MISDIAGNOSIS:
DYSFUNCTION BETWEEN WESTERN HEALTH ORGANIZATIONS AND DEVELOPING NATIONS

Infectious diseases play a unique role in perpetuating state weakness, as well as creating security threats for other nations. Indonesia makes a remarkable case study for the examination of the role of infectious diseases in middle states with weak institutions. The country found itself in the middle of a global controversy regarding the novel Southeast Asian highly pathogenic influenza A (HPAI H5N1) virus in 2007. At that time, the virus just described was emerging in Southeast Asia. An avian influenza virus, it had made the interspecies jump to human infectivity, but not yet to sustained human-to-human transmission. Because it was found to be highly pathogenic, with significant associated morbidity and mortality within Indonesia, concerns were high regarding the potential of a pandemic. However, despite initial cooperation with the World Health Organization (WHO) regarding pandemic preparedness, Indonesia abruptly altered course and withheld virus samples from WHO labs, igniting a global firestorm as epidemiologists were concerned the Indonesian virus in particular could lead to a pandemic.

This article will explore how Indonesia withheld virus samples because of an underlying distrust of Western institutions. This relationship resulted from serial negative encounters with Western institutions, beginning in the 1600’s with the highly extractive Dutch East India Company and continuing until as recently as 1997 with the International Monetary Fund (IMF) and World Bank (WB) during the Asian Financial Crisis of 1997-1998.

Two Indonesias

Although Indonesia is considered a relatively strong state by the Index of State Weakness, (ranking 77 out of 141 in 2008) and by the current health of its economy, it’s World Bank and United Nations Development Program (UNDP) health care indicators are on par with other lower-middle income developing nations. In fact, the United States Agency for International Development (USAID) Strategy for Indonesia 2014-2018 describes “Two Indonesias.” It outlines the growing income inequality in Indonesia, with the richest twenty percent of the population owning eighty percent of the wealth, and half of the population living on less than two dollars a day.

Indonesia was particularly hard-hit by the avian Influenza A H5N1 pandemic. According the WHO’s Disease Outbreak News in January 2014, Indonesia experienced a total of 195 documented infections, with 163 deaths. A British Medical Journal (BMJ) Public Health article in 2013 noted at that time the case fatality rate was 83%, almost twenty percent higher than similarly affected countries. Worldwide documented cases from the start of the outbreak through January 2014 totaled 650 with 386 deaths. The hardest hit countries were Indonesia (numbers stated above), Egypt (173 cases, 63 deaths), Vietnam (125 cases, 62 deaths), and China (45 cases, 30 deaths).

Because of its status as a developing nation with relatively weak public health institutions, public health threats such as avian influenza H5N1, emerging from Indonesia could potentially be associated with an ineffective response. Shortcomings in Indonesia’s institutions play a major role in the dangers of emerging infectious diseases. These include corruption in political institutions, health care system inequities that favor the rich, public health deficiencies both in veterinary and human health, and cultural distrust of Western institutions such as the WHO, the World Bank, and the IMF. This distrust played out during the H5N1 outbreak. In an unprecedented move, Indonesia withheld their viral samples from the WHO’s Global Influenza Surveillance Network (GISN), claiming ecologic sovereignty over the virus type due to a distrust of Western institutions.

Biopiracy and Neo-Colonialism

While Indonesia did eventually decide to share viral samples with the GISN, their distrust was validated when an Australian vaccine manufacturer (who
had obtained samples of the Indonesian virus from the WHO) approached the Indonesian government offering to sell the vaccine. Indonesia felt that this was another example of western power striving to keep developing nations hostage. An intense legal battle gave rise to a new term in global governance, “biopiracy.” Indonesia’s fear was that a vaccine was being developed using their H5N1 samples by the Australian company, who would then attempt to sell it targeting their strain of H5N1 at unaffordable prices during a national emergency (such as an epidemic). Unavailability of the vaccine in Indonesia led to a perception that they were living in a “sacrifice zone”, in which the Indonesian population was being ignored at the expense of protecting wealthy nations. Indonesia felt this amounted to blackmail and was representative of western international regimes holding economic power over developing nations. This added insult to injury as the country was also dealing with the highest caseload of human-avian flu at that time. Furthermore, Indonesia’s Health Minister had difficulty obtaining oseltamir, the only known effective treatment for influenza A, because worldwide stockpiles were unavailable due to alleged hoarding of the drug by wealthy nations. These events led Indonesia to reconsider what they were gaining from participating in the global health surveillance system. Indonesia’s Health Ministry decided once again to stop sharing virus samples, claiming that the use of their virus to patent a vaccine to which they did not have access violated the principle of ecologic sovereignty. This placed the country in violation of both Indonesia’s Material Transport Agreement (MTA) and local regulations.

Western institutions, including the WHO, the CDC, and the ECDC explained discrepancies in vaccine availability in several ways. The first was on the basis of epidemiologic factors. Targets for vaccine coverage are those people who meet eligibility criteria for high risk, including the elderly, and those with chronic medical conditions. Western countries argued that they receive higher coverage with vaccination stockpiles because they have the largest populations meeting those criteria. They added that many of these same countries have pharmaceutical presence able to produce the vaccines locally. They further asserted that the effects of seasonal influenza outbreaks are not well-studied in developing nations, thus there is not a documented need for seasonal flu vaccine in those countries. Finally, they insisted that withholding virus samples was in violation of international law, specifically an International Health Regulation signed at the World Health Assembly in 2005 (IHR 2005). As far as the vaccine manufacturer was concerned, the WHO insisted that issue was between the Indonesian government and the vaccine manufacturer.

