Global Health Security: Closing the Gaps in Responding to Infectious Disease Emergencies

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Rising concerns about the human, political, and economic costs of emerging infectious disease threats and deliberate epidemics have highlighted the important connection between global public health and security. This realization has led security communities, particularly in the U.S., to seek ways to bolster the international health response to public health emergencies as a means of protecting national security. While there have been important recent efforts to strengthen international response to infectious disease threats, there are areas that deserve more attention from both the health and security communities. In this article, we describe two important gaps in international frameworks that govern the response to global public health threats which can negatively affect the security of states: (1) despite attempts to strengthen international rules for responding to public health emergencies, there continues to be strong disincentives for states to report disease outbreaks; and (2) systems for detecting and responding to outbreaks of infectious diseases are hindered by a lack of standards of practice for sharing biological samples and specimens. To address these gaps in global governance of infectious disease threats, additional incentives are needed for states to report disease outbreaks to the international community; there should be greater enforcement of countries' international health obligations; and both political and scientific communities should develop workable practice standards for sharing biological samples of all types.

INTRODUCTION

The anthrax attacks of 2001, the rapid global spread of severe acute respiratory syndrome (SARS) in 2003, the 2009 influenza A (H1N1) pandemic, and the recent *E. coli* O104 (STEC O104:H4) outbreak in Germany have all demonstrated the considerable human, political, and economic costs that result from outbreaks of infectious disease. Such outbreaks have increased global political concerns about emerging infectious disease threats and deliberate epidemics, and have highlighted the important connection between global public health and security.[1]

This realization has led security communities, particularly in the U.S., to seek ways to bolster the international health response to public health emergencies as a means of protecting national security. While much discussion about global health security has been appropriately focused on such issues as increasing public health surveillance to detect early emergence of disease or the appropriate safety and biosecurity measures for laboratory work, there are additional areas that deserve more attention by both health and security communities. In this article, we describe two important gaps in the international frameworks that govern the response to global public health threats that can negatively affect the security of states: (1) despite attempts to strengthen international rules for responding to public health emergencies, there continues to be strong disincentives for states to report disease outbreaks; and (2)

existing systems for detecting and responding to outbreaks of infectious diseases are hindered by a lack of international standards of practice for sharing biological samples and specimens. This article will describe these problems, explore why they are important to global health security, describe progress in addressing them, and propose additional mechanisms for resolving them.

EXISTING FRAMEWORKS FOR GLOBAL HEALTH SEEN AS AN OPPORTUNITY TO STRENGTHEN SECURITY

In recent years, the U.S. national security community has expressed interest in supporting international efforts that promote global health, such as the International Health Regulations (IHRs). In 2009, the U.S. National Security Council declared that as part of the National Strategy for Countering Biological Threats the U.S. government would "work with partner countries and regions to assist in their efforts to comply with the World Health Organization's (WHO) International Health Regulations (IHR)."[2] Evidence of this intention to support the IHRs can be found in the activities of other U.S. agencies. The U.S. Department of Defense, which works at 500 sites with partners in 75 countries to strengthen emerging infectious disease surveillance, noted in 2010 that, in going forward, the IHRs will serve as a framework to guide these activities.[3] In 2009, the U.S. Department of State also hosted two conferences meant to "highlight the interrelationship" between the IHRs and the Biological Weapons Convention.[4]

Strengthening Global Health and Security through the IHRs

The International Health Regulations (IHRs) are a legal framework that articulates how nations should respond to international disease threats, and are intended to limit the international spread of disease while ensuring minimum interference with trade and travel. They were first adopted by the 22nd World Health Assembly in 1969, but their history extends further back to discussions in an international sanitary conference in 1851.[5] The latest revision of the IHRs took place in 2005, partially in response to the 2003 SARS outbreak and the global perception that China's lack of communication worsened the epidemic.

The core goal of these regulations has remained constant through the revisions: Article 2 of the revised International Health Regulations (2005) stipulates that the purpose is to "prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and *which avoid unnecessary interference with international traffic and trade* [emphasis added]."[6] The revised IHRs encourage countries to use necessary measures to control the spread of diseases, but actively discourage the use of measures for which scientific evidence is lacking. This is meant to prevent countries from taking politically expedient measures at the expense of another country's economy.

Several provisions of the revised IHRs have piqued the interest of both the public health and security communities.[7] First, the IHRs aim to improve nations' capacities to detect and report outbreaks. Signatories to the IHRs must, within 5 years after the regulations enter into force, develop and maintain the capacity to detect and report any infectious disease outbreaks or other public health conditions that have the potential to spread beyond their borders — so-called "public health emergencies of international

concern," or PHEIC.[8] The IHRs also call upon states parties to help resource-constrained countries build capacity to detect, report, and respond to PHEICs.

By employing a broad definition of what constitutes a PHEIC, the IHRs aim to increase the speed with which any significant outbreak — whether naturally-caused or deliberate — is detected and reported, which is of interest to both security and public health communities alike. Article 9 of the revised IHRs stipulates that, "States Parties shall, as far as practicable, *inform WHO within 24 hours of receipt of evidence* [emphasis added] a public health risk identified outside their territory that may cause international disease spread as manifested by exported or imported: human cases; vectors carrying infection or contamination; or goods that are contaminated."[9] Previously, nations only needed to report a short, defined list of disease events to WHO, such as cholera or plague. However, in broadening the definition of a reportable event, the IHRs require that nations report a range of known and yet-to-emerge global public health disease threats, including pathogens that may be used in a bioterrorist attack.

By requiring countries to develop the medical and public health capacities to respond to outbreaks, the IHRs may also help reduce the consequences of an attack. Medical and public health communities are likely to be the first to respond regardless of whether an infectious disease event is natural or deliberate. The important role of the medical and public health as first responders was observed both in the salmonella outbreak deliberately caused by the Rajneesh cult in 1984[10] and the 2001 Amerithrax attack. In these two events, medical and public health communities helped to reduce the morbidity and mortality by providing medical care to sick patients, investigating the cause of the outbreak, and distributing medical countermeasures. Such medical and public health interventions that are aimed at treating the sick and protecting the well can be instrumental in reducing the scope of the outbreak and limiting the success of an attack.[11]

Another important security provision of the IHRs is the authority it grants to WHO to consider and act on unofficial reports of disease. In 2003, unofficial reports of a severe, contagious respiratory illness circulated for months before SARS was officially recognized by any government.[12] Yet, the WHO was not able to publicly comment or respond to the reports until it received official notice from the affected countries. Adding to WHO's increased authorities are new resources for getting information: there are more systems available to provide situational awareness of global outbreaks. The Global Public Health Intelligence Network (GPHIN), originally developed by the Public Health Agency of Canada and used by governments and NGO's worldwide,[13] and Project Argus, used by a variety of United States government agencies,[14] are two examples of systems that scan global news for evidence of outbreaks. The increase in event-based surveillance systems presents more public health intelligence for WHO and other public health officials to utilize, and may increase the speed that outbreaks are recognized, particularly in areas where traditional disease surveillance systems are not well developed.

Security communities have increasingly recognized the relevance of the IHRs to their goals of protecting the political, economic, and military well-being of nations, and have begun work to support and strengthen IHR implementation.[15] For example, the Biological Weapons Convention relies on confidence-building measures, such as declaration of maximum containment facilities and vaccine manufacturers, to increase transparency about the biological weapons capabilities of member states. Some have

argued that countries' compliance with the International Health Regulations may serve as yet another confidence building measure.[16]

Limits to Using the IHRs to Strengthen Security

The intertwining of health and security in the context of the IHRs is not universally embraced. The process to revise the IHRs faced a deadlock in 2005 when several countries opposed having any explicit reference to a deliberate release of a toxic or infectious agent.[17] The negotiations continued after such references were dropped, and it was agreed that deliberate biological events would be implicitly covered through a broad definition of "disease" that makes no reference to its source.

This compromise highlights a potential shortcoming of the IHRs for security: less concern about the source of the outbreak. The focus of the IHRs is on controlling the disease where it is occurring, and not necessarily identifying the source of the outbreak. From a public health standpoint, this distinction is largely irrelevant, and historically, outbreaks are rarely conclusively determined. For example, the 1918 influenza pandemic was called the "Spanish flu" and was thought to originate there, or somewhere else in Europe, but it now appears — though it is still debated — that the virus originated on a farm in Kansas.[18] When the origin of an outbreak is identified, it is often after an enormous amount of data is collected and analyzed, which takes time. While the source of a disease may not be as important for informing public health action, it is of fundamental concern for the security community. The speed of detection of a disease outbreak may serve to eliminate this distinction, however.

Another potential security challenge is that in spite of being able to rely on unofficial sources of disease information, the WHO is still limited in how it can intervene when a country does not report. No entity, including the WHO, can verify the character of an outbreak until a sufficient body of evidence is amassed, and wrongly accusing a country of not reporting has political consequences. The WHO will likely act conservatively, favoring a wait and see approach, so as not to wrongfully accuse a member nation. Recent criticism directed at the WHO that it overstated the threat of the 2009 H1N1 pandemic may force the WHO to take an even more conservative stance in the future.[19] The next outbreak could escalate before the WHO is politically able to use their IHR authorities.

No matter how carefully worded, a treaty is only effective if there is adherence to its stipulations. Though security communities increasingly look to the IHRs to ensure that to detect an outbreak and limit its effect, it is important to note that during international public health crises, not all countries have chosen to respond to infectious disease outbreaks in ways that are consistent with the premises of the International Health Regulations. Rather, while there may be agreement in principle that member nations should restrict responses to only those measures that are deemed by the WHO to likely be effective, early experience with the revised IHRs indicate that when faced with the threat of disease originating in other countries, member nations may resort to protectionist tactics, such as trade and travel restrictions. These actions may be politically beneficial for the nation's populace, but would produce no public health benefits and weaken the IHR regime. To combat these tendencies new incentives need to be created to strengthen implementation of the IHRs by encouraging countries to adhere to WHO guidance during crises for the betterment of both health and security.

GAP #1: DESPITE REQUIREMENTS, FEW INCENTIVES FOR COUNTRIES TO REPORT DISEASE

From the perspective of a nation, there are few incentives for reporting the presence of a disease to the international community. This political decision is often not made (or made in a timely manner) because of clear disincentives — significant drops in tourism and trade, closings of borders and other measures that the IHRs are supposed to prevent, and other negative economic effects. The challenge to overcome these disincentives to reporting needs to be met head-on by the international community. While all disincentives to reporting cannot be erased, it may be possible to incentivize reporting through increased enforcement of the IHRs, or tying the willingness to report to the access and benefit sharing of medical countermeasures and public health assistance.

Right now, much of the burden of global surveillance largely falls on developing countries, where trained personnel, diagnostic laboratories, and funding required to support surveillance are at a premium. Yet without robust surveillance, these countries fall prey to "inaccurate reports and rumors [which] can rapidly lead to social disruption nationally and unwarranted panic internationally."[20] Inflammatory news travels faster than accurate diagnoses can be made, especially without a robust surveillance infrastructure.

The ongoing *E. coli* O104 (STEC O104:H4) outbreak, which has to-date sickened more than 2,900 people, most of whom reside in Germany, serves as a current example of both the difficulties and consequences of diagnosing an outbreak.[21] In first announcing the outbreak, German health officials initially suspected that the cause of the outbreak might be linked to cucumbers imported from Spain.[22] Though that diagnosis has since been retracted[23] and though no source of contaminated produce has been confirmed, Russia and Lebanon responded to these reports by banning all produce imports from the European Union.[24]

Penalties for Reporting Disease Outbreaks: The Cautionary Examples of Plague in India and Cholera in Peru

Two infectious disease events — the Peru cholera epidemic of 1991 and the plague outbreak that was suspected to have occurred in India in 1994 — serve as cautionary tales for countries that are thinking about whether and when to report an outbreak. While both of these events predate the 2005 revision of the IHRs, they highlight the consequences that countries can face when they decide to openly report outbreaks of infectious disease outbreaks, particularly when non-affected countries take measures that are not science-based.

Although a fundamental premise of the revised IHRs is that effective response to global public health emergencies is aided by early detection and reporting of events, it can be very difficult for countries to know whether to declare that a public health event of international concern (PHEIC) is occurring. Although the IHRs provide a loose algorithm to help in determining whether an event constitutes a "PHEIC," it is not clear-cut in all cases how to apply this algorithm, and decisions made along these lines are

often complicated by the high degree of uncertainty that tends to accompany an outbreak at its onset.[25]

The situation that occurred in India in 1994 illustrates such challenges. In September 1994, a handful of cases of illness and deaths occurred in the poor sections of Surat, Gujurat. The identification of a rod-shaped bacilli led to initial projections that the causative agent was *Yersinia pestis* (plague). Although laboratory confirmation of the etiologic agent was not immediately available, government officials decided to be extra cautious. India declared that the deaths may be a plague outbreak and employed a broad case definition to identify additional cases.[26]

In reaction to these reports, as many as 500,000 people fled Surat. Schools were closed and other governments instituted quarantines, fumigated cargo at all ports to kill rodents, cancelled flights to and from India, restricted the importation of food and other goods, and issued travel warnings.[27] Indian citizens living in other countries received additional scrutiny. Flight cancelations led to greater than $30M dollars in tourist trade losses, with total losses in the billions.[28] All of these measures were implemented in spite of WHO requests that no travel or trade restrictions be imposed.

Ultimately, the causative agent of plague was never isolated from a patient, and many believe that health officials' handling of the outbreak may have been a mistake. Invoking plague as a possible cause of the deaths occurring in Surat led to "widespread panic, worldwide apprehension, and severe economic losses for India."[29] The Center for Disease Control and Prevention (CDC) and WHO concluded the response to the outbreak was excessive and unnecessary.[30]

India's plague situation illustrates the difficulty of reporting events before there is scientific confirmation of their cause. But even when countries have confirmation that a serious outbreak is occurring, there is still the chance that other nations will overreact and employ measures that defy international guidance. This was the case in a 1991 cholera outbreak that began in Peru and ultimately spread throughout South America, causing over a million cases and close to 10,000 deaths. Although the health effects of the epidemic were considerable, measures taken by nations to prevent the importation of the disease were not rooted in science, and exacerbated the effects of the epidemic. Despite clear evidence of the ineffectiveness of foodstuff export restrictions (as cholera bacteria do not survive cooking and drying) and immigration restrictions, many countries implemented these measures in defiance of international health and trade guidance. The European Community banned all the importation of all goods from Peru and Bolivia, Chile, Argentina, and Ecuador banned Peruvian food imports. Some countries, including the U.S., went beyond WHO recommendations, and required all food products from Peru to be tested. Argentina suspended an international soccer match as a result of the outbreak. In the end, it is estimated that the tourist industry lost $150M. Moreover, some Peruvian travelers were barred from Europe. For Peru the economic losses on trade alone were estimated at more than $770M.[31]

Countries Penalized When Others Ignored WHO Guidance During the H1N1 (2009) Pandemic

The 2009 influenza A (H1N1) pandemic represented one of the first global tests of the revised IHRs. During the pandemic, the international community "generally adhered to the IHR (2005), supported WHO recommendations, and participated in

unprecedented levels of information sharing."[32] However, as Katz and Fischer have comprehensively detailed, there were some notable exceptions to this general state of international cooperation.[33] Judging by the rapid pace influenza cases were appearing, the WHO made it clear that no practical measures existed that would prevent the disease from being spread from country to country.[34] Consequently, the WHO recommended that countries not ban imports, close borders, or restrict travelers to contain the outbreak at national borders.

The WHO's position that such measures would be ineffective was informed by science and experience. Historically, closing airports and detaining travelers at borders has not been effective in preventing disease importation. In weighing evidence from multiple countries' experiences with SARS, a WHO expert group concluded that screening and detaining travelers at international borders had "little documented effect on detecting SARS cases."[35] Furthermore, in a historical analysis of previous influenza pandemics, another WHO expert concluded that "screening and quarantining entering travelers at international borders did not substantially delay virus introduction in past pandemics...and will likely be even less effective in the modern era."[36]

Despite these recommendations, countries pursued these measures during the 2009 H1N1 pandemic, even after WHO issued guidance to the contrary. Around the world, a number of countries restricted flights to or from North America[30] in defiance of WHO guidance.[37] China[38] and Singapore[39] quarantined Mexicans and other North Americans traveling to those countries regardless of H1N1 exposure. Fever screens were also employed in 2009 for H1N1 at 22 international airports in countries such as China, India, and others, despite WHO judgment that such measures would hinder trade and travel without compensatory public health benefit.[40] The WHO based this recommendation on the grounds that fever screens did not work well to control SARS[41] and on evidence that suggested they would not work well to control influenza.[42] In addition, some countries banned pork from the affected countries in spite of a joint statement by the WHO, United Nations Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), and the World Trade Organization (WTO), which stated that pork and pork products could not transmit H1N1 influenza.[43]

GAP #2: LACK OF STANDARDS AND PRACTICE FOR SAMPLE SHARING

The emergence of diseases such as SARS and the 2009 H1N1 influenza highlighted the important role that disease surveillance can play in detecting outbreaks and understanding how to respond. Experiences with both of these events underscored that recognition of outbreaks, management of epidemics, and development of countermeasures can depend heavily on having access to highly specific surveillance information that is typically obtained from testing of clinical specimens. In both of these events, health authorities noticed that unusual patterns of illness had been occurring among individuals for weeks to months, but it was not until a laboratory test was applied to clinical isolates that health authorities were able to understand that a novel virus of pandemic potential was in their midst.[44] Such events have led to a greater emphasis within governments on improving laboratory and diagnostic capacity in order to improve global biosurveillance for infectious diseases.[45]

Biological samples (such as from patients or sick animals) are routinely collected for research and for epidemiological surveillance. In many cases the samples must be

shipped to laboratories far away from where they were collected for analysis and research. In the case of influenza, samples are collected in order to assess how the virus is evolving in the wild, as well as vaccine development: influenza vaccine development requires access to the naturally circulating strain that the vaccine will protect against.

Though access and sharing of biological samples and specimens is critical for surveillance and vaccine development, recent outbreaks provide some warning about the extent to which countries will continue to share clinical isolates during public health emergencies. Nations have proposed that there exists a right to *benefit* from sharing samples, such as to have access to vaccine or to vaccine profits, and in the absence of this benefit, have withheld critical samples from analysis. Impediments in the ability to share samples has global health security implications, as delays in disease detection could lead to increased numbers of cases, delays in the manufacturing of medical countermeasures, and greater uncertainty of the source of the outbreak.

Conflicts in Sample Sharing during H5N1 avian flu

In 2007, Indonesian officials learned that an Australian pharmaceutical company developed an H5N1 vaccine based on a sample that was originally isolated in Indonesia.[46] The officials believed that those samples would be developed into vaccines that Indonesia — a nation clearly affected by flu — could not afford. Worse, the vaccine companies could potentially patent the sample. Indonesia pulled out of the Global Influenza Surveillance Network (GISN) in protest.[47]

No international framework currently exists that requires countries to share clinical samples or biological specimens during a public health emergency.[48] WHO promised to address the vaccine inequities in availability in exchange for a resumption of sample sharing. They promised to increase global vaccine production capabilities, explore short term responses like national stockpiling of vaccine/drugs, and to guarantee that if a vaccine company were to set aside a percentage of the vaccine that resulted from the samples, WHO would purchase it.[49] The World Health Assembly Resolution WHA60.28 called for action to promote the "transparent, fair and equitable sharing of the benefits arising from the generation of information, diagnostics, medicines, vaccines and other technologies" while maintaining "timely sharing of viruses and specimens."[50] After 4 contentious years of negotiations, there has finally been a breakthrough: an agreement has been reached that would govern influenza virus sharing for all WHO countries, and obligate the sharing of vaccines, diagnostic kits and other public health benefits.[51]

The agreement states that influenza vaccine, diagnostic, and pharmaceutical manufacturers who participate in the WHO global influenza surveillance and response system will contribute to WHO "for improving global pandemic influenza preparedness and response" up to 50 percent of the running costs of the program, about $56m, commencing in 2012. It also puts into place "Standard Material Transfer Agreements" to contractually identify the terms for sharing and for providing benefits. This addresses member nations' concerns about influenza samples being used for profit by a limited number of countries and pharmaceutical companies. The agreement is a landmark, and while there have been some criticisms that the amount of the financial contributions is small, that not enough of the obligations is on developed countries, and companies are

mandatory, it is likely to pass at the WHA meeting in May, 2011.[52] This agreement could become a model for the sharing of samples of other pathogens.

In their battle for access to benefits from sharing samples, Indonesia also invoked the UN Convention on Biological Diversity (CBD, 1992).[53] The Indonesian government claimed that it was an act of 'biopiracy' under the Convention for pharmaceutical companies to profit from Indonesian samples.[54] The CBD endorses "access and benefit sharing" in article 15.7, and pathogens are included, but adding clarifying language was contentious. The recent Nagoya Protocol to the CBD is somewhat vague, stating that [States] "Parties may take into consideration the need for expeditious access to genetic resources and expeditious fair and equitable sharing of benefits arising out of the use of such genetic resources, including access to affordable treatments by those in need, especially in developing countries." The next steps for the protocol will be a series of meetings to discuss how to implement fair and equitable sharing, perhaps with the creation of a specific fund.[55]

The future of (non-influenza) sample sharing is not clear

The problem of sample sharing is not likely to go away soon, even with additional reflection on the Nagoya protocol and the WHO draft agreement for influenza virus sharing. The extent to which the WHO agreement may set a standard for access to benefits in exchange sharing non-influenza samples is also not clear.

In addition, the problem of sample sharing is likely to expand as biological samples and personal genetic information becomes even more economically important. The CBD does not extend to human samples, but this could be challenged, or another mechanism could be employed to assert the rights of those whose personal biological samples lead to profit for others. In the US, there are no legal restrictions on what can be done with a person's biological samples that are left (for example, after a surgical procedure), and most of these samples have no commercial value whatsoever. Historically, samples which have had value have not yielded any benefits to the surviving family members of the patient. Yet as awareness increases, this practice may be challenged not only on the national level, but by individuals as well. In all such cases, pharmaceutical companies and researchers will argue that monetary incentives are required to invest in surveillance, and patenting and vaccine profits will fund the research to make new vaccines. Experts worry that compensating patients will lead to patients insisting on unrealistic financial arrangements or will hinder the benefits of that research for most people.[56]

RECOMMENDATIONS FOR FILLING THE GAPS

The gaps in global health security referenced in this article have been seen in recent pandemics of influenza, in SARS, and are likely to be seen in future epidemics. While there have been efforts to address them, more attention is needed for resolving issues prior to an emergency, when these issues could cause delays in detecting cases or treating people. Neither of these gaps will be filled by one organization, such as WHO, but require a variety of governmental and nongovernmental actors to take the following aspirations as priorities:

1) Reduce disincentives for countries to report disease by promoting science-based measures to controlling outbreaks (and by discouraging unnecessary restrictions for trade and travel).

The IHRs are an important framework for health security, but the current approaches to IHR implementation are insufficient to ensure that member states comply with its guidance and reporting requirements, and to promote science-based responses to disease outbreaks.

First, there should be consequences for countries that choose politically expedient measures such as travel restrictions and trade barriers that are not supported by WHO guidance. There are IHR mechanisms that have not and are not likely to be used, including a dispute mechanism within the IHRs and a possibility of revoking World Health Assembly membership.[57] However, countries that violate WHO guidance could be strongly condemned by other IHR treaty members, and diplomatic and other channels can be used to prevent unnecessary restriction of trade and travel.

By specifically aiming to keep trade lines open if there is no impact on controlling disease, the IHRs keep the costs of compliance down by eliminating unnecessary penalties for those countries that report. It is important for all member nations to avoid the creation of "loser" nations — an unfair situation that puts future compliance in doubt, and which may exacerbate negative public health consequences. In addition, international governmental organizations, such as the World Health Organization, FAO, OIE, World Trade Organization (WTO), and others, should work to discourage protectionist policies, by speaking out against national actions to control disease that are not consistent with consensus recommendations. During the 2009 influenza A (H1N1) pandemic, the WTO and the WHO issued a joint statement that stressed to member states that there was "no justification...for the imposition of trade measures on the importation of pigs or their products."[58] These and other organizations should continue to use their authority to criticize protectionist measures, as preventing the unnecessary restriction of trade and travel is important for ensuring implementation of the IHRs. Such measures will do little to stop the spread of disease, but send a strong message to countries that reporting outbreaks may result in strong penalties.

Countries should further use their political capital to encourage fellow member states to implement only science-based response measures and to discourage those that do not. This problem should also be worked on from the bottom-up. Health officials must work to convince their political leaders that response to disease outbreaks must be scientifically defensible. While protectionist policies may score political gains, they rarely serve to limit the spread of disease and may ultimately reduce security, by discouraging affected nations from reporting disease outbreaks early. Experience with past outbreaks has shown that in the midst of global outbreak, political leaders may be quick to try to close borders and look for other ways of keep the disease out, countries would fare better if they focused instead on implementing community-based measures that might slow the spread of the disease and lessen its impact.[59] Such advice may be particularly difficult to impart when the political stakes associated with responding to an outbreak are high, such as during a biological attack, but promoting science-based medical and public health interventions will be even more critical in that event, as such measures have the greatest likelihood of reducing the impact of an attack.

When possible, countries and international governmental organizations should seek to create incentives that can overcome hesitations to report cases of disease. In the 1990's, following Saudi Arabia's decision to deny entry to individuals from countries that were experiencing meningitis outbreaks, reported rates of meningitis sharply declined, which suggested that many countries were withholding evidence of cases for fear that their citizens would be barred from the Muslim Hajj. After an outbreak of meningitis that resulted in 250,000 cases and 25,000 deaths, the WHO established the International Consultative Group (ICG) in 1997 to provide meningococcal vaccines to all African countries that provided epidemiological information on the meningitis cases. This appears to have been a strong incentive for countries to resume reporting of meningitis cases.[60]

Although there have been recent efforts to create an international stockpile of vaccines to help countries that report outbreaks of other diseases, such as influenza and smallpox, these stockpiles are often virtual — i.e. made up of vaccines that have been pledged by other countries. Questions remain about how these stockpiles would be distributed and utilized in an emergency.[61] For example, during the influenza A (H1N1) pandemic of 2009, although a number of countries had pledged to donate the vaccine to the WHO, many countries delayed their contribution of the vaccine until global shortages in H1N1 vaccine production, which occurred well into the pandemic. In order for vaccine stockpiles to serve as incentives for countries to report outbreaks, there must be dedicated, actual, vaccine stockpiles and detailed plans for distribution of these countermeasures to the countries that need them, or specific funds that are available, not just promised, for purchasing countermeasures in an emergency.

In addition to conditioning access to vaccine stockpiles on whether or not a country is providing adequate epidemiological information, other "benefit sharing" incentives can be developed for disease reporting. For example, ensuring that those countries that report outbreaks will receive the technical assistance and medical expertise necessary to resolve the outbreak may encourage earlier reporting. Currently, a country that reports a PHEIC can request technical and other assistance from the WHO in responding to the event. WHO's ability to provide assistance during previous outbreaks has been limited by needing to raise funds to deploy staff to the affected area.[62] The international community should continue to support such efforts, ensuring that organizations, like the WHO, have the resources they need to aid in response. The international community could also consider compensation mechanisms for countries that incur losses as a result of reporting outbreaks to facilitate timely global response to health security threats, with funds set aside for that purpose.

2. Create mechanisms for sharing biological samples during outbreaks.

The decision to report disease to the international community is essentially a political decision — cases will occur and will, presumably, be treated by health professionals regardless of whether the international alarm is raised. However, biological sample and specimen sharing is a technical *requirement*, a necessity for laboratory scientists to be able to confirm the causative agent of disease, to examine the way a particular virus is evolving, to develop medical countermeasures, and even to further characterize the pathogen in basic research. While 'benefit sharing' measures

such as receiving priority access to vaccines may encourage countries to report disease, it will likely require more involvement of technical professionals, and their technical agreements on use, to ensure that biological samples are appropriately shared in a timely manner during outbreaks. There are a myriad of concerns that need to be worked out, such as: how samples should be collected, where should they be sent, adherence to shipping regulations, and data ownership. Ideally, such terms should be worked out in advance of an emergency.[63]

Although there have been some important developments on the sample sharing issue — the WHO draft agreement on sharing of influenza samples and the Convention on Biological Diversity nascent framework — neither of these efforts fully address the many decisions that need to be made regarding the sharing of all pathogen. Therefore, it is likely that sample sharing will continue to be an episodic issue with other pathogens, in future outbreaks. Given the importance of this issue to international security, the need for further discussion about sample exchange could be discussed by the Biological Weapons Convention, as well, with a session devoted to "Expert Group" analysis. That group could provide an opportunity to communicate the technical imperatives of sample sharing to a non-technical audience.

As sample sharing is a necessity for biological research, scientific, and infectious disease societies should become involved in exploring the problems in sharing and workable solutions for emergencies, for surveillance, and for basic research. After Indonesia's successful campaign to tie access to vaccines and public health assistance to sharing samples, the political dimension of sample sharing may never go away. However, technical standards of practice among scientists may make politicizing this activity less fruitful.

CONCLUSION

The efficiency of the international public health response, and nations' adherence to evidence-based methods for controlling disease is important to global health and global health security. While security communities, particularly in the U.S., have tied security goals to the IHRs, other forums such as the BWC, WTO, and technical audiences need to be continuously engaged and pursued to make progress. A concerted effort by health and security communities will be required to create incentives for nations to report disease outbreaks to the international community, to explore mechanisms to provide greater enforcement of the IHR obligations and evidence-based disease control, and to develop workable standards and guidance for the scientific and public health communities to share all types of biological samples.

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Health Diplomacy in China

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China has been actively involved in health diplomacy since the founding of the People's Republic of China (PRC) in 1949. In addition to the changing international environment, dominant ideologies, and foreign policies over the past sixty years, health diplomacy in China has also experienced strategic shifts, which can be categorized by different periods: 1. Period of "Leaning to one side" diplomacy and the advent of health cooperation between China and the Soviet Union (from the founding of PRC to the end of the 1950s); 2. Period of "Fight against the hegemony of two superpowers,--the US and the Soviet Union" and the initiation of medical teams to Africa (from the end of 1950s to the end of the 1960s); 3. Period of "Uniting with the US against the Soviet Union" and the beginning of multilateral health diplomacy (from the end of the 1960s to the end of the 1970s); 4. Period of "Pragmatism" in foreign policy and pushing forward of comprehensive health diplomacy (from the end of the 1970s to the end of the 1990s); and 5. Period of "harmonious world" mentality and thriving of comprehensive health diplomacy (from the year 2000 until now). At present, China is actively involved in international health affairs, activities including cooperating with international health organizations, expanding inter-governmental health cooperation, and pioneering - non-governmental health diplomacy. Such shifts indicate that health is occupying an increasingly important role in diplomacy, and that diplomatic tools are being utilized to solve health issues. China, with its growing national strength, should attach more priority to the development of health diplomacy, and should be more responsive and active in the global health arena.

INTRODUCTION

Health diplomacy is defined as a political change activity that meets the dual goals of improving global health while maintaining and strengthening international relations abroad.[1] It emphasizes the inter-linkages between health and foreign policy, and is part of the "new diplomacy" that resulted from the expansion of foreign policy into new sectors and issues since the Cold War.[2] Although this term only gained importance and popularity in recent years, notably with the launching of Foreign Policy and Global Health Initiative in 2006 by foreign ministers from Brazil, France, Indonesia, Norway, Senegal, South Africa, and Thailand, the practice of health diplomacy can be traced back much earlier in many countries, including in China.

Since its founding in 1949, the People's Republic of China (PRC) has been attaching importance to utilizing health as a tool for promotion of foreign relations. However, a majority of existing literature on health diplomacy in China focuses exclusively on the dispatching of medical teams to African and Middle Eastern countries, claiming that this is largely driven by the desire to expand political influence and enhance "soft power,"[3] a notion coined by Joseph Nye and indicating the ability to obtain what one wants through co-option and attraction. In this article, we will examine a more complete history of health diplomacy in China since 1949, summarize the different characteristics in respective periods, thus to further our understanding of China's engagement in health diplomacy and identify future challenges.

HISTORY OF HEALTH DIPLOMACY IN CHINA

The foreign policy of China, starting from the birth of People's Republic in the year 1949, has experienced twists and turns as a result of diverse international environments, ideologies, and diplomatic situations over the past sixty years. Health diplomacy has also been through strategic shifts.

From the Founding of the PRC to the End of 1950s: Leaning To One Side- Diplomacy and the Advent of Health Cooperation between China and the Soviet Union

In the early years of the PRC, the Chinese foreign policy is largely influenced by a highly articulated and systematic Communist ideology, "a formal system of ideas which provided a perceptual prism" through which the Communist leaders view the world.[4] It is with this ideology that Chinese leaders at that time saw the inevitable victory of anti-imperialism and doomed failure of capitalism. This contributed to China's leaning towards the Soviet Union. Not only did it join the socialist ally led by the Soviet Union, but also conformed to the Soviet Union and other socialist nations on diplomatic issues. The two sides - acted in a mutually supportive way in politics, and -also shared frequent exchanges in the health arena.

During the first five-year plan, the Soviet Union committed aid to 156 large-scale plants and factories in China, including two pharmaceutical factories in north China and Taiyuan, the capital of Shanxi Province. Meanwhile, a large group of Chinese students and health technicians were sent to the Soviet Union for studying and training, and eventually provided a reservoir of health professionals for future development. Many of those who came back after studying there became the main force in China's health sector. For instance, the former Health Minister, Dr. Qian Xinzhong, obtained his doctoral degree in the Soviet Union.

From the End of 1950s to the End of 1960s: The Fight against the Hegemony of Two Superpowers- The U.S. and the Soviet Union

The good relationship between China and Soviet Union deceased gradually. By the end of the 1950s, the two sides disagreed over many things such as diplomatic directions, ideologies, and how to construct a socialist country. The foreign policy in this period was characterized not only by anti-American imperialism and anti-Soviet revisionism, but also anti-reactionaries and anti-hegemonism. Although it acted largely as "a revolutionary power"[5] at odds with many regional governments, China gradually enhanced its diplomatic relations with countries in Asia, Africa, and Latin America. While supporting these countries in their efforts to win and sustain independence, China also offered political and material assistance to them, including the dispatch of medical teams. On April 6th, 1963, China sent its very first medical team to Algeria as directed by the former Premier Zhou Enlai.[6] Over the past 40 years, Chinese medical teams in the developing world have gone through enormous hardships to emerge with remarkable successes. Such efforts have played an active role in both generating favorable images of China in the international community and promoting the development of Chinese diplomatic relations.

From the End of 1960s to the End of 1970s: Uniting with the United States against the Soviet Union and the Beginning of Multilateral Health Diplomacy

The Sino-American relationship welcomed its historical reconciliation after the conflict over Zhenbao Island between China and the Soviet Union in March 1969. During this time, the

United States (US) was mired in the Vietnam War. The reconciliation process reached its climax in February 1972, when the then President Nixon visited China in public. China began to break the ice with the capitalist world and become more involved with the international community, especially with the regaining of its UN membership status. The relaxation of tension in diplomatic relations has also facilitated exchanges in the health arena. This period witnessed a booming of China's health assistance to other countries as well as frequent visits by country health delegations from Asia, Africa, and Latin America.
On May 12th, 1972, the 25th World Health Assembly passed a resolution to resume the rightful identity of China in the World Health Organization (WHO). Since then, China has participated in every World Health Assembly and Regional Committee Meeting of the WHO and has been elected as a member of the Executive Board many times. In October 1978, the former health minister Dr. Jiang Yizhen signed the *Memorandum of Technical Cooperation between the People's Republic of China and the World Health Organization* (hereafter referred to as the *Memorandum*) with the former Director-General of the WHO, Dr. Halfdan Mahler. This signing was a milestone that marked the initiation of multilateral health cooperation in China.

From the End of 1970s to the End of 1990s: Pragmatism in Foreign Policy and Pushing Forward Comprehensive Health Diplomacy

Ideological factors became less important with the adoption of the reforming and opening-up policy, proposed by the 3rd Plenum of 11th Central Committee of the Communist Party in 1978. It was under Deng Xiaoping's strategic view that "peace and development have become two major themes of today's world" that China decided to shift its priority to economic modernization, and focused its foreign policy on peaceful coexistence and all-directional diplomatic relations. This view dramatically changed the earlier judgments of the world situation and helped China to embark on a new road,[7]bringing major changes in China's diplomatic behaviors. As observed by Medeiros and Fravel, "China has expanded the number and depth of its bilateral relationships, and joined various trade and security accords, deepened its participation in key multilateral organizations, and helped address global security issues."[8]

These changes also pushed the health diplomacy in this period into a more comprehensive direction, notably reflected in the following four areas: co-development of bilateral and multilateral health cooperation, co-introduction of technologies and capital in health, mutual complementation of official and unofficial approaches on health issues, and a bidirectional flow of health assistance both into and out of China.[9] It was during this period that many agreements on health cooperation with strategic importance were signed between China and other countries (i.e. *Protocol of Scientific Cooperation on Health Between the People's Republic of China and the United States of America* on June 22nd, 1979; *Agreement of Scientific Cooperation on Health and Medical Science* signed between China and the Soviet Union on May 16th, 1990; *Memorandum of Understanding on Health Cooperation* signed between the health ministries in China and Australia, etc.) Apart from the successful bilateral health cooperation, China has also been extending its influence in international health affairs both in breadth and depth and further enhancing its cooperation with international health organizations like the WHO.

CHINA'S HEALTH DIPLOMACY IN THE NEW CENTURY

At the 4th Plenum of the 16th Central Committee of the Communist Party of China in 2004, President Hu Jintao announced that China was trying to develop a "harmonious society."[10]A year after, during the 60th anniversary of the founding of the United Nations,

Hu Jintao proposed a democratization of international relations and construction of a harmonious world where all civilizations coexist and accommodate each other.[11] The construction of a "harmonious society" inside and a "harmonious world" outside are, as put by Zhu Liqun, a reflection of the "inner needs of China's transformation to a pluralized society and the essential dynamics of the transition of China's diplomacy."[12] It also shows that China is ready to take a more proactive role both internally and externally.[13] This new diplomatic thinking has thus influenced the health diplomatic activities in 21st century China, giving them new dynamism while maintaining the same strategy of "comprehensive health diplomacy" as in the last period.

Active Involvement in International Health Affairs

A major characteristic of China's new diplomacy in the new century is the multilateral diplomacy and its vigorous participation internationally. This is especially true in terms of health. With ongoing globalization, cross-border transmission of health hazards has been largely facilitated, going beyond the capacity of single or several countries and thus requiring concerted efforts at global level. International organizations have therefore become an ideal platform for countries to discuss solutions together to these transnational health issues. In this regard, China has enhanced its cooperation with international organizations and has participated in international health decision-making processes more actively, promoting its opinions on international health affairs.

Cooperation with the WHO

Since 1972, China has been cooperating closely with the WHO, especially after the signing of the *Memorandum* in 1978. Such cooperation becomes increasingly active in the new century as China's national strength grows. The major approaches include:

- Supporting various activities of the WHO in the world and hosting some of its important conferences and events. In December 2006, the former Director of Health Department in Hong Kong, Dr. Margret Chan, was elected Director-General of the WHO under nomination by the People's Republic of China. China was selected as a member of the Executive Board of WHO many times and hosted several major conferences and activities for the organization, including the 38th and 55th Regional Committee Meeting of Western Pacific Regions. Additionally, China plays an active role in the formulation and revision of WHO policy tools, such as the revision of International Health Regulations (IHRs) in 2005. Furthermore, following the newly introduced IHRs 2005, China established a special coordinating team composed of experienced individuals from the ministries of health, foreign affairs, and quarantine.
- Establishing WHO Collaborating Centers (CC) in China. At present, there are more than 60 WHO CCs in China, accounting for about eight percent of the total number of CC in the world, of which 13 were established after the year 2000.[14] The major fields of concern include prevention of communicable and non-communicable diseases, traditional Chinese medicine, reproductive health, mental health, primary health care, and maternal health.
- Conducting WHO cooperating programs. These programs are composed mainly of biennial regular budget programs and extra-budgetary supporting programs. From 1982 to 2009, China received a total of $86.5 million of regular budget from the WHO; of this amount, $33.3 million were given between the years 2000 and 2009 (Figure 1).[15] The budget for each biennial program stays constant at $6.8 million, indicating that this cooperation has stabilized. Four major fields are: 1) combating communicable diseases; 2) building healthy communities and populations; 3) health sector development; and 4)

reaching out. These programs have been conducive to cultivating health personnel and enhancing the health system in China.

Cooperation with Other International Organizations

1. Cooperation with UNICEF. From 1980-2005, UNICEF has provided a total of $140 million to China's health sector, supporting seven rounds of cooperation projects and establishing a dozen cooperative programs in fields such as maternal and child health, immunization, elimination of iodine deficiency, health education, and nutrition. In the 8th round (2006-2010), UNICEF has committed another $50 million to health in China. By taking into consideration China's national development strategies for its health sector, UNICEF reoriented its priorities to fields more closely related to maternal and child health (i.e. maternal and child hygiene, child nutrition, disease prevention and immunization, etc.).
2. Cooperation with Global Fund to Fight AIDS, Tuberculosis and Malaria (hereafter referred to as the "Global Fund"). The Global Fund was established in January 2002, initiated by Group 8 countries. China has been active in the whole process since June 2001 and was a member of the Board representing developing countries in the Western Pacific region. By June 2008, China successfully applied for 11 programs from the Global Fund, a monetary amount of $550 million.
3. Cooperation with UNAIDS. UNAIDS is an innovative partnership that leads and inspires the world in achieving universal access to HIV prevention, treatment, care, and support. In June 1996, UNAIDS set up an office in Beijing, to advance its cooperation with China. By the end of 2007, China received more than $3 million in assistance from UNAIDS, to be used towards policy guiding and leadership training, participation of the infected, management of migrants, and gender issues.
4. Cooperation with the World Bank.
Since the first loan program in 1982, China has cooperated with the World Bank on 11 health projects, utilizing loans of $1.26 billion and donations of $112 million. Prioritized fields have included regional health planning, development of rural human resources for health, DOTS strategy in tuberculosis control, medical aid for maternal and child health in poor areas, and HIV/AIDS prevention and control.

Expanding Cooperation with Regional Organizations

Cooperation with ASEAN

China started out its official cooperation with ASEAN in 2003. In the intervening seven years, it has established a series of health ministerial-level dialogues and other regular high profile meetings.

In April 2003, China contributed 10 million RMB to set up a Sino-ASEAN Foundation on Public Health Cooperation. Also, the Sino-ASEAN Cooperative Foundation and other special funds for cooperation with Asia countries set public health as their priority.

In March 2008, ASEAN, together with China, Japan and Korea, began its operation on information notification for emerging infectious diseases, making information sharing among China and ASEAN countries a reality, thus guaranteeing effective response to disease outbreak in advance.

Cooperation with GMS Countries

GMS (Great Mekong Sub-region) countries are crucial for China to carry out its

strategic policies and promote regional cooperation. China began its cooperation in health with GMS in 2005, with a focus on malaria, HIV/AIDS, and tuberculosis prevention in bordering areas at Yunnan Province and Guangxi Zhuang Autonomous Region. Up to now, China has donated more than 5.08 million RMB for these regions and provided training to some 220 person-time. Such cooperation facilitated exchanges among health departments of different countries and benefited the capacity building in bordering areas.

Cooperation with SCO Countries

The Shanghai Cooperation Organization (SCO) is yet another effective channel for China to enhance its regional cooperation. Established in the year 2001, SCO is composed of Kazakhstan, Kyrgyzstan, Russia, Tajikistan, China, and Uzbekistan. It has multi-facet cooperation directions, in which health is one of the most important areas. At the end of November 2008, the first ministerial meeting of health ministers of SCO members was held in Beijing. Health emergency response, cross-border infectious disease prevention and control, medical assistance and disaster relief, and research and development for traditional medicine, were all shared priorities that called for regional cooperation.

Cooperation with the European Union

China established a partnership with the European Union (EU) in 2003. From 1994 to 2001, the EU contributed €4.5 million to HIV/AIDS prevention in China, setting up six provincial level regional training centers to provide technical assistance to medical personnel in HIV/AIDS prevention, which is conducive for capacity building of medical institutions of all levels in dealing with HIV/AIDS.

Strengthening Bilateral Cooperation

The health cooperation and exchanges between China and other countries have been established mainly through the signing of health cooperation agreements, the establishment of regular dialogue mechanisms, and high profile visits and founding of joint health programs.

Cooperation with Developed Countries

Among all the developed countries, there are several who are particularly active in China's health issues, notably the United Kingdom (UK), the US, and Australia.

1. Cooperation with the UK

Of any other country, the UK provided the most funds (over £100 million) to China's health sector through Official Development Assistance. Since 2000, the UK Department for International Development has been cooperating with China's Ministry of Health, supporting the government's efforts in tuberculosis, HIV/AIDS, community health, health policy research, and medical aid. The two major programs are HIV/AIDS Prevention & Care Project (HAPAC) and China AIDS Roadmap Tactical Support Project (CHARTS). In the new round of cooperation between the two countries, from the year 2006 to 2011, UK has promised £30 million to further support AIDS prevention efforts in China.

2. Cooperation with the United States

The new century witnessed closer ties on health cooperation between China and the United States. In 2005, a mechanism of biennial ministerial-level dialogue was established between the two sides; in 2006, Sino-US Strategic Dialogue was initiated jointly by the leaders of the two countries, in which health featured as an important topic. The personal

participation and direct dialogue of high profile leaders have significantly promoted exchange and cooperation in the health sector.

In recent years, the cooperation between China and the US has mainly focused on emerging and re-emerging infectious diseases, HIV/AIDS, and influenza. In June 2002, both health ministries reached an agreement in the *Memorandum of Understanding on AIDS Cooperation*, which served as a policy foundation for enhancing AIDS prevention and treatment. On November 20th, 2005, the leaders of the two countries officially signed the *Conceptual Paper on China-US Joint Actions on Avian Influenza*, while the two health ministries signed *Memorandum of Understanding on Establishment of Cooperation on Emerging and Re-emerging Infectious Disease*.

3. Cooperation with Australia

China and Australia share broad cooperation and exchanges in infectious disease prevention, public health emergency response, health system and financing, and medical research. In September 2005, the two nations set up a regular ministerial-level meeting on health.

Since 2000, seven health projects have been successfully carried out between the Australian Government's overseas aid program and the Chinese government (AUS$82.8 million). These projects have included: elimination of iodine deficiency in Tibet (May 2005), prevention and care for HIV/AIDS in Xinjiang Uyghur Autonomous Region (2002-2009), and HIV/AIDS project in Asia, covering Yunnan province and Guangxi Zhuang Autonomous Region (2002-2007).

Cooperation with Eastern European Countries and Russia

Eastern European countries, notably Russia, share a close and stable tie with China. During the past 30 years, China's Ministry of Health has signed 92 health cooperation agreements with 24 countries in this region and continued to maintain frequent high profile exchanges.

Since the formation of Sino-Russian Cooperation Committee on Humanity in the year 2000 (previously known as the Sino-Russian Committee of Education, Culture, Health, and Sports), the vice premiers of both countries have called for a number of meetings, in which both health departments and health issues are inseparable components. Inside this Committee, a health branch was established at the beginning of the year 2001, with officials in health departments at the vice-ministerial level serving as chairmen, thus adding momentum to the health cooperation between the two countries.

Cooperation with African Countries

In 1963, China dispatched its first medical team to Africa. Over the past 30 years, more and more medical teams have been sent to Africa. By the end of 2007, China had sent medical teams to 67 countries and regions in Asia, Africa, Latin America, Europe, and Oceania, totalling 21,238 medical professionals who distributed approximately 200 million treatments, of which Africa received the majority. At present, China has dispatched 40 medical teams of 980 medical personnel to 39 African countries, all of them are highly valued by local governments and people for the teams devotion to work and willingness to help.

Meanwhile, as proposed by China, the Forum on China-Africa Cooperation was started in October 2000. During the Beijing Summit of this forum in 2006, President Hu Jintao put forward eight measures to advance assistance to Africa.[16] These measures, many of which are now underway, included setting up 30 hospitals and 30 centers for malaria prevention and treatment.

Pioneering on Non-governmental Health Diplomacy

Globalization has brought an inflow of players and actors in the health arena, notably the springing up of non-governmental organizations, which are shouldering an ever–growing role. In the new century, China stepped up its efforts in cooperating with these organizations and institutions, and has attracted funds, technologies and pharmaceuticals of more than $80 million for its health sector. NGOs are playing an increasingly important role in health sector in China; the Vice Health Minister Wang Longde used to openly commend NGOs for their "outstanding role" in fighting HIV/AIDS in China, saying they worked "in the fields where the government cannot go deep."[17]

In 2004, the Ministry of Health signed a memorandum of understanding with the Clinton Foundation in US, initiating AIDS cooperation projects. In 2005, the Ministry of Health signed a memorandum of understanding on AIDS prevention and control in Sichuan Province with the Merck Company in the US for $30.5 million over a period of five years. In 2006, the Ministry of Health signed a memorandum of understanding on AIDS prevention with the Gates Foundation for $50 million over five years. In 2007, a memorandum of understanding on philanthropic surgery of cleft lip and palate was reached by the Ministry of Health and Smile Train foundation in US, in which the latter committed funding and technical assistance to patients with cleft lips and palates. What's more, China maintains favorable cooperative ties with many NGOs around the world, including the Rockefeller Foundation, China Medical Board, Ford Foundation, and the Open Society Institute.

TRENDS AND CHALLENGES FOR HEALTH DIPLOMACY IN CHINA

Health diplomacy in China far surpasses the small arena of medical aid to African countries. During the past 60 years since the founding of People's Republic of China, health has always been a tool of foreign policy, playing different roles at different times. At the beginning of the 1960s, the decision to discontinue health cooperation with the Soviet Union and Eastern European countries was made under special historical circumstances. The dispatching of medical teams to Africa in the middle of the 1960s opened a new chapter in Sino-African health cooperation. Health diplomacy in the 1970s contributed to the normalization of relationship between China and the United States; the issue of Taiwan in the WHO beginning in the 1990s tested the wisdom of Chinese health diplomats. Now, in the new century, China, with growing comprehensive national power, is expected to bear more responsibility and to have a greater say in international health affairs.

Although a tool of broader diplomacy, we can still summarize the changes in health diplomacy itself. In the first 30 years after the founding of the PRC, the Chinese leaders felt insecure about the world order and believed that another world war is "difficult to avoid."[18] As a result, the primary function of foreign policy then was to maintain national security, and health diplomacy served to this end. During this period, ideological differences and domestic "extreme left ideology" interfered with foreign health policies and politicized many insensitive health issues unnecessarily, including China's refusal to participate in the Alma-Ata conference, overestimated national economic strength, and China's rejection of WHO technical assistance. The year 1978 was a major turning point, when foreign policy became more "pragmatic," and its function of promoting national economic development more prominent. In this period, health diplomacy readjusted its goal to serve both political interests and the modernization of the country. The new century is a century influenced by the mentality of "a harmonious world". Health, in this context, continues to serve foreign policy needs, but diplomacy also starts to serve health. Over the past decade, health

meetings with high profile Chinese leaders have become more frequent and foreign policy tools like negotiation and consultation have been employed in health sectors to facilitate development of health.

Yet as an emerging power, China still lacks voice in health diplomacy, and is not active enough in formulating a country strategy on health diplomacy. The spreading of globalization has made non-traditional health security threats like climate change, public health security, and biological terrorism more imminent. It is now essential for countries to work together in dealing with such issues as most of them respect no national borders. Thus, diplomacy, with its power of negotiation, will become an indispensable component in this process.

Still, other challenges lie ahead. As a developing country, China has largely been the recipient of developmental assistance including that for health; it also has relied on such assistance to advance domestic health status, for the end of "modernization of medicine."[19] However, with its increasing national power, China now is also expected to shoulder more responsibilities and to make donations to many other developing countries, and not just in the form of medical teams. How can China strike a balance between its dual role in global health, receiving and making donations, and take care of its own interests as well as that of the majority of the developing countries? How can health diplomacy better serve this balance and maximize both interests? These are the issues that China needs to address in the time to come.

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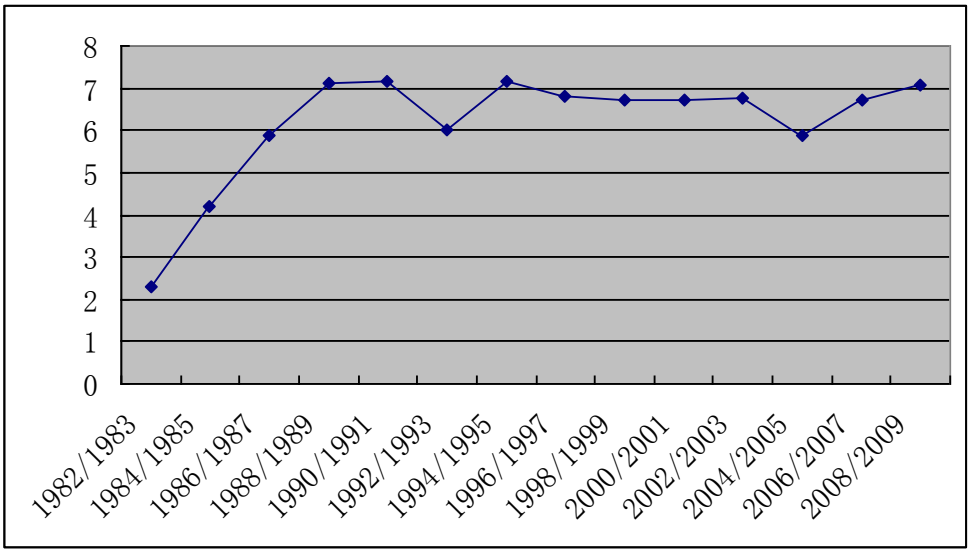
Fig 1: WHO Regular Budget Support to China: 1982-2009 (in million dollars)



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[16] The eight measures are: 1) Double its 2006 assistance to Africa by 2009; 2) Provide US$3 billion of preferential loans and US$2 billion of preferential buyer's credits to Africa in the next three years; 3) Set up a China-Africa development fund which will reach US$5 billion to encourage Chinese companies to invest in Africa and provide support to them; 4) Build a conference centre for the African Union to support African countries in their efforts to strengthen themselves through unity and support the process of African integration; 5) Cancel debt in the form of all the interest-free government loans that matured at the end of 2005 owed by the heavily indebted poor countries and the least developed countries in Africa that have diplomatic relations with China; 6) Further open up China's market to Africa by increasing from 190 to over 440 the number of export items to China receiving zero-tariff treatment from the least developed countries in Africa having diplomatic ties with China; 7) Establish three to five trade and economic cooperation zones in Africa in the next three years; and 8) Over the next three years, train 15,000 African professionals; send 100 senior agricultural experts to Africa; set up 10 special agricultural technology demonstration centres in Africa; build 30 hospitals in Africa and provide RMB 300 million of grant for providing artemisinin and building 30 malaria prevention and treatment centres to fight malaria in Africa; dispatch 300 youth volunteers to Africa; build 100 rural schools in Africa; and increase the number of Chinese government scholarships to African students from the current 2000 per year to 4000 per year by 2009. Full speech available at

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Regional HIV-Related Policy Processes in Peru in the Context of the Peruvian National Decentralization Plan and Global Fund Support: Peru GHIN Study

Ruth Iguiñiz-Romero, Roberto López, Clara Sandoval, Alejandro Chirinos, José Pajuelo and Carlos Cáceres

The implementation of large projects such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) represents a very significant investment in HIV/AIDS in Peru and a challenge to the administrative capacity of the country. To develop and implement the GFATM projects successfully requires new relationships between the public sector, civil society organizations, and vulnerable groups; however the analysis of these relationships and their impact on HIV/AIDS-related sustainable policies and policy changes is still pending. The objective of this paper is to explore the challenges that the national process of state decentralization in Peru presents to the constitution of regional multisectoral HIV-related coordination mechanisms (COREMUSAs) promoted by the GFATM and vice versa. With respect to HIV/AIDS-related policy, decentralization processes need to be strengthened and responsibilities and attributions of both national and regional government levels must be clearly defined. In those cases in which regional governments and civil society organizations were already active and organized, GFATM initiatives have generally helped to consolidate those processes. However when regional institutions were weak, GFATM projects did not trigger such processes.

INTRODUCTION

Since its inception in 2001 in response to the UNGASS Declaration of Commitment[1], the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), together with other global HIV/AIDS initiatives such as the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the World Bank's Multi-Country AIDS Program, has dramatically increased resource allocation for HIV prevention and care in lower and middle-income countries.[2] In Peru, it has funded three proposals (Round two, five and six from 2003-2011) to work on HIV/AIDS initiatives, with a contribution of approximately US$ 77 million. The implementation of these large projects represents a very significant investment in HIV/AIDS in Peru and a challenge to the administrative capacity of the country. It has already had and will continue to have an impact on the relationship between the organization of the response to the epidemic, the redistribution of public resources, and the quality of care offered to people living with HIV/AIDS.

