

Report on

International Security and Foreign Policy Implications of Overseas Disease Outbreaks



International Security Advisory Board

May 23, 2016

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While all ISAB members have approved this report and its recommendations, and agree they merit consideration by policy-makers, some members may not subscribe to the particular wording on every point.



United States Department of State

Washington, D.C. 20520

May 23, 2016

MEMORANDUM FOR UNDER SECRETARY GOTTEMOELLER

SUBJECT: Final Report of the International Security Advisory Board (ISAB) on International Security and Foreign Policy Implications of Overseas Disease Outbreaks

I am forwarding herewith the ISAB's report on Overseas Disease Outbreaks. The report responds to your request of April 7, 2015 that the Board undertake a study on the international security and foreign policy implications of significant overseas disease outbreaks, with a particular focus on how large-scale overseas outbreaks can impact geo-political stability and international relations, including long-term effects. The report was drafted by members of a Study Group chaired by Dr. Amy Sands. It was reviewed by all ISAB members and unanimously approved by May 23, 2016.

The report examines the security implications of disease outbreaks and the contributing factors to global health challenges. The report examined the landscape of ongoing efforts to address large-scale disease outbreaks by the United Nations, the World Health Organization (WHO), the Biological and Toxin Weapons Convention (BWC), international academics, the National Academies of Science and U.S. government agencies. ISAB members reviewed the lessons-learned exercises being conducted following the Ebola outbreak in West Africa and examined ongoing efforts to improve global preparedness, coordinated response, risk assessments, attribution investigations, biosecurity and biosafety, and national capacity building under the International Health Regulations and through the Global Health Security Agenda. The report draws from these efforts, but focuses primarily on how the Department of State should prepare and be organized to address and mitigate current and future infectious disease threats that can threaten international security.

The report identifies a series of:

- Structural solutions: ways in which the U. S. government and Department of State could be better organized to address overseas outbreaks;
- Capacity issues: gaps in resources, personnel and readiness (including exercising, planning and preparedness); and

- Opportunities: where the WHO, U.S. government and Department of State can take steps to be better positioned for public health crises and overseas outbreaks going forward.

By addressing structural problems, committing appropriate resources, building capabilities, and taking advantage of opportunities to strengthen our position, the United States can improve its ability to address overseas outbreaks, and by doing so, strengthen international security and better protect its own national security. Some of these changes will require financial support from Congress, which may require closer interaction with Congress. A recent paper by the National Bureau of Economic Research found that the costs of a global pandemic would be \$570 billion per year. Prevention, preparedness and planning costs are, by comparison, very small.

We encourage you to consider the report's findings and recommendations carefully. The Board stands ready to brief you and other members of the Administration on the report.

A handwritten signature in black ink that reads "Gary Hart". The signature is written in a cursive style with a large, sweeping initial "G".

Hon. Gary Hart
Chairman
International Security Advisory Board

INTERNATIONAL SECURITY ADVISORY BOARD

Report on

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Report on International Security and Foreign Policy Implications of Overseas Disease Outbreaks

I. EXECUTIVE SUMMARY

The International Security Advisory Board (ISAB) was charged by Undersecretary Gottemoeller to examine the international security and foreign policy implications of overseas disease outbreaks, with a particular focus on how large-scale overseas outbreaks can impact geo-political stability and international relations, including long-term effects.

We examined the landscape of ongoing efforts to address large-scale disease outbreaks by the United Nations (UN), the World Health Organization (WHO), the Biological and Toxin Weapons Convention (BWC), international academics, the U.S. National Academies of Science, Engineering and Medicine (National Academies), and U.S. government agencies. We reviewed the lessons-learned exercises being conducted following the Ebola outbreak in West Africa and examined ongoing efforts to improve global preparedness, coordinated response, risk assessments, attribution investigations, biosecurity and biosafety, and national capacity building under the International Health Regulations and through the Global Health Security Agenda. Given the breadth of analysis currently underway to reconsider global health preparedness and response, we did not desire to reproduce these efforts. Instead, we acknowledge the analyses, lessons learned and evolving efforts - particularly those aimed at the World Health Organization. We draw from these efforts, but focus primarily on how the Department of State (DOS) should prepare and be organized to address and mitigate current and future infectious disease threats that can threaten international security.

Unlike many previous ISAB studies, we were challenged to first define our study topic as an international security concern. The links between disease and security have become clearer as more disease threats have emerged and global interconnectedness makes a threat anywhere, a threat everywhere. We have seen the impact on regional and international security and foreign policy from large-scale disease events like Ebola in West Africa, Middle East Respiratory Syndrome (MERS) in Saudi Arabia and South Korea and the evolving Zika outbreak throughout the Americas. There are few threats to the United States and its global interests that match the potential scale and scope of the threat to life and security and economic interests than those from infectious disease outbreaks, whether naturally occurring or intentionally caused.

There are many ongoing efforts to identify how the global community, the U.S. government, departments and agencies can be better organized to address public health threats, such as the Ebola crises. As we write this report, however, the community has already swung its attention to Zika virus, barreling head first into the next crisis, with little time for reflection, strategic planning and systems improvements. We believe the scale of the potential threat today – and the potential threat in the future – demands that the U.S. government systemically analyze current infrastructure and plans. Below, we identify a series of:

- Structural solutions: ways in which the U.S. government and DOS could be better organized to address overseas outbreaks;
- Capacity issues: gaps in resources, personnel and readiness (including exercising, planning and preparedness); and
- Opportunities: where the WHO, U.S. government and DOS can take steps to be better positioned for public health crises and overseas outbreaks going forward.

By addressing structural problems, committing appropriate resources, building capabilities, and taking advantage of opportunities to strengthen our position, the United States can improve its ability to address overseas outbreaks, and by doing so, strengthen international security and better protect its own national security.

RECOMMENDATIONS

1.0 STRENGTHENING PUBLIC HEALTH AND SECURITY

The U.S. government should be better positioned to prevent, mitigate and respond to disease threats – both in structure and resources. To date, disease and other challenges to population health have been considered as a possible threat, but kept at arms distance from core foreign policy operations. The ISAB finds that it is time to incorporate disease threats into the core international security and foreign relations infrastructure at the Department of State.

RECOMMENDATION 1.1: The White House National Security Council should consider running an interagency effort to evaluate the numerous after-action reports on the Ebola response, and in that context review the roles and responsibilities of each agency in meeting potential infectious disease threats to U.S. security. Each agency should be tasked with an internal review to assess the structure and resources that are dedicated to global public health emergencies, and propose structural reforms and identify gaps in resources.

RECOMMENDATION 1.2: The United States must commit to increasing preparedness planning and exercising – in collaboration with NGO and international partners – for overseas outbreaks, which would help each agency to assess weaknesses and develop the structural and policy changes required to effectively contribute to a whole of government response.

2.0 STRENGTHENING WHO

WHO is the designated international organization for responding to and facilitating the governance of a public health emergency, or the public health implications of a humanitarian disaster. Many organization and entities are currently reviewing international response capacity to public health emergencies, including WHO itself, the United Nations Secretary General, and the National Academies. All of these entities recommend that WHO fix structural issues in order to fulfill its operational role during crises and to ensure quick, accurate communication and data sharing from the field to the regional offices to the secretariat. Many of the

reform panels commenting on the WHO have pointed to the need for strengthening international disease surveillance, and capacity building at the national level. We strongly support those findings and agree that effective global disease surveillance can make the difference between a locally contained outbreak and a pandemic. For WHO to be effective at supporting global governance of a public health emergency, however, it must know that it will have the resources, trained staff – including an effective health emergency workforce – and funds to surge when required. Additionally, WHO needs to fix its ability to communicate and share data, as well as structure governance decisions, between the field, the regional offices and the secretariat to ensure efficient and effective responses.

RECOMMENDATION 2.1: The United States must develop a set of recommendations for WHO reform and global financing for pandemic preparedness and response. The United States has been slow in publically identifying preferred financing mechanisms for response, and should make its positions clear to the international community and to the WHO at relevant international meetings.

RECOMMENDATION 2.2: The United States must increase its financial support to both the Pan American Health Organization and the World Health Organization to support enhanced response capacity, and commit resources to the WHO Emergency Contingency Fund, as described in the 2015 World Health Assembly resolution 68/10. Additionally, the United States should provide specific funding for WHO efforts to restructure its response capacity, per resolution A69/4 for the 2016 World Health Assembly. This increased funding should be used to support the WHO plan to create a new structure within the organization fully focused on preparedness and response activities, and the United States should at the same time encourage other nations to step up their support.

3.0 STRENGTHENING U.S. GOVERNMENT COORDINATION

The U.S. government approach to the threat of global infectious disease outbreaks has evolved over the past two decades, but interagency collaboration and operations are inherently difficult to develop in the middle of a crisis. We have seen from Ebola that the flow of communication must go upwards to decision

makers, but also needs to flow back to the field and agencies, as these challenges require a broad spectrum of expertise and experience. It should be clear now that disease outbreaks are a national security issue, and that this urgently requires the U.S. government to review its capacity and organization to ensure that key organizations have the needed capacity, and to identify existing gaps in expertise, as discussed in Recommendation 1.1.

RECOMMENDATION 3.1: The U.S. government must address the structural challenges across the federal government by providing new lines of communication, understandings and collaborations during non-emergency times, including mapping capabilities to identify resources and address gaps. One example that could be built upon and expanded is the ongoing Department of Defense (DoD) Global Health Council meetings to connect the health community with the disaster response community.

3.1.1: The U.S. government must build its capacity to develop and then exercise emergency response plans for overseas disease threats. These plans should clarify roles and responsibilities, particularly the potential role of the DoD in terms of staff, logistical support, and other resources.

RECOMMENDATION 3.2: An interagency standing working group, co-chaired by the Department of Health and Human Services (HHS) and DOS, should be created to facilitate regular communication and collaboration between agencies on global health threats, and to enable coordinated planning and exercising during non-emergency times.

RECOMMENDATION 3.3: The U.S. government must develop plans for responding to a public health emergency in areas out of control of a central government and/or hostile to U.S. government involvement. Contingency plans need to be developed to protect humanitarian disaster response personnel, including medical personnel, in insecure environments.

RECOMMENDATION 3.4: As the Global Health Security Agenda is implemented, it is important to ensure that core public health infrastructure is in place, functional, accessible and accepted in all areas of the globe, as we cannot

predict where the next global pandemic will emerge. While it is important to prioritize among the 31 countries receiving U.S. government assistance, assistance efforts should not leave out nations of Latin America or Asia.

3.4.1: To address intersecting vulnerabilities, a key aspect of strengthened public health infrastructure is the ability to quickly develop “data safe harbor” mechanisms so that faster sharing of data about disease outbreaks can occur. In addition, strengthened data analytic capabilities need to be developed and given a home in a relevant U.S. government agency or multinational organization. This is important for vectoring of the dominant migratory pathways for pandemics, whether accidental or deliberately induced.

