

U.S. Global Health and National Security Policy

A Report of the CSIS Global Health Policy Center

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U.S. GLOBAL HEALTH AND NATIONAL SECURITY POLICY

*Harley Feldbaum*¹

Overview

The emergence of HIV/AIDS, SARS, extensively drug-resistant tuberculosis, and avian influenza, as well as the Aum Shinrikyo sarin gas attack and anthrax letters, have demonstrated the threat that certain global health issues pose to U.S. national security. The related threats of infectious disease epidemics and bioterrorism are being driven by trends related to globalization. Increased travel, trade, development, and land use are creating new infectious disease threats, and the rise of nonstate actors and the global dissemination of advances in biology and technology are facilitating the potential use of biological weapons. Underlying both threats is a growing acceptance of global interdependence on health issues: “[I]n the context of infectious diseases, there is nowhere in the world from which we are remote and no one from whom we are disconnected.”²

Bioterrorism and infectious disease epidemics have received high-level political attention within the United States. The U.S. intelligence community has issued four major reports on the national security implications of specific diseases and global health,³ and the Bush administration’s 2002 and 2006 National Security Strategy statements gave prominent attention to the threat of both bioterrorism and emerging infectious diseases. Major U.S. funding commitments to HIV/AIDS

¹ Dr. Harley Feldbaum is associate director of the Johns Hopkins SAIS Global Health and Foreign Policy Initiative. He thanks those colleagues who kindly commented on early drafts of this paper.

² Institute of Medicine (U.S.). Committee on Emerging Microbial Threats to Health., J. Lederberg, et al. (1992). *Emerging infections: microbial threats to health in the United States*. Washington, D.C., National Academy Press.

³ These reports are: National Intelligence Council. (2000). *The global infectious disease threat and its implications for the United States*. National intelligence estimate. Retrieved from http://www.dni.gov/nic/PDF_GIF_otherprod/infectiousdisease/infectiousdiseases.pdf; National Intelligence Council. (2002). *The next wave of HIV/AIDS: Nigeria, Ethiopia, Russia, India, and China*. Retrieved from http://www.dni.gov/nic/PDF_GIF_otherprod/HIVAIDS/ICA_HIVAIDS20092302.pdf; National Intelligence Council. (2003). *SARS: down but still a threat*. Intelligence community assessment. Retrieved from http://www.dni.gov/nic/PDF_GIF_otherprod/sarsthreat/56797book.pdf; and National Intelligence Council. (2008). *Strategic implications for global health*. Retrieved from http://www.dni.gov/nic/PDF_GIF_otherprod/ICA_Global_Health_2008.pdf.

(\$3.75 billion/year for 2004–2008⁴), avian flu (\$3 billion/year for 2006–2007⁵), and bioterrorism response (\$6.3 billion/year for 2004–2008⁶) have followed. U.S. allies, including the United Kingdom, Brazil, and Switzerland, are also increasingly prioritizing the role of global health in their foreign policies, in recognition of the impact of disease across their national security, economic, developmental, and humanitarian interests.⁷

U.S. policymaking to address global health threats is complicated by a rising dependence of U.S. security on health conditions in other countries as well as weak health knowledge among foreign policy and national security decisionmakers. Overall, the U.S. response to infectious diseases and bioterrorism has overemphasized defensive medical countermeasures and treatment while underinvesting in prevention, strengthening of public health systems, and the surveillance and response capacities of developing countries. This paper recommends an increased focus on global surveillance and response capacity, heightened attention to the World Health Organization's International Health Regulations, and putting a high priority on meeting the health needs of developing countries as core elements of a U.S. strategy to address the national security threats of emerging infectious diseases and bioterrorism.

Emerging Infectious Diseases

Throughout history, infectious diseases have posed great challenges to national security interests. Diseases have decimated militaries, altered or cancelled military operations, and often caused more deaths in wartime than combat.⁸ The epidemics of Black Death in Europe and smallpox among native populations of the Americas were so severe as to shape the political and demographic composition of the modern world.⁹ In the United Kingdom, the protection of the health of soldiers and civil servants in colonial states was essential to the functioning of the British Empire.¹⁰ Disease control efforts were the critical component of the U.S. success in overcoming the malaria and yellow fever that had stymied French attempts to build the Panama Canal,

⁴ PEPFAR. (2009). *Celebrating life: the U.S. president's emergency plan for aids relief*. 2009 annual report. Retrieved from <http://www.pepfar.gov/documents/organization/113827.pdf>.