Previous studies have shown that new relationships between the public sector, civil society organizations and vulnerable groups are required to develop and implement the GFATM projects.[3] [4] To better understand these relationships and their impact on HIV-related sustainable policies and policy changes, further inquiry into the challenges that the national process of state decentralization

presents to the constitution of regional multisectoral HIV-related coordination mechanisms (*COREMUSAs*) promoted by the GFATM and *vice versa* was necessary.

One of the key discussions around global HIV/AIDS initiatives is the extent to which the support they provide strengthens rather than weakens health systems.[5] The aim of this study is to analyze the effects of elaboration and implementation of GFATM-funded projects on HIV-related policy and program formulation within the context of the Peruvian decentralization process and to ascertain whether both processes show synergies or conversely, remain disconnected or even antagonistic.

GLOBAL FUND MANDATES AND IMPLEMENTATION PROCESSES

The Global Fund model finances programs developed by the recipient countries that are line with national strategic health plans and priorities. The Fund's requirement that all areas of society with a stake in public health be involved in the proposal development process, including civil society and the private sector, ensures strong and comprehensive programs.[6] However in practice, the extent to which this has occurred varies widely.

GFATM support has resulted in a range of different types of effects on health systems. Most studies have focused on the national level, where GFATM effects are initially felt, and most progress in aligning with national joint strategic planning processes has been achieved.[7] Yet, there is little empirical evidence regarding effects at the district, facility and community levels within the health system and throughout other public sector systems.

Studies in Benin, Ethiopia and Malawi provide some evidence of GFATM processes contributing to both strengthening and exacerbating weaknesses of health systems depending on the country context, and the planning and implementation strategies adopted.[8] Although global health initiatives did not initially consider health systems strengthening to be part of their mandate, they are now more willing to address system weaknesses that have been revealed through project implementation.[9]

The planning processes which countries have adopted to apply for and implement GFATM support appear highly centralized, even in rather decentralized contexts such as Malawi and Peru. A consequence of this leads to problems at the implementation stage due to lack of ownership at sub-national levels. Malawi, for example, benefited from an extensive national planning process that occurred prior to the initial GFATM call for proposals, and had involved sub-national stakeholders.[10] In Peru the decentralization process began in 2004 when the first GFATM proposal was already being implemented.

GFATM guidelines do not stipulate what role sub-national actors should play in developing or implementing GFATM proposals. This has led to problems as countries begin to implement GFATM -supported activities. In some cases, the GFATM work plans did not always match the regional priorities or needs.

Nevertheless regions were asked to implement additional activities with no additional support or budget provided for overall management.[11]

While previous research has raised concerns about the alignment of GFATM processes with decentralized decision-making structures in-country, the demand for rapid outcomes – in terms of proposal development, program planning, and implementation – can easily undermine fragile decentralization processes as it is simply much quicker to centralize decision making. Furthermore the GFATM does not have any specific procedures or requirements that counter this tendency; for example, there is no requirement that actors from regional and district levels are included in the Country Coordinating Mechanisms (CCM). Finally, the diseases-specific nature of GFATM support may also reinforce a shift towards greater centralization: whereas regional and district health services are clearly responsible for the planning and implementation of the full range of health services provided within their region, Principal Receptors of GFATM grants are often heads of national disease control programs.[12]

In an effort to remain consistent with its own decentralization process, in Peru, the CCM has developed a number of features not seen elsewhere. The CCM has evolved a layered approach that includes the CCM or the National Multisectoral Coordination Mechanisms of Peru and several sub-groups known as COREMUSAs which are more regional level, multisectoral coordination mechanisms for HIV/AIDS, and TB.

THE STATE DECENTRALIZATION PROCESS IN PERU

According to the 2002 Framework Law for Decentralization,[13] decentralization in Peru aims to achieve the country's comprehensive, harmonious, and sustainable development through the distribution of competencies and functions, and the balanced exercise of power among the three levels of government (National, Regional and Local) that benefit and include the participation of the population.

The decentralization model in place acknowledges the administrative, economic, productive, financial, revenue collection and fiscal dimensions that need to be distributed and shared among different governmental levels. The implementation of the current decentralization process[14] began in 2004 focusing mostly on mechanisms for transferring administrative and managerial competencies to regional and local governments. Some ministries more proactively than others also began to define and plan their sector-specific decentralization plan and processes.

Within the health sector, the Ministry of Health (MINSA) began its decentralization process in 2005 based on a concerted plan[15] for the progressive transfer of functions to regional and local governments. According to this plan, the Ministry of Health led a national consultation process for the formulation of the 2007–2011 National Concerted Plan that would include national as well as regional health priorities. Prior to the decentralization law, the Ministry of Health already administered an extended network of 7027 public health facilities in the country.

Health services facilities, classified in three levels according to the level of complexity of the health services they provide, were finally linked to a Regional Directorate of Health (DIRESA). Each DIRESA reported directly to the Central Ministry of Health Offices with no coordination/ communication with the regional government.

Once the decentralization process began, a significant step forward by MINSA has been the transfer of 124 functions and the incorporation of DIRESAs within the regional and local governments' administrative structure. Although this is the case for three regions in this study, the cases of Lima City (the capital of the country, and also of the region) and Callao are distinct because of their closeness to the central government. DIRESA Callao depended financially and politically on the national MINSA budget and was unable to accept new responsibilities without accompanying resources until 2008. Lima City still depends on MINSA.

From a political standpoint, the decentralization process is also concerned with democratization and social inclusion to increase citizens' participation in decision making and management of public affairs at local and regional levels.[16] Thus, decentralization policies identify, among others, two mechanisms to allow for civil society organizations' active participation within the decision making process: Concerted Regional Development Plans (Planes de Desarrollo Regional Concertado) and Participatory Budgeting (Presupuestos Participativos).

The Concerted Regional Development Plans define strategic priorities for each region. According to Law 27902 and Law 27867, they are meant to become the main managerial and administrative instrument for medium- and long-term development of each region.[17] They are expected to synthesize the results of a participatory and multisectoral analysis of the region's situation, and to propose a prioritized agenda to channel regional investment and expenses.

Once a plan is approved by local and regional participants, it will be the basis for the foundation of the participatory budget. The participatory budgeting process also implies analysis and priority-setting across all the plan's objectives to identify those that will be implemented with regional funds. Importantly, the regional budget is finalized and approved later by the regional government technical team and representatives of the Ministry of Economy and Finance based on the participatory budgeting results and historical records of the region's budgets. Hence, activities included in the Concerted Regional Development Plan and the Participatory Budget will be the ones with best opportunities to receive funding for implementation. Therefore, a good measure of regional acknowledgement of the epidemic and willingness to respond will be the existence of indicators related to HIV-related activities in the regional budget.

THE COUNTRY AND REGIONAL COORDINATION MECHANISMS (CONAMUSA AND COREMUSAS)

One of the objectives of the GFATM is to promote wider participation from civil society actors at national, regional and local levels and to increase the state's

accountability and commitment to ensure sustainable funding of HIV/AIDS treatment and other related initiatives.[18] This became evident soon after the failed attempt by MINSA to get funding for the proposal submitted to the 1st round of funding. The GFATM made it clear that MINSA needed to summon other state ministries, representatives of civil society organizations, religious institutions, international cooperation agencies, NGOs and representatives of vulnerable populations to constitute the CCM (called CONAMUSA in Peru) to fulfill GFATM criteria of multisectorality.

In 2004, CONAMUSA officially became a consulting body to inform and coordinate the development of grant proposals, policy implementation, and program supervision under the technical and operational guidance of the Ministry of Health. All subsequent proposals to the GFATM were formally submitted by CONAMUSA, which to some extent allowed for the strengthening of its articulating role, the opportunity to change the way HIV/AIDS policies are conceived and planned, and the chance to develop a more participatory and inclusive governance space.

As one of its first tasks, CONAMUSA led the process of formulating the 2007-2011 HIV/AIDS Multisectoral Strategic Plan (PEM, Plan Estratégico Multisectoral) to set the objectives, strategies and goals in the fight against HIV. Later, this plan became part of MINSA's National Concerted Plan. In the context of a national decentralization process, the PEM identified two key institutions responsible in 2006 for the regional response to HIV/AIDS: the regional government – formally instituted by the Peruvian Constitution and the Decentralization Law- and the regional HIV/AIDS coordination mechanisms (COREMUSAs) – promoted by GFATM policies and included in the Peruvian Global Fund Projects Implementation.

The recently autonomous regional governments are therefore expected to perform roles and functions such as regional planning, intersectoral coordination, and educational and health care facilities management, and to provide the organizational structure needed for their plan's development.

The development of COREMUSAs has been uneven, depending greatly on the characteristics and stages of the decentralization process in each region and the articulation of other actors involved. Only the project funded in the 6th GFATM Round provided tools and resources to promote participation of COREMUSAs on the formulation and implementation of regional planning processes in the five regions studied, and to strengthen the capacities of affected populations and vulnerable communities to participate on the COREMUSAs.

MAIN RESEARCH QUESTION

The inclusion or omission of HIV-related activities in the Concerted Regional Development Plans and other policy documents of the five regions were analyzed considering the stages and actors involved in the policy formulation process. Since core perspectives on policy and systems research agree that the quality of and

access to information for decision making determines the soundness of problem identification, agenda setting, policy definition and implementation[19],[20] and that a wider representation of state and civil society institutions increases policy acceptance, institutional commitment and sustainability.[21] The participation of social and political actors is identified at three levels within the policy formulation process: a) situational assessment and problem identification; b) goal and agenda setting; and c) incorporation of programs, projects or activities within the Concerted Regional Development Plan and their potential for implementation.

METHODS

This study is part of a wider study to analyze the effects of HIV-related collaboration between the Global Fund and the Peruvian State, civil society organizations and involved populations, on the effectiveness, accountability and sustainability of the national response to HIV/AIDS. Data collection was conducted in five different geopolitical regions: Lima, Callao, Loreto, Arequipa and Lambayeque. These regions were selected from the 26 in Peru to represent contexts of diverse geography, culture, HIV/AIDS prevalence, progress of decentralization in their regional governments, and cultural and political significance of HIV/AIDS. In all of them at least one HIV-focused project funded by GFATM was locally active.

The regions of Lima (the metropolitan capital) and Callao (the neighboring port), account for 73% of AIDS cases reported over the past 25 years in Peru. By 2009, the Ministry of Health's Epidemiology Directorate reported that other regions with high HIV incidence include Loreto, La Libertad, Ica, Tumbes and Arequipa.

Peru is frequently characterized by its so-called 'natural regions': the coast, the Andean highlands and the Amazon rainforest, each geographically and culturally distinct. From the Amazonian rainforest, Loreto was selected because, in addition to its high HIV incidence, it hosts the main fluvial port in the country with important military and commercial activity, and shows an early multisectoral response to the epidemic. From the southern Andean highlands, Arequipa was chosen because it simultaneously demonstrates one of the highest HIV incidences and very little political commitment to fight the epidemic. Finally, from the northern coast Lambayeque was chosen because of the higher concentration of the epidemic in that geographical area as well as its early political response to the epidemic – which preceded the implementation of GFATM projects, and its advanced decentralization process.

Data were collected through semi-structured interviews with regional and national political leaders, regional and local health sector authorities and professionals, representatives of civil society organizations, and affected populations. Additionally, an analysis of regional policy documents and relevant legislation was completed in order to identify the presence or absence of HIV/AIDS initiatives in each region.

FINDINGS

Assessment Data and Problem Identification

Most of the information available regarding HIV is based on the official epidemiological surveillance system and, for Lambayeque and Loreto, other sentinel studies, all of which mainly report health services performance and STI / HIV prevalence rates.[22] Additional regional studies conducted to support intervention plans have been promoted by NGOs or international cooperation agencies without active participation of regional governments.

In Lambayeque interviewees[23] showed concern for the lack of studies to identify social determinants and other non-epidemiological factors associated with HIV that are relevant to prevention initiatives. This information gap is also aggravated by the disproportionate number of studies conducted on urban areas and by the design of programs and interventions from Lima. In Loreto for example, the chief of the DIRESA explained that some cultural and social practices in its region are so different from other regions that "the interventions designed and recommended by the National MINSA STS/HIV Strategy (for implementation elsewhere) are impossible to implement and become inapplicable".[24]

Although in regions like Loreto, GFATM projects have included funds for baseline studies to learn more about epidemic characteristics,[25] the information is usually not available in time for planning purposes. Some of the interviewees in Lambayeque revealed that the GFATM projects require inclusion of social organizations within the COREMUSA and as sub-recipient agents to implement the projects, but their participation in both governmental and non-governmental projects limited their autonomy and time to produce qualitative information relevant for policy making.

Lima and Callao are different from other regions because of their closeness to the national government and their historic accumulation of resources (financial, technical, educational, and structural) and political power. Moreover, the two regions account for over 70% of HIV cases registered in the country, and therefore had the highest volume of HIV data.

As a result, most of the evidence base for the proposals submitted to the GFATM and the national multisectoral plan was generated with a focus on the epidemic in Lima and Callao, its population and the resources available.

National and Regional Agenda Setting

The analysis of four Concerted Regional Development Plans (Arequipa, Callao, Loreto and Lambayeque) shows that such plans may be failing to ensure a well-organized response to the epidemic as part of their agenda, which would indicate the inadequacy of efforts by the Ministry of Health, NGOs, and civil society organizations to promote this inclusion. Alternatively it could be argued that

despite these efforts, in most regions HIV, alongside other health problems, is not recognized as a health or political priority for decision makers; or that the active presence of the Regional Directorates of Health continues to be identified with the central Ministry of Health rather than as part of the Regional Governments. This suggests that the decentralization process needs to be strengthened to avoid parallel structures and miscommunication.

In the case of Lambayeque,[26,27] despite several attempts, none of the policy documents reviewed prioritized activities related to the HIV epidemic. Partial explanations can be found in the lack of regional technical capacity to identify strategies for positioning this issue on the agenda; or the limited availability and reduced number of researchers and activists able to participate in either the COREMUSA as required by the GFATM, the regional government participatory spaces, or both.

The cases of Arequipa[28-29] and Lima differ in the sense that, while they do have their COREMUSAs, their members have not participated in any of the decentralized processes organized by the respective regional governments. These have resulted in very general formulae for "implementation of the Multisectoral Strategic Plan" and "strengthening of the epidemiological surveillance of STI and HIV and AIDS" in their regional plans, which leave many practical gaps unresolved. In these regions, despite the fact that interviewees recognized the importance of fighting the epidemic at a discursive level, no progress has been made yet to allow this inclusion and articulation at a programmatic level.

Conversely, Lambayeque and Callao[30] have made significant efforts to include the response to the epidemic in their Concerted Development Plan. This attempt has been more explicit in Callao, where concrete items have been included at the level of specific objectives and activities for the medium-term strengthening of the HIV intervention strategy.

The case of Loreto is peculiar because the regional government is playing a key in articulating the role among different sectors at the COREMUSA. In 2007, the formulation of a regional multisectoral strategic plan for Loreto[31] was initiated through a participatory process. It included "regional HIV policy guidelines on HIV", universal access to comprehensive prevention and care services, health promotion, and protection against discrimination based on HIV status or sexual orientation.

Despite the different levels of articulation attempted between regional governments and COREMUSAs (with the exception of Callao and Loreto) in the last few years none have been able to incorporate initiatives against HIV as a high priority in their regional multisectoral strategic plans. Interestingly Callao and Loreto, who show more advanced policies and specific plans, have reached this point due to the leadership and commitment of their regional governments, which were influenced by regional social movements and not directly related to COREMUSA advocacy.

Resource Allocation for Implementation

The few regions that have succeeded in incorporating the response to HIV in their Regional Development Plans have faced difficulties trying to include the few activities proposed in the Regional Participatory Budgets. In most cases, health projects are related to improvements in local infrastructure and quality of the health care services which for the most part can be associated with the care of people affected by the disease. In Arequipa and Loreto, the National Budget Allocation System (SNIP) criteria and procedures imposed by the Ministry of Finance are identified as obstacles for efficient implementation of activities included in their own Regional Development Plans.

Even in the Callao region in which the epidemic is identified as a soaring health priority, no entry has been allocated for HIV/AIDS-related activities in the Participatory Budget. This could be explained in part by the state of the decentralization process at the financial level. While the decentralization process promotes some regional autonomy to allocate resources through the Participatory Budgeting, the final decision continues to be made by the Ministry of Finance technocrats who prioritize infrastructural expending. Not surprisingly, regional public budgets have so far allocated very limited resources to indirect HIV-related activities.

Social and Political Actors

The Lambayeque and Loreto cases represent distinct contexts for the constitution of their COREMUSA and multisectoral participation in the fight against HIV. Previous participatory experiences in Lambayeque had incorporated vulnerable and affected populations as well as other civil society organizations, researchers, NGOs, and regional public health institutions in what was called Mesa de Concertación contra el VIH y SIDA (Mechanism for consensus-building in the fight against HIV) to identify and prioritize actions to enhance prevention, and confront discrimination and violence from health and police personnel. As a result of this, the political will of the regional government, and pressure from people living with HIV, an active multisectoral body was formed prior to the arrival of GFATM projects.[32]

As for Loreto, the constitution of the *Red Sida Loreto* in 2003 and support received through activities implemented by the GFATM-funded projects, facilitated the incorporation of the health and education sectors, the Armed Forces and Police Committee for HIV Prevention and Control (COPRECOS), civil society organizations and representatives of people living with HIV and AIDS in its COREMUSA. Later on, the commitment of Loreto with the decentralization process motivated the creation of local branches of COREMUSA. Consequently, COREMUSAs in regions such as Lambayeque and Loreto have made important contributions to developing a regional multisectoral strategic plan involving many

regional players with an important and active presence of the Regional Government.

Despite the aim to incorporate broader social participation in policy formulation and decision making, civil society representatives are more critical of those processes. For example, while the multisectoral strategic plan was widely approved at a National Consultation Forum, many stakeholders consider that it was for the most part formulated by consultants from the Ministry of Health with input from only 4 regions.

To strengthen regional participation and COREMUSAs, and to contribute to the decentralization process, objectives 4.1 and 4.2 of the 6th round project sought the integration of the Multisectoral Strategic Plan within the Regional Annual Strategic Plans, thereby trying to articulate the national health objectives and the regional priorities. Implementation of these objectives was assigned to the MINSA´s National HIV/STI Sanitary Strategy which, together with CONAMUSA, decided to skip the longer yet more legitimate process of formulating Regional Multisectoral Strategic Plans and asked the regions to develop Annual Operations Plans, in an attempt to facilitate the on-site implementation of already approved GFATM projects. Regional discontent was expressed through including the formulation of Regional Multisectoral Strategic Plans within their regional POAs.

While the 6th Round project proposed strategies seeking to promote greater participation of regional actors at the policy formulation and implementation levels, once in place, regional actors' participation was limited to the completion of activities without regional managerial provisions. In Lima, where CONAMUSA is located, the creation of a COREMUSA in 2005 resulted from an attempt to meet GFATM requirements and not of a regional process.[33] Although it has developed few actions according to its own regional plan, all of them are implemented by national public health institutions and the municipal government, with very limited participation of other social and public sectors.

The interviewees in Arequipa, Lima and Callao also expressed that the Regional Multisectoral Strategic Plans are still limited instruments not reflecting the extent of the regional problems and needs. Furthermore, interviewees from regional public institutions considered that there is a mismatch between the formal local and regional mechanisms to develop plans, assume responsibilities, and include activities in their regional and institutional budgets, and the processes followed to formulate the National Multisectoral Strategic Plan and prepare the 6th Round proposal.

Sustainability of GFATM-funded Activities

When assessing the sustainability of actions initiated with the support of the GFATM in the context of the decentralization process, one of the main concerns is the heterogeneous administrative and political capacity of regional governments. While decentralization's legislation and implementation is mostly concerned with the progressive development of regional capacities and transfer of resources, the

implementation of GFATM projects appears to operate on tight time frameworks, leading to the contract of independent institutional consortia that fail to harmonize their activities with the regional plan, and to share with the regional government the lessons learned from implementation and evaluation needed for sustainability in the future.

In addition to the weak financial commitment from regional governments to continue the programs initiated, the construction of administrative, managerial and political capacities among social and governmental institutions, both local and regional, still needs to be achieved.

In Lambayeque for example, there is no reference in the regional budget to ensure continuity of any of the GFTAM initiatives. Although the COREMUSAs studied are constituted, and in most cases headed, by regional government and DIRESA representatives, they have been overwhelmed with the implementation of GFATM projects and have not been able to harmonize their objectives and functions with the regional plans or the government structure. Interviewees from Loreto also express regret that the implementation of GFATM projects has hindered opportunities to analyze, supervise, and evaluate the experience of the COREMUSA as a newly developed multisectoral space.[34]

DISCUSSION

In terms of the information and data regionally available, significant efforts from NGOs, cooperation agencies, and academia have been made to collect data that could be important in the design of regional responses to the epidemic. However, such studies have had little influence in the formulation of strategies for intervention at the regional level. For the most part, interventions are based on epidemiologic data centrally produced by the national-level General Directorate of Epidemiology.

As for HIV-related policy, the decentralization processes need to be strengthened (including CONAMUSA's own decentralization process), and responsibilities and attributions of both national and regional governments need to be defined. Participation channels of civil society institutions and community actors must be established. At one level, regional governments need to incorporate DIRESAs and other state institutions within their administrative and managerial structure, while at another level, they have to negotiate with the national government for the political, administrative and financial autonomy they need to be able to develop and implement their plans.

While Peru's policy documents allocate substantial decision-making powers to decentralized actors at the regional level, as the broader decentralization literature suggests, those powers are often contentious and contested particularly by those actors whose power it diminishes.[35] Since the regional government budgets still need to be approved by the national government, and the processes followed by both levels to prioritize activities are not completely compatible, financial dependence clearly means this is most difficult to achieve.

A strong limitation of the COREMUSA is also the lack of access to resources to ensure its smooth and autonomous operation. As several interviewees have pointed out, this financial limitation and the role assumed by the regional government have influenced the balance between technical and political priorities and autonomy achieved by the COREMUSA.

At the national level, CONAMUSA is still reluctant to more actively include its regional counterparts. This is particularly evident in regional perspectives about the project funded in the 6th GFATM Financing Round: it seems that, among those responsible for the proposal, legitimacy was established by the fact that it was based on the Multisectoral Strategic Plan in whose formulation and approval the regions participated. Regional informants, however, establish that regional participation in the project formulation was needed as well. Some try to further explain the centralized project formulation based on the equally centralized administrative structures still present, the concentration of qualified professionals in the capital city, and the short timeframe established by GFATM procedures.

In Lambayeque and Loreto the COREMUSAs, as spaces representing civil society organizations and the state, have demonstrated that participation of regional governments can become very significant, and that such participation increases the likelihood of incorporation of the HIV response into regional plans.

The potential of COREMUSAs as a multisectoral space to articulate the regional HIV response is widely recognized. The incorporation of regional actors and responses to fight HIV/AIDS would allow integrating GFATM initiatives into their own broader health, educational and social plans, promoting ownership and sustainability over time, even if GFATM projects discontinue.

As we demonstrate here, however, their development and strengthening need to be consistent with regional governments' frameworks and procedures. COREMUSAs' lack of a free-standing legal status and financial autonomy is a limitation that threatens their sustainability and capacity to build a strong space from where to negotiate with the regional government. Indeed, the response to the epidemic, particularly as expressed in Global Fund projects, has little or no linkages with the regional management tools. The decentralization process is probably still very incipient and actors involved from both public and private institutions ignore the strategic importance of managerial and political collaboration for the long term impact of their activities in the fight against HIV/AIDS.

Depending on the stage and strength of the decentralization process in each region, the GFATM projects have contributed to the regional governments' assumption of new responsibilities in the response to the epidemic. In those cases in which the regional governments and civil society organizations were already active and organized, GFATM initiatives have generally helped to consolidate those processes. But where regional institutions were weak, GFATM projects did not trigger such processes.

GFATM guidelines should propose and stipulate what role sub-national level actors should play in developing and implementing GFATM proposals. Procedures

to incorporate their initiatives and participation should also be clearly defined to ensure projects actually incorporate and respond to national and local needs and expectations of public, private and civil society actors involved. The Peruvian initiative to constitute COREMUSAs is the first step in this direction.

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Stop Making Excuses: Understanding Hepatitis B and the Global Failure to Act

Laura L. Janik-Marusov

Hepatitis B virus (HBV) is one hundred times more contagious than HIV/AIDS and is one of the leading causes of primary liver cancer. Merck created the first hepatitis B vaccine in 1982, but the distribution of it remains a global problem as does sustained HBV research, monitoring, and surveillance. As the seventh vaccine incorporated into the World Health Organization (WHO) Expanded Program on Immunization, what factors contribute to the under-delivery of HBV vaccine? Why has so little action been taken to lessen global HBV prevalence rates and what steps should be taken to remedy this global problem? Using a public goods framework, this article attempts to understand the global lack of attention given to the hepatitis B virus. In doing so, it highlights issues related to: public-private partnerships for health, public goods contingency, and perception of virus transmission and virus carriers. Further, WHO's role in HBV prevention and treatment activities is examined.

INTRODUCTION

"It's absolutely disgraceful that a disease that could have been eradicated from the planet has not been and actually is not looking like being in the foreseeable future unless we do something to shake people up." – Charles Gore, President, World Hepatitis Alliance[1]

"It's money, it's politics, it's culture." – Cathy Hyett, President, Togo Run[2]

Cancer awareness and anti-cancer movements are at an all-time high. In the United States (US), for example, it is easy to locate broad-based cancer coalitions, such as the American Cancer Society, in addition to cancer-specific awareness groups, such as the National Breast Cancer Foundation. As a result of sustained research, development, and advocacy, our understanding of the causes of various types of cancer and our ability to prevent and treat these maladies continue to progress. Part of the reason for these persistent efforts is the growing public awareness that cancer kills, but that it can often be prevented or at the very least treated. It is surprising, therefore, that the world possesses the hepatitis B vaccine - the first anti-cancer vaccine - but this vaccine continues to be under-delivered. The hepatitis B vaccine was developed more than twenty-five years ago, but access to it remains a global problem. As a result, countless numbers of people in the developed and developing world continue to suffer the painful effects of liver disease.

Hepatitis B virus (HBV) is the leading cause of cirrhosis, liver disease, and primary liver cancer.[3] The Hepatitis B Foundation estimates that approximately 400 million people are chronically infected with HBV and that 10-30 million

people become infected every year.[4] One million people die from HBV induced liver disease each year, which equates to about two HBV-related deaths per minute.[5] The World Health Organization (WHO) notes that hepatitis B is the fifth leading cause of death from infectious disease worldwide, surpassed only by lower respiratory tract infections, diarrheal diseases, HIV/AIDS, and tuberculosis.[6] In 2000, the Western Pacific WHO region accounted for ~ 52% of global deaths from HBV, followed by the South East Asian region (23%), the African region (11%), Europe (8%), the Eastern Mediterranean (3%), and the Americas (2%).[7] As of 2007, 88% of WHO member states reported having introduced the hepatitis B vaccine; however, only 27% had incorporated a birth-dose, which is perhaps the most critical. Further, only 65% of WHO member states reported the delivery of the recommended three doses.[8] While the number of member states that have incorporated three doses of the HBV vaccine has increased significantly over the past twenty years (from less than 10% in 1989 to 65% as of 2007), more than 30% of member states have yet to meet the recommended WHO guidelines. Put differently, as of 2007, nearly 44 million infants globally were not immunized with the recommended three doses of hepatitis B vaccine. Seventy five percent of these unvaccinated children primarily come from ten countries: India (24.1 million), Nigeria (3.1 million), China (1.36 million), Indonesia (1.11 million), Japan (1.07 million), Ethiopia (0.79 million), UK/Northern Ireland (0.72 million), Pakistan (0.70 million), Niger (0.62 million), and France (0.54 million).[9]

It is possible to prevent hepatitis B virus transmission; however, the global health community's failure to tackle HBV vaccine distribution issues more effectively has resulted in the death of one million people annually, particularly in the developing world.[10] At the international level, incremental steps have been taken to remedy the global HBV problem but these efforts are not sufficient. In 1992, the World Health Assembly passed Resolution 45.17, which called on member states "to integrate cost-effective new vaccines, such as hepatitis B vaccine, into national immunization programmes in countries *where it is feasible*."[11] In 1998, the WHO-cosponsored "Conference Regarding Disease Elimination and Eradication as Public Health Strategies" concluded that hepatitis B was "a primary candidate for elimination or eradication."[12] Despite this "primary candidate" characterization, no global control or elimination effort has been initiated. In fact, the Western Pacific Regional Office of the WHO is the only region in the world to have established control targets for hepatitis B.[13] In May 2010, the sixty-third World Health Assembly adopted a viral hepatitis resolution, but it remains to be seen how this will affect support, funding, advocacy, surveillance, and research for viral hepatitis, particularly hepatitis B. Until HBV is elevated to a higher priority within health decision-making bodies at all levels of governance, we can continue to expect millions to die from preventable liver disease.

These stark assessments are not meant to undermine the efforts of hepatitis B advocacy and research groups, because without them global prevalence rates would be much higher. Further, it is possible to identify country successes, namely in East Asia and Southeast Asia. Taiwan, for example, has made significant steps towards eliminating HBV transmission. Hepatitis B was

"hyperendemic" in Taiwan.[14] Beginning in 1984, the country initiated a national program of neonatal HBV vaccination.[15] Two years later, the program was expanded to include all newborns, regardless of the mothers' carrier status, as well as older children. In 1986 newborn vaccination rates were 15% and by 1994 had increased to 84%.[16] Targeting newborns coupled with a rigorous public awareness campaign and close monitoring of the healthcare system has positively served Taiwanese citizens, and the country is a model in this regard.[17] At the end of the day, despite these successes, hepatitis B continues to pose a huge disease burden globally. Charles Gore, president of the World Hepatitis Alliance claims, "It's one of those circular problems. Awareness is low, so it's not on the priority list. Funds are not put into it, there is very little advocacy and nobody is doing anything to raise awareness."[18]

As the seventh vaccine incorporated into the WHO Expanded Program on Immunization (EPI), what factors contribute to the under-delivery of HBV vaccine? Why has so little action been taken to lessen HBV prevalence rates and what steps should be taken to remedy this global problem? The world health community has capably drawn attention to the Big Three – tuberculosis, HIV/AIDS, and malaria. HBV, by contrast, is one hundred times more contagious than HIV and yet the attention given to it in international health decision-making circles has been pitiable.[19] This article attempts to catalyze a more sustained conversation regarding the HBV epidemic and understand why HBV continues to be relegated to the back burner in health decision-making circles.

The potential eradication of hepatitis B represents a pure public good for health. Even if eradication is not possible at present, studies indicate that sustained efforts to more fully distribute HBV vaccine would significantly reduce health spending on acute and chronic carriers as well as positively contribute to a country's economic growth given the age at which hepatitis B attacks the liver in chronic carriers.[20] Eradication is global and its benefits are fully non-rival and fully non-excludable; non-rivalry and non-excludability are the two defining features of a public good.[21] Non-rivalry implies that one person's consumption of the positive spillover effects of living in an HBV-free world detracts nothing whatsoever from others' ability to equally consume these benefits. Additionally, non-excludability means that no one can be barred from consuming the positive spillover effects of living in an HBV-free world because the disease would no longer exist anywhere. The classic free rider and collective action dilemmas come into play when referencing global disease eradication as well as elimination and control efforts. [22] In short, it is in everyone's interest to free ride on the advantageous actions of others while not bearing their relative share of the costs. As a final product, HBV eradication is a pure public good for heath. But, the intermediate inputs required to generate this final good are mixed. Some are impure, which means that the non-rivalry or non-excludability properties have been violated, while other inputs such as financing or research may be altogether private. The HBV story, therefore, highlights the multiple types of goods – pure, impure, private, and club – that are required to generate final public goods for the global health community. In noting these mixed inputs, the hurdles and obstacles faced when attempting to overcome barriers to collective action are also emphasized.

Whereas vaccine cost was once a key factor preventing its widespread distribution, over the past thirty years HBV vaccine prices have significantly decreased; thus, financial arguments against more fully distributing it should be discounted. When Merck marketed the first HBV vaccine, Heptavax cost approximately $30 per dose and three doses were required to convey full immunity. Because the vaccine was prohibitively expensive, initial efforts to curb the spread of HBV were geared at high-risk communities: healthcare workers, men who have sex with men, and injection drug users. Recognizing these barriers to distribution, scientists from the Centers for Disease Control and Prevention (CDC), New York Blood Center, and the Program for Appropriate Technology in Health formed the International Task Force on Hepatitis B Immunization, which was instrumental in helping to reduce the cost of the HBV vaccine. The Task Force catalyzed vaccine pricing wars between big pharma companies such as Merck and other vaccine manufacturers such as Korean Green Cross Corporation. By 1990, HBV vaccine cost less than one dollar per dose.[23] The cost of the HBV vaccine today varies by country, but for developing countries that have little capacity to pay and need the vaccine most, the vaccine costs less than thirty cents per dose.[24] Moreover, the Global Alliance for Vaccines and Immunisation (GAVI) has been instrumental in providing low-income countries with affordable access to HBV vaccine. In countries where diphtheria-pertussis-tetanus (DPT) coverage rates are between 50-80%, GAVI provides support for vaccine purchase for five years and a "one off payment" of $100,000 to assist in the introduction of HBV vaccine. Further, GAVI helps countries develop long term plans for the maintenance of hepatitis B immunization programs.[25] In short, it pays to vaccinate. Research has demonstrated time and time again that vaccinating infants against hepatitis B is cost-effective, particularly when compared to the cost of treating sick persons. As one recent WHO study concludes, "In the Gambia, vaccinating infants against hepatitis B is highly cost-effective. Compared with offering no intervention, the vaccination programme would cost US$28 per DALY [disability-adjusted life year] averted from the societal perspective or US$47 per DALY averted from the payer's perspective."[26]

GLOBAL PUBLIC GOODS AND THE UNDERPROVISION OF HEPATITIS B VACCINE

Despite calls by the United Nations and the World Health Organization to increase the number and presence of public-private partnerships (PPPs) in the realm of health,[27] the HBV community remains disunited and lacking a global voice. Schafferhof, Campe, and Kaan[28] note that global PPPs "constitute a hybrid type of governance, in which non-state actors co-govern along with state actors for the provision of collective goods, and adopt governance functions that have formerly been the sole authority of sovereign nation-states." Within the hepatitis community, it is possible to locate hundreds of domestic advocacy groups, many regional organizations, and a newly formed global patient advocacy group – the World Hepatitis Alliance (WHA). The WHA, however, is not exclusively focused on hepatitis B. Rather, it speaks on behalf of the viral hepatitis community at large, with a specific emphasis placed on hepatitides B and C. Formed in 2007,

the World Hepatitis Alliance is a collaboration of two hundred hepatitis-activist groups operating globally in more than fifty countries. In this sense, the initiative is largely patient-operated and driven by the understanding that there is a large "disconnect between awareness and the size of the problem."[29] The Alliance "provides global leadership and supports action that will halt the death toll and improve the lives of people living with chronic viral hepatitis B and C."[30] Although it is endorsed by a plethora of respected health actors, including the European Association for the Study of the Liver and GAVI, it has no formal connections to the CDC, the WHO, or the United Nations Children's Fund (UNICEF).[31] Each of these actors has played a pivotal role in other successful PPPs for health such as the Global Polio Eradication Initiative and the Measles Initiative. At the end of the day, the World Hepatitis Alliance is the only global voice for viral hepatitis, and it has comparative advantages in leadership, advocacy, and awareness. Any global effort to assuage the HBV crisis, however, needs the help of other health agencies that can provide technical support, research, laboratory and scientific expertise, disease monitoring and surveillance, as well as country-specific knowledge.

It is unclear why a more centralized voice has not emerged within the hepatitis B community. Charles Gore, president of the WHA, notes the resistance within the WHO when it comes to bolstering hepatitis B control activities.[32] Thus, one must question the extent to which this resistance affects support by other important health agencies and donors. We must also question the extent to which the lack of a hepatitis B-specific World Health Assembly Resolution hampers the attention that hepatitis B receives in health decision-making bodies.

In May 2010, the World Health Assembly adopted a viral hepatitis resolution and this is a huge accomplishment for the viral hepatitis community. The resolution will hopefully re-energize a lethargic international health community and bring renewed emphasis to the dangers of uncontrolled viral hepatitis (types A, B, C, D, and E). Even so, until recently the WHO has devoted insufficient attention to viral hepatitis and this inattention needs to be better understood. In other words, we should not let recent WHO actions cloud our examination of its prior track record. Dr. Alison Evans, of the Department of Epidemiology and Biostatistics at Drexel University School of Public Health and of the Hepatitis B Foundation, suggests that one reason the WHO has been absent is because it is more concerned with acute diseases than chronic ones.[33] As a result of its organizational mandate, the WHO must limit its role and be selective about the diseases it chooses to focus on. Charles Gore takes a somewhat different approach and notes that the WHO is a bureaucracy and like all bureaucracies that possess standard operating procedures, rules, and regulations, change is difficult to achieve.[34] Because the WHO possesses finite resources, the creation of a new department dedicated to viral hepatitis would mean re-allocating funds and personnel that are already scarce. And yet, as Gore notes, so many of the departments present in the WHO overlap with viral hepatitis research.[35] Departments such as Family and Community Health; HIV, TB, Malaria, and Neglected Tropical Diseases; and Health, Security, and Environment each touch on research that is connected with viral hepatitis, either directly or indirectly. Even with these spill-overs, however, in early 2009 Gore

claimed, "I do not have the support of the WHO."[36] In fact, one of the only reasons that there is any support given to viral hepatitis within the WHO is because the CDC has funded the single WHO viral hepatitis position since 1987.[37]

Increased support from the WHO should have positive spill-over effects in other critical decision-making circles such as the United Nations Children's Fund and the United Nations Development Fund for Women. One must still question, though, if a hepatitis B-specific resolution would more fully benefit the hepatitis B community, given that different types of hepatitis possess diverse modes of transmission and disparate prospects regarding elimination and eradication potential.

There are numerous reasons that a hepatitis B public-private partnership would further the goals of the hepatitis community. First, a partnership would eliminate some of the competition between domestic, regional, and global hepatitis B groups, particularly in terms of research, development, advocacy, and funding. With so many unconnected actors, overcrowding can make it difficult for decision-makers, nationally and internationally, to know who to listen to, who to take advice from, and who to fund. Second, with so many unconnected actors there is no clear understanding of what has been done and what needs to be done. Instead, groups operate in isolation from one another even though they may possess the same end goals. Third, the more unified the hepatitis B community becomes, the easier it will be to disseminate information to the public that remains uninformed and to petition governments and private organizations for funding and support. Additionally, PPPs bring together actors with very different specializations. Any global health initiative requires the skills and expertise of players who can provide technical support, research and development, bargaining skills for vaccine procurement, funding, advocacy, and country-specific knowledge of disease epidemiology. No single actor alone can provide all of these necessities and thus it becomes necessary to distribute tasks and capitalize on actors' comparative advantages. Whereas a more unified front from advocacy groups and the WHO could help to assuage issues related to technical support and public awareness, funding as well as research and development remain critical issues that neither the WHO nor advocacy groups alone can provide.

Regarding funding, increasing the amount of resources allocated to the hepatitis B community will certainly allow for the increased distribution and availability of HBV vaccine. However, Dr. Harold Margolis, former Director of the CDC Division of Viral Hepatitis, notes that increased financial resources are also needed to conduct sustained surveillance and monitoring.[38] Without an established system to globally monitor vaccine distribution, prevalence rates, morbidity and mortality, as well as high-risk (and low-risk) regions, the health community remains under-informed.[39] In other words, we do not know what programs and strategies are working and which ones are not. Last, Dr. Chham Samnang, Program Team Leader for Immunization at the Program for Appropriate Technology in Health, reminds us that in the developing world increased funding is also needed for healthcare workers themselves.[40] Improved incentives for healthcare workers will amplify their desire to be informed about hepatitis B immunization and provide vaccination services in home, where many

births occur. If healthcare workers have an incentive to remain local, this can potentially lessen the brain drain from the global South to the global North.

Along these lines, many centrally funded research and development agencies remain resource-deprived. For example, the CDC Division of Viral Hepatitis is currently working with a budget of roughly eighteen million dollars.[41] This budget must support staff working at the CDC headquarters in Atlanta, staff in all fifty states, and the single WHO viral hepatitis position. Jeffrey Caballero, Executive Director of the Association of Asian Pacific Community Health Organizations (AAPCHO), claims:

> [Viral hepatitis] is so grossly underfunded that they [the CDC] can provide a staffing support to a state but that's all they can do is provide that person with a salary. They don't have enough money to give them tools or resources to actually do the work and the reporting to CDC that can contribute to national surveillance.[42]

In 2008-2009, members of the Association of Asian Pacific Community Health Organizations and other US-based hepatitis groups lobbied the US government to increase viral hepatitis funding in the CDC by fifty million dollars. However, the 2009 fiscal budget increased such funding by only one million dollars. Caballero suggests that this limited increase results from competition with other federal priorities and health advocacy groups. For example, the HIV/AIDS lobby in the US remains extremely powerful and some speculate that it has worked against the hepatitis B cause, albeit not intentionally.[43] What is odd is that each organization overlaps with the other given that HIV/hepatitis B co-infections are quite common. Because of its limited stock of personnel, money, and support, the hepatitis B community arguably has more to gain from a HIV/hepatitis B joint collaboration, but a combined effort could benefit both communities, given the similarities in disease epidemiology between HIV and hepatitis B.

Finally, a hepatitis B public-private partnership may help to re-energize a cause that continues to fall short of attention. At the very least, support from organizations like the WHO, UNICEF, and CDC makes a statement. It demonstrates that the main actors in the global health community take the disease seriously and are dedicated to decreasing morbidity and mortality rates associated with it. PPPs bring together the masses and speak on behalf of a united front. In the realm of hepatitis B, future progress is likely dependent on the development of a hepatitis B-specific PPP. The seeds of such a partnership have already been planted in the form of the World Hepatitis Alliance, but the Alliance needs support from public health agencies in addition to private donors and other nongovernmental groups. Many people engaged in the hepatitis fight acknowledge the value in developing a hepatitis B public-private partnership.[44] Without one, the hepatitis B landscape will remain decentralized, isolated, and "desert-like."[45]

For quite some time, public goods scholars have noted how a more interconnected and globalized world can produce negative externalities in the form of disease transmission and movement that states alone cannot handle.[46] The proposed hepatitis B public-private partnership has the potential to unite

developing and developed countries with international and regional health agencies, nongovernmental organizations, as well as private firms and investors - all of which can positively contribute to remedying the global HBV crisis.

PUBLIC GOODS CONTINGENCY

Health causes often find themselves in competition with one another when it comes to funding, political attention, and research and development. Consider, for example, the Global Polio Eradication Initiative and Measles Initiative. The former is dedicated to the eradication of polio and the latter to global measles control. In endemic polio/measles countries, most notably India, measles control activities are frequently hindered because of the push to finalize polio eradication. While both initiatives are quite supportive of each other, there is no denying that the Measles Initiative, at times, falls short due to polio eradication activities. Hepatitis B also suffers because other global health needs remain unmet. As the seventh vaccine incorporated into the WHO Expanded Programme on Immunization, hepatitis B is frequently treated as the EPI outsider. For quite some time, the WHO was reluctant to incorporate hepatitis B into the Expanded Programme on Immunization because the EPI was already struggling with the distribution of measles, polio, BCG, tetanus, pertussis, and diphtheria vaccines.[47] Until the HBV Task Force demonstrated the feasibility of incorporating hepatitis B vaccine into national immunization schedules, the inclusion of HBV into routine immunization programs, particularly in poor countries, remained unlikely. Muraskin's interview with Terrel Hill, former EPI advisor for UNICEF, lends support to the claim that increased efforts for hepatitis B are contingent upon other successes:

> [W]e have a measles goal: control by 1995. There will be a doubling of our investment on measles. Also, there is a neo-natal tetanus goal; [that] will [require] double the investment. The bottom line is we don't have the resources...We have other goals [too] – education, jobs, etc. All require more funds. If we fundraise where do we put the emphasis. [If UNICEF started to raise funds aggressively for hepatitis B, then] that money will not be available for AIDS, diarrheal disease...or education...[It is a case of] competition with scare resources.[48]

In short, the hepatitis B community finds itself constrained on a number of fronts. Health targets stemming from the World Health Assembly and WHO regions, such as polio eradication, measles control, and diarrheal disease reduction, continue to complicate efforts to do more for the global HBV crisis. Because we have limited resources to combat global health ills, selective decisions have to be made and hepatitis B frequently stands on the losing end of these decisions. As I will discuss, one reason for the continued resistance to hepatitis B reduction activities may be related to perceptions of HBV transmission. The distorted and misguided perceptions of HBV transmission, combined with a limited global voice, create a perfect storm whereby hepatitis B continues to be overlooked, pushed aside, and neglected.

As we move the public goods agenda forward, it is clear that there is a deep interconnection between public goods cohorts of the health variety. Hepatitis B is related to HIV/AIDS, polio, measles, malaria, and tuberculosis in more ways than one. It is therefore necessary to understand better how these communities interact, engage, and compete with one another. Doing so may help us create health policy that is more all-encompassing and wide-ranging.

PERCEPTION AND HEPATITIS B TRANSMISSION

One of the hallmarks of public goods analyses has been a reliance on formal modeling and quantitative methodology to assess the costs and benefits associated with public goods provision. Indeed, the use of sophisticated quantitative techniques has earned public goods theory the reputation for being robust and generalizable. Economic analyses of health interventions frequently guide policymakers in executing health decisions. When the benefits of intervention outweigh the costs, intervention becomes a viable policy option. In contrast, when the costs of intervention outweigh the benefits, intervention is much less likely. Of course, even economic models can contain subjective biases, and as Dr. Harold Margolis reminds us, early attempts to model the costs and benefits of HBV reduction activities made it appear that it was cheaper to let people die from hepatitis B than to seriously engage in national immunization, improved surveillance measures, and similar activities.[49] For example, in 1997/98, the Pennsylvania Health Care Cost Containment Council concluded, "while we recognize that prevention—through immunization—is an effective method in combating this chronic disease, we did not find evidence to recommend acceleration of the hepatitis B immunization program as currently outlined in this bill."[50]

Eventually, a more accurate understanding of HBV-associated costs and benefits emerged, and it is now widely believed that the benefits of universal infant vaccination, measured in life years lost due to premature death (disability adjusted life years) and the costs of treating patients with liver disease, significantly outweigh the costs of providing the vaccine.[51] In short, it pays to vaccinate, but HBV vaccine is still under-delivered.

Recently, scholars such as Gaizer and Touffut[52] and Kaul[53] have begun to address the socially constructed nature of public goods. In other words, what we accept as public and private largely result from deliberate decisions made by policymakers. This has ultimately led scholars to question the processes that lead a particular good to be classified as either public or private as well as the mechanisms that can be pursued to shift a good from public to private and vice versa. These types of analyses are much more "sticky" and hard to quantify. They present an added "fuzzy" dimension to an overly formal theoretical lens. If we accept that public goods are subjective entities, then we should also assume that decision-makers have the power to decide which goods receive attention and which do not. With this in mind, skewed perceptions of HBV transmission, and disagreements surrounding disease epidemiology, continue to obstruct attempts to elevate hepatitis B to a higher position on the global health agenda, despite the

known economic benefits that a more sustained global effort to reduce HBV prevalence could produce.

To expand, hepatitis B can be transmitted in a variety of ways: unprotected sex, mother-to-child, child-to-child, intravenous drug use, sharing personal items with someone infected, tattoos and piercing needles, and human bites.[54] In the developing world, particularly in Africa and Asia, mother-to-child and child-to-child are common modes of hepatitis B transmission. In developed countries, like the US, intravenous drug use and unprotected sex are more commonplace modes of transmission and contribute to higher rates of acute infections. In this sense, there are what we might call innocent and risky modes of HBV transmission. This is a very different situation from diseases such as polio, measles, or pertusiss, all of which are associated with innocent routes of transmission in infancy and childhood.

Anti-vaccine advocates have unfairly highlighted high-risk modes to the disadvantage of the global hepatitis B community. For example, Schlafly argues:

> My new grandchildren were not at risk for hepatitis B, which is primarily an adult disease transmitted through bodily fluids. Those most at risk are the highly promiscuous (heterosexual or homosexual), needle-sharing drug addicts, health care and custodial workers exposed to blood and babies born to infected mothers.[55]

As a result of this manipulation, developing countries are disadvantaged because of the perceptions of hepatitis B held by key decision makers in the developed world, even though the most common modes of transmission vary greatly from the global North to the global South. That perception of disease transmission works against the hepatitis B struggle is widely accepted in the hepatitis community. For example, Dr. Alison Evans notes, "among more educated people who do understand what hepatitis B is, there's a lot of stigma."[56] Charles Gore (2009), adds:

> Yes – there's a huge stigma. One of things that you have to remember is that communicable diseases per se carry a stigma…people do not like talking about communicable disease: this is sexually transmitted disease, this is blood borne viruses, this is anything regardless of how you get it. Because, you know, you are a risk to other people - it's that whole kind of you're a leper [thing].[57]

Additionally, Kathy Hyett, President of Togo Run notes, "So I think it's almost like the perfect storm of all these conditions coming together and…it's just so big that lots of people keep trying to fix it but they're just…taking little chunks out of the problem."[58] Stigmatizing hepatitis B-positive persons has tangible consequences that run deep. In China, for example, discriminatory employment laws against hepatitis B carriers mean that some people actually lose their jobs, or fail to get hired, if they are known to be infected with the virus.

The consequences from this stigmatization and ostracism generate a negative cycle which is hard to interrupt. First, people are reluctant to get tested, which means that the virus will continue to circulate. Few people are willing to openly talk about their infection and thus some of the greatest potential advocates remain silenced. Third, because people remain silent, the problem gets

overlooked in decision-making circles and the issue is relegated to a less important status than it really deserves. Dr. Alison Evans notes that many chronic carriers in the US are legal migrants from Asia.[59] These individuals, particularly parents of adopted children, are reluctant to address the issue over fear that hepatitis B will be associated with immigration - a politically heated debate. As we've seen in the past, particularly in reference to the HIV/AIDS community, some of the most influential advocates who've fought for public recognition of the disease are carriers themselves.[60] That so few hepatitis B-positive persons are willing to come forward and publicly engage with the issue, particularly in countries that have the ability to make a difference, is therefore very troubling.[61]

In order to assuage the stigmatization of hepatitis B carriers, a concerted effort needs to be made to downplay high-risk modes of transmission – a goal that the proposed hepatitis B PPP could further. This is because in areas where carrier rates are highest, high-risk modes of transmission are less common. Thus, the global North has painted an unfair and inaccurate picture of hepatitis B transmission that has transnational effects. Instead, highlighting the multiple innocent routes of transmission would have the potential to increase public acceptance of the vaccine for infants. Particularly in cultures where homosexuality and promiscuous sexual encounters remain taboo subjects, finessing the way we talk about hepatitis B can help shift individual perception regarding hepatitis B transmission and infection. Additionally, it is more politically attractive to allocate funds to vaccines that protect the innocent as opposed to the "high risk."[62]

Perception of disease transmission is not the only social construction working against the hepatitis B community. So too is perception of the carrier. Hepatitis B vaccine is a childhood vaccine that prevents middle-aged liver disease. Whereas diseases like polio and measles most frequently infect and subsequently kill or paralyze children, few kids die from hepatitis B infection. Rather, the earlier children contract it, the greater their likelihood of becoming chronic carriers and thus battling liver disease later in life. This is a tension with which the hepatitis B community continues to struggle. Is hepatitis B a childhood or an adult problem? As Dr. Steven Wiersma of the WHO notes:

> The other thing that's made this vaccine...less interesting...is it's not a child survival vaccine. Think about all the EPI vaccines...common, universally used vaccines [that] in some way impact child mortality and this one absolutely doesn't and I think it just got missed by a lot of people.[63]

We are much more willing to accept death at forty or fifty years than we are at age one or two. If we view HBV through an economic lens, the productive life years lost due to premature death at a young age significantly outweigh the productive life years lost from death at forty or fifty. In this sense, perceptions of *who* are the rightful referents of health and health goods are a vital part of the hepatitis B story. There are direct policy implications that emerge from this assessment. Namely, in order to increase vaccine distribution, raise public

awareness, and heighten political will, hepatitis B needs to be portrayed as a childhood issue.

Moreover, if this assessment is indeed true – that the global health community and health policymakers are more inclined to address acute and childhood diseases - then one must question how this might affect the support and attention devoted to other chronic diseases and non-childhood illnesses. For example, a recent breakthrough in the obstetrics/gynecology community has been the discovery of the HPV (human papillomavirus) vaccine, which can prevent cervical cancer in women. HPV is a sexually transmitted disease and most severely affects sexually active women between the ages of 15-24. In the US, there is still resistance to full financial coverage of the HPV vaccine for sexually active women among healthcare providers, many of whom will not fully cover the cost of the vaccine or will not do so after a certain age. As the CDC notes, "while some insurance companies may cover the vaccine, others may not."[64] Just as with hepatitis B, it is likely that resistance to funding this beneficial anti-cancer vaccine is related to perception of disease transmission and carriers.

A final note about perception is in order. One of the reasons that HBV vaccine pricing dropped significantly in the early 1990s was due to an increase in non-Western vaccine manufacturers, like the Korean Green Cross Corporation.[65] As Dr. Alison Evans claims, "Now, countries like China, Taiwan, and Korea make their own vaccine and... at least in China...it's made in government factories and...they're not trying to make a profit from it. They're trying to distribute it as widely as possible."[66] The increase in HBV vaccine manufacturers means that supply is increasing while price is decreasing. Thus, no single corporation can claim a monopoly on vaccine distribution and demand unreasonable prices for it.

However, not everyone agrees that increasing the number of developing country vaccine manufacturers is the most appropriate way to decrease costs on the international vaccine market. In other words, some see this phenomenon as troublesome because they fear developing countries will manufacture vaccines that are of subpar quality and may actually inflict more harm than good. Advocates of developing country vaccine manufacture respond that the reason some pharmaceuticals do not meet internationally established vaccine standards is because public health agencies are unfairly persuaded by big pharmaceutical companies who demand vaccine standards that are unachievable to all but big pharma. For example, with regards to hepatitis B vaccine standards, Muraskin argues:

> When the Task Force was organized, the existing WHO standards for vaccines were exceptionally rigorous – many people considered them unreasonably so – and the suspicion existed that the inability of most vaccine manufacturers to meet those standards was not coincidental...one of the key aspects of the requirements involved a level of purity for the vaccine that was only achievable by using the process Merck employed.[67]

Erecting barriers that work against the creation of developing country vaccine manufacturers is not only wrong on ethical grounds, as such companies have the potential to significantly increase the availability of medicines needed to combat health ills largely confined to the global South, but it also interferes with

the free market and the free exchange of goods and services. As Jadhav claims, more and more developing country vaccine manufacturers are demonstrating that they can develop quality vaccines and at a reduced price. Furthermore, they are more likely to focus on vaccines that big pharmaceutical companies neglect.[68]

Assuming that developing country vaccine manufacturers continue to produce quality vaccines, it is in the interest of the global health community to facilitate large-scale investment in public health agencies as well as aiding the transfer of medical technology. Doing so will put downward pressure on vaccine prices and it can also catalyze increased research on neglected tropical diseases. Of course, this policy suggestion will not be accepted by all decision-makers alike, particularly those with ties to big pharma, but it is one way to aid developing countries in their attempts to improve basic national healthcare services. An increase in developing country vaccine manufacturers may also help to meet a number of the Millennium Development Goals that target children's health and wellness, poverty, and maternal mortality.

CONCLUSION

Using a public goods framework to better understand the failure to more effectively tackle the global HBV crisis suggests that a hepatitis B specific public-private partnership could help to overcome issues related to vaccine distribution, global surveillance and monitoring, as well as aiding individual states who are either unable, or unwilling, to elevate the fight against HBV to a higher status in health decision-making circles. The public goods framework also reveals areas of tension between the hepatitis B community and other disease cohorts that continue to battle for international recognition and attention. As we move the public goods agenda forward, scholars must make a more concerted effort to question how different types of health communities can engage one another and what this type of engagement might look like. Where the public goods framework remains weak, however, lies with its rational choice leanings which make it difficult to incorporate issues related to perception and misperception of disease transmission and the carrier.

There are many lessons and recommendations that emerge from this assessment of the hepatitis B crisis and efforts (failed and successful) to curb the spread of hepatitis B globally. Below is a plan of action which will ideally move these suggestions forward.

A Proposed Plan of Action to Eliminate Hepatitis B:

- The proposed hepatitis B public-private partnership needs collaborators that will combine their expertise in the following areas: technical assistance, research and development, bargaining skills for vaccine procurement, funding, laboratory expertise, monitoring and surveillance, advocacy and awareness, and country-specific knowledge of disease epidemiology.
- Some players that will likely be critical in the proposed hepatitis B partnership are: World Health Organization, Centers for Disease Control

and Prevention, United Nations Children's Fund, GAVI, World Hepatitis Alliance, and Hepatitis B Foundation.

