

SYSTEMATIC REVIEW

Global Health Security Demands a Strong International Health Regulations Treaty and Leadership From a Highly Resourced World Health Organization

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ABSTRACT

If the Ebola tragedy of West Africa has taught us anything, it should be that the 2005 International Health Regulations (IHR) Treaty, which gave unprecedented authority to the World Health Organization (WHO) to provide global public health security during public health emergencies of international concern, has fallen severely short of its original goal. After encouraging successes with the 2003 severe acute respiratory syndrome (SARS) pandemic, the intent of the legally binding Treaty to improve the capacity of all countries to detect, assess, notify, and respond to public health threats has shamefully lapsed. Despite the granting of 2-year extensions in 2012 to countries to meet core surveillance and response requirements, less than 20% of countries have complied. Today it is not realistic to expect that these gaps will be solved or narrowed in the foreseeable future by the IHR or the WHO alone under current provisions. The unfortunate failures that culminated in an inadequate response to the Ebola epidemic in West Africa are multifactorial, including funding, staffing, and poor leadership decisions, but all are reversible. A rush by the Global Health Security Agenda partners to fill critical gaps in administrative and operational areas has been crucial in the short term, but questions remain as to the real priorities of the G20 as time elapses and critical gaps in public health protections and infrastructure take precedence over the economic and security needs of the developed world. The response from the Global Outbreak Alert and Response Network and foreign medical teams to Ebola proved indispensable to global health security, but both deserve stronger strategic capacity support and institutional status under the WHO leadership granted by the IHR Treaty. Treaties are the most successful means the world has in preventing, preparing for, and controlling epidemics in an increasingly globalized world. Other options are not sustainable. Given the gravity of ongoing failed treaty management, the slow and incomplete process of reform, the magnitude and complexity of infectious disease outbreaks, and the rising severity of public health emergencies, a recommitment must be made to complete and restore the original mandates as a collaborative and coordinated global network responsibility, not one left to the actions of individual countries. The bottom line is that the global community can no longer tolerate an ineffectual and passive international response system. As such, this Treaty has the potential to become one of the most effective treaties for crisis response and risk reduction worldwide. Practitioners and health decision-makers worldwide must break their silence and advocate for a stronger Treaty and a return of WHO authority. (*Disaster Med Public Health Preparedness*. 2015;9:568-580)

Key Words: World Health Association, International Health Regulations Treaty, Ebola, epidemics, pandemics, foreign medical teams, GOARN, global health security, humanitarian assistance

“The WHO we have is not the WHO we need...”
Jimmy Kolker, Assistant Secretary for Global Affairs,
US Department of Health and Human Services

In the late 1960s, the developed world predicted that advances in vaccines and antimicrobials would soon eradicate infectious diseases from the face of the earth. Even then, post-colonial Africa was making unprecedented gains in education, governance, and

the building of a protective public health infrastructure that brought hope that the continent would soon follow the rest of the world. No one foresaw that increasing global conflict, civil wars, refugee influxes, population migration, and the political, ethnic, and religious strife and developmental inequities of the turn of the century would also directly bring new life to infectious diseases with a new disease emerging at the unprecedented rate of about one per year for the

past 2 decades.¹ Whereas the beginning of the 21st century would bring massive advances in world commerce, trade, and transportation, the world also faced an alarming trend of compromised public health infrastructure and systems that were not maintained, modernized, or repaired. Multiple disasters were recorded that were geographically widespread in severely population-dense areas and prolonged. With increasing emerging and re-emerging diseases, many feared a catalytic prelude to a downward trend, or eventual collapse, of public health as we know it.²

In 2002, Price-Smith, a political scientist by training, developed the hypothesis that the increasing levels of infectious diseases act as stressors on nation-state capacity and undermine prosperity and governance and in certain cases national and human security. Unlike other crises facing a society, identifying, containing, and ultimately eliminating the threat of an outbreak require every element of government to coordinate and collaborate. Capacity to control and protect a nation from infectious disease, he claimed, was the most sensitive predictor and measure of good governance.³ Multiple crises from epidemics, pandemics, and large-scale natural disasters were increasingly keeping governments honest by defining the public health and exposing vulnerabilities in their protective infrastructure and systems.⁴

Following multiple single cases dating back to the 1900s, it was not until the 1980s that the infectious disease afflicting victims would be known as HIV/AIDS.¹ Since then, more than 35 million people worldwide are estimated to have been infected with HIV. While the medical response has yielded numerous successes, many challenges remain not only with HIV but with many unyielding infectious disease such as malaria, tuberculosis, and polio. Initially, the Global Outbreak Alert and Response Network (GOARN) was established in 2000 as a network of technical and research institutions, universities, international health organizations, and technical networks “willing to contribute and participate in internationally coordinated responses to infectious disease outbreaks.”⁵ GOARN was recognized as an independent body coordinated by the World Health Organization (WHO). The first outbreaks to which GOARN partners were sent occurred in 2000, and for the first several years, GOARN primarily responded to multiple hemorrhagic fever outbreaks in Afghanistan and Africa, Rift Valley fever outbreaks in Yemen and Saudi Arabia, and an Ebola outbreak in Uganda (Gulu). The key drivers of the global alert and response capacity were the shared WHO Disease Outbreak News and the Outbreak Verification List.⁵

The turning point for GOARN began in November 2003 when an unknown virus caused severe acute respiratory syndrome (SARS), which rapidly spread from South China to 37 countries in a matter of 10 weeks. SARS was the first of what would become numerous “multi-country events” to which the network responded. Within 2 weeks the virus was identified as a previously unknown strain of coronavirus,

a pathogen more commonly associated with the common cold. Henk Bekedam, the WHO Representative to China from 2002 to 2007, recalls that Chinese officials refused to give a “straight answer” to multiple queries about the rapidly worsening SARS outbreak.⁶ Case reports from Chinese physicians were passed to local health departments and then forwarded to municipal and provincial authorities, but it would take a month before they finally reached government officials in Beijing. Bekedam finally told Beijing’s Mayor, “We are not at all satisfied with the current analysis. You need to focus on these sporadic cases. You have to find out how they are getting the diseases.”⁷ Eventually, while working with infectious disease expert Alan Schnur of WHO’s Beijing Office, WHO led what would become the operational framework for future GOARN teams.⁸ They hand held China’s initially incompetent and politically controlled surveillance and control system leading them to what is currently a model for openness and internal expertise.