4.0 *STRENGTHENING THE DEPARTMENT OF STATE*

The Department of State is a critical player in the U.S. response to overseas outbreaks. Given the magnitude of the potential threat, DOS should strengthen its capacity to analyze and respond to public health emergencies. This will require that DOS undertake a series of structural changes, building necessary capacity, and capitalizing on opportunities, including the relationships that DOS has through its embassies around the world.

RECOMMENDATION 4.1: Structurally, there is no clear leader for identifying gaps and integrating the work that is done on global health issues across many bureaus within DOS. During the Ebola crisis and beyond, Deputy Secretary Higginbottom and Under Secretary Kennedy took important actions to fill that need, but this responsibility is not codified in those positions. The agency must identify a clear point of authority and ensure that they have the power, resources and expertise to assess, manage and integrate the range of efforts undertaken by DOS – identifying gaps, providing leadership and elevating issues to the highest levels when needed. The Under Secretary for Economic Growth Energy and the Environment (E) was identified to us as having that responsibility through the Bureau of Oceans and International and Scientific Affairs, but as currently structured E does not have sufficient authority, focus, expertise and resources to properly carry out the scope and scale of effort that is essential to meet the current threat. Structural reform is essential. That said, even with our recommended

structural reforms, there may still be a need to appoint a special coordinator in the midst of a public health emergency, but that coordinator would then have clear reporting lines and there would be integrated leadership.

4.1.1: The roles of the International Health and Biodefense Office and the Global Health Diplomacy Office need to be clarified and integrated into a department-wide strategy for health emergencies.

4.1.2: The regional bureaus within DOS need to accept public health as a critical aspect of their portfolio. Instead of creating new offices, the regional offices should be enhanced so that public health crises are integrated into the normal functions of the agency and can be addressed utilizing the existing means of communication and crises management within DOS.

RECOMMENDATION 4.2: During a public health emergency, it is important to have sustained communications and engagement between embassies and Washington decision makers if there is to be an effective response and needed diplomatic support, within countries of concern and with international partners.

RECOMMENDATION 4.3: DOS must develop capacity to review and modify embassy standard operating procedures during emergency health situations to prevent under-staffing and delays in fielding a response, and to appropriately balance security concerns. Specifically, all embassies must develop plans and procedures for:

- Travel within an outbreak region when required for the response, including appropriate measures to protect Embassy staff health;
- Identification of waivers for visas and country clearance that might be required to expedite a response;
- Human resources plans to ensure sufficient staff is available within an embassy to continue non-crises activities; and
- Immediately capturing lessons from an outbreak or emergency response.

RECOMMENDATION 4.4: DOS should build and retain a catalogue of personnel with relevant health and emergency response experience and expertise, so that these individuals can be called up in future events.

RECOMMENDATION 4.5: Given the enormous impact that public health threats can have on U.S. foreign relations and international security interests, the Department of State should integrate public health experts into the DOS regional offices in Washington. Instead of trying to hire Foreign Service Officers with specific technical expertise, we recommend detailing CDC employees who have worked overseas to bolster the embassy capabilities and regional bureaus at DOS. Over time, we believe that this would create a cadre of public health experts with strong diplomatic skills and experience, which would be beneficial for both DOS and CDC. For this to work effectively, CDC would need to make such details a part of the career path for their employees, and the Department of State would need to ensure that the detailees are integrated into the Department of State.

We believe there is both interest and opportunity to implement these recommendations before the end of the current administration, as well as an opportunity to prioritize the full integration of health into foreign relations for the next administration. Such efforts will institutionalize the lessons learned from the response to Ebola and leave structures in place that the next Administration can build upon to strengthen population health and improve international security.

II. OVERVIEW

In early December, 2013, a young boy from a small village in Gueckedou, Guinea, who reportedly had been playing with bats in a tree near his home, became sick and died four days later. By the end of the month, five more people directly related to the boy became sick and died of what was eventually determined to be Ebola virus disease.¹ Two years later, the outbreak that started with this boy had spread to seven countries, infected over 28,600 people and killed more than 11,300. The total economic cost of the outbreak in Guinea, Liberia and Sierra Leone – the countries most heavily affected – is estimated to be \$2.2 billion, or 16% of their collective

¹ Baize, et al. Emergence of Zaire Ebola Virus Disease in Guinea. *New England Journal of Medicine* 2014; 371:1418-1425, October 9, 2014 DOI: 10.1056/NEJMoal1404505.

GDP.² And it threatened the continuity and stability of their governments. The Ebola outbreak was devastating in terms of loss of life and societal disruption in the hardest hit nations of West Africa; it could have been globally catastrophic had the micro-outbreak in Nigeria spread through Lagos and onward.

On February 1, 2016, with sporadic cases of Ebola still occurring in West Africa, the World Health Organization turned its attention to the Americas to declare the Zika virus a Public Health Emergency of International Concern. Zika virus, first identified in Uganda in 1947, has spread through more than 26 countries in the Americas. While most people who get infected are asymptomatic and those who do develop symptoms experience only mild illness, the potential link of this virus to severe birth defects and other neurological diseases has led to massive mobilization by governments to better understand the epidemiology of the virus and take early actions to mitigate its consequences.

In addition to Ebola and Zika, the global health community carefully monitors MERS, a respiratory disease with a 36% mortality rate that was first identified in Saudi Arabia in 2012. MERS has circulated throughout the Middle East, and in June 2015, a traveler brought the disease to South Korea, leading to over 17,000 people being placed in quarantine, and an estimated \$1 billion in economic losses. Public health officials are also studying new strains of influenza to bolster prevention of, and preparedness for, a pandemic. During the 1918 flu pandemic, it is estimated that 20-40% of the worldwide population became ill and that approximately 50 million people died.

In the context of these and other bio-threats, the ISAB was charged by Under Secretary Gottemoeller to examine the international security and foreign policy implications of overseas outbreaks, with a particular focus on how large-scale overseas outbreaks can impact geo-political stability and international relations, including long-term effects. The ISAB was also asked to review the structure, strengths and weaknesses of existing international systems for responding to

² United Nations High-level Panel of the Global Response to Health Crises. Protecting Humanity from Future Health Crises. 25 January 2016. (Advanced Unedited Copy) Page 27.
http://www.un.org/News/dh/infocus/HLP/2016-02-05_Final_Report_Global_Response_to_Health_Crises.pdf

disease outbreaks, the implications of the limited international capabilities to rapidly, reliably and credibly resolve international questions about whether an overseas outbreak is deliberate, natural or accidental in origin, methods for improving international and U.S. responses to outbreak-caused civil unrest and conflict, and methods for improving international and U.S. response to overseas disease outbreaks without contributing to further civil unrest or conflict, or undermining the development of domestic capacity in affected nations.

The ISAB examined this broad charge and also assessed the landscape of ongoing efforts by the United Nations, World Health Organization, Biological and Toxin Weapons Convention, international academics, National Academies and U.S. government agencies. Most of these entities are either conducting lessons-learned exercises following the Ebola outbreak, or examining specific changes for global preparedness, coordinated response, risk assessment, attribution investigations, biosecurity and biosafety, and national capacity building. Given the breadth of activities and analysis underway in the wake of Ebola, the ISAB decided to interpret the charge from Under Secretary Gottemoeller as focusing on how the United States should build appropriate infrastructure, strategy, planning and exercising, so that we are better prepared for all health challenges, including black-swan events.³ The ISAB further narrowed the focus of most of our recommendations to how the Department of State should prepare and be organized to address and mitigate current and future infectious disease threats that can threaten international security.

III. SCENARIOS

Infectious diseases can have widespread impacts on everything from population health to international and regional security and foreign policy. Starting nearly two decades ago, concern about the likelihood of a link between disease and security was solidified into policy directives and programming. At the United Nations General Assembly in 2011, President Obama urged global leaders to, “. . . come

³ A black swan event is an unprecedented, out of the ordinary event that would be difficult to predict.

together to prevent, and detect, and fight every kind of biological danger – whether it’s a pandemic like H1N1, or a terrorist threat, or a treatable disease.”⁴

President Obama reiterated this call to global partners at the Global Health Security Agenda Summit in 2014, and further emphasized the link between disease and security, noting, “We have to change our mindsets and start thinking about biological threats as the security threats that they are – in addition to being humanitarian threats and economic threats. We have to bring the same level of commitment and focus to these challenges as we do when meeting around more traditional security issues.”⁵

SCENARIOS

The following fictional yet realistic scenarios demonstrate how:

- Infectious diseases can impact geopolitical stability and international relations;
- Initial response to a deliberate biological attack is likely to be the same as an infectious disease, but security issues complicate a response once the spread of an infectious disease is determined to be deliberately spread;
- Disease outbreaks can cause civil unrest and border conflicts and addressing the unrest and conflict needs to be deconflicted from disease response; and
- International response to infectious disease outbreak can undermine domestic health capacity in affected nations.

What if...

Scenario 1: Migration and a Respiratory Disease

Of the millions of refugees fleeing from the Middle East to various parts of the world, several thousand develop a severe respiratory influenza-type disease. The

⁴ Remarks by President Obama to Address the United Nations General Assembly, 2011. <https://www.whitehouse.gov/the-press-office/2011/09/21/remarks-president-obama-address-united-nations-general-assembly>

⁵ Remarks by President Obama at the Global Health Security Agenda Summit, September 2014. <https://www.whitehouse.gov/the-press-office/2014/09/26/remarks-president-global-health-security-agenda-summit>

disease has a 3-5 day incubation period, and once a patient shows symptoms, they become ill with influenza-like illness that last approximately two weeks. The virus seems to be most severe in 20-44 year olds, and about 5% of people who become ill have died. This disease has infected migrants in Europe and is spreading to the indigenous populations of the European countries. Nations are become unwilling to receive immigrant populations as the disease intensifies. The disease has not yet spread to the United States, but the Center for Disease Control and Prevention (CDC) expects the virus to arrive in the United States shortly. An existing anti-viral drug has demonstrated the ability to decrease the amount of time a patient is ill, and has shown potential to prevent illness if taken before symptoms develop, but the drug is in short supply, and countries are holding on to their stockpiles in fear that the virus will spread.

European nations struggle to isolate and treat infected individuals with overwhelmed healthcare systems. Prioritization of governments toward treating their own citizens over immigrants has strained ties between indigenous and migrant populations, and governments are under significant pressures. Countries are now pressuring the World Health Organization to obtain access to the anti-viral medication and personnel to help treat patients and the World Trade Organization for the right to manufacture generic versions of the anti-viral. The disease has started to spread in the states that are experiencing conflict, thus creating further opportunity for instability across Eastern Europe and a significant part of the Middle East. The instability could turn to outright conflict as a result of the disease, and there are already signs of civil unrest as populations become frightened and access to medication remains sparse. In the United States, the CDC is being asked to assist in managing the response to the outbreak, as airlines are looking to cancel flights to Europe. The White House, the CDC, HHS, the Department of Homeland Security, and state and local officials are trying to manage domestic fear and discrimination against migrants; hospitals are already being overrun with patients worried about developing the virus. In addition, the Department of Defense has been asked to provide field hospitals and logistics capabilities to the international effort, and the Department of State is tasked with managing diplomatic relations as nations become more desperate to protect their citizens.