- WHO, UNICEF, and CDC should aid in providing the following necessities to the proposed partnership: technical assistance, laboratory expertise, research and development, country-specific knowledge, monitoring and surveillance, and vaccine procurement.
- The World Hepatitis Alliance and Hepatitis B Foundation stand in the best position to spearhead the proposed public-private partnership given their comparative advantage in promoting hepatitis B awareness and advocacy. The World Hepatitis Alliance is a global partnership that brings together hepatitis B (and C) patient and advocacy groups. The Hepatitis B Foundation is the only US non-profit organization solely dedicated to the global problem of hepatitis B.
- GAVI already provides support to developing countries for the incorporation of hepatitis B vaccine into routine immunization schedules. GAVI expertise and experience should be drawn on, particularly as GAVI is operative in developing countries with poor routine healthcare services.
- For the past twenty-three years, the CDC has funded the sole WHO position for viral hepatitis. As one of the most respected international authorities in the realm of health, the WHO needs to increase the resources it devotes to hepatitis B and hire more staff for research and development. Some of this staff should solely confine their activities to hepatitis B and not viral hepatitis broadly speaking (which includes hepatitides A, B, C, D & E).
- Increased funding from private foundations/donors is necessary to increase the delivery and supply of HBV vaccine, treatment for infected persons, advocacy and awareness campaigns, as well as permanent staff for the proposed partnership. Private donors such as the Bill and Melinda Gates Foundation and the UN Foundation continue to donate enormous sums of money to various global health projects; however, it is absolutely necessary to tap into new sources of funding. Due to donor fatigue and donor schizophrenia, diversification of funding sources is critical.
- Once formed, and pending future decisions in the World Health Assembly, the proposed partnership will need to enact structural decisions. Namely, will the partnership be structured as top-down or bottom-up? If the partnership favors the former, then looking to the experiences of the Global Polio Eradication Initiative (WHO, CDC, Rotary International, and UNICEF as core partners) is recommended. If the partnership chooses to remain decentralized and operate from the ground up, it is recommended that it explore the history of the Measles Initiative (WHO, CDC, UNICEF, UN Foundation, and Red Cross as core partners).
- The proposed partnership needs a simplistic but straightforward mission and plan of action. This will address questions regarding the overall program goals, relationship of partners to one another, target regions/countries, frequency of partner interaction, and modes of communication.

- In addition to increasing the delivery of hepatitis B vaccine and treatment for sick persons, the partnership must make a concerted effort to portray hepatitis B as a childhood vaccine and childhood necessity regardless of the fact that the worst effects of chronic hepatitis B infection do not set into until middle age. This will require sustained public advocacy and awareness.
- The partnership should attempt, when possible, to disassociate hepatitis B infection from issues related to immigration. This will ideally increase the partnerships support base as potential advocates and proponents will be more willing to speak up and become active.
- Given the success of Taiwan in significantly reducing acute and chronic cases of hepatitis B transmission, the partnership should use the Taiwan program as a model to emulate. Other Western Pacific countries have since adopted similar approaches to HBV prevention - universal infant vaccination, close monitoring of vaccination status, and sustained public awareness campaigns. This approach to HBV elimination should be applied elsewhere.

Charles Gore claims, "I wouldn't be doing this if I didn't feel so strongly that this is just a totally unacceptable situation that I, like you, cannot understand. I cannot understand why these people are dying...its ridiculous."[69] We, the global health community, possess the first anti-cancer vaccine. It is technically feasible to eradicate hepatitis B, and yet every year millions of people suffer and die unnecessarily from hepatitis B-induced liver disease. While the international community may be late in responding to the HBV crisis, as the sage says, better late than never.

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[59] Author's phone interview with Dr. Alison Evans, Department of Epidemiology and Biostatistics at Drexel University, July 16, 2009.
[60] N. McKee, J.Bertrand, and A. Becker-Benton, *Strategic Communication in the HIV/AIDS Epidemic.* (Los Angeles and Washington DC: Sage, 2004).
[61] Further research is warranted here to address why HIV/AIDS positive persons, particularly in developed countries, have been willing to publicize their fight when hepatitis B positive persons are less willing. Immigration issues may reveal a part of the problem, but it is doubtful that this hotly debated issue tells the whole story.
[62] Finessing how we talk about hepatitis B is a slippery slope. Reducing stigma surrounding positive persons' is necessary but so too is conveying a sense of personal responsibility for those who live high-risk lifestyles.
[63] Author's phone interview with Dr. Steven Wiersma, Medical Officer and Hepatitis Focal Point at the World Health Organization, August 25, 2009.
[64] Centers for Disease Control and Prevention. "HPV Vaccine Information for Young Women." Available at: http://www.cdc.gov/std/hpv/STDFact-HPV-vaccine-young-women.htm#note1
[65] Muraskin, *The War Against Hepatitis B.*
[66] Author's phone interview with Dr. Alison Evans, Department of Epidemiology and Biostatistics at Drexel University, July 16, 2009.
[67] Muraskin, *The War Against Hepatitis B,* 196.
[68] S.Jadhav, "Developing Countries Vaccine Manufacturers Network (DCVMN)." Available at: http://www.who.int/vaccine_research/about/gvrf_2004/en/gvrf_2004_jadhav.pdf
[69] Author's phone interview with Charles Gore, President of the World Hepatitis Alliance, July 31, 2009.

Epidemics as Politics with Case Studies from Malaysia, Thailand, and Vietnam

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Severe epidemics caused by severe acute respiratory syndrome (SARS) and avian influenza viruses have recently killed hundreds of people while causing chaos and panic in many countries. These epidemics have distinct characteristics that make their politics significant and interesting, although both health policy analysts and political scientists have neglected the phenomenon. In this article, I propose an analytical framework that treats epidemics as political processes divided into four phases: "pre-political," "announcement," "mitigation," and "rebuilding" phases. I then apply the framework to the case studies of Malaysia, Thailand, and Vietnam, and show how level of democracy, level of centralization in the state structure, and the social construction of risks shaped government responses to epidemics in these cases. The cases suggest that global health governance should not ignore politics at the national level and the redistributive impact of epidemics originating from or transmissible through livestock.

INTRODUCTION[1]

Severe epidemics caused by severe acute respiratory syndrome (SARS) and avian influenza (AI) viruses have recently killed hundreds of people while causing chaos and panic in many countries.[2] These epidemics have three distinctive characteristics that make their politics significant and interesting. First, unlike acquired immune deficiency syndrome (AIDS) and tuberculosis, these epidemics are especially susceptible to politicization because of their urgency[3] and their potential to spread quickly and far beyond the points of origin or discovery.[4] Second, these epidemics are often caused by zoonoses, i.e. animal pathogens transmissible to human beings.[5] Although these diseases have not killed as many people as AIDS, they killed livestock and destroyed the sources of income for millions of farmers while forcing governments to spend millions of dollars on vaccine stock and vaccination campaigns. At their peaks, these epidemics even threatened regime legitimacy, domestic stability and national security in the countries affected.[6] Epidemics in these cases are not only a health issue but also economic, fiscal, political and security challenges. Finally, these zoonoses are most threatening to developing countries undergoing fast economic growth. From China to Cambodia, population growth and income gains have stimulated greater demand for livestock products. As livestock producers rise up to meet exploding demand, their businesses impose severe pressures on rudimentary hygiene standards and the fragile ecological balance between human societies and nature in these developing countries.[7] The political challenges are how authoritarian governments with weak bureaucratic capacity cope with epidemics and how they can revamp the health regulatory environment quickly enough to keep diseases under effective control as in developed countries.

Although politics is so significant, it is ironically the least understood aspect of these epidemics. [8] For example, AI, or the "bird flu," has generated numerous studies but analysts have approached it from any perspective but politics.[9] Similarly, the SARS epidemic has been mostly analyzed from epidemiological, economic, media communication, and regional security perspectives, and only occasionally in the limited context of Chinese politics.[10] Studies that treat epidemics as crises do not pay adequate attention to their politics.[11] At the same time, scholars of health policy and governance have generally been more interested in politics at the global than at national and local levels.[12] The comparative public health literature (to be briefly reviewed in the next section) has identified three important political factors at the national level that explain different policy responses to health challenges across countries. These factors include the level of democracy, the level of centralization in the state structure, and the social construction of risks. To my knowledge, no studies have systematically examined how these factors play out in the kind of epidemics considered here.

This article builds on this literature and seeks to understand how political factors at the national level shape government responses to epidemics. To analyze the politics of epidemics originating from livestock, I propose an original conceptual framework that treats an epidemic explicitly *as a political process* divided into four phases: "the pre-political phase" when animal deaths occur but government officials are not yet informed; "the announcement phase" when the discovery and announcement of the outbreak are made; "the mitigation phase" when the measures to mitigate the impact of the epidemic are implemented; and "the rebuilding phase" when the crisis has passed and producers can resume production.[13]

The proposed framework facilitates the analysis of epidemic politics in three Southeast Asian countries: Malaysia, Thailand, and Vietnam. These cases are selected because they all have recently experienced devastating outbreaks but have produced puzzling outcomes. During 1998-1999, a mysterious Nipah virus believed to originate from bats killed thousands of pigs and 100 Malaysians in a few months. The Malaysian government failed miserably in containing the outbreak and had to shoot half the national pig stock to stop the epidemic. From 2003 to 2008, AI has repeatedly threatened Thailand and Vietnam, causing more than 50 deaths and millions of dollars in losses. Despite facing similar threats from AI, Thailand has been more successful than Vietnam in controlling the virus and in recovering from the damages. Among three cases, Malaysia boasts the highest gross domestic product (GDP) per capita, and Vietnam is under the rule of a communist regime known for its ruthless effectiveness. Their failures to cope effectively with epidemics are thus greatly puzzling.

The following sections present a brief literature review, the conceptual framework, and findings from the case studies. My goal is not to explain all the variations in the case studies. Rather, I seek to demonstrate the usefulness of viewing epidemics as political processes and how important political factors shaped government responses at different phases of an epidemic. In the conclusion, I will discuss two implications of the study for public health governance.

STATE STRUCTURE, DEMOCRACY, AND THE SOCIAL CONSTRUCTION OF RISKS

Studies of comparative public health policymaking have long noted that countries take different approaches even while facing similar problems. Explanations for cross-national variations in approaches and in policy performance are diverse but tend to focus on three main variables.[14] First is the degree of centralization in state structure. A central structure facilitates centralized and uniform policymaking whereas a decentralized structure encourages policies to be developed first at local levels, implying great variations across administrative units. Neither a centralized nor a decentralized structure is inherently more superior in terms of performance. For example, a centralized structure allowed the French central government to tackle infant mortality much earlier and in a more comprehensive manner compared to the United States (US).[15] In a contrary example, the decentralized Brazilian government has adopted aggressive policies and succeeded in its fight against AIDS compared to centralized but laggard South Africa.[16]

A second variable, the level of democracy, is more complex than state structure. For example, a popular thesis in the study of epidemic control argues that absolutist, autocratic or conservative regimes are more likely to adopt sanitary cordons and quarantine which require a higher degree of intrusion and coercion than measures to prevent diseases by hygienic reforms.[17] Yet this broad generalization of political cultures and regimes such as "conservative" and "absolutist" is vulnerable to many criticisms. For example, a regime may be "conservative" in some aspects but "liberal" in others. Empirically the relationship between regime types and health policy outcomes appears ambiguous. While autocracies tend to have higher immunization rates than democracies,[18] a recent study of mortality decline in Western Europe found "right-wing" authoritarian regimes did not lag far behind more democratic "welfare states."[19] Even when a more clearly defined indicator of democracy such as the strength of civil society vis-à-vis the state is employed, the impact is again ambiguous. American success in tobacco control has also been credited to the strength of the anti-smoking grassroots movement in the US.[20] Yet South Africa was bustling with civil society groups in the 1990s but this condition failed to transform into effective policies against AIDS.[21]

The third variable identified by the literature is the social construction of risks. Health risks are not just objective facts but are also socially constructed. Three elements constitute the construction process, including credible medical authorities, the development of credible theories on the causes of the risks, and the designation of potential victims.[22] Countries vary in their respect for science and medicine. Causal theories also vary based on different assumptions. Finally, risks may be depicted as universal (threatening everyone) or particular (threatening only certain groups). For example, maternal and infant health was interpreted differently in the example above concerning France and the US. French politicians were concerned that maternal and infant health problems could depopulate France, thus posing a threat to the nation. In contrast, in the US the high rates of infant mortality were interpreted as evidence of the "ignorance of immigrant mothers," a sectarian but not a national threat. Numerous studies have shown that ethnic minorities and the poor often take the blame for epidemics in the US or elsewhere.[23]

In the construction of risks, the presence and strength of "boundary institutions" are particularly instructive. These institutions are the rules and procedures such as racial categories or segregation laws that allow the state to monitor or regulate citizens according to particular group identities.[24] Boundary institutions can affect whether medical professionals are respected, what causal theories are adopted, and who are identified as potential victims. The contrast between Brazil and South Africa in their AIDS policy has been attributed to the relative strength of such institutions in the latter country.

State structure, democracy, and the social construction of risks do not explain all differences in health policies, but they are among the most critical factors suggested in research on the subject.[25] Yet this literature does not suggest how these factors might shape government responses to epidemics originating from or transmissible through livestock. In the next section I will present a conceptual framework to study epidemics as political events. This framework is useful to tease out the particular impact of each factor at different phases in the process.

EPIDEMICS AS POLITICAL PROCESSES

Epidemiologists may have a different scheme to analyze disease outbreaks, but from a political perspective, these events can be divided into four overlapping phases. First is *the pre-political phase* when unusual deaths of livestock concentrated in a particular farm or area occur. Human sickness or deaths may also appear at this time. If we assume that a wealthier society has a greater number of practicing veterinarians per capita, a higher level of disease awareness among their farmers, and better means of communication, news or reports of animal deaths reach local authorities faster there relative to poorer countries. Thus the level of development matters crucially at this stage. But this phase is pre-political: political factors do not yet have a role as long as the government has not been informed.

The second phase begins when local authorities receive reports of the deaths, possibly from a local veterinarian. In this *announcement phase*, political variables start to bear on the process. The degree of centralization has theoretical impact on the flow of information and the rapidity of the response. It has sometimes been argued that a decentralized system allows local governments to deal rapidly with emerging threats rather than waiting for central orders.[26] This argument assumes that local governments are capable and willing to act, but this is not always the case. If a local government fails to act in a timely manner, a decentralized system can hamper national coordination to mitigate the impact of the disease.

Assuming information flows all the way to the central level, the level of democracy matters in two ways. First, if there are powerful groups whose interests would be hurt by a public announcement of the outbreak, a high level of democracy means that sufficient checks and balances exist to prevent such groups from blocking a timely announcement. These groups may include large livestock companies which want to sell off their inventory before any announcement is made. Or the tourist industry which fears that news of the outbreak can scare tourists away. Outgoing leaders in an upcoming election may suppress the news in the hope of finishing their terms without controversies; so do new leaders who need to consolidate their power first before

confronting a crisis.[27] If political opposition exists in the political system, this can serve as an effective check on these groups or individuals. Second, a high level of democracy also implies a greater degree of transparency in the policymaking process, given that citizens enjoy the rights to access information and to demand timely responses from their representatives. If citizens and professionals are free to voice their concerns in public forums, if the media are free to publish news with minimal political censorship, it would be hard for any powerful groups to conceal the outbreak for very long. A public announcement would depend more on the careful evaluation of scientific evidence and less on undue political concerns.

The social construction of risks matters in this phase as well. If the disease is perceived as affecting only minority groups, less incentive exists for the government to act, especially if such acts incur political costs. Strong boundary institutions in a society may cause government officials to underestimate the extent of risks. Perceptions of low risks would in turn discourage the government from publicizing the outbreak.

The public announcement of the outbreak starts *the mitigation phase*. During this phase, political contention centers on three main sets of questions. First, who is to blame for the epidemic: "dirty and backward" farmers, "greedy" traders, "corrupt" slaughterhouse inspectors, "delinquent" local officials, "incompetent" medical authorities, or "complacent" politicians who were slow to publicize the outbreak? As social actors play the blame game, the scientific community debate the second set of questions such as what virus causes the disease, how it is transmitted to human beings, what is the best way to stop it, what should be destroyed (wild life, mosquitoes, or livestock), and if vaccination helps. The third set of questions, i.e. who deserves government help and how much, are strongly influenced by "the blame game" and, more generally, by the dominant "outbreak narrative" jointly constructed by powerful stakeholders and the media.[28] At the heart of these questions are fairness and accountability. Groups that are blamed for the disaster stand less chance to be compensated for their losses and may even be threatened with harsh punishments. Officials who are blamed may lose their jobs and politicians their elections. Farmers as a rule always demand higher compensation for culled livestock.

Taking place against the backdrop of animals being killed en mass and people being hospitalized or dying by the day, this third phase is the most politicized phase. In this phase, the three variables continue to shape the process albeit in different ways. Consider first the degree of centralization. While the central government may call for a massive mobilization of resources to stop the disease, it often has to rely on local governments for the tasks to be implemented effectively. While directly affected areas are keen on supporting central measures, other less directly threatened areas may not. Before some subsidies from the central government can be negotiated, local governments may be reluctant to sacrifice their technically still healthy livestock in the name of national interests. Centralized systems perhaps face fewer challenges in this matter than decentralized ones. The degree of centralization also has an impact on how responsibilities are placed. A decentralized system may encourage governments at different levels to blame each other rather than take responsibility for what happened. In a centralized system this would perhaps be less of a problem.

How would the democratic variable matter during this phase? If checks and balances exist, it would not be easy for powerful groups with a stake in the outcome to

influence the political process to their advantage. Incompetent or irresponsive incumbent politicians would be justly censured. Civil society organizations could play a big role in defending and providing help to weak social groups. Medical professionals would not be under any pressure to toe the official line. All groups could try to manipulate the media to their advantage but the media themselves have their own interests in the struggle. Breaking news increases sales and ad revenues. Theoretically, the social construction of risks also matter. If boundary institutions are strong, risks may be constructed along these lines and blames directed accordingly by the media and by popular opinion. The government constrained by such boundary institutions may be oblivious to the needs of certain groups for help.

The rebuilding phase begins when no new cases emerge, perhaps thanks to the public health measures taken against the disease. In a sense this phase continues the second phase with public debates on causes, culprits, and compensation spilling over. Yet the issue is no longer an emergency; thus normal channels of information, power and resources resume their functions while emergency mechanisms established during the crisis lapse. The fight now takes a slower tempo and much can happen outside public scrutiny. For relevant parties, however, the economic and political stake in the struggle may remain high. The market for livestock products is not the same as it was before. Domestic markets may have collapsed while foreign ones closed off forever. While pundits continue their debate on the causes of the outbreak, government officials consider how to reform or restructure the sector to prevent future outbreaks. The outcome of this struggle may drag on for years but how it is decided has important consequences for public health and for the livestock sector in the affected countries.

In this last phase, the degree of centralization is relevant to the extent that strengthening farming standards require changes in land use policy where local governments often have a big say. The central government can issue general guidelines but frequently must depend on local governments for implementation and enforcement. The level of democracy is still important in this phase in deciding whether losses and costs of necessary reforms are fairly divided or born mostly by weaker groups. Effective checks and balances prevent powerful groups from shifting costs of reform onto weaker ones. The role of the media and the medical community is much less important in this phase but political opposition and civil society advocacy groups are still crucial. The crisis may have left behind new powerful groups such as consumers' advocates, solidarity associations, charity agencies and government watchdogs, not to mention numerous new internet websites and personal blogs. At the same time, civil society may suffer backlashes if (in an authoritarian environment) the government clamps down on outspoken groups and the media once the emergency ended.

Below I will apply the foregoing conceptual analysis to the cases, which will illustrate how state structure, democracy, and the social construction of risks played out differently in each case and at each phase in the process.

MALAYSIA'S NIPAH OUTBREAK, 1998-1999

The first case of what was deemed to be Japanese Encephalitis (JE) infection was reported in January 1998 by the state government of Perak.[29] Even though blood tests of this and later cases yielded inconclusive results, the authorities concluded early on that

the disease was JE because the symptoms of the infection apparently matched those of JE.[30] Following the detection, health authorities ordered the fogging of affected areas to destroy Culex mosquitoes believed to carry the JE virus. Between February and October of the same year, 20 similar cases were reported and five people died. All of the 20 infected victims were associated with pig farms: owners, traders, workers, and their families. Besides continued fogging, pig farm workers were vaccinated against JE. In late November, the Minister of Health declared that the outbreak had been controlled.[31]

Yet by late December, new victims emerged not only in Perak but also in Selangor and Negri Sembilan, states south of Perak. By early January 1999, four more had died in Perak and another four in Negri Sembilan.[32] Only by this time did Veterinary Departments in various states issued bans on the movement of pigs from farm to farm or across states. While officials continued to stress that the disease was caused by the JE virus, dissenting voices about its origin were raised since December 1998. First, most victims were not old people and children as would be the case with the JE virus; they were in fact young and healthy pig workers. Second, the JE virus is not known to affect pigs but pigs also died *en mass* after mysteriously developing mental excitation with pulmonary involvement. In mid-March, based on samples taken from dead victims, the US Center for Disease Control confirmed that most cases were not caused by JE but a different, to-be-identified Hendra-like virus.[33] The government then set up a Task Force to tackle the outbreak but still considered the disease to be caused by the JE virus. By then, thousands of residents in pig-farming areas began to flee their homes in panic, leaving behind their pigs roaming the streets. Schools were closed and entire towns were abandoned. The outbreak peaked in March and April, when hundreds of people were infected and the human death tolls reached 100. At this point, troops were sent to affected areas to shoot and bury hundreds of thousands of pigs. This effectively ended the outbreak by May.

Why did the government fail to realize that the outbreak was caused not by JE but a different virus? This issue was critical because it affected the strategy for controlling the outbreak.[34] Besides the medical uncertainty involved in identifying the exact causes of the epidemic, political variables were critical in this failure. Consider first the state of democracy in Malaysia. Since independence, the Malaysian government has been dominated by the National Front (*Barisan Nasional* or BN), a coalition of four main ethnic parties: the United Malay National Organization (UMNO), the Malaysian Chinese Association (MCA), the Malaysian Indian Congress (MIC), and (since the 1970s) the (mostly Chinese) People's Movement Party (*Gerakan*).[35] UMNO is the most powerful partner in the coalition and can be considered the ruling party. There are two main opposition parties: the largely Chinese Democratic Action Party (DAP) and the Malaysian Islamic Party (PAS). DAP is strong in Chinese constituencies and for decades PAS has controlled state government in one northern state. BN has managed to maintain its domination even though individual politicians of the coalition often face stiff fights to retain their seats, among themselves as frequently as with opposition candidates.[36] UMNO's well-institutionalized dominance suggests a shortage of checks and balances in the system. This results in a systematic suppression of critical or dissenting views from the medical community and the media, which was confirmed by various sources.[37]

The social construction of risks was just as important as the low level of democracy. Pigs are considered dirty in Islam and no devout Muslims would want to have anything to do with pigs. Any issues associated with pigs are considered "Chinese" domain. For national unity the federal government dominated by Muslim-Malays tolerates but does not support the pig sector. In the words of a local academic, the pig sector is something national Malay politicians "can't swallow but can't spit out."[38] The MCA, which represents Chinese interests in the ruling coalition, plays only a secondary role to the Malay UMNO. While UMNO politicians were sympathetic with Chinese issues on a personal level, there would be clear political costs for them to say so in public. For example, when the government appointed the Deputy Prime Minister Abdullah Badawi to lead the Task Force, PAS leader Fadzil Noor joked publicly that "while the Badwis (Bedouins) in Arabia looked after camels and goats, the "Badwi' (Badawi) in Malaysia was taking care of pigs."[39] The joke insinuated that Mr. Abdullah was not a good Muslim by dealing with pigs. The lack of government attention to the outbreak is thus understandable. Chinese and others' questioning of the prevailing JE hypothesis only fell onto deaf (Malay) ears.[40]

A low level of democracy and the way risks were constructed clearly led to the delayed admittance of mistake in diagnosis. These factors were exacerbated, but not caused by, the highly-charged political environment at the time. Malaysia experienced a political earthquake in September 1998 when Deputy Prime Minister Anwar Ibrahim was sacked for challenging his boss's policy to cope with the financial crisis of 1997.[41] Anwar was subsequently detained and brought to court in September with charges of sodomy. As the trial went on, his wife led massive street demonstrations and joined forces with opposition parties to protest against the ruling coalition. Middle-class Malays angered by the treatment of Anwar flocked to support PAS and DAP. This tense political environment must have distracted policymakers from the outbreak.

Yet eventually government officials were forced to acknowledge, partially and belatedly, that the outbreak was caused by a new virus. Why? First, while the ruling UMNO controlled most mainstream media through ownership, there were alternative channels of information, especially online ones. One of the first voices that questioned the JE hypothesis in fact came from a foreign epidemiologist working in West Malaysia who posted her email on an online forum of Malaysian health professionals, questioning the government's claim that the JE virus was the cause. Another early dissenting voice was reported in the Chinese newspaper *Nan Yang Siang Pau* in December 1998. Chinese papers were subject to much less state control than Malay-language ones. As the epidemic spread, it became harder for the government to persuade people not to believe in alternative viewpoints. A second factor that apparently forced the government's hand was the action of thousands of pig farmers and workers, who fled their homes and farms despite the government's contrary advice. This mass action threatened a dangerous breakdown of order and national security.

Turning to the mitigation phase, all three variables exerted their influences on the political process. The blame game in this phase was particularly shaped by the federal structure of the Malaysian state. Malaysia is organized as a federation comprising 13 states. Constitutionally, state governments are vested with significant power in regards to land, mining, agriculture, forestry, local administration, housing, and local markets.[42] Federal and state governments share responsibility for animal

production, protection of wild animals, veterinary services, and animal quarantine, among others.[43] Although the federal government has supreme authority and controls major sources of revenues, federal policies touching on issues in which states have constitutional authority require negotiations or political resources to be expended.

The blame game started when the federal Minister of Housing and Local Government revealed that state governments had agreed with a federal directive many years ago to relocate pig farms for better disease protection and sanitary conditions.[44] According to him, the federal government did not support closing down pig farms which would cause unemployment and dependence on imported pork, but it did call for relocation of polluted farms to improve bio-security.[45] Rejecting the federal government, the top government official in Perak, the state most affected by the epidemic, claimed that federal ministries had the power to make farmers relocate by issuing orders related to public health.[46] This official also blamed "illegal pig farm operators" for what happened. The state of Melaka also claimed that it had cancelled all pig farming licenses in 1991, meaning the 100 farms rearing 150,000 pigs that still existed in the state in 1999 were operating illegally.[47] Without explaining why such a large number of "illegal" farms could exist, the state government vowed that they would be closed down in one year "to ensure the safety of all." In response, the Chairman of the Malaysian Livestock Federation (FLFAM), an association of (Chinese) livestock producers, came to the defense of pig farmers, claiming that they had agreed to relocate but state governments had not approved land for building new farms.[48] He called on the federal government to help, implicitly suggesting that a deadlock existed between pig farmers and state governments.

The blame game also reflected the role of boundary institutions that maintained the racial cleavage between Malays and Chinese. Throughout colonial and postcolonial periods, government laws and regulations in political, economic, and cultural spheres have sharply distinguished Chinese from Malays. British colonial policy of racial segregation reflected in part turn-of-the-century Western racism and in part the colonial government's desire to protect Malay farmers from more commercially astute Chinese migrants.[49] The political system with ethnic-based political parties forged at the time of independence further reinforced racial cleavages among Malays, Chinese, and Indians. Since 1971, the Malaysian government has implemented affirmative programs aimed at addressing the racial inequities created in part by colonial policy.[50] While quotas in university admissions, government employment and business ownership have helped Malays as a group to achieve relative equality with Chinese, these programs have deeply alienated Chinese and Indians.[51] These boundary institutions in political, economic, and cultural spheres underlay the attitudes of some Malays who laid the entire blame on Chinese while being silent about the hostilities toward Chinese pig farmers by many Malay politicians at the state level. These Malays blamed "greedy" pig farmers for ignoring health regulations and the government for ignoring (Malays') anti-pig farms protests. The outbreak was considered "[God's] warning."[52] Yet many pig farms had only temporary occupation leases, which gave them no incentive to invest in costly sanitary equipment. Many state governments had refused to give them new lands or renew their licenses.

As the blame game went on, a struggle developed around compensation. Farmers wanted to be compensated with RM 200 for a culled pig, and harassed government

officials at community meetings to demand compensation.[53] Chinese community leaders who called for adequate compensation argued that sufficient compensation would give incentives to farmers to comply with culling. Prime Minister Mahathir Mohamad initially ruled out compensation. Thanks to Chinese collective efforts,[54] he eventually relented and agreed to pay only RM 50 for every pig in affected areas and RM 10 for those in safe areas.[55] On balance, the government treated the matter as a communal rather than a national affair.[56] The MCA, not a government agency, was assigned the task of fundraising to help pig farmers. The MCA proposed a lottery to raise money despite the knowledge that lottery was prohibited in Islam and would not attract Muslim buyers. This proposal indicated and further reinforced the prevalent public perception that the problem was a Chinese one. Thus the way risks were perceived critically influenced government policy to fight the epidemic.

The same factors, including boundary institutions and federalism, continued to shape the rebuilding phase. The improvement of sanitary conditions in pig farms has been viewed by Chinese as unfair burden imposed on them by anti-Chinese Malays. Chinese resistance is in turn considered by Malays as motivated by pure greed. Governments in several overwhelmingly Muslim states no longer issue new licenses for pig farms.[57] Malay politicians in other states have also sought to adopt similar measures, only to stir up Chinese opposition.[58] In late 2007, the state of Melaka sought to use force to reduce the number of pigs in the state by half, leading to massive Chinese protests.[59] Despite the hardened attitude by many state governments toward pig farming and the uncertain future of the industry, surviving producers are apparently not concerned about improving farm biosecurity.[60] As argued above, this is caused in part by the federal system in which land use is under state control, and state governments have found many excuses to delay allocating land for relocating pig farms.

Economically, despite government neglect and Muslim hostility, the sector has been able to gradually recover, thanks to strong Chinese demand for the product, Chinese political clout in some local governments, and Malaysia's geographical proximity to Singapore (which closed all its pig farms in 1990). By 2005, the industry had become profitable again because rising demand and limited supply caused prices to soar. Yet supply capacity has never recovered to pre-1999 level. The industry arguably could have done much better had it received government support.

THAILAND'S BIRD FLU OUTBREAK, 2003-2004

Thailand's most serious livestock disease outbreak in recent years (2003-2004) was caused by the highly pathogenic avian influenza (HPAI). Early incidents of massive chicken deaths were reported in November 2003 but the government declared that the causes were diarrhea and bronchitis, but not bird flu.[61] Limited quarantine measures were carried out but these appeared ineffective as the disease spread and the number of culled chickens reached tens of millions by mid-January. By this time, several veterinarians, opposition politicians and the Consumer Power Association publicly accused the government of lying and covering up the outbreak to protect large poultry producers. Yet government officials from the Prime Minister to the Agriculture Minister simply repeated their denials. They only conceded in late January that the deaths were caused by the bird flu virus.

Once the epidemic had been admitted, the government moved quickly to set up "red zones" for quarantine purposes while still trying to protect producers. The government rejected outright vaccination as an option, citing that vaccination did not save China from a second outbreak.[62] The proposed measures to prevent future outbreaks included a ban on fowl transport, the registration of all fowl farmers, the insertion of microchips in fighting cocks, and increased disease surveillance and slaughterhouse inspection. Loans and land were also provided to "landless farmers" to raise chickens in 20 chicken-farming estates to be set up in the near future.[63]

The announced measures received praises from poultry exporters and their association but earned prompt condemnations from various quarters. Focus on the Global South, a Bangkok-based foreign NGO, defended small farmers and criticized the Thai government for acting in the interest of large poultry exporters.[64] The microchip idea was denounced as a scheme to enrich politicians.[65] The Moor-Duck and Goose-Farmers and Traders' Club threatened to demonstrate if the transport ban was not lifted in seven days. The Fighting Cock Professional Promotion Association opposed the ban on vaccination and demanded that it be lifted after three months. In response, the Prime Minister allowed the vaccines to be used for fighting cocks but not farm chickens. The idea of microchips was also dropped.

Why did Thai politicians deny the epidemic for months before admitting it? There are similarities and differences between Thai and Malaysian cases. Consider first the level of democracy. Like in Malaysia but to a lesser extent, Thai politics is dominated by politicians and bureaucrats. Decision-making at all levels lacks transparency and dissenting voices are often not allowed. Government officials apparently suspected the AI virus as the cause of the outbreak but tried to manipulate suspicious farmers and local journalists to believe otherwise.[66] Although no officials would admit to covering up the outbreak, intense political pressure was imposed on Thai public officials and medical professionals to keep quiet.[67] Even after having declared the outbreak, the government continued to manipulate public information about the event. The Deputy Prime Minister even said a public panic worried him more than the outbreak. He declared that only designated spokespersons of the government, the Ministry of Health and the Ministry of Agriculture were allowed to issue public comments.[68] Thai system may appear more democratic than Malaysia but its checks and balances apparently fell short of guaranteeing transparency.

The lack of transparency had to do with the great political power of livestock corporations which would stand to lose tremendously if the outbreak had been announced. Thailand's successful livestock sector ranks third or fourth in the world by the exported quantity of frozen chicken meat. The sector is dominated by a few poultry businesses. The largest firm is Charoen Pokphand (CP) Group, which is also Asia's largest agro-conglomerate. CP began as a small family store selling animal feed and was a pioneer in poultry production for export in the 1970s.[69] In 1995, the Group's total turnover was US$4 billion and it employed about 100,000 employees in 20 countries, engaging not only in poultry but also in retailing, real estate, telecommunications, and petrochemicals.[70] Its economic clout would be sufficient to make politicians and officials listen, but the firm also enjoyed direct access to the government: the son-in-law of CP's founder, Dhanin Cheavaranont, was a cabinet member under Thaksin.[71]

There is circumstantial evidence that poultry exporters had a hand behind the failure of the Thaksin government to announce the outbreak early. When accused of covering up the outbreak, CP executives admitted that they were aware of the possible presence of the AI virus in Thailand since November 2003 and had then "provided the information to the government."[72] Yet they said it was not their responsibility to declare the outbreak. At the same time, they loaned the government US$5 million to compensate farmers whose animals were culled, which may be viewed as bribes to the farmers just to keep their mouths shut.[73] Finally, a trade unionist in a CP factory testified that workers in the factory had to work overtime during November and December to process an increased amount of meat, part of which came from apparently sick chickens.[74] If this account was true, poultry companies were hiding information while lobbying the government to delay announcing the outbreak.

Although the Thai government may be easily captured by business interests, political power is more evenly distributed in Thailand compared to Malaysia. Thailand had a much weaker ruling party and freer press than Malaysia did. While UMNO had been in power since independence, the coalition led by Thaksin's TRT party assumed power in 2001 for the first time. There were numerous political parties in Thailand, and except one or two, most had recent origins. Parties were created to win elections and most did not survive a few electoral seasons. The dominant institution in Thai politics has been the military, which would have been able to suppress information more effectively had it had any stake in the outbreak. Furthermore, Malaysia did not (and still does not) have independent English-language newspapers, such as Thailand's *The Nation* and *Bangkok Post,* despite the greater use of English in Malaysia relative to Thailand.

Thailand also differed from Malaysia on the social construction of risks and the level of centralization. Thais are predominantly Buddhist, and the outbreak concerned chickens and not pigs. The outbreak was always viewed as a national problem. Unlike Malaysia, a centralized state structure helped Thailand avoid the confusion between federal and local responsibilities during the mitigation phase. No difficulties in coordination between the central government and local ones were reported. Politics was at the heart of the blame game in Thailand as in Malaysia, but blaming occurred primarily between departments of the central government and between the ruling coalition and opposition parties. The National Health Office under the Ministry of Health openly criticized the Department of Livestock Services under the Ministry of Agriculture for covering up the outbreak.[75] Opposition politicians called for a non-confidence vote and demanded the resignation of Ministers of Health and Agriculture.[76] Yet there was no finger-pointing between central agencies and local governments as in the case of Malaysia. Thailand's unitary structure made the central government the focal point of conflicting claims, whereas the Malaysian federal system created confusion about who and in what areas would have the final responsibilities.

Thailand's imperfect democracy displayed mixed roles in the mitigation phase as it did in the announcement phase. On the one hand, corporate interests still shaped government policies at the expense of other groups. A billionaire before entering politics, Prime Minister Thaksin went on radio a week after the announcement of the outbreak, pledging to use his own money to pay *Baht* three million to the family of any victim of bird flu who died after eating *cooked* chicken.[77] This move may have been

aimed to calm the public, but it was certainly carried out with the interests of poultry producers in mind. Thaksin's statement protected all producers, large or small, from being destroyed financially by consumers' fear and rejection of chicken. At the same time, his government was unequivocal in placing the blame for the outbreak on backyard farmers but not on those farmers contracted out by CP and other large producers that employed closed-house technology.[78] Of course, that was also the position adopted by large poultry businesses such as CP.[79] The government also came out strongly against vaccination as an approach to stop the outbreak. This decision can certainly be justified on scientific grounds, but it would be hard to deny the fact that poultry exporters had a big stake in this issue[80] and must have pressured the government to reject vaccination.

Despite the political influence of big poultry exporters, Thailand's civil society, an indicator of democracy, did play an important role in the process. In opposition to the close alliance between big poultry businesses and the government were a wide range of advocacy organizations, as mentioned above. These organizations effectively defended the interests of smallholders and other affected groups that had no access to policymakers and that were being blamed for the outbreak. Thailand's civil society emerged from the democratizing process since the early 1990s. Competitive elections for national and local legislatures now make rural voters' support crucial to political parties. Furthermore, farmers' groups now stage regular protests to demand price supports, land compensation, and other favorable policies that the government can no longer suppress or ignore.[81] While it may be easy to buy the votes of many poor farmers and co-opt their organizations,[82] politicians have also sponsored many policy initiatives designed to promote agricultural production.[83]

In the rebuilding phase, the government's program continued to show the strong political influence poultry businesses enjoyed. The Thai government's support for its poultry exporters sharply contrasted with Malaysia. When Japan banned the import of Thai frozen chicken, Thailand's Minister of Commerce threatened to retaliate with a ban on Japanese cars.[84] After another outbreak occurred in July 2004, the government proposed a bailout plan for large poultry producers with excess stock. Under this scheme, taxpayers' money would be used to purchase 100,000 tons of frozen poultry meat from the three largest poultry firms.[85] The meat would be exported by the government with possible barter deals with Russia and Sweden.

Full government backing was clearly an important factor explaining the different outcomes in Thailand compared to Malaysia. Thailand's large poultry exporters such as CP have shown surprising resilience after losing millions of dollars in poultry exports and in stock prices.[86] Even before the outbreak hit, CP executives were seeking to develop market in Japan for high-priced precooked chicken meat. Now no longer able to export uncooked chicken following the outbreak, they have successfully switched to cooked meat, exports of which rose by 80% from 193,000 tons in 2004 to 350,000 tons in 2005.[87] This move actually helped them in the long run to enter processing activities with greater value-added and to avoid rising competition from newcomers like China which rely on lower labor costs.

VIETNAM'S BIRD FLU OUTBREAK, 2003-2004

Among Southeast Asian countries, Vietnam has suffered the most from recurrent bird flu outbreaks (2003-2008).[88] This section examines the first bird flu outbreak during 2003-2004. The first signs of the virus were detected as early as July 2003 but the disease spread unadvertised as the government adopted a policy of quiet mitigation.[89] In September, there were some brief reports in local newspapers of suspicious chicken deaths and farmers selling off dead chickens. These reports dropped vague hints of a possible bird flu epidemic but no open mentioning of it was heard in the press or any other public forums until late December.[90] By early January 2004, when outbreaks had occurred in more than 10 out of 64 provinces, the government formally announced the epidemic to the world.

After the official announcement, chaos reigned. The central government ordered provinces to undertake quarantine and culling measures but provinces, especially poorer ones, dragged their feet while demanding central subsidies. Many provinces were believed to hide outbreaks to avoid shouldering the costs of compensation and culling.[91] To nudge local governments into action, three Deputy Prime Ministers and six Ministers were sent around the country. Feeling that the normal chain of bureaucratic command had broken down, the Communist Party's Politburo intervened with an order to mobilize party organizations into the act.[92] Subsequently, a donor-funded vaccination campaign was launched in mid-2004 but outbreaks appeared again later in the year, in late 2005 and, most recently, in late 2006 and early 2007.

Why was Vietnam slow to declare an outbreak? Consider first the level of democracy. Among the three cases, Vietnam scores lowest on democratic indicators. The Vietnamese Communist Party monopolizes power, making all important policy and personnel decisions. Most policies are made by Party officials doubled as state executives in closed committees outside of public view. Elected organs (e.g. the National Assembly) and mass organizations (e.g. the Trade Union) have little power although their collaboration is often sought to legitimize executive decisions and to implement policies. The Vietnamese political system is thus highly authoritarian and normally, officials are accountable only to their superiors but not to any social groups.

An authoritarian structure explains why no decision was taken even though relevant authorities had been warned about the threat of bird flu in 2003. A livestock official revealed that informal suggestions were made to Ministry of Agriculture officials in late 2003 for an aggressive response to the suspicious poultry deaths, but top leaders either were not informed or failed to take action.[93] The excuse for not declaring the outbreak given later by these officials was the fear that a public announcement would hurt tourism.[94] Government officials were not concerned about how an early announcement and quarantine would *help* millions of farmers, suggesting the latter's lack of representation in the system.

In any country, when authorities decide not to act, it falls on those outside the government to blow the whistle. We have seen that this happened in Malaysia and Thailand. Here, the very low level of democracy in Vietnam exerted an impact on the process in the sense that effective government control of information and association prevented the emergence of whistle-blowers. While Vietnam has loosened up recently, there are still no private media, private publishers, or autonomous advocacy

associations. Censorship is institutionalized through Party committees organized for every newspaper, radio and television station, publishing house, professional association, research institute, and university department. With few exceptions, all positions of authority in these institutions are occupied by party members working within the Party hierarchy and being bound by Party discipline much more than by their professional or public commitments. Sensitive information or alternative views from official policy must be cleared in advance by Party committees before being disseminated. Violations of this rule could make officials vulnerable to Party disciplines.

Above all, the Party's Central Commission on Culture and Ideology holds weekly meetings with editors-in-chief from all major state-owned media to tell them what news to report and how to report. To be sure, the system never had complete control over information even in its heydays. Savvy journalists and conscientious intellectuals have never stopped pushing the limits whenever possible, as noted above in the publication of a few reports of suspicious chicken deaths prior to the official announcement. However, information is far more systematically controlled in Vietnam than Malaysia or Thailand. In the latter countries, alternative theories of the disease or news of suspicious livestock deaths were independently circulated while opposition parties challenged officials in public forums on the matter. In Vietnam, in contrast, tight state control over information explains why news of the outbreak was effectively covered up until the government decided to announce the outbreak on January 8, 2004.[95] The checks on the power of the Party-state were weak as evidenced in the fact that the late announcement was only briefly criticized in the press[96] and no officials took responsibility for it.

Vietnam's relatively low level of centralization also contributed to the delayed announcement of the epidemic. Vietnam is in theory a unitary state under the unified leadership of a hierarchical communist party. Yet central powers in Vietnam are much more limited than expected. The principle of centralization is circumvented by two mechanisms. The first mechanism is central-local power-sharing in the Central Committee of the Communist Party, the top policymaking body in the country. Provincial leaders are well represented in this Committee (one seat for every province and two each for Hanoi and Ho Chi Minh City), and together they form the largest bloc in this body. The second mechanism is through dense and informal patronage networks linking central and local factions. Local governments often ignore central policy with impunity: for example, at least half of provincial governments have been found to violate investment laws in order to attract more foreign investment to their provinces.[97] Given their institutional power, provincial leaders could safely get away if they wished to hide outbreaks for whatever reasons.

Turning to the mitigation phase, democracy and centralization again explain well the outcome in Vietnam. During this phase, few opinions different from those of officials were heard on public forums. Besides compensation which was inadequate and late to come, officials made no efforts to protect farmers or the industry with a view towards its eventual recovery. The blame was placed entirely on small holders (and sometimes wildlife) and the plan was to restructure the industry to eliminate their role. The state-sponsored Farmers' Association, which was supposed to represent the interests of farmers, never came to the defense of livestock producers. Many urban governments banned all livestock raising activities outright. Ho Chi Minh City government declared a "Three-No's" campaign, i.e. no eating, no keeping and no transporting poultry.[98] The

state-controlled media, while frankly reporting weak government coordination, contributed to the panic,[99] which hurt those producers whose stock was not affected by the disease. Only months after the poultry sector had suffered devastating losses, less from culling than from losses of customers and tumbling prices, was the Minister of Agriculture seen on television eating cooked chicken.

Compared to Thailand or even Malaysia, Vietnam's private producers lacked political protection. Many farmers volunteered to cull their birds because nobody would buy their chicken, which continued to consume food and cost them money.[100] Big producers were hit as much as smallholders. The construction of CP's fourth feed factory in Vietnam was suspended for two years.[101] After the Vietnamese government banned the sale of chicken, Thai-owned Kentucky Fried Chicken franchised stores in Vietnam had to close shops for weeks before reopening and changing the menu to serve fish instead of chicken.[102] This led one journalist to quip that "KFC" now stood for Kentucky Fried Catfish. The same KFC chain in Thailand continued to serve chicken and actually did better during the outbreak because their restaurants were the only few places where Thais could eat chicken without worrying about the quality.[103] Besides CP and the KFC chain, Cargill Vietnam was forced to close down its chick breeding farm in 2005. While the powerful interests of poultry exporters in Thailand corrupted politics, legitimate interests of poultry producers in Vietnam were not adequately protected because they were denied representation in the political system.

Vietnam's low degree of centralization continued to be a factor in the mitigation phase. As mentioned above, after the announcement of the outbreak, the central government called on all provinces to strengthen their oversight over the production and trade of chickens and ducks. Yet many provinces demanded subsidies from the central government *before* complying with central orders.[104] This practice can be traced to the socialist past when all revenues were collected and distributed by the central government based on *ad hoc* negotiations. Since reform, provinces have been permitted to develop their own fiscal base, but a few years ago only about 10 out of 61 provinces and provincial-level cities were rich enough to be either fiscally self-sufficient or to contribute surplus funds to the central budget.[105] While decision-making power was fragmented, fiscal power was not similarly dispersed. Too many provinces are still dependent on the central government. The reliance on *ad hoc* negotiations on fiscal matters under these conditions led inevitably to slow responses to emergencies at the provincial level.

During the rebuilding phase in Vietnam, wildlife and small farmers continued to be blamed. A low level of centralization generated various approaches to compensation and reform across local governments. Provincial governments were responsible for compensation, and poor provinces offered very low compensation to farmers for their culled poultry.[106] Since 2004, the central government has requested foreign funds for restructuring the sector. It has also ordered provinces to come up with plans to reform livestock farming practices with the goal of reducing the stock owned by smallholders.[107] Governments of large cities have started drawing plans to build new slaughterhouses but other local governments have not done so.[108] Some improvements in trading practices in the poultry market have been observed together with a greater popularity of frozen chicken among urban consumers.[109] Yet poor sanitary standards remain a real problem and have contributed to subsequent outbreaks.[110]

Full recovery dragged on for many years because bird flu outbreaks returned five more times. In subsequent outbreaks, both central and local governments issued tough regulations that banned livestock keeping in cities, towns, "places near schools and residential areas," livestock transport on passenger vehicles, and livestock slaughtering out of designated areas.[111] The mode of policymaking continued to reflect the lack of inputs in the process from farmers and businesses. This lack of inputs in turn reflected the low level of democracy in Vietnam, which allowed the state to ignore the legitimate needs of a large number of people.

CONCLUSION

The politics of epidemics of the kind examined here has not received much attention from both political scientists and public health specialists. These epidemics are on the rise recently because of exploding demand for livestock products in industrializing countries. Besides the obvious threat to human lives, these epidemics are especially important because they affect a large productive sector and the livelihood of millions of farmers.

The case studies illustrate how important political factors at the national level shaped government responses to recent epidemics. The inadequacy of democracy accounts for delays in making public announcements of outbreaks in Thailand and Vietnam. The same factor explains in part the failure of the Malaysian government to correct its mistake in diagnosing the cause of the outbreak. The lack of transparency at various degrees in all three cases led to late announcements and greater damages than would have been the case. Insufficient checks and balances explain the different outcomes during the mitigation phase in Malaysia, Thailand, and Vietnam. Producers suffered the most in Vietnam because they had no voice in the system. In Thailand, the great political influence enjoyed by poultry exporters was balanced by political opposition and strong civil society groups, generating a more equitable outcome.

Like levels of democracy, varying levels of centralization in the three cases contributed significantly to the outcomes. A low degree of centralization accounted for the slow and ineffective responses to epidemics in Malaysia and Vietnam during all three political phases. In the former country, the fact that land allocation rights rested with local governments was a critical factor. In the latter country, the dispersion of power but not fiscal capacity and the reliance on *ad hoc* bargaining between local and central governments accounted for the ineffective responses to the bird flu epidemic.

The social construction of risks is found to be a central factor in the Malaysian case but not in the other two. The epidemic involved pigs, which split the country along its ethnic and religious fault lines. The Muslim sensitivity to pigs led to the government's neglect of the sector and the epidemic. The epidemic was thus framed and dealt with as a communal but not national crisis.

State structure, democracy and the social construction of risks do not make up all aspects of politics; however, these are systemic variables that represent the basic institutional setup of a political system and the fundamental cleavages in a society. These variables not only shape the manner by which governments respond to epidemics, but also contribute to state capacity by affecting state ability to process information, make decisions, and mobilize political and social resources. While state capacity is also

determined in part by bureaucratic competence, elite unity, and the general level of socio-economic development, these factors did not seem to explain Thailand's better performance relative to Malaysia and Vietnam. My interviews suggest that Malaysian bureaucrats were just as competent and dedicated as their Thai counterparts. Thai elites bickered openly and occasionally violently throughout the period examined here, and Malaysia is nearly twice as rich as Thailand which is in turn more than twice as rich as Vietnam (measured by GDP-PPP per capita).

By examining the national politics of epidemics, this study has two policy implications for public health governance. First, my analysis suggests that epidemics originating from or transmissible through livestock have considerable redistributive impact on various social groups. For effective disease control, governments and global health institutions have to sort out the political economy of livestock production and consumption in affected countries. The narrow approach that treats these epidemics as mere health challenges helps only the victims of the disease and will not work to create sustainable disease control frameworks. Second, the cases indicate that global schemes for monitoring and collaboration for disease control may have only limited impact if they ignore politics at the national level. Global solutions to epidemics require collaboration with national governments which must be committed to providing greater transparency in disease reporting, making long-term planning for land use in relation to livestock production, and opening up dialogues across social cleavages on the dangers of zoonoses.

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[2] Landis A. MacKellar, "Pandemic Influenza: A Review," *Population and Development Review* 33 (2007): 429-451.

[3] The diseases victimize people relatively soon after exposure. To be sure, the politics of AIDS and tuberculosis are interesting and significant in their own ways. For example, see Evan Lieberman, *Boundaries of Contagion: How Ethnic Politics Have Shaped Government Responses to AIDS* (Princeton: Princeton University Press, 2009); S. Elbe, "Our epidemiological footprint: The circulation of avian flu, SARS, and HIV/AIDS in the world economy," *Review of International Political Economy* 15, no. 1 (2008): 116-130; Samuel Roberts, *Infectious Fear: Politics, Disease, and the Health Effects of Segregation* (Chapel Hill, NC: University of North Carolina Press, 2009); Peter Baldwin, *Disease and Democracy: The Industrialized World Faces AIDS* (Berkeley: University of California Press, 2005); Geir Honneland and Lars Rowe, *Health as International Politics: Combating Communicable Diseases in the Baltic Sea Region* (Aldershot, Hants, England: Ashgate Pub., 2004); Elizabeth Fee and Daniel Fox, *AIDS: The Making of a Chronic Disease* (Berkeley: University of California Press, 1992).

[4] Christopher Foreman, *Plagues, Products & Politics: Emergent Public Health Hazards and National Policymaking* (Washington: The Brookings Institution, 1996), 7-8.

[5] The animal origin of SARS is not as clear and confirmed as that of Avian Influenza.

[6] Andrew T. Price-Smith, *Contagion and Chaos: Disease, Ecology, and National Security in the Era of Globalization* (Cambridge, Mass: MIT Press, 2009).
[7] Dennis Hoffman, *Asian Livestock to the Year 2000 and Beyond* (FAO-RAP Working paper series ½, Rome, 1999);
for a broader argument see M. L. Barreto, "Science, policy, politics, a complex and unequal world and the emerging of a new infectious disease," *Journal of Epidemiology and Community Health* 57, no. 9 (2003): 644-645.
[8] An exception is the case studies of Thailand, Vietnam, Indonesia and Cambodia in Ian Scoones, ed., *Avian Influenza: Science, Policy, and Politics* (London: Earthscan, Ltd., 2010). For a review, see MacKellar, "Pandemic Influenza: A Review."
[9] For example, see Paul Tambyah and Ping-Chung Leung, eds., *Bird Flu: A Rising Epidemic in Asia and Beyond?* (Singapore: World Scientific Publishing, 2004); Institute of Medicine, *The Threat of Epidemic Influenza: Are We Ready?* (Washington: The National Academic Press, 2005); Nicholas Thomas, "The Regionalization of Avian Influenza in East Asia: Responding to the Next Epidemic (?)," *Asian Survey* 46, no. 6 (2006).
[10] Grant Lewison, "The reporting of the risks from severe acute respiratory syndrome (SARS) in the news media, 2003-2004," *Health, Risk & Society* 10 (2008): 241-262; L. H. Chan, P. K. Lee, and G. Chan, "China engages global health governance: Processes and dilemmas," *Global Public Health* 4 (2009): 1-30; Tsung-Jen Shih, Rosalyna Wijaya and Dominique Brossard, "Media Coverage of Public Health Epidemics: Linking Framing and Issue Attention Cycle toward an Integrated Theory of Print News Coverage of Epidemics," *Mass Communication and Society* 11 (2008): 141-160; Haishan Yu, "Talking, Linking, Clicking: The Politics of AIDS and SARS in Urban China," *Positions: East Asia Cultures Critique* 15 (2007): 35-63; Deborah Davis and Helen Siu, eds., *SARS: Reception and Interpretation in Three Chinese Cities* (New York: Routledge, 2007); Arthur Kleinman and James Watson, eds., *SARS in China: A Prelude to Epidemic?* (Stanford: Stanford University Press, 2006); Mely Caballero-Anthony, "SARS in Asia: Crisis, Vulnerabilities, and Regional Responses," *Asian Survey* 45, no. 3 (2005): 475-495; David P. Fidler, *SARS: Governance and the Globalization of Disease* (New York: Palgrave Macmillan, 2004); John Wong and Yongnian Zhang, eds., *The SARS Epidemic: Challenges to China's Crisis Management* (Singapore: World Scientific Publishing, 2004); Christine Loh, *At the Epicentre: Hong Kong and the SARS Outbreak* (Hong Kong: Hong Kong University Press, 2004).
[11] For example, see Stella R. Quah, ed., *Crisis Preparedness: Asia and the Global Governance of Epidemics* (Stanford: Shorenstein Asia-Pacific Research Center, 2007); Jesper Gronvall, "Mad Cow Disease: The Role of Experts and European Crisis Management," in *Managing Crises: Threats, Dilemmas, Opportunities*, eds. Uriel Rosenthal, R. Arjen Boin and Louise Comfort (Springfield, Ill.: Charles Thomas, 2001); see also Foreman, *Plagues, Products & Politics*.
[12]For example, see Elbe, "Our epidemiological footprint"; Sarah Dry, *Epidemics for All? Governing Health in a Global Age* (STEPS Working No. Paper 9, Brighton, UK: STEPS Centre, 2008); Mark W. Zacher and Tania J. Keefe, *The Politics of Global Health Governance: United by Contagion*. (New York: Palgrave Macmillan, 2008); and Fidler, *SARS: Governance and the Globalization of Disease*. An exception is Scoones, ed., *Avian Influenza: Science, Policy, and Politics*, which analyzes politics of Avian Influenza at the local, national, and global levels. For a criticism of the literature for neglecting the role of states in international framework for disease control, see James Ricci, "Global Health Governance and the State: Premature Claims of a Post-International Framework," *Global Health Governance* 3, no. 1 (Fall, 2009): 1-18.
[13] Foreman, *Plagues, Products & Politics*, 2 offers a different scheme based on five broad and overlapping tasks facing policymakers: outbreak discovery, field investigation, field intervention, the regulation of products and processes, and biomedical research.
[14] Constance Nathanson, "Disease Prevention as Social Change: Toward a Theory of Public Health," *Population and Development Review* 22, no. 4 (1996): 617-621.
[15] Ibid.
[16] Varun Gauri and Evan Lieberman, "Boundary Institutions and HIV/AIDS Policy in Brazil and South Africa," *Studies in Comparative International Development* 41, no. 3 (2006): 47-73.
[17] Baldwin, *Disease and Democracy*, 11-13.