⁵ Lister, S. (2007). Congressional Research Service report for Congress. *Pandemic influenza: appropriations for public health preparedness and response*. Retrieved from <http://www.fas.org/sgp/crs/misc/RS22576.pdf>.

⁶ Franco, C. (2008). Billions for biodefense: federal agency biodefense funding, FY2008–FY2009. *Biosecure Bioterror* 6 (2):131–146.

⁷ Kickbusch, I., Novotny, T. E., Drager, N., Silberschmidt, G., and Alcazar, S. (2007). Global health diplomacy: training across disciplines. *Bull World Health Organ* 85(12):971–973.

⁸ Smallman-Raynor, M., and Cliff, A. D. (2004). *War epidemics: an historical geography of infectious diseases in military conflict and civil strife, 1850–2000*. New York: Oxford University Press.

⁹ McNeill, W. H. (1976). *Plagues and peoples* (1st ed.). Garden City, N.Y.: Anchor Press.

¹⁰ King, N. B. (2002). Security, disease, commerce: ideologies of postcolonial global health. *Social Studies of Science* 35 (5-6):63–789.

thereby delivering control of this strategic passage to the United States for the remainder of the twentieth century.¹¹

By the 1950s, the advent of sanitation, vaccines and antibiotics, as well as decolonization, had reduced the perceived relevance of infectious diseases to the strategic interests of powerful states.¹² A focus on Cold War rivalry rightly consumed national security policymakers. But between the 1950s and the present, new diseases continued to emerge at a rate of almost one per year at the same time that older diseases resurged in forms increasingly resistant to antibiotics and drug treatment.

While the threat from the emergence of infectious diseases was increasing, it took a combination of events and efforts to push emerging diseases back up the political hierarchy in the immediate post-Cold War era. Perhaps most influential in framing how infectious diseases could be a national security threat to the United States was the 1992 U.S. Institute of Medicine (IOM) report entitled *Emerging Infections: Microbial Threats to Health in the United States*. The first sentence of that report, quoted at the end of the first paragraph of this analysis, clearly framed the threat of infectious diseases to the United States as a result of increasing global connectedness. The report described the emergence of new diseases such as HIV/AIDS and the resurgence of old ones, such as tuberculosis, in drug-resistant forms. Globalization was both facilitating the emergence of these diseases and rapidly decreasing the amount of time it would take them to travel to the United States and infect Americans.

HIV/AIDS

Although the global HIV/AIDS pandemic had killed approximately 9 million people between 1990 and 2000,¹³ it was not that fact that elevated HIV/AIDS early in this decade to be seen as a national security threat. Rather, it was the perceived future threat of the HIV/AIDS pandemic on the political and economic stability of foreign states, societies, and militaries.

Work on the national security implications of HIV/AIDS proceeded on two fronts during the Clinton administration. First, the National Intelligence Council (NIC) issued in early 2000 the highly influential report *The Global Infectious Disease Threat and Its Implications for the United States*, which contained extensive findings on HIV/AIDS. The report argued:

New and reemerging infectious diseases will pose a rising global health threat and will complicate U.S. and global security over the next 20 years. These diseases will endanger U.S. citizens at home and abroad, threaten U.S. armed forces deployed overseas, and exacerbate

¹¹ Stern, A. M. (2005). The public health service in the Panama Canal: a forgotten chapter of U.S. public health. *Public Health Rep* 120 (6):675–679.

¹² Fidler, D. P. (2004). Caught between paradise and power: public health, pathogenic threats, and the axis of illness. *McGeorge Law Review* 35 (45):45–104.

¹³ National Intelligence Council. (2000). *The global infectious disease threat and its implications for the United States*.

social and political instability in key countries and regions in which the United States has significant interests.¹⁴

Tied to that report, Ambassador to the United Nations Richard Holbrooke held what would become a series of United Nations Security Council (UNSC) meetings beginning in January 2000 on the global threat of HIV/AIDS, which included passage of UNSC Resolution 1308 on HIV/AIDS and peacekeeping operations. These were the first UNSC meetings and resolution on a health issue in the Council's history, and they raised the global political stature of the disease and its international security implications.