Scenario 2: Global Spread of a Hemorrhagic Fever

A family of five attends a large funeral in Central Africa of a relative who had died suddenly. Almost immediately afterward they travel, as previously planned, to the United States. They fly from Brussels to Newark, New Jersey, and then on to Boston, Massachusetts where they were picked up by a relative for the two hour drive to a family wedding. On arrival, they reported being tired, with headaches and generalized aches and pains. They do not seek medical treatment and attended the wedding the next day as planned. Forty-eight hours later, as the symptoms grow worse with severe diarrhea, nausea and vomiting, they are referred to the local urgent care facility. The urgent care facility suggests it was most likely the flu and sends them home, but when they become even sicker, they eventually are seen at a local hospital. After several days, the hospital consults with health department staff, which in turn, contacts the CDC for assistance. The family is eventually determined to have Marburg Virus, a hemorrhagic disease. Two of the family members survive, but three succumb to the disease.

Local news media reported on the Marburg cases, leading to some panic amongst people who may have come into contact with the family during travel, at the wedding, in the hotel, or in a healthcare setting. CDC is brought in by the local state health department to assist with infection control guidance and screening at the hospital. The National Guard is activated to assist with setting up triage space for anyone who may have come into contact with the family and experiencing symptoms. International contact tracing is initiated, including coordination with the airlines to identify individuals who had shared a flight with the family. The World Health Organization is notified under the International Health Regulations. Meanwhile, in the country of origin in Africa, rumors of the disease leads to uncontrolled refugee movements with some seeking safety in urban areas. Within a week, reports of illnesses and deaths from what appeared to be Marburg or related diseases are over a hundred.

Scenario 3: Outbreak in a Non-permissive Environment

In a South Asian country, the effort to immunize children against polio is in trouble. Terrorist organizations operating in the region have banned polio immunization and have accelerated a campaign to target health care workers, accusing them of being spies who are attempting to sterilize Muslim children. Because of security concerns, international health care workers involved in vaccination campaigns are forced to pull out, and the actual vaccination work is being implemented almost exclusively by local community health workers. Nonetheless, the targeting of vaccination workers continues, and as result there is an uptick in the number of polio cases. A military offensive to combat terrorist groups causes hundreds of thousands of citizens who were not immunized against polio to flee into neighboring areas and across the border. Cases of polio are now being reported in major cities in the region, and even farther away in the Middle East.

The stakes in the immunization campaign are high. Polio is one of the few diseases that can be effectively eradicated, and the effort to eradicate it is one of the largest internationally coordinated public health efforts in history. Since it was launched in 1988, polio cases that were once endemic to 125 countries have decreased by more than 99%, saving 10 million children from paralysis. The eradication campaign involves national governments, WHO, Rotary International, the U.S. CDC, UNICEF and the Bill and Melinda Gates Foundation. More than 20 million volunteers worldwide have collectively immunized nearly 3 billion children over the past 20 years. Yet, the WHO predicts that failure to stop polio in these last remaining areas could result in as many as 200,000 new cases every year, within 10 years, all over the world. Thus, a nearly 30-year effort to eradicate polio – one that if successful will save lives around the world and save up to \$50 billion over the two decades following eradication, depends on fulfilling a vaccination campaign in a non-permissive environment. The U.S. Department of State, along with Defense, and CDC representatives are coordinating with the White House, WHO and other international organizations to determine what, if anything can be done to contain this latest polio outbreak and re-institute vaccination campaigns.

Scenario 4: Deliberate Attack on Agriculture

Cattle herds in several western states in the United States start experiencing a large-scale outbreak of Foot and Mouth Disease (FMD). In response, the U.S. agriculture community is forced to cull herds of cattle throughout the Midwest. Trading partners around the world refuse to purchase beef from the United States. Human-animal interactions are controlled and international travel is being restricted for anyone who has been on or near a farm. The U.S. public is upset because the outbreak has caused a decreased supply of beef, and the USDA has issued warnings to any retailer looking to raise prices exponentially. The animal health officials try desperately to stop the spread of the disease at the same time FBI discovers, several weeks after the initial outbreak, that the disease was intentionally spread as an act of bioterrorism.

U.S. Government officials try to rapidly determine who launched this intentional attack, and the Intelligence Community is concerned there may be a subsequent attack on human health, including a possible deliberate contamination of the food or water supply. Biosurveillance and environmental sampling is intensified and physical security at food and water processing sites has been increased. The Department of State is trying to manage relationships with nations that are cutting off trade with the U.S., as well as co-ordinating with allies for assistance identifying the perpetrator.

Lessons from the Scenarios

Each of these scenarios demonstrates the impact of infectious disease outbreaks, in terms of morbidity and mortality, but also stabilization, economic costs and international relations. A lack of security in areas not under the full control of national governments threatens a global health security goal. A respiratory disease spreading through a vulnerable population, migrating due to political instability, is difficult to control, strains relationships and creates challenging situations for response. An exodus of refugees or internally displaced persons (IDPs) from an outbreak zone can quickly overwhelm national government health response capabilities and could contribute to weakening the government itself. A healthcare infrastructure, even when comparatively strong, can falter in the face of an

unexpected infectious disease. Globalization means an outbreak in one part of the world can be anywhere else within days, and adversaries can intentionally use biological agents to attack humans, animals, agriculture, and the environment.

While disease outbreaks are inevitable and their timing and exact location unpredictable, pandemics are preventable. The difference between a locally contained outbreak and a global pandemic is clear in terms of scope, scale, and breadth of impact. Time is the critical variable, so having effective global disease surveillance that can recognize an outbreak at its earliest stages is the linchpin to being able to field the necessary rapid treatment and containment response.

Without strengthened capacity to prevent, detect and respond, outbreaks will result in needless deaths, strain foreign relationships, threaten the stability of governments, and provide opportunity for mass panic and civil disruption, in addition to potentially massive economic losses. Conversely, with improved national capacities, faster detection, rapid, effective response by global partners, and partnerships with the private sector, it is possible to reduce mortality, stabilize nations and strengthen international relations.

While this section has focused on hypothetical scenarios, in the next section, we look briefly at a very real event – the 2014-2015 West Africa Ebola outbreak.

IV. THE 2014-2015 EBOLA OUTBREAK IN WEST AFRICA

Many entities have either produced, or are working on lessons learned and recommendations based on the experience of the 2014-2015 West Africa Ebola outbreak. These efforts range from a series of After Action Reports from across the U.S. agencies, to a series of expert panels providing recommendations for global reform to improve preparedness and response, to the WHO response to implement wide reaching reforms across the organization.⁶ This ISAB report acknowledges these efforts, and does not try to replicate them. Below is a review of what we have observed through our interviews and analyses.

⁶ WHO. Overview of reform implementation. A69/4. 11 March 2016. http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_4-en.pdf

While the first case of Ebola emerged in early December 2013, it wasn't until March 2014 that the international community began to comprehend the unprecedented emergence of the virus in West Africa. Not only was it the first known time the virus had been seen in humans in this part of the world, but it was also the first time the global health community had witnessed an outbreak of Ebola in urban settings, within a highly mobile population, that regularly moved across national boundaries. The most affected nations – Guinea, Liberia and Sierra Leone – had only basic health care infrastructure, and limited healthcare workers, who themselves were on the front lines and being killed by the virus. By August 2015, there were 881 cases of Ebola among healthcare workers and 512 deaths.⁷

In addition to the massive human tragedy unfolding in West Africa, there was great fear the disease would spread around the world. A diplomat who brought Ebola from Liberia to Nigeria could easily have sparked massive numbers of cases, far exceeding what was witnessed in Guinea, Sierra Leone and Liberia, were it not for the rapid and impressively effective actions by the Nigerian government. When a Liberian brought Ebola to the United States, leading to two healthcare worker infections in Texas, but no additional deaths, the U.S. public and policy makers began to realize the possibility of an unprecedented challenge. U.S. citizens, including healthcare workers, returning from West Africa became subject to advanced screening and in some cases, quarantine. Several healthcare workers and other volunteers who became ill and either needed to be re-patriated, or initiate care in the United States, sparked the rapid development of protocols and policies from securing a medical-evacuation plane willing to move an Ebola patient, to protocols for hospitals for triage, treatment, personal protective equipment and waste disposal.

In West Africa, the international response was delayed. In August 2014, six months after Medicines sans Frontiers first started making desperate appeals for assistance, the World Health Organization declared the outbreak a Public Health Emergency of International Concern (PHEIC) per the International Health Regulations. Eventually, the WHO and other international organizations, the NGO community, and bilateral donors began to arrive in the region. The outbreak,

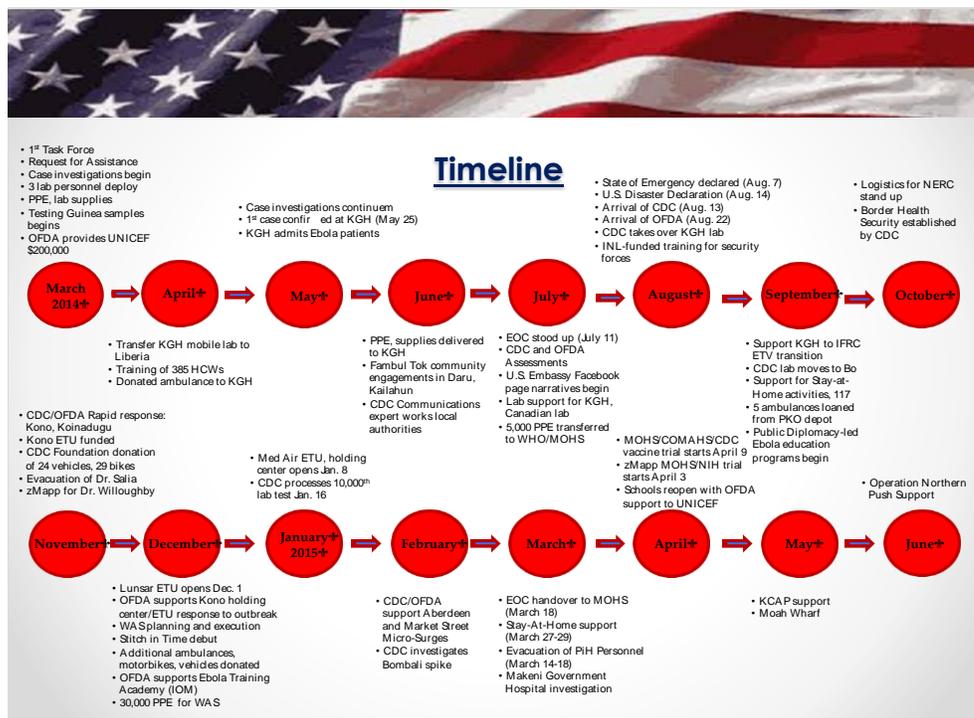
⁷ The Economist. Ebola in graphics: the toll of a tragedy. August 27, 2015. <http://www.economist.com/blogs/graphicdetail/2015/08/ebola-graphics>

crossing national borders, impacting every sector of society, and causing grave economic consequences, was determined to be greater than the scope of the WHO, and the United Nations created the first ever emergency health mission (UNMEER) to oversee response efforts.