[18] Varun Gauri and Peyvand Khaleghian, "Immunization in Developing Countries: Its Political and Organizational Determinants," *World Development* 30, no. 12 (2002): 2109.
[19] J. A. T. Granados, "Politics and health in eight European countries: A comparative study of mortality decline under social democracies and right-wing governments," *Social Science & Medicine* 71, no. 5 (2010): 841.
[20] Nathanson, "Disease Prevention as Social Change," 624.
[21] Gauri and Lieberman, "Boundary Institutions and HIV/AIDS Policy in Brazil and South Africa," 56-57.
[22] Nathanson, "Disease Prevention as Social Change," 614-615.
[23] For example, see Roberts, *Infectious Fear: Politics, Disease, and the Health Effects of Segregation*; Laura Eichelberger, "SARS and New York's Chinatown: The politics of risk and blame during an epidemic of fear," *Social Science and Medicine* 65, no. 6 (2007): 1284-1295; Marcos Cueto, *Cold War, Deadly Fevers: Malaria Eradication in Mexico, 1955-1975* (Washington, D.C.: Woodrow Wilson Center Press, 2007).
[24] Gauri and Lieberman, "Boundary Institutions and HIV/AIDS Policy in Brazil and South Africa," 47.
[25] Of course, there are other factors. For example, see Peter Baldwin, *Contagion and the State in Europe, 1830-1930* (New York: Cambridge University Press, 1999) for the role of historical precedents; Gauri and Khaleghian, "Immunization in Developing Countries: Its Political and Organizational Determinants," for that of global policy environment and contacts with international agencies. For the role of foreign aid, see Scoones, ed., *Avian Influenza: Science, Policy, and Politics*; and for the importance of international politics, see Cueto, *Cold War, Deadly Fevers*. I do not examine historical precedents here because these events in developing countries are difficult to evaluate for lack of data. Global policy environment and international politics were nearly identical for the three case studies in this paper, while the role of foreign aid for a nearly identical set of cases has been examined in Scoones, ed., *Avian Influenza: Science, Policy, and Politics*.
[26] Baldwin, *Contagion and the State in Europe*, chapter 3.
[27] This was the situation in China when the SARS outbreak occurred. See Yongnian Zheng and Lye Liang Fook, "SARS and China's Political System," in Wong and Zhang, eds., *The SARS Epidemic: Challenges to China's Crisis Management*; and Tony Saich, "Is SARS China's Chernobyl or Much Ado about Nothing?" in Kleinman and Watson, eds., *SARS in China: A Prelude to Epidemic?*
[28] Priscilla Wald, *Contagious: Cultures, Carriers, and the Outbreak Narrative* (Durham, NC: Duke University Press, 2008).
[29] *Utusan Malaysia* [Malaysian Affairs], November 21, 1998.
[30] Interview, Putrajaya, December 8, 2005.
[31] *Berita Harian* [Daily News], November 25 and 28, 1998.
[32] *New Strait Times*, January 7, 1999.
[33] For a technical description of the virus and the disease, see M.N. Mohd Nor, C.H.Gan, and B.L. Ong, "Nipah virus infection of pigs in Peninsular Malaysia," *Rev Sci Tech* 19, no.1(2000):160-5.
[34] Fogging and vaccination against JE were useless simply because the virus was not JE and not transmitted through mosquitoes but through direct contact with infected pigs.
[35] Recently, the power of BN has weakened with electoral victories of a coalition of opposition parties, including the People's Justice Party led by Anwar Ibrahim.
[36] Harold Crouch, *Government and Society in Malaysia*. (Ithaca, NY: Cornell University Press, 1996), 56.
[37] The Minister of Health told his staff that all dissemination of information to the public had to be approved in advance by their seniors (*Berita Harian*, February 25, 1999). See also Abd. Jalil Ali, "Mengapa Kita Lambat dan Lembab Menangani Masalah JE? [Why are we so slow and clumsy in dealing with the JE problem?]" *Dewan Masyarakat* [People's Forum] (April, 1999): 66; and interview of Dr. Chan Chee Khoon, "A Local Response to Disinformation," *Aliran Monthly* (May 3, 1999).
[38] Interview, Kuala Lumpur, December 6, 2005.
[39] *Utusan Malaysia*, April 12, 1999.
[40] Southeast Asian Affairs, *The Scourge of the Nipah Virus* (Singapore: Institute of Southeast Asian Studies, 2000).
[41] The following is based on Meredith Weiss, "What Will Become of *Reformasi*? Ethnicity and Changing Political Norms in Malaysia," *Contemporary Southeast Asia* 21, no. 3 (1999): 424-450.
[42] "State List," Constitution of Malaysia.

[43] "Concurrent List," Constitution of Malaysia.
[44] *Utusan Malaysia*, January 10 & 13, 1999.
[45] *The New Straits Times*, February 19, 1999.
[46] *Utusan Malaysia*, February 17, 1999.
[47] *Utusan Malaysia*, April 3, 1999.
[48] *Utusan Malaysia*, March 9, 1999.
[49] Charles Hirschman, "The making of race in colonial Malaysia: political economy and racial ideology," *Sociological Forum* 1, no. 2 (Spring 1986): 330-361.
[50] Crouch, *Government and Society in Malaysia*, 152-176.
[51] Lim Teck Ghee, Alberto G. Gomes and Rahman Azly, *Multiethnic Malaysia: Past, Present, and Future* (Kuala Lumpur, Malaysian Institute of Development and Asian Studies. 2009); Hari Singh, "Ethnic Conflict in Malaysia Revisited," *Commonwealth and Comparative Politics* 39, no. 1 (2001): 42-65.
[52] Abd. Jalil Ali, "Jangan Tunggu Sehingga Bom Jangka Meletup!" [Don't wait until this time bomb explodes!] *Dewan Masyarakat* (June 1999): 66.
[53] *Utusan Malaysia*, April 1, 1999.
[54] Several Chinese social organizations sent a joint memorandum to the government and staged a peaceful demonstration outside the Health Ministry (*Utusan Malaysia*, March 24, 1999).
[55] *Far Eastern Economic Review*, April 1, 1999, 29.
[56] *Aliran Monthly*, April 1999, 2.
[57] Interview, Kuala Lumpur, December 6, 2005.
[58] For example, see *The Star*, December 9, 2005, 30.
[59] *Utusan Malaysia*, September 4 & 5, 2007.
[60] Interview, Kuala Lumpur, December 2, 2005.
[61] *The Nation*, January 16 & 23, 2003.
[62] *The Nation*, February 1, 2004.
[63] *The Nation*, March 15, 2004.
[64] *Bangkok Post*, July 5, 2004.
[65] *The Nation*, July 16, July 17, & September 26, 2004.
[66] *The Nation*, February 1, 2004.
[67] Interviews, Bangkok, November 15 and 16, 2005.
[68] *The Nation*, January 28, 2004.
[69] Jasper Goss, David Burch and Roy Rickson, "Agri-Food Restructuring and Third World Transnationals: Thailand, the CP Group, and the Global Shrimp Industry," *World Development* 28, no. 3 (2000): 515-516.
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[72] Ibid.
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[74] *Multinational Monitor*, March/April 2006, 10-13.
[75] *The Nation*, July 16, 2004.
[76] *The Nation*, February 4, 2004.
[77] *The Nation*, February 1, 2004.
[78] *Business Week*, February 9, 2004.
[79] *Bangkok Post*, January 29, 2004.
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[81] Bruce Missingham, *The Assembly of the Poor in Thailand* (Chiang Mai: Silkworm Books, 2003).
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[87] The Poultry Site, "Thai Cooked Chicken Exports Seen to Soar in 2005," March 9, 2005. Available at: http://www.thepoultrysite.com/LatestNews/?AREA=LatestNews&Display=7566.
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[93] Interview, Ho Chi Minh City, December 22, 2005.
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[102] *Financial Times*, January 29, 2004.
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[104] *VietnamNet*, February 4, 2004.
[105] *Thoi Bao Kinh Te Viet Nam* [Vietnam Economic Times], June 28, 2003.
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[108] *Tuoi Tre*, November 7, 2005.
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Global Health Governance at a Crossroads

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This review takes stock of the global health governance (GHG) literature. We address the transition from international health governance (IHG) to global health governance, identify major actors, and explain some challenges and successes in GHG. We analyze the framing of health as national security, human security, human rights, and global public good, and the implications of these various frames. We also establish and examine from the literature GHG's major themes and issues, which include: 1) persistent GHG problems; 2) different approaches to tackling health challenges (vertical, horizontal, and diagonal); 3) health's multisectoral connections; 4) neoliberalism and the global economy; 5) the framing of health (e.g. as a security issue, as a foreign policy issue, as a human rights issue, and as a global public good); 6) global health inequalities; 7) local and country ownership and capacity; 8) international law in GHG; and 9) research gaps in GHG. We find that decades-old challenges in GHG persist and GHG needs a new way forward. A framework called shared health governance offers promise.

INTRODUCTION

To discern new directions for global health governance (GHG), it helps to know where GHG has been. This article thus provides a much-needed review of the GHG literature. In the first section we address the transition from international health governance to global health governance, analyze the role of major players — nation-states, United Nations (UN) agencies, multilateral organizations such as the World Bank (WB) and the World Trade Organization (WTO), the G8, non-governmental and civil society organizations (NGOs and CSOs), and public-private partnerships (PPPs) — and explain some accomplishments and challenges under GHG. We then analyze the various ways health has been framed in the global health literature: as national security, human security, human rights, and global public good, as well as the implications of these frames. The third section employs the literature to identify major issues in global health governance and reveals that, despite three decades of serious commitment and earnest effort, GHG remains confounded by the same problems that Charles Pannenborg listed in his 1979 work, *A New International Health Order*. Effective global health governance demands alternative solutions.

SEARCH STRATEGY

We searched multiple databases including, but not restricted to, PubMed, Web of Science, Medline, Scopus, Academic Search Premiere, EconLit, Public Affairs Information Service (PAIS), International Bibliography of the Social Sciences (IBSS), Social Science Full Text, General Science Full Text, Humanities Full Text, ProQuest, Westlaw, and Lexis-Nexus Academic. Search terms included “global health governance,” “health governance,” “global health,” and “governance.” References cited in relevant

books and articles identified further publications. We reviewed only materials published in English. Searches had no date restrictions.

GLOBAL HEALTH GOVERNANCE SYSTEMS AND ACTORS

Transition from International to Global Health Governance

Until the 1990s, nation-states and multilateral organizations with state members governed international health. Health funding was mainly bilateral, flowing between donor and recipient governments. National ministries shouldered responsibility for health services delivery. The World Health Organization (WHO) coordinated worldwide efforts such as smallpox eradication with a limited set of partners; it also provided for international reporting and handling of disease outbreaks through the International Health Regulations (IHR). International health governance — also referred to as "the multilateral health regime"[1] and "horizontal germ governance"[2] — was relatively simple, with a small cast of actors and clearer lines of responsibility. Critics have charged that IHG served the interests of powerful Western states or "Great Powers."[3] Moreover, the need for coordination was lower. Rapid, globalized spread of emerging and re-emerging infectious diseases was not as salient a concern as it is now. Developed states with advanced medical and administrative capacities felt competent to control outbreaks and defend borders from diseases on their own, and did not rely on the IHR to handle outbreaks.[4]

Acceleration of globalization, increasing economic interdependence, and vast international movements of people and products ushered in the GHG era. Recognizing that infectious diseases emerging or re-emerging somewhere can have repercussions everywhere gave new urgency to addressing health on a global scale. GHG is dramatically more complex than IHG, with a plethora of new actors and the accompanying deluge of uncoordinated activities, and only recently has a definition of "global health" been attempted.[5] Characterizations like "post-Westphalian,"[6] "nodal,"[7] "open-source anarchy,"[8] and the application of complexity frameworks to globalization and global health[9] point to the involvement of non-state actors and the non-hierarchical nature of GHG activities and influence. New actors bring new resources and ideas, but new actors and new forms of organization — e.g., networks and partnerships — also "blur[ ] lines of responsibility."[10]

A lack of clear structure is a conspicuous feature of GHG. The roles played by nation-states, UN organizations, international organizations, NGOs, CSOs, and PPPs are not neatly delineated. Each serves multiple functions: as sources of funding, as originators of initiatives, and as implementers, monitors, and evaluators (Figure 1). The US President's Emergency Plan for AIDS Relief (PEPFAR), for example, is initiated and funded by the United States, with resources channeled to NGOs that propose and implement programs abroad. Another example is the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund or GFATM), which is funded by national governments, philanthropic foundations, NGOs, and corporate initiatives. Global Fund resources are disbursed to national governments, which design national plans with the input of donors and CSOs, and which may implement those plans with their assistance. Observers assert that there is "no architecture of global health,"[11] though some characterize GHG as three concentric circles of actors: WB and WHO at the center;

countries, the International Monetary Fund (IMF) and other UN organizations (UNOs) in the next ring; and NGOs, multi-national corporations (MNCs), epistemic communities, and individuals in the outermost ring.[12] Scholars may disagree on the structural description, but the operational chaos is indisputable. Competition among actors and priorities runs rampant, funding and initiatives often bypass governments, which complicates national planning, and donor requirements (e.g., for accountability) often lead to duplication and waste. Looking at its separate actors in turn might provide a clearer view of GHG (Table 1). Though non-state actors sometimes seem to be GHG's defining feature, traditional IHG actors prove difficult to displace and remain dominant in health governance. NGOs and PPPs earn praise for their flexibility, innovation, cost-effectiveness, and greater democratic accountability, yet experience demonstrates that these actors have problems of their own and may add new complications even as they solve others.

Nation-States

The bulk of GHG literature affirms the continuing primacy and ultimate responsibility of nation-states in health governance, national and global.[13] Bilateral funding still constitutes the greatest single source of global health assistance,[14] and national resources (public and private), even in low- and middle-income countries, still fund most national health spending.[15] Disease surveillance and control, despite their global implications, depend on the capacity and decisions of national governments (e.g., the attempted suppression of news of the Severe Acute Respiratory Syndrome (SARS) outbreak by China in 2003 and of the plague outbreak by India in 1994; the handling of H1N1 by China and Mexico in 2005). States continue to be vital because they decide what is negotiated internationally and implemented domestically,[16] and because member states fund and support organizations like WHO. Rich and powerful states can further affect health by using measures like bilateral trade agreements to strengthen intellectual property rights and limit drug access through measures like TRIPS (trade-related aspects of intellectual property rights) -Plus and their defense of pharmaceutical, tobacco, and food industry interests. Powerful Western states also set priorities in WHO and define the upper limits of acceptable action; WHO's surveillance authority, for example, has been characterized as a function of what Western states allow.[17] The globalization of public health supposedly erodes state boundaries' significance and the nation-state's importance (though the Westphalian model is still relevant).[18] Episodes like SARS and H1N1, however, show that an "elusive global system" does not simply replace the international system, as public officials who face disease outbreaks revert to quarantine and other sequestration measures.[19] Some observers suggest that GHG actually promotes "re-territorialization."[20]

States are relevant in other ways. Domestically, public sector or mixed public-private health systems tend to outperform strictly private sector ones in achieving equity,[21] supporting a major role for the nation-state. States have also shown themselves able to lead successful public health efforts, such as the trachoma control campaign in Morocco, folic acid fortification of flour for neural tube defect prevention in Chile, and the HIV/AIDS programs in Brazil and Thailand.[22]

Powerful states are important because global policies in any domain will not advance significantly without these industrialized states' strong backing. Some scholars

believe that the U.S. and the G8 countries have tremendous, even hegemonic clout.[23] Does U.S. hegemony drive the risk factors behind infectious disease threats? Is it thus obligated to address those risks?[24] Should the U.S. use its global influence to establish a global health agreement?[25] Is the G8 the logical emerging global health governor?[26] Rich and powerful states like the U.S. and those of the European Union (E.U.) can affect health by using measures like bilateral trade agreements to strengthen IP rights and limit drug access. Their defense of other industry interests — especially those of the tobacco industry — also undermines global efforts to improve health. Emerging countries, most prominently Brazil, Russia, India, and China (BRICs), are playing a larger role in GHG, as sources of financial and technical assistance, positive and negative examples of health system development, and medical services and supplies, including generic drugs. These countries are also taking a lead in challenging trade and intellectual property rules that hinder access to drugs, and are more generally giving greater voice to the concerns of the developing world in the global arena.[27]

World Health Organization (WHO) and Other United Nations (UN) Organizations

The rise of non-state actors and major global health initiatives driven by public-private partnerships, foundations, G8, and other non-UN/WHO entities has diminished the importance of WHO and health-related UN organizations in GHG.[28] Disillusionment with WHO inefficiency and ineffectiveness has arguably spurred engagement of non-state actors.[29] Initiatives such as the Global Fund and the Joint United Nations Programme on HIV/AIDS (UNAIDS), which took away purview over major diseases, appear to challenge WHO.[30] The UN and WHO are beset with criticisms. The UN lacks a "master plan" for health, leading to competition and duplication among UN agencies.[31] WHO is vulnerable to bilateral influence and political pressure, hindering its role as "global health conscience."[32] It has no enforcement powers. Critics charge that it is too focused on technical matters and vertical programs, too bureaucratic, and insufficiently engaged with civil society.[33] Its conflicting roles as advocate, advisor, and evaluator further limit its effectiveness.[34] Its partnership with the private sector might undermine its ability to set norms and standards.[35] In the past, it had been unable — and it continues to be reluctant — to use the power of international law.[36]

For all of WHO's flaws, the global health community continues to look to it as the leading global health governor, in the absence of a real alternative. Scholars deem WHO "unique" in its position to coordinate disease surveillance,[37] and identify it as the "only" authority that combines the necessary "institutional mandate, legal authority, and public health expertise."[38] And while WHO's budgetary weaknesses and dependence on powerful member states are clear,[39] the prevalent proposal is to strengthen it financially and politically, by giving WHO enforcement powers and a stronger mandate, for example, rather than urging alternative institutions.[40] Globalization for some points to a greater role for multilateral UN organizations and specifically the WHO, as they are more neutral forums than bilateral arrangements.[41]

World Trade Organization, World Bank, G8, G20

Other multilateral organizations, not traditionally health-related, have gained importance in GHG. The WTO's role has expanded as its trade regime raises issues for access to drugs and health services and for non-communicable diseases (through, for example, major risk factors such as tobacco, food safety, and unhealthy diets). By one account, it is "becoming the single most important international institution in the architecture of global health governance,"[42] with the power to enforce compliance with WTO rules and to limit sovereign choice in public health policies even absent the authority and capacity to establish food standards and arbitrate technical regulations.

The World Bank has come to recognize the role of health in development, and is emphasizing health system strengthening and financing, technical and policy advising.[43] Its superior resources have allowed it to displace the WHO as the main multilateral agenda-setter in health since the 1990s, especially in poor countries.[44] Yet the displacement is incomplete: the World Bank has been called upon to support WHO functions,[45] offer effective leadership,[46] and to collaborate with WHO in mitigating freer trade's negative health effects.[47] Critics charge it with undemocratic and pro-privatization policies,[48] closed and inefficient management,[49] and focus on performance rather than outcome evaluation (with recent emphasis on impact evaluation).[50]

The G8 has been discussed as a potential global health governor,[51] or one "of last resort,"[52] and the emerging center of GHG.[53] Its small membership, public-private collaborations,[54] task-orientation, common values, and a degree of intra-group accountability arguably make the G8 more effective than other global institutions.[55] Essentially an informal network, the G8 may lack the capacity to be a "global health apex institution," but the flexibility of its structure can be an asset.[56] Free from the regulations constraining WHO's interactions with NGOs and the private sector, the G8 is more flexible in its actions and can choose to sidestep extant global health bureaucracies. Its visibility and access to national financial and human resources also render it effective in highlighting global problems and raising money for specific activities.[57] The Global Fund, for example, was formed under G8 auspices. Such a select group of nation-states, however, may prioritize their own interests over those of global health, as shown by G8's inaction regarding tobacco[58] and its less-than-stellar efforts toward redistribution.[59]

Some argue that the G20, an expanded version of the G8, has more advantages: the G20 is an inter-government group based on national governments with authority and accountability to their populations; the group accounts for more than 60 percent of the world's population; it consists primarily of finance ministers with more direct authority over funding, and is a "broadly representative leaders-level grouping."[60] However, the G20 made little if any mention of the poverty and suffering resulting from the world financial meltdown in their 2009 summit, and some see the G20 as unlikely to deliver "fundamental" reforms.[61]

Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs)

NGOs potentially outperform governments as service providers due to their organizational flexibility, cost-effectiveness, and access to communities, especially in remote and difficult areas.[62] Many "proven successes in global health,"[63] for example, stem from work of and with NGOs (e.g. Task Force for Child Survival; Bangladesh Rural Advancement Committee; Carter Center; Clark, Gates and Hassan II Foundations;

Helen Keller International; International Trachoma Initiative (ITI); etc.) and most PEPFAR funding, for example, is channeled to NGOs instead of governments. Participation by NGOs and CSOs can also enhance democracy, giving voice to and empowering aid recipients,[64] particularly those with few resources, by helping them understand issues and define positions in negotiations. NGOs get credit for making drug access a high profile issue during the WTO Doha Round[65] and for influencing the Framework Convention on Tobacco Control (FCTC) negotiations.[66] Calls for broader inclusion of NGOs and civil society are routine. But time and experience have shown that NGOs have their own pathologies. The survival imperative drives NGOs to compete amongst themselves for donor funding, turf, and attention, with adverse effects on program design, implementation, and inter-organization coordination.[67] Ideology can undercut NGO effectiveness, as when religious beliefs obstruct condom use and promotion,[68] though real needs "on the ground" can often overcome ideology in the provision of necessary interventions.[69] A more nuanced view of NGOs evolved with the recognition that they are funded not just by "civil society," but also by states and businesses and are therefore not divorced from those interests.[70] Perceptions of NGO and CSO legitimacy became more critical as observers realized that, though they often purport to represent the public interest, these entities are not elected and it is unclear whom they represent or to whom they are accountable. Moreover, reliance on NGO/CSO service delivery bypasses and potentially undermines elected governments and could damage public sector organizations as higher NGO salaries cause health-worker brain drain.[71] Some question altogether the broader notion of a "global civil society."[72]

Public-Private Partnerships

Many have commended the emergence of PPPs as a means to bring together civil society, and the public and private sectors to correct market failures. PPPs promise private sector managerial skills, expansive financial and in-kind resources, innovation, and efficiency.[73] They may also be inescapable in some contexts: in drug research and development, for example, the private sector "own[s] the ball."[74] The prominently successful PPPs, such as Merck's ivermectin donation and Pfizer's trachoma programs, are pharmaceutical in nature. Studies have found that most such public health partnerships do speed disease reduction at a lower cost,[75] and target the most burdensome diseases and the most needy countries relatively well.[76]

But reservations abound. Some argue that in PPPs the public sector carries the risks while the private sector reaps the benefits, and that PPPs are basically public relations and market expansion gambits for the private sector.[77] Because specific companies and industries participate in PPPs, these partnerships tend to favor technical approaches and vertical programs with their attendant problems (see below).[78] Nor are they particularly pro-poor, as impoverished countries with big populations, or countries with "unpopular" governments or bad infrastructure may tend to be excluded.[79] PPPs are often opaque and evade accountability due to a lack of procedures to hold them responsible.[80] Northern participants tend to dominate PPPs, with under-representation from the South,[81] though that situation has begun to improve.[82] PPPs may also have worrisome effects on governments and multilateral organizations, by undermining the

public sector's normative focus and compromising the values of international organizations and thus their moral authority to set norms and standards.[83]

Global Health Successes

One of the most salient global health successes was the global eradication of smallpox in the 1970s, under IHG. Coordinated by WHO, member states implemented eradication programs with the help of WHO and donor governments such as the U.S., the U.S.S.R., and Sweden, as well as the invention of the bifurcated needle by Wyeth Laboratories. Smallpox was declared eradicated in 1980, 13 years after the commencement of the program in 1967.[84] Despite the profusion of new actors and the absence of clear governance architecture under GHG, prominent examples of global health successes show that these operational difficulties can be overcome. National governments, international organizations, NGOs, the private sector, and individuals have managed fruitful collaborations (Table 2). We will mention just a few here. One well-known example is the African Programme for Onchocerciasis (APOC), started in 1995 following the success of the West African Onchocerciasis Control Program (OCP) to eliminate onchocerciasis in central, southern, and eastern Africa. It continues the collaboration between WHO, UNDP, FAO, World Bank, and Merck's Mectizan Donation Program under OCP, and further includes the governments of 19 African countries, 27 donor governments, over 30 NGOs, and more than 80,000 rural African communities that locally distribute the medication. Polio and guinea worm eradication and lymphatic filariasis elimination campaigns are additional instances of successful global health efforts that involve large numbers of national, international, non-profit and corporate actors, including the WHO, PAHO, UNICEF, U.S. Centers for Disease Control and Prevention (CDC), the Gates Foundation, the Carter Center, Merck, and DuPont.[85] Through regional measles elimination campaigns undertaken by national governments and entities such as WHO, UNICEF, U.S. CDC, and the International Federation of Red Cross and Red Crescent Societies, dramatic global declines in measles mortality have also been achieved since the year 2000.[86]

Another example is the PARTNERS project on multi-drug resistant tuberculosis, a collaboration among Partners in Health, Socios en Salud, U.S. CDC, WHO, the Task Force for Child Survival and Development, and national governments. PARTNERS demonstrated the feasibility of scaling up MDR-TB treatment in resource-poor settings, and resulted in the integration of MDR-TB treatment into WHO TB policy.[87]

Different types of actors can offer different elements necessary for good global health performance, such as adequate and sustained funding, political leadership and commitment, technical consensus and innovation, and managerial and logistical expertise.[88] The obstacles of competing agendas, conflicting requirements, and turf disputes can be surmounted if partners with aligned interests and complementary skills can develop mutual trust, agree on goals, measurements, and strategies, and operate within an appropriate collaborative structure.[89] International cooperation may also be facilitated by third parties, such as the Carter Center partnership with the Dominican Republic and Haiti to eliminate malaria and lymphatic filariasis, part of the greater efforts of the Carter Center's International Task Force for Diseases Eradication.[90]

Widely-acknowledged global health successes are notable partly because they are still relatively few in number. Meeting the challenges of cooperation under GHG remains arduous in practice. Though the Millennium Development Goals (MDGs) offer a basis for cooperation,[91] there is no universally agreed-upon coordinating body or unified vision for global health.[92]

FRAMING OF HEALTH

That there is no consensus vision for global health is reflected in the different frames applied to health in the GHG literature. Health policy will differ depending on whether health is framed as a matter of security and foreign policy, human rights, or a global public good.[93] These frames are not mutually exclusive, but do have distinct implications.

Health as Security and Foreign Policy

Health framed as a traditional security issue emphasizes the defense of borders against infectious diseases and bioweapons with little consideration for non-communicable diseases and social determinants of health.[94] The policy focus is on disease surveillance and outbreak control, though HIV's demographic impact in high prevalence countries is also beginning to raise concerns about regional and economic stability.[95] The desire of developed (mostly Western) states to protect their trading interests and their borders from contamination drives action.[96] Given this motivation, even some infectious diseases receive little attention because they are geographically concentrated away from developed countries, and are not perceived as important threats.[97] Some describe WHO's IHR and Global Outbreak Alert and Response Network (GOARN) as biased toward the protection of Western states[98] — the revised IHR's definition of public health emergencies of international concern, for example, focuses on bioterror agents as defined by the U.S. CDC rather than diseases causing the most fatalities in the past decade.[99] This bias could undermine WHO's moral authority to elicit cooperation from developing states, a problematic development because the effectiveness of surveillance and response depends largely on poorer states' ability to detect and verify outbreaks.[100] Such perceived bias reduces poorer states' willingness to cooperate and all states' motivation to develop standardized procedures to address infectious agents at their origin.[101] The incentives are few as is — nation-states fear the loss of prestige in revealing disease outbreaks associated with underdevelopment, as well as diminished trade and tourism.[102] Reporting outbreaks could also spur the stockpiling of drugs by wealthy nations, potentially at the expense of access for poorer countries.[103]

Treating health as a security or foreign policy issue further strengthens the state's role in international health[104] and the element of state sovereignty, possibly influencing the manner and extent to which states are engaged in global health. A popular example of this interplay is China. China sees health as part of foreign policy, and is thus more actively engaged in international health. But a realist agenda drives this engagement, which both guides and hinders China's role.[105] Some assert that neorealist and neoliberal foreign policy approaches make health matter only as a security or foreign policy issue, because they do not share the humanitarian concerns of public health.[106] A

security approach may also have the effect of shifting global health response from civil society toward intelligence and military entities with less concern for civil liberties and democratic participation. On the other hand, framing health as a security issue does have the advantage of increasing attention and resources on both domestic and international levels.[107] The relative emphasis between health and foreign policy may also be adjusted. For example, seven countries declared their intention to view foreign policy through "a health lens," to judge policies at least partly by their health implications; the focus remains on infectious diseases, but this alters the traditional practice of judging health policy by its foreign policy implications.[108]

Health as Human Security

In contrast to traditional security, advocates have proposed treating health as a matter of "human security."[109] Human security aims to protect individuals' freedom from fear and freedom from want, and to ensure physical and economic security. It is a "people-centered" — as opposed to state-centered — concept that encompasses economic, food, health, environmental, personal, community (cultural), and political security.[110] Health is considered by some as being at the center of human security because it is universally valued and connects the other components.[111] This viewpoint essentially shifts focus to issues neglected under the traditional security framing, such as the social and economic determinants of health and non-communicable diseases. Some advocate "human security" as a way to understand changes that are generating novel or escalated threats, and to analyze "what security is provided and for whom."[112] GHG should address "the structural causes of human fear and want as fundamental sources of insecurity."[113] Others espousing this view observe that HIV is a high human security priority.[114] The concept of human security has been defined and operationalized in various ways,[115] but the lack of clear agreement on what it entails draws charges of vagueness and excessive expansiveness.[116] There is also the notion of "health security," but its definition is also inconsistent across users and agencies, hampering its usefulness as a basis of cooperation.[117]

Health as a Human Right

Health as a human right moves health provision from a discretionary charitable activity to a human entitlement or global citizenship right, adding moral force to actions and appeals to help the poor.[118] Advancing health as a human right is consistent with advancing other human rights, such as civil and political rights imbued in democracy (believed to have positive influence on health), as well as social and economic rights.[119] Although the impact of human rights on health awaits empirical evaluation, the effect is expected to be beneficial.[120] International human rights law has developed to promote the pursuit of global health.[121] There is much discussion about the swings between the traditional security/foreign policy approach and the human rights perspective in global health.[122] Some international health policies, the IHR for instance, adopt principles from both frameworks,[123] and in some countries, India for example, the expanding language of rights is creating popular demand for services and holding the state to account.[124]

Health as a Global Public Good

The framing of health as "commons" or as a "global public good" conceives of health as something beyond the jurisdiction of any one country and of interest to two or more countries or their populations.[125] Public goods are non-excludable and non-rival—people cannot be excluded from consuming such goods, nor does one person's consumption of such goods preclude consumption by another. Examples of global public goods for health include communicable disease control, disease eradication, disease surveillance, the dissemination of research and best practices, and health-related rules and standards.[126] Because the consumption of public goods is non-excludable, there is little commercial incentive for their production. Though national governments may take steps to provide public goods nationally, there is no global government to provide or pay for global public goods.[127] A focus of the global public good perspective, then, is how to ensure collective action for health at the international level.[128] The emphasis of this approach is that of mutual benefit among countries rich and poor, rather than that of aid from the rich to the poor.[129] This potentially raises social justice and equity concerns, since the health interests of the rich and poor are often different, and the rich are more able to act on their own interests.[130] The concept of global public goods itself provides no guidance as to how priority should be assigned to global health issues,[131] nor does it set forth how provision is to be implemented.[132] There is, however, "strong agreement" that provision of global public goods must start at the national level.[133]

Depending on how health is framed, the major issues in GHG identified from the literature may be more or less relevant. For example, inequity in health may be more important in a human rights frame than in a national security/foreign policy frame, whereas the connection between trade and health may take on greater significance in the foreign policy frame.

MAJOR ISSUES AND CHALLENGES IN GLOBAL HEALTH GOVERNANCE

Persistence of Global Health Governance's Key Problems

The most striking theme in the GHG literature is the persistence of GHG's key problems. With the exception of more recent work on proven successes in global health, which pertain primarily to disease-specific programs, the global concerns in health governance Pannenborg listed in 1979 still persist today.[134] In 1979, international and global health governance vexations included:

- Lack of coordination between donor governments and NGOs, and recipient countries;
- Confusion of norms and activities due to different ideas regarding health rights and obligations;
- Lack of coordination between WHO, WB, other UNOs and multilateral organizations;
- Lack of national health plans in recipient countries, or plans that do not provide for donor coordination;

- Donor neglect of recurrent expenditures;
- Donors' short-term orientation and lack of middle- and long-term commitments;
- Health aid tied to foreign policies of donor or recipient, or to purchases of supplies from donor countries; and
- Criteria of "self-reliance" and past performance, channeling aid away from the most needy countries.

Today one, of the most salient issues remains the lack of coordination among donors and between donors and recipient governments; GHG's proliferation of actors and initiatives has exacerbated this problem.[135] Many donors retain their short-term orientation,[136] and the criteria of "sustainability" and accountability as well as performance-based evaluation persist in distorting program design, implementation, and choice of funding recipients.[137] Economic and strategic interests of donors continue to determine bilateral health aid.[138] Enumerations of these problems are routine, but GHG solutions remain elusive after 30 years.

Approaches to Tackling Health Challenges

Main approaches to health challenges are vertical and horizontal, trending into calls for a diagonal third way. Vertical programs or selective primary health care are disease-specific, while horizontal programs or comprehensive primary health care entail broad-based development and strengthening of health systems without particular specification of health priorities. WHO's Health for All initiative announced in Alma Ata in 1978 is an example of the horizontal approach, while current global health initiatives tend to be vertical.

Disease-specific programs show results; their performance and outcomes are more easily measured and assessed. The wider systemic scope of horizontal strategies, on the other hand, means that results take longer to manifest, are harder to measure, and efforts are more likely to become unmanageable.[139] Donors therefore tend to gravitate toward vertical programs. Vertical programs have produced many of the "proven successes in global health" (e.g., smallpox eradication; onchocerciasis, trachoma, TB, measles, and Chagas disease control; polio eradication; guinea worm reduction; etc.) through international collaboration (e.g., among UNICEF, U.S. CDC, Carter Center, and WHO on guinea worm and among numerous partners through the Onchocerciasis Control Program (OCP)) and demonstrate "what works" in global health programming.[140] But problems with the vertical approach are well recognized. Vertical programs that do not fall within the proven successes category, for example, have been criticized for exhibiting and exacerbating many of the enduring health governance challenges mentioned earlier, such as poor coordination, duplication and waste, short-term funding, unsustainability, and inadequate performance assessment, calling into question the accuracy of results reporting. Vertical programs may also distort national health priorities, and intense focus on particular diseases creates a hierarchy of diseases, in which certain ailments — like HIV/AIDS — receive extraordinary attention while other conditions are ignored (Table 3).[141] Health staff and resources are diverted from normal functions. Nor does the vertical approach address the broader socio-economic determinants of health or social equity. Some criticize vertical programs for being technocratic, exhibiting urban bias and targeting particular populations over others,[142] and overlooking investments in the broader health system that are prerequisites for

vertical strategies' success[143]; some argue they reduce states' policy autonomy.[144] Still, some believe that in countries with weak health systems, a logical first step is to direct funding toward disease-specific programs, which can foster health infrastructure as a second stage;[145] successful programs also offer important examples and lessons for international collaboration in global health.

Nevertheless, a consensus is growing around the need for more action on health systems strengthening, which is more and more considered key to improving health. Systems failings are impeding the achievement of MDGs[146] and vertical program objectives. Scholars increasingly argue for strong commitment, funding, and technical support for building health infrastructure, ensuring access, and addressing inadequacies in human resources and data systems.[147] The World Bank has directed its attention toward health system strengthening.[148] Observers believe WHO's horizontal policy to develop health systems driven by primary health care is essential for meeting developing country challenges.[149] However, the potential of the horizontal approach is "largely unexploited,"[150] though it showed good results in the 1980s in Mozambique, Cuba, and Nicaragua;[151] strategies for building a strong health system vary and are undecided.[152]

More recent is advocacy for a diagonal approach, also known as a "matrix approach." It combines vertical and horizontal elements[153] and allocates resources to strengthen health system components relevant to specific diseases burdening a given country.[154] These approaches seek to use explicit intervention priorities (vertical) to drive health system improvement (horizontal). GAVI-HSS, a health systems strengthening initiative started by the Global Alliance for Vaccines and Immunisations in 2006, is an example of a diagonal approach. GAVI-HSS allows the health ministry of each applicant country to define health system constraints, and aims to improve immunization through strengthening health systems.[155] A study of the first four rounds of applications supports the concept of developing an HSS approach starting with specific programs.[156]

Multisectoral Connections with Health

Increasingly, scholars understand health as a multisectoral issue that does not exist in isolation, especially in a globalizing world.[157] Greater intersectoral coordination[158] to better integrate health into broader policymaking is essential to ensure coherent policies that protect health interests.[159] The connection between the health and trade sectors is particularly challenging in this regard. Researchers recognize that economic globalization and trade liberalization are driving forces for a globalized health crisis, with implications for issues like non-communicable diseases and access to drugs and health services;[160] yet globalization and trade also link to economic growth, which is necessary for health systems development and sustainability. These are widely discussed topics, especially in the WTO context.

Trade and trade rules affect drug access through incentives for research and development, pricing, and intellectual property (IP) rules. Pharmaceutical research and development (R&D) is concentrated in developed country markets and on conditions affecting developed country populations, because poor countries and populations do not have the spending power to make the immense time and investment for drug R&D worthwhile for private industry. Tropical diseases are neglected because profit-driven R&D is unlikely to recoup investments in developing country markets.[161] The Drugs for

Neglected Diseases Initiative (DNDi) (to deliver 6-8 drugs by 2014) and Orphan Drug Acts in the U.S., Japan and the E.U. attempt to address this.[162]

Drug pricing, if too high, limits access,[163] and IP rules play a major part in determining prices. IP protection can lead to huge price differences between countries where drugs are patented and countries where generic versions are available (Table 4).[164] International price discrimination, however, can be positive if pricing in rich countries subsidizes lower prices in poor ones,[165] and instruments such as parallel importing and compulsory licenses (allowing manufacturing or importing of generic versions) can mitigate patent-related access problems. But developing countries' attempts to use these instruments often encounter opposition from pharmaceutical interests in rich countries. Some of these opposing actions fail (e.g., the 42-firm law suit against South Africa and threatened sanctions against Brazil), but others caused countries and companies to surrender efforts to make or import affordable generics.[166] Are drug patents the real problem for access to essential medicines? Some note that most drugs considered "essential" by WHO are not under patent,[167] that drug companies often do not apply for patents even where they could, and that in practice, patents are not a serious obstacle to access.[168] This view maintains that fixing TRIPS would not solve the access situation in developing countries, because the fundamental problem—that individual nation-states have not established a right to essential medicines—remains. Others find this claim biased[169] and inapplicable to HIV/AIDS drugs.[170]

The General Agreement on Trade in Services (GATS) and its implications for developing countries' health services and systems are another nexus where trade and health meet. GATS aims to liberalize trade in health services, encouraging privatization and market competition, with unclear ramifications for health and health care. Some charge that GATS is a means for multinational service corporations to increase their business prospects,[171] while others worry that privatization of health services would be costly, generate inequitable two-tiered systems, widen health gaps, and obstruct universal access.[172] Another concern is that "progressive liberalization" under GATS would only mean increasing privatization of health systems and health care provision, which could hinder development of public health services and limit future government options in health system design and reform.[173] The brain drain problem may also worsen domestically and internationally, as workers move from public to private sectors, and from developing to developed countries.[174]

Non-communicable diseases (NCDs) are receiving more attention now that the globalization of unhealthy diets and sedentary lifestyles is making them both more common and more deadly,[175] a threat exacerbated by tobacco's spread into developing markets[176] and tobacco's importance in numerous developing economies (e.g., China, Turkey, Zimbabwe).[177] Observers urge action, particularly through multisectoral partnerships; both the environment and individual behaviors affect NCDs, which therefore involve too many sectors for any one agency to manage.[178] Philanthropists such as Bill Gates and Michael Bloomberg are involved in global efforts to mitigate the effects of tobacco.[179]

Trade impacts health profoundly, but health holds the weaker position in the health-trade nexus. Trade's formalized governance as opposed to the "unstructured plurality" in health is one explanation for this uneven match.[180] Countries believe that their economic well-being depends on participating in an effective international trade system, and are therefore willing to join the WTO, where membership comes with many

legal, enforceable obligations. WHO, in contrast, lacks enforcement power and bases its authority mainly on technical expertise, and must contend with more diverse perspectives with minimal reciprocal obligations. WHO has limited access to WTO proceedings; business representatives outnumber health representatives on trade commissions. The deficiency in systematic monitoring and assessment of trade policy from a public health perspective and the absence of a unified GHG vision undermine and complicate health's position vis-a-vis trade.[181] Greater coordination between health and trade to achieve policy coherence is desired.[182] WHO could help countries understand, negotiate and draft trade laws.[183] It could mitigate the effects of global brands marketing, regulate tobacco, and monitor large-scale agricultural production.[184] Some scholars propose direct transnational corporation (TNC) regulation to protect health from the abuses of international commerce.[185]

Sectors other than trade also affect health. Health ties into development more generally, particularly extreme poverty and other development indicators.[186] WHO has called for incorporating health into Poverty Reduction Strategy Papers (PRSPs) and sector-wide approaches,[187] and the World Bank considers health a major component of its global economic role.[188] Yet large-scale development projects are often planned without adequately assessing effects on health.[189] Greater attention to the implications for human health from animal health,[190] agriculture,[191] and the environment[192] is important.

Neoliberalism

The health-trade nexus may be a particularly prominent manifestation of a larger theme playing out in the globalization process: neoliberalism. Neoliberalism connotes global economic liberalization, privatization, market competition, and the pursuit of efficiency. Neoliberal economic globalization and the accompanying migration behavior increase risks from infectious disease outbreaks; economic growth, foreign direct investments, and urbanization significantly affect NCD mortality rates.[193] Although trade openness has been found to be associated with economic growth and poverty reduction, it produces winners and losers. Liberalization does not necessarily support poverty-oriented health care, nor does public health necessarily improve under the devolution of health responsibilities to the individual level when health's determinants are also national and global.[194] Observers believe that international economic and financial organizations such as WTO, IMF, and the World Bank push a neoliberal agenda, favoring capital and overriding the will of national democratic institutions.[195] Some argue that debt repayment schemes, structural adjustment programs (SAPs), and PRSPs have little regard for the economic and social costs of adjustment,[196] especially to the health sector.[197] They charge that policies to reduce government health expenditure, such as user fees and spending cuts[198] undermine health care. Indeed, some propose exempting health spending from international financial institution (IFI)-stipulated fiscal restraints.[199] Neoliberal globalization, some argue, "simultaneously maximizes the need for social intervention," and minimizes the political and strategic options available.[200] Some further believe that the neoliberal pursuit of consumption and efficiency comes at the expense of equality.[201] The neoliberal orientation is contrasted with a social-democratic one.[202] On the other hand, a review of SAPs' consequences for health found that empirical studies tend to present both positive and negative effects.[203]

Health Inequalities

Health inequality is a widely-recognized problem (Fig. 2).[204] In 2008, a WHO Commission on the Social Determinants of Health report named health equity a central goal in global health.[205] This is not a new call, since WHO has already advocated reduction of economic and social inequalities and pushed for universal access to primary health care.[206] Health equity is not an unquestioned priority, however.[207] Some advocate providing some minimal level of opportunity and addressing basic survival needs of the poor, rather than pursuing equity per se.[208] Others argue for reducing shortfall inequalities in health capabilities with efficiency.[209] Proposals to mitigate inequities include greater resource transfer from rich and increasingly emerging countries to poor countries,[210] more focus on equality in poverty reduction strategies,[211] South-South collaboration,[212] and clarifying duties and obligations in domestic and international policy and law.[213] International commissions may be a way to move the health equity agenda forward, since they can assert the "power of ideas."[214] Fairer distribution of voting power and representation of poor countries in international organizations could be beneficial.[215]

Along with inequalities in access to drug and health services noted earlier, another major health inequality is the 90/10 research gap: though the developing world suffers 90 percent of the global disease burden, only 10 percent of research expenditures target that burden. This gap resists remediation both because the private sector has little market incentive to make the investments, and because the means to conduct and access research are so lacking in poor countries.[216] Under these conditions, technological and scientific advancements such as genomics, nanotechnology, and proteomics in developed countries are likely to widen the gap even more.[217] Augmenting research capacity in developing countries, information sharing to improve knowledge access,[218] and "fair global rules" to channel technology toward the health needs of the poor could help bridge this divide.[219]

Local/Country Ownership and Capacity

Recipient countries and localities suffer from the short-term orientation and lack of coordination that plague global health programs, complicate national planning and strain national and local resources. Greater local ownership and participation in global health initiatives are seen as important for development and for sustainability,[220] and are cited as contributing to recent successes in efforts against malaria, onchocerciasis, and guinea worm, for example.[221] Local ownership better represents and addresses local needs,[222] and greater control over community events improves community health.[223] The Healthy Cities initiative (started in the 1980s) can serve as an example of a strong local approach to development.[224] Country leadership is important, as is the alignment and harmonization of global health initiatives with national plans.[225] Examples of efforts to facilitate coordination and country ownership include PRSPs, the Paris Declaration on Aid Effectiveness, UNAIDS' "Three Ones" initiative, GAVI-HSS, Committee C, and the International Health Partnership and related initiatives (IHP+). Theoretical advantages aside, however, the ability of countries and localities to take ownership of projects is a concern. These efforts must take human resources and financial capacities

into account[226] and include key stakeholders. Poor countries might not have the capacity to regulate activities of better-resourced actors,[227] and many governments might lack competence and integrity,[228] which require strengthening. That said, governments in impoverished countries have led and funded "proven successes" in global health.[229] Country ownership may also be difficult to achieve, since donors are often reluctant to give up pet initiatives and longstanding procedures.[230]

The Use of International Law

International health law increasingly links to human rights, environmental law, labor law, and trade, and international treaty law takes on growing significance as a mechanism of future international collective action.[231] Some believe that international law can more effectively govern health. WHO is deemed to be uniquely positioned to draft international health law and codify international public health treaties, due to its legal authority, institutional mandate, and public health expertise. Yet it has not used its international law-making powers extensively.[232] WHO embraced international law with the 2003 Framework Convention on Tobacco Control (FCTC), WHO's first binding legal treaty.[233] The FCTC, along with litigation and courts, are mechanisms for holding the tobacco industry liable.[234] Yet WHO's next effort, the non-binding and non-norm-setting Global Strategy on Diet, Physical Activity and Health (2004), seemed to retreat back to a technical and administrative support role.[235] It placed responsibility mainly on nation-states and designated no entity for enforcement or interpretation of policies. More extensive WHO involvement in international law is suggested, for instance to lead effective health law development,[236] to help countries draft and negotiate trade laws,[237] and to coordinate, catalyze, and effectuate future health law codification.[238] Reader argues for an "ex post facto liability regime" to hold countries accountable for the deliberate suppression of disease outbreak information, to improve compliance with IHR, to strengthen international health norms and to push governments to give GHG higher priority.[239] He states that China's behavior during the SARS outbreak amounted to an "abuse of rights" in customary international law.

But international law and agreements can be double-edged swords. As we have seen, existing laws and agreements — more particularly those related to WTO and trade — sometimes hinder health efforts. TRIPS-related obstacles to drug access and trade disputes over states' power to ban harmful imports like tobacco and mutton flaps are examples of international legal barriers to public health promotion. Power and resources influence law-making, and the resulting legislation may favor wealthy businesses and countries. For example, industries and their powerful home countries are better able to shape the development of standards like the Codex Alimentarius, which regulates food trade.[240] A still more fundamental problem, however, is the weakness of international law. In the absence of a supranational government with strong and independent enforcement powers, international law is unlikely to be consistently or effectively enforced, regardless of its substantive quality or equity. This problem is acute in the health arena, given WHO's lack of enforcement powers. The record of member state compliance with WHO binding rules and non-binding recommendations is poor, even when member states can choose which policies to adopt.[241]

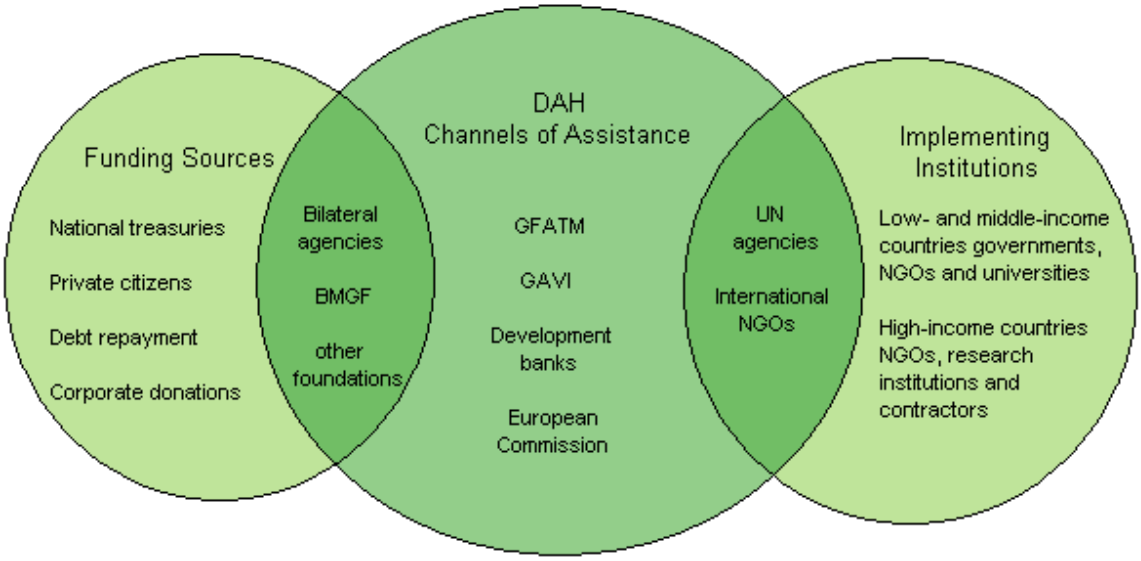
Global Health Governance Research Gaps

The global health problem of the 90/10 gap aside, global health governance itself suffers from fundamental knowledge deficiencies. For the most important global health tasks — such as improving population health and strengthening health systems — the global health community may have an insufficient evidence base. Few global health interventions are evidence-based, and interventions to improve population health among the poor are often untested; what works in one place may not work elsewhere.[242] More knowledge about interventions' costs and cost-effectiveness is critical.[243] What works and what doesn't work in health policy design and implementation also require more examination.[244] Other areas that stand to benefit from more research include the effectiveness of private sector contracting and its impact on the poor,[245] biotechnology relevant to disease, agriculture, and the environment[246], and GHG institutions and processes. Ways to enable treatment adherence by patients with limited literacy and numeracy are worth exploring as well,[247] given the widespread need for relatively complex HIV/AIDS treatments in some of the world's poorest countries. Perhaps more fundamentally, norms for allocating resources across health needs also demand development.[248] To maximize usefulness, global health research should address priority health needs and contribute to policy formulation.[249]

CONCLUSION

Despite select "proven successes in global health," overall, the state of global health governance reflected by the literature points to continuing, decades-old problems of insufficient coordination, the pursuit of national and organizational self-interest, inadequate participation by the recipients and targets of aid, and sheer lack of resources. The world needs a new way forward, and shared health governance (SHG)[250] may provide a useful conceptual and operative framework. A detailed description of SHG is beyond the scope of this paper; it is discussed elsewhere.[251] SHG calls for melding values among different global, national, and local actors — a shared vision of health and health provision. Such a consensus aims to foster agreement on goals and strategies to promote program design, implementation, evaluation, and coordination. SHG is compatible with the different framings of health, and can potentially bring the frames together if consensus is sufficiently robust. SHG also advances health agency for all, as enabling affected but marginalized groups to participate in national and global health initiatives is critical for addressing the needs of aid recipients effectively and reining in powerful industry and national interests in global health and international law instruments. The global community should recognize health as a meaningful and operational right, the realization of which will require voluntary resource redistribution from rich to poor in order to narrow the vast, unjustifiable gaps in health and health services. Actors must internalize public moral norms for equity in health and commit to meeting the health needs of others.

Figure 1: Overlapping Roles of Global Health Actors



Note: "DAH" is development assistance for health. "BMGF" is the Bill and Melinda Gates Foundation. "GAVI" is Global Alliance for Vaccines and Immunization.

Source: Institute for Health Metrics and Evaluation (IHME), *Financing Global Health 2009*, p.15.

Table 1: Examples of Global Health Actors	
Nation-states	*Top ten donors, by total amounts (2007):*[a] USA, UK, France, Germany, Japan, Canada, Norway, Sweden, Netherlands, Spain *Top ten recipients (2002-2007):*[b] India, Ethiopia, Uganda, Nigeria, Tanzania, Indonesia, Kenya, Pakistan, Zambia, China
Multilateral Organizations	*United Nations Organizations*: WHO, UNICEF, UNFPA, UNDP, UNAIDS *Others*: WTO, World Bank, regional development banks, G8/G20, European Commission, Global Fund
Non-Governmental Organizations	Save the Children, Catholic Relief Services, Medecins Sans Frontieres, Carter Center, Christian Health Association of Malawi, Task Force on Child Survival, Bangladesh Rural Advancement Committee, International Trachoma Initiative (ITI), International Life Science Institute (industry-supported), Doctors without Borders, Partners in Health, Rotary International, Red Cross and Red Crescent Societies, Helen Keller International
Private Sector	*Philanthropic foundations*: Bill and Melinda Gates Foundation, Edna McConnell Clark Foundation, The Rockefeller Foundation, Clinton Foundation, Bloomberg Initiative *Industry:* pharmaceutical companies (e.g., Merck, Pfizer, GlaxoSmithKline, Aventi Pasteur), tobacco companies (e.g., Philip Morris, Japan Tobacco), food companies (e.g., makers of infant formula), BASF, DuPont, Exxon Mobil, Sumitomo, other health-related industries

[a]: IHME, *Financing Global Health 2009*, Figure 15, p.30.
[b]: IHME, *Financing Global Health 2009*, Figure 32, p.50.