Today, China enjoys the WHO relationship that they have, historically building up “a massive capacity to respond to this kind of situation, to avoid damage to public health and prevent the socioeconomic problems that arise with it,” emphasizing “that’s invaluable to protect China and the rest of the world from any future epidemic—it’s a completely different approach from 10 years ago” and adding that “politicians and scientists realized they cannot repeat what they did during the SARS investigations.”⁶ Today, Bekedam is considered a role model for what WHO Country Representatives (WRs) can accomplish, mixing diplomatic skills and a highly respected knowledge base in medicine, economics, and cultural awareness.

Despite the over 8000 cases and 774 deaths, SARS was, in comparison to the deadly 1918 H5N1 virus, only a moderately severe disease. By 2006 the spread of SARS was fully contained but its natural reservoir and whether it will return in the future as a more aggressive and lethal mutated disease remain unknown. In many respects the disease could have been worse, much worse, but served as a strong message that awakened an otherwise ineffectual and passive international response system. Since 2000 and up until June of 2014, GOARN has been involved in about 153 outbreaks and humanitarian missions. GOARN never stood alone but would complement existing outbreak alert and early warning systems, WHO Collaborating Centers, and disease-specific surveillance and laboratory networks by deploying small teams of highly selective voluntary experts who in their normal lives held respected positions in academia, research, nongovernmental agencies, and national public health networks, primarily in the developed world.

THE GRAND EXPERIMENT

SARS directly exposed not only nation-state public health capacities and capabilities but also vulnerabilities within

international cooperation of an unprecedented nature. No country's public health protections were immune to criticism by the public health and scientific communities, and alarms were set off around the world that neighboring country incapacities might be potential sources of future cross-border spread of infectious disease. Public health emergencies (PHEs) were already being defined as those crises, whether as a result of war, conflict, large-scale natural disasters, or pandemics and epidemics (of an accidental or deliberate origin), that would require international assistance to counter the consequences of massive direct and indirect mortality and morbidity.⁴ When pandemics occur they are immediately considered worldwide Public Health Emergencies of International Concern (PHEICs) as no country possesses all the resource capacities to control their spread. Current experience tells us that all PHEs are best understood and managed in the context of multidisciplinary, multisectoral, and multiministerial capacities of governance and political will, economics, judiciary, public safety, quality of public health utilities, health security, agriculture, communications, transportation, education and training, and other capacities that allow a village, town, city, and nation-state to functionally protect its citizens.²

Clinicians have always known that isolated infectious disease outbreaks begin and end at the local community level; as do pandemics. This involves means to detect, investigate, isolate, and prevent the transmission of the virus or bacteria. What antibiotics do for bacterial infections, vaccines do for virus eradication. However, the manufacturing of novel virus vaccines is highly technical, prohibitively expensive, and may take many months to be tested for safety and effectiveness. The Achilles' heel of every virus is that once the transmission of the virus can be prevented, the virus will die out. Those who practice international health have thrived by bringing public health "best practices" to outbreaks in many culturally and politically challenging environments throughout the world. The process of the joining of clinical practice with public health principles and the local culture define what I referred to as "operationalizing public health skill sets"⁹ and recognized as WHO core competencies.¹⁰ Unfortunately, until they are actually faced with an epidemic, few practitioners appreciate the operational importance of these consolidated skills. One must always remember that whereas the "biology" of infectious disease control is universal, the politics surrounding its control differ greatly in every culture. The very same prevention, preparedness, and management principles applied to outbreaks and epidemics arising in rural communities and isolated refugee camps are identical to those that must be expeditiously and sensitively translated and reproduced to control pandemics at nation-state, regional, and global levels. Yet, this process has proved to be overwhelmingly complex and often chaotic, especially within the 3 Ebola-ravaged socio-politically and culturally distinct countries in West Africa, as well as the 9 countries that accepted patients into their advanced critical care settings.

Patrick Drury, the GOARN Manager at WHO acknowledges that, "Public health events, like Ebola, are profoundly complex, and that complexity varies from place-to-place, from event-to-event, and evolves during the lifespan of the outbreak," adding that an "effective response needs to involve wide ranging stakeholders in preparedness, alert and response. GOARN and partners have unrivalled experience in all major public health emergencies, and represent a unique resource and knowledge base that potentially provides the basis of building both response and coordination capacity" (Patrick Drury, Manager, GOARN, WHO Geneva, e-mail communication, February 1, 2015).

INTERNATIONAL HEALTH REGULATIONS TREATY

Historically, the International Health Regulations (IHR), originally adopted in 1951, and last substantially changed in 1969, had thus far only been applied to diseases of cholera, plague, and yellow fever that required quarantine. The IHR Treaty had lost its "effectiveness and relevance" by the 1960s;¹¹ partly due to the fact that the world was then anticipating that major infectious diseases, like smallpox, would soon disappear. Catalyzed by SARS and the looming avian influenza, which had a death rate greater than 50% in countries with poor resource capacity, the IHR of 2005 represented an historic development in international law on public health.¹¹ Essentially, the IHR under the direction of the World Health Assembly, an independent WHO body, moved the WHO from a passive to an active organization. In the process, the IHR vastly expanded the range and nature of disease events, strengthened WHO's nonbinding authority in recommending more demanding surveillance (which far surpasses that of the 1969 IHR) and response obligations, and applied human rights principles to public health interventions.¹² The IHR Treaty that came into force in June of 2007 also allows the WHO to recognize disease reports from nonstate sources working in humanitarian crises, which may constitute the only fledgling public health system in existence in these war-torn countries. The WHO Director-General has the power to determine whether an event constitutes a PHEIC.¹¹ From the outset, recognized strengths were that the IHR was internationally binding, had an idealized implementation work plan, and was "all-hazard" and flexible in its approach. Weaknesses, however, were that the IHR had no enforcement mechanism, were donor driven and funded, and lacked independent objective metrics for success.

PHEICs are often "situations of high scientific uncertainty."¹³ Expectations from the public and politicians run high. As with any novel virus, gaining and analyzing the scientific data necessary for credible predictions is painstakingly slow. These uncertain periods must strengthen operational best public health practices, not diminish them. Risks are too high that transmission will rapidly increase if one's guard is let down. During SARS, Canada was forced to initiate many politically charged decisions on protection and voluntary quarantine only

to alter them once evidence-based science was known. Each virus is totally different in its capacity to transmit, infect, and claim those in the population who are most vulnerable. Arguably, PHEICs will have immediate economic impact for any country in which the disease is occurring. With expected declines in tourism, decreased demand for exports and possible trade embargoes, the IHR provides safeguards to ensure that the WHO declarations of PHEICs are made with proper deliberation, taking into account data from member states, advice from the WHO Emergency Committee, and the logic of a decision-instrument tool.^{11,12} Decisions are based on scientific evidence and assessment of the risks to human health, the international spread of disease, and interference with international trade. An innovative strength of the IHR is that the countries reporting potential PHEICs are guaranteed to be represented on the committee advising WHO's Director-General on potential international measures to be taken in response; this reinforces transparency as well as country "buy-in" in the process. Fidler and Gostin, both prolific scholars on the impact of the IHR, emphasized that the IHR Treaty is "unprecedented in the history of the relationship between international law and public health."¹⁴ Whereas public health experts will testify that the Treaty has been the one instrument that has allowed "best practices" for infectious diseases to be translated worldwide, in reality, multiple political, societal, and basic differences that divide the capacities and capabilities of the developed and developing world ultimately challenge the implementation and the very existence of the Treaty itself.

