

CORRESPONDENCE

Trust in the Age of Bioweapons

Distrust of the US government's motives in biodefense may have negative consequences, including lack of support at home and suspicion abroad. In "Biodefense and Transparency: The Dual-Use Dilemma" (18.2, July 2011, pp. 349–68), Kirk Bansak argues that the United States must do more to increase transparency to discourage other nations from embarking on biological weapons programs. Indeed, the United States can, and should, do more to explain the importance of biodefense and to reassure that efforts are truly for defense. Yet while allaying suspicions is important, the top priority for the United States needs to be actual biodefense capability.

The United States is currently on the right track to counter misperceptions of its biological defense program. One major recent step was posting the US confidence-building measures (CBMs) declarations under the Biological Weapons Convention (BWC) on the public side of the BWC Implementation Support Unit website. Of the 164 nations that are party to the BWC, only 63 submitted CBMs by November 2011, and only 18 nations allowed them to be publicly accessible. In addition, the United States has invited visitors from other nations to the US National Interagency Biodefense Campus at Fort Detrick to see firsthand the defensive nature of the work. The United States also instituted, years ago, a "treaty compliance" review at the Department of Homeland Security for biodefense projects.

While distrust in US motives might lead a nation to embark on a biological weapons program, as Bansak argues, pursuing a biological weapons program is already an option currently available to *all* nations.

Compared to nuclear weapons in particular, making biological weapons is inexpensive, the technology already exists and is widely available, and the starting materials are present in every nation on earth. Last year my colleagues and I published a survey, "Everywhere You Look: Select Agent Pathogens," which showed that in period of less than two years anthrax disease was reported in more than fifty countries on public health sites.¹ This almost certainly underestimates the true number of infections caused by *Bacillus anthracis*. In addition, many other pathogens thought to have weapons potential are isolated from sick animals or people and are grown in laboratories, all over the world, all the time; furthermore, the misuse of modern biotechnologies could lead to advanced technologies or altered pathogens.

Individuals and small groups already have the ability to make a biological weapon. According to the FBI, a single scientist who had no special training in designing bioweapons was able to commit the anthrax letter attacks in 2001. More than a decade later, it is as difficult to make and use a biological weapon as it will ever be; that is, it will only get easier in the future, as powerful biotechnologies become more commonplace. Given the harm that could result from using a biological weapon, as well as the accessibility of the materials and technologies needed, it would be a profound mistake if the

¹ Kunal J. Rambhia, Abigail S. Ribner, and Gigi Kwik Gronvall, "Everywhere You Look: Select Agent Pathogens," *Biosecurity and Bioterrorism* (March 2011), pp. 69–71.

United States did not pursue biodefense capabilities as expeditiously as possible.

Although the United States has made progress in biodefense since 2001, there is a great deal left to accomplish to increase US defenses against biological weapons, as well as defenses against naturally occurring diseases. For example, filling the Strategic National Stockpile (SNS)—the country's emergency supply for use during public health emergencies—with diagnostics, vaccines, anti-virals, and other medical countermeasures has been slow, despite the fact that medical countermeasures are necessary to limit the effects of an outbreak, whatever the source, and they may even serve as a deterrent to attack.² The National Biodefense Science Board, which was set up to provide advice to the Department of Health and Human Services, diagnosed the problem as not one of effort, but of coordination: "The U.S. Government workers involved in [medical countermeasures] discovery, development, acquisition, and fielding are doing good and important work. But they are not synchronized, their projects are not prioritized, and oversight from the highest levels of Government is neither consistent nor evident. These inefficiencies are prolonging America's vulnerabilities."³ Funding is also insufficient, and Project BioShield, a special reserve fund to purchase medical countermeasures for the SNS, has had \$1.4 billion of its funding taken by Congress for other projects.

Other recent assessments of US biodefense are no more reassuring. The US

government has spent \$60 billion on biodefense since 2001, much of that going to the Centers for Disease Control and Prevention and to bolster the nation's public health system. Unfortunately, gains made in public health since 2001 are being rapidly dismantled through budget cuts. About 19 percent of the workforce has been lost in the past three years, hurting biodefense and disease containment in general.⁴ Regardless of whether a disease epidemic begins as a result of bioweapons use or a naturally occurring event, public health workers are needed to detect and contain it.