Table 2: Some Examples of Global Health Successes

Global Health Problem	Impact	Actors
Smallpox	A global campaign from 1967-1979 made smallpox the first eradicated disease in history	WHO, US CDC, USSR, with participation of all WHO member states[a]
Childhood immunization	Increasing coverage of vaccination against common childhood diseases from 20% in 1984 to 80% in 1990[b]	Task Force for Child Survival, composed of WHO, UNDP, World Bank, UNICEF, Rockefeller Foundation[b]
Polio	Reduction of reported polio cases from 350,000 in 1988 to fewer than 700 in 2006 worldwide. Elimination of polio in Latin America and the Caribbean[a]	Latin America/Caribbean elimination campaign was led by a coalition of international organizations including PAHO, USAID, UNICEF, InterAmerican Development Bank, Rotary International, and Canadian Public Health Association, and national governments; global eradication campaign started in 1988 led by WHO, Rotary International, UNICEF, US CDC, with funding from governments, NGOs, foundations, and corporations[a]
Guinea worm	Reduction of cases from 3.5 million in 1986 to fewer than 11,000 cases in 2005; reduction of prevalence by 99.7%. Transmission halted in 11 of 20 endemic countries[a]	Carter Center, UNICEF, US CDC, WHO, 20 national governments in Asia and sub-Saharan Africa, donor countries, NGOs, foundations, private sector (e.g. BASF and DuPont), and individuals who undertake behavioral change[a]
Trachoma in Morocco	Reduction of trachoma prevalence by 99% in Morocco from 1997 to 2005; elimination of disease in some provinces[a]	Moroccan government, with external support from UNICEF, the International Trachoma Initiative (through which Pfizer donated Zithromax), Helen Keller International, bilateral and multilateral agencies, local NGOs[a]
HIV/AIDS in Brazil	Brazil's HIV/AIDS program is viewed as a global health role model, providing free antiretroviral therapy to infected patients, with strong education and prevention campaigns, aggressive outreach to vulnerable populations. AIDS mortality decreased by 50% between 1996 and 2002; AIDS hospitalization decreased by 80%[c]	Brazilian government funds ART treatments; it also provides funding for active civil society involvement in HIV/AIDS control. World Bank, from inception of Brazilian program in 1993, has directed almost US$500 million toward Brazilian HIV efforts[d] -- about 11% of Brazilian HIV spending -- mainly for prevention and tracking (not ART)
MDR-TB	Demonstrated feasibility of treating multi-drug resistant tuberculosis in resource-poor settings, with initial cure rates of up to 80% (first testing site was Peru). WHO in 2005 passed resolution integrating DOTS-Plus and MDR-TB treatment, making the latter available to all patients[b]	PARTNERS, a partnership among Partners in Health, Socios en Salud, US CDC, Peruvian Ministry of Health, WHO, and Task Force for Child Survival and Development; Gates Foundation provided funding. PARTNERS treatment approach also applied in Estonia, Latvia, Lima, Manila, and Tomsk[b]
Onchocerciasis	Onchocerciasis Control Programme (OCP) halted transmission in 11 West African countries and made 25 million hectares of arable land safe for settlement. African Programme for Onchocerciasis Control (APOC) is estimated to prevent 54,000 cases of blindness each year[a]	WHO, World Bank, UNDP, FAO, USAID, Merck, Task Force for Child Survival and Development, Carter Center, Helen Keller International, Lions Clubs, River Blindness Foundation, 11 West African countries (OCP), 19 Central, South, and East African countries (APOC), and other donors and participants[a]

[a]: Levine et al., *Millions Saved*, http://www.cgdev.org/section/initiatives/_active/millionssaved/studies

[b]: Rosenberg et al., *Real Collaboration*
[c]: Okie, "Fighting HIV"
[d]: World Bank, "Improving Healthcare and Quality of Life for People Living with HIV/AIDS in Brazil," (27 September 2010), http://go.worldbank.org/DIZ29JT640

Table 3: Financial Development Assistance for Health by Health Focus, 1990-2007

2007 US$ (Millions)

Year	HIV/AIDS	Malaria	TB	Health Sector Support	Other	Unallocable by Disease	Total
1990	189	38	17	-	2,544	2,800	5,589
1991	201	43	18	-	2,618	2,595	5,474
1992	208	19	16	-	2,891	2,980	6,115
1993	218	18	34	-	3,433	2,909	6,612
1994	333	38	26	-	3,807	3,564	7,767
1995	344	33	26	8	3,854	3,750	8,015
1996	400	39	53	3	3,924	3,686	8,106
1997	437	37	35	12	4,303	3,596	8,420
1998	430	61	56	2	4,317	3,788	8,654
1999	557	76	75	6	4,947	4,136	9,797
2000	718	153	118	13	5,407	4,288	10,697
2001	924	148	153	14	5,431	4,237	10,907
2002	1,408	127	173	72	5,495	5,165	12,440
2003	1,820	184	213	124	6,383	4,825	13,548
2004	2,433	352	360	215	6,740	5,502	15,603
2005	3,086	720	390	424	7,015	6,272	17,907
2006	3,907	649	506	776	6,270	6,888	18,997
2007	4,943	724	649	937	6,570	7,968	21,791

Notes: Developmental Assistance for Health (DAH) includes both financial and in-kind contributions for activities aimed at improving health in low- and middle-income countries. This table disaggregates financial DAH earmarked for HIV/AIDS, malaria and tuberculosis specific activities as well as DAH provided as sector-wide support. The Institute for Health Metrics and Evaluation was able to allocate flow from the following channels of assistance by their disease focus: bilateral development agencies, World Bank (International Development Association & International Bank for Reconstruction and Development), African Development Bank, Asian Development Bank, GFATM, GAVI, and the Bill and Melinda Gates Foundation. Contributions from remaining channels are shown as unallocable by disease.

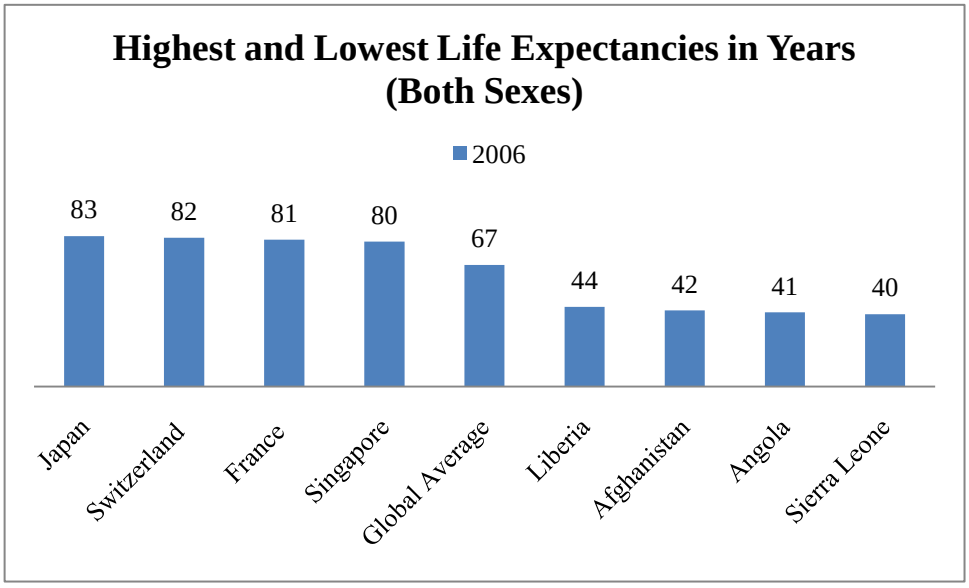
Source: Adapted from IHME, *Financing Global Health 2009*, p.110.

Table 4: Medecins Sans Frontieres Comparative Study of Generic and Patented Flucanozole: Wholesale Prices of 200mg Capsules, June 2000

Manufacturer	Country of Distribution	Price per Unit (US$)
Biolab (Thailand)	Thailand	0.29
Cipla (India)	India	0.64
Bussie (Colombia)	Guatemala (negotiated)	3.00
Pfizer	Thailand	6.20
Vita (Spain)	Spain	6.29
Pfizer	South Africa	8.25
Pfizer	Kenya	10.50
Pfizer	Spain	10.57
Pfizer	Guatemala (negotiated)	11.84
Pfizer	USA	12.20
Pfizer	Guatemala (not negotiated)	27.60

Source: Adapted from Perez-Casas, Chirac, Berman, and Ford, "Access to Fluconazole in Less-Developed Countries", p.2102.[252]

Figure 2: Highest and Lowest Life Expectancies in Years (Both Sexes), 2006



Source: Data from World Health Statistics 2008, pp.36-44.[253]

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Rise and Fall of Global Health as a Foreign Policy Issue[1]

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Global health has risen in prominence in foreign policy but now faces a fall in its foreign policy importance. Global health's recent rise in foreign policy has been unprecedented, but this phenomenon reveals continuity and change in how foreign policy has addressed global health in previous periods. This historical perspective points to the need for a deeper understanding of the relationship between global health and foreign policy, which reveals global health's unstable place in foreign policy, especially with respect to higher priority foreign policy objectives, such as national security, national economic power, and development. This instability is appearing again and leading to a decline in global health's foreign policy significance. Structural, political, economic, and epidemiological factors illustrate how global health is experiencing a fall in foreign policy importance. Although a fall is starting, it must be kept in perspective given the unprecedented nature of the rise and uncertainty about what unfolds for global health in the next years. Keeping an eye on key indicators will help reveal the nature and extent of any fall in global health's stature in foreign policy.

INTRODUCTION

We live in interesting times, the adage goes, and much about world politics today—from China's emergence to dire predictions about climate change to revolutions in the Middle East—fascinates and unnerves us. We are entering a period of global uncertainty where we oscillate between hope and fear, sensing we cannot really fathom what will happen. Shrouded in this fog is global health, a policy area that experienced unprecedented growth over the past ten to fifteen years in foreign policy, diplomatic, and global governance importance. Global health now confronts an unsettling transition that will shape this area for years. We witnessed global health's rise as a foreign policy issue but are starting to see a fall in its foreign policy significance. However disconcerting, understanding this rise and potential fall is important in assessing how global health factors into world affairs now and in the foreseeable future.

In this article, *foreign policy* refers to the policies a state advances in relations with other states, intergovernmental organizations (IGOs), and non-state actors (e.g., non-governmental organizations) on issues that have cross-border consequences. *Global health* means the policy realm in which states, IGOs, and non-state actors interact to address health challenges that have cross-border implications. Under these definitions, global health involves foreign policy because a state has to formulate positions on cross-border health issues in its relations with other states, IGOs, and non-state actors.

This article examines the claim that global health has risen in foreign policy prominence. The claim is not controversial, but evaluating any fall of global health as a foreign policy concern requires prior analysis of the rise. This analysis exposes features about the relationship between global health and foreign policy that requires an

understanding of how foreign policy makers address global health. A key finding is the unstable position of health within foreign policy, or health's *elasticity* as a foreign policy issue. This elasticity suggests that a *rise and fall* pattern should be anticipated, as earlier *rise and fall* episodes confirm.

However, could the recent rise of global health in foreign policy be sufficiently different to sustain the new prominence and avoid a fall into foreign policy purgatory? This article addresses this possibility by looking at structural, political, economic and epidemiological factors that suggest global health is losing traction in foreign policy. Any predicted fall has to be kept in perspective because of the unprecedented nature of the rise and uncertainty about the extent of the slippage. This article explores whether global health is settling into a *new normal* in which foreign policy makers more readily act upon global health than in the past, which would represent a marked improvement of health's status in foreign policy. This article describes indicators that bear watching in discerning whether global health's fall represents an improved new normal or a more precipitous decline. Predicting where these indicators ultimately point is foolhardy, but the omens for global health are not good.

RISE OF GLOBAL HEALTH IN FOREIGN POLICY

Global health's rise in foreign policy can be understood to mean that foreign policy makers have addressed global health challenges more frequently and prominently than in the immediately prior period. Existing literature describes how global health achieved this increased stature over the last ten to fifteen years (Table 1). This phenomenon has been sufficiently prominent that the United Nations (UN) General Assembly adopted resolutions and requested reports from the UN Secretary-General on foreign policy and global health.[2]

Table 1. Indicators of Global Health's Rise in Foreign Policy

• Funding: Development assistance for health quadrupled from U.S.$5.59 billion in 1990 to U.S.$21.79 billion in 2007.
• Initiatives: Initiatives aimed at global health problems have increased dramatically, reaching an estimated 90 ongoing initiatives.
• Governance: Countries have negotiated groundbreaking governance regimes for global health problems, including the World Health Organization's Framework Convention on Tobacco Control (2003), International Health Regulations (2005), Global Code of Practice for the International Recruitment of Health Personnel (2010), and Pandemic Influenza Preparedness Framework for the Sharing of Influenza Viruses and Access to Other Benefits (2011).

Demonstrating that global health has received more foreign policy attention in recent years is not difficult, whether the evidence comes from the Secretary-General's

reports,[3] the World Health Organization (WHO),[4] ministers of foreign affairs,[5] think-tanks not previously interested in global health,[6] scholarship exploring the foreign policy-health relationship,[7] or increases in global health funding.[8] Never before has global health been of such foreign policy interest.

Identifying the rise is easy, but analysis should examine the rise's connection with previous eras. Looking back, two patterns are prominent in foreign policy:

- responses to health threats, such as cross-border spread of communicable diseases, that generate international problems; and
- uses of health-related cooperation to pursue non-health objectives, such as utilizing health assistance to increase a state's influence or secure better relations with other states.

In terms of foreign policy responses to health problems, this pattern has experienced continuity and change. The continuity appears in the privileged place foreign policy has accorded communicable diseases. Foreign policy on health problems began in the mid-nineteenth century with European states addressing threats from cholera, plague, and yellow fever.[9] The second decade of the twenty-first century sees communicable diseases receiving the lion's share of foreign policy attention.

The change appears in fluctuations in foreign policy interest in global health, especially in high-income states. In the twentieth century, high-income countries transitioned from significant communicable disease morbidity and mortality to growing non-communicable disease burdens, lessening fears about cross-border communicable disease threats.[10] This shift—caused by improved domestic public health capabilities—helped shrink foreign policy interest in health among stronger countries to providing humanitarian assistance to low-income nations.

As for foreign policy use of health-related policies to achieve non-health objectives, we see continuity because states have, over time, included health in strategies to increase their stature in the international competition for power and influence. During the Cold War, the United States,[11] Soviet Union,[12] China,[13] and Cuba[14] utilized health-related cooperation to boost their geopolitical positions and ideological ambitions. This pattern remains prominent today, with frequent assertions that health constitutes part of "soft" and "smart" power that states can exercise.[15]

Changes in this pattern have been (1) country-specific, such as China's reduction of its overseas health missions during the post-Mao reform period, and (2) generated by systemic change, as happened with the end of the Cold War when geopolitical pressure to view health as a soft-power tool fell and with the recent re-emergence of a multi-polar system and renewed interest in using health to secure non-health objectives.

Therefore, global health's rise in foreign policy involves the:

- increased need for foreign policy responses to proliferating global health problems, particularly those involving communicable diseases that threaten key state interests; and
- return of health as a soft-power tool.

These developments have brought global health new political significance, but this prominence does not resonate with public health thinking. The need for more foreign policy responses to global health problems reveals failures to prevent such problems, and national and international weaknesses in surveillance and response capacities worldwide. These failures reveal lack of commitment to public health in both domestic and foreign policy. The foreign ministers behind the Oslo Foreign Policy and Global Health Initiative argued that, despite global health's increased stature, it remains a neglected foreign policy area.[16]

Increased soft-power use of health demonstrates greater instrumentalization of health for foreign policy purposes, challenging the ethos that health is an end in itself and not a tool for geopolitical machinations. The use of health in soft-power strategies indicates that this ethos is not transforming foreign policy concerning health. Health as soft power might produce some positive health outcomes, but such outcomes are often not the primary purpose of these strategies.

Although unprecedented, the recent rise of global health in foreign policy reflects long-standing patterns of how states use health in foreign policy, and persistent problems domestically and internationally with preventing and responding to health challenges. These characteristics invite deeper exploration of the relationship between foreign policy and global health.

ANALYSIS OF THE RELATIONSHIP BETWEEN GLOBAL HEALTH AND FOREIGN POLICY

Global health's rise in foreign policy reveals that states began to perceive health problems and soft-power opportunities as more relevant to all the basic functions of foreign policy, which are (in descending order of foreign policy importance) ensuring national security, strengthening national economic power, engaging in development with key countries, and protecting human dignity. The WHO Director-General and Norwegian and French foreign ministers used this functional approach in observing that global health issues are important for "national and global security[,] . . . pursuing economic growth, fostering development, and supporting human rights and human dignity."[17]

Identifying global health as important in all foreign policy's core functions reveals two developments. First, health concerns expanded beyond their conventional association with human dignity, which typically ranks last in foreign policy priorities. Locating health problems and opportunities within the security, economic, and development agendas gave global health a foreign policy profile different from its historical position as a marginalized, neglected topic associated with humanitarian assistance.

Second, health's appearance in higher priority foreign policy functions meant that, at some level, foreign policy makers were re-thinking security, economic well-being, and development—suggesting that health concerns were helping stimulate broader conceptions of foreign policy responsibilities. The changed relationship between

foreign policy and global health reveals a two-way exchange, not a foreign policy takeover of global health.

However, this new relationship exhibits characteristics that demonstrate the difficulty of sustaining health's foothold in higher-priority foreign policy functions. Few health problems qualify as national security concerns, and the ones frequently cited as such (e.g., bioterrorism, pandemic influenza, and HIV/AIDS) involve a narrow range of communicable disease threats. Using health as a soft-power tool typically happens in conjunction with many initiatives, and because of the soft-power link, foreign policy makers do not consider health efforts as useful in addressing *hard power* security challenges.

In addition, skepticism in security and public health communities about *securitizing* health remains strong and is growing,[18] especially as (1) dangers from traditional (e.g., nuclear proliferation) and other non-traditional (e.g., cyber-attacks) security threats increase, and (2) security arguments fail to translate into adequate commitments to public health nationally and internationally. We also see this dynamic with global health's role in policy debates about national economic power and overseas development. As relevant as public health might be to these foreign policy functions, bigger problems preoccupy policy makers in these realms, which helps explain why public health experts lament continued underinvestment domestically and in development policy.

What emerges is *elasticity* for health in development, economic and national security policies. Global health problems more frequently appear in these areas when crises develop, such as a pandemic, but foreign policy attention fades when the crisis wanes.[19] The more elevation global health receives in the hierarchy of foreign policy interests, the more elasticity we witness. Global health concerns tend to be most inelastic with respect to human dignity objectives; however, this function, historically, has been the least important in foreign policy making.

This elasticity appears today but also occurred in the past. Foreign policy attention on health began in the mid-nineteenth century because communicable disease epidemics were damaging national populations, trade, and commercial interests. Negotiations reflected balance-of-power concerns, such as the European continental powers' worries about British opposition to quarantine, combined with Britain's trade and sea power, illustrating how *realpolitik* affected responses to health problems. As the threat from large, cross-border epidemics lessened in the twentieth century (through improved domestic public health measures and medical technologies), health faded in foreign policy significance for the great powers, becoming associated largely with humanitarianism and exploiting the political advantages that providing humanitarian assistance could create.

Similarly, the WHO-led push for Health for All in the 1970s, culminating in the Declaration of Alma Ata in 1978,[20] converged with Cold War ideological battles, which raised this initiative's foreign policy stakes. However, in 1979, the Iranian revolution, the resulting oil crisis and its impact on economies, and the Soviet invasion of Afghanistan marginalized *health for all* as a foreign policy concern for major international players.

These older rise and fall episodes suggest that health's elasticity in foreign policy is persistent, and that the rise and fall pattern should be expected. This observation segues into evaluating whether the pattern is unfolding again, which requires determining whether the recent rise in global health's foreign policy profile represents something different—something that reduces the elasticity and embeds health more firmly in the development, economic, and security functions of foreign policy.

FALL OF GLOBAL HEALTH AS A FOREIGN POLICY ISSUE

My contention that global health's foreign policy prominence is starting to slip centers on structural, political, economic, and epidemiological factors that indicate how the global terrain is shifting under the global health-foreign policy relationship. The financial, food, energy, and climate change crises of recent years prompted health leaders to warn about dangers these crises pose to health. These warnings were also pleas to prevent these dilemmas from marginalizing health domestically and internationally. These crises do not prove global health's fall in foreign policy importance; they merely establish that global health has entered a more difficult environment in which to maintain a prominent foreign policy profile.

The first factor pointing to a decline is the changing structure of the international system. Global health's rise in foreign policy transpired in the post-Cold War system dominated by a United States that gave global health significant foreign policy attention. What is unfolding now is a multi-polar system marked by the rise of emerging powers, especially China, and the decline of U.S. power and influence.

As noted earlier, multi-polarity encourages state interest in health as a soft-power instrument, but multi-polarity also makes it more difficult for states to agree on solutions to problems, including those affecting global health. The multi-polar system will be more unforgiving concerning core state interests, which will make it harder to sustain claims about global health's contributions to security, economic power, and development. For example, efforts to make health central to climate change negotiations and the Group of 20's development strategy failed. Already challenged about their persuasiveness, health-based security arguments increasingly confront a geopolitical landscape populated by serious security threats, ranging from worries about Chinese military power to concerns about what follows upheavals in the Middle East.

In terms of political factors, a weaker United States means that U.S. foreign policy cannot play the catalytic role it did for global health over the past ten to fifteen years. None of the perceived rising powers—Brazil, Russia, India, or China—has the means or willingness to lead in global health as the United States has led. States will continue soft-power uses of health, but these efforts offer diminishing payoffs as other challenges dominate international politics. Harder and harsher questions will be asked, especially in connection with foreign aid, about the benefits foreign policy action on global health produces for priority state interests. This environment will prove conducive for non-state actors, especially the Bill & Melinda Gates Foundation (Gates Foundation), to become even more important in shaping the global health agenda. Praise and criticism of the Gates Foundation's push for global polio eradication illustrates this dynamic.[21]

Economically, sustaining global health prominently on foreign policy agendas is becoming more difficult as the global economic recession and domestic fiscal crises adversely affect states, IGOs, and non-state actors. Although fiscal travails in high-income countries have not yet gutted health components of foreign aid budgets,[22] significant increases in health assistance will not happen for the foreseeable future. Instead, agonizing choices will be the order of the day. How long will, for example, the

Obama administration's financial support for global health survive at or near existing levels when the administration and Congress have already cut and are proposing more cuts to domestic public health, health care, and other programs?[23] Other high-income countries face similar dilemmas, so pressure to reduce funding for global health will continue for years.

In epidemiological terms, foreign policy action will become harder to sustain because political commitment and funding for existing efforts (e.g., HIV/AIDS)—widely recognized as inadequate—will flatline or decline, leaving progress more difficult to achieve. In addition, global health leaders want more focus on problems that have weaker foreign policy *pull*—non-communicable diseases (NCDs)—or represent more expansive projects—health-systems reform and addressing the social determinants of health (SDH).

The September 2011 UN meeting on NCDs illustrates the push to make NCDs more important to foreign policy makers. However, experts recognize that the case for more foreign policy action on NCDs is difficult to sustain, even without considering the mounting fiscal constraints.[24] Despite warnings about the NCD problem, these diseases tend to reflect interconnectedness, rather than interdependence, between states, in contrast to most communicable diseases that have garnered foreign policy interest. Interconnectedness, even as intensified by globalization, produces weaker common interests and often reflects divergence in foreign policy priorities.

Put differently, U.S. security, economic power, and development objectives are not affected by smoking or obesity prevalence rates in rival powers, other high-income states, or middle- and low-income countries. Many countries have reduced tobacco consumption without needing foreign aid or the WHO Framework Convention on Tobacco Control, illustrating that claims of the necessity of intensified cooperation stretch political and public health realities. Low-income countries often need assistance to grapple with NCDs, but this fact reflects their dependence on aid for health problems —not interdependence between the world's nations on NCDs. Further, the *human dignity* pull of NCDs related to behavior (e.g., smoking, diet) is less than what communicable diseases, maternal and child health, or humanitarian disasters generate. Finally, arguing that increased foreign policy action and aid for NCDs will generate soft-power payoffs for a state will be hard given multi-polarity, fiscal scarcity, and demands from existing inadequately addressed and underfunded global health problems.

Emphasis on health-systems reform and SDH reflects global health policy's tendency to expand when seeking solutions for underlying causes. This proclivity runs into foreign policy processes that ruthlessly winnow complex problems into defined tasks with measurable targets. We see this mismatch in controversies over *horizontal* versus *vertical* health projects. Health-systems reform and SDH are horizontal, which pits them against foreign policy preferences for more limited vertical activities. Despite efforts to ameliorate this problem (e.g., "diagonal" policies[25]), it remains persistent. The more difficult environment now facing the global health-foreign policy relationship means that the horizontal/vertical tension will continue, which will affect foreign policy action on health-system reform and SDH.

"BLOOD AND TREASURE" FOR GLOBAL HEALTH

The argument that a decline in global health's foreign policy importance is beginning has to be kept in perspective. The recent rise was unprecedented. Expecting this trajectory to continue without change is not realistic. Some tapering off should be expected, especially as high-profile initiatives become integrated into day-to-day foreign policy operations. Further, arguments about the fall constitute speculation, even if grounded in analysis of unfolding events. The nature and extent of a fall, if any, remains to be determined.

When foreign policy makers debate responses to challenges, they often ask whether their country wants to expend *blood and treasure* on an issue, and, if so, how much. *Blood* typically means commitment of military forces, and *treasure* means expenditure of public money. The more important the issue, the more blood and treasure get committed. The fall in global health's foreign policy significance will be determined by a health-relevant blood and treasure calculus—whether, and how much, states commit political and economic capital for global health. The blood calculus involves states deciding how much civilian and military time and energy get tasked with supporting global health. The treasure measure focuses on how much public money states appropriate for global health.

States could limit a fall by a establishing a *new normal* through embedding global health interests in foreign policy processes in ways that heighten the likelihood that policy makers consider such interests seriously and routinely. Support for this approach appears in recent country-specific foreign policy strategies on global health,[26] and UN advocacy for more such strategies.[27] These plans could help reduce the foreign policy elasticity health historically has experienced, especially concerning economic power, development, and human dignity. Systematic, operationalized consideration of global health across foreign policy, coupled with increases in "civilian power,"[28] could help counteract any leveling off or decline in treasure for global health.

However, this new normal is not assured because a more precipitous fall could occur. The structural, political, economic, and epidemiological factors discussed above signal serious blood and treasure problems—flagging political interest in, and fewer economic resources for, global health that could heighten global health's elasticity in foreign policy. Pushing foreign policy deeper into NCDs, health-systems reform, and SDH might exacerbate these problems because these areas represent less clear blood and treasure issues, especially for the great powers and high-income countries that would have to lead and provide significant economic resources for these issues. This observation reveals a continuing gap between foreign policy and public health thinking.

Key indicators that will help us discern the nature and extent of any *fall* include:

- How foreign policies of leading states adjust in global health to multi-polarity and the decline in U.S. power and influence;
- How states perceive the political benefits of responding to global health problems and using health as a soft-power tool of foreign policy in this changed geopolitical context;

- How high-income countries allocate foreign aid for health-related purposes;
- Whether leaders of key states stay or become personally committed to global health in foreign policy;
- How all governments appropriate funds and implement programs for national public health because, without action domestically, prospects for foreign policy impact diminish; and
- How states respond to efforts to heighten foreign policy action on NCDs, health-systems reform, and SDH, especially in a context where existing commitments and interest in global health are under increasing scrutiny and stress.

CONCLUSION

Hans Morgenthau once argued that statesmen think and act in terms of interest defined as power.[29] Getting statesmen to add public health has typically required health crises that threaten power interests. Ironically, this pattern negates public health's emphasis on prevention, and sustaining adequate surveillance and response capabilities when crises are not occurring. This mismatch is the source of the rise and fall phenomenon and global health's elasticity in foreign policy.

Reducing the zeniths and nadirs of the rise and fall pattern requires more effective conceptual and operational linkages between power and public health, and more efficient application of blood and treasure in an emerging context of greater skepticism about global health in foreign policy and fewer economic resources for foreign policy. These tasks will not prove easy, certainly not as easy as hoping for another crisis that sends foreign policy makers scrambling and global health on another rise to a prominence that betrays its principles.

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H1N1 – The Social Costs of Cultural Confusion

Bill Durodié

In May 2011, the World Health Assembly received the report of its International Health Regulations Review Committee examining responses to the outbreak of the 2009 H1N1 pandemic influenza and identifying lessons to be learnt. This will emphasized the need for better risk communication in the future. But risk and communication are not objective facts; they are socially mediated cultural products. Responses to crises are not simply determined by the situation at hand, but also mental models developed over protracted periods. Accordingly, those forces responsible for promoting the precautionary approach and encouraging the securitization of health, that both helped encourage a catastrophist outlook in this instance, are unlikely to be held to scrutiny. These cultural confusions have come at an enormous cost to society.

INTRODUCTION

The final report of the World Health Organization (WHO) International Health Regulations (IHR) Review Committee charged with assessing the global and WHO response to the 2009 H1N1 influenza pandemic was presented to the the World Health Assembly – the decision-making body of the WHO composed of delegations from all its Member States – in May of this year.[1]

This was announced just over a year ago,[2] "after accusations by some that [the WHO] exaggerated the dangers of the virus under pressure from drug companies,"[3] and this process merged with the five-year review of the IHR, which officially defines the "obligations of countries to report public health events,"[4] as well as terms such as "pandemic."

Senior members of the WHO have been keen to quash all suggestions of commercial impropriety relating to the possible influence of pharmaceutical interests – both through individual advisory roles and national contractual obligations – such as those that committed countries as early as 2007 to purchasing vast stocks of vaccine once a pandemic was deemed to have reached Phase 6 of the WHO's new six-point alert system.[5]

In her opening remarks to the IHR Review Committee last September, Margaret Chan, the WHO Director-General (DG) asserted:

> I can assure you: never for one moment did I see a single shred of evidence that pharmaceutical interests, as opposed to public health concerns, influenced my decisions or advice provided to WHO by its scientific advisers. Never did I see a shred of evidence that financial profits for industry, as opposed to epidemiological and virological data, influenced WHO decisions.[6]

In a similar vein, Keiji Fukuda, the WHO Assistant Director-General for Health Security and Environment, who largely took control of the early stages of this affair in the absence of Margaret Chan who was on home leave at the time,[7] is also recorded as explicitly stating that "[t]he pharmaceutical industry did not influence any of our decisions."[8]

This particular line of criticism of the WHO's actions has become most associated with Paul Flynn, a British Labour Parliamentarian, who has also questioned how the H1N1 incidence rate came to be assessed.[9] Flynn sits as an Assembly Member on the Council of Europe, through which, as Rapporteur to the Social, Health and Family Affairs Committee, he has successfully promoted and led a review of these matters.[10]

His inquiry was highlighted in another critical report published last year in the prestigious British Medical Journal (BMJ) that was co-authored by a journalist from the Bureau of Investigative Journalism.[11] This piece was endorsed by the BMJ's editor, Fiona Godlee, who noted that, through this episode, the WHO's "*credibility has been badly damaged*."[12] She raised concerns about a lack of transparency at the WHO in identifying its advisors and their external interests. Godlee's editorial was met with a robust rebuttal by DG Margaret Chan.[13]

Both Flynn and Godlee were interviewed by the IHR Review Committee during its Second Meeting in early July of 2010.[14] At that time, the Review Committee also heard from a third dissenting voice – that of Tom Jefferson – an epidemiologist and member of the Cochrane Collaboration, the prestigious, voluntary international network of healthcare professionals who review medical evidence and methodologies.[15]

Jefferson's challenge, as later noted by the Chair of the IHR Review Committee, Harvey Fineberg,[16] was more related to questioning the efficacy of antivirals and vaccines *per se*,[17] than of questioning the interests and actions of the WHO and its advisors. Jefferson, Flynn and Godlee appear to have been the only truly adversarial voices heard by the IHR Review Committee in person, despite requests for more.[18]

No doubt there are debates worth exploring that pertain to the benefits of vaccination programs. It is also the case that regulatory capture – whereby those charged with promoting the public good, wittingly or unwittingly, advance some sectional goal instead – does occur and can have an influence, but probably not as much as is supposed by those who effectively see individuals and institutions as being consistently unable to "separate or distinguish subjective interests from objective judgments."[19]

The purpose of this article, however, is to explore a third line of reasoning in response to the DG's call to hear "questions or concerns" about "what can be done better" as her organization is "seeking lessons, about how the IHR has functioned, about how WHO and the international community responded to the pandemic, that can aid the management of future public health emergencies of international concern."[20]

COMMUNICATING RISK

It was evident early on that one dominant strand that was to emerge from the IHR Review Committee report would relate to communication in general, and, in particular, the perceived difficulty of conveying risk in a "rapidly evolving situation" marked by "considerable scientific uncertainty."[21]

Harvey Fineberg also noted that "[t]he communications issues permeate the entire process," and indeed that an analysis of these would form one of the "five major lines of organization and development" for the Review Committee.[22] And, like the DG, he pointed to "the challenge of decisions and actions under uncertainty," as well as the resultant "complexity" produced – presumably – by the actions, reactions and interactions of countless individual, institutional, national and international actors.[23]

In a similar vein, while speaking in Singapore in early 2011, Ailan Li, an IHR Medical Officer for Health Security and Emergencies based at the WHO Regional Office for the Western Pacific in Manila, also noted that the final report was likely to dwell on the difficulties of communicating risk.[24] It is indeed how risk and communication were understood by all parties that may have been one of the main drivers of the H1N1 episode in the first place. But there is little evidence that the IHR Review Committee solicited the views of any who understood the way that these elements are, and have been, shaped by contemporary culture.

The discussion about the need for better risk analysis and communication makes risk appear as an objective fact, particularly so in relation to such a scientific matter. Viruses kill and their Case Fatality Rate (CFR) can be estimated or projected by epidemiological and serological means. However – aside from any difficulties associated with this – that we perceive something to be a risk, and how we respond to it, are socially mediated.

This understanding may well be informed by scientific evidence, but broader cultural trends and outlooks can often dominate. Fineberg effectively noted as much when stating that "public health is embedded in attitudes of public [sic] toward authorities, toward government, toward experts," prior to lamenting a decline in "general public trust" towards "virtually every profession."[25]

So, whether we presume ourselves to be living in a particularly dangerous world or surrounded by risky strangers, and whether we trust these individuals or the authorities charged with ensuring our well-being to act as we expect them to in particular situations – as well as our own actions and assumptions – are a function of the times. This is impacted by a vast number of social, cultural and political variables, such as the cumulative impact upon our imagination of books, television programs and films that project dystopian – or positive – visions of the present and the future, as well as our interpretation and understanding – or not – of issues as apparently tangential as the consequences of climate change, or the role played by supposedly greedy bankers in the 2008 economic crash, and whether we believe – rightly or wrongly – that the authorities have ever exaggerated, or even underestimated, a crisis before.

An emergency, whether relating to health or otherwise, does not simply concern the events, actions and communications of that moment. Rather it draws together, in concentrated form, the legacies of past events, actions and communications as well. And while it may not have been the IHR Review Committee's task to analyze and – still less – to act upon all of these, there is precious little evidence that those interviewed by the IHR Review Committee considered such dynamics at all.

It has been noted elsewhere that "Western radicals and Western elites now view the world in near-permanent catastrophist terms."[26] It is clear that this essential understanding of the context was not included in the IHR Review Committee report. Yet, it would help to explain why, whatever the actions taken by the WHO – such as reiterating that "the number of deaths worldwide was small" or that "the overwhelming

majority of patients recovered fully without any medical care" – would never suffice as "most health officials decided to err on the side of caution."[27] Perhaps these officials did so in response to prior pronouncements about uncertainty combined with a sense of living in a particularly insecure age? And, of course, it did not help that the words of moderation from the WHO emanated from the same source that had previously advised the world's media that "it really is all of humanity that is under threat."[28]

Harvey Fineberg's description of communication as "achieving the desired understanding and beliefs and behaviour on the part of the audiences that are the targets of the communication"[29] could also be perceived as somewhat one-sided, although maybe, in such instances, press statements ought not to be confused with more considered opinions – a lesson that all may care to draw from.

In her recent talk in Singapore, Ailan Li stated that "risk communication about uncertainty is very challenging."[30] That is hardly surprising as risk and uncertainty are quite different concepts – the former pertaining to calculations where data is available and assessments are made on the basis of probability, while the latter refers to situations characterized by an absence of evidence, where the focus changes to considering possibility. Nevertheless, the two are often confused and this has led to a tendency towards "identifying everything as a risk."[31]

This trend, reflected in a shift over the recent period, from probabilistic assessment to possibilistic speculation, along with its sociological and political drivers, as well as its cultural manifestations and consequences, including a demand to imagine worst-case scenarios and apply the so-called precautionary principle in all situations, has been explored in the general sociological literature,[32] as well as that pertaining more specifically to health.[33]

There is little sign that the WHO was aware of this, and the IHR Review Committee did not draw it to their attention. Rather, a more rigid view of risk communication is now likely to emerge: one that both presumes an objective form of risk, leading to a demand for more rigorous risk assessment by experts, and that then seeks to transmit their conclusions more effectively to the public through the use of a "better quality information product."[34]

It is the equivalent of believing that if people do not understand what you are trying to say, then all you have to do is to repeat yourself more slowly, simplistically and loudly.

In her opening statement at the Third Meeting of the IHR Review Committee, DG Margaret Chan implicitly identified what she saw as the key forces to shape the episode when asserting that even before the H1N1 virus had emerged "[p]andemic became a hugely frightening word in the minds of the public and the media".[35]

For Fineberg too, in addition to the public – within whom, as noted earlier, he presumed that "the desired understanding and beliefs and behaviour," should be elicited through effective communication – it was the media who would also have to appreciate that "turnabout is fairplay" and that accordingly they should "expect ... to be the subject of accusation,"[36] just as some in such organizations were held to have been accusatory of the WHO.

Combining these two elements, DG Chan also suggested that the "WHO and many countries were unprepared for a new form of scrutiny: electronic scrutiny by the public" that allowed people to "draw their own instant information from a wide range of sources."[37] Her Assistant DG, Keiji Fukuda, has raised similar concerns, complaining of

the disruptive impact of the Internet on the handling of the pandemic through the production of "rumours, a great deal of speculation and criticism in multiple outlets,"[38] including blogs and social media. Such suggestions are quite remarkable considering that the WHO itself makes use of new media so central to its operations and communications.

Nevertheless, it was to be expected that criticism of some media for projecting "anti-science,"[39] and "[a]nti-vaccine,"[40] views into the public domain would form part of the final report of the IHR Review Committee – or at the very least references to how complex global public health management becomes when operating in such a milieu. This would be combined with concern for how to communicate accurate information more effectively to the public in the future, in light of the latter's presumed predilections for suspect sources.

But, according to research conducted over the first week of the crisis, "[n]ational and international public health authorities were by far the leading source of information on the new virus. They were identified as the main source of information in 75% of the articles analyzed. 94% of the articles were either neutral, relaying factual information (70%), or expressing support for the authorities handling of the situation (24%)."[41]

So – far from being unable to convey their messages through a cacophony of competing voices – the authorities concerned totally dominated the information space about the pandemic in its early stages to an extent that would make military propagandists – who think in such terms – proud. The problem is to presume that it was merely accurate information and the effective communication of it that was lacking and so essential in the first place.

In fact – as identified earlier – in an emergency, information only forms one element of the public's considerations. Concerns over the need to provide the latest, accurate details, through the most effective channels, miss the wider context entirely. There is, as the authorities have rightly noted, a surfeit of information available at such times. Accordingly, it is the interpretation of its meaning, according to previously determined frameworks, that have evolved across protracted periods that come to matter most. Indeed, it may have been almost impossible by the time of the outbreak for WHO officials to have much impact on how their communications would come to be received.

When push comes to shove in a crisis, individuals and institutions often act primarily on the basis of their interpretative frameworks of reality, not solely the information available to them at the time. So, for example, presented with information that there was no evidence for weapons of mass destruction in Iraq, it is clear that rather than taking this at face-value, the response of the US authorities was to assume that any such weapons were simply well hidden. Of course, it is too late then to hope to shape those mental models as to who people trust – or not – and what people have come to worry about through their contemporary cultural prism, and why. It is time for those charged with running the global public health system to take cognizance of these basic sociological lessons and not presume that they can project their advice about risk into some kind of cultural vacuum.

EXPECTING PANDEMIC

The confusion of messages and actions emanating from the unexpected outbreak of pandemic H1N1 influenza that gripped the world in 2009 is best understood as the culmination and latest expression of a deeper cultural malaise that has been shaping the world since the demise of the Cold War period, which last provided social leaders with a cohering ideology and concomitant strategic purpose and direction.[42]

That the handling of this episode will prove highly problematic for managing future health emergencies is likely to be denied by those who were the most directly involved. Rather, as noted above, they look to the public and the media, or vague allusions relating to uncertainty and complexity, as mechanisms to deflect responsibility for any role that they, their predecessors, or the broader culture itself had in shaping the context of the crisis. In the UK, for example, displaying a significant disconnect from the views and actions of ordinary people – let-alone those of prominent critics – the official line has been to declare that the "response was highly satisfactory."[43] This, as at least one commentator has noted, can only be achieved by largely being aloof from the debate.[44] For instance, the views of Paul Flynn – one of the dissenting voices known to the WHO – despite being cited as having contributed to the UK review,[45] appear to have made no impact on it at all.

There is no mention either of important voices within the UK medical profession, such as Michelle Drage, joint Chief Executive of the Londonwide Local Medical Committees, who argued that "[j]ust because the World Health Organization has put a label on [H1N1] and called it a pandemic we are treating it differently," or Sam Everington, a former Deputy Chair of the British Medical Association and advisor to the Parliamentary Under-Secretary for Health on primary care, who stated that "[a]ll this is being ratcheted up by the Chief Medical Officer and the Government. They are actively scaremongering everybody."[46] Neither are the views of any other high-profile public commentators, such as Simon Jenkins, the former editor of The Times,[47] Nigel Hawkes, its former Health Editor,[48] or Phil Whitaker, a former General Practitioner (GP) and journalist,[49] afforded any attention. This avoidance, or ignorance, of alternative opinions simply reflects the fact that there is nowadays, on a wide range of matters, a growing gap between élite preoccupations with, and representations of, particular problems, as compared to the public's lived experience of them. Bridging this divide is likely to become the single most pressing social policy issue of the next decade.

In the case of H1N1, one single indicator suffices to demonstrate the existence and consequence of such misapprehensions – the take-up of the vaccine when it became widely available in the third quarter of 2009. Contrary to the presumptions of Assistant DG Fukuda, the failure to get inoculated did not emerge from ignorance, superstition, speculation, or the propagation of rumors. It was quite clearly led by many health workers themselves, despite the exhortations of various officials.[50] And whilst these may have been influenced by a multitude of factors – including the various anti-vaccine campaigns of recent times, as well as the experience of the post-9/11 demand that they be inoculated against smallpox on a precautionary basis – their decisions were also informed by their experience of the relatively mild effects of the outbreak, in the full knowledge of the "reasonable worst case scenario" predictions of the WHO and others, such as the UK Chief Medical Officer.[51]

It would also have been shaped, consciously or not, through the sheer frustration of having been the front-line troops of what they by then understood as a phantom

emergency, being dictated to by distant officials, and working twenty-four hours-a-day, seven days-a-week.

Regardless, and as the GP and medical writer, Michael Fitzpatrick, argues in an important contribution on the matter, "[t]he apparent lack of confidence in the pandemic flu vaccine among professionals was inevitably transmitted to the wider public."[52] Accordingly, a poll conducted for ABC and the Washington Post in the United States found that almost 40 percent of parents had determined not to allow their children to be vaccinated.[53] The stated uptake rates may have been higher than for a normal seasonal influenza, but, given the circumstances and the level of alarm raised, uptake remained relatively poor, especially because actual uptake was considerably lower than stated intentions.

This informed dissent, or deliberate denial of the official line, may then have further encouraged the detractors of vaccination in general in society. These detractors have grown in confidence since the measles-mumps-rubella (MMR) vaccine debacle over a decade ago.[54] It may indeed have been rationalized as a continuation of such campaigns by some professionals, although again, the voice of WHO officials, such as Assistant DG Fukuda who warned without any evidence or suggestion to the contrary that "[o]ne of the things which cannot be compromised is the safety of vaccines,"[55] can only have helped to shape and encourage such concerns.

Rather than being a corruption of interests by powerful commercial forces, as proposed by Flynn and Godlee, and as reflected in Der Spiegel that went as far as to note that this "could explain why Professor Roy Anderson, one key scientific advisor to the British government, declared the swine flu a pandemic on May 1. What he neglected to say was that [GlaxoSmithKline] was paying him an annual salary of more than €130.000,"[56] what is proposed here is a far more subtle, yet deeper, cultural confusion that has emerged across all layers of society over a protracted period. This confusion manifests itself as a proclivity to identify problems as being extreme. It was expressed in varying ways, including through the words of German virologist, Markus Eickmann, when he extolled that, "[a] pandemic – for virologists like us, it's like a solar eclipse in one's own country for astronomers."[57]

Others have also alluded to H1N1 as an "opportunity" – either for "global solidarity," in the words of Margaret Chan in her April 29, 2009 statement,[58] or for personal and professional reasons, as suggested by Ailan Li, when enthusiastically relating to her audience in Singapore how she had never imagined that within her lifetime "we would ever have the opportunity to witness the declaration of a public health emergency of international concern."[59] In other words, it is not only economic gain that officials benefit from at such times, but rather the possibility of enhancing their moral authority by projecting their interpretation of events and necessary courses of action into the situation. And, in doing so, it is not a personal project that they pursue so much as reflecting a wider cultural proclivity to view events through the prism of the worst possible outcome.

When the Cochrane Collaboration epidemiologist, Tom Jefferson, suggested that "[s]ometimes you get the feeling that there is a whole industry almost waiting for a pandemic to occur,"[60] he could simply have replaced the words "whole industry," with "whole society." It certainly seems clear that in the years and incidents prior to the outbreak of H1N1 in 2009, "epidemiologists, the media, doctors and the pharmaceutical

lobby have systematically attuned the world to grim catastrophic scenarios and the dangers of new, menacing infectious diseases."[61]

PRIORITIZING PRECAUTION

Accordingly, if we hope to understand when the episode started, there is really no point in looking to Mexico in April 2009. In any case, aside from the longer term cultural context that helped to shape the views identified above, the public health specialist, Richard Fielding, has noted that the outbreak had "probably been on-going for months."[62]

Yet, despite knowing that the data emanating from Mexico, relating to the possible CFR was poor, and, worse, knowing that many – including the 5-year old, Edgar Hernandez, who at the time was held to have been the "patient zero" of this outbreak – had made a full recovery after suffering a mild illness for just a few days,[63] still the tendency and maybe even desire among many leading public health professionals, who were witnessing the equivalent of their first solar eclipse, was to assume the worst. This suggests a tendency to want to assert a claim to authority – and accordingly shape a professional identity – through the declaration of emergencies. This behavior is increasingly shared by many other groups in society today, and the actions of the public health authorities were entirely consistent with the current demand to apply the so-called precautionary principle to most policy matters, particularly those pertaining to environmental concerns, consumer safety or public health.[64]

The origins and limitations of this approach have been widely examined and criticized elsewhere,[65] and those arguments will not be explored or revised further here. Yet, it was effectively such an outlook that Assistant DG Fukuda reflected when he asserted that, "[w]e wanted to overestimate rather than underestimate the situation."[66] John Mackenzie, the Australian virologist appointed by the WHO at the time of the outbreak to chair the Emergency Committee and advise on courses of action, has acknowledged that, "[i]n that early phase, we still had too little information."[67] But then, one possible lesson that the IHR Review Committee should have reported back to the WHO is that, in the absence of information or evidence, it may be preferable not to speculate about what you do not know, or worse, to start acting as if what you did not know was true.

This is not to argue against planning but to propose that plans be conducted discretely rather than projected into the public domain and that officials distinguish between preparation and action – the latter being likely to transform a situation in an unwarranted or unexpected way. For instance, all parties knew that the CFR data emerging from Mexico was dubious. This is because, if people are unable to report themselves sick until it is too late – as often happens in isolated places with poor access to health services – then the CFR is likely to appear disproportionately high, as many cases are reported only after it is possible to help them. In a similar way, over-reporting of supposed H1N1 cases, as may be encouraged by a worldwide pandemic alert, can create the semblance of a low CFR as everyday instances of temperatures and sore throats become confused through the call to record all possible occurrences of H1N1.

Accordingly, as Dame Deirdre Hine noted in her inquiry for the British government, "modeling the pandemic was seen as a priority." Such computer-based techniques had first been employed in the UK "in order to influence policy" during the

2001 outbreak of foot-and-mouth disease amongst bovines, and had helped facilitate the policy of "contagious culling" then.[68] The response to that earlier episode – which led to the slaughter of more than ten times as many animals than during a similar scale outbreak in 1967 and an effective shutdown of large parts of the British countryside – was criticized by one of the Ministers responsible as an example where "the precautionary principle perhaps got out of hand."[69] But such worst-case scenario, precautionary approaches were now *de rigueur*, having only just been officially endorsed and advocated through the then recently released Bovine Spongiform Encephalopathy (BSE) Inquiry Report, written under the auspices of Lord Justice Phillips.[70]

In relation to H1N1, despite UK ministers and officials having been advised at an early stage "that modeling capability would be low due to the lack of available data," regardless a team "was asked to produce forecasts" on a frequent basis.[71] The pressure to predict, emanating from politicians and officials was evidently not repelled. Dame Hine concedes that, "ministers and officials set a great deal of store by modeling," as it "provides easily understandable figures" that "because of its mathematical and academic nature may seem scientifically very robust."[72] In other words – at least in the early stages of the emergency – computer models simply provided an aura of knowing what was happening and what might ensue.

And while actual decisions were shaped by a variety of factors, it is clear that such projections provided all parties with a semblance of understanding and things to say to establish their authority over the situation. As is often the case in such situations, those responsible and accountable to the public were "keen to be seen" to be taking action.[73] But whether the measures they took, or communications they issued, really had the effects they presume is a moot point. The maxim, often attributed to computer specialists, of "rubbish in, rubbish out," does not appear to have been given much consideration in this instance.

CONTAINING CONFUSION

Even as all of the counter-evidence to the nightmare scenarios then being projected into the public domain by the various global public health authorities came to hand, still there was a continued reluctance to scale-down the alerts.[74] This was particularly understandable among certain countries in the East and Southeast Asian regions that had been the most lambasted by Western officials and commentators for having allegedly failed to help contain the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 and were incessantly scrutinized over their handling of H5N1 (Avian) influenza thereafter. Even Margaret Chan had been criticized during the SARS outbreak in her previous role as Director of Health for Hong Kong, and so – presumably – it featured prominently in her memory too.

In response to H1N1, Hong Kong, China, Japan and others entered into a full-scale alert mode by implementing containment strategies for dealing with the outbreak. These efforts involved active case detection, extensive contact tracing and strict quarantine procedures consistent with the approach advocated by the WHO in the early phases of such an outbreak. However, as on April 27, 2009 the authorities had already announced pandemic Phase 4, all countries had effectively been advised to switch to a

mitigation strategy that prioritizes treatment provision, social distancing and capacity building, instead – an approach that was soon made official.

But as elsewhere, officials and politicians in Asia also presumably wanted to be perceived as taking active steps to combat the threat. Unlike the United States, which had effectively been implicated in the outbreak right from the start, there was a belief across Asia that it might still be possible to at least delay the impact – a step that might fit in between containment and mitigation. In effect, and aside from the fact that there is little evidence as to the effectiveness of containment strategies, "many countries either failed to understand, ignored, or even contradicted in their actions, the advice of the WHO."[75]

The former Director of the National Resilience Division at the Ministry of Information, Communication and the Arts (MICA) in Singapore, KU Menon, proposed – in the wake of SARS – that "there were also high expectations from the populace" for governments to implement "visible containment measures" including "quarantine, border controls and screening," as well as the deployment of thermal infrared scanners, "even when the evidence shows that it may well be a drain on resources for limited ends."[76]

Fineberg too, in his September 29, 2009 press briefing, notes that certain national officials had pointed to:

> [A] political need to demonstrate to your public that you are doing something about this threat and so it may be that the thermometers measuring temperature at a distance at an airport have no value from the point of view of the literal control of the epidemic but they may have a lot of value of reassurance to the public that is comforted to see, well, at least the authorities are doing something.[77]

These interpretations of what the public wanted were mere speculation. Menon effectively admits as much, stating that these views are simply "reasonable to assume."[78] It seems just as plausible that the public's perceived preferences emerged from the insecurities of those in authority themselves, and certainly, the notion that propagating what was effectively a "good lie" may serve to assuage concerns in such situations, is a dubious one which also points to a very low view of the public held by those charged to serve and represent them, as well as possible problems for the authorities in handling such matters again in the future.

Singapore – to its credit – was more flexible than many countries in the region, issuing regular advisories and having the courage to step-down the alert well ahead of others. This may be due to the advantages of controlling a small, highly centralised and integrated governmental system, although much confusion about the outbreak and the measures that supposedly thwarted it – such as the ritual of daily temperature checks – still persist there too. Elsewhere in Asia, the quarantining of all passengers on an aircraft if one was found to have an elevated temperature continued well beyond when it was reasonable to do so, assuming such measures work at all.[79]

In Europe, Johannes Löwer, then-President of the Paul Ehrlich Institute – the German Federal Agency for Vaccines and Biomedicines –noted, "[w]e expected a real

pandemic, and we thought it had to happen. There was no-one who suggested re-thinking our approach."[80]

In fact, as it transpired, the term "pandemic" itself generated considerable confusion in these early stages. Previously associated with measures of morbidity and mortality, only a few months previously, the WHO had redefined the term to refer merely to the geographical extent of an outbreak. However, reference to severity, rather than mere geographical spread of H1N1 persisted – even on the WHO's website – some considerable time after the onset of the emergency. The references on the WHO website were swiftly removed soon after inquiries started into the matter.[81]

But, the key question to be addressed is why everyone was expecting a pandemic in the first place? As Philip Alcabes notes in his recent book on epidemics, the 1918 "Spanish Flu" outbreak, whilst truly devastating, "registered hardly at all in the Western imagination," either at the time, or for decades after.[82] Possibly, he suggests, it was "just too catastrophic to dwell on," or maybe societies wanted to move on after World War I. Irrespective, it was not until the 1970s that epidemics became such a central element of our social imagination, driven by the work of some "who were interested in promoting their theory that devastating flu outbreaks occur every decade or so."[83] Even then, this cyclical theory made little headway; although, in the period after the SARS outbreak in 2003, it became mainstream. It was then that, promoted by the WHO, public health authorities and other agencies the world over were encouraged to develop "pandemic preparedness plans" for responding to such eventualities.

SARS had an early onset and elevated temperature, as well as a relatively high fatality rate – H1N1 featured neither of these. Indeed, depending on circumstances, pathogens that are highly virulent often have a limited capacity to spread as they do not allow sufficient time for a carrier to infect many others. Sadly, the initial response to the 2009 H1N1 influenza outbreak was tailored to the plan – not the virus. Like old military generals – always preparing to fight the last war – so the global public health authorities sprang into action with mental models, systems and responses designed for another time.

SECURITIZING HEALTH

One truly striking aspect that emerges from an examination of these responses is the extent to which the language and – now it would seem – practice of healthcare have steadily become infused, and infected, by a growing discourse of securitization. For example, in addressing such emergencies, the WHO now has a Strategic Health Operations Center (SHOC) where staff can view an array of monitors, broadcasting images and information from across the globe, streaming on a twenty-four hours-a-day, seven days-a-week basis.[84] Even the British security service, MI5, operated no such facility until the latter half of the 1980s.[85]

Health professionals now casually refer to 'sitreps,"[86] (situation reports), develop "colour coded alert levels"[87] in a manner akin to the now defunct system developed by the U.S. Department of Homeland Security in the aftermath of the September 11, 2001 terrorist attacks, and prepare to "fight" prolonged "battles" and even "wars" with unknown and supposedly "ingenious" viruses. As noted by the Australian academics, Caroline Wraith and Niamh Stephenson in their excellent analysis of these developments, "influenza has been constructed as a matter of national security."[88] It

accordingly lends itself to a "rationality of preparedness," or eternal "vigilance," the development of systems "capabilities" and the conducting of regular "exercises" across society as a whole.

Reflecting this new mindset, and possibly getting a little too carried away in the rhetoric, one former senior official goes so far as to note how the Executive Group charged with directing a "civil crisis or emergency" in his country "maintains a low profile during peacetime."[89] Countless others, such as the authors of a brochure for the new "Global Health Security" program at Chatham House, the international relations think-tank in London, assert similar linkages and, through the use of a security discourse, may help to normalize this presumed association.[90]

The fear of bioterrorism, and the development of biosecurity more broadly, have effectively encouraged a militaristic demand for perpetual preparedness among domestic populations and serve to justify national readiness and response plans, the strengthening of border controls and expectations of international cooperation by developing countries – all in the name of enhancing health security. This, as Wraith and Stephenson note, aside from representing a basic shift in how health is conceptualized and acted upon, has also come at the cost of other – more serious and more pressing – issues that affect most health services.[91]

SARS was not the real trigger behind this episode but rather an opportunity to push the agenda.[92] Before SARS, it was the anthrax attacks that had rocked and haunted the United States in the immediate aftermath of September 11, 2001 that played a far more significant role. These incidents amplified the disorientation of Western societies at the time, encouraging them to become fixated on external threats rather than examining their own internal confusions.[93]

Military planners and some civilian agencies were charged with looking into the possible impact of being subjected to a bioterrorist attack,[94] despite the limitations and caveats associated with this pointed to by some.[95] As this proved a largely futile exercise – emanating largely from the realms of hypothesis and hyper-active imaginations – so the locus of interest shifted to health officials and the possible social disorder that might be generated by so-called emerging and re-emerging infectious diseases (EIDs).

It is worth noting that Wraith and Stephenson, in their contribution on these matters, identify a shift in thinking about infectious disease "from conquerable to emergent" over the last thirty years.[96] Citing the work of Peter Conrad,[97] and Paul Farmer,[98] they note that, this approach, whilst prompting interest in surveillance and prevention, "has not contributed to bolstering arguments for work on examining and addressing the socio-economic conditions that contribute to disease and its patterning across populations."[99] This transformation in outlook also coincided with the post-Cold War loss of certainty.

At the time of the anthrax attacks in the United States, many voices in the world of medicine lamented that public health had become a neglected field. Who then, was going to say "no" to the injection of vast sums of money amounting to hundreds of billions of dollars in the United States alone,[100] from military and domestic security sources, even if the stated aims were not seen by the professionals themselves as being the best use of such funds? For some, it would have made more sense to develop generic, primary healthcare capabilities that could be adapted to particular problems than to build capacity for specific situations in the hope that this would somehow benefit the system as a whole.[101]

The long-term result was also to prepare the ground for what was to become the most extensive and most expensive public health response of all time. Pandemics are now assessed and addressed as being national security – not just medical – concerns, as evidenced to some extent for instance, by the former DG of the British Security Service, Baroness Eliza Manningham-Buller, now sitting on the Board of Governors of the Wellcome Trust, Britain's largest medical charity, and the Council of Imperial College, its most prestigious science-based university.