Admittedly, the IHR does not create new international law that is binding on member states. In reality, the international community relies on "soft law" that represents nonbinding "normative duty to cooperate fully with other countries and with WHO in connection with infectious disease surveillance and response to outbreaks." While this "soft law" is "neither binding nor enforceable," "the duty is powerful politically." Fidler cited 2 compelling reasons: first, that participating in and enhancing international cooperation in infectious disease control is in a country's self-interest, and second that WHO's performance to date has allowed it to "construct a framework for international cooperation on infectious diseases that may withstand the expanding global threats posed by pathogens."¹⁵

Furthermore, the IHR Treaty was founded on irrefutable scientific evidence that even sovereign nations cannot deny. This alone has forced a unique but potential state of collaboration and cooperation not seen before in history. However, infectious diseases whether they be outbreaks, epidemics, or pandemics must be looked at through their source: poverty, widespread protective public health infrastructure loss, urbanization, increasing density of populations, pollution, and climate change to name but a few. Future conflicts, wars, and forced migration that are already increasingly driven by scarcities of water, food, and energy of an unprecedented nature provide a perfect platform for infectious disease outbreaks and spread. Evans warns that while scarcity is not a new issue, "what is new

is the combination of scarcity with global interdependence that we see today."¹⁶ The gravity of each infectious disease event will pale and be compounded even more by the underlying catalyst of the failed systems and demands of widespread "emergencies of scarcity."

THE END OF OPTIMISM

Political Challenges

Unfortunately, the hopeful bubble that initially surrounded the implementation of the IHR Treaty brought with it numerous political hassles and interference that have plagued the Treaty from its onset. Suk reminds us that "one of the under-appreciated insights from the SARS outbreak of 2003 is that during a pandemic, science and politics are difficult to disentangle."¹³ Pandemics serve as "wise truth-tellers" by exposing what can and cannot be reasonably disentangled from politics without compromising public health. Each country was forced to openly confront these dilemmas within their own culture and politics, especially as they applied to the implementation of the IHR. While many developed countries easily anticipated and met responsibilities, especially in developing surveillance requirements, failures became especially evident where crisis events impact the crucial interface between governance and science. Initial disagreements sidelined attention on internal issues of developed countries that today seem petty and at times obstructive to what was thought to embody a larger global good.

The challenges were numerous, but 4 unique examples are notable and worthy of mention. First, the IHR requires that all member nations notify the WHO "within 24 hours of assessment of public health information, of all events which may constitute a PHEIC within its territory as well as any health measure implemented in response to those events."¹⁵ In the early weeks of another outbreak, federal governments, which make up about 40% of the world's population and include India, Australia, the United States, and Canada, can create an obstacle to a centralized approach to national crises when treaties are signed by the central government but lack the cooperation from individual states or provinces.¹¹ This played out when the Canadian federal government's ability to obtain critical data in a timely manner from the Province of Ontario was handicapped because the data gathering was dependent on "voluntary transfer" of information crucial to WHO decision-makers.¹⁵ Seen as a "key obstacle" to management, WHO was forced to place Toronto in a quasi-quarantine status. This was WHO's enforcement inauguration and, while businesses and tourism proponents balked, the world community supported the action.

Secondly, while the United States did not suffer SARS cases, it may have found itself in a similar quandary if an outbreak occurred. Conflict and confusion will undoubtedly arise unless it is clearly determined which seat of government has the authority to manage a pandemic. Furthermore, the

United States attempted to insert a clause in the IHR “acknowledging the unique structure of federations,” but this was denied. Subsequently, all major countries with federal systems signed the IHR without reservation and provided WHO with a designated focal point for communicating timely information to WHO.¹⁵ The Treaty required the identification of a country’s focal point for communicating with the WHO on new cases and the data obtained by the required surveillance. However, lagging behind the encouraging trend of other federations who complied by passing national legislation, the United States declared that it may not comply with the regulations if the public health power belonged to the states rather than the federal government. At the time, the focal point for the United States was the Centers for Disease Control and Prevention (CDC), and their legal authority to prevent the “introduction, transmission, or spread of communicable diseases into or within the U.S.”¹⁵ remained unresolved and archaic. Hypothetically, if the CDC tried to exercise power, its legal authority could be challenged by the power of the states, causing needless delays and uncertainty, and its actions might be ruled unconstitutional. This left the United States temporarily in limbo and unable to guarantee their capacity to “effectively identify, respond to, and communicate information on disease outbreaks.”¹⁵ To date, the US federal system has not compromised reporting of potential PHEICs. Federalism also plays out nationally when faced with large-scale natural disasters such as Katrina, for which the post-hurricane debate focused on what entity, state versus federal government, ultimately has the responsibility for recovery and rehabilitation.

Thirdly, because of emerging concerns over potential threats of biological attacks within the United States after 9/11 and similarities with how naturally occurring outbreaks would be managed, “security” was administratively and operationally added as an equal priority. In inserting this “security twist” to the language it was argued that the CDC, which served as the focal point in communicating with WHO during SARS, would best abdicate that role to the Department of Health and Human Services (HHS), which has the capacity to reach out to all US agencies, and their operations center within the Office of the Assistant Secretary for Preparedness and Response.¹⁷ One of these agencies, the Department of Homeland Security, was formed post-9/11 to fight against invisible enemies of the future, including infectious diseases that “require broad and rapid responses to protect the safety of populations and economies” and works with the CDC on measures to identify and screen anyone at all land, sea, and air ports.¹⁸ This decision, however, had a negative influence on other IHR member states. Brazil and Indonesia did not approve this link with security, and other governments such as Germany have signaled ambivalence about a too-tight connection. Today, most countries are no longer openly antagonistic and China, which has its own terrorist threats, did not object.