The George W. Bush administration further elaborated the links between global health and national security by including global health in its 2002 and 2006 National Security Strategy statements and by issuing in October 2002 an NIC report entitled *The Next Wave of HIV/AIDS*. Over time, however, three of the main arguments linking HIV/AIDS to U.S. national security interests used by both the Clinton and Bush administrations have come into serious question.

First, the 2000 NIC study's current and projected rates of HIV/AIDS among African militaries have been shown to have significantly overestimated the situation. The prevalence of HIV/AIDS in African militaries is likely similar to or slightly higher than the rates among civilians from the same countries (some of which are as high as 30 percent), but they do not pose the strategic emergency anticipated at the beginning of the decade.¹⁵ Second, the premise of the 2002 NIC report was that there would likely be a "next wave" of HIV/AIDS outside sub-Saharan Africa in Russia, India, and China that would shift the global epicenter of the pandemic from Africa to these strategically important countries. In retrospect, this premise was based on a flawed understanding of the epidemiology of the virus, and most experts do not expect epidemics in Russia, India, or China to be as severe as in southern and eastern Africa.¹⁶ The third assumption of these reports, and the UNSC discussions of HIV/AIDS in the last year of the Clinton administration, was that HIV/AIDS could destabilize societies and thereby create weak, failing states that posed worsening risks to U.S. national security. While the HIV/AIDS pandemic has done grave harm, especially in eastern and southern Africa, to the functioning of weak and vulnerable states, the social and political destabilization that was predicted early in this decade did not come to pass, and the provision of treatment on a mass scale in these regions of Africa makes such a scenario even more unlikely.¹⁷

¹⁴ National Intelligence Council. (2000). *The global infectious disease threat and its implications for the United States*.

¹⁵ Feldbaum, H., Lee, K., and Patel, P. (2006). The national security implications of HIV/AIDS. *PLoS Medicine* 3 (6): e171.

¹⁶ Chin, J., and Bennett, A. (2007). Heterosexual HIV transmission dynamics: implications for prevention and control. *Int J STD AIDS* 18 (8): 509–513.

¹⁷ Whiteside, A., De Waal, A., and Gebre-Tensae, T. (2006). AIDS, security and the military in Africa: a sober appraisal. *African Affairs* 105 (419): 210–218.

The major U.S. effort to address HIV/AIDS is the President's Emergency Plan for AIDS Relief (PEPFAR). Announced during the 2003 State of the Union speech, PEPFAR has revolutionized global HIV/AIDS funding by providing antiretroviral drugs to people with AIDS in poor and highly affected countries. PEPFAR benefited from discussion of HIV/AIDS as a threat to U.S. national security, but it was based on both national security and humanitarian rationales, as well as on strong political support from religious conservatives.¹⁸ The initiative grew to become the largest global health initiative ever, reaching expenditures of almost \$19 billion in its first five years.

PEPFAR is regarded by many observers as a major foreign policy and global health success for the Bush administration. That success accounted for the passage by Congress and signing into law by the president of the \$48 billion PEPFAR reauthorization legislation in late July 2008. The Department of Defense has used PEPFAR funds to support U.S. national security by helping foreign militaries prevent HIV infection within their ranks and, by implication, improving state stability and cooperation with the United States. PEPFAR has come in for increasing criticism recently, however, for its “stovepipe” focus on single diseases,¹⁹ its open-ended funding commitment to providing expensive treatment,²⁰ and a lack of success in preventing further spread of the disease.²¹ On security grounds, one ironic aspect of PEPFAR's success is that it has expanded confidence within Africa and the larger international community about the ability to better respond to the HIV/AIDS pandemic—and by implication has lessened its perceived threat.

Drug-Resistant Tuberculosis

While HIV/AIDS alone has not yet caused weak states, one consequence of weak states and health systems for U.S. national security is the emergence of moderate and extensively drug-resistant tuberculosis (MDR-TB and XDR-TB.) Tuberculosis is normally a curable disease, and a short course of drugs to treat the disease is one of the most cost-effective interventions to save lives in all of public health.²² However, in 2007 there were 500,000 cases of MDR-TB, and 55 countries had reported at least one case of XDR-TB by the end of 2008.²³

¹⁸ Burkhalter, H. (2004). The politics of AIDS: engaging the conservative activist. *Foreign Affairs* 83 (1): 8–14.