Pandemics demand public compliance to emergency measures for defeating a foreign invasion. This encourages a shift away from treating illness based on actual evidence to speculative imperatives to be prepared focusing on the possibility of worst-case scenarios. But such plans have now come to be acted upon as if the problems they were designed to confront were true. As Huang notes, officials became, "so overwhelmed by the consequence of being wrong that they were unable to tell the difference between consequence and likelihood."[102]

CONCLUDING CONSEQUENCES

In fact, society has been wrong in relation to H1N1 before. In 1976, there was an outbreak in the United States, also referred to as "swine flu," that led to a mass vaccination programme by the authorities.[103] This in turn prompted suggestions of adverse effects from certain quarters that persist to this day.

At the time the authorities concluded that future responses should not be premised on the worst-case scenario – the most likely might be more useful for planning purposes – and also that there should be "provision for the monitoring of the situation and continual reconsideration of policy directions based on new evidence."[104] Neither of these aspects appear to have featured much in the WHO's calls for pandemic preparedness plans from all its Member States subsequent to 2003.

So instead, by 2009, "drugs formerly largely used in the treatment of severe cases of very ill patients in hospitals were suddenly made available for the treatment of large numbers of generally healthy adults and children with relatively minor illnesses in the community."[105] Tamiflu (Oseltamivir) and Relenza (Zanamivir) were prescribed through telephone and internet systems supposedly designed to relieve some of the pressure from medical staff. However, these systems achieved no such thing. The simplistic, algorithm-generated questions asked by telephone operators and websites to confirm a patient's self-assessment of their symptoms had an accuracy rate of less than 10 percent.[106] And then, as Fitzpatrick notes, instead of taking the prescribed substances at the earliest opportunity, many waited to obtain a second opinion from their doctors anyway, thereby missing the window within which the drugs were held to be useful and effective.[107]

Unsurprisingly – given the generally nervous social climate that has already been described – accusations that the known side-effects of these treatments would outweigh their prophylactic benefits also began to mount. No wonder then, that when the vaccine itself finally emerged, those who had borne the brunt of this episode – healthcare professionals themselves – came to form the vanguard of those rejecting it.

Despite appearing on the market less than six months after the emergency began – itself a remarkable achievement of modern science, communication and technology – the impositions and demands generated by alien public health officials, feeding into the

generally fragile social climate, effectively encouraged a spontaneous protest movement that communicated far more efficiently to the general public than the assembled ranks of health security planners.

Social scientists point to a number of distinct side-effects of authorities being out of touch with their constituencies.[108] One of these side effects is to encourage acts of deliberate defiance, even if, these may not consciously be so. Another is to generate exaggerated concerns in populations – such as the understandably anxious parents who refused to allow their children to attend school lest they become infected – irrespective of assurances to the contrary, especially as these latter emanated from those that had promoted uncertainty and apocalyptic projections in the first place.

A variation on the latter – and an area that has received little consideration, let-alone having been assessed – is to determine the cumulative impact of continuously asking people, particularly children, to be eternally vigilant and monitoring their temperatures on a systematic basis – as occurred in many places – lest they be carrying a virus whose consequences were professed to be unknown. Encouraging the advent of such a generation of nervous hypochondriacs, perpetually and introspectively monitoring their every bodily function, may reward a febrile identity, but it is unlikely to regenerate public life in the manner assumed by Margaret Chan when announcing the crisis as an "opportunity for global solidarity."[109] It seems more likely to help undermine social resilience in the long run.

There is finally, also the distinct possibility of such episodes encouraging a greater degree of distance and disengagement in society as people learn to ignore the voices of those they perceive to be "crying wolf" just a little bit too frequently. After all, most people's lived experience of the virus – assuming they had one at all – was of a relatively mild episode that – rightly or wrongly, in their minds at least – may have helped fortify them against future outbreaks. That this episode appears to have disproportionately affected younger people, who would not have experienced such outbreaks previously, would appear to confirm this.

Worse, it is evident that, through the desire to identify H1N1 cases, there was a significant element of over-diagnosis that,[110] in its turn, became reflected in a degree of misdiagnosis. Cases of malaria, meningitis, bronchitis, appendicitis, diabetes and leukemia were all mistaken for influenza – with fatal consequences for some.[111] In China alone, Huang points to an outbreak of Hand, Foot and Mouth disease that went largely under the radar, yet resulted in 400,000 cases with 155 fatalities between March and May 2009 alone, at a time when H1N1 had yet to claim any victim there.[112]

For the United Kingdom, the official inquiry estimated the episode to have cost about £1.2billion (or just under $2billion), including expenditure on drugs, vaccines, helplines and other health-related costs.[113] But, as a study published in the BMJ has noted, this takes no account of any of the broader ramifications – including the opportunity costs of redirecting resources away from other health services, or factors such as absenteeism resulting from exaggerated fears or workplace closures.[114] Accounting for the reduction in gross domestic product (GDP) caused by these, the losses are estimated to be between six and sixty times as much as the official estimate.

That latter figure is a sum on a par with some estimates of the immediate damage inflicted to the British economy over the course of the global market crash of 2008. It is hardly money well-spent on an "exercise," as some have rather disingenuously suggested the episode could be viewed as having been in its aftermath. It amounted,

through the cost of vaccines alone for the French government, to "three times the amount allocated to cancer research in that country over a four-year period."[115] It is a price that most developing countries might like to think twice about prior to accepting as the cost of preparedness.

Above all, it is trust in the authorities that will have been lost through the course of this episode – a precious commodity that most recognize as hard to obtain. And while the degree of this loss may vary from country to country according to how the authorities there acted and fared, the impact of it – in encouraging a degree of cynicism in these – will be felt by all for some time to come.

It has been noted in relation to bioterrorism,

> It's bad enough when an important federal government programme designed to deal with a pressing national security threat turns out to be mostly a waste of money; it's worse when that programme also turns out to distract people and agencies from the more serious and fruitful approaches to the problem; it's worst of all if that programme actually contributes to making the problem even worse than it otherwise would be.[116]

The worldwide response to the 2009 outbreak of H1N1 influenza achieved all this and more.

Whilst the last draft report of the IHR Review Committee, prior to their final report submitted in May, noted that those who "assert that WHO vastly overstated the seriousness of the pandemic" should recognize that "reasonable criticism can be based only on what was known at the time and not what was later learnt,"[117] it is precisely the contention of this paper that the existence of this broader cultural confusion that encourages a proclivity to imagine the worst was known.

It is not the actions of the individuals concerned that need to be scrutinized, through presumptions of impropriety or personal gain, but rather the dominant social narrative to which officials respond, and thereby perpetuate, that remains to be explored and challenged if such extreme social costs and consequences are to be avoided in future.

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Why African Countries Need to Participate in Global Health Security Discourse

Lenias Hwenda, Percy Mahlathi, and Treasure Maphanga

The concept of human security is increasingly accepted as being integral to contemporary notions of national security because of a growing awareness of the importance of individual and societal well-being to national, regional and global peace and stability. Health is thus considered an important component of the predominant vision of human security. However, the precise meaning and scope of global health security remains contested partly due to suspicions about clandestine motives underlying framing health as a security issue. Consequently, low and middle-income countries have not engaged global discourse on health security. This has resulted in an unbalanced global health security agenda shaped primarily by the interests of high-income countries. It narrowly focuses on a few infectious diseases, bioterrorism and marginalizes health security threats of greater relevance to low and middle-income countries. Focusing primarily on countries in the WHO-AFRO region (the African Group), this paper examines the implications of the participation deficit by the African Group of countries on their shared responsibility towards global health security. The potential benefits of regional health security cooperation are analyzed using selected critical health security threats in the Southern African Development Community (SADC). This paper concludes that the neglect of the African Group health security interests on the global health security agenda is partly due to their disengagement. Ensuring that multilateral health security cooperation includes the African Group's interests require that they participate in shaping the global health security agenda, as proposed in a putative SADC health security cooperation framework.

INTRODUCTION

Global health security considerations are increasingly shaping multilateral decisions in the global governance of health. We argue that the African Group and other low and middle-income countries (LMICs) undermine their interests by disengaging the ongoing global health security discourse, which is increasingly informing multilateral discussions in the World Health Organisation (WHO), United Nations (UN) Security Council and elsewhere. The global health security agenda reflects the national security concerns of countries and marginalises threats of relevance to countries that do not participate like the African Group, such as access to essential medicines and trade in harmful medical products. Using SADC as an example, we highlight some potential benefits of global health security cooperation to African countries and propose a possible health security cooperation mechanism within the existing regional frameworks for security cooperation.

GLOBAL PUBLIC HEALTH SECURITY POLICY

The WHO defines public health as all organized collective, public or private measures whose objective is to prevent disease, promote health and prolong the life of entire populations.[1] The concept of public health goes beyond diseases of an infectious nature. It includes non-communicable diseases, physical and mental health and policy activities at the sub-national, national, regional and global levels.[2]

Public health security is a novel concept whose precise definition remains to be clearly articulated. However, its contemporary use is generally in the context of preparedness and responses to infectious disease outbreaks and in reference to bioterrorism.[3] The 2007 WHO World Health Report defines public health security as the proactive and reactive activities needed to reduce vulnerability to acute public health events that threatens the collective health of national populations.[4] Public health security policies are thus considered as policy areas in which national security and public health concerns overlap.[5] Whilst the concept of public health which forms the basis of public health security goes beyond infectious diseases, the majority of empirical analyses on public health security describe the nature of the links between public health and national security primarily focusing on a few infectious disease threats.

Health security within countries is significantly influenced by trans-national threats from States and non-State actors alike.[6] The growing perception of the scope and significance of the external threats to national public health has led to a shift away from the concept of international health security, which applies the principles of public health to health challenges across geopolitical borders—the responses to which are primarily dependent on nation-states. The notion of global public health encompasses the entire spectrum of events with potential to undermine health worldwide. It considers sub-national, national and international threats to health codependent, thereby bringing together the mutual vulnerabilities that are influenced by trans-national determinants. It posits that effectively mitigating against such challenges requires coordinated multidisciplinary approaches by a range of actors including non-state actors. Because global public health challenges are influenced by circumstances or experiences in other countries, they are considered beyond the purview of individual countries and are best addressed through global cooperation. The transnational nature of global public health security threats and collective vulnerability underlies global public health security cooperation.

GLOBAL PUBLIC HEALTH SECURITY AGENDA

The WHO, the global convener and norm-setting health agency of the UN uses the global health security agenda to coordinate health cooperation amongst the global community. This agenda currently narrowly focuses on a few infectious diseases and bioterrorism,[7] neglecting other health issues that also undermine individual and societal health security of populations in LMICs, such as lack of access to life saving essential medicines and vaccines. This focus on infectious diseases and bioterrorism in global health security discourse reflects the national concerns of countries actively involved in shaping the global health security agenda. For example, the U.S. government's Public Health Security and Bioterrorism Preparedness and Response Act of 2002 articulates the national need to combat threats to public health, focusing on threats from

bioterrorism.

The paucity of diverse voices shaping the global health security agenda has led to the neglect of equally important health security threats of relevance to African countries and LMICs. This paper explores some of the health security threats of relevance to LMICs in the WHO-AFRO regional context which excludes North African countries. It examines why African countries and other LMICs do not engage the global health security policy discourse, the impact of their disengagement and possible mechanisms through which they could circumvent possible limitations to their participation in order to advance their health security interests in multilateral cooperation.

HUMAN SECURITY: A NOVEL SECURITY PARADIGM

The concept of international health security stretches back to 1947 when the State Department of the U.S. used it in their analysis of the pre-World War II International Sanitary Conventions.[8] Its contemporary use is associated with human security, a novel security concept that considers national security to be more than the military defense of a state's territory and sovereignty.[9] The defense of a country's territory and its sovereignty from foreign threats is traditionally considered the primary objective of foreign policy and a state's highest priority. This view of national security was the basis of the cold war concept of security, which focused solely on securing the vital national interests of countries through foreign policy or against external threats of a military or forceful nature. A security threat was understood then to be any event, incident or process that could compromise the protection of a state's integrity and political autonomy from potential harm.[10]

However, the end of the Cold War altered the prominence of military threats, thereby eroding this traditional concept of national security and led to the recognition that exclusive focus on state security had become obsolete. Thus, a new security paradigm which incorporates human security as an important component of national security was conceived. The expansion on the conventional military definition of threats to include direct and indirect threats to the well-being of individuals and societies within countries to include health makes human security a major departure from the traditional concept of security. Human security as an objective of national security is based on the premise that the provision of basic needs of individuals and societies is important for maintaining national and international peace and stability.

HUMAN SECURITY IN INTERNATIONAL POLICY-MAKING

A cacophony of voices including governments, scholars and practitioners has provided diverse interpretation and meaning of human security. It is, however, generally understood to be principally about protecting and empowering people.[11] The UN Commission on Human Security defines human security as the protection of "the vital core of all human lives."[12] The UN Security Council and UN Development Programme's (UNDP) definition of human security considers health as an important element of human security.[13] Therefore, this paper utilizes human security in its original broad meaning as defined by UNDP.

The concept is widely accepted within the UN system, as suggested by the establishment of a Commission on Human Security and the convening of the UN World

Summit in 2005 to determine ways of achieving human security. The Commission's report, Human Security Now, considers human security as complementary to state security, and recommends access to basic health care as an important element.[14]

The WHO's World Health Report of 2007 deviates from the broader interpretation of the concept shared by the Commission and other UN institutions such as UNDP and the United Nations International Children's Emergency Fund (UNICEF). It focuses on specific issues that threaten population health internationally and on global compliance with the International Health Regulations as revised in 2005 (IHR2005).[15] The WHO links health security to infectious diseases. It subsequently renamed its communicable diseases cluster to Health Security and the Environment, but has not defined the scope of health security or its implementation.[16] The WHO's limited use of the concept is symptomatic of the concept's rejection by its Member States.

Beyond the UN, a limited number of governments have integrated human security and its focus on the security of individuals rather than states into their foreign policies. For example, in keeping with the UN Charter's emphasis on preventive diplomacy to mitigate against threats escalating into crisis, Japanese[17] and Canadian[18] foreign policies are informed by human security. Human security has also informed international legal instruments such as the 1997 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction, and the Rome Statute of the International Criminal Court.[19]

ORIGINS OF HUMAN SECURITY

Human security has its roots in the UN Charter of 1945, which considered the achievement of peace to be contingent upon freedom from fear and the socioeconomic objective of freedom from want.[20] The rationale was that world peace could only be achieved if people have security in their lives. Since then, the UN alluded to human security in the 1992 document 'An agenda for Peace'[21] and explicitly mentions it in the 1994 UNDP Human Development Report: New Dimensions of Human Security[22] which aims to promote social development and achieve peace through investment in human development. Its inception was an attempt to remedy the historical Cold War neglect of the concerns of citizens in national security. UNDP considered this approach to national security important because contemporary causes of conflict were increasingly arising from within rather than from outside states.

People are primarily concerned with protection from the threat of diseases, political repression, violence, crime and social conflict, amongst others. Therefore, their perceptions of threats to their individual security reduce their tolerance. This is highlighted by the increase in anti-immigration sentiments and the rise of the far rights groups across Europe associated with the economic downturn. These perceived threats to individual security can create a destabilizing force within nations and beyond. Human security thus promotes an approach to national security which considers protecting citizens' security within countries, against both internal and external threats to their health and well-being alongside other interests of the state. Protecting the entirety of nations' security requires mitigating against threats of any type or origin, to the vital core of people's lives to achieve freedom from want and freedom from fear for individuals and societies.[23]

FREEDOM FROM WANT AND FEAR FROM A PUBLIC HEALTH PERSPECTIVE

From a public health perspective, freedom from want involves protecting individuals from diseases, ensuring their access to health care and access to essential life-saving medicines. [24] Freedom from fear entails protecting individuals from threats of a violent nature stemming from conflict and disaster and emergency situations, with potential to inflict physical harm.[25] The objective of both freedoms and of the shared responsibility towards health security is to ensure that social, political, economic and environmental determinants do not undermine people's health and wellbeing.

Therefore, actions or events that could undermine the quality of life of a country's citizens or threaten to significantly reduce its public and private policy options in contemporary society are considered national security threats. For example, 9/11 and the subsequent anthrax attacks undermined the individual and society's ability to live free from fear, and thus affected their human and health security. Similarly, efforts by the European Union (EU) and the U.S. to enforce TRIPS-Plus conditions (a principle involving Trade-Related Aspects of Intellectual Property Rights among and/or involving WTO members that can create higher standards)[26] in bilateral Free-Trade Agreements (FTAs) that seek to limit LMIC's legislative and policy-options to enable access to life-saving essential medicines constitute a health security threat. Therefore, measures to protect global health security should include interventions that protect individuals and societies from diverse threats.

Such threats include trade in harmful medical products, also called "substandard/spurious/falsified/falsely-labeled/counterfeited" medical products, lack of access to life-saving essential medicines, lack of access to health care, antimicrobial drug resistance, emerging and re-emerging infectious diseases, national disasters such as the recent Asian Tsunami or the earthquake in Japan, humanitarian crisis arising from conflict such as in Libya, chemical accidents such as Bhopal in India, and deliberate attacks on health such as the U.S. anthrax attacks.[27] Yet many of these threats including lack of access to lifesaving medicines or trade in harmful medical products are absent from the global health security agenda. Their absence is an unfortunate omission that needs to be remedied. Such remedial action is necessary because in its original scope, human security is considered universal, its components interdependent, people-centered and easier to promote through preventive measures.

HEALTH SECURITY CODEPENDENCE

National health security emergencies, especially those arising from infectious diseases such as severe acute respiratory syndrome (SARS), can escalate into regional and international crises with global repercussions on public health, international trade and commerce.[28] This illustrates the codependence of national and global health security as a result of a myriad of globalization processes and the concomitant increased interaction between them. For example, the interaction between global trade and commerce, human mobility, climate change and disease[29] has increased the potential for health security to undermine trade, tourism and access to goods (such as medicines) and for health security to be undermined by them.

For instance, the growing incidence of emerging disease and re-emerging infectious diseases[30] is fueled by processes such as urbanization and climate change in

the context of increased human transnational mobility. From 1996 to 2004, the WHO identified an emerging infectious disease in each of its six regions, including SARS coronavirus in China, Nile Fever in the U.S., and new variant Creutzfedt-Jacob's disease in Europe. The spread of antimicrobial resistance genes such as the New Delhi-Metallo-β-lactamase 1 (NDM-1) identified in 11 bacteria species including those causing cholera and dysentery and multiple drug resistant tuberculosis constitute a serious emerging threat to health.[31] Diseases once thought to be under control but are re-emerging influenced by a myriad of factors such as shifting attitudes toward vaccination, irrational use of drugs, climate change, trade in harmful medical products and human mobility include the ongoing measles outbreaks in France, Turkey and Spain, polio in Pakistan and Nigeria, yellow fever in West Africa and Marburg haemorrhagic fever in Angola. The potential for disease amplification and spill-over across international borders has thus grown considerably.

OUR SHARED RESPONSIBILITY, THEIR HEALTH SECURITY?

Codependence coupled to the increased diversity of health threats has raised the geopolitical importance of global health security and the need for multilateral cooperation to protect health. Because global health security is as strong as its weakest link, the UN Secretary General called health security and the vision for a more secure global society a "shared responsibility."[32] However, whether multilateralism translates to improved health security for all remains questionable. Empirical evidence does not suggest that the framing of global health security in terms of common vulnerabilities leads to better health security in African and other LMICs.[33]

Recent civil unrest in North African countries like Egypt, Libya and in the Middle East in early 2011 lends credence to the idea that unmet needs of individuals and societies can destabilize national-regional and, therefore, global peace. Furthermore, responses to this civil unrest as seen in Libya and Syria in April 2011 demonstrate that governments can and do pose a threat to the human security of their own citizens. Resultant instability has far-reaching consequences. For example, the influx of 25,000 people fleeing such revolutions in North Africa in Italy and France has prompted these countries and the EU to explore possible regulation of passport-free travel within the Schengen zone. Therefore, the importance of individual and societal security to maintaining national and international peace and stability renders national security and stability an international concern and hence a shared responsibility. Shared responsibility towards mitigating health security threats and other threats to human security within countries is underpinned by enlightened self-interest.

Shared responsibility arises from the need to maintain the integrity of the global system, a critical concern for wealthy nations. For this reason, health security issues that potentially threaten the integrity of the international system such as the H1N1 pandemic influenza, H5N1, and other influenza viruses with pandemic potential, form the focal point of contemporary health security concerns alongside bio-weapons.[34] The recent conclusion of the intergovernmental negotiations on the framework for pandemic influenza preparedness by WHO Member States on the 16th of April 2011 highlights the importance of this issue to the global community. Among other things, the framework addresses the issue of inadequate global production of antivirals and influenza vaccines to expedite their accessibility to LMIC populations based on public health risk and need.

In contrast to the historical neglect of product development for many diseases that threaten the health security of people in LMICs,[35] this triumph of multilateralism to ensure global health security, suggests selective shared responsibility.

A similar show of global solidarity has not occurred with some significant threats to health of relatively less concern regarding their potential impact on the international system. For example, despite that 9 million people develop active tuberculosis (TB) each year, there have been virtually no newly licensed TB drugs in 40 years, and an effective vaccine remains elusive despite enormous strides in bio-molecular technology. This paucity of effective diagnostics and therapeutics for TB and other neglected diseases primarily results from underinvestment in research for these health threats. Yet a multilateral solution to the challenge of scaling up and expediting access to influenza antivirals and vaccines has been found relatively quickly. This suggests that lack of political will to find sustainable solutions to some health challenges makes shared responsibility a hollow promise.

Even with health security threats where multilateral cooperation is recognized as being essential to mitigating them such as the threat of bioterrorism, shared responsibility still does not entail protection in LMICs. For example, in the event of a bioterrorist attack with smallpox or anthrax, insufficient global pharmaceutical manufacturing capacity for vaccines and antibiotics against these threats is likely to limit access and therefore the security of LMIC populations. For example, there is currently no medico-scientific capacity to diagnose smallpox in the entire African region. Diagnostic capacity is concentrated in the North, in the U.S, the Russian Federation and Europe. Therefore, our shared responsibilities to ensure health security offer little, if any, protection for LMIC nationals.

THE LOGIC OF SECURITISING HEALTH

Whilst shared responsibility may not entail shared benefits, the logic of security is useful in influencing political debate on issues such as global health. Securitization is the identification of an existing threat that takes an issue beyond the usual rules of politics, and calls for urgent and extreme measures to respond. Thus portraying health as a security concern (securitization) is a valuable mobilization tool in that it links domestic and external threats to health. This allows national threats to be projected in an international context such that the threats can be viewed as issues of global concern thereby increasing the impetus for multilateral cooperation. For example, HIV/AIDS, the first health problem addressed by the UN Security Council, was declared a security threat in 2000.[36] This led to a subsequent increase in its political prioritization which culminated in efforts to establish the Global Fund to Fight AIDS, Tuberculosis and Malaria and increased health development financing between 2000 and 2005.[37]

Similarly, prior to H5N1 avian influenza, aid for international influenza surveillance, pandemic planning and response was virtually nonexistent. The securitization of pandemic influenza spurred a dramatic increase in the amount of funding available for international surveillance, pandemic planning and responses. In the United Kingdom (UK) between 2004 and 2008, over $2 billion was made available[38] and according to the Centers for Disease Control and Prevention, the annual expenditure on influenza in the U.S. averages $17 billion compared to $720 million for hepatitis B or $7 billion for sexually transmitted diseases excluding HIV. Therefore,

conceptualizing health as a security challenge is persuasive towards increasing the political prioritization of health in geopolitics, increasing funding for health issues and strengthening global cooperation to protect public health.[39]

SECURITIZATION AS A RATIONALE FOR HEALTH FOREIGN POLICY

The securitization of health partly accounts for the growing trend of crafting health foreign policies by wealthy countries such as the U.S., the UK and Switzerland. Specific events such as the global pandemic influenza, fears of bioterrorism and of emerging and resurgent diseases have strengthened the perception of health as an important element of national security[40] and its acceptance as a foreign policy issue. The Oslo Group of 7 and the subsequent UN General Assembly resolutions A/Res/63/33 and A/64/L16 urge countries to consider health issues in their foreign policies.[41] It promotes health as an important foreign policy goal in itself.[42]

If the rationale for health foreign policy and bilateral or multilateral cooperation is the protection of the health security of nationals, it follows that countries may act to protect their interests by omitting health security threats with little relevance to their national health security concerns. Therefore, arguments that health in foreign policy allows foreign policy to move away from debates about interests to one about altruism[43] do not reflect the basic premise of foreign policy. Foreign policy health initiatives are primarily a major tool for improving national security, projecting power and influence, improving countries' international image and for supporting other traditional foreign policy objectives.[44] This precludes the interactions of health and foreign policy from being necessarily mutually reinforcing or mutually beneficial.[45]

Since the global health security agenda is driven by foreign policy interests of its architects, global health political priority threats in multilateral cooperation fora omits major health security concerns of LMICs. Similarly, because health development assistance is principally driven by foreign policy considerations, it is generally guided by the interests of benefactors rather than by national health security priorities of development partners.[46] Consequently, the use of health initiatives as instruments to advance foreign policy interests in bilateral and multilateral cooperation often leads to the underfunding of key health security priorities and the misalignment of global health priorities determined by the World Health Assembly, budgetary allocations and program funding.

Therefore, assumptions based on available evidence, that the benefits of health to foreign policy are so great that health substantially drives foreign policy[47] have little if any relevance to LMICs. Whilst benefits do accrue from health foreign policy activities in LMICs, their grounding in national interests of development partners suggests their benefits may equally be limited. This limitation is exacerbated by power imbalances characteristic of bilateral and multilateral negotiations which restricts the extent to which LMICs can negotiate agreements better aligned with their own national health security concerns. The recent smallpox negotiations during the 64th WHA when the US threatened to force a vote on postponing setting a date for the destruction of the remaining variola virus stocks to bypass objections and the EU and the U.S. efforts to enforce TRIPS-Plus conditions in FTAs with LMICs are a case in point. Coercion undermines confidence, generates resentment and suspicions about ulterior motives which can undermine global health security cooperation.

THE DEFICIENCIES OF SECURITISATION

Securitization as a rationale for linking foreign policy to health is criticized for introducing great power politics and narrow national security interests into health and humanitarian matters[48]. It has led to the narrow framing of health security and the dominance of foreign policy considerations over global public health. Treating global health issues as national security threats also focuses disproportionate attention on diseases and countries considered to pose a threat to wealthy nations rather than the greatest threat to global public health.[49] For example, whilst evidence used to support the securitization of HIV and AIDS was subsequently shown to be false, securitization was used as a justification for implementing HIV-based travel, migration and entry restriction policies and legislation that barred entry of people living with HIV into countries such as the U.S., Canada and China. [50] Whilst China and the U.S. recently repealed this legislation, similar restrictions are still widely enforced in many countries such as Russia.

Furthermore, the securitization of public health and the use of public health security as a tool to fight terror have led to greater investment in counter-bioterrorism and less investment in essential public health functions such as routine immunizations.[51] Securitization also raises questions about motives and has generated growing suspicions amongst LMICs[52] as suggested by the controversies over the sharing of H5N1 pandemic influenza viruses and benefit sharing and within IHR(2005) negotiations.[53] The results appear designed to protect the health security of wealthy countries from emerging and resurgent infectious disease threats. That epidemiological intelligence gathered in LMICs seems to primarily benefit wealthy countries suggests this. During the recent revision of WHO IHR(2005), the U.S. insistence that mandatory entry into affected countries be authorized to allow bypassing a country's consent[54] in circumstances where its efforts to control an epidemic are considered inadequate to prevent international spread by other countries, generated further reservations on securitization. The U.S. proposal was rejected by the majority of Member States because of its potential to violate their sovereignty.

Questions regarding the motives of health securitization have led to its rejection by LMICs. For example, during the WHO Intergovernmental Working Group (IGWG) on pandemic influenza preparedness and the sharing of benefits in November 2007, Portugal attempted to introduce the term global health security in a draft statement.[55] Portugal asserted that global health security should have preeminence over other laws.[56] This proposal was categorically rejected by Indonesia, Thailand, India and Brazil.[57] The concept was similarly challenged by Brazil during the 2008 WHO Executive Board during discussions on the implementation of IHRs because there is no clear meaning of the term and it is not supported by the Assembly: Brazil pointed out the lack of clarity on the goal of international health security and the need for Member States to work on a consensus definition.[58] However, whilst the word "security" was not used in the revised regulations (except in reference to a World Health Assembly resolution) the WHO Secretariat subsequently introduced it in its report which described the IHR(2005) as an important instrument for ensuring that the goal of public health security is fully met.

PREFERENCE FOR BILATERALISM OR MULTILATERALISM

The need to protect health security has increased its acceptance as a legitimate foreign policy concern in Western countries. Countries with health foreign policies are mainly in Europe and North America. For example, the UK[59], U.S.[60] and Switzerland[61] project their national health security concerns through their health foreign policies which guide their bilateral and multilateral activities in the governance of global health.[62] Whilst health foreign policy is commonly professed to have altruistic objectives such as the protection of the poor and people in failed States,[63] a more probable driver of health foreign policy is the need for protection from bioterrorism, the global spread of diseases and their impact on the global economy. The increasing preference for health foreign policy may be because bilateral negotiations allow countries to go beyond international law in order to protect their national health security.

Furthermore, the ascendance of non-military power has resulted in the gradual diffusion of power to a broader range of state and non-state actors such that power is no longer concentrated in the hands of a few. High economic growth rates in emerging countries such as Brazil, Russia, India and China (BRICs) have increased their political influence in global governance of health and other sectors such as trade. Their political willingness to challenge the traditional powers on matters of national interest has created a balancing effect as illustrated by Brazil's successful challenge of the TRIPS regime.

This has transformed health geopolitics by altering the dynamics of multilateral negotiations and the importance of soft power to influence international health politics. Soft power is a diplomatic approach to obtain foreign policy objectives through persuasion and collaboration rather than through economic influence or political domination. Examples of recent breakthroughs that curtail the interests of traditional powers are the 2010 WHO Global Code for the International Recruitment of Health Personnel (WHO Global Code) and the recently concluded pandemic influenza framework.[64] Whilst these changes do not mean power asymmetries no longer exist, they are important steps in transforming the multilateral system by limiting the ability of the traditional powers to impose their policy will within multilateral institutions. This may partly explain the increasing preference for health foreign policy, which may be an attempt to circumvent the diminishing power in multilateral fora.

However, not all countries have crafted health foreign policies. There is no known documented foreign policy approach for Senegal and South Africa, the two African countries which participated in the introduction of health as a foreign policy in the UN. And others have taken a different approach to health foreign policy. For example, Brazil emphasizes south-south cooperation whilst Thailand focuses on regional cooperation. Greater cooperation between LMICs and emerging economies like the BRICs has increased their bargaining power in multilateral negotiations and is successfully offsetting power asymmetries in the global governance of health. These countries therefore show a greater preference for multilateralism though they have not adopted explicit health foreign policies. A dichotomy of preferences therefore emerges. The North's fear-driven dual approach to national health security employs health foreign policy in bilateral relations to reinforce the less than optimal multilateral solutions. The South's growing confidence and suspicions of the North's motives show a preference for regional cooperation through like-minded coalitions.

ENSURING GLOBAL HEALTH SECURITY FOR ALL

Ensuring global health security for all requires a balanced and inclusive agenda. This can only occur if LMICs participate in shaping the global health security agenda in order to determine how it can better serve their domestic health security needs. Furthermore, since there is no consensus on the meaning of global health security, participation would enable LMICs to provide their understanding of what global health security should entail and broaden its scope beyond its current narrow definition.

The African Group and other LMICs are affected by the health security issues that are marginalized on the global health security agenda such as lack of access to life-saving medicines and health workforce shortages. The majority of empirical analysis characterizing the interaction between health security and health foreign policy has been made from a high-income country perspective. There is little if any analysis of this interaction in the LMIC context. This limits the relevance and applicability if any of such generalizations to LMICs. The inherent nature of foreign policy as a function of national interest whose primary objective is to protect national security, economic interests and national development precludes health foreign policy from serving altruistic purposes it is alleged to serve. Its primary purpose as the pursuit of self-interest is a goal that potentially undermines solutions that respond to the threats of greater relevance to LMICs.

For example, Laos receives disproportionate donor support in influenza surveillance from several sources including the US Navy EWORS and the Rockefeller Foundation-funded Mekong Basin Disease Surveillance Network. [65] However, whilst surveillance data is of great value by providing early warning to other countries of possible international spread of diseases, it has limited practical value to the country originating the data if the country has limited health systems capabilities. Functioning health systems are the bedrock of any credible responses to health security threats. Therefore, effective disaster responses including the containment of disease outbreaks requires viable health systems,[66] and investment in basic health services to ensure broader and sustainable health security responses that are capable of addressing a variety of potential health security threats.

Therefore, global commitment to build sustainable responses to security threats should not be limited to surveillance and containment, but need to integrate health systems strengthening. Though developing, strengthening and maintaining health systems is more costly than introducing infectious disease surveillance and outbreak containment, such an approach would ensure that poor countries also benefit from timely and open sharing of epidemiological intelligence essential for protecting global health security.

POSSIBLE LIMITATIONS TO PARTICIPATION BY AFRICAN COUNTRIES

The African Group and other LMICs face unique health security threats that are not congruent with the narrow focus of the global health security agenda, yet seriously undermine their national health security. The lack of engagement of health security discourse by African countries may be a manifestation of their rejection of this concept as a rationale for multilateral action. For example, the African Group supported Brazil,

India, Thailand and Indonesia's, objection to the concept of global health security during pandemic influenza and International Health Regulations negotiations. [67]

However, effective participation must begin with a clear articulation of national health security threats within African countries. Identified priorities should inform their foreign policy interactions in bilateral and multilateral cooperation. This requires coordination of all relevant stakeholders to determine priority threats and to achieve national policy coherence at the intersection of health and other cross-cutting issues relevant to other government ministries, including foreign affairs, trade, development and defense. Effective coordination is a resource-intensive process. This limitation could be circumvented by pooling resources such that the health security threats of African countries are considered within regional configurations.

Another possible limitation to African country participation may be that coercion by wealthy countries has espoused a culture of being passive recipients of high-income country policy initiatives such as the health foreign policies shaping the global health security agenda in the WHO, the UN General Assembly, the UN Security Council and in bilateral cooperation. For example, the U.S. has threatened sanctions on countries that attempt to utilize TRIPS flexibilities and pressured them to implement TRIPS-Plus provisions, which undermine access to affordable medicines.[68] The U.S. disregard of the health priorities and needs of African may also explain their hesitation in engaging global health security policies.

THE MERITS OF ENGAGING GLOBAL HEALTH SECURITY DISCOURSE

Whilst LMICs might reject explicit reference to health security in multilateral agreements such as the IHR(2005), the concept is progressively influencing multilateral decisions despite perceived legitimacy and merits of LMICs reservations. For example, subsequent WHO reports to the Executive Board described IHR(2005) as an important instrument for protecting international public health security.[69] Furthermore, during the April 2011 intergovernmental pandemic influenza preparedness negotiations, some Member States including Norway, stressed the need to finalize the pandemic influenza preparedness framework in order to ensure global health security. More importantly, a recently proposed resolution at the 64th WHA on the destruction of the remaining stocks of variola virus stocks used the need to protect global health security from the threat of bioterrorism with reconstituted genetically-engineered weaponised smallpox as a justification for maintaining the viral stocks at the repositories in the US and the Russian Federation. This sequence of events suggest that in the long term, LMIC neglect of this discussion may be detrimental to their health security interests because global health security discourse continues with or without their input and the outcomes influence multilateral decisions in subtle but incrementally significant ways.

Countries not engaging health security discourse at national level are limited in their ability to elaborate their national health security priorities or to inform their multilateral and bilateral negotiation positions with such priorities. The potential for global health security cooperation to translate to positive health outcomes for African country health security priorities is contingent upon their ability to engage global health security discourse to ensure better representation of their national-regional health security concerns. A proactive approach could prevent the marginalization of their health security threats and bring the required balance to the global health security

agenda.

Whether African countries and other LMICs accept or reject the securitization of health, their multilateral obligations means that they remain key stakeholders in the implementation of a global health security agenda that does not serve their health security interests. Therefore, they need to carefully weigh the potential benefits of engaging against their current approach of disengagement. Joint problem-solving, proposal and collaboration on innovative policy interventions would ensure a more inclusive agenda and prevent a shared responsibility towards the health security concerns of others. Furthermore, greater engagement could provide impetus for African countries to develop more coherent national health strategies underpinned by their health security interests.

BRINGING HEALTH SECURITY TO THE AGENDAS OF AFRICAN COUNTRIES

Passive reliance on other countries' health foreign policies undermines the health security needs of African countries. For example, health foreign policies of these countries can have ideological conditions harmful to health. PEPFAR, implemented in 15 countries, several in Southern Africa, such as Zimbabwe, Botswana and South Africa, required 33 percent of funds to be earmarked for programs promoting abstinence until marriage. This was widely criticized for undermining proven public health interventions[70] by neglecting risk reduction measures based on public health principles. Its top-down, vertical approach undermined national programmatic knowledge and neglected health systems and sexual health.

Cooperation on health security amongst African countries could provide greater bargaining power to negotiate bilateral agreements better aligned with public health principles. It could also positively influence outcomes in multilateral negotiations that affect African health security, such as climate change which affects food security and trade agreements that affect access to essential medicines.

African countries could follow good policy practices. For example, Brazil successfully leverages its advocacy for access to antiretroviral medicines for people living with HIV and AIDS[71] into expanded south-south cooperation, leadership, diplomatic influence and access to markets.[72] These activities have raised Brazil's international standing thereby promoting its foreign policy goal to obtain a seat in the UN Security Council. China similarly leverages its support for health programs in African countries to support its foreign policy objective to gain access to strategic resources and markets in African countries. For example amongst its numerous health promoting foreign policy initiatives, in early 2011, China announced a bilateral agreement deal with Zimbabwe of $585 million to boost health and agriculture sectors.[73]

Global economic growth projections by the World Bank that the African continent will have the second highest annual economic growth rate next to Asia in 2011[74] should inspire African countries to become more assertive in advocating for a balanced global health security agenda that also mitigates their health security concerns. African countries could consider leveraging access to their resources through health foreign policies to ensure that bilateral and multilateral agreements with development partners like China, the U.S. and the UK do not undermine health security within their countries. In a contemporary global society where countries routinely use health as a bargaining chip in bilateral and multilateral negotiations and use health interventions to

achieve strategic foreign policy objectives, African countries could benefit from a better understanding of how they could better leverage their resources and strategic health foreign policy interests to promote national and regional health security as routinely done by other countries.

AFRICAN REGIONAL HEALTH SECURITY COOPERATION FRAMEWORKS

Whilst there are no documented discussions on health security in the context of health foreign policy in most African countries, health has long been on African regional agendas. Various fora exist through which health security issues could be integrated without needing novel structures to act as a vehicle. These could provide a platform for systematic analysis to determine health security priorities that require foreign policy action in African countries. African health security cooperation frameworks established within such pre-existing regional cooperation structures such as the SADC community could be implemented under existing international legal instruments such as the IHR(2005) or the WHO Global Code, which African countries are already under international legal obligation to implement in their own countries.

The 15 Member State economic integration partnership of SADC has a mission to promote socio-economic development, peace and security through deeper integration and cooperation.[75] Representing a total population of 170 million people, SADC FTAs create a regional market worth $360 billion and include economies with annual growth rates of over 7 percent. The SADC community already possesses a suitable institutional framework that could adopt the concept of health security and expand it beyond SADC's current exclusive focus on HIV and AIDS to recognize a myriad of other threats to health in the region some of which are briefly discussed below.

The putative SADC health security cooperation framework could be embedded within the existing organ on politics, defence and security cooperation. Incorporating health security as a component of security cooperation under the existing SADC security cooperation organ could enhance the appeal of the concept with its Member States. It may also be an innovative way of improving the chronically underfunded health sector through linkage with better-funded national security budgets on the basis of health being a national security issue. This health security cooperation framework could guide and inform national health foreign policies within SADC countries. Should a common health security cooperation framework not prove feasible, an alternative approach could be to increase national and regional policy coherence on foreign policy and health without formal strategies as has been done by some countries in the Oslo Group of Seven such as Thailand, Brazil and Indonesia.[76]

However, whilst informal cooperation may work in the context of individual country approaches, it may not provide an effective model for partnership across many countries by failuring to command their commitment thereby undermining cooperation. Therefore, a formal regional health security cooperation framework might provide a better model for regional health security cooperation for SADC or other African regional groupings. SADC health security priorities could guide national legislation, foreign policies and be harmonized with the priorities of other African regions to provide a wider platform for the African Group strategy in multilateral cooperation.

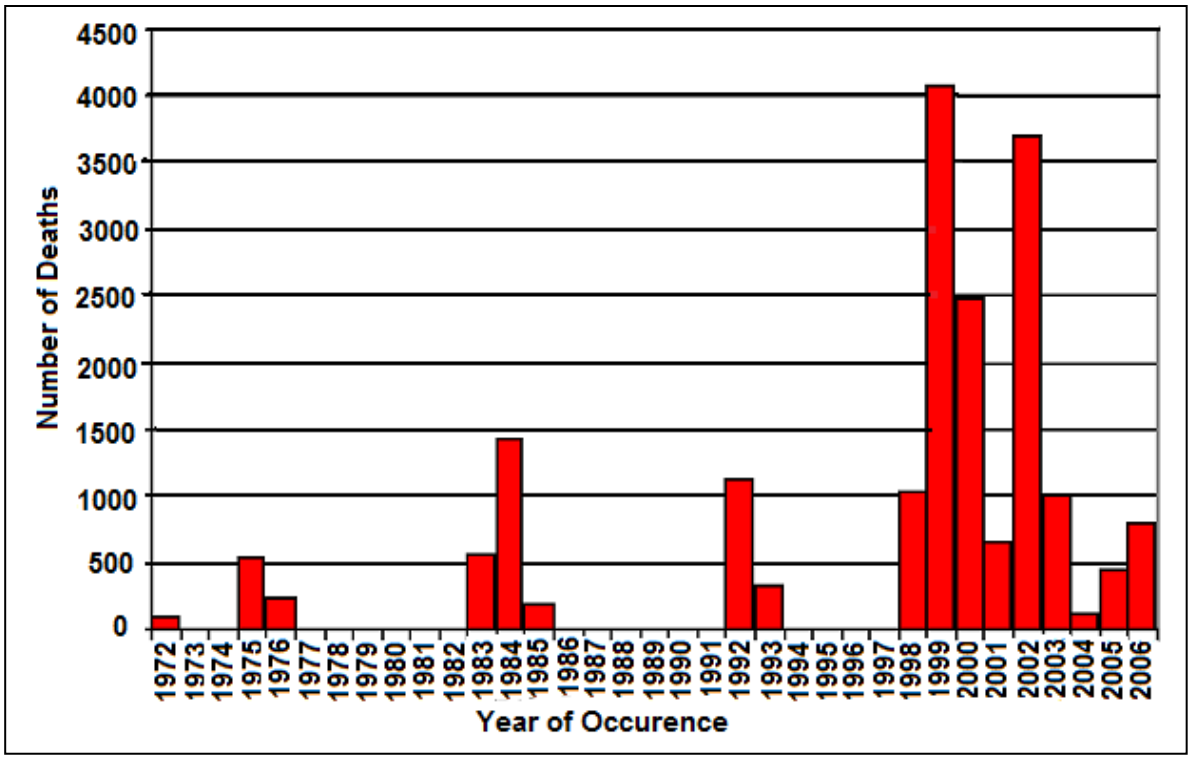
SADC Health Security Codependence

The 2008 Zimbabwe cholera epidemic illustrates health security codependence amongst SADC countries and supports the benefits of health security cooperation in the region by illustrating how cooperation could mitigate similar regional health security challenges. Cholera is an acute intestinal infection caused by the consumption of food and water contaminated with the bacterium, *Vibrio cholera*, which manifests itself as a diarrheal sickness.[77] The provision of safe drinking water, adequate sanitation and food safety are critical to preventing and reducing the spread of cholera. Public health messages to enhance communities' preventive behavior to halt further contamination and infection are equally important. Whist interventions to mitigate cholera spread are relatively simple and cheap; they are dependent upon functional health systems, effective surveillance, early detection and rapid response mechanisms.

In 2007, the health system of one of the SADC community countries, Zimbabwe, was severely debilitated by the social, economic, and political crisis that embroiled the country. Rampant inflation and economic free-fall put the government under enormous financial stress. Negative ramifications were felt in all sectors of society with health being one of the worst affected. Resultant massive cuts in national health expenditure coupled to social policies that undermined population housing conditions, the availability of safe drinking water and adequate sanitation were a prelude to the health security crisis. The government struggled to pay health personnel and other civil servants. These factors partly accounted for the massive exodus of people including health personnel into neighboring countries.

Incapacitated health systems severely undermined response capabilities to the impending cholera epidemic whose onset occurred in August 2008. Ordinarily, based on prior history of low frequency sporadic cholera cases occurring in Zimbabwe since 1972, Figure 1[78] this might have resulted in better preparedness and rapid responses at the epidemic onset. However, the ongoing crisis severely curtailed early detection and responses. The consequent delayed response allowed dramatic deterioration of the national crisis before concerted responses could be initiated. With the declaration of a national emergency situation occurring five months after the epidemic onset, Zimbabwe's national health systems were under severe pressure and its capabilities overwhelmed.

Figure 1: Cholera in Zimbabwe, 1972 – 2006



Source: Zimbabwe Ministry of Health and Child Welfare

The concomitant exodus of people into neighboring countries allowed cholera spillover into the entire SADC region. The evolution of this epidemic demonstrates national-regional health security connection resulting from intra-regional human mobility and the trade routes linking all SADC countries. SADC did not have an appropriate response mechanism to mitigate the spread of the epidemic into the entire SADC community, and the IHR(2005) advises against quarantine measures, trade and human embargoes because they are ineffective at controlling the trans-national spread of cholera. A SADC health security cooperation framework guided by this instrument might have facilitated innovative ways of mitigating a regional crisis.

The Zimbabwean Ministry of Health and Child Welfare, in collaboration with local and international partners, launched coordinated responses, providing safe drinking water, disseminating health information and rehydration therapy to those affected subsequently halting the epidemic. Across countries, differences in reported cases, case fatality rates and the total number of deaths as shown in Table 1, illustrates the different response capacities within countries. Countries without a concurrent internal crisis whose health systems were not under severe stress such as Botswana (2 deaths) and Namibia (9 deaths) had fewer cases, lower case fatality rates and total recorded deaths.

Table 1: Cholera Deaths in SADC 2008-2009 Cholera Season.

Country	Reported Cases	Reported Deaths	Case Fatality Rate	Time Period
Zimbabwe	98, 349	4,276	4.4%	15 Aug 2008-24 May 2009
Mozambique	17, 761	140	0.8%	1 Jan 2009-9 May 2009
Swaziland	17, 448	0	0.00%	22 Dec 2008-16 May 2009
South Africa	12, 752	65	0.5%	15 Nov 2008-31 May 2009
Zambia	8, 312	173	2.1%	10 Sept 2008-7 May 2009
Angola	7, 495	134	1.8%	1 Jan 2008-17 May 2009
Malawi	5, 269	113	2.1%	15 Nov 2008-24 May 2009
Namibia	203	9	4.4%	22 Oct 2008-17 Apr 2009
Botswana	15	2	13.3%	1 Nov 2008-24 May 2009
TOTAL	**167, 604**	**4,912**		

Source: United Nations Office for the Coordination of Humanitarian Affairs Regional Update

Partnership and cooperation are of greater importance in national contexts where health systems capabilities are limited because they leverage national health security needs to create synergistic responses to regional health security threats, facilitate early detection and expedite responses, thereby mitigating the potential impact of threats to the entire region. This case illustrates SADC health security challenges such as weak surveillance and poor emergency preparedness and the lack of credible mechanisms for limiting the impact of policy actions outside the health sector such as water and sanitation policies and poor social protection from severely undermining health security of countries and the region. It also underscores the cross-sectoral nature of health threats, the need for coordination between the health ministry with other ministries and sectors in finding effective measures to mitigate health security threats.

Whilst the presented case illustrates a health security threat of infectious nature, threats to health security in SADC are diverse. There exists a myriad other threats that could also benefit from SADC health security cooperation. Table 2 outlines some of the health threats that could benefit from deliberate foreign policy interventions by SADC countries and some foreign policy issues with potential to undermine SADC health security but that could positively impact health security if carefully managed.

Table 2: The Interaction between Health Security and Foreign Policy in SADC.

Health Security Threats Affected by Foreign Policy	Foreign Policy Issues Affecting Health Security
Lack of access to medicines, vaccines, diagnostics and other essential medical products	Climate change, food security and management of natural resources like water
Weak procurement systems, lack of access to affordable essential medicines	Human mobility, migration of health workers
Poor investment in product development and innovation for neglected tropical and infectious diseases	Global economic and financial crisis
Poor investment in health and weak health systems	Natural disaster, conflict, human rights, civil unrest, post-conflict crisis
Weak national medicines regulatory authorities and the flow of harmful medical products in the national and regional supply chains	Trade in harmful medical products,
Health development goals misaligned with national health security threats and priorities	Negative impact of International trade law and intellectual property laws on access to affordable life-saving medicines and diagnostics, TRIPS-plus conditions

Lack of Access to Essential Medicines

Between 2001 and 2007, 38 percent of medicines on the WHO essential list were available in public and private health facilities in Africa. The problem was more acute for medicines still under patent. The WHO defines essential medicines as those that satisfy the priority health care needs of the entire population. Consequently, many people in SADC die of preventable diseases due to lack of access to affordable essential medicines. Diverse factors undermine the availability and affordability of essential medicines, including weak national medicines regulatory authorities, procurement policies, generics policies and the negative impact of global trade and intellectual property regimes. Therefore, enabling access to essential medicines could be greatly enhanced by international trade regimes and the development and innovation policies that safeguard public health security interests.

The TRIPS agreement has flexibilities to safeguard public health by allowing States to override patents and increase access to medicines in spite of intellectual property under certain public health circumstances.[79] The implementation of TRIPS flexibilities requires national policy and legislative frameworks. This instrument radically altered global supply of affordable medications by countries like India, Brazil, Thailand and South Africa. However, the potential for TRIPS flexibilities to enable access to essential medicines has been undermined by U.S. and EU perception that the flexibilities constitute a political and regulatory impediment to market access. Since the TRIPS agreement, the U.S. has actively pursued and threatened trade sanctions against trade partners who have attempted to implement TRIPS flexibilities, notably South

Africa, Brazil and Thailand. The ability to benefit from TRIPS flexibilities has been further curtailed by U.S. and EU promotion of TRIPS-Plus conditions in bilateral FTAs negotiations which restricts flexibilities implementation across LMICs. Threats of sanctions by the U.S. on countries that utilized TRIPS flexibilities led SADC countries to convene regional meetings to discuss ways of circumventing the negative impact of U.S. foreign policy on access to medicines within SADC.

Such cross-cutting issues require significant foreign policy involvement and intergovernmental negotiations. SADC health security cooperation framework could provide strategies for influencing multilateral negotiations that affect access to safe, efficacious and affordable essential medicines such as the General Agreement on Trade and Services. Through cooperation, SADC could anticipate, prevent and ameliorate the regional health security challenges of access. For example, harmonized procurement systems under the SADC customs union could enhance the bargaining power of countries to negotiate lower prices with pharmaceutical suppliers thereby increasing the availability of safe efficacious and affordable quality essential medicines within countries.

The Threat of Harmful Medical Products

Harmful medical products are another important threat to health security in SADC. These products threaten public health security by, for example, promoting antimicrobial drug resistance which causes treatment failure, toxicity, poisoning, teratogenicity, and may have compounds with contraindications against a person's concurrent medication, which could cause other pathologies, treatment failure due to lack of, insufficient or excessive amounts of active ingredients and even death. SADC also faces a growing threat from uncertified Chinese complementary medicines which claim to be legitimate and certified replacements of pharmaceutical medical products for treating conditions such as hypertension, diabetes and even HIV and AIDS. The World Customs Union reported that 65 percent of global counterfeited medicines originate in China whose export trade in harmful medical products was estimated at $24.6 billion in 2001. Most of these products are destined for Africa. SADC medicines regulatory authorities have been cooperating to stem the transnational supply of harmful medical products by ensuring the affordability of high-quality, safe and efficacious medicines because elevated prices force people to use informal markets for their medicinal needs. Trade in harmful medical products result from organized criminal syndicates, compounded by weak national medicines regulatory authorities, weak legislative frameworks and poor cross-border policing. SADC cooperation could disrupt cross-border supply chains of these harmful medical products.

Harmful medical products are, however, a health security threat of relevance also to other regions such as Europe and Asia. Therefore, African countries could use their health security cooperation frameworks to bridge the division amongst the different positions of the WHO regions that are currently blocking progress on finding a multilateral solution within the WHO to the threat of harmful medical products. Ongoing WHO intergovernmental negotiations on how to address the health security threat of harmful medical products have been impeded by disagreements amongst WHO Member States on the precise nature of these harmful medical products and the manner in which to mitigate their threat to global health security. Protecting health security

requires that the definition does not characterize generic versions of essential medicines under patent but legally manufactured by countries under TRIPS flexibilities as counterfeited medical products. A definition that classifies generics as counterfeit would seriously compromise SADC health security by impeding access to affordable essential. To promote consensus on a definition, SADC could propose the neutral term such as "harmful medical products" as a compromise solution. The determination of harmful medical products would be determined by national medicines legal and policy frameworks informed by WHO guidelines.

Human Mobility, Health Personnel Migration and Weak Health Systems

Functional health systems are the backbone of any credible health security framework. SADC health systems are weakened by a host of factors including health workforce shortages and dependency on foreign aid. Health workers are a key pillar of a functional health system, and the severe shortages in the SADC countries undermine health security. Therefore, regional cooperation to address health workforce shortages would be a critical strategy to improving SADC health systems and its health security. Since health workforce shortages are a global phenomenon, a SADC strategy could promote bilateral and multilateral cooperation frameworks informed by the WHO Global Code. Mutual learning opportunities in the management of health workforce migration are abundant but hardly recognized and utilized. Countries like South Africa have clear policies on managing the employment of foreign health professionals which could be used as a platform for sharing identified good practices in the region.

Food Insecurity and Climate Change

Food is an important determinant of health. Food insecurity causes malnutrition and undermines social stability as was seen with the 2010 food riots in Mozambique as a result of price and supply volatility in the food sector. Some countries in SADC are projected to have food shortages in 2011 due to droughts and flooding which have caused widespread crop failure. Neoliberal policies of the Breton Woods institutions which undermined local food production by reducing subsidies to local farmers and tariffs on imported food in LMICs have also negatively affected local production of food within SADC. High prices of food due to rising inflation and speculation in the commodities markets and the associated increase in import costs has caused food shortages in local markets and food insecurity within countries.

Factors affecting food security undermine social stability and threaten health security. Food insecurity in the SADC context of high HIV prevalence increases risky behavior in vulnerable populations and it affects the ability of people living with HIV and AIDS to take up treatment, stay on treatment, and undermine positive treatment outcomes. Treatment failure due to food insecurity undermines the health security goal of universal access to antiretroviral treatment. SADC health security cooperation strategies could aim to reduce vulnerability to food insecurity through short term social safety nets coupled to long-term livelihoods projects to ensure sustainable solutions to food insecurity that are grounded in the local context.

Climate change, such as increased frequency of droughts and floods, also affects the availability of safe drinking water and food security through, for example,

contamination of underground water sources and crop failure. Climate change has increased the prevalence of vector-borne diseases like malaria and water-borne diseases like cholera. Mitigating the global impact of climate change and food insecurity requires awareness of how climate change affects health security and how to incorporate these concerns in climate change negotiations. SADC health security cooperation could strengthen institutional capacity to pursue long-term development whilst ensuring that health is not marginalized in global trade and climate change regimes.

CONCLUSION

The people-centered approach to global health security justifies the inclusion of all threats that undermine the security of individuals and societies such as lack of access to essential medicines. However, the current global health security agenda is narrowly defined. It excludes threats relevant to African countries these countries with a responsibility to protect the health security of others. Therefore, African countries need consider the potential benefits of participating in shaping the global health security agenda in order to advance their health security interests. African regional cooperation within existing frameworks, such as the SADC, under existing international legal instruments could reduce the cost of participation. The use of health security arguments by countries like the U.S. in multilateral negotiations in attempts to bypass national sovereignty has generated mistrust, and the potential to undermine the faithful implementation of legal instruments such as the IHR(2005). Therefore, a more inclusive health security agenda and greater sensitivity towards health security needs of African countries and other LMICs by the EU and the U.S. during bilateral and multilateral negotiations could restore confidence and enhance international relations and global health cooperation.