Fourthly, a major concern of developing countries was revealed with Indonesia over the timely sharing of live avian influenza virus samples to develop vaccines. Indonesia, with support of many developing countries, argued that the expensive vaccines developed from these samples will not be affordable to those countries that need them the most. The WHO found itself in a quandary as they did not have the authority to resolve such disputes, although in 2007 Margaret Chan, Director-General of WHO, argued “that countries that did not share the avian influenza virus would fail the IHR.”¹⁹ The decision gained respect for WHO and the IHR Treaty and underlies what was seen as a necessary role and responsibility of WHO, one that cannot be subsumed by any one nation-state.

IHR and WHO Operational Dilemmas

Regrettably, little if any discussion occurred on how all of the critical issues defined by the Treaty would be maintained by the global community. Gostin provided an assessment of the IHR based on the world’s response to the 2009 influenza H1N1 pandemic. He suggested that there “remain significant gaps in WHO’s authority and resources necessary for an effective response,” citing that recommendations on travel and trade were being ignored.²⁰ The anticipated development of surveillance and response capacities and the promised support of donations and technical assistance from rich nations have fallen short. A blatant contradiction is that only countries at lowest risk have developed adequate surveillance systems.

Less than 20% of the 194 United Nations member states implemented the IHR requirements for surveillance, secure laboratory assets, and health system standards necessary to rapidly contain outbreaks and ensure vital vaccination programs. In many countries the largest impediment remains political and economic corruption. The failure to build health system capacity is a direct violation of the 2005 IHR.¹⁹ The WHO’s Executive Board and World Health Assembly utterly failed to keep the promise they made in 2005 to scale-up attention and investment in crucial surveillance and reporting systems so necessary to prevent the kind of epidemic that is Ebola today.¹⁹ While all the WHO member states agreed to the IHR principles, countries “were left to self-report their progress” on core public health competencies most likely seen in their countries, especially on demands for surveillance, diagnosis, and containment.²¹ While 2-year extensions were allowed in 2012 to countries to meet core surveillance and response requirements, it is not realistic to expect that these gaps will be solved or narrowed in the foreseeable future.²¹ Unfortunately, no additional financing was put in place and no proper accountability mechanism was made available to “ensure independent monitoring” of the longed for “laudable vision” that was hoped for with this Treaty, thus resulting in a “huge missed opportunity.”²¹ While developed countries with vital surveillance and response capacity were expected to

participate in assisting developing countries, especially with surveillance development, this did not happen on a scale that made a difference. In defining and containing an infectious agent or any crisis event for that matter, we are only as good, as a country or a planet, as the threat data that we have before us.

Global Health Security Agenda

In early 2014 the Global Health Security Agenda (GHTSA) was launched. Sharing in the growing frustration over the noncompliance under the IHR, the GHTSA under the leadership of the United States put in place as a temporary fix a ministerial-level partnership of Canada, the European Union, France, Germany, Italy, Japan, Mexico, the United Kingdom, and the United States with the WHO as an “expert advisor.”²² The GHTSA addresses issues of “protecting the public health and security globally,” including support to WHO’s disease surveillance network, but emphasized that this “informal group was not intended to replace, overlap or duplicate existing fora or networks.”²³ This decision, however, did have an impact on other IHR member states. The additional priority of “security” did not bode well with some GHTSA partners.²⁴ Finland, Kenya, Georgia, and others voiced no objections; Indonesia while expressing reservations decided not to break with the consensus. Russia, invited to the first meeting, also expressed caution regarding the linking of health and security but agreed that control of international epidemic diseases was a priority (subsequently, owing to the decline in US-Russia relations in 2014, Russia ceased to participate actively in GHTSA).

Although the GHTSA predated the massive US Ebola response of 2014, once the US government decided in the summer of 2014 to accelerate their involvement in West Africa, the White House saw the capacity-building aspect of the GHTSA and the emergency operational response to Ebola as a unified, complementary effort to build health security in West Africa. While initially dealing with capacity building and diplomatic outreach and operational agendas within the field, the GHTSA was seen as an inclusive generic response for the White House with both strategic initiatives jointly funded.²⁵ The Defense Threat Reduction Agency provided some of the earliest clinical support in laboratory assets, personal protective equipment (PPE), and training in the US response to Liberia. Much influenced by Médecins Sans Frontières (MSF) and WHO’s public call for military assistance in the fall of 2014, it was the Department of Defense that spent many resources in Operation United Assistance along with technical assistance from the US Army Medical Research Institute of Infectious Diseases and the Naval Research Center. However, expressing uneasiness whether the military presence might take undue precedence in the future, language negotiated in the WHO Executive Board’s Special Session on Ebola in Geneva attempts to clarify military asset use with the following statement: “Emphasizing also the fundamentally civilian character of humanitarian assistance,

and reaffirming, in situations in which military capacity and assets are used as a last resort to support the implementation of humanitarian assistance, the need for the use to be undertaken with the consent of affected States and in conformity with relevant provisions of international law.”²⁶

The emerging GHTSA Steering Group agenda, prompted by WHO and IHR “failures” in bringing “at-risk countries” to comply, have initiated new steps for the 10 countries that make up the current GHTSA. These begin with over 100 commitments to 44 countries and 11 multisectoral (health, agriculture, defense, etc) action packages with goals to “respond and recover affected countries, rapidly augment preparedness in ‘at risk countries’ and create needed sustainability.”^{25,26} For those countries not in crisis, USAID or the CDC, under the US Ambassador, will take the lead. The CDC’s director firmly supports the GHTSA initiatives and has engaged in health security projects in Uganda and Vietnam supported jointly by the CDC and the Defense Threat Reduction Agency. Notwithstanding the importance of these initiatives globally, the transfer of Ebola patients from West Africa to the United States has uncovered multiple internal clinical judgment failures, political incompetence and grandstanding, and other barriers within the United States alone that need urgent internal debate and solutions. What is disturbing is that while the priority focus is on response and security, Congress failed to recognize the importance of the National Institute of Health’s (NIH) crucial support for research on pathogen emergence and lethal diseases and emphasis on prevention and preparedness. The consequences of budget cuts to the NIH since 2003 have been palpable. To add insult to injury, slim allocations from the federal and state legislatures have left the CDC with inadequate resources to support state and local health departments. If these states had strong surveillance systems that were highly integrated, there might be less concern. By contrast, however, only a few states have strong surveillance systems and “many others are deficient so that early warning and response is highly fragmented.”²⁷ Indeed, CDC’s own studies have shown that the state’s current epidemiological preparedness before Ebola was no better than what was exposed before the 2003 SARS pandemic.^{28–30} With the Ebola outbreak, Congress was quick to criticize both agencies.