¹⁹ Garrett, L. (2007). The challenge of global health. *Foreign Affairs* (January/February): 14–38.

²⁰ Over, M. (2008). *Prevention failure: the ballooning entitlement burden of U.S. global AIDS treatment spending and what to do about it*. Retrieved from <http://www.cgdev.org/content/publications/detail/15973>.

²¹ Bendavid, E., and Bhattacharya, J. (2009). The president's emergency plan for AIDS relief in Africa: an evaluation of outcomes. *Ann Intern Med*.

²² Dye, C., Floyd, K. (2006). Tuberculosis. In D. T. Jamison (ed.), *Disease control priorities in developing countries* (2nd ed., pp. 289–310). New York: Oxford University Press; Washington, DC: World Bank.

²³ World Health Organization, and Global Tuberculosis Programme. (2009). *Global tuberculosis control: epidemiology, strategy, financing*. Retrieved from: http://www.who.int/tb/publications/global_report/2009/pdf/full_report.pdf.

MDR-TB and XDR-TB have emerged because proper standards of tuberculosis care are either not available or not universally applied. The development of drug resistance is also linked with immuno-suppressed populations suffering from AIDS. In a recent deadly outbreak among predominately HIV-positive persons in South Africa, XDR-TB killed 53 of 54 people infected with the disease.²⁴ Like tuberculosis, MDR- and XDR-TB are spread from person to person through the air and are spreading globally. Unlike tuberculosis, these drug-resistant forms of the disease are exceedingly difficult and costly to treat.

The failure globally to provide effective tuberculosis treatment has undermined our ability to treat a disease as old as human history. The transmissibility and mortality rate of XDR-TB, and the tremendous cost associated with treating both MDR and XDR-TB, merit examination of them as an emerging national security threat to the United States. Investments in developing countries that improve tuberculosis treatment, ensure consistent antibiotic use, and support the health systems that provide them, will be essential to reduce the risks of MDR/XDR-TB, and other drug-resistant diseases, washing up on American shores.

SARS

The emergence of SARS in 2002–2003 presents a case study in the global management of the threat of a new and deadly infectious disease. This episode is well described in other literature,²⁵ but the outline of what occurred is as follows. The outbreak began in China's Guangdong Province in 2002, where local and central government officials first misdiagnosed the disease and then attempted to cover up the epidemic. The World Health Organization (WHO) was alerted to the possibility of an outbreak of atypical pneumonia through electronic disease surveillance reporting systems and approached China about the cases. But, again, China obfuscated, saying the situation was under control and that the number of cases was decreasing. SARS then traveled from China to Hong Kong, Vietnam, Singapore, Canada, Ireland, and the United States, and presented a global threat.

Faced with real-time information about an emerging epidemic for the first time in human history, the WHO issued unprecedented global alerts and, as the epidemic spread to other countries, emergency travel advisories against travel to affected countries. A combination of WHO's actions and the natural course of the disease stopped the SARS outbreak in 2003.²⁶

²⁴ Gandhi, N. R., Moll, A., Sturm, A. W., Pawinski, R., Govender, T., Lalloo, U., et al. (2006). Extensively drug-resistant tuberculosis as a cause of death in patients co-infected with tuberculosis and HIV in a rural area of South Africa. *Lancet* 368 (9547): 1575–1580.

²⁵ Knobler, S., Institute of Medicine (U.S.). Forum on Microbial Threats, and Institute of Medicine (U.S.). Board on Global Health. (2004). *Learning from SARS: preparing for the next disease outbreak: workshop summary*. Washington, DC: National Academies Press.

²⁶ Fidler, D. P. (2004). *SARS: governance and the globalization of disease*. New York: Palgrave Macmillan.