The U.S. response to the outbreak was complex, multifaceted, and coordinated by the White House with support across the interagency. USAID Disaster Assistance Response Teams were sent to help coordinate response efforts on the ground, as other parts of USAID worked to strengthen food security, and engage in health system strengthening. CDC eventually sent several thousand employees to West Africa, establishing itself as the scientific backbone for the response and providing both technical and program support. The Food and Drug Administration rapidly approved use of experimental drugs when available. The Public Health Service deployed personnel to staff the Ebola Treatment Units (ETUs).

The Department of Defense did not initially anticipate the level of response that was eventually requested from the White House to support the Ebola response, and determining DoD's role in the response caused widespread debate across the U.S. government. DoD eventually deployed active duty personnel to build ETUs in Liberia and worked to accelerate research and development on Ebola countermeasures. DoD's presence in Liberia alone reportedly inspired confidence and lifted spirits among the local population.

Figure 1: Timeline of U.S. Government Response to Ebola in Sierra Leone⁸



Major Lessons Learned from the Ebola Outbreak

As described by CDC Director Tom Frieden at the Council on Foreign Relations

1. Every country must have capacity to detect and respond to health threats.
2. When a country's capacities are overwhelmed, the world can surge in effectively and rapidly.
3. Healthcare facilities and systems around the world must be strengthened.
4. There must be a system of accountability to know when countries are ready and a partnership to help those that are not.

Source: Darryl G. Behrman Lecture on Africa Policy with Thomas Frieden. Lessons Learned After the Ebola Crisis. November 24, 2015. Available at: <http://www.cfr.org/diseases-infectious/lessons-learned-after-ebola-crisis/p37278>

The Department of State's role in the Ebola response fell into several categories. There was the response by embassy staff in Guinea, Sierra Leone and Liberia; coordination with foreign governments and requests for assistance; efforts to

⁸ Slide from Kathleen Fitzgibbon, former United States DCM in Sierra Leone

coordinate medical evacuation of American citizens; and contributions to interagency and White House coordination and decision making.

U.S. embassies in Guinea, Sierra Leone and Liberia were essential to the Ebola response effort. The ambassadors and their staff maintained strong relationships with the governments, coordinated the influx of civilian and military personnel, moved response equipment, organized use of experimental medication, arranged evacuations, and coordinated an extraordinary response effort with partner countries, NGOs and the United Nations. These ambassadors and their embassy teams did all of this without any specific training on disease outbreaks or emergency response. In addition, many of the staff had their families evacuated, embassy infrastructure was overwhelmed by the massive influx of U.S. government personnel, and existing emergency response and logistics planning was found lacking for this type of outbreak.

While many senior leaders from across the government commended the embassies on their efforts in West Africa, the ambassadors felt excluded from major policy decisions on the Ebola response, which created some tension with Department of State colleagues in Washington. Earlier and more extensive exchanges on how to organize the regional effort between Department of State officials in D.C. and those in the affected countries might have provided more options in interagency discussions. The ambassadors, for example, were not given the opportunity to weigh in against the decision to divide responsibility for the most affected countries by colonial history, with the United States responsible for Liberia, France for Guinea and the United Kingdom for Sierra Leone.

In Washington, the Department of State formed an Ebola Coordination Unit, a task force with ambassadorial leadership and staff borrowed from across the department. This task force became the focus of coordination for DOS and for requests from the White House and interagency. Undersecretary Kennedy (DOS/M) became actively involved in the response through work with the DOS/MED unit to take control of medical evacuations, including securing a plane. Deputy Secretary Higginbottom became an effective point of contact for other leaders in the government, including CDC director Thomas Frieden. These relationships, however, were not codified, and it remains unclear to other agencies who they should work with at DOS for high-level discussions. The White House

also noted its frustrations at points that DOS was not quick enough on outreach and not aggressive enough with diplomatic engagement, such as putting pressure on countries to not ban travel of first responders to West Africa.

V. MAJOR GLOBAL HEALTH CHALLENGES

Disease outbreaks – whether natural, deliberate or accidental in origin – are an increasingly salient national security and foreign policy concern. Widespread and rapid international travel and trade increase the risk that an infectious disease will spread widely and rapidly, leading to loss of life and rendering countries vulnerable to political instability and economic disruption. Additionally, rapid urbanization accentuates the risk of disease spread in countries with limited public health or healthcare infrastructure.

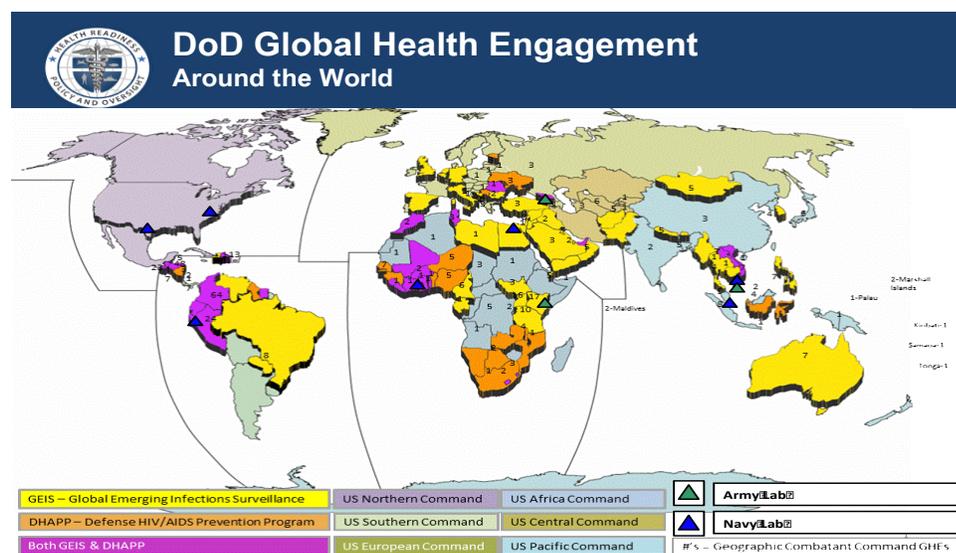
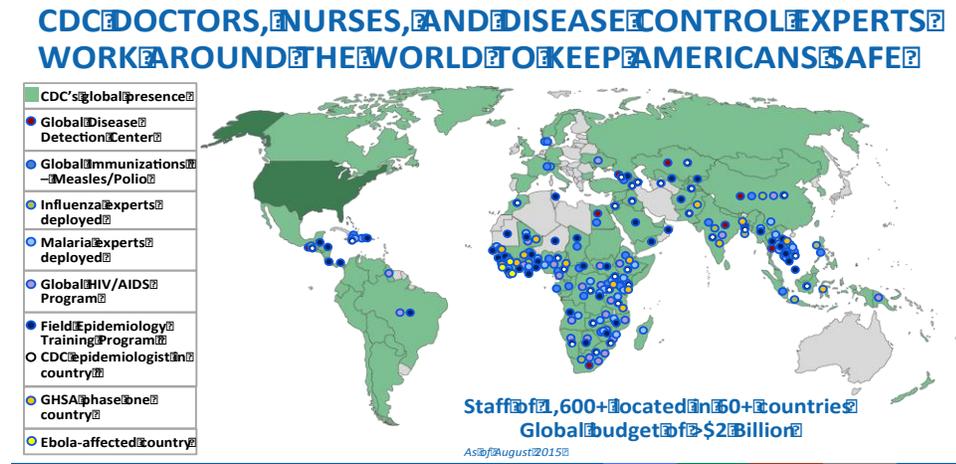
The international response to overseas disease outbreaks relies on international and non-governmental organizations supported financially and technically by key countries. U.S. airlift and other logistics capabilities, combined with high-caliber technical expertise, play a leading role in responding to such outbreaks. However, these assets may also be needed for other vital security missions, requiring policymakers to weigh tradeoffs. The relationship between efforts to mitigate civil unrest and border conflicts and efforts to slow and reverse overseas disease outbreaks are complex and not well or easily understood in the abstract. Each situation will likely have unique political, security and technical elements. The United States has a strong interest in enhancing both health and security efforts, while avoiding implementation measures that (1) undermine or work at cross-purposes to either goal or, (2) undermine the development and maintenance of domestic capacity in affected nations. The United States has developed a strong overseas presence to further global health goals (as seen in Figure 2).

The ISAB has found that most major challenges to global health fall into five major categories:

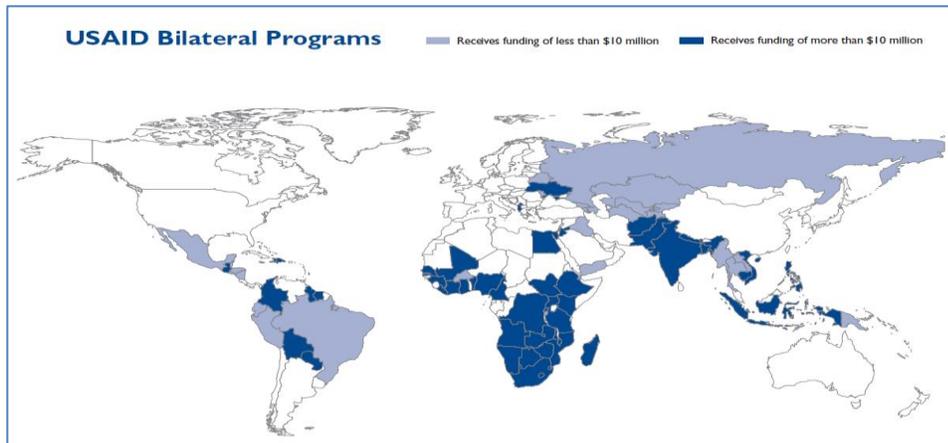
- Global Health Governance,
- Geopolitical Stability,
- Climate Change,
- Use of Biological Agents as a Weapon, and

- Intersecting Vulnerabilities.