Health Security Response in Global Crises

When it comes to providing expertise in a number of all-hazard crisis events, both the developing and the developed world have utilized several options to temporarily boost their capacity and capabilities. With the Ebola tragedy, health expertise was either pulled from or coordinated through 4 different options:

- Internal WHO, country, and regional office surge capacity
- GOARN
- Foreign medical teams
- The GHTSA

WHO, Country, and Regional Office Surge Capacity

Post-SARS, the WHO lost seasoned experts at all levels, experienced slashed emergency response capabilities, and justified a shift in emphasis away from acute crises toward noncommunicable diseases. At the same time, the WHO regional offices tended to be in permanent tension with Geneva. Each of the 6 WHO regions has its own profile and structure and is quite different in infectious disease risk and health system capacity and capability, especially when faced with public health emergencies. Pre-Ebola delays in efficient communications with WHO-Geneva were attributed to conventional “lines of power and authority” within WHO, which lie first with the WRs and the regional offices and not with WHO-Geneva. The traditional bottom-up lines of authority, while seemingly working well for long-term development issues within a country, can prove inadequate in crises when rapid communication is key.

The following Ebola timeline is instructive:

Unfortunately, the run up to identifying Ebola as the culprit was delayed, with cases first being diagnosed as possible malaria or cholera. Investigators now know that the index case occurred in December 2013, in a 2-year-old boy in Meliandou, Guéckédou, Guinea, who was initially misdiagnosed. In February 2014 a health care worker in a neighboring province became ill. It was not until March 18 that Guinean health officials reported an outbreak of a mysterious hemorrhagic fever with 35 cases and 23 deaths. On March 21, Guinea first notified WHO of the outbreak; the next day, WHO shipped PPE to the country and classified the outbreak as a level 2 emergency. On March 25, the first GOARN deployments took place; on the 26th the first laboratory and donor appeal was launched. By March 29, the CDC had deployed a laboratory team and the WHO had updated travel and health alerts. On the same day, Liberia notified WHO of its own outbreak. GOARN simultaneously issued a Request for Assistance to all network partners. On April 1 MSF warned that Ebola’s spread was “unprecedented.” On May 12, cases were reported in Conakry, the capital of Guinea, a critical turning point in that the city held a population of 2 million. Within 2 weeks, the first confirmed cases and deaths were confirmed in the Kailahun District of Sierra Leone traced to the funeral of a traditional healer who had contracted the disease after treating patients in Guinea.

While the initial response, especially by GOARN personnel, was swift, it was insufficient locally, with weak leadership and inadequate response from April to the end of June 2014. Despite consulting early and consistently with the Regional Office for Africa on the developing Ebola threat, the WHO Director-General was severely criticized for lagging behind in aggressively responding. Anyone familiar with its ongoing burdens knows that the Regional Office for Africa, which is faced with multiple emergencies yearly, rapidly runs out of

emergency funds often within the first quarter of every year. The apparent delay raises important concerns that the current WHO lines of authority, surveillance, reporting, and support issues must be reevaluated. Whereas China dismissed bureaucrats at several levels during SARS, all 3 WRs in West Africa and several regional office representatives were also dismissed. More importantly, chronically underdeveloped countries and the WRs that serve them must realistically clarify their capacity and capabilities in crisis situations and be willing to accept an administrative and operational level shift leasing WR and regional office “lines of authority” to WHO-Geneva when most PHEs and certainly PHEICs occur. Furthermore, crisis managers in both practice and diplomacy have voiced concern that WRs and regional office leadership, more often skilled in being amiable and diplomatic, should also be assessed for competencies in all-hazard crises before being named.

GOARN

Often unfazed by the political turmoil around them, deployed GOARN experts, since its formation in 2000, have steadfastly coordinated 109 international operations both small and large. Coordinated and supported by the WHO, including WHO-Geneva, WHO regional offices, and WHO country offices, GOARN pulls expertise from 154 technical institutions and 44 network hubs. There have been 1978 deployments of experts from technical partners to support multiple countries to respond to events, including SARS, the 2004 Indian Ocean Tsunami, bird flu, H1N1, and MERS. International missions to provide support to countries are typically measured in 2 weeks rather than months. Whereas the IHR gave traction for WHO to lead with direct authority during SARS, what occurred in China in 2003 has few similarities to the current Ebola outbreak in West Africa. During the post-SARS decade, and despite the decline of influence of the IHR and WHO, GOARN continued to provide access to international expertise and capacity in epidemiology, infectious disease control, and public health preparedness during a range of outbreaks under the flag of the WHO to many undeveloped countries and WHO regional offices. More often than not, GOARN’s presence garnered trust and respect. GOARN focuses primarily on the technical support roles of an outbreak that strengthen surveillance, such as effective and timely data gathering and analysis, information dissemination, and health information capability, all of which are required to control an epidemic. With an increasing regional focus, which is central to PHEICs, GOARN works primarily through each country’s ministers of health, who ultimately decide who from GOARN is allowed in and what expertise is needed.

As of January 2015, WHO has supported 398 GOARN deployments with over 800 additional CDC deployments in support of Ebola. Eighty-six GOARN experts are currently deployed in the affected countries, including the entire Emerging and Dangerous Pathogens Laboratory support in

the field, with a further 98 experts in the pipeline. While the volunteer alliances and contributions from individual experts and institutions works well for a limited period of time, especially for events of a smaller nature, the Ebola crisis requires adapted operational procedures to address the immediate challenges of the outbreak and the difficulties of sustaining the operations for both the GOARN Steering Committee and WHO operational support teams. For the Ebola response, experts receive 2 to 3 days of briefing before being deployed. For missions of longer durations of up to 6 weeks, the institution partners are asked to continue support over many months, which places additional—and unique—operational burdens on both the WHO support team and GOARN.

GOARN is not just a recruiting agency but has strength beyond the experts they field during crises. GOARN uniquely straddles 2 WHO clusters: one focused on emergency response and one on preparedness. With the decline of country capacity, GOARN has increasingly worked to build core capacity within the countries they serve to ensure sustainable expertise absent any outbreaks. This includes formalized junior and senior level training programs and opportunities to become familiar with any future coordination functions required during a crisis.