In issuing travel advisories, the WHO exceeded its legal authority as an international institution by imposing significant economic losses on sovereign countries. However, these events also powerfully demonstrated the critical need to have a trusted international organization to manage global disease outbreaks. Soon thereafter, the WHO's actions during SARS were codified in the revised International Health Regulations (IHR) issued in 2005, which requires the 194 states party to the regulations to report disease outbreaks and public health emergencies of international concern to the WHO.²⁷ The IHR represent a valuable new international tool of disease surveillance and response, but they require further support to build disease surveillance and public health systems, especially in developing countries. This is essential because disease surveillance is currently strongest in wealthy countries, while historically most emerging diseases stem from areas, such as Central Africa and Southeast Asia, where humans interact most closely with wildlife and where disease surveillance and reporting capacities are weak.²⁸

Pandemic Influenza

Many public health experts now believe that a pandemic outbreak of avian influenza is inevitable; what is far less certain is the precise timing of the outbreak and the severity of the epidemic. Fears that this outbreak could rival the 1918 "Spanish" flu epidemic, which killed between 50 million and 100 million people worldwide, have driven governments globally to address avian flu as an international security threat to ensure "global health security."²⁹ However, this approach has also created tensions and confrontation between wealthy northern countries and southern developing countries, embodied most graphically in the ongoing controversy over virus sharing with the Indonesian government.

With most of the world's cases of avian flu transmission occurring in Indonesia, the Indonesian government realized that it was sharing virus samples with the WHO, which gave the samples to pharmaceutical companies to make vaccines, which then would likely be unaffordable for Indonesia and used only in wealthier countries in the event of an outbreak.³⁰ Indonesia's possession of bird flu samples, essential for the timely development of new vaccines against the disease, provided implicit leverage against Indonesia's vulnerability to bird flu, and the Indonesian government used it. In 2006, it stopped sharing virus samples with the WHO, claiming intellectual property rights over the virus samples and demanding access to any vaccines or drugs developed using its samples. Brazil, India, and Thailand quickly supported Indonesia's position,

²⁷ Previously, the IHR required reporting of only three diseases, (yellow fever, plague, and cholera) and were not widely enforced.

²⁸ Jones, K. E., Patel, N. G., Levy, M. A., Storeygard, A., Balk, D., Gittleman, J. L., et al. (2008). Global trends in emerging infectious diseases. *Nature* 451 (7181): 990–993.

²⁹ Taubenberger, J. K., and Morens, D. M. (2006). 1918 Influenza: the mother of all pandemics. *Emerg Infect Dis* 12(1): 15–22.

³⁰ Garrett, L., and Fidler, D. P. (2007). Sharing H5N1 viruses to stop a global influenza pandemic. *PLoS Med* 4 (11): e330.

resisting the WHO and the United States' conception of "global health security," which these states argued meant little to the security of their own people.³¹ The virus-sharing issue has not been resolved, and the world as a result is at greater risk because of a lack of agreement on who will have access to vaccines and pharmaceuticals in the event of a pandemic influenza outbreak, and because of the continued absence of a reliable mechanism to move rapidly from the discovery of new virus strains to the development and equitable dissemination of new vaccines.

Other Global Health Issues

Although the United States has initiated a malaria initiative and broadened the remit of PEPFAR to better include tuberculosis and broader health systems support, addressing most global health issues cannot be justified by national security considerations. Even some of the worst global health problems, such as those that cause the most disability-adjusted life years lost worldwide—including maternal and child health, neglected tropical diseases, and road traffic injuries—simply do not have large-scale strategic or economic consequences for the United States. Thus, some serious global health issues will likely never be linked credibly to U.S. national security interests. Such issues will have to rely on moral, humanitarian, or other frameworks to win U.S. funding and political support. They will continue to compete for resources and attention against more politically salient diseases, such as avian influenza and XDR-TB, that have clearer relevance to U.S. national security.

Bioterrorism

President Richard Nixon ended the U.S. offensive biological weapon program in 1969. After the signing of the Biological Weapons Convention (BWC) in 1972, little attention was paid to the threat of biological weapons over the following two decades. It was assumed that biological weapons were unlikely to be used because (1) they had seldom been deployed in the past; (2) they were too destructive and morally repugnant to use; and (3) the science of creating and dispersing the weapons was so complex as to be within reach of only the few, most-sophisticated state laboratories.³² By the mid-1990s, however, these assumptions would be overturned as three events brought the issue of bioterrorism back onto global health and national security agendas.

First, in 1995, the Aum Shinrikyo cult attacked the Tokyo subway with Sarin gas, killing 12 people and sickening thousands. Later investigations would reveal that this nonstate terrorist group had also planned for biological attacks. The Tokyo subway attack had a major impact by convincing

³¹ Sedyaningsih, E. R., Isfandari, S., Soendoro, T., and Supari, S. F. (2008). Towards mutual trust, transparency and equity in virus sharing mechanism: the avian influenza case of Indonesia. *Ann Acad Med Singapore* 37 (6): 482–488.