Figure 2: Map of U.S. Centers for Disease Control and Prevention, Department of Defense and USAID Global Health Activities⁹



⁹ Maps provided by CDC, DoD and USAID upon request, February 2016



Global Health Governance

In 2005, the World Health Assembly adopted the revised International Health Regulations (IHR), in an effort to create stronger global governance of disease. The regulations, in addition to obligating national governments to build core capacities to detect, report and respond to public health emergencies, also created a framework for coordination and communication in a global response. While the IHR stand as an important framework, there have been significant challenges to operationalizing the agreement, including a severe lack of capacity building on the part of most of the developing world. In 2014, approximately 70% of nations had not developed core capacities to detect, assess, report and respond to public health emergencies – many countries lack the resources to do this, despite the treaty obligation under the IHR.

When the WHO was pushed to coordinate a complicated, multi-nation, high case fatality infectious disease response effort for Ebola, it was neither organized nor had the resources to do so. Some of this failure was due to funding cuts and complicated relationships with Member States around the role of the organization. The challenges of lack of resources, weaknesses in management and the insufficient sharing of disease surveillance data and analysis continue to limit WHO and national governments ability to respond effectively and in a timely way. The concern over effective global governance in public health emergencies has resulted in a multitude of panels and studies aimed at improving international response to disease, from the United Nations Secretary General High Level Panel, to the U.S. National Academies of Medicine, to the WHO itself conducting a series

of reviews. These reviews should be thoroughly assessed by the U. S. government and their best recommendations acted upon.

Geopolitical Stability

Today's world reflects an incredible leap in communications, transportation, and technology that in many cases is overwhelming states and their ability to govern. We no longer live in a world where a set of countries are the primary or only players/stakeholders; rather it is now critical to understand and take into consideration the nature, significance, and relationships among many different groups, organizations, cultures as well as power alignments and environmental patterns. These geopolitical conceptions underpin peoples' attitudes and responses to health and security challenges.

As situations emerge in one area of the world, they rumble through global information and communication channels, while also leveraging technology and transportation systems to allow for quick movements of people and materials from one country to another. In addition, the openness of borders in many areas of the world allow for uncontrolled migrations and illicit trafficking. When infectious diseases are involved, these modern systems may facilitate the spilling over to neighboring states not only of the disease, but also of any resulting political and social instability as states are unable to cope with the outbreak. As governments falter, there may be a rippling effect that undermines other regional weak states, thus challenging the geopolitical stability of the whole region.

The exact relationships and mechanisms will be unique in each case, but disease outbreaks have the ability to threaten the stability of nations and regions, particularly where there are fragile states or governments. Conversely, already weak governments or national instability can lead to breakdowns in public health, medical and sanitation services, mass out-migration, and migration of medical personnel, leaving the population more susceptible to disease and fewer options available to control outbreaks. Effective mitigation of a disease outbreak is often predicated upon the public changing behaviors, following guidance, and often temporarily limiting civil liberties. This can only happen if there is trust in government. If the public does not trust government officials, or is wary of

guidance, the outbreak may worsen, which circularly, decreases trust in government. This was a major factor in the early efforts to control Ebola in West Africa, particularly in rural regions, where the public rejected directives to change cultural burial practices.

Climate Change

Climate change poses a direct threat to global health. Changing environments directly affect food security, availability of clean water, and energy use. Changing weather patterns are making regions of the world newly susceptible to disease, including the expansion of mosquitos into new geographic regions, broadening the reach of vector borne diseases like Zika, dengue and chikungunya into Latin America, Asia and the United States. Increasing temperatures in the United States have expanded the reach of deer ticks, spreading Lyme disease to every state except Hawaii. Warmer climates have accelerated the host-parasite cycles. There is also the threat of disease emerging from the thawing of the Arctic tundra, including old disease reemerging from once frozen corpses, such as smallpox and the 1918 influenza.

Climate change is also impacting wildlife and agricultural systems, including stressing coral reefs, challenging their ability to fight off infections. Ecosystems are changing, and it is difficult to predict just how these changes will impact human health in the delicate interconnectedness between humans, animals and plants.¹⁰

Use of Biological Agents as a Weapon

The deliberate use of a biological agent as a weapon of mass destruction or mass disruption is increasingly possible, as the capacity to develop these weapons has spread globally with the widespread diffusion and development of relevant science and technology. There are strict global norms against the use of biological weapon. The intentional use of a biological agent is a direct violation of the Geneva Protocol and the Biological and Toxins Weapons Convention (BWC), and

¹⁰ Special Issue of Science Magazine. 2 August 2013 Natural Systems in Changing Climates

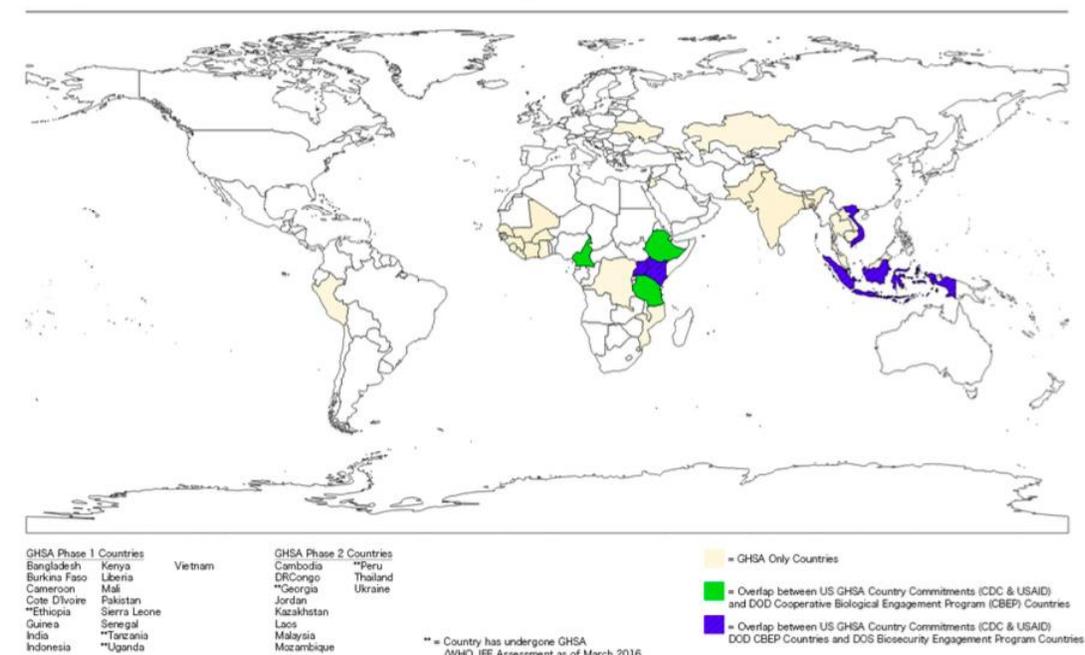
states are obligated to prevent non-state use of biological agents under United Nations Security Council Resolution 1540, but there are few enforcement mechanisms. Any deliberate use of a biological agent would present an obvious security threat and have deep implications for foreign relations.

Intersecting Vulnerabilities

Governance, stability, climate change and disease outbreaks and the threat of weaponization intersect in a number of potentially devastating ways. First, there are the challenges resulting from these different trends coming together in one region and acting as a multiplier, thus creating an even greater challenge. This might be seen as a wave picking up velocity and debris as it moves across the ocean finally hitting shore with much greater force than it had initially. Another example might be when changes in climate cause increased competition for scarce resources in regions where states are already fragile. We might expect more instability that could be a catalyst to sudden migrations, economic breakdowns, government collapse, and significant threats to human wellbeing. The intersection of such emerging challenges is to be expected given the dynamic, complex and linked nature of today's world. A crisis in one sector often will now either cause a problem for another or will overlap with another crisis happening concurrently, creating a new tsunami of its own. In other words, intersecting vulnerabilities can lead to cascading consequences when triggered by a crisis in one arena.

Second, we know that the microbes that cause disease are constantly evolving. On average, there is one new emerging infectious disease a year, most of which are the result of the disease jumping from animals to humans. The environment-vector-host interaction remains the root cause of the spread of disease, and epidemiologists, veterinarians and disease ecologists continue to study the factors of disease emergence. The interactions between animals, humans, and their environment provide fertile ground for new outbreaks of disease that can then undermine the stability and governance arrangements in a region, thereby creating something much bigger than the sum of its parts.

Figure 4. Map of Overlap between U.S. GHSA Commitments, and the Cooperative Threat Reduction Programs at DoD and DOS.¹²