In the end, Indonesia successfully claimed that IHR 2005 was not binding until it officially entered force on June 15, 2007, which was after the controversy started and the samples were held. Furthermore, they argued that while the regulation was designed to facilitate sharing information, it did not include biologic samples. Thus, even though the IHR was not officially in effect, they still had not violated the voluntary obligation expressed in the law.

However, the larger question remains. How can a global response to a pandemic that could potentially require up to six billion vaccine doses be possible? Less-developed countries, especially those with infant scientific or pharmaceutical industries, are ill-equipped to develop and distribute influenza vaccines on an emergency basis. Furthermore, some countries, as is the case with Indonesia, do not trust western institutions to meet their needs in cases of wider global epidemics. In fact,
Know Your Enemy:
Highly Pathogenic Avian Influenza A (HPAI H5N1)

H5N1 is a subtype of avian influenza A that has crossed species to infect not only birds, but also humans. It is a type of virus known collectively as a “zoonoses” - any organism (virus, bacteria, parasites et cetera) whose known hosts are non-human vertebrates. Close and sustained contact between people and the usual host organism, birds, can result in infection in humans. Molecular identification of the viral genome in the case of H5N1 was found to have originated in wild fowl in China where it infected domesticated chickens. Subtypes of this virus were eventually proven to be identical between infected humans and poultry in the case of multiple countries across Eurasia, including Vietnam and Indonesia, proving it had crossed species.

Differences between virus families are known as “clades”. In the case of H5N1, several clades were identified and mapped, allowing epidemiologists to track the spread of particular viral families (such as those descending into Vietnam and Thailand, versus those found in Indonesia). Because of peculiarities to the genetic code held in each clade, some clades may be more pathogenic in humans versus others, resulting in more profound morbidity and/or higher mortality.

This information is critical to pandemic preparedness and vaccine development because vaccines must be tailored to the clade with the highest pathogenicity. Furthermore, some clades may have a higher antigenicity (the ability to induce antibodies) and therefore make more effective vaccine preparations. Researchers and manufacturers need access to as many clades as possible to design a vaccine that effectively both produces antibodies with the fewest doses possible (ideally only a single thermo-stable dose) and targets the most pathogenic clade(s).

The international health regime has evolved over time to include free and prompt sharing of new viruses to international health agencies in order to study and develop vaccines as needed preemptively. The primary agencies are: the WHO, which is associated with the United Nations; the Centers for Disease Control and Prevention (CDC) in the United States; and the European Centre for Disease for Prevention and Control (ECDC). These agencies work in conjunction with the Global Influenza Surveillance Network (GISN) to survey for and genetically categorize novel influenza viruses. The goal is to identify potentially epidemic strains at their source and activate the so-called “Rapid Containment Strategy” to keep the virus from spreading outside its zone of origin. These agencies are especially concerned about influenza viruses because they have known pandemic ability, as evidenced by Spanish Influenza that resulted in more than thirty million deaths worldwide. But the entire regime hinges on rapid typing of novel strains, which can only be accomplished though timely participation in the GISN, so the containment strategy can be activated.
in 2010, a review of seasonal vaccine (H1N1) availability by Khoon showed these worries to be valid. Despite the global vaccine manufacturer’s promise to provide poor nations with a stockpile of 120 million doses, those pledges could not be fulfilled until months after the pandemic had waned. Meanwhile, wealthy nations who had been able to pre-order doses were provided with the first billion produced. Thus, Indonesia (and other developing nations) perceive themselves to be in a precarious and dangerous situation, providing the viruses that may herald a coming pandemic, yet unable to obtain vaccinations until too late. However, as Margaret Chan, Director General of the WHO argues, the global community is at risk when global cooperation in surveillance and planning is not achieved.

Policy Solutions
There are several policy options that can assist international cooperation between developing countries, like Indonesia, as well as promote increased cooperation between global institutions, such as the WHO, and the nations they claim to help.

1. Continue dialogue, including listening to complaints from developing countries regarding global governance and sincerely attempt to remedy those complaints. The WHO did this in their pandemic preparedness plan by having multiple meetings with all the stakeholders, but in the future this should be accomplished successfully in less than four years.

2. Involve countries in all steps of pandemic preparedness so they can have ownership over the process, including assurances that vaccine and/or treatment will be available within an acceptable time frame. This should include transparency in policy and processes.

3. View these opportunities as chances for further institutional and economic development. Offer training to local health care personnel in both veterinary and human medical disease surveillance and intervention. Avoid creating parallel systems by not allowing foreign actors (NGO’s etc.) to solely perform these duties. Instead, work with existing infrastructure and governments to build institutions locally and prevent brain drain by creating employment opportunities in the home country.

4. Make an effort to understand local cultural and historical context so solutions will be as seamless as possible. Be sensitive to these contexts in an effort to avoid paternalistic tendencies while seeking consensus regarding global issues.

Conclusion
Infectious diseases are increasingly recognized as threats to national security. Indonesia is a contemporary and compelling study of the multiple and sometimes disparate relationships between public health and geopolitical interests. First, Indonesia displays the cultural norms that allow close proximity and spread of the avian influenza virus to human populations as well as the weak and underfunded health care infrastructure that is unable to care for the ill and infected. Second, it is a nation bearing the collective memory of a long-lasting colonial occupation, and perceives that her national sovereignty continues to be undermined at the hands of global governance agencies. Global institutions such as the World Bank and WHO either intentionally or unwittingly hindered efforts at full integration of Indonesia into global economic and governance regimes. Third, Indonesia’s demographic challenges as the fourth most populous nation, strategically located in the heart of global shipping lanes, placed an enormous strain on her governance structures during an effort to treat an epidemic within her borders and to inhibit the epidemic’s spread to other regions. Finally, all of the above factors support the case that both national security and public health threats are culture specific. A case-specific paradigm must be developed so that all of these issues can be addressed to achieve a desirable outcome.

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