Foreign Medical Teams

With the Ebola tragedy, some of the early pleas to the world community of nations focused on the deployment and coordination of foreign medical teams (FMTs) and replacement volunteers. The immediate Ebola response model depended on health-related nongovernmental organizations (eg, MSF, Emergency, International Medical Corps) and multiple government-sponsored FMTs. These teams have been traditionally designed for trauma-related crises, both from man-made and naturally occurring disasters and fall under a WHO Emergency Risk Management and Humanitarian Response cluster. Several months before the current epidemic, WHO had seconded a 2-year position for Ian Norton, an FMT expert from Australia, to Geneva to work with the Global Health Cluster FMT Working Group to explore the potential design of FMTs needed in unconventional and newly emerging crises. The group had already published, in September 2013, the long-anticipated *Classification and Minimum Standards for Foreign Medical Teams in Sudden Onset Disasters*, which defined the types, capacities, services, and minimum deployment standards for FMTs.³¹ These standards, supported by the United Nations Office for the Coordination of Humanitarian Affairs, WHO, and nongovernmental organizations, were the first step in a concerted effort of FMTs to reverse the lack of performance and coordination of health workers revealed during the response debacles in Haiti and Pakistan. This resulted in the call for greater “accountability, transparency, professionalism and a formal registry” of pre-screened FMT personnel that would be mandated to report

progress and share data with WHO’s in-country Health Cluster run by the WHO regional organization.³²

With the Ebola outbreak, Norton was immediately detailed as the FMT Project Manager to coordinate the FMT support for the Ebola response, including recruiting health volunteers, which at the outset yielded disappointingly very few. Only 3 organizations (MSF, Emergency, and International Federation of Red Cross and Red Crescent Societies) answered early; next came Samaritan’s Purse, which was among the first to suffer infected international staff, followed by International Medical Corps. The rest came very slowly. As such, for 6 weeks previously uncommon but necessary triage management decisions took place, with patients (suffering Ebola and other local burden of disease illnesses and injuries) being either turned away or dying untreated for lack of teams, medical provisions, and emergency treatment center beds.

The MSF’s successful clinical model and experience in infectious disease outbreaks was unique; offering pre-deployment training to recruited volunteers in Brussels before assignments in West Africa. This helped immensely. Norton reported that, “There was fear among the FMTs, mainly of the unknown, and of lack of previous experience. We had placed all FMT clinical surge capacity for Ebola in MSF for decades, so no other group had felt the need to gain the skills or prepare for response” (Ian Norton, Project Manager, FMTs, WHO Geneva, e-mail communication, January 29, 2015). WHO assisted the teams by building the Ebola treatment units, providing training, and offering PPE supplies. In both the United Kingdom and the United States, the governments took on a huge role of encouraging verbally and financially the nongovernmental organizations and other government FMTs to step forward. Despite the decline in Ebola cases, obtaining and sustaining a health workforce remains problematic. However, refocusing treatment from the larger Ebola treatment centers to smaller (8 beds) Ebola treatment units or community care centers, along with moving laboratory assets forward, safer burials, and utilizing Ebola survivors for traditional nursing duties, has shown benefits in disease containment. As of this writing, the WHO reports 40 organizations, 58 FMTs, and 66 Ebola treatment units in country with some now closing owing to a drop in cases and disease transmission.

The FMT buildup was an example of a new possibility for the WHO becoming truly operational and filling needed gaps. With a project team from WHO, the World Food Programme, and UNICEF working with local Liberian builders and the Minister of Health, FMTs had 600 beds with an expansion capacity to 1000. Subsequently, the buildup of US Ebola treatment units followed WHO’s original design. Norton, reflecting that he “felt more like an architect not a physician” was assured that, with the anticipated UK buildup with assistance from the Department for International Development in Sierra Leone, all agencies agreed that the FMT approach was working

(Ian Norton, Project Manager, FMTs, WHO Geneva, e-mail communication, January 29, 2015).

THE FUTURE: WHAT MUST OCCUR?

Revisiting the IHR and WHO Mandates

The collective agenda must guard against throwing the baby out with the bathwater and a rush to judgment. A 2014 *Lancet* editorial is legitimately critical of the delayed response of WHO to even declare the Ebola epidemic a PHEIC, but critically concludes that “the final responsibility to prevent the international spread of disease rests with WHO and its IHR.”²¹ It is a given that the WHO has been poorly served by its member states and governing bodies. Member states have failed to invest in WHO to ensure the agency has full capacity to address its global mandate. Political concrete mind-sets can be an enemy to society in preventing what could have been applauded in 2014 as a monumental gain to global health and security. There should not be a blame game. While some vital course corrections are necessary, the initial intent and language of the IHR Treaty is sound. Collectively, we know how to properly support treaties and to make the compulsory adjustments brought to light by the current Ebola tragedy. Treaties remain the strongest way the world has to change things for the better, from the 1997 Ottawa Landmine Treaty to the 2013 Global Arms Trade Treaty. Although all treaties may not be perfect, they remain a vital interest in making such outbreaks less frequent and should galvanize scientists and diplomats alike.³³ Furthermore, the millennial generation, who will see for the first time the benefits of these treaties, see themselves less as nationalists and more as global citizens and recognize the value of treaties in a more globalized world.³⁴ It is through treaties that the rapidly changing globalized world will do most of its work. The global community of nations who are signatories are expected to understand and support the letter of what their nation has willingly signed on to.

Wisely, Gostin recommends an immediate fix to the human resource shortages and fragile health systems, but so many competing factors are influencing the landscape by which infectious diseases take place.²⁰ When Ebola emerged, the first belief of many of us who have worked in Liberia, Sierra Leone, and Guinea was that neither the affected country’s public health infrastructure nor its governance was prepared to manage such a pandemic. Gostin suggests that to “dedicate International Health Systems Fund at WHO would rebuild broken trust, with the returns of longer, healthier lives and economic development far exceeding the costs.”²⁰ Public health concerns are evident worldwide. In many respects West Africa was the proverbial canary in the coal mine. Population density is but one of those societal factors that infectious disease thrives on. In Liberia much of the jungle canopy has thinned out and has been replaced by rapid unsustainable urbanization from Monrovia to Lofa Country in the north (a distance of about 364 km along the Kakata Highway), which calls attention to one of the major reasons for the accelerated spread of infectious disease in West Africa and elsewhere.

The WHO Executive Board’s Special Session on Ebola (January 25, 2015) is a robust document that “ensures WHO’s capacity to prepare for and respond to future large-scale and sustained outbreaks and emergencies.”³⁵ The session emphasized that “full implementation of IHR remains a priority” and stressed the urgency for all countries to attain strong resilient and integrated health systems capable of fully implementing the IHR and having the capacity for health-related emergency preparedness. The WHO’s role of lead agency was reaffirmed. GOARN members recall clearly that in 2011 an IHR Review Committee document similarly emphasized that GOARN was “relevant, should be continued” and emphasized that GOARN enables WHO to fulfill its alert and response capabilities and as such called for “institutional status” and Steering Committee status within WHO.³⁶ Additional Executive Board Special Session documents point out that the IHR Treaty is not working as designed, that countries have not developed capacities, that the IHR lacks “teeth” and enforcement, and that the Treaty is complex and hard to access. The documents further recommend additional regional meetings to identify problems with the IHR and to make recommendations to the World Health Assembly in 2016.³⁷ One cannot fail to recognize the chronic frustration in how these documents speak to the same issues that the post-SARS IHR Treaty was supposed to accomplish. Clearly, the WHO agenda requires rewrites to both strengthen and clarify institutional lines of authority and enforcement that was previously lacking.