³² Henderson, D. A. (1998). Bioterrorism as a public health threat. *Emerg Infect Dis* 4 (3): 88–92.

many in the Clinton administration of the potential nexus between biological weapons and terrorist groups.³³

Also occurring in 1995 were the revelations about the extent of Iraq's biological weapons programs, including the production and deployment of anthrax and botulinum toxin on bombs, rockets, and airplane spray tanks. Although these revelations were accompanied by a statement that these weapons had been destroyed, that information was not trusted and the impact of the revelations was to increase the fear of rogue states or terrorist groups possessing biological weapons.³⁴

Information from the defection of former Soviet biological weaponeer Ken Alibek, made public in 1998, enhanced these fears within government and became a major media story. Alibek revealed that the Soviet Union, instead of stopping its bioweapons research upon signing the BWC, had violated the treaty and ramped up development and production of biological weapons.³⁵ His detailed revelations about the extent of the Soviet programs, and the lack of security around Vector and other (now Russian) bioweapons facilities, solidified a Washington consensus that the spread and use of biological weapons and the scientists who made them to other states or nonstate actors constituted an immediate and severe threat to U.S. national security.

The Clinton administration's response to this threat was to rapidly increase funding for bioterrorism detection and response and to include the securing of bioweapons facilities and scientists under the Nunn-Lugar Cooperative Threat Reduction Program. This approach has been criticized for conflating the unique threat of bioterrorism, where pathogens are available in nature and biology equipment broadly accessible, with the nuclear issues the legislation was designed to address.³⁶ Aside from the Nunn-Lugar legislation, the response to this threat was driven by the idea that the scientific power of the United States had to be harnessed to develop vaccines that would neutralize the threat of biological weapons. Also mentioned at the time was the idea that what was good for preventing bioterrorism was good for public health. Both ideas would come under greater scrutiny during the George W. Bush administration.

The September 11 attacks and the anthrax attacks of 2001, in which anthrax spores were mailed to the U.S. Senate and media outlets, killing five people, made dealing with bioterrorism an immediate emergency. Congress passed the Project BioShield legislation, echoing the Clinton administration's approach, seeking to encourage the biotechnology and pharmaceutical industries to develop medical countermeasures to neutralize the threat of biological weapons. This

³³ Wright, S. (2006). Terrorists and biological weapons. Forging the linkage in the Clinton administration. *Politics Life Sci* 25 (1-2): 57-115.

³⁴ Ibid.

³⁵ Alibek, K., and Handelman, S. (1999). *Biohazard: the chilling true story of the largest covert biological weapons program in the world, told from the inside by the man who ran it*. New York: Random House.

³⁶ Ostfield, M. L. (2008). Strengthening biodefense internationally: illusion and reality. *Biosecur Bioterror* 6 (3): 261-267.

expansion of laboratory capacity to study anthrax and other biological weapon threats continues under considerable scrutiny because of accusations that a U.S. biological weapons scientist was the source of the anthrax attacks of 2001. Biosurveillance in the United States has also been given great attention, with BioWatch environmental sensors deployed around the United States to provide early warning of an aerosolized bioattack.

While the U.S. response to the threat of bioterrorism has included action on improving the public health infrastructure, this has not been a priority focus. Instead, the overwhelming focus of the U.S. response has been on detection and on the deployment of medical countermeasures in the United States.³⁷ This typifies a national security viewpoint of countering a threat with countermeasures, while undervaluing the important public health and international dimensions of dealing with biological weapons. Many commentators argue that rebuilding the U.S. public health infrastructure would provide both better detection and better capability to treat the impacts of a biological attack, as well as improve surge capacity to deal with other mass casualty incidents.³⁸ Implementing electronic medical records and digital links between hospitals and public health authorities have also been argued to be a useful approach to countering biological weapons, because they would greatly enhance communication and management during a biological attack, (and are currently needed to confirm BioWatch-sensor false positives³⁹). Furthermore, efforts to strengthen the International Health Regulations and related global surveillance and response mechanisms are essential to improving the U.S. ability to address both bioterrorism and naturally occurring outbreaks of disease. After all, the release or emergence of a dangerous pathogen anywhere on the planet can threaten U.S. national security. And efforts to improve U.S. bioterrorism response capacity have the added benefit of being useful during nonemergency times to improve public health.