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The Security Dividend: What the United States Can Obtain from Investing More in International Health Care Capacity

Kermit Jones

With their increased emphasis on soft power, both the Bush and Obama Administrations have opened up a new front in the war of ideas regarding who will have the most influence over developing countries as the world moves through the twenty-first century. Currently the political and philosophical differences between the parties of this conflict are not as starkly defined as they were in George Kennan's historic argument for containment (i.e., there is no "Evil Empire," and "terrorism" can be a process, act, or method, but not a state). Yet the consequences of losing this international war on poverty have been defined as no less than a tangible threat to U.S. national security interests and moral leadership. This paper narrowly focuses on one particular type of strategy in this new war—foreign aid for health—and how, by helping countries to supply and train more of their own soldiers in this type of fight (i.e., non-physician health workers and surgically trained workers) the United States can achieve the best results in terms of sustainability, cost, and regional impact.

INTRODUCTION

Shortly after September 11th, the Bush Administration concluded that it was in U.S. national security interests to use foreign aid to help prevent fragile state collapse, with the logic being that fragile states could become ungoverned territory from which terrorist organizations could operate against U.S. interests. The 2002 National Security Strategy (NSS) encapsulated this conclusion and elevated the use of foreign aid in U.S. foreign policy by stating that, "including all of the world's poor in an expanded circle of development…is a moral imperative and one of the top priorities of U.S. international policy."[1] Sustained economic growth, poverty reduction, and public health are listed as areas of strategic importance.[2] In 2007, candidate Barack Obama also decided that well-structured foreign aid to developing countries was in U.S. national security interests, writing in the journal, *Foreign Affairs*, that the United States needed to, "invest in building capable, democratic states that can establish healthy and educated communities, develop markets, and generate wealth."[3] In 2008 Congress took the lead, increasing funding for the original Bush Administration's President's Emergency Plan for AIDS Relief (PEPFAR) by $48 billion.[4] In 2010, Secretary of State Clinton declared that in the new administration development aid would have a place on equal footing with defense and diplomacy in U.S. foreign relations.[5] However, in 2011 with the United States just beginning to recover from a massive economic downturn and a newly elected Congress ready to flex its budgetary muscles, a strong fiscal reflex emerged to cut funding for all things foreign and domestic, especially foreign aid programs deemed merely as expensive, self-delusional exercises of soft power. But continuing along this path would be a strategic and shortsighted mistake. In this paper I argue that President Bush and President Obama both had it right. Well-structured foreign aid can produce efficiencies in the health care sectors of developing countries that augment economic

growth in ways comparable to education and beyond what can be achieved through military aid or military means alone. Foreign aid specifically designed for developing countries' health care systems can increase the number and broaden the skill set of physician and non-physician health workers. If designed correctly, programs in specific areas of need, such as rural obstetrics, surgical care, and proper vaccination distribution, can decrease marginal health care costs, broaden access and result in long term spillover effects into labor markets and thus stimulate economic growth—one of the few things that many studies consistently suggest lowers the risk of country collapse.

FOREIGN AID FOR SECURITY

September 2002 was a time of great turmoil and diplomatic decision making in the United States. The U.S. was engaged in one war in Afghanistan, and President Bush was making the case before the United Nations and the American people for an invasion of Iraq. The Bush Administration, determined to usher in a dramatic shift in U.S. foreign relations, released a National Security Strategy (NSS) that highlighted foreign aid and economic development as pillars of a new U.S. foreign policy. Stating, "A world where some live in comfort and plenty, while half of the human race lives on less than $2 a day is neither just nor stable," the 2002 NSS outlined a series of development goals headlined as imperative to national security.[6] Investing in health and education, improving the effectiveness of development banks, and "unleash[ing] the productive potential of individuals in all nations," were only a few of the goals set forth in the document.[7] Shortly after the NSS was released, PEPFAR funding legislation was enacted and the Millennium Challenge Corporation (MCC) was created. PEPFAR committed $15 billion dollars of aid over five years to help combat AIDS in developing countries and the MCC launched a new platform for awarding foreign aid to countries that met specific market and democratic criteria.[8] When the Obama Administration came into office, it issued funding requests to Congress to increase the budgets for PEPFAR and the MCC, highlighting the role that the aid branches of government, such as the United States Agency for International Development (USAID), would play in utilizing soft power to achieve national security objectives in developing countries.[9]

TO GIVE OR NOT TO GIVE

Policy makers and commentators originally skeptical of the U.S. policy shift to increase foreign aid funding became even more doubtful of its wisdom or long term effectiveness after the global economic downturn, citing as evidence cases where American public funds have landed in the coffers of unscrupulous government actors.

Yet there is strong evidence that poor health indicators are actually good markers for low-economic development and potential country destabilizing conflict. A study by Pinstrup-Andersen and Shimokawa, using World Bank data, found significantly positive correlations between under-five child mortality, nutritional status, degree of level of poverty, and likelihood of armed conflict eruption.[10] Collier and colleagues also found strong correlates between risk of country collapse and decreased economic growth. Their model suggested a 1 percent drop in risk of civil war in poor countries for every percentage point increase in the rate of economic growth.[11]

USAID, as an organization, has indicated that it also believes in health sector underpinnings of economic development. In its publication, *Implementation of the Global Health Initiative: Consultation Document*, USAID lays out its vision of a type of global health diplomacy where health is used as a vehicle to stabilize communities, spur economic progress, and contribute to the global security of nations.[12] Also in the document are outlines for strategic investments in health and gender equality, and on its website are examples of where the agency has achieved success in its childhood vaccination program in Pakistan and its mid-wife training program in Afghanistan.[13]

Interestingly, the global health implementation document also describes a USAID plan to strengthen health systems in developing countries by training and retaining 140,000 new health care workers.[14] Yet few specifics are given in terms of the types of health care workers that will be trained and in what capacity they may serve. This lack of definitional precision can be used as a structural advantage if converted into an effort to support and strengthen programs already in existence in many developing countries which are currently helping to fill the gap in health care provider presence in the areas of greatest demand.

A 2007 survey paper by Mullan and Frehywot characterized twenty-five sub-Saharan African countries where non-physician clinicians (NPCs), health workers trained beyond secondary school with fewer skills than physicians but more than nurses, were active in a spectrum of duties ranging from primary care to obstetric and major surgery.[15] In many instances NPCs were more likely than their physician counterparts to work closer to the geographic areas where they trained. Furthermore, in war-torn countries with very low physician density per population, such as Uganda, Rwanda, and Malawi, the number of NPCs performing traditional physicians' duties far outnumbered the actual physicians in the country.[16]

However, because of a demand that far outstrips supply, a 2007 World Health Organization study estimated a global deficit of 2.4 million health care providers in 57 low and middle-income countries.[17] Yet, because of the speed with which some of these programs had to be developed, the skill levels of these NPCs (also called clinical officers (COs), medical officers, assistant medical officers, surgically trained assistants, and several other employment-descriptive terms) vary widely.

In Malawi, where a 2011 paper by Wilhelm and colleagues documented only fifteen trained surgeons for a population of thirteen million, the COs performed nearly half of the 2931 major surgical procedures recorded during the study period.[18] Strikingly, in many instances no statistical significance was noted between fully trained surgeons and their patients' outcomes with respect to mortality (P=0.99), wound infection (P=0.65), or re-operation (P=0.14).[19] In similar studies, not only were the outcomes of NPCs comparable to those of surgeons, but also these outcomes cost significantly less to achieve.[20] In one program in Mozambique where assistant medical officers were trained to perform high-risk obstetric surgery in three years as opposed to the standard six years, the cost per major surgery was less than half ($38.9 v. $144.1). Outcome measures were statistically insignificant in all areas except superficial wound infections, and the surgically trained medical workers were more likely than the fully trained surgeons to remain posted in rural areas.[21]

However, not in all low-income countries have these programs been entirely successful in producing lower cost physician and surgeon substitutes that can perform similar duties. A 2009 study by Hounton and colleagues using data from 2305

caesarean sections performed at regional hospitals in Burkina Faso found marked outcome variability in newborn fatality rates among operating clinical officers.[22] These clinical officers, nurses who completed a two year surgical training course, cost substantially less than obstetricians to train. But their case fatality rate was nearly twice that of their obstetrician counterparts and over fifty percent higher than general practitioners who had completed six month surgical training programs.[23]

These programs, designed to fill relative scarcities in local low-income markets for physician labor, present USAID with a unique opportunity to be a game changer in the health sectors of these countries by elevating and standardizing the level of training for NPCs and improving patient outcomes in ways that these countries can likely not achieve on their own. Very few of these low-income countries' health ministries have the resources to duplicate within their borders what has actually worked regionally. Nor is the majority of the non-physician health care labor market fluid enough to allow for net positive migrations between neighboring states. Furthermore, while actual physicians trained in these countries can and often do migrate to higher income countries such as the United Kingdom, Canada, or the United States, NPCs who choose to migrate are more likely to revert back to the nursing and medical assistant positions they occupied before their home countries spent resources for their advanced training, thus doubling the resulting social losses to already depleted health care systems.

MATCHING SUPPLY WITH DEMAND

In areas outside of health care in many low-income countries, USAID has job training and skills-transfer programs designed to plant fertile seeds for economic growth. Its computer skills training program in Afghanistan and its primary school education programs in Guinea are only two examples mentioned on its website.[24] Similar or even more substantial gains in developing country economies can be obtained by adding skill-set enhancing health worker training programs to USAID's vast repertoire of health care initiatives.

Across many of the low-income countries which already have such programs in place, USAID can first investigate which ones have been exceptional (e.g., such as clinical officer training programs in Kenya, where the COs run most of the health centers in the country) while also distinguishing these from the ones which have been less so, based upon program funding, length of training, acceptance criteria, training attrition rates, worker retention rates, and clinical outcomes. It can then use the clinical outcome data obtained in ways similar to the way comparative effectiveness research data is used to distinguish interventions and clinical algorithms in the U.S. and other Western countries. Through descriptive and other quantitative analyses it can next determine which programs provided the best population coverage with respect to cost-effectiveness, and the lowest or at least decreasing costs per averted negative patient outcome (e.g., mortality, re-operations, or eventual referral to higher levels of care). After the analyses are complete, iterative models can be designed and then provided to low-income countries which may not have the resources to obtain data on best practices through a prolonged period of trial and error. For example, Ghana has a three to five year medical and surgical training program for registered nurses designed to increase providers in rural areas; Lesotho also has a similar program to provide nurses with advanced training, but it requires a one year internship.[25] Malawi's program is of the

same length of time as Ghana's and Lesotho's, yet it's reserved for medical officers and of broader scope.[26] Comparing programs through participant evaluations, interviews, and data analysis could yield vital information in terms of what works best as well what specific resources one program may need to bring it to the level of another better functioning program.

Similar to current debates regarding how to optimize the U.S. health care system, with respect to developing countries trying to supply their health labor markets, there is also the need for an investigation of whether governmental, quasi-private, or private organizations may be better positioned to deliver services to particular patient populations. The African Medical Research and Education Fund (AMREF), winner of the 2005 Gates Award for public health, is a Kenya based non-governmental organization that, in addition to funding and designing studies, also trains medical workers in roles traditionally reserved for physicians and surgeons.[27] Organizations such as this one, through public and private relationships, can sometimes deliver health services far more efficiently than national governments, which are sometimes beholden to powerful constituents who sometimes marginalize subgroups in society.

Finally, in terms of how supply can be better matched with demand in the health sectors of these countries, USAID can also help train health market supporters in the efficient utilization of information and communication technology such that what is learned in a Kenyan NPC training center can be readily transmitted to a rural surgical clinic in Malawi. In this way, USAID would not only help hubs for regional health care training, but also, it would help establish and strengthen channels for regionally-based electronic communication and trade.

GETTING IT RIGHT

By helping low-income countries to more efficiently supply their health care labor markets, USAID can help stimulate economic growth in many ways similar to how economic growth is stimulated through education and military aid. Education, especially primary, can help lay a foundation upon which future skills may be developed; and military aid can create a stable environment from which markets and societies may flourish. In a similar vein, helping countries produce their own highly skilled, low cost health workers, can lay foundations for skills to diffuse to other members of society and thus lay the foundation for further human capital development within the labor force. Furthermore, like military aid, creating multiple points of access to a competent health care system within a society—one not geographically or ethnically confined to particular regions—can help create stable environments from which people can participate in markets and communities may thrive.

While no studies directly modeling the relationship between health care systems augmented by non-physician health workers with specialized training and GDP growth rates in low-income countries were found by the author, based upon the literature, reasonable inferences can be drawn about their indirect economic effects. The Burkina Faso obstetric surgery study by Hounton and colleagues, when taking cost of training and remuneration into account, demonstrated a near ten thousand dollar difference between surgical teams lead by obstetric surgeons versus ones lead by general practitioners with surgical training.[28] In Mozambique, even though outcomes only differed statistically with respect to wound infections, there was a near two and a half

times difference in cost per surgical procedure when the procedure was performed by an obstetric surgeon as opposed to a trained medical assistant.[29] With respect to vaccinations—a public health measure historically proven in many cases to be very cost effective in disease prevention--the 2007 cross-country study by Anand and Bärnighausen demonstrated that even though the density of doctors in low-income countries did not seem to correlate with higher rates of measles, polio, and DTP3 vaccinations, the density of nurses, far cheaper to train, strongly correlated.[30]

USAID and other U.S. aid agencies, NGOs, and development organizations are currently fighting the good fight to bend the poverty, health, and security curves of many low-income countries in a direction of significant and sustainable improvement. Yet we live in a world where governmental expenditures of all kinds, not just foreign aid, should be justified. Some of the readily identifiable justifications for foreign aid expenditures designed to increase health care capacity are the benefits to productivity and country stability that can be gained by decreasing infant mortality rates in communities highly dependent upon manual labor. The spillover effects that skilled labor can have on education and training throughout low-income societies from which human capital often migrates; and the aggregate benefit to the global market obtained from improving the consumptive capacity of low-income countries currently unable to self-invest to a level sufficient enough to optimize their growth. Any of these effects could yield the types of national security interest benefits mentioned in the 2002 NSS by the Bush Administration and announced as a strategic imperative of the Obama administration.

The continued emigration of healthcare workers trained in developing countries to European and Western economies is a valid argument to consider when debating the potential effects of U.S. policies designed to invest public funds into the training of higher skilled health care labor in developing countries. Working with foreign governments and training organizations to produce incentives for their workers to serve in their home countries and achieve training specific to the needs of their rural populations could be a strategy that might mitigate the negative externalities in terms of migration that could result from foreign aid.

But finding the right balance and composition of foreign aid to grow markets abroad, is extremely important, especially given the issues at hand: health, stability, economic development, and U.S. national security interests. With so much at stake, the U.S. government should use every tool at its disposal to accomplish this monumental task, including the tool of enhancing non-physician clinician and other skilled health worker training programs in developing countries. In an era where it costs approximately seven-hundred thousand dollars per year, per U.S. service member serving in Iraq[31] or Afghanistan--about as much as it would cost to fully fund three years of surgical training for thirty-six assistant medical officers in Mozambique—as we crash up against our $14.3 trillion debt ceiling--a thorough cost-benefit analysis of what may or may not serve our long term security and economic interests, and the old markets we should leave behind and the new markets we should enter should be thoroughly, vigorously, and publicly debated.

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The International Flow of Risk: The Governance of Health in an Urbanizing World

Julie E. Fischer and Rebecca Katz

In 2008, the world's urban population exceeded its rural population for the first time. The United Nations estimates that about 15% of the world's population now lives in "megacities" of 10 million or more people, or in near-megacities of 5-10 million. Three-quarters of the megacities are in low- and middle-income nations, where rural-to-urban migration will drive rapid urbanization through 2050. Services and infrastructure rarely keep pace with population growth. Even in well-resourced cities, municipal leaders struggle with urban sprawl, unmet housing and transportation needs, environmental degradation, and disaster vulnerabilities. In the absence of adequate resources and regulation, informal settlements and markets evolve fluidly, creating shelter and livelihoods but also exposing inhabitants to environmental risks that exacerbate health inequities. These problems might once have been considered local challenges. Now, these "international cities" are often cross-roads for the movement of people, animals, and goods (and the health risks that they carry), as well as drivers of national or regional economic development. New strategies are needed to govern the flow of health risks within and among these densely populated urban centers. The breathtaking scope of the challenges that urbanization poses for development and security can only be understood by looking at long wave events that cross sectors, disciplines, and borders. Tools such as the Framework Convention on Tobacco Control and the International Health Regulations (2005) can affect the flow of health risks between regions, but cannot substitute for strong planning, policy, and management functions at the municipal level – exactly where governance capacities tend to be weakest.

INTRODUCTION

In the last two decades, accelerated globalization and urbanization helped promote unprecedented economic growth, allowing millions in the developing world to climb out of poverty. Globalization and urbanization also profoundly influenced the determinants of health for these millions and more.

Just as resources can be envisioned as flows from one country to another, so can risks. Since the modern reduction of endemic disease burdens by the world's industrial powers, most models of health risks and benefits assume directionality. Knowledge, technologies and resources predictably flow from the developed to the developing world in this paradigm, benefits that ultimately improve the quality and length of lives, while infectious disease risks flow back "uphill" with goods and people. This view underestimates the complexity of health risk flows. Many common behavioral risk factors that underlie the steep worldwide increase in chronic diseases – unhealthy diets, physical inactivity, and tobacco use – originated in highly developed regions, spreading worldwide. Populations in developing regions are increasingly susceptible to a dual burden of the diseases of poverty and wealth. At the same time, those populations are

increasingly concentrated in built environments where new behaviors, conditions, and microbes may mix dangerously to generate new health threats. These could easily flow with trade and travel to every corner of the world, starting with the urban centers where disease multipliers might propagate risks still further.

Instruments such as the International Health Regulations (2005) and the Framework Convention on Tobacco Control are intended to stem the international flow of risk, from the existential threat of emerging infections to an underlying determinant of chronic disease. Implementing these instruments and other global governance tools presents new challenges in an urbanizing world, where leaders at the municipal level hold immediate responsibility for the health and welfare of populations that may number in the tens of millions, among cities directly connected by travel and trade routes.

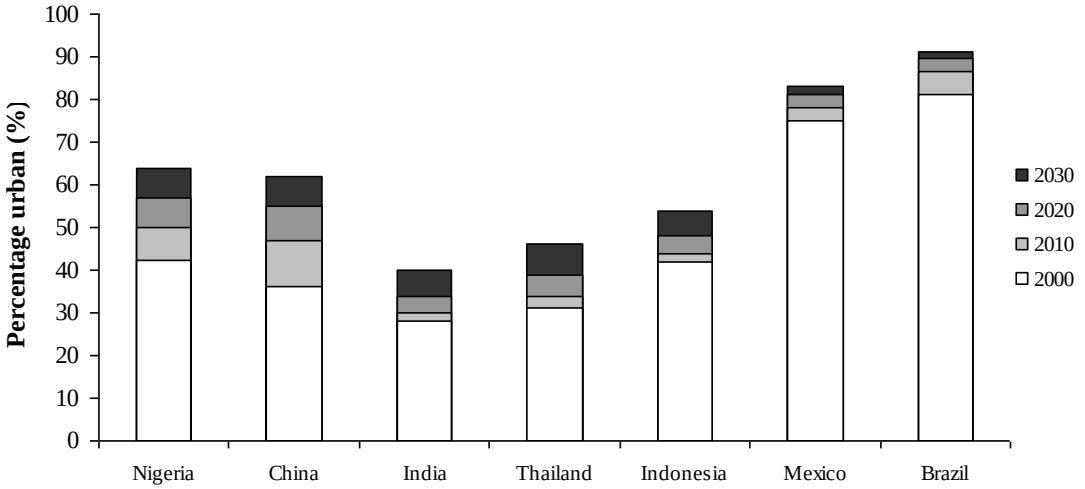
In this paper we describe trends in urbanization, review urban health risks in an increasingly complex built environment, and discuss the implications of globalization for the international flow of such risks. We then present some of the tools that are available to manage the flow of risk, and discuss the importance of building policy and planning capabilities at the municipal level.

URBANIZATION TRENDS

By mid-2009, the world's urban population exceeded its rural population. In coming decades, worldwide rural population growth is projected to slow and then decline as the global urban population swells to almost 5 billion by 2030.[1] While the number of urban centers of more than one million people continues to increase precipitously, most projected urban population growth through 2030 will take place in cities of less than 500,000 people. These smaller cities frequently lack strong policy and planning mechanisms and face the worst combined challenges of the urban and rural worlds, struggling to match basic services to needs, and competing for skilled workers attracted by larger cities.[2]

Only about 15% of the world's population lives in what the United Nations Department of Economic and Social Affairs defines as "megacities" of 10 million or more people, or "megacities-in-waiting" of 5-10 million. However, more than 80% of these massive urban centers are in low- and middle-income nations; their cumulative populations are projected to exceed 600 million people by 2025.[1] Their sheer size and complexity amplify public health challenges, particularly in the developing nations of Asia and Africa, where public services and infrastructure often lag behind population growth.

Figure 1: Urban population as a percentage of total population in select nations



The urban population is predicted to increase among the emerging economies of East, South, and Southeast Asia through 2030, and to climb slightly within the already highly urbanized nations of Latin America. (Source data: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2008 Revision* and *World Urbanization Prospects: The 2009 Revision*.)

Population growth will most likely outstrip public health and safety infrastructure in many of the megacities projected to absorb the largest population increases, including Kinshasa, Dhaka, Lahore, Karachi, Lagos, Delhi, and Mumbai. The already highly urbanized emerging economies of Latin America will see relatively slow growth of urban populations through 2030. In contrast, widespread rural-urban migration by those seeking educational and employment opportunities will propel Africa and Asia to annual rates of urban population growth in excess of two percent. China and India alone are expected to account for one-third of the projected increase in the worldwide urban population through 2050.[1]

These cities serve as engines of growth for national economies, often accounting for an outsized share of gross domestic product, and providing gateways to globalized private sector networks.[3] At the same time, rapid urban growth exacerbates the management and planning challenges that already overwhelm some municipal authorities. Much of the internal migration in developing countries will be driven by the rural poor moving to cities where poverty (relative and absolute), social inequalities, and health inequities are already high. Estimates suggest that 40-50% of the urban populations of developing nations such as Burundi, El Salvador, the Gambia, Kenya, the Kyrgyz Republic, Moldova, and Zimbabwe live below the poverty line. This percentage climbs to more than half in Angola, Armenia, Azerbaijan, Bolivia, Chad, Colombia, Georgia, Guatemala, Haiti, Madagascar, Malawi, Mozambique, Niger, Sierra Leone and Zambia.[4]

As the poor migrate from rural to urban environments, kinship networks and necessity often steer them toward informal settlements characterized by crowding, lack

of access to clean water and adequate sanitation, and air pollution (both outdoor and indoor from the burning of solid fuels).[5] In 2006, nearly one billion people worldwide – about one-third of the world's urban population – lived in these slums, more than 90% of them in developing countries. Their numbers are projected to double in coming decades.[6] Informal or illegal slums often consist of low-quality housing on marginal lands not in demand for other uses. Housing structures are prone to collapse during natural disasters, from major catastrophes to more common (and costly) events such as flooding. Even though residents may find employment in the formal or informal sectors, the majority lack access to basic workplace protections and benefits including health insurance.[7]

Urban population and slum population growth rates vary considerably among cities and across regions. For example, in Southeast Asia, the proportion of the urban population living in slums is declining with economic development and maturing migration patterns. In South Asia and sub-Saharan Africa, slum populations are growing at the same rate as the total urban population. Although urbanization in sub-Saharan Africa has lagged, its cities have the highest percentage of slum dwellers, at more than 70%. Projections suggest that the number of slum dwellers in the region will double to nearly 400 million by 2020, just edging out South Asia as the region with the most slum occupants.[7]

Urban sprawl can affect cities at every level of economic development in the absence of strong regional planning. Low-density housing developments spring up beyond existing administrative boundaries in response to two different types of demand: relatively affluent households seeking a higher quality of life, and poor households seeking affordable housing, often through informal or illegal settlements – a functional extension of slums into peri-urban areas. Suburbanization can carry penalties in terms of long commutes, traffic congestion, and stresses on basic public services.[8] However, the expansion of high-value residential and commercial developments also creates a foundation for urban corridors, city-regions, and mega-regions, such as the Hong Kong-Shenzen-Guangzhou region of China or São Paulo and Rio de Janeiro in Brazil, where city populations of tens or even hundreds of millions converge, spurring dynamic economic activity and innovation.[9]

HEALTH RISKS AND THE URBAN ENVIRONMENT

On the other side of the equation, the pace of urbanization and industrialization often outstrips the concomitant development of basic public health services and infrastructure. As a consequence, occupational and community exposures to environmental health risks strongly affect the underlying determinants of health.

In its *Global Report on Human Settlements 2003*, the United Nations Human Settlements Programme (UN-HABITAT) first established an operational definition of slums. In the context of the Millennium Development Goals, slums consist of urban households that lack one or more of the following: improved water, improved sanitation, sufficient living area, durable housing, and secure tenure.[10] These conditions expose slum households to physical, biological, and chemical health risks. Exposures to outdoor air pollution, indoor air pollution from burning solid fuels, unsafe drinking water, and toxic metals and chemicals may underlie nearly 25% of the global disease

burden. Urban crowding amid inadequate infrastructure also increases the toll of unintentional injuries such as the road traffic accidents that claim an increasing number of lives each year in low- and middle-income countries.[11] The risks are not confined to dense urban cores. Urban sprawl contributes to changing land use including deforestation and encroachment into new ecosystems. Disruption of ecosystems changes the habitats of local wildlife species and insect vectors, increasing the risks that vulnerable human populations will be exposed to the diseases they carry, either directly or through a "bridge" domestic animal species.[12]

Public services in these urban areas may fall far short of population needs, especially where municipal leaders may hesitate to legitimize illegal settlements by investing in public health infrastructure.[6] The lack of sanitation and waste removal services creates breeding grounds for pathogens and vectors of disease, including insect and animal vermin, perpetuating a cycle of exposures to microbiological hazards. Poor water management also creates conditions hospitable to parasites and insect vectors. For example, *Aedes aegypti*, the mosquito vector of yellow fever, dengue, and chikungunya viruses thrives in the minute amounts of stagnant water rife in urban areas, from water barrels and flower pots to toilet tanks. In every major city in the world, populations of thousands or even millions living in slums or slum-like conditions are vulnerable to infectious disease outbreaks and the consequences of disasters.[13],[14]

The incidence and prevalence of infectious diseases in urban communities depends on population mobility and crowding and social determinants including access to basic resources such as clean water and air and adequate quantities of safe and nutritious food. Unsafe water, inadequate sanitation, and insufficient hygiene perpetuate cyclical outbreaks estimated to cause 1.5 million deaths worldwide from diarrheal diseases each year. Ninety percent of these deaths occur in children under five years of age. Repeated bouts of waterborne diarrheal diseases and parasitic infections also lead to malnutrition. This increases stunting and susceptibility to other infectious diseases, adding another 860,000 estimated child deaths each year.[15] Inadequate access to safe water can prevent hygiene practices such as hand-washing that prevent fecal-oral disease transmission.[16] Access to improved drinking water and sanitation tends to be significantly higher in urban than in rural areas. This still leaves nearly 800 million urban dwellers worldwide without access to improved sanitation (including more than 40% of the urban populations of South Asia and more than half in sub-Saharan Africa), and about 140 million without access to improved water.[17] Measurements of access alone can also be deceptive: sewerage systems can be fragmented and poorly maintained, eventually discharging wastes directly into the open urban environment. Municipal leaders often cope with excess demand on water treatment and supply capacities by deliberately interrupting water services, resulting in profound inequities in water distribution. Households in areas of concentrated poverty may receive only intermittent services, with municipal water flowing cumulatively for a few hours each day. Prolonged periods of low or no water pressure not only reduce access to and use of drinking water, but result in high levels of contamination in treated water. Urbanization can exaggerate water stress as crowding reduces per capita water availability – a problem that is only going to worsen with climate change and increasing demands on finite groundwater sources.[18]

Undernutrition can hamper intellectual and physical development in children and compromise immune function. Maternal and child undernutrition may underlie more than one-third of the global disease burden in children under five years of age, and at least 20% of maternal mortality.[19] The availability of adequate and nutritious food supplies depends on interlinked economic, political, and environmental factors. Poor urban households may lack not only the financial resources to buffer changes in food costs, but also any benefits that subsistence farming offers to poor rural communities. Households made vulnerable by food insecurity or socioeconomic isolation – as well as migrant laborers separated from family support networks –appear more likely to engage in behaviors, such as transactional sex, that increase the risk of HIV transmission.[20]

Tuberculosis spreads most easily among densely crowded populations affected by chronic undernutrition and environmental health threats such as indoor and outdoor air pollution. Co-infection with HIV significantly increases the risk of active TB disease even in the absence of AIDS-defining conditions and regardless of antiretroviral therapy. All of these risk factors are concentrated in the growing urban areas of low and low-middle income countries, creating perfect conditions for the transmission of TB including drug-resistant strains arising from incomplete or inadequate treatment.[21]

Overcrowding in slums throughout the world (with as many as 13 people cooking, eating, and sleeping in a space of less than 450 square meters) can also accelerate the spread of other communicable diseases including the acute respiratory infections that remain the leading infectious cause of death worldwide.[22],[23] Air pollution from the indoor burning of solid fuels, industrial sources, and traffic emissions increases susceptibility to acute respiratory infections and non-communicable cardiovascular and respiratory conditions.[24]

Many urban centers now carry a dual disease burden: morbidity and mortality associated with infectious diseases and complications of pregnancy remain relatively high, while the prevalence of chronic diseases such as coronary artery disease, ischemic stroke, diabetes, and some cancers climb sharply among working-age adults.[25] The spread of these chronic diseases is the result of a complex interplay of social, economic and behavioral factors. In the last decade, behavioral risks or "lifestyle choices" that increase the odds of developing chronic diseases have increased dramatically among cities in developing regions.[26] For example, in both sub-Saharan Africa and South Asia, tobacco use tends to be highest among urban men of lower socioeconomic and educational status, and is particularly prevalent among slum dwellers.[27,28] Not all unhealthy behaviors represent voluntary preferences. Despite assumptions about the "failure of rationality" in lifestyle choices, the unintended consequences of deliberate policies (such as domestic protections for sugar producers, which may make sweets much less expensive than fruit) and marketing also play significant roles. Secondhand smoke and the marketing of unhealthy foods and sugared drinks to children are instances where personal choice is limited. [29]

The urban poor face economic and time pressures to purchase energy-dense, nutrient-deficient foods, and are less likely to have access to adequate healthcare or nutrition information. Urban dwellers often find less physically demanding work than their rural counterparts, with the likelihood of recreational exercise largely determined by education and income levels. In sprawling urban agglomerates, many non-working hours may be spent sitting in buses or cars mired in traffic congestion. Housing costs

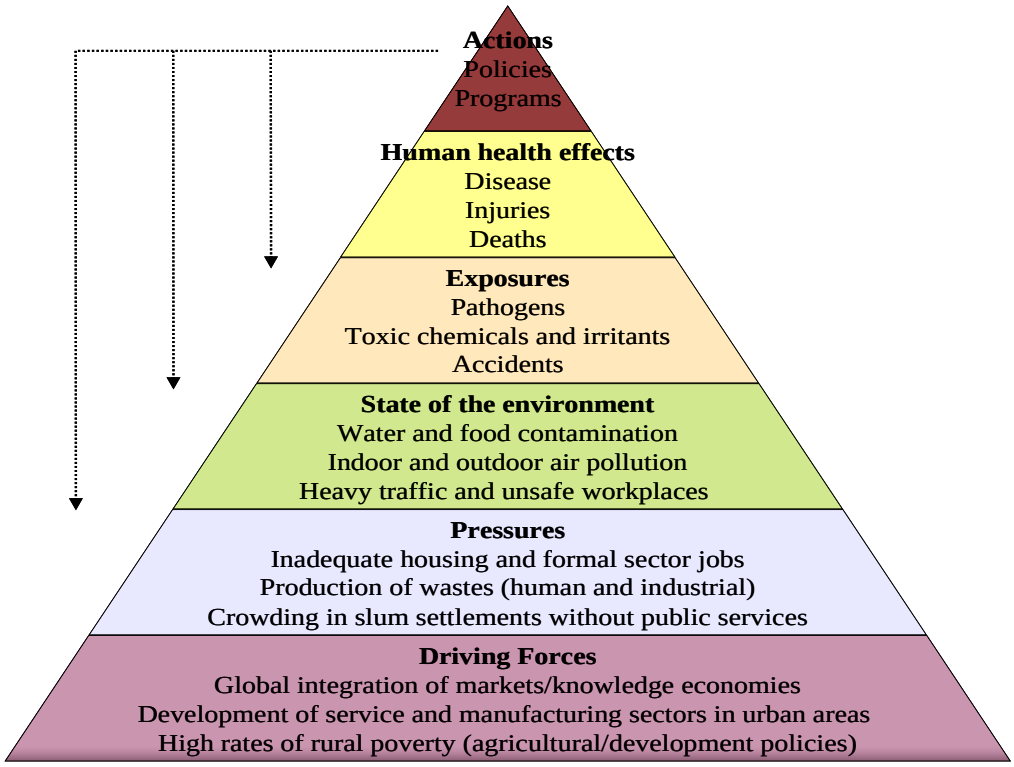
often drive the poor to outlying peri-urban areas in search of housing that is both safe and affordable. For example, the poorest socioeconomic groups in Rio de Janeiro spend an average of three hours daily commuting from peripheral neighborhoods into the urban core and back. Although deliberate urban planning can encourage physical activity, this has not been a priority in low- and middle-income countries, and the urban poor appear to be on a trend toward increasingly sedentary lifestyles.[30]

Unsurprisingly, groups from the lowest socioeconomic levels are significantly more likely than their neighbors to suffer from one or more non-communicable chronic diseases (NCD). Chronic diseases tend to take a higher toll at a younger age in low- and middle-income countries.[31] Urban centers typically offer a wider array of public and private healthcare options than rural areas, but the resulting patchwork of varyingly affordable and accessible treatment options does not encourage the type of integrated healthcare programs that can delay the onset and severity of NCD symptoms. Disabilities from NCD can limit labor market participation and curb household consumption and savings. In the worst case, catastrophic spending on health and long-term care can lead to household impoverishment, exacerbating inequities.[32]

The stratification of health status among populations can also exacerbate perceptions of relative deprivation, increasing socioeconomic, political, and cultural frictions. Rates of intentional violence across the Latin America and Caribbean region, where profound income inequality remains the norm, are double the world average. Violent crime and homicide rates in Mexico City, Rio de Janeiro and São Paulo significantly exceed their national averages (more than two-fold in the case of Rio), with implications for life expectancies and mental health in affected communities.[33],[34],[35] The urban centers of South Africa are similarly notorious for violent crime. In both regions, higher socioeconomic status offers partial insulation against exposures to such violence, as the wealthier classes sequester themselves in enclaves protected by private security measures.[36]

Although the proximate causes of these health effects vary, they are often rooted in the same "upstream" societal forces. One of the major challenges in analyzing health risks associated with development and environmental changes lies in understanding all of the causal pathways that converge to influence any given health indicator, such as the incidence of acute respiratory infections in a slum population. Figure 2 depicts a framework for analyzing how global socioeconomic and governance trends ultimately influence urban health effects, using the "Driving Forces–Pressures–State–Exposure–Effects–Action" model to consider the health effects of exposures to physical, chemical, and biological hazards in the context of broader market forces and population growth.[37]

Figure 2. Globalization and urbanization drive changes in human behavior that affect the quality of the environment, exposures to health risks, and, ultimately, population health



This schematic depicts how the "Driving Forces–Pressures–State–Exposure–Effects–Action" framework can be used to understand the relationships between global and national economic drivers and health indicators at the community or city level. Arrows indicate opportunities for policy and programmatic interventions to ameliorate any negative public health consequences. (After Corvalan, Briggs, and Kjellstrom, 1996.)

GLOBAL INTERCONNECTEDNESS

Urban health once fell solely into the province of local decision makers. However, the increased interdependence of markets and interconnectedness of cultures creates substantial global risk in parallel with economic opportunities. The annual international movement of millions of travelers from countries with considerable burdens of malaria, dengue fever, tuberculosis, and other endemic diseases to low prevalence countries attracts the attention of the public health community for obvious reasons. The diffusion of behavioral risk factors for chronic diseases from mature market economies to low- and middle-income nations is also of considerable concern, but until recently attracted less public attention.

Travel and Trade

Many megacities and near-megacities serve as regional hubs for travel and trade. As demonstrated by the 2009 H1N1 influenza outbreak and the spread of SARS in 2003, the volume of international air transit allows emerging infections to spread between air hubs too rapidly to be contained with current disease detection and response

capabilities. Intra-regional and domestic migration facilitate the circulation of diseases between vulnerable urban and rural populations – such as the cycling of malaria and polio strains between rural Indian states and Mumbai – allowing the resurgence of disease threats despite public health interventions.[38],[39] Workers in developing regions frequently travel between urban and peri-urban workplaces and their rural home provinces. In some countries, national household registration policies that limit the portability of health coverage or other government services reinforce this cycle. These trips help outbreaks cycle between rural areas, where the risk of infectious disease exposures may be much higher and disease surveillance and treatment capacities much lower, and cities densely populated with susceptible local and foreign populations.

For example, in 2007 and 2008, health authorities in Paraguay, Brazil, and Argentina reported clusters of yellow fever in urban areas for the first time in decades.[40] Brazil suspended exports of its domestically produced yellow fever vaccine and requested an additional four million doses of vaccine from the global emergency stockpile managed by the International Coordinating Group on Vaccine Provision for Yellow Fever Control for an emergency vaccination campaign targeting seven million people.[41] Three major factors most likely fostered resurgence of the disease: the circulation of workers between densely populated urban centers and rural or peri-urban areas, where deforestation has increased exposures to the *Aedes aegypti* mosquito vector; poor management of fresh water and wastes in deprived urban areas, providing the mosquito vector with breeding habitats; and lack of a long-term political commitment to a sustained mosquito control program that crosses national borders.

Thailand offers another example of health risks among highly mobile, intersecting populations. Employment opportunities for unskilled laborers in the greater Bangkok metropolitan region attract legal and illegal migrants from less-developed neighboring countries, as well as from the Thai countryside.[42] Migrants often turn to crowded slum housing with poor protection from the mosquitoes that transmit various infectious diseases.[43] Thailand (like Brazil) has recently experienced a high incidence of dengue fever, another illness borne by the *Aedes aegypti* mosquito. Epidemics of dengue hemorrhagic fever, the most serious form of the disease, have radiated outward from Bangkok in a traveling wave, eventually affecting every province.[44] Despite Thailand's highly integrated disease detection and response infrastructure, dengue epidemics can spread across the entire country in the space of months.[45] The influx of international migrants over the last decade has also coincided with an increase in reported malaria cases, from 51,271 cases in 2004 to 63,272 in 2006 (50% of cases? in the migrant population).[46] Thailand's tourism and business sectors draw large numbers of temporary migrants from beyond the region; Bangkok's airport is among the top 20 busiest in the world, hosting over 38.6 million travelers in 2008.[47]

Food

Shifts in technologies and trade promote the "nutrition transition," a shift from diets based on traditional grains, fruits, and vegetables to increased consumption of animal products and high-calorie foods.[48] As worldwide consumption patterns and preferences become more homogenous, food marketing and delivery trends continue to converge across middle- and high-income nations.[49] Trade liberalizations have fostered

the multinational proliferation of supermarkets, convenience store, and fast food outlets which market low-cost, calorie-dense, nutrient-deficient foods. Studies suggest that income elasticity is high for foods such as prepared sweets and soft drinks, so that snacking tends to increase rapidly as incomes rise in low- and middle-income countries.[50] Easy access to low-cost processed foods contributes to rapid increases in overweight and obesity. As a consequence, deaths from diabetes in low- and middle-income countries are projected to nearly double between 2008 and 2030.[51] At the same time, children of the urban poor are at increased risk for undernutrition. This can lead to side-by-side obese and malnourished populations in cities undergoing socioeconomic transitions, sometimes within households.[52]

Animal/Human Interface

To support the nutritional demands of urban populations, the agriculture industry often creates complex food supply and delivery networks that stretch into rural and peri-urban areas. Concentrated livestock populations on the margins of large urban areas expand the opportunities for pathogens to move among species at the human-domestic animal-wildlife interface. The increased demand for animal protein and the popularity of urban "wet markets" for selling live or freshly butchered animals multiplies the odds of human exposures to zoonotic diseases. These often occur in settings where crowding and poor underlying health status increase susceptibility to infectious diseases.[53] The SARS virus provided a case study of how a novel pathogen might cross from a wild animal vector (bat) into a cultivated animal (civet), and then into urban populations through marketing, handling, or food preparation. The emergence of West Nile virus in New York City in 1999 (when mosquitoes presumably imported as a byproduct of trade transmitted an infection previously unknown in the U.S. to humans, zoo animals, and the wild birds that serve as a disease reservoir) pointed to the continuing gaps in knowledge and resources of the ecology of urban green spaces.[54]

GOVERNING THE FLOW OF HEALTH RISKS

In one sense, urbanization improves the odds of fulfilling one of the traditional roles of public health: ensuring access to safe water and adequate sanitation. Urban water and sanitation systems can reach many more people, more cost-effectively, than small-scale water improvement projects scattered through rural villages. Effectively managed basic public services can ameliorate many of the physical, chemical, and biological hazards associated with industrialization and increasing population density. Large urban centers also tend to attract skilled health workers and foster community mobilization, producing a higher concentration of health and social services than in surrounding rural areas. These can create an urban advantage in terms of child survival and other indicators of population health. However, proximity does not guarantee access to such interventions. In areas of concentrated disadvantage, including slums, poor and migrant households may still incur urban health penalties – in some cases not only considerably worse off than their more affluent near-neighbors, but than their rural counterparts.[55]

No case illustrates the intersection of governance and the underlying determinants of health more clearly than the provision of safe water and sanitation services. Developing nations may devote as much as 5% of gross domestic product (GDP) to providing urban water and sanitation services. However, spending is not synonymous with success, as illustrated by the example of Lagos. Investments in Lagos steadily increased the capacity to deliver household water between the 1970s and early 2000s, but not quickly enough to keep pace with demand. Reforms passed in 2004 laid the groundwork for increased privatization of the state water utility and also launched a major overhaul and expansion of existing municipal water treatment and delivery systems. The strategy ultimately attracted World Bank support, but political and economic risks discouraged foreign investors. [56]

By the end of 2008, vigorous efforts by the state water authority achieved a water delivery capacity of 200 million gallons per day (mgd) against a demand of 600 mgd, a gap of about 66%. Plans to rehabilitate and expand waterworks should boost the water supply to about 241 mgd by 2015 – still far short of current needs.[57] Periodic electrical failures prevent existing treatment plants from operating at their design capacity. The Lagos Water Corporation (which spans 20 independently administered local government areas in the conurbation) rarely collects adequate revenues for the water it does deliver, eroding capital and maintenance budgets.[58] Households lacking piped water in the home or from community taps turn to private wells or street vendors to meet drinking water needs, creating a thriving market for "sachet water," commercially purified water packaged in polyethylene pouches. Sampling studies have shown that, despite popular perceptions of purity, sachet water frequently exposes consumers to bacterial and heavy metal contamination exceeding local regulatory standards.[59, 60] The plastic packages themselves create a solid waste hazard that chokes waterways and drainage systems. Perceptions of water safety and purification at the point of use echo findings elsewhere: households tend to be more concerned with the appearance and taste of water than the invisible load of microorganisms. The number of cases of waterborne diseases such as cholera and dysentery reported annually in Lagos has increased over the past two decades. [61]

This is by no means atypical: when public services fail, poor households often turn to private vendors who inflate prices for the poorest customers, charging from 50% to more than 1200% in excess of typical local rates.[62] Households that cannot afford these services are likely to turn to unsafe bore wells, untreated open water sources, or illegal taps, increasing community exposures to water-borne illnesses and contaminants. Population growth concentrated in developing regions will plunge more countries into water stress by 2030, increasing demands on water by all sectors.[63]

The risks of such municipal governance failures can be significant for spread of diseases between and beyond urban communities. For example, hyper-inflation in Zimbabwe compounded serious challenges in managing water and sanitation services in the capital of Harare in the late 2000s. Services became increasingly intermittent, ceasing altogether in outlying suburbs for prolonged periods by July 2008.[64] In August 2008, an outbreak of cholera began just south of Harare. The complete failure of Harare's piped water and sewage systems facilitated rapid spread among crowded urban

populations, just as the public health system collapsed.[65] People leaving the dysfunctional capital for holiday travel or to seek care at rural health outposts spread the outbreak to every province in the country. Migrant workers and medical refugees seeking health services spread the disease to Botswana, Mozambique, South Africa and Zambia. In December 2008, Zimbabwe's government declared the cholera outbreak a national emergency and called for international assistance.[66]

The industrializing cities of nineteenth century Europe and the United States illuminated the "urban health penalty" more than a century ago: the crowding of people and environmental health risks amidst socioeconomic upheaval can leave poor households even more vulnerable to disease.[67] The same patterns are now being repeated among emerging and developing economies. At every level of development, the middle and upper classes insulate themselves against many environmental hazards with resources and technologies. Vaccines and antibiotics interrupt the transmission of diseases common among those at the lowest socioeconomic levels. Options for circumventing weak public health and safety systems range from bottled water to private security forces. Many simply take refuge behind high walls where external hazards can be more easily avoided. This effectively exaggerates existing health inequities, and reduces incentives for the growing professional classes to demand better urban governance – a key factor in spurring the historical sanitary reforms that helped offset the urban health penalty in industrialized settings.[68]

URBAN GOVERNANCE

Given the myriad health risks, more research is needed to examine the options available to govern the flow of health risks within and between urban areas, and assess best practices for effective governance. At the global level, three separate agreements create relevant frameworks for international actions: the Millennium Development Goals (MDG), the Framework Convention on Tobacco Control (FCTC), and the revised International Health Regulations [IHR (2005)]. UN Member States and international development institutions adopted the Millennium Development Goals (MDGs) in 2000, establishing donor consensus on measurable steps toward reducing global poverty by 2015. Three of the MDGs address health issues directly (reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria, and other infectious diseases). Other relevant MDGs set targets for improving conditions for slum dwellers and increasing access to sanitation, nutrition, clean water, and affordable pharmaceuticals.[69] The MDGs helped focus international attention on the role of governance in the delivery of basic services, with an emphasis on strategies to "reinvent government," primarily through decentralization of authorities to the local level.[70]

The FCTC governs the international flow of a specific health risk: the globalization of the tobacco industry, and the public health implications of increasing tobacco use in developing regions. Concerns about the future burden of tobacco-related chronic diseases helped spur an unprecedented level of cooperation between state and civil society actors during negotiation of an "evidence-based treaty" through the World Health Organization (WHO), aimed at curtailing the tobacco industry's transnational marketing influence by harmonizing national and local tobacco control policies.[71] Finally, the IHR (2005) require all 194 States Parties to develop the core capacities to

detect, assess, report, and respond to public health emergencies when and where they occur, and to report such incidents promptly and transparently if they pose a risk for international spread.[72] The IHR (2005) conceptually value mutual protection from transnational disease threats over sovereignty, providing an operational framework for reciprocal responsibility.

All three of these global agreements share a core trait: they depend on national, provincial or state, and local stakeholders for effective implementation. The past two decades have seen widespread adoption of reforms that stress decentralization of planning and program authorities to the local level, both within health systems and across governments. Decentralization strategies generally replace top-down vertical management with more flexible decision-making instruments, placing responsibility into the hands of stakeholders who are familiar with local conditions and most directly affected by services. In practice, results can be decidedly mixed for reasons that range from lack of local public administration capacities to capture of programs by local elites. However, new governance strategies that deliberately encourage participation by non-governmental organizations and community actors have proved successful in areas such as community water management and public sanitation projects. Public health leaders have begun to identify best practices in community participation, and in building the capacities for local governance of services and health programs. This will require a new approach to sustainable development in the context of urbanization, with new demands on leadership between the immediate community and national levels. As described succinctly by Burris et al., "Local governments typically are short not just on cash but on properly trained bureaucrats with the skills and incentives to use their power productively."[73]

Maintaining public health surveillance and intervention programs to prevent outbreaks among vulnerable urban populations requires an unrelenting infusion of resources, political commitment, and technical competency. Increasing urbanization and decentralization of government functions means that municipal leaders are responsible for a larger share of national public health challenges, with tools that are often an unplanned, poorly integrated mix of public and private assets. The driving forces are generally beyond their control – and preventing the spread of health risks within and beyond the city may be a very low priority compared to more immediate socioeconomic concerns. A 2006 survey of public and private sector stakeholders in the management of the world's largest cities found that although environmental sustainability, health, and security issues represented serious concerns, more than 80% of respondents cited economic competitiveness and employment as the primary drivers in urban decision-making. Despite the increasingly obvious toll of inadequate access to safe water and sanitation on economic growth and workforce productivity, only 3% of respondents ranked water and sanitation first among issues affecting economic competitiveness.[74]

The private sector plays an important role in service delivery within urban areas, from pharmaceutical distributors to privately run, highly sophisticated health clinics. This can increase access to services but may also exacerbate fragmentation of health systems at the national and sub-national level, with implications for public health surveillance, reporting, and response across populations. To implement the revised IHR and the FCTC successfully in an urbanizing world, the global health community must

seriously consider integration of the private sector—from NGOs to for-profit service providers – into public health planning and policy development.

Local decision makers and their national and international counterparts will require not only examples of best practices, but significantly more data to understand the roles of social networks and other emerging factors in containing or propagating the flow of health risks. Major gaps remain in identifying acute urban public health vulnerabilities – such as "hot reservoirs" and "hot settings" for disease emergence and spread – and in establishing the baselines that would allow officials to identify unusual events before they become health crises. The flow of health risks directly between major urban centers, as well as along the increasingly blurred rural-urban continuum, has been glimpsed only in fragments. Mapping such risks will require cross-sector engagement beyond the public health community, including expertise in urban planning, migration, and animal and environmental health.

Public health vulnerabilities with implications for the emergence of potential pandemics are clearly not unique to megacities and near-megacities, but these massive urban centers represent a special challenge for global health security. The fluid evolution of informal settlements and markets accommodates a dynamic workforce, but also creates conditions hospitable to new, re-emerging, and drug-resistant diseases in the midst of densely crowded communities. These "international cities" are often not only drivers of economic growth but trade and transit hubs for their countries – cross-roads for the movement of people, animals, and goods, and thus for disease vectors.

Neither the emergence of lethal new diseases nor the vulnerability of poor and marginalized populations to health catastrophes represents a new phenomenon. What has changed in recent decades is the extreme and routine mobility of international travelers and the interdependence of economies via financial markets and global inventory systems. In this context, emerging and re-emerging infections pose a direct threat to vital national, regional, and global interests and could represent a singular concern for the densely populated urban centers where disease multipliers can exacerbate the rapid spread of disease. The disease burden caused by environmental and behavioral health risks may also erode economic growth, with implications for stability and for societal resilience. Finally, the perception that government leaders have failed to meet public health and safety needs can reverberate politically. Successive community and household health crises may undermine public trust in the priorities, effectiveness, and ultimately the legitimacy of governments that fail to implement necessary reforms.

Such concerns have helped catapult global health issues, from capacity building for emerging infectious disease control to global health governance to development assistance for health, into foreign policy and security discourse worldwide. Future success in governing the flow of health risks in an increasingly urbanized world will require a better understanding of urbanization itself as a determinant of health, and the evolution of mechanisms to strengthen multi-stakeholder networks organized around health risks and capabilities rather than borders.

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Securitizing Global Health: A View from Maternal Health

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Over the last 15 years public health challenges have increasingly been framed as security threats, arguably leading to increased political relevancy and funding for such public health challenges as HIV/AIDS. While maternal health has not yet been securitized, there are several reasons to believe that it could be in the future. Such a securitization of maternal health could increase funding and political relevancy, important for improving maternal health outcomes. At the same time, we believe there are many unconsidered risks of such an approach. The risks we have identified are long-term unknowns from a lack of research, increased politicization of aid at the expense of effective programs, unexpected funding challenges due to geopolitical priorities, gender concerns, and the blurring of civilian and military institutions. Our goal is not to present a structured framework for analyzing the securitization of maternal health, but to begin a debate about the positive and negative aspects of securitization, and the dangers of securitization that we believe have been inadequately considered to date.

INTRODUCTION

With the increasingly globalized and interconnected world, what were once viewed as isolated public health issues to be dealt with by public health organizations have begun to be viewed as global security threats to be countered by security organizations. Policy-makers, public health organizations and academics are redefining security to include public health concerns as threats to national and international security. The 2010 U.S. National Security Strategy cites the need to "strengthen health systems and invest in interventions to address areas where progress has lagged, including maternal and child health" as a key component to countering security threats.[1] At the same time, international health organizations are redefining public health concerns as threats to international security. The World Health Organization (WHO), the directing authority for health within the United Nations (UN), now lists "fostering health security" and "strengthening health systems" as the second and third points of its six-point agenda. Some academics within security studies are further arguing that public health issues pose real threats to security that have long been ignored by policy-makers.[2]

Although the WHO does not argue that strengthening health systems and improving maternal and child health is necessary for security reasons, it's possible that it**,** or other organizations, will do so in the future. In certain situations, several of which will be discussed below, individuals and organizations have already begun to describe poor maternal health care as a critical security threat. In addition, recent research has demonstrated that infant mortality, which is linked (directly or indirectly) to maternal mortality,[3] is a significant indicator of future instability in a country.[4] This link between health and stability was central in securitizing HIV/AIDS and could be so for maternal health as well. Moreover, since securitization in such areas as HIV/AIDS and other infectious disease outbreaks has been largely successful in gaining access to resources

and increasing political relevancy for these issues,[5] there would seem to be a strong allure for securitizing maternal health as well. Improving maternal health is the 5th Millennium Development Goals (MDG) and, according to the WHO, "Maternal health remains the MDG target for which progress has been most disappointing."[6] Many have argued that the primary reason for the disappointing progress is that improving maternal health has not received the financial backing or political support it needs.

While the reframing of maternal health as a security issue could lead to increased funding and policy relevance, there are also significant risks in taking such an approach. The following article will focus on these potential opportunities and risks. In the process it will shed light on two questions: Why Securitize Maternal Health? and Why Not Securitize Maternal Health? The article will do this by first giving a brief overview of how security and public health have been recently reframed, particularly since the introduction of the concept of securitization by what has been defined as the, "Copenhagen School," led by Ole Waever and Barry Buzan.[7] The article will then introduce the current state of maternal health, including the generally agreed upon causes of and solutions to improving maternal health. The article will then go into depth on the possible advantages (the *why*) and disadvantages (the *why not*) of reframing maternal health as a security issue. The analysis presented in this article is not meant to encourage or discourage the securitization of maternal health, nor is it meant to imply that the securitization of maternal health is certain to be widely used as a strategy for gaining relevancy, or will gain widespread legitimacy if it is used as a strategy. While it is beyond the scope of this article to fully debate whether or not maternal health will be securitized in the way HIV/AIDS has been, for our purposes we assumed that such a securitization is possible. As such, this article aims to be forward-leaning in providing insights for decision-makers on the potential opportunities and dangers of such an approach to addressing maternal health care.

SECURITY AND SECURITIZATION

Within a networked global society the distinct levels of individual, national, and international security are increasingly interconnected.[8] In speaking to the UN General Assembly in September 2009, President Barack Obama stated:

> *More than at any point in human history—the interests of nations and peoples are shared. The religious convictions that we hold in our hearts can forge new bonds among people, or tear us apart. The technology we harness can light the path to peace, or forever darken it. The energy we use can sustain our planet, or destroy it. What happens to the hope of a single child—anywhere—can enrich our world, or impoverish it.*[9]

The end of the Cold War and the increase of globalization processes have changed the objects of security from the strictly national to also include the individual or the international system. While most security policy is still developed and implemented by national institutions, policies have increasingly focused on transnational threats. Although threat assessments have always been highly subjective, this shift in policy emphasis has furthered the complexity in deciding what is a threat, and to whom, and what can and should be done to counter the threat. As then Secretary of State Colin

Powell admitted in 2004 speech at Princeton University, "Yes, we are well beyond the World of the Cold War…[but] it hasn't been easy to rename the world we are in."[10]

Policy-makers and academics in security studies have attempted to adapt to these challenges through a variety of conceptual frameworks and adjustments to policy and theory. Although there is still widespread debate within security studies about the right paradigm for a globalized world, the various positions can be divided into two main camps, the *traditionalists*—led by Stephen Walt—who focus on state-power and military conflict and the *wideners* who seek to expand the definition of security to include a variety of transnational issues.[11]

In some cases, the widening of security has come from outside of security studies itself. Formed out of Amartya Sen's ideas of economic development,[12] *human security* seeks to complement traditional security by shifting the emphasis of security, "from the state to the security of people."[13] According to the United Nations Report of the Commission on Human Security entitled 'Human Security Now,' this shift focuses specifically on individuals and, "connects different types of freedoms - freedom from want, freedom from fear and freedom to take action on one's own behalf."[14] Anything that threatens these freedoms, to include traditional state security structures are seen as threats to human security.[15]

Within the field, the expansion of security has led to what has been defined as the *securitization* of issue areas previously thought of as distinct. According to Ole Waever, who coined the term *securitization*, it is the:

> *Discursive and political process through which an intersubjective understanding is constructed within a political community to treat something as an existential threat to a valued referent object, and to enable a call for urgent and exceptional measures to deal with the threat*.[16]

More simply, securitization elevates a particular issue in, "urgency and precedence" by reframing the issue as a security threat, be it to individuals, states, or the international system.[17] Of particular relevance for this article is the recent securitization of public health issues and the potential for the inclusion of maternal health to these discussions.