The United States and their GHSA network partners, while responding appropriately in buttressing the West African capacity at a most critical time, must recognize that their immediate role now is to advocate for the global investment needed to replicate GHSA capacities at the WHO regional office and country levels. Global financial investment and sustainment are needed to improve WHO-IHR leadership expectations and staffing, to improve the integration of global surveillance networks, and to modernize public health infrastructure, which were expected to be priorities of the initial IHR Treaty. Unquestionably, the GHSA model must be universally mandated and supported. Currently, some US \$800 million are appropriated—a mere drop in the bucket of what will be required to meet the stated goals. Getting other countries to do their share is already meeting resistance.²⁵ The spread of Ebola to developed countries should convince all that there cannot be any gaps, a fairly basic concept to anyone working in infectious diseases and public health. In the end what must be evident is to ensure that the WHO and the IHR can properly “care for patients” and that there is accountability and transparency for this outcome at every level.²⁵ There are concerns within and outside of WHO that it does not make sense to build capacities of member states and develop international early warning and response mechanisms only for IHR-related hazards. While biological hazards and outbreaks have their specificities, they would be better served with an all-hazards approach. Such an approach is especially important in the least developed countries, which experience a considerable variety of

hazards. The ultimate goal of the GHSA should be to ensure that the WHO under the IHR will strengthen and assume the current GHSA capacities but in the meantime continue to shore up any gaps, especially in the most at-risk countries.

Somewhat prophetically, in 2009 at a Woodrow Wilson Center for International Scholars conference with China on the IHR, it was anticipated that “The global community, no doubt, will relive the painful lessons learned from pandemics before it understands that no one country approaches the capacity to manage such emergencies. Eventually a similar and mutually accepted international norm, modeled after the current IHR, will once again be debated.”³⁸ The IHR will need to be appreciated as a dynamic document allowing the WHO and other partners such as GHSA and the individual countries themselves to adapt to a multitude of factors that, if not addressed along with the outbreak itself, will not allow approaches to containment to succeed. The IHR needs to improve its relevance and resources to address unique regional cultures and risks. For example, when Ebola broke out with an increasing risk of global spread, the WHO immediately focused on Asia with its densely populated urban conclaves and multiple cultures that have a totally different understanding of health risks, especially infectious diseases. The IHR must address the unique challenges of the Pacific Basin island nations that are already highly urbanized (eg, Ebeye and Kiribati Islands) and suffer rapidly disappearing public health protections and infrastructure, especially water and sanitation, leading to some of the highest infant mortality rates in all of Southeast Asia.

I suspect that, to succeed, the new norms incorporated into any rewrites to the WHO charter must take an inclusive, multi-disciplinary format requiring equal partnerships of health experts with social and political scientists, international law experts, and many other disciplines before realistic solutions will be found. It was encouraging that WHO fielded cultural anthropologists in this Ebola epidemic. When the epidemic “outpaced the global health response,” anthropologists explained how factors like “culture, weak governance, human behavior, and social organization made the outbreak unintelligible to the global health community and, academics.”³⁹ The language in any rewrites must be uniquely designed in a manner that any one of these factors will automatically catalyze collaboration and coordination in front of the emerging infection.

GOARN

The Ebola response has clearly highlighted deficiencies in global capacity and systems to respond to large, multinational protracted events. GOARN is already reviewing its performance and making changes. Building from past and current Executive Board Special Section documents, the views of the GOARN Steering Committee on the enhanced GOARN necessary for the future include:

- an expanded network of partners that includes full representation from all regions, and possibly other disciplines;

- greater efforts in preparing network partners including enhanced or expanded pre-deployment training;
- an increase in the pool of senior field coordinators available through leadership training and a system of rotations or fellowships in appropriate positions in the WHO at all 3 levels (country offices, regional offices, WHO-Geneva);
- greater engagement with training networks, such as field epidemiology training programs, that are preparing the next cohorts of responders;
- development of professional epidemiology networks to support outbreak response and ensure roles for network partners to be engaged between outbreaks with strengthening countries’ core capacities to detect and respond to events, reaffirming that while GOARN works within an all-hazards approach, GOARN’s key strengths are in infectious disease outbreaks; and
- development of a stronger role for the GOARN Steering Committee at the WHO, including an emphasis on its potential to enhance support in global alert functions (the “A” in GOARN).

These enhancements will require a strong operating platform, led by high-caliber field coordinators, with systems for rapid deployment, clear lines of command and control, funding, and new approaches to coordination.

GOARN is eager to develop more partners from Asia, the Asia-Pacific region, and Africa. While Cuba and China must be incorporated into the expanding GOARN system, the Ebola experience taught that incorporating new partners at the time of an outbreak can inadvertently stretch the system’s capacity. GOARN and WHO must explore developing a clearer pathway to incorporating new and highly respected partners.

Foreign Medical Teams

Similarly, the coordination of FMTs and technical advice by WHO is as vital now as it will be in the future. Norton emphasizes that “We should celebrate the new dawn of another type of FMT model apart from those ready for outbreak response... the south-south FMTs. South-south teams bring skills and national capacity home, and in general are far better at adapting to the context in the field conditions they work.” He adds, “Cuba had a slow start, through language and other difficulties but are now a huge success and valued part of this response. They are working well with the MoH and African Union (AU) teams in each country and in Coyah Guinea are running the facility with most of the remaining Ebola cases” (Ian Norton, Project Manager, FMTs, WHO Geneva, e-mail communication, January 29, 2015). With the AU teams working well, WHO is primed to work with countries that would like to deploy trained teams but lack specific logistics and leadership support. While this must be preplanned and well resourced, it would allow countries

unwilling or unable to deploy their own flagged teams to contribute with salaried staff or other resources.