The original BioShield legislation and the corrective Pandemic and All-Hazards Preparedness Act of 2006 have so far not succeeded in developing sufficient quantities of medical countermeasures or consistently improving detection of biological threats. As a consequence, the public health and international dimensions of bioterrorism response have taken on added importance.⁴⁰

³⁷ O'Toole, T. (2007). *Six years after anthrax: are we better prepared to respond to bioterrorism?* Testimony of Tara O'Toole to the U.S. Senate Committee on Homeland Security and Governmental Affairs, October 23, 2007. Retrieved from http://www.upmc-biosecurity.org/website/resources/hearings/content/Hearings2007/20071023_sixyearsafteranthrax.pdf.

³⁸ Relman, D. A. (2006). Bioterrorism—preparing to fight the next war. *N Engl J Med* 354 (2):113–115.

³⁹ O'Toole, T. (2007). *Six years after anthrax: are we better prepared to respond to bioterrorism?*

⁴⁰ Gronvall, G. (2008). Biodefense countermeasures: the impact of Title IV of the US Pandemic and All-Hazards Preparedness Act. *Emerging Health Threats Journal* 1: 1–5.

Closing Observations

Linking global health issues to U.S. national security interests helped to raise the profile of select health issues, including bioterrorism, HIV/AIDS, SARS, MDR/XDR-TB, and avian influenza, and addressed real health threats to the United States. Attention to these issues spiked in the early part of this decade with press coverage of disease outbreaks but subsequently waned, along with policymaker attention. Successfully preventing and responding to global health threats, however, despite the ebb and flow of disease outbreaks, requires constant support for systems of surveillance and public health, particularly in developing countries. The episodic nature of these threats should not lull policymakers into a sense of safety from these diseases.

Other major global health problems that do not directly threaten the U.S. population or strategic interests, including neglected tropical diseases, weak health systems, and maternal health, do not share the political spotlight and thus have received little attention or funding. This oversight is becoming less sustainable, in terms of the United States spending major portions of its global health budget to unilaterally keep millions of people with HIV/AIDS alive with antiretroviral therapy and in terms of the resulting underinvestment in other important areas of public health. Also, conceptions of global health security have newly generated resistance from a number of countries that are critical to global disease surveillance and therefore to U.S. security. Linking health with national security, in this case, has caused the United States to focus too much on its own protection without recognizing the very point of the IOM report—that the health of the United States is tied to the health of other countries. The United States ignores this lesson at its peril. Indonesia has demonstrated resistance to the concept of global health security when it is not accompanied with help for the countries most affected, and it has found leverage to make sure wealthy countries pay attention. U.S.-led, multilateral efforts to incentivize countries to share virus samples and to detect and report outbreaks of bioterrorism and infectious diseases are needed, but this will require a reappraisal of our conceptions of global health security as well as skillful diplomacy.

Closing Recommendations

Global health threats are real and should remain a priority. While news coverage of global health threats is variable, acts of bioterrorism or the emergence of new diseases are not driven by news coverage. Human activity, mutations, ecological change, and travel are what largely determine bioterrorism, disease emergence, or the development of drug resistance. Increased and stable funding for disease surveillance and response is needed, regardless of news cycles.

Continued ample investments by the United States in global public health systems and the IHR are essential to improve the U.S. response to both bioterrorism and emerging infectious disease threats. These efforts will likely benefit U.S. national security more than U.S.-based detection and medical countermeasure efforts have to date, while also working to improve health during times of peace.

Not all global health issues are relevant to U.S. national security, but *the United States will need to engage on the broader global health agenda to meet developing countries' needs if it is to gain cooperative action on threats to U.S. national security.* Indonesia's resistance to sharing avian flu samples, while not commendable, should be seen as a warning about the limits of international cooperation on health threats when developing country needs are not addressed.

There is at present no overall U.S. global health strategy, nor is there a coherent governmental organizational structure for managing U.S. investments in global health or responding to transnational health threats. This lack of a plan and coordination impedes effective U.S. government action (and represents a problem across all U.S. foreign assistance funding). *U.S. government coherence and organization on global health issues should be addressed as a major component of reforming foreign aid and rewriting the Foreign Assistance Act to better manage transnational health threats and U.S. global health efforts.*