SECURITIZATION OF PUBLIC HEALTH

Public health is the practice of protecting and improving the health of communities through advocating for and implementing preventative measures such as improving sanitation, infection control, health education, and disease surveillance.[18] It seeks to protect the health of the public and assure both the health of whole communities and the health of the individual, through effective community efforts.[19] Since the end of the Cold War, and even more so since the Al-Qaeda attacks against the United States on September 11, 2001, public health issues and efforts have become increasingly linked to foreign policy and security interests. Public health strategies that may have once been viewed as solely protecting the health of individuals and communities are now viewed as necessary for the protection of peoples and states globally.[20] As we will discuss in the following sections, broadly, this has made global health issues more politically relevant. However, using the strategy of securitization has raised a number of important questions, a few of which will be discussed below.

To begin, because there is no formally agreed upon securitization process, it is often unclear whether and to what extent securitization is occurring. Ole Waever and the Copenhagen School initially argued that a "speech act," or the words by which a particular issue is socially (re)constructed as a security issue, is all that is necessary for an issue to be securitized.[21] More recently, however, the Copenhagen School has expanded its concept of securitization to include the audience of the speech act, or the external actors who decide whether or not the reconstruction of a security issue, such as reframing high maternal mortality rates as a threat to security, is valid. Building off of the Copenhagen School, Holger Stritzel argues that speech acts "need to be related to their broader discursive contexts from which both the securitizing actor and the performative force of the articulated speech act/text gain their power."[22]

Given the diversity of decision-makers and policy-actors, this definition explains little about the level of securitization occurring in a particular discourse at a specific time, or how broadly the link between security and a particular issue such as maternal health is accepted (or not). Furthermore, it does not distinguish between securitization at the local, national, or international level, or between individuals and large organizations. Moreover, it has been argued that the definition discounts the diversity of speech acts that occur in policy debates, as well as the non-speech methods, such as imagery, by which securitization occurs.[23] While strategy documents, policy statements, and public reports are clear indicators of securitization, unless a policy-maker directly states securitization as the primary reason for a particular policy action - like a new policy agenda or direct funding to counter the security threat in question - there is no way to definitively measure securitization.[24] This is important because maternal health, as an issue and potential threat, may not ever be defined as a primary threat to global or national security. It could however be defined as a secondary threat to global or national security, or as a primary threat to local security.

In addition, because the securitization of public health is a relatively new phenomenon, there is little research on the impact the securitization process may have on public health efforts and interventions. Despite these concerns, the securitization of public health appears to have continued each year, with public health issues developing stronger linkages to security issues and more organizations adopting the language of security, adding urgency and relevancy to their debate. While addressing this range of public health/security issues is beyond the scope of this paper, by presenting several prominent examples the following section will briefly introduce the process by which public health issues have been reframed as security issues since the end of the Cold War. This overview of the securitization process will lay the foundation for our subsequent analysis of why (or why not) maternal health may (or may not) be securitized in the future.

Securitization From 1994 to 2010

Although it could be argued that public health has long been relevant in foreign policy and international security debates, throughout the Cold War it was, like many issues, overshadowed by the specter of nuclear war between the United States and the Soviet Union. According to Andrew Price-Smith, even though linkages between public health and governance have been made for centuries, "issues of public health…were typically consigned to the realm of "low politics"" during the Cold War and only began to

"ascend on the international agenda" in the early 1990s.[25] The 1994 United Nations Development Program (UNDP) report, "New Dimension of Human Security" marks the beginning of the link between public health and foreign security policy. The report highlighted 7 categories of threat to human security – including health.[26] In discussing health security, the report highlighted a diverse range of threats, including infectious and parasitic diseases, lack of access to healthcare, and maternal mortality.[27] The UNDP report additionally shifted the concept of security from the territory or nation to the individual, laying the foundation for a stronger connection between health and security.[28]

Soon after, biological attacks such as Aum Shinrikyo's 1995 sarin gas attack on the Tokyo subway system and the anthrax attacks through the U.S. mail system in September 2001 showed the security community – and greater international community - the relevance of public health issues.[29] Since these attacks, improvements have been made in emergency preparedness for biological attacks, including access to medication, human resources and health warning and communication systems, deemed necessary to protect individuals and the nations as a matter of national security concern. Biological weapons have long been a security concern as seen with their use being officially prohibited after World War I by the 1925 Geneva Protocol and their development, production, and stockpiling being prohibited by the 1972 Biological and Toxin Weapons Convention (BTWC), with much of the previous attention on the use of biological weapons by national militaries.[30] Since being reframed as a transnational security threat, countering biological attacks by non-state actors has clearly gained increased relevance in policy and academic debates, as well as increased funding from national governments and international institutions.[31]

In 2000 the United Nations Security Council (UNSC) adopted Resolution 1308, *Responsibility of the Security Council in the Maintenance of International Peace and Security: HIV/AIDS and International Peacekeeping Operations*. The adoption of this resolution represented the first time that the UNSC directly addressed a health issue.[32] This not only affected future security policies and the priorities of other international organizations, but it also made public health issues a direct concern of military forces and peacekeeping operations. According to the resolution, the UNSC was not only recognizing that combating HIV/AIDS requires a coordinated international effort and that "the spread of HIV/AIDS can have a uniquely devastating impact on all sectors and levels of society," but it also stressed that "the HIV/AIDS pandemic, if unchecked, may pose a risk to stability and security." HIV/AIDS was then placed on the UNSC's list of 'threats of international peace and security.'[33] As a result of resolution 1308, increased focus was placed on health education for military forces and peacekeeping operations to be able to protect themselves from HIV/AIDS, as well as developing protocol for the prevention and reduction of HIV/AIDS within the larger population.[34]

In the 2000s, a series of infectious diseases that spread throughout the world such as Severe Acute Respiratory Syndrome (SARS), H1N1 (Swine Flu), the Avian Flu and HIV/AIDS gave policy-makers, international organizations, security and public health experts further justified the need to frame public health issues as security threats. Today, "there is increasing acceptance that health is a legitimate foreign policy concern."[35] Terms mixing health and security such as 'Heath Security,' 'Global Public Health Security', 'Health and Security' and the need to strengthen health systems are now commonly found in the flagship publications and national security documents and

development reports of national and international organizations. These publications can have a profound effect on the direction of international policies and funding. According to Maureen Mackintosh of the Open University and Meri Koivusalo of the National Research and Development Centre for Welfare and Health,

> *These publications raise issues and reshape intellectual agendas; they seek to extend or reshape the mandate of particular organizations; they raise the policy profile of organizations' activities, and are an important element of organizational claims to status and funding. They can contribute to major policy shifts, altering the intellectual 'common sense' that shapes broad policy fields.*[36]

In sum, they can reinforce the securitization of public health and redefine how and why public health issues receive political attention and funding.

The theme of the WHO's 2007 World Health Report and World Health Day, "International Health Security" is one such example of the securitization of public health. The report focused on eight international security issues including emerging diseases, economic stability, chemical radioactive and biological terror threats, HIV/AIDS and building health systems. In the 2007 Issue Report, the WHO states that UNSCR 1308 demonstrated,

> *A broader security agenda had to encompass new pandemics as well as the emergence of drug-resistant strains of parasites, viruses and bacteria that pose renewed threat to health globally…[and] the discussion opened the door for health in general to be looked at through a new lens. Public health, was no longer seen as irrelevant to security or as its by-product; it had become an essential ingredient.*[37]

The 2007 Report emphasizes that other emerging diseases, such as varieties of the avian flu, drug resistant TB and Ebola, pose a similar threat and require international cooperation, just as for HIV/AIDS.[38]

At the national level, since taking office, U.S. President Barack Obama has expanded on the President's Emergency Plan for AIDS Relief (PEPFAR), established by President Bush to combat HIV/AIDS, launching the Global Health Initiative (GHI) in 2009.[39] Framing functioning health systems generally as important for countering potential security threats, through the GHI the administration, "seeks to achieve improved disease prevention and treatment, strengthened health systems, enhanced maternal and child health, improved outcomes for neglected tropical diseases, and increased research and development."[40] With its Quadrennial Diplomacy and Development Review (QDDR), the State Department further supported the idea of viewing public health broadly as a foreign and security issue saying, "We invest in global health to strengthen fragile and failing states, to promote social and economic progress, to protect America's security, as tools of public diplomacy, and as an expression of our compassion."

The above events represent just a handful of the policy statements, speeches, and reports that have securitized public health over the past 15 years. In the following section, we will look at maternal health specifically, discussing the challenges that have

prevented improvements in maternal health during this same time, as well as the solutions the public health community has developed for overcoming these challenges.

FRAMING MATERNAL HEALTH

Maternal mortality is a serious international public health issue. Over 350,000[41] women die each year from pregnancy related causes and 99%[42] of these deaths occur in developing countries. Maternal mortality is defined as "the death of a woman while pregnant or within 42 days termination of pregnancy, irrespective of the duration and site of the pregnancy from any cause related to or aggravated by the pregnancy or its management but not accidental causes."[43] Since 2010, maternal deaths where HIV complicated the pregnancy or childbirth are now included in the total number of maternal deaths.[44] The majority of maternal deaths occur in developing countries, with the lifetime risk of maternal death ranging from 1 in 120 to the 1 in 37 in the least developed countries.[45] Over the past 20+ years there have been a series of calls to action by international organizations to reduce or eliminate maternal mortality and improve women's health. Yet progress has been slow. MDG 5, to reduce the maternal mortality ratio (MMR) by 75% between 1990 and 2015, continues to fall behind the other MDGs.[46] This lag is not due to a lack of knowledge on what is necessary to reduce the MMR, but rather a lack of funding and political priority. Despite the many global efforts over the past decades to heighten awareness of maternal health challenges, the issue has failed to garner the level of interest required to receive the political and financial support it needs.

From the 1970s to 2010

Since the mid 1970s there have been a number of initiatives to make maternal health more relevant to the international community. The United Nations Decade for Women (1976 – 1985) called for an end to maternal mortality by 2000. In 1987 the WHO, United Nations Population Fund (UNFPA) and the World Bank sponsored the International Safe Motherhood conference, marking the first major international conference dedicated to improving maternal health. During the conference the Safe Motherhood Initiative was created, calling upon heads of state and governments to take action to cut maternal mortality in half by 2000.[47] The Women's Global Network for Reproductive Rights and the Latin American & Caribbean Women's Health Network/ISIS International drew attention to maternal deaths in Latin America through declaring May 28th 1990 the International Day of Action for Women's Health. [48] At the 1994 International Conference on Population and Development (ICPD), and again with the establishment of MDG 5 in 2000, declarations were made to reduce the MMR by 75%. Since 2000, newer initiatives including, but not limited to, the Partnership for Maternal, Newborn and Child Health, Maternal Health Task Force, Women Deliver, and the White Ribbon Alliance have emerged, all with the aim to increase awareness and act on improving maternal health.

The causes of maternal deaths, and the elements necessary to prevent them, are well known.[49-50] Seventy percent of all deaths stem from indirect causes, including excessive bleeding, infection and high blood pressure, and most maternal deaths occur between late pregnancy and the end of the first month of the child's life. Access to

emergency obstetric care, skilled attendance at birth, and family planning services, all of which are components of a functioning health system, are vital to preventing maternal deaths.[51] Most maternal deaths occur during labor, delivery or the first 24 hours after birth and modern life-sustaining procedures can prevent death.[52] Complications are difficult to predict and in many rural areas in developing countries, hospitals are often too far away for women to arrive quickly when complications do arise. The ability to reach a facility with antibiotics, blood, and other drugs could help prevent 30% of all of the maternal deaths each year.[53] Additionally, access to health care facilities also facilitates the delivery of pre and antenatal care that can help identify life-threatening problems. Evidence has shown that when women have access to these services, they opt to use them.[54] Campbell, et al state that the "main priority should be for women to have the choice to deliver in health centers." Without such a strategy they suggest, "substantial declines in maternal mortality are unlikely in the next 10 – 20 years." [55]

The international maternal health community has agreed that preventing maternal mortality is founded in a sustainable health system that can provide access to emergency obstetric care, skilled birth attendants and family planning to all women.[56] As Lynn Freedman states,

> *Maternal mortality is different from other major maternal and child health problems in at least one important respect: A functioning health care system must be at the center of the solution. No amount of information and education or community mobilization or even poverty reduction will make a major dent in maternal deaths in high-mortality countries unless it is accompanied by a health care system that makes emergency obstetric care widely available.*[57]

According to the WHO,

> *A health system is the sum total of all the organizations, institutions and resources whose primary purpose is to improve health. A health system needs staff, funds, information, supplies, transport, communications and overall guidance and direction. And it needs to provide services that are responsive and financially fair, while treating people decently.*[58]

Gerein, et. al state that the main objective of a health system is to "produce good health."[59] In line with the health systems approach, producing "good health" requires the resources and support to make health services, supplies and staff available, a commitment from governments to provide resources and implement sound policies to promote health services, community participation and other social services such as clean water and education.[60]

The need for functioning health systems further reinforces the conclusion that there is no simple solution or single intervention that will eliminate maternal mortality. The greatest cause of maternal death, post-partum hemorrhage, accounts for only 25% of all deaths, leaving the others to be a combination of indirect and direct causes. The adoption of a health systems approach to maternal health and a commitment from the global community is vital to reducing maternal mortality and reaching MDG 5.[61] Increased funding for maternal health that is focused on health systems would enable the development of a diverse range of programs that tackle the complexities of providing

adequate maternal care. It would for example, enable developing countries to increase the number of available skilled birth attendants who are able to provide emergency obstetric care, the provision of essential drugs and consumables and allow for the expansion of transportation services to the facility. Thus far, efforts to encourage policy-makers to commit to improving maternal health have been largely unsuccessful. The Gates Foundation's 2010 $1.5 billion pledge "over the next five years for family planning, maternal and child health and nutrition in developing countries"[62] is a strong start but must be supplemented by policy and the support of other necessary actors. While resources for countering HIV/AIDS, biological attacks, and pandemic disease have rapidly increased since 2002, funding for maternal health continues to remain low. According to UNFPA and the Guttmacher Institute, a $12 billion yearly increase is needed to reduce maternal mortality.[63]

In the FY11 State and USAID budgets, out of a total $8.2 billion, $641 million has been allotted for Maternal and Child Health and $595 Million for USAID Family Planning as compared to the $4.7 billion allotted to PEPFAR.[64] Seeing this disparity, individuals and organizations concerned with improving maternal mortality may begin to view securitization as a viable way to gain political relevancy and the funding that follows.

WHY SECURITIZATION? WHY NOT?

Having introduced the concept of securitization, its application in public health over the past 15 years, and the challenges of maternal health, this section will focus on the potential motivations for the securitization of maternal health, as well as the possible advantages and disadvantages of such an approach. Despite the difficulties in reducing the MMR internationally, maternal health has not been securitized in the same way that HIV/AIDS and disease outbreak have been. However, given that a lack of funding and lack of political will are commonly cited as central impediments to improved maternal health outcomes, it is possible that efforts to securitize maternal health will increase in the future. For example, in a statement from February 2011, H.E. Mr. Palitha T.B. Kohona, the Permanent Representative of Sri Lanka to the United Nations, stated that reduced maternal mortality through government policies was a key indicator that the Sri Lankan government recognizes, "Economic development as a vital precondition to achieving security and normalcy. In fact, stability and economic development were used as incentives to encourage the Tamil civilians to leave the grip of the Liberation Tigers of Tamil Eelam (LTTE) during the conflict."[65] Similarly, in pushing for compensation for the families of victims of maternal death in Uganda, Kaitiritimba Robinah, the Executive Director of Uganda National Health Consumers and Users organization, stated, "Health and [the] death of women and children are major security issues."[66] In addition, infant mortality rates, which are closely linked to maternal mortality rates, were found by the U.S. government sponsored State Failure Task Force to be one of the primary indicators of likely state failure.[67] Preventing state failure has, in turn, been recognized as a high-priority of national and international security policy.[68]

Although such a reframing of maternal health challenges as potential international security threats could lead to increases in funding and political will for improving maternal health, as it has done with HIV/AIDS, there are also significant

risks associated with such an approach. These and potential benefits will be discussed below.

Why Securitization?

As discussed in the previous section, the causes of maternal health are known and the solutions to decreasing the global MMR exist. With political pressure from the international global health community and the European Union, United States, and UN as well as from state governments, coupled with adequate funding, maternal deaths could become a development issue of the past. However, as previously stated, adequate funding is not available and maternal health lacks the necessary political relevancy to gain that funding. Additional funding is necessary to provide access to family planning and maternal and newborn health care services. Securitizing maternal health, through focusing on the health systems necessary for positive maternal health outcomes and their impact on government stability may begin to bring the amount of funds necessary to reduce the MMR. This is not to imply that there are not alternative strategies for obtaining the necessary political relevancy and funding that maternal health requires. Discussing these alternatives, however, such as viewing health as a global public good,[69] or improving coordination and message within and between maternal health advocacy groups,[70] is beyond the scope of this paper.

It is evident that maternal health has thus far lacked the political relevancy and priority to gain the international awareness and funding described by UNFPA and the Guttmacher Institute as necessary to reduce the majority of maternal deaths. The experiences of Egypt, Sri Lanka and Malaysia, prove that efforts to reduce maternal mortality are successful when backed by the necessary financial resources and political will. In the early 1990s, the Egyptian Ministry of Health and Population scaled up efforts to prevent maternal deaths with funding from the Safe Motherhood Initiative. According to the WHO, Egypt's MMR decreased by 52% between 1992-93 and 2000. During this time there was an increase in the number of hospital beds, amount of available blood for transfusions, and the overall number of facilities. This led to an increase in pre and antenatal doctor's visits and a 50% increase in deliveries that took place in health care facilities. More births were assisted by skilled birth attendants leading to a reduction in deaths due "to a decrease in substandard care by health providers from 505 (71%) to 386 (66%)" reflecting a gradual improvement of health care services." [71] to more women seeking medical care during pregnancy.[72] Similarly, in Sri Lanka and Malaysia, Jerker Liljestrand and Indra Pathamanathan conclude that both countries "demonstrated an early commitment to maternal and child health through sustained financial, managerial, and political support."[73] They used these resources to increase access to skilled birth attendants for the rural poor, those who were most highly affected by MMR. In doing so, they have been able to half the MMR every ten years and continuously improve their health delivery system. [74]

Given the need for relevancy and funding, it is possible that policy-makers or individuals working within the maternal health community may consider securitizing maternal health. For example, although he does not advocate for securitization, Jeremy Shiffman of the Maxwell School at Syracuse University claims, "Attaining public health goals is as much a political as it is a medical or technical challenge; success requires not only appropriate technical interventions but also effective political strategies."[75]

Understanding the need for effective political strategies, it is certainly possible that the strategy of securitization has been considered by individuals and organizations, or will be considered in the future.

This article has already argued that the securitization of public health by security practitioners, governments, and aid organizations, particularly the securitization of HIV/AIDS since the adoption of UN Resolution 1308, has increased since the end of the Cold War. As HIV/AIDS became more politically relevant, funding for programs dealing with HIV/AIDS increased dramatically, from approximately $300 million in 1996 to $15.6 billion in 2008.[76] In addition, much of this increase in funding occurred from 2002 to 2008, the same time that HIV/AIDS was being framed as a security issue.[77] It is impossible to know exactly how much this funding was impacted by security arguments, as opposed to economic, human rights, or social arguments, for example. However, it is clear that the framing of HIV/AIDS as a security threat dramatically increased the political relevancy of HIV/AIDS that helped lead to major increases in funding.

Seeing the impact that increases in political relevancy had on policies and programs related to HIV/AIDS, it appears that policy-makers are increasingly attuned to the importance of improving health outcomes, and are beginning to offer suggestions. For example, in 2007 the Ministers of Foreign Affairs of Brazil, France, Indonesia, Norway, Senegal, South Africa, and Thailand issued the Oslo Ministerial Declaration where they stated, "It is generally acknowledged that threats to health may compromise a country's stability and security. We believe that health as a foreign policy issue needs a stronger strategic focus on the international agenda."[78] Addressing maternal health, the Ministers argued,

> *Countries that succeed in meeting the MDGs will experience benefits far beyond the MDGs. The well-functioning health systems that are needed to reduce maternal, newborn, and child mortality and to combat HIV/AIDS, tuberculosis, and malaria will also help countries to cope with other major health concerns such as sexual and reproductive health, newly emerging infectious diseases, accidents and injuries, and chronic non-communicable diseases.*[79]

References to the possible security implications of maternal health, and the corresponding need to improve health systems, have also begun to be debated by organizations that have historically been uninterested in maternal health. As previously mentioned, the 2010 U.S. NSS mentioned the need for improved health systems, and a recent report entitled the 'Strategic Implications of Global Health' and published by the U.S. National Intelligence Council discussed the impact high MMRs have on U.S. national interests.[80] Should it continue, this process of reframing health systems and maternal health as potential security threats will almost certainly raise the level of political relevancy of maternal health, and likely increase funding for programs designed to reduce MMRs in developing countries.

Why Not?

While the advantages of securitization tend to appear relatively straightforward—likely increased funding and increased political relevancy—the dangers of securitization are more nuanced. The risks of securitization discussed below are not intended to be

comprehensive. Instead, this section is an introduction into some of the possible risks associated with the use of securitization as a strategy for gaining increased political relevancy and funding. Some of the examples are based on the experiences of the securitization of other public health issues, such as HIV/AIDS and the securitization of general development issues. Other examples are based on the specific dynamics of securitization and of maternal health and health systems, which are distinct from other public health issues and likely to lead to dangers not faced by other issues. In all, we have identified five major risk areas that demand further thought, though there are almost certainly many more. They are:

1. Lack of research
2. Politicization of aid
3. Potential funding challenges
4. Gender considerations
5. Blurring of civilian and military institutions

Lack of Research

Understanding the potential disadvantages and consequences of the securitization of maternal health is difficult primarily due to the concept of securitization being relatively new to both security studies and public health. Securitization itself was only introduced within security studies in 1995 and even now remains primarily a European-based idea overshadowed by revamped versions of traditional security paradigms. In addition, while the concept of securitization within the academic community has been well defined by proponents and critiques of the Copenhagen School, there is no commonly accepted definition within policy circles. This is partially because the process of the securitization of public health, only started to be implemented after UN Resolution 1308 in 2000. The securitization of development issues more broadly has increased dramatically since the Al-Qaeda attacks against the United States on September 11th, 2001. Because of the limited duration of securitization processes, there is a high level of uncertainty with the use of securitization as a method for increasing funding and political relevancy. Moreover, given the difficulty in deciphering levels of securitization, few studies have been undertaken to better understand how the securitization of a particular development issue has impacted the specific policies, programs, and funding levels that are meant to counter the newly constructed security threat.

One of the few studies that has attempted to better understand the relationship between the securitization of a development issue and the specific policies, programs, and funding levels related to this securitization has been highly critical of the link between security and social challenges. Through comparative field research in Afghanistan, Pakistan and the Horn of Africa, the Feinstein International Center (FIC) at Tufts University has concluded that the U.S. concept of "winning hearts and minds" through development projects is flawed at best and at worst counter-productive.[81] After almost 400 interviews in Afghanistan, Andrew Wilder of FIC concluded, "Instead of winning hearts and minds, Afghan perceptions of aid and aid actors are overwhelmingly

negative. And instead of contributing to stability, in many cases aid is contributing to conflict and instability."[82]

Politicization of Aid

In attempting to make maternal health more politically relevant, securitization could subject maternal health to politics. Although aid is always subject to politics, increased political relevancy through security likely means that more policy-makers will feel they have a stake in the fight against maternal mortality. This could ultimately lead to unsustainable funding that is more dependent on current administrations, the political environment, and politicking than on effective programs. The experience of the President's Emergency Plan for AIDS Relief (PEPFAR) is a timely and pertinent example of the potential drawbacks of securitizing an issue to make it more politically relevant. PEPFAR, which has brought valuable resources and programs to highly affected countries,[83] including over $32 billion dollars[84] since 2004 and a commitment by the U.S. congress in 2008 of an additional $48 billion over five years,[85] was made possible partly by the increased emphasis placed on overcoming HIV/AIDS after it had been securitized.[86] However, the increased relevance, and funding, has exposed some programs designed to combat HIV/AIDS to increased fluctuations in funding. For example, the politicized nature of abortion and family planning has limited the use of funding and greatly impacted the effectiveness of local NGOs and programs.[87] A 2009 study demonstrated that PEPFAR funded interventions for those with HIV/AIDS have helped decrease the number of deaths, but have not helped decrease the prevalence of HIV/AIDS.[88] In other words, the PEPFAR funding that helps provide anti-retroviral medication and treatment infrastructure has been successful; however the program has had little impact on the number of new infections.

This inability of interventions to reduce infections is at least partly due to the Mexico City Policy, also know as the Global Gag Rule, which began during the Reagan Administration in the mid-1980's and was reinstated during the Bush Administration. According to Pathfinder International, a non-profit organization whose mission, "is to ensure that people everywhere have the right and opportunity to live a healthy reproductive life," the Global Gag Rule,

> *Prohibits US family planning assistance to foreign non-governmental organizations (NGOs) that provide abortion-related information or services, even if these services are legal in their own countries and are funded with their own money. The rule prevents NGOs from even participating in public debates or speaking out on issues concerning abortion.*[89]

This rule led to the closure of clinics and a dramatic cut in funding of NGOs that provided family planning services that would not agree to the Global Gag Rule. Additionally, during the Bush Administration, distribution of free condoms and contraception was dramatically reduced.[90] The cut of family planning services most likely led to the 2009 studies' findings that PEPFAR had done little to reduce HIV/AIDS prevalence. In addition, while both Presidents Reagan and Bush instated and reinstated the Global Gag Rule, Presidents Clinton and Obama both repealed it. As such, the

stability of international women's health NGOs, funded mainly by the US, has been dependant on the actions and policies of the US administration.

Given that one of the main solutions to reducing maternal mortality is access to family planning, the maternal health community must be aware of the possibility of a similar restriction on maternal health funding. With the increased political relevance that securitization may bring, comes the risk of political fights for funding to be distributed in the necessary places, and subsequent funding fluctuations for programs. While securitization per se is not necessarily the source of these political battles, securitization has arguably made HIV/AIDS more politically relevant. It is this political relevancy, then, that has increased overall funding for HIV/AIDS programs while also increasing possible funding fluctuations by programs supported by this increase in funding.

Focusing on a health systems approach to maternal health, and the development of infrastructure, may be a way for maternal health to avoid being at the center of this debate. Additionally, the possible increased funding due to securitization may outweigh the risk of any subsequent funding uncertainty. However, it is important to note that by making maternal health programs politically relevant, including through securitization, they may be funded and proven successful during one political environment and then dramatically restricted during another.

Unexpected Funding Challenges

The need to prioritize funding further complicates the issue. Inevitably, the national governments and funding institutions will need to weigh geostrategic interests and greatest need when deciding when and where to allocate resources. As with political relevancy, this reality exists regardless of whether or not maternal health is securitized. Also like political relevancy, securitization opens the door for unexpected challenges that come with increased funding based on a threat perspective. In certain locations, such as Afghanistan, the two concerns of geostrategic interests and greatest need will overlap and funding will be high. However, in other situations the two criteria are likely to be at odds, and governments and institutions will be forced into making difficult decisions. When these difficult decisions are being made, it is likely that locations of minimal geostrategic interest will be the first to lose funding, regardless of how high their MMR may be. In some situations, this could lead to a paradoxical situation where relatively stable and free countries receive less funding for maternal health because they are not as threatening as unstable and undemocratic countries.

For example, comparing MMRs and funding levels from USAID in 2008 that were devoted to maternal and child health, almost 40% went to either Afghanistan (21%) or Pakistan (17%)[91]. As the country with the highest MMR (~1400), and clear geopolitical relevance, it is not surprising that Afghanistan received more funding than any other country. However, Pakistan has a comparatively low MMR (~260), and is almost certainly receiving large amounts of funding because of its importance in U.S. policy goals to defeat the Taliban and Al-Qaeda. This process of using development aid as a strategic tool is only likely to be enhanced if maternal health is securitized. However, given the current disparity between greatest funding and greatest need, it could be argued that maternal health has been on the losing end of securitization already, and therefore would benefit from securitizing itself.

On the other hand, an increase in the political relevance of maternal health could lead to a situation where maternal health receives more funding than it should in a given location. According to study by Laurie Garrett of the Council on Foreign Relations, this is precisely what happened with HIV/AIDS spending. In a 2007 article published in *Foreign Affairs*, Garret states,

> *Today, thanks to a recent extraordinary and unprecedented rise in public and private giving, more money is being directed toward pressing heath challenges than ever before. But because the efforts this money is paying for are largely uncoordinated and directed mostly at specific high-profile diseases -- rather than at public health in general -- there is a grave danger that the current age of generosity could not only fall short of expectations but actually make things worse on the ground.*[92]

In 2009, Raymond Offenheiser of Oxfam America further argued, "Africa is covered with HIV/AIDS money, but they're facing a global food crisis and we don't have a strategy for it."[93]

Gender Considerations

An additional unknown of securitizing maternal health is the implications it will have for gender dynamics within the countries in question. If maternal health is successfully securitized, it could lead to a feminization of security, as a distinctly women's security concern (maternal mortality) is brought into security debate, or it could lead to a masculinization of maternal health as the masculine security institutions become involved in countering maternal mortality.

Although they do not specifically mention maternal health, according to Hoogensen and Rottem, the securitization of maternal health, which could be described an articulation (speech act) of women's security, may help to empower women in security debates. In an attempt to bring gender into the debate on securitization, Hoogensen and Rottem have argued, "When women's articulations of security are recognized and heard, this results in access to the appropriate resources women need to ensure their security, as well as creating new foundations for theoretical reorientations of security."[94] However, Cynthia Enloe has warned, "Militarization is the step-by-step process by which something becomes *controlled by, dependent on,* or *derives its value from* the military as an institution or militaristic criteria."[95] Securitizing maternal mortality could, then, be argued as giving value to maternal health only based upon militaristic criteria, specifically the possible threat it poses to individuals and societies. Feminist scholars in security studies have argued that there are gender biases in the core concepts of security studies, including the state and the definition of security itself.[96] Framing maternal health as a security threat relies on this gendered terminology and, in doing so, risks defining maternal health through a masculine lens. As such, even though "[f]eminist scholars have embraced the Copenhagen School's interest in broadening what counts as security and whose security matters,"[97] they must be wary of being, "limited to it or subsumed within it."[98]

In addition, the securitization of maternal health would likely lead to an increased role of military institutions in maternal health programming. This does not

mean that securitization would lead to a military takeover of maternal health programming, but that defining maternal health, or any issue, as a security threat invites military participation. In turn, the military and armed forces are traditionally male dominated sectors that are known for promoting and maintaining a culture of masculinity. According to Galla Golan, this is the case even when women are an integral part of the military, such as in Israel.[99]

Were the military and armed forces to play a large role in the formulation, implementation and funding of maternal health programs that tend to focus primarily on women, it could have negative social repercussions. This does not mean that the securitization of maternal health will inevitably lead to military institutions controlling maternal health programs. It is clear that this has not been the case with the securitization of HIV/AIDS, and there is no reason to think that maternal health would be qualitatively different. At the same time, it would be naïve to claim that increasing the relevance of maternal mortality as a security threat can occur without increasing the involvement of traditional security institutions.

Civil-Military Relations

The securitization of maternal health could also lead to a shift of maternal health policies and programs from civil society to military institutions. Stefan Elbe, Professor of International Relations at the University of Sussex argues that the securitization of public health programs, specifically HIV/AIDS, risks pulling health issues out of the hands of civil society and putting them into the hands of military and intelligence institutions.[100] This has the danger of not only overextending the capabilities of military forces, but also further delegitimizing the operational independence of maternal health programs. In part, this was one of the primary critiques of securitization theory made by Stephen Walt. Arguing that security is primarily about the use of force, when referring to the Copenhagen School, Walt said,

> *But this prescription runs the risk of expanding "security studies" excessively; by this logic, issues such as pollution, disease, child abuse, or economic recessions could all be viewed as threats to "security." Defining the field in this way would destroy its intellectual coherence and make it more difficult to devise solutions to any of these important problems.*[101]

In addition, in conflict situations, conflating security with maternal health could possibly lead to a situation where civilians working on maternal health issues are associated with military force, or where military members are associated with civilian work. This is particularly likely in situations where policymakers hope to legitimize military forces through associating military institutions with development projects. This commonly occurs in US and NATO operations in Afghanistan,[102] and is also evident in the US government's creation of the African Command (AFRICOM). In his 2011 'Posture Statement', presented to the House Armed Services Committee, AFRICOM Commander Gender Carter F. Ham said,

> *U.S. Africa Command's programs and activities directly support American national security interests…We support the United States Government's (USG)*

> *five priorities in Africa: good governance, economic progress, preventing and resolving conflicts, strong public health programs, and helping our African partners develop the capacity to meet the demands of transnational challenges. In supporting these national priorities, U.S. Africa Command focuses on preventing and resolving conflict and helping our African partners develop their own security capacity.*[103]

If it has not already been subsumed into the security mindset, were maternal health to be securitized, it would invite an increased involvement of AFRICOM and the military institutions associated with it.

This is potentially dangerous for many reasons. To begin with, soldiers are usually not adequately trained for maternal health work, and are unlikely to have the necessary skills to help develop health systems and effective maternal health programs. In addition, in such a situation civilians, working with military personnel or receiving funding or logistical support from them, risk being redefined as combatants. The distinction between civilian and combatant is important, not just for legal and moral reasons, but because individuals are viewed by differing sides in a conflict will have direct repercussions on behavior. If civilians are seen as being associated with the military, the likelihood that they will become targets of violence is raised significantly.[104]

CONCLUSION

Over the last 15 years security and public health have become increasingly interrelated. Policy-makers and academics have argued for the extension of threat paradigms to issues traditionally viewed as separate from security. This has led to increased political relevance and funding for such public health challenges as HIV/AIDS. While maternal health has not yet been fully securitized, there are several reasons to believe that it could be in the future. Such a securitization of maternal health could be positive for the struggle to improve maternal health globally. At the same time, we believe there are many unconsidered risks of such an approach, risks that have the potential of not only failing to improve maternal health outcomes, but also leading to a number of negative side-effects. In this article we have identified two major opportunities and five major sets of risks that would likely come with the securitization of maternal health. The opportunities are increased funding and political relevance. The risks are: long-term unknowns from a lack of research, increased politicization of aid at the expense of effective programs, unexpected funding challenges due to geopolitical priorities, gender concerns, and the blurring of civilian and military institutions. Our goal was not to present a structured framework for analyzing the securitization of maternal health, but to begin a debate about the positive and negative aspects of securitization, including the likely benefits and many possible risks of securitization that we believe have been inadequately considered to date.

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US Military Global Health Engagement since 9/11: Seeking Stability through Health

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Following the September 11, 2001 terrorist attacks, the US military expanded its global health engagement as part of broader efforts to stabilize fragile states, formally designating "medical stability operations" as use of Department of Defense (DoD) medical assets to build or sustain indigenous health sector capacity. Medical stability operations have included medical assistance missions launched by US Africa Command and in other regions, deployment of hospital ships to deliver humanitarian assistance and build capacity, and health-related efforts in Afghanistan and Iraq. The public health impact of such initiatives, and their effectiveness in promoting stability is unclear. Moreover, humanitarian actors have expressed concern about military encroachment on the "humanitarian space," potentially endangering aid workers and populations in need, and violating core principles of humanitarian assistance. The DoD should draw on existing data to determine whether, and under what conditions, health engagement promotes stability overseas and develop a shared understanding with humanitarian actors of core principles to guide its global health engagement.

INTRODUCTION

The US military is not new to the global health scene. For more than a century, to protect its deployed forces, the military has mounted infectious disease research and treatment programs overseas. Seminal contributions include vaccines and drugs for malaria and other tropical infections, many of which are cornerstones of current disease control programs.[1] Since the late 1990s, it built a global infectious disease surveillance and response network from its international research infrastructure, supporting US and global efforts against pandemics.[2] For the most part, key global health actors have welcomed these contributions to global health.

After the September 11, 2001 terrorist attacks, the US military launched global health activities as part of broader efforts to counter violent extremism and bring stability to conflict-prone areas. Some of these activities resemble humanitarian assistance missions, which provide aid to crisis-affected populations with the primary purposes of saving lives and alleviating suffering; others seek to build health capacities, in both peaceful or conflict-beset areas. Now that the US military has established major initiatives and policies as part of this new global health engagement, it is timely to take stock, and assess the US military's post-9/11 global health engagement.

FOCUS ON FRAGILE STATES

Following 9/11, the US military projected health assistance abroad with the primary and explicit goal of reducing poverty, poor perceptions of America, and other socio-economic conditions that could facilitate "violent extremism." These formed part of a broad US Government effort to strengthen failed or failing states, seen increasingly as

potential breeding grounds and safe havens for terrorist movements (apparent in pre-9/11 attacks as well; e.g., the 1998 US embassy bombings in Kenya and Tanzania, linked to Osama bin Laden and associates). President George W. Bush articulated the agenda in a 2005 National Security Presidential Directive:

> The United States should work with other countries and organizations to anticipate state failure, avoid it whenever possible, and respond quickly and effectively when necessary and appropriate to promote peace, security, development, democratic practices, market economies, and the rule of law. Such work should aim to enable governments abroad to exercise sovereignty over their own territories and to prevent those territories from being used as a base of operations or safe haven for extremists, terrorists, organized crime groups, or others who pose a threat to US foreign policy, security, or economic interests.[3]

In support of this policy, the Department of Defense (DoD) identified "stability operations" – "Military and civilian activities conducted across the spectrum from peace to conflict to establish or maintain order in States and regions" – as a core US military mission with priority comparable to combat operations.[4] Stability operations aim, in the short term, to provide security, essential services, and humanitarian needs; and in the long term, to develop "indigenous capacity for securing essential services, a viable market economy, rule of law, democratic institutions, and a robust civil society."

The US military has long conducted operations that would meet the definition of "stability operations." Through programs that came to be called "civil affairs," it has provided humanitarian assistance, host nation support, post-conflict reconstruction, peace operations, and related missions for more than 200 years.[5] But until the recent policy, the DoD lacked an enduring, institutional mandate to maintain proficiency in such operations, which were considered less important than combat operations during and immediately following the Cold War.[6]

In 2010, the DoD formally established the category "medical stability operations" for stability operations using DoD medical assets, and directed the military health system "to be prepared to perform any tasks assigned to establish, reconstitute, and maintain health sector capacity and capability for the indigenous population when indigenous, foreign, or US civilian professionals cannot do so."[7] By the time DoD established this policy, the US military was already engaged in medical stability operations as part of its campaign against violent extremism in many countries, in both peaceful and conflict settings.

SEEKING STABILITY THROUGH HEALTH

Africa, home to many fragile states (several of its countries consistently make the top of a global ranking),[8] porous borders, and terrorist groups linked to Al Qaeda, became a focus of the US military's stability operations after 9/11. The US military established the Combined Joint Task Force-Horn of Africa (CJTF-HOA) in Djibouti in 2002, which remains its only substantial presence in Africa. CJTF-HOA uses "civil military operations as the cornerstone to countering violent extremism and building partner nation and regional security capacity" in East Africa.[9] Its health-related activities include building and renovating clinics and hospitals, and providing medical care to local populations in medical civil action programs (MEDCAPs). CJTF-HOA became part of US Africa Command (AFRICOM) after it was established in 2007. AFRICOM also

provides medical care to indigenous populations through its Trans-Sahara Counterterrorism Partnership, in northwestern Africa.[10]

Other US military regional commands also conduct stability operations, most prominently in Central and South America (by US Southern Command) and the Asia-Pacific region (by US Pacific Command). The medical stability operations in these regions include MEDCAPs and infrastructure projects, as in Africa, but also regularly scheduled deployments of hospital ships and large-deck amphibious vessels to deliver assistance in multiple countries over several months.

As the hospital ship USNS *Comfort* embarked on a 5-month, 12-country deployment with 500 medical staff, then-Chief of Naval Operations (and current Chairman of the Joint Chiefs of Staff) Admiral Mike Mullen reflected on these ship-based medical stability operations: "It's a mission that continues to grow and one about which I am very excited. And like Sailors around the world, they're making such a difference in people's lives, and I think that's, in the long run, how we'll impact the global war on terror[ism]."[11] The Navy has also used the *Comfort*, its sister ship, USNS *Mercy*, and other vessels to provide emergency medical assistance following natural disasters. Recent examples are numerous: the South Asian tsunami in 2004; the earthquake in Pakistan in 2005; the cyclone in Bangladesh in 2007; the earthquake in Haiti in 2010; and the flooding in Pakistan in 2010.

The US military also trained its medical professionals for the growing global health mission. Notable examples of training initiatives are shown in Table 1 below.

Table 1: Selected Examples of Global Health Training Initiatives for US Military Medical Professionals

Training initiative	Host	Description
Guide to Nongovernmental Organizations for the Military	International Health Division, Office of the Assistant Secretary of Defense (Health Affairs)	"A primer for the military about private, voluntary, and nongovernmental organizations operating in humanitarian emergencies globally."[12]
Medical Stability Operations Course	Defense Medical Readiness Training Institute	"...familiarize DoD healthcare personnel with the complexity of military medical diplomacy within the context of US strategy and international relations."[13]
Clerkships and practicums for medical and graduate students	Center for Disaster and Humanitarian Assistance Medicine (Uniformed Services University of the Health Sciences)	"...opportunities for students to gain greater insight into the world of medical humanitarian assistance/disaster relief from the perspectives of US Government, Interagency entities and foreign communities."[14]
United Nations Civil-Military Coordination Course	Center of Excellence in Disaster Management and Humanitarian Assistance	"...designed to address the need for coordination between international civilian humanitarian actors, especially [United Nations] humanitarian agencies, and international military forces in an

		international humanitarian emergency."[15]
International Health Specialist Program	US Air Force	"...has members deployed around the world, engaging in building global health partnerships, humanitarian assistance, disaster response, health care infrastructure development during wartime and building partnerships through stability operations in times of peace."[16]

In the Iraq and Afghanistan wars, stability operations became a key part of US military counter-insurgency strategy. They aimed to correct governance deficiencies that insurgents exploited, and to strengthen local support for national and local governments and international forces. Two programs have been especially important for implementing these initiatives: Provincial Reconstruction Teams (PRTs) and the Commander's Emergency Response Program (CERP).

PRTs are civil-military units designed to "improve stability in a given area by helping build the host nation's capacity; reinforcing the host nation's legitimacy and effectiveness; and bolstering [the host nation's capacity to] provide security to its citizens and deliver essential government services."[17] PRTs began operating in Afghanistan in 2002 and Iraq in 2005; they are led by the United States and other coalition countries. They generally include 50-100 people, most of whom are US or coalition military personnel, with US or coalition government civilians specializing in agriculture, engineering, law, public health, and other priority areas for PRT projects. PRT health-related projects include building clinics, donating technology, and training healthcare workers, addressing both immediate and longer-term health capacity needs (mirroring the range of activities that other, non-military organizations conduct in the same countries; for example, the US Agency for International Development supports delivery of health services as well as healthcare worker and lay training in Afghanistan, among many other health-related programs).[18]

The main funding mechanism for US-led PRTs is CERP, first implemented in Iraq to enable US military commanders to respond to urgent humanitarian relief and reconstruction needs. PRTs, as well as US military unit commanders in Iraq and Afghanistan, may draw on CERP funds to implement critical small-scale humanitarian relief and reconstruction projects that can be executed quickly, employ people from the local population, benefit the local population, and are "highly visible."[19] Allowable health-related projects include repairing or reconstructing hospitals or clinics, and providing urgent healthcare services, immunizations, medicine, medical supplies, or equipment. The DoD obligated $1.4 billion to CERP in Afghanistan during fiscal year 2005 through the 3rd quarter of fiscal year 2009, including $51.4 million for 969 health-related projects.[20]

To help US military commanders select and monitor projects funded by CERP or other sources, the US Agency for International Development (USAID) created a tool to identify the underlying causes of instability or conflict in 2006.[21] US and international forces throughout Afghanistan have used this survey instrument, the Tactical Conflict Assessment Planning Framework (TCAPF), to interview local Afghans and determine

whether lack of security, education, healthcare, or roads, or other factors are significant causes of local instability; and to assess whether stability improves after projects are implemented. The approach became a core part of a broader framework for improving stability in local areas.[22] A key principle underlining the TCAPF and the broader framework is that projects should address causes of instability, not simply the needs or desires of the local population.

UNCERTAIN PUBLIC HEALTH IMPACT

Considering the US military's appreciable post-9/11 efforts to promote medical stability operations, the lack of evidence supporting their effectiveness in achieving public health improvements is surprising. In many cases, it is not that medical stability operations clearly failed to bring about improvements in health outcomes – few would argue that US military assistance following large-scale natural disasters has not benefitted the recipients. Rather, it is that the US military has not systematically collected data on their public health results.

Investigators at the Uniformed Services University reviewed 1,000 DoD reports of humanitarian assistance operations recorded between 1996 and 2007, and compared the after-event assessments against aid community standards for assessing the impact of humanitarian assistance missions, such as identifying measures of success and measuring changes in health outcomes before and after interventions.[23] Reports included measures of process, capturing activities and outputs, such as how many patients were treated. Yet, only seven reports mentioned impacts on public health.

Some interpret the failure to monitor health outcomes as evidence that the US military is not serious about improving health through medical stability operations, but rather is focused predominately on projecting an image of US benevolence to counter negative perceptions abroad. In explaining the use of hospital ships and US Navy large-deck vessels to deliver medical assistance – missions the Navy currently conducts about twice per year, not including disaster responses – US Government officials frequently point to public opinion polls in Indonesia after the US military provided post-tsunami assistance in 2005, which showed improved public perceptions of the United States.

In a "medical diplomacy" venture, the USNS *Comfort* deployed to Latin America for over 4 months in 2007. According to President Bush adviser Karen Hughes, the mission was not just to provide medical care, but "to do so in a very visible way:"[24]

> Hughes initiated the Comfort's medical diplomacy mission after a trip to Latin America in 2006, and says publicity was a central goal from the beginning. Although the President considers Latin America a focus of his administration and has overseen a near-doubling of annual assistance to the region to $1.47 billion, she said the commitment seemed lost on people who live there.[23]

Health professionals serving on the ship complained that port calls seemed designed mainly for publicity, and that they failed to effectively use the ship's considerable technological and human resources. One Navy surgeon on board noted, "There's a lot of medical need down here – simple stuff, really – that we can't take care of because we're not here long enough to get into it."[24] Another physician on the mission wondered, "It's one thing to sweep through here and say, `Let's do surgery, let's fill cavities,' but are we really making a difference?"[25]

In Iraq and Afghanistan, military-led assistance programs also have been criticized for not measuring or achieving appropriate outcomes. A 2008 House Armed Services Committee assessment noted that neither DoD nor the Department of State had "adopted a performance monitoring system to provide an assessment tool that can measure the PRTs' effectiveness and performance . . . There are no standard metrics by which PRTs are judged."[26] The Special Inspector General for Afghanistan Reconstruction similarly reported that CERP managers focused more on obligating funds than on monitoring how projects were implemented.[27]

Humanitarian assistance organizations active in Afghanistan went a step further, beyond a critique of how PRTs monitor their programs to a blunt assessment of their effectiveness. A joint statement from seven non-governmental organizations asserted that "development projects implemented with military money or through military-dominated structures aim to achieve fast results but are often poorly executed, inappropriate and do not have sufficient community involvement to make them sustainable."[28]

The US military has been responsive to criticism that its medical stability operations do not track or achieve the right public health outcomes. The Navy is developing guidelines for conducting and monitoring medical stability operations, emphasizing long-term, internationally-agreed public health goals and standards. Furthermore, since the initial USNS *Comfort* mission of 2007, medical stability operations launched from large-deck ships have focused more on building host-country capacity than on showcasing medical care of host country populations by US military personnel. Recent US military guidance for PRTs also notes the importance of assessing results, not just outputs like the number of clinics constructed.[29]

HUMANITARIAN RIFT

Humanitarian organizations, however, not only have criticized the technical competence of military forces in delivering assistance – they also have questioned the ethics of this engagement. The rift has, in many cases, precluded collaboration that the US military has sought, especially in conflict areas. Some humanitarian organizations see medical stability operations as part of a broader and troubling encroachment of military forces on the "humanitarian space," violating core principles of humanitarian assistance.

Among humanitarian actors, there is broad agreement that humanitarian assistance must be provided according to the core principles of:

- **Humanity:** Human suffering must be addressed wherever it is found, with particular attention to the most vulnerable in the population, such as children, women, and the elderly. The dignity and rights of all victims must be respected and protected.
- **Neutrality:** Humanitarian assistance must be provided without engaging in hostilities or taking sides in controversies of a political, religious, or ideological nature.
- **Impartiality:** Humanitarian assistance must be provided without discriminating as to ethnic origin, gender, nationality, political opinions, race, or religion. Relief of the suffering must be guided solely by needs and priority must be given to the most urgent cases of distress.

These criteria are based on a United Nations (UN) General Assembly Resolution codified in the 1992 multilateral "Oslo Guidelines" for military engagement in disaster relief,[30] and later extended to military support for UN humanitarian relief in conflict settings, or "complex emergencies."[31] Both sets of guidelines, for peaceful and conflict scenarios, generally encourage use of civilian assets for relief, and allow for military participation in relief only as a last resort.

It is important to distinguish between peaceful and conflict settings in assessing medical stability operations against these principles. Humanitarian assistance providers generally have praised the US military's response to natural disasters in areas not beset by conflict, noting that no other organization can deliver large-scale logistical capabilities and relief assets so rapidly. In these settings, most humanitarian actors usually would see the "last resort" standard for military engagement met, along with the core principles of humanity, neutrality, and impartiality. Humanitarian organizations have commented less (at least publicly) on medical stability operations in peaceful areas not experiencing an emergency. They have vigorously addressed military-led assistance in conflict settings.

In those situations, the primary charge against the US military's use of medical stability operations, and of military-led assistance more broadly, is that foreign military forces are neither neutral nor impartial in delivering assistance – and this can have violent consequences (some also argue that even UN efforts may fail the neutrality principle, if it recognizes one side but not the other as the legitimate government in an internal conflict).

A World Health Organization-led coalition of more than 30 humanitarian health organizations, known as the Global Health Cluster, recently released a draft position paper on civil-military coordination during humanitarian health action. In conflict settings, the Global Health Cluster notes, military forces providing assistance "are deployed with a specific security and political agenda,"[32] in contrast to humanitarian actors, which (by definition) provide assistance according to the principles of humanity, neutrality, and impartiality.

> Any confusion between the different mandates carries the risk that humanitarian aid agencies may be drawn, or perceived to be drawn, into conflict dynamics. Humanitarian agencies that are perceived as acting according to agendas other than their humanitarian mandate may lose their credibility in the eyes of other local actors as well as the trust of the population they are there to serve. This can severely affect their ability to operate and, ultimately, create security risks for their staff and for the aforementioned populations.[33]

The key message about the use of medical stability operations in conflict settings could not be clearer: "Humanitarian actions should not be used to advance security and/or political agendas."[34]

Some humanitarian organizations point to events in the Afghanistan and Iraq wars in which military involvement has had a negative impact. *Medecins sans Frontieres* (MSF, or Doctors without Borders) left Afghanistan, where it had been active for 24 years, in July 2004 after the murder of 5 of its workers. Three months later, the organization announced it was ending operations in Iraq due to increasing violence against aid workers. The decisions to withdraw from Afghanistan and Iraq because of security concerns were remarkable for the Nobel Prize-winning organization, which had

previously operated in many conflict areas. MSF pointed to military encroachment on the "humanitarian space" as a key culprit in violence against its workers:

> Throughout the reconstruction period in Afghanistan, MSF objected to the blurring of boundaries between the military and humanitarian-aid communities, criticizing the coalition government's strategy of deploying provincial reconstruction teams that placed soldiers and civilians side by side when delivering food, medical care, and economic assistance to the Afghans. They argued that nationals were unable to distinguish between MSF clinics and clinics built by the military.[35]

The coalition of non-governmental organizations that criticized military-dominated development activities on competence grounds also pointed to the "perverse incentives" that military-led assistance brings in Afghanistan, forcing Afghans "to make an impossible choice between aid and security," by "offering food and other aid in exchange for information in a country where a third of the population is at risk of hunger is not only unethical, it puts Afghans in potential danger of being targeted by anti-government groups."[36]

THE HEALTH-STABILITY LINK

If the US military embraces a new approach to medical stability operations that targets and tracks sustainable public health improvements, it is likely that, in many cases, the military could bring about the desired improvements. Efforts in infectious disease research and surveillance show that the US military can make lasting contributions to public health abroad. Yet, the US military does not conduct medical stability operations to improve global health – the goal is stability. From this perspective, the effectiveness of medical stability operations is far from certain: little or no data is available on the stability effects of medical stability operations, and assessments of stability operations in general are less than encouraging.

A study from the Feinstein International Center of Tufts University assessed CJTF-HOA's 151 aid projects during 2003-2008 in northeastern and coastal Kenya, projects that were established in Muslim-majority areas considered vulnerable to radicalization and development of terrorist safe havens (28 percent of the projects were health-related).[37] It found no evidence that they promoted stability, noting that a multitude of factors beyond the scope of aid projects shape local perceptions (e.g., the relationship between local populations and the Kenyan government, and perceptions of US foreign policy towards other parts of the Muslim world). Some community members viewed the aid as part of broader US efforts to change Muslim communities' faith and beliefs. A local religious leader asked the researchers: "Do they think we are stupid?"

An assessment reached similar conclusions of stability operations in Afghanistan, including PRT activities and CERP-funded projects.[39] The 2010 roundtable, "Winning 'Hearts and Minds' in Afghanistan: Assessing the Effectiveness of Development Aid in COIN Operations," was organized by the Feinstein International Center and included academics, military and civilian aid practitioners, and policy-makers. The conference report concluded that aid projects sometimes have short-term tactical benefits, such as establishing access to local populations and gathering intelligence, but that the relationships established are transactional. Little evidence

suggests that local populations can be "won over" to side with the government, away from the insurgency, with aid projects.

Moreover, in Afghanistan, the government itself appears a key driver of instability. Many Afghans perceive their government as corrupt and unjust, so a "COIN strategy premised on using aid to win the population over to such a negatively perceived government faces an uphill struggle," especially where many view the Taliban as able to provide security and justice more effectively.[38]

HOW IMPORTANT IS STABILITY TO US NATIONAL SECURITY?

Beyond the issue of the US military's effectiveness in promoting stability through health and other assistance programs, there is a more fundamental question: How much of a threat do fragile states pose to core US security interests? Recently, criticism has emerged of the central, strategic premise underlying the US military's stability operations. Stewart Patrick, with the Council on Foreign Relations, wrote in 2011:

> In truth, while failed states may be worthy of America's attention on humanitarian and development grounds, most of them are irrelevant to US national security. The risks they pose are mainly to their own inhabitants. Sweeping claims to the contrary are not only inaccurate but distracting and unhelpful, providing little guidance to policymakers seeking to prioritize scarce attention and resources.[39]

Studying all 141 developing countries on 20 indicators of state strength, he concluded that, "only a handful of the world's failed states pose security concerns to the United States."[40] Considering the investments the US Government and DoD in particular have made in strengthening fragile states – for example, providing resources, deploying personnel, developing policy and professional skills – it is long past time for a critical appraisal of exactly where fragility is relevant to US national security.

As for the US military's global health engagement to promote stability, the experience to date suggests two immediate priorities for the way ahead. First, there likely is sufficient data for empirical analysis of whether the military's health-related programs do promote stability, at the very least, in a local context. While the findings will be context-dependent and cannot be expected to hold universally, they should prove useful in providing evidence for, or against, the current 'stability-through-health' heuristic.

Second, the US military should engage humanitarian actors and others with deep understanding of the central, moral tenets of humanitarian assistance in a sustained conversation about difficult, but critical questions. These might include: What is the importance of trade-offs between short-term and longer-term human protection objectives; for example, if military-led health assistance might lead to a safer environment in the longer-term, but only after shorter-term instability? What is the impact of strict adherence to the principles of impartiality and neutrality on the health and safety of innocent civilians, in conflict settings where opposing sides vie for their support? In general, what is the relevance of health outcomes to ethical considerations in determining where, in relation to the humanitarian space, military health engagement appropriately begins and ends?

The US military has brought significant resources (financial, material, and human) to its global health engagement since 9/11. It has learned from criticism on

effectiveness grounds, though careful analysis of effectiveness should remain a priority. However, if it is to have a chance of working in broad, sustained partnership with humanitarian actors, the military must advance toward a shared understanding with those potential partners of the core principles that will guide its global health engagement.

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