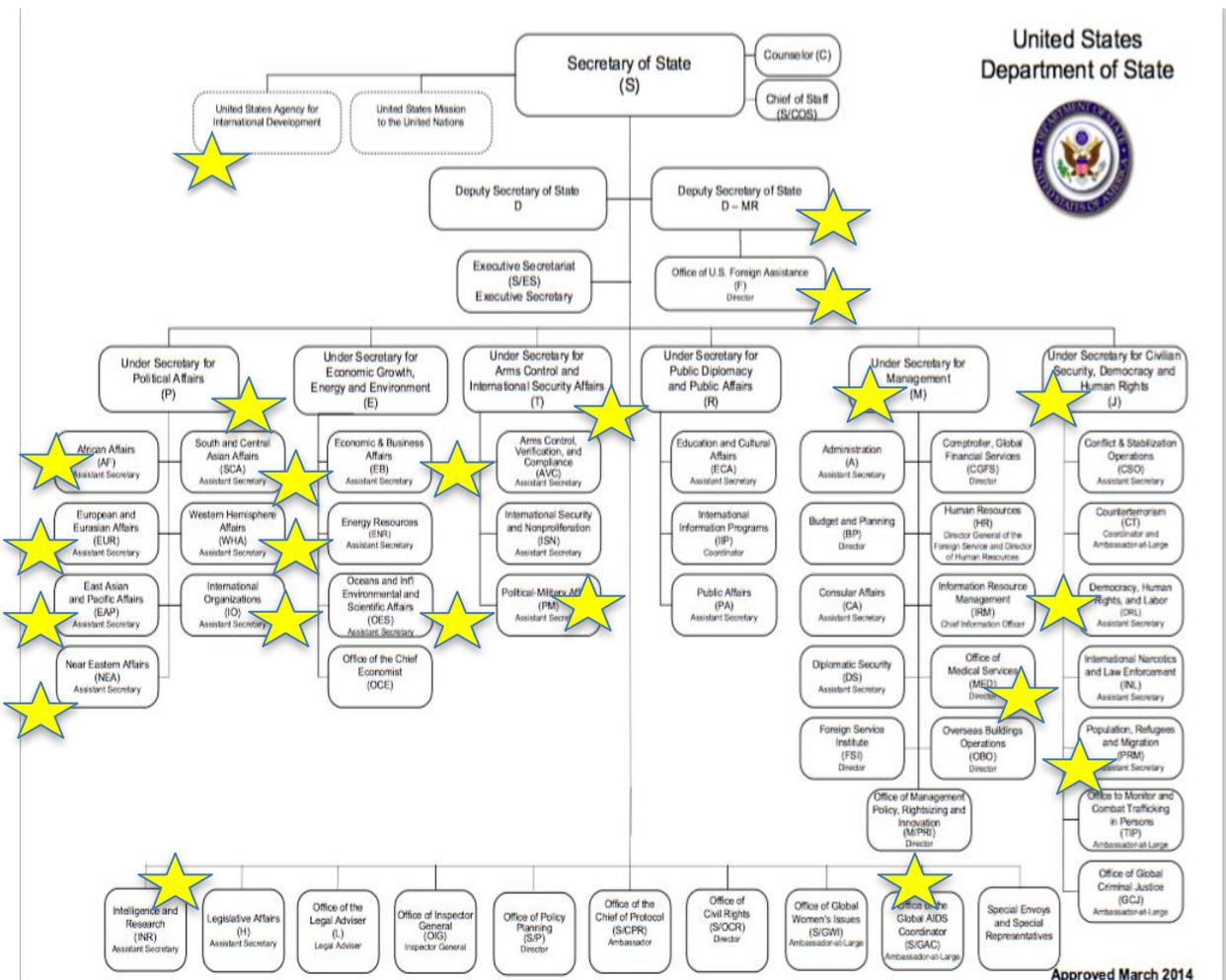


The responsibility for addressing global health issues is spread throughout numerous bureaus in the Department of State. Several offices, including International Health and Biodefense within the Bureau of Oceans and International Environmental and Scientific Affairs (OES/IHB) and the Global Health Diplomacy Office within the Office of the Global AIDS Coordinator (S/GAC/GHD) have missions that encompass global health and public health threats, but neither office has the authority or capacity with current staffing to coordinate and support a cohesive, Department-wide health policy strategy. Pockets of knowledge and capacity exist across other offices, including within the Bureau of International Security and Nonproliferation (ISN) and the Office of Medical Services (MED), but these offices have equities and missions that are not directly related to public health threats (ISN), or external policy development (MED). Many of the regional bureaus have a special advisor that addresses health issues, and some offices, such as those dealing with refugees, must address health issues within specific sub-

¹² Fadaak, R. Mapping the Global Health Security Agenda. March 29, 2016. Biodefense News. <http://globalbiodefense.com/2016/03/29/mapping-global-health-security-agenda/>

populations. As a result, many offices across many parts of DOS address health issues. (See Figure 5)

Figure 5: Organizational Chart of the Department of State. Stars indicate that the office is either regularly involved in issues related to disease and health, is responsible for disease events that happen in a given region, or was involved in the Ebola response



There is, however, no single high-level (Under Secretary or Deputy Secretary) person at DOS, who has line responsibility for seeing how all the various efforts underway fit together and who has the power to elevate issues and gain senior level attention. In the absence of this institutional structure, ad hoc solutions have been

developed. The Deputy Secretary of State for Management and Resources and the Under Secretary for Management have shown a particular interest in providing that senior level guidance and support, particularly during the Ebola response, but without an institutional structural fix, there is an institutional barrier to a rapid response and recognition of health threats and a distinct vulnerability in the upcoming change of administrations.

It does not appear that the Department of State's efforts to plan, prepare and exercise for the next outbreak are adequate to the threat. There is no formal structure at DOS to incorporate disease surveillance information from the WHO or U.S. systems, nor formal assessments within DOS to understand partner country capacity to deal with an outbreak, and challenges exist to ensuring that data from countries/embassies/posts are integrated into decision making in Washington. In many countries where the United States is investing resources in building health capacity, the embassy coordinates health teams with representatives from across the interagency that are operating in country. The best example of this is the coordination that happens under the President's Emergency Program for AIDS Relief (PEPFAR). Similarly, these types of teams are being re-created to coordinate investments under the Global Health Security Agenda (GHS). The ambassador approves of activities, but the work itself is coordinated by other parts of the interagency, including CDC and USAID, where the appropriate technical expertise are located.

When there is a large-scale public health event, a new group is stood up, as happened with Ebola and the Avian Influenza Action Group (AIAG). The Ebola Task Force and the AIAG were led by an ambassador and staff pulled from across the department and supplemented with retired Foreign Service Officers. This is in line with how the Department handles other major events. These groups and task forces are, however, usually by design short-term and do not lend themselves to learning from past efforts or providing foundations for future activities. While the task force approach is common across agencies, and a necessary approach to major cross-cutting crises that require immediate augmentation of expertise, resources and attention, DOS often fails to conduct the after action lessons learned and to feed these back into the organization.

The Department of State's expertise and capabilities are not adequate to the threat. While every post around the world has someone assigned to work on health issues, there are only a few dozen Foreign Service Officers designated as Environment, Science, Technology and Health (ESTH) officers. These ESTH officers are responsible for the public health portfolio for the countries in which they are stationed, and often for the region as well. Frequently, however, health is not the strongest part of their portfolio or training, and as of 2015, only 15 of the approximately 50 officers have any specific academic training in science or engineering.¹³ In countries where there is no ESTH officer, the economics officers are responsible for the health portfolio. Several years ago, new ECON officers received 1.5 hours of training in global health at the Foreign Service Institute. It is not clear if there is currently any global health training required for these officers.

VII. RECOMMENDATIONS

1.0 STRENGTHENING PUBLIC HEALTH AND SECURITY

Public health threats are inevitable. Only their exact timing and locations remain uncertain. There will be another influenza pandemic. There will be new emerging diseases. Shifting climates will enable old diseases to enter new locations. We know that the rapid urbanization that is occurring in the developing world is creating an environment that will allow the explosive growth of disease outbreaks. We know that when population health is threatened, particularly in acute situations, it can lead to public panic. Governments must provide multi-sectoral responses to public health emergencies, facilitate appropriate scientific and medical interventions, establish trust, and maintain governance and stability. The U.S. government and 50 partner nations have acknowledged the important link between disease and security through the Global Health Security Agenda, and even more nations have expressed an understanding of this relationship and the essential components of a competent response through actions in the World Health

¹³ Chen, JF. OP-ED: Reinstating the ESTH cone. *Journal of Science Policy and Governance*. Vol 7, Issue 1, August 2015.

Assembly (including the International Health Regulations) and in meetings of the Biological Weapons Convention.

The relationship between disease and security has become abundantly clear. Creating governance structures to prevent, detect and respond to public health threats, though, is a work in progress. There are few threats to the United States and its global interests that match the potential scale and scope of the threat to life and security and economic interests from infectious disease outbreaks, whether naturally occurring or intentionally caused. The scale and scope of the threats have changed and evolved in recent years. The U.S. government could be better positioned to address them – both in structure and resources.

The Ebola response succeeded, yet it was delayed in getting off the ground and required short-term emergency actions to address the crises. The Ebola response did not resolve the structural challenges that would enable the U.S. government and DOS to effectively address the security and economic implications of a future public health crisis. Taking the lessons learned from Ebola and other recent infectious disease outbreaks, we can lay the foundation for effective long-term capacity to respond to public health emergencies, facilitate actions to mitigate the threat, and maintain stability. We need to develop plans and procedures to ensure that we are able to not only protect population health around the world and for our citizens, but that we also strategically approach health to advance diplomacy, and conversely, that we use all diplomatic tools available to advance health.

The U.S. government must fully integrate the challenge of any type of infectious disease outbreak into its national security agenda by providing resources, developing organizational leadership within the United States and internationally, and developing and exercising appropriate plans for preparing for, preventing and responding to threats. Disease has the potential to impact both homeland and international security agendas, and therefore requires sustained White House attention and leadership to ensure that the multiple federal agencies that have responsibilities in addressing global public health have clear roles and responsibilities and are effectively meeting them. At the same time, the international community must develop processes for working together during

global health emergencies so roles are clear, actions are coordinated, and the need for sustained in-country engagements are recognized.

There are many ongoing efforts to identify how the global community, the U.S. government, departments and agencies can be better organized to address public health threats, such as the Ebola crises. As we write this report, however, the community has already swung its attention to Zika virus, barreling head first into the next crisis, with little time for reflection, strategic planning and systems improvements. We believe the only way to be better prepared is to systemically analyze our current infrastructure and plans. Below, we identify a series of:

- Structural solutions: ways in which the U.S. government and DOS could be better organized to address overseas outbreaks;
- Capacity issues: gaps in resources, personnel and readiness (including exercising, planning and preparedness); and
- Opportunities: where the WHO, U.S. government and DOS can take steps to be better positioned for public health crises and overseas outbreaks going forward.

By addressing structural problems, committing appropriate resources, building capabilities, and taking advantage of opportunities to strengthen our position, the United States can improve its ability to address overseas outbreaks, and by doing so, strengthen international security and better protect its own national security.

RECOMMENDATION 1.1: The White House National Security Council should consider running an interagency effort to evaluate the various after-action reports on the Ebola response and in that context review the roles and responsibilities of each agency in meeting potential infectious disease threats to U.S. security. Each agency should be tasked with an internal review to assess the structure and resources that are dedicated to global public health emergencies and propose structural reforms and identify gaps in resources.

RECOMMENDATION 1.2: The United States must commit to preparedness planning and exercising for overseas outbreaks, which would help each agency to assess weaknesses and develop the structural and policy changes required to effectively contribute to a whole of government response.

2.0 STRENGTHENING WHO

WHO is the designated international organization for responding to and facilitating the governance of a public health emergency, or the public health implications of a humanitarian disaster. Many organization and entities are currently reviewing international response capacity to public health emergencies, including WHO itself, the United Nations Secretary General, and the National Academies. All of these entities recommend that WHO fix structural issues in order to fulfill its operational role during crises and to ensure quick, accurate communication and data sharing from the field to the regional offices to the secretariat. Many of the reform panels commenting on the WHO have pointed to the need for strengthening international disease surveillance, and capacity building at the national level. We strongly support those findings, as effective global disease surveillance can make the difference between a locally contained outbreak and a pandemic. For WHO to be effective at supporting global governance during a public health emergency, however, it must have the resources, trained staff – including an effective health emergency workforce – and funds to surge when required. Additionally, WHO needs to fix its ability to communicate and share data, as well as structure governance decisions, between the field, the regional offices and the secretariat to ensure efficient, effective, accurate, and relevant responses.

RECOMMENDATION 2.1: The United States must develop a set of recommendations for WHO reform and global financing for pandemic preparedness and response. The United States has been slow in publically identifying preferred financing mechanisms for response, and should make its positions clear to the international community and to the WHO at relevant international meetings.

RECOMMENDATION 2.2: The United States must increase its financial support to both the Pan American Health Organization and the World Health Organization, and commit resources to the WHO Emergency Contingency Fund, as described in the 2015 World Health Assembly resolution. Additionally, the United States should provide specific funding for WHO efforts to restructure its respond capacity, per resolution A69/4 for the 2016 World Health Assembly.