The existing WHO-FMT coordination unit must be strengthened and be present early for every response requiring surge clinical teams in the future to maximize the efficiency and effect of the WHO operational requirement. Clearly, the FMTs have proven that despite poor preparation for the outbreak, they gave the required surge capacity. An FMT meeting on Ebola response and the FMT Initiative taking place in Geneva in February will discuss FMTs in Phase 2 priorities to maximize the impact of deployed FMTs during the remainder of the response. Ebola's many lessons will catalyze preparedness by FMTs for outbreak clinical response. This preparedness should not concentrate on Ebola alone but rather on an all-hazard approach. This includes calls to ensure that health workers are provided with adequate training and protective gear, to ensure adequate security to protect health workers from violence, and to ensure that WHO is able, building on the newly established FMT unit, to coordinate offers of and requests for the deployment of equipped and experienced FMTs to fill urgent needs and to systematize the formation, training, and support of these FMTs in a timely manner. Implicit in these requests is a "process of consultation, coordination and integration based on the request or acceptance of the host countries, recognizing that FMTs are intended to support temporarily the national health system, with a view to its sustainable strengthening" (Ian Norton, Project Manager, FMTs, WHO Geneva, e-mail communication, January 29, 2015). In future outbreaks, the vital lessons learned through FMT deployments will contribute to improve safe reactivation and restoration of essential health services and the involvement of specific FMTs for South-South mobilization.

Global Health Workforce

The 2011 IHR Review Committee report called for the "establishment of a more extensive global, public health reserve workforce," and requested the WHO Director-General to take immediately the necessary steps to draw up consultation with member states and with GOARN. This emphasized the need for "adequate numbers of dedicated and trained WHO staff with appropriate range of skills positioned at all levels of the organization, particularly at the country level" and looked to "deepened and expanded partnerships with GOARN, the Global Health Cluster, existing and new standby partners, and foreign medical teams, with the additional aim of building capacity in countries."³⁶ The current Executive Board Special Session has asked Director-General Chan to draw up plans for the creation of what has been called a "global health emergency workforce" for presentation to the World Health Assembly in May 2015. With this agenda item once again on the table, decision-makers must take heed of the collective experience of the Ebola health workforce. Reports to date indicate that a healthy overlap of

the clinical aspects of GOARN and FMTs took place along with a natural coordination of health resources and clinical and administrative decisions, all without fanfare. GOARN and FMT members readily filled coordinator roles, shared recruitment responsibilities for senior public health and clinical experts, and filled joint training responsibilities. This being said, from a health response standpoint, it is clear that GOARN's surveillance, epidemiology, and other traditional public health technical experts alone are not always enough. As well, FMTs must focus as much on mitigating the direct epidemic consequences of mortality and morbidity as on the indirect nonepidemic cases, which were staggering in numbers. There must be a synergistic link to well-trained clinical surge teams (national, WHO, and FMTs), something that might be best seen as a working Venn diagram rather than separate line items. While this agenda does not clearly call for a single all-hazards workforce entity that might risk excluding one for the other, the idea is cautiously concerning. There should not be a rush to form an exclusive workforce structure without much debate on what might be gained and lost in the process.

World Opinion

It is clear that the UN member states, the United States included, expect the WHO to play a stronger leadership and coordination role and support revisions in the IHR that would define this better. The IHR itself will also need to be reviewed and revised.

The Hyogo Declaration Framework of Action (HFA-1), which in 2005 rarely mentioned health as a priority, must incorporate prevention and preparedness into the upcoming 2015 HFA-2 mandates. Unfortunately, the plurality of many nation-states continues to prefer non-public health economic strengthening and initiatives over essential public infrastructure repair and modernization. In doing so, the once seamless and sustainable social public health protections (eg, maternal and child health and vaccine preventable programs) are constantly under pressure to sustain their programs despite increasing urban population growths and limited data analysis. Increasing cuts to essential infrastructure in favor of shameful tax cuts to the business community has become the norm.⁴⁰ In the search for a quick fix, the knowledge that every US \$1 spent on prevention and preparedness actually saves US \$4 in response seems to be inexcusably lost on global investors, national political leadership, and many world leaders.⁴¹ As such, the HFA-2 and the IHR/WHO mandates have much in common, especially in mitigating preventable public health emergencies.

Lastly, whereas the West Africa Ebola epidemic has exposed many legal and political affronts that were preventable, we as global health practitioners need to strongly advocate for completion of the original intent of a WHO-IHR solution to a most vital problem in an increasingly globalized world.

In truth, advocacy for a stronger voice from practitioners and scientists alike has actually come from unlikely corners such as investment strategists who challenge passive health care providers to speak out on climate change and all those global insults that allow epidemics to flourish.^{42,43} This could take the form of new petitions from the World Health Assembly health ministers from UN member states (the world's highest health policy setting body and governing body for WHO), from the UN member states themselves, the WHO Secretariat, GOARN partners, health- and non-health-related nongovernmental organizations, international governmental organizations, national county and city health associations, academia, and national and global professional organizations such as the World Association for Disasters and Emergency Medicine (WADEM), the Society for Disaster Medicine and Public Health (SDMPH), and the fledgling Global Humanitarian Health Association (GHHA), a professional association that recognizes the unique and distinct skills of a wide range of humanitarian health providers and which, under Canadian registry, will soon be a recognized international nongovernmental organization.

The bottom line is that the global community can no longer tolerate an ineffectual and passive international response system. At the time of this writing, Ebola is no longer the centerpiece of the worldwide news. One has to worry whether a “Scarlett O’Hara Syndrome” popularized by the post US Civil War movie drama *Gone With the Wind* is at risk of developing a similar stance in which man’s procrastination and limited attention span might again contribute to a post-SARS mindset of “putting off today what you can do tomorrow.”

CONCLUSION

Separate from the intricacies and controversies surrounding the IHR is the realization that public health has become increasingly inclusive, being redefined to include all elements of society that must integrate to bring stability to a nation. As Price-Smith so correctly proposed, health, or the lack of it, just happens to be the major predictor of success or failure of nation-state governance, every element of which is inextricably reproduced in ensuring the global health. Whereas the IHR has made the world and individual nation-states a safer place, infectious diseases continue to emerge at an unprecedented pace.⁴⁴ The ultimate question arises of whether lessons learned within the framework of the IHR experiment will survive and possibly serve as a model for the equally compelling and complex issues confronting broader inequities in international law. The IHR and the WHO must be guaranteed the resources they require to ensure that any global outbreak is properly discovered and controlled. Sometime in the future the global community will conclude that the grand experiment has accomplished what it can and must now confront infectious diseases at the source or the larger battle will be lost. One must remember that the global health community, which represents many diverse cultures

and countries, performed well together. What legacy of this collaboration is worthy of being sustained? Osler was correct. Health has universality over other disciplines. The millennial generation, who see themselves less as nationalists and more as global citizens, expect nothing less of us.

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