Select Panels, Committees and Reports Addressing Response to Public Health Emergencies¹⁴	
Ebola Assessment Panel	WHO
Review Committee on the Role of the IHR in the Ebola Outbreak and Response	WHO
Advisory Group on Reform of WHO's Work in Outbreaks and Emergencies with Health and Humanitarian Consequences	WHO
UN Secretary General High Level Panel on Global Response to Health Crises	UN
Commission on a Global Health Risk Framework for the Future	U.S. National Academy of Medicine (Secretariat)
Harvard-LSHTM independent panel on the global response to Ebola	Academia

3.0 STRENGTHENING U.S. GOVERNMENT COORDINATION

The U.S. government approach to the threat of global infectious disease outbreaks has evolved over the last two decades, but interagency collaboration and operations is inherently difficult to develop in the middle of a crisis. We have seen from Ebola that the flow of communication must go upwards to decision makers, but also needs to flow back to the field and agencies, as these challenges require a broad spectrum of expertise, and experience. Given that disease outbreaks are a national security issue, the U.S. government must review its capacity and organization to ensure that the right organizations have the right capacity, and to identify existing gaps in expertise, as discussed in Recommendation 1.1.

RECOMMENDATION 3.1: The U.S. government must address the structural challenges across the federal government by providing new lines of communication, understandings and collaborations during non-emergency times,

¹⁴ From Gostin, L. Katz R. The International Health Regulations: The Governing Framework for Global Health Security Milbank Quarterly, June 2016

including mapping capabilities across the federal government to identify resources and address gaps. For example, the DoD should continue to hold its Global Health Council meetings to connect the health community with the disaster response community.

3.1.1: The U.S. government must build its capacity to develop and then exercise emergency response plans for overseas disease threats. These plans should clarify roles and responsibilities, particularly the role of the DoD in terms of staff, logistical support, and other resources.

RECOMMENDATION 3.2: An interagency standing working group, co-chaired by HHS and DOS, should be created to facilitate regular communication and collaboration between agencies on global health threats, and to enable coordinated planning and exercising during non-emergency times.

RECOMMENDATION 3.3: The U.S. government must develop plans for responding to a public health emergency in areas out of control of a central government and/or hostile to U.S. government involvement. Contingency plans need to be developed to protect humanitarian disaster response personnel, including medical personnel, in insecure environments.

RECOMMENDATION 3.4: As the Global Health Security Agenda is implemented, it is important to ensure that core public health infrastructure is in place, functional, accessible and accepted in all areas of the globe, as we cannot predict where the next global pandemic will emerge. While it is important to prioritize among the 31 countries receiving U.S. government assistance, assistance efforts should not leave out nations of Latin America or Asia.

3.4.1: To address intersecting vulnerabilities, a key aspect of strengthened public health infrastructure is the ability to quickly develop “data safe harbor” mechanisms so that faster sharing of data about disease outbreaks can occur. In addition, strengthened data analytic capabilities need to be developed and given a home in a relevant U.S. government agency or multinational organization. This is important for vectoring of the dominant migratory pathways for pandemics, whether accidental or deliberately induced.

4.0 STRENGTHENING DEPARTMENT OF STATE

The Department of State is a critical player in the U.S. response to overseas outbreaks. Given the magnitude of the potential threat, DOS should strengthen its capacity to analyze and respond to public health emergencies. This will require that DOS undertake a series of structural changes, building necessary capacity, and capitalizing on opportunities, including the relationships that DOS has in embassies around the world.

RECOMMENDATION 4.1: Structurally, there is no clear leader for identifying gaps and integrating the work that is done on global health issues across many bureaus within DOS. During the Ebola crisis and beyond, Deputy Secretary Higginbottom and Under Secretary Kennedy took important actions to fill that need, but this responsibility is not codified in those positions. The agency must identify a clear point of authority and ensure that they have the power, resources and expertise to assess, manage and integrate the range of efforts undertaken by DOS – identifying gaps, providing leadership and elevating issues to the highest levels when needed. The Under Secretary for Economic Growth Energy and the Environment (E) was identified to us as having that responsibility through the Bureau of Oceans and International and Scientific Affairs, but as currently structured E does not have sufficient authority, focus, expertise and resources to properly carry out the scope and scale of effort that is essential to meet the current threat. Structural reform is essential. That said, even with our recommended structural reforms, there may still be a need to appoint a special coordinator in the midst of a public health emergency, but that coordinator would then have clear reporting lines and there would be integrated leadership.

4.1.1: The roles of the International Health and Biodefense Office and the Global Health Diplomacy Office need to be clarified and integrated into a department wide strategy for health emergencies.

4.1.2: The regional bureaus within DOS need to accept public health as a critical aspect of their portfolio. Instead of creating new offices, the regional offices should be enhanced so that public health crises are integrated into the normal functions of the agency.

RECOMMENDATION 4.2: During a public health emergency, it is important to have sustained communications and engagement between U.S. government ambassadors and embassy staff and Washington decision makers if there is to be an effective response and needed diplomatic support, within countries of concern and with international partners.

RECOMMENDATION 4.3: DOS must develop capacity to review and modify embassy standard operating procedures during emergency health situations to prevent under-staffing and delays in fielding a response, and to appropriately balance security concerns. Specifically, embassies must develop plans and procedures for the following:

- Travel within an outbreak region when required for the response, including appropriate measures to protect Embassy staff health;
- Identification of waivers for visas and country clearance that might be required to expedite a response;
- Human resources plans to ensure sufficient staff is available within an embassy to continue non-crises activities; and
- Processes in place to immediately capture lessons from an outbreak or emergency response.

RECOMMENDATION 4.4: DOS should build and retain a catalogue of personnel with relevant health and emergency response experience and expertise, so that these individuals can be called up in future events.

RECOMMENDATION 4.5: Given the enormous impact that public health threats can have on U.S. foreign relations and international security interests, the Department of State should integrate public health experts into the DOS regional offices in Washington. Instead of trying to hire Foreign Service Officers with specific technical expertise, we recommend detailing in CDC employees who have worked overseas to bolster the embassy capabilities and regional bureaus at DOS. Over time, we believe that this would create a cadre of public health experts with strong diplomatic skills and experience, which would be beneficial for both DOS and CDC.

VIII. CONCLUSIONS

Infectious diseases are dynamic threats to global stability and well-being. The potential impact of disease on international security and foreign relations is growing in both consequence and probability. As now recognized, outbreaks cannot be contained to one locale and will continue to evolve as we evolve; will spread quickly given modern transportation and open borders; and will exploit vulnerabilities in our health care coverage and systems. Experts have been sounding this alarm for almost 20 years, including a presidential directive from President Clinton’s administration on infectious disease threats, an address on HIV/AIDS at the UN Security Council in 2000, and a series of academic reports, national security presidential directives and programmatic activities across the interagency. Public health is now a national security challenge and must be treated as such in terms of planning, resources, and organizational support. It is essential to refocus the U.S. approach to this threat, and to invest in the appropriate level of “insurance” just as we do for traditional defense related needs. Specifically, the U.S. government must build better capabilities within the U.S. government, civil society, and international community to prevent, respond to, and mitigate effects.

This report advocates for structural changes at the Department of State in order to recast public health diplomacy as a core national security and foreign policy priority, and thus to better prepare for the next public health emergency. As global attention has focused on recent public health threats, there is an opportunity to capture current interest and collaborate with new partners to build stronger bridges to promote public health capacity building, preparedness and response.

The ISAB finds that there is sufficient interest at the Department of State in making real, lasting changes to the core infrastructure around how the agency addresses international security and foreign relations. Beginning the required efforts to implement the recommendations in this report would create a foundation for long-term capacity growth within DOS and the U.S. government in general to better address global disease threats.

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Appendix A - Summary of Recommendations

1.0 STRENGTHENING PUBLIC HEALTH AND SECURITY

The U.S. government should be better positioned to prevent, mitigate and respond to disease threats – both in structure and resources. To date, disease and other challenges to population health have been considered as a possible threat, but kept at arms distance from core foreign policy operations. The ISAB finds that it is time to incorporate disease threats into the core international security and foreign relations infrastructure at the Department of State.

RECOMMENDATION 1.1: The White House National Security Council should consider running an interagency effort to evaluate the numerous after-action reports on the Ebola response, and in that context review the roles and responsibilities of each agency in meeting potential infectious disease threats to U.S. security. Each agency should be tasked with an internal review to assess the structure and resources that are dedicated to global public health emergencies, and propose structural reforms and identify gaps in resources.

RECOMMENDATION 1.2: The United States must commit to preparedness planning and exercising for overseas outbreaks, which would help each agency to assess weaknesses and develop the structural and policy changes required to effectively contribute to a whole of government response.

2.0 STRENGTHENING WHO

RECOMMENDATION 2.1: The United States must develop a set of recommendations for WHO reform and global financing for pandemic preparedness and response. The United States has been slow in publically identifying preferred financing mechanisms for response, and should make its positions clear to the international community and to the WHO at relevant international meetings.

RECOMMENDATION 2.2: The United States must increase its financial support to both the Pan American Health Organization and the World Health

Organization to support enhanced response capacity, and commit resources to the WHO Emergency Contingency Fund, as described in the 2015 World Health Assembly resolution 68/10. Additionally, the United States should provide specific funding for WHO efforts to restructure its response capacity, per resolution A69/4 for the 2016 World Health Assembly. This increased funding should be used to support the WHO plan to create a new structure within the organization fully focused on preparedness and response activities, and the United States should at the same time encourage other nations to step up their support.

3.0 STRENGTHENING U.S. GOVERNMENT COORDINATION

RECOMMENDATION 3.1: The U.S. government must address the structural challenges to establish new lines of communication, understandings and collaborations during non-emergency times, including mapping capabilities across the federal government to identify resources and address gaps. For example, the DoD should continue to hold its Global Health Council meetings to connect the health community with the disaster response community.

3.1.1: The U.S. government must build its capacity to develop and then exercise emergency response plans for overseas disease threats. These plans should clarify roles and responsibilities, particularly the potential role of the DoD in terms of staff, logistical support, and other resources.

RECOMMENDATION 3.2: An interagency standing working group, co-chaired by HHS and DOS, should be created to facilitate regular communication and collaboration between agencies on global health threats, and to enable coordinated planning and exercising during non-emergency times.

RECOMMENDATION 3.3: The U.S. government must develop plans for responding to a public health emergency in areas out of control of a central government and/or hostile to U.S. government involvement. Contingency plans need to be developed to protect humanitarian disaster response personnel, including medical personnel, in insecure environments.

RECOMMENDATION 3.4: As the Global Health Security Agenda is implemented, it is important to ensure that core public health infrastructure is in place, functional, accessible and accepted in all areas of the globe, as we cannot predict where the next global pandemic will emerge. While it is important to prioritize among the 31 countries receiving U.S. government assistance, assistance efforts should not leave out nations of Latin America or Asia.

3.4.1: To address intersecting vulnerabilities, a key aspect of strengthened public health infrastructure is the ability to quickly develop “data safe harbor” mechanisms so that faster sharing of data about disease outbreaks can occur. In addition, strengthened data analytic capabilities need to be developed and given a home in a relevant U.S. government agency or multinational organization. This is important for vectoring of the dominant migratory pathways for pandemics, whether accidental or deliberately induced.

4.0 STRENGTHENING THE DEPARTMENT OF STATE

The Department of State is a critical player in U.S. response to overseas outbreaks. Given the magnitude of the potential threat, DOS should strengthen its capacity to analyze and respond to public health emergencies. This will require that DOS undertake a series of structural changes, building necessary capacity, and capitalizing on opportunities, including the relationships that DOS has through its embassies around the world.

RECOMMENDATION 4.1: Structurally, there is no clear leader for identifying gaps and integrating the work that is done on global health issues across many bureaus within DOS. During the Ebola crisis and beyond, Deputy Secretary Higginbottom and Under Secretary Kennedy took important actions to fill that need, but this responsibility is not codified in those positions. The agency must identify a clear point of authority and ensure that they have the power, resources and expertise to assess, manage and integrate the range of efforts undertaken by DOS – identifying gaps, providing leadership and elevating issues to the highest levels when needed. The Under Secretary for Economic Growth Energy and the Environment (E) was identified to us as having that responsibility through the Bureau of Oceans and International and Scientific Affairs, but as currently

structured E does not have sufficient authority, focus, expertise and resources to properly carry out the scope and scale of effort that is essential to meet the current threat. Structural reform is essential. That said, even with our recommended structural reforms, there may still be a need to appoint a special coordinator in the midst of a public health emergency, but that coordinator would then have clear reporting lines and there would be integrated leadership.

4.1.1: The roles of the International Health and Biodefense Office and the Global Health Diplomacy Office need to be clarified and integrated into a department wide strategy for health emergencies.

4.1.2: The regional bureaus within DOS need to accept public health as a critical aspect of their portfolio. Instead of creating new offices, the regional offices should be enhanced so that public health crises are integrated into the normal functions of the agency.

RECOMMENDATION 4.2: During a public health emergency, it is important to have sustained communications and engagement between U.S. government ambassadors and embassy staff and Washington decision makers if there is to be effective response and needed diplomatic support, within countries of concern and with international partners.

RECOMMENDATION 4.3: DOS must develop capacity to review and modify embassy standard operating procedures during emergency health situations to prevent under-staffing, delays in fielding a response, and to appropriately balance security concerns. Specifically, embassies must develop plans and procedures for the following:

- Travel within an outbreak region when required for the response, including appropriate measures to protect Embassy staff health;
- Identification of waivers for visas and country clearance that might be required to expedite a response;
- Human resources plans to ensure sufficient staff is available within an Embassy to continue non-crises activities; and
- Processes in place to immediately capture lessons from an outbreak or emergency response.

RECOMMENDATION 4.4: DOS should build and retain a catalogue of personnel with relevant health and or emergency response experience and expertise, so that these individuals can be called up in future events.

RECOMMENDATION 4.5: Given the enormous impact that public health threats can have on U.S. foreign relations and international security interests, the Department of State should integrate public health experts into the DOS regional offices in Washington. Instead of trying to hire Foreign Service Officers with specific technical expertise, we recommend detailing in CDC employees who have worked overseas to bolster the embassy capabilities and regional bureaus at DOS. Over time, we believe that this would create a cadre of public health experts with strong diplomatic skills and experience, which would be beneficial for both DOS and CDC.

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Appendix B - Terms of Reference

UNDER SECRETARY OF STATE FOR
ARMS CONTROL AND INTERNATIONAL SECURITY
WASHINGTON

April 7, 2015

MEMORANDUM FOR THE CHAIRMAN, INTERNATIONAL SECURITY ADVISORY BOARD (ISAB)

SUBJECT: Terms of Reference – ISAB Study on International Security and
Foreign Policy Implications of Overseas Disease Outbreaks

The International Security Advisory Board (ISAB) is requested to undertake a study of the international security and foreign policy implications of significant overseas disease outbreaks.

A number of factors combine to make such disease outbreaks—whether natural or deliberate in origin—an increasingly salient national security and foreign policy issue: widespread and rapid international travel increases the risk that infectious diseases may spread widely; high degrees of reliance on international trade, including for food sufficiency, renders countries vulnerable to economic and other shocks in cases where disease outbreaks disrupt commerce; the rise of mega-cities in the developing world accentuates the risk of large scale infectious disease outbreaks in countries with limited public health (or even governance) capacity. Globally, few countries have yet put in place the full range of capabilities needed to effectively detect and respond to such outbreaks, despite international commitments to do so, creating vulnerabilities to both emerging diseases and, potentially, acts of bioterrorism. Especially in fragile states, or where suspicions arise about the actions of other states, a major outbreak could pose a risk of civil unrest or border conflicts, and have destabilizing global security implications – especially given that outbreaks can be naturally occurring or man-made, and identification and attribution take time. Moreover, significant disease outbreaks can have a devastating impact on health workers and other care-givers, hindering efforts to control the outbreak and undermining states' ability to deal with future health threats, and—depending on what elements of the population are most susceptible to a given outbreak—can also have disruptive or destabilizing effects on demographic patterns.

An additional consideration is the unique role of the United States. While international responses to overseas disease outbreaks rely on a mix of international and non-governmental organizations supported financially and technically by key countries, U.S. airlift and other logistics capabilities, combined with high-caliber technical expertise, enable it to play a leading role in responding to such outbreaks. However, these assets may also be required for other vital security and public health missions, requiring policymakers to weigh possible tradeoffs.

The relationship between efforts to mitigate civil unrest and border conflicts and efforts to slow and reverse overseas disease outbreaks are complex and not well understood. The United States has an interest in enhancing both efforts, while avoiding implementation measures that (1) undermine or work at cross-purposes to either goal, or (2) undermine the development and maintenance of domestic capacity in affected nations.

It would be of great assistance if the ISAB could examine and assess:

- the effect of overseas disease outbreaks on geo-political stability and international relations, including long-term impacts;
- the structure, strengths and weaknesses of existing international systems for responding to disease outbreaks;
- the implications of currently limited international capabilities to rapidly, reliably and credibly resolve questions about whether an overseas outbreak is deliberate, natural, or accidental in origin, and options to address this;
- methods for improving international and U.S. responses to overseas outbreak-caused civil unrest and border conflict without impeding disease response efforts; and
- methods for improving international and U.S. response to overseas disease outbreaks without contributing to civil unrest or border conflict or undermining the development of domestic capacity in affected nations.

Recommendations produced during the study on enhanced international collaborations for preparedness and response, following review by the Department and interagency, may inform the U.S. delegation's position at the 8th Review Conference of the Biological Weapons Convention, in December 2016. These recommendations could directly inform U.S. positions on Article VII and Article X.

I request that you complete the study in 270 days. Completed work should be submitted to the ISAB Executive Directorate no later than January 2016.

The Under Secretary of State for Arms Control and International Security will sponsor the study. The Assistant Secretary of State for International Security and Nonproliferation will support the study. Rebecca Katz will serve as the Executive Secretary for the study and Chris Herrick will represent the ISAB Executive Directorate.

The study will be conducted in accordance with the provisions of P.L. 92-463, the "Federal Advisory Committee Act." If the ISAB establishes a working group to assist in its study, the working group must present its report of findings to the full ISAB for consideration in a formal meeting, prior to presenting the report or findings to the Department.



Rose E. Gottemoeller

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Appendix C – Members and Project Staff

Board Members

Hon. Gary Hart, Chairman

Hon. Charles B. Curtis, Vice Chairman

Dr. Graham Allison

Amb. Brooke Anderson

Hon. Douglas Bereuter

Dr. Bruce Blair

Amb. Linton F. Brooks

BGen Stephen Cheney (USMC, Ret.)

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Gen Lester L. Lyles (USAF, Ret.)

GEN Montgomery C. Meigs (USA, Ret.)

Rep. Harold P. Naughton Jr.

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Dr. Amy Sands

Hon. Walter Slocombe

Dr. James A. Tegnalia

Hon. William H. Tobey

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Project Staff

Mr. Christopher Herrick, Acting Executive Director, ISAB

Dr. Rebecca Katz, Executive Secretary

Ms. Anne Choi, ISAB Action Officer

Ms. Thelma Jenkins-Anthony ISAB Action Officer

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Appendix D - Individuals Consulted by the Study Group

A. Individuals who gave presentations at ISAB plenary meeting

April 16, 2015 Plenary Meeting

Assistant Secretary Jimmy Kolker, Office of Global Affairs, HHS

June 24, 2015 Plenary Meeting

Ms. Laura Holgate, Senior Director, WMD Terrorism and Threat Reduction, National Security Council

September 15, 2015 Plenary Meeting

Assistant Secretary Linda Thomas-Greenfield, African Affairs, DOS

B. Individuals who consulted directly with the study group, either in person or via phone

June 25, 2015

Dr. Elisabeth Cameron, Director, Countering Biological Threats, National Security Council

Dr. Adrienne Keen, DOS/INR

July 31, 2015

Dr. Elisabeth Cameron, Director, Countering Biological Threats, National Security Council

Mr. Andrew Weber, Former Assistant Secretary, DoD; Former Ebola Coordination Unit, DOS

Ms. Angela Mansco, Senior Advisor DOS/WHA

Under Secretary Patrick F. Kennedy, Management, DOS

September 16, 2015

Mr. Steve G. and Mr. Nicholas M., National Intelligence Council

Mr. Jonathan Margolis, DOS/OES

October 16, 2015

Col Mike Bell, Director, AFHSB

Dr. Cody Sanchez, Epidemiologist, AFHSC

Dr. David Smith, Deputy Assistant Secretary, Health Affairs, Health Readiness, DoD

Mr. Richard Gustafson, OSD Policy- Stability and Humanitarian Affairs

Mr. Mark Swayne, Principal Director for Stability and Humanitarian Affairs, OSD Policy, DoD

Ms. Meghan Delayne, Interagency Liaison with Global Health Engagement, DoD

Dr. Chris Daniel, Senior Advisor for Global Health Engagement, Health Affairs, DoD

Mr. Joe Laundree, Director of Readiness, Health Affairs DoD

October 19, 2015

Ms. Ann Blackwood, DOS/IO

November 17, 2015

Deputy Secretary Heather Higginbottom, Management and Resources, DOS

December 11, 2015

Ms. Kathleen FitzGibbon, Former DCM, Sierra Leone, DOS

Dr. Thomas Frieden, Director, Centers for Disease Control and Prevention