In summary, it is important that the US government continue to reassure the US public and other nations that it is engaged in biodefense, not offensive biological weapons development. But no amount of bilateral visits, communication strategies, or efforts to increase transparency will change this reality: biological weapons are within the reach of any state, and it will only get easier for small groups or individuals to develop them. Natural disease will continue to plague us, surprise us, and challenge our ability to stop it. While we need to be concerned about the *perception* of biodefense efforts and the harmful consequences of mistrust, the top priority needs to be an *actual* capability to defend against biological threats, no matter the source.

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² Bob Graham and Jim Talent, "Bioterrorism: Redefining Prevention," *Biosecurity and Bioterrorism* 7 (June 2009), pp. 125–26.

³ National Biodefense Science Board, "Where Are the Countermeasures? Protecting America's Health from CBRN Threats," June 2010.

⁴ Erika Check Hayden, "Biodefense since 9/11: The Price of Protection," *Nature* 477 (September 8, 2011), pp. 150–52.

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In the conclusion of "Biodefense and Transparency: The Dual-Use Dilemma," Kirk Bansak correctly states that a lack of transparency and engagement regarding biodefense research can erode public trust domestically and foster distrust internationally. Research by the Federation of American Scientists shows that the public is becoming more concerned about scientific research and the possibility of accidental infections or of a terrorist misusing biotechnology. In light of the anthrax attacks of 2001 (which the Federal Bureau of Investigations concluded were committed by an American scientist), the synthetic synthesis of poliovirus in 2001, the reconstruction of the 1918 influenza virus in 2005, and a variety of higher-profile laboratory accidents, it is increasingly essential for scientists to actively engage and communicate with the public in order to maintain public trust. On the international level, the December 2011 review conference for the Biological Weapons Convention (BWC) focused on issues of biodefense transparency and engagement to increase trust between nations—especially since verification measures are not politically viable.

In terms of increasing overall transparency, Bansak recommends improving the BWC's voluntary confidence-building measures, supporting Jonathan B. Tucker's call for the US government to host "'open houses' for foreign delegations and the international press corps at major [US] biodefense facilities," and developing a stronger international dialogue.

According to data collected by the BWC "JACKSNZ" countries (Japan, Australia, Canada, South Korea, Switzerland, Norway and New Zealand) and Sweden,

many life scientists—including those performing "dual-use" research—are not fully aware of the risks of misusing biotechnology, of the BWC's priorities, or of how the BWC is relevant to their work. Without an understanding of the BWC and its importance, the research community cannot properly create an explicit culture of peace and transparency.

It is difficult to convince a skeptical public, much less a foreign nation, of an institution's peaceful endeavors—unless there is proof of its efforts to ensure the research communities' awareness of biosafety and biosecurity risks. One way institutions can start raising awareness is to engage their researchers and to adopt a clear code of ethics. A benefit of greater BWC awareness is the increased likelihood of community efforts to bolster collaborations and confidence-building measures between countries both within, and outside the framework of, the BWC.

Some organizations have already begun spearheading efforts in biosecurity education, including the Federation of American Scientists and the University of Bradford Disarmament Research Centre, yet more training materials in different formats and languages are needed so they can be adapted in a broader range of educational environments.

BWC discussions can flourish outside of the intersessional meetings and review conferences by using web-based collaborative and networking tools. This would allow for ongoing dialogue, sharing of best practices and more rapid responses to changing technology, with the added benefit of allowing countries to engage in ongoing BWC discussions without added expense. This engagement can foster trust between nations, which is the first step to transparency of biodefense research

efforts; it could even help bring non-signatory states to the table.

One must be aware of the issues at hand before the proper engagement, trust, and transparency regarding biodefense and biosecurity can take place. This is why biosecurity education and awareness of the BWC are extremely important components to increasing transparency and engagement both domestically and internationally.

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Kirk C. Bansak responds

As Gigi Kwik Gronvall points out, the availability and relative cheapness of biological materials and technologies makes pursuing biological weapons programs a widely accessible option. Consequently, while acknowledging that increasing transparency of biodefense activities is important in order to allay suspicions, Gronvall concludes that the top priority for the United States should be building biodefense capabilities.

The good news is that increasing transparency and improving biodefenses are not mutually exclusive, nor are they necessarily trade-offs that need to be prioritized against each other. Improving America's biodefense capabilities is an important but funding-intensive endeavor, as the \$60 billion spent since 2001 suggests. In contrast, the primary burden of increasing biodefense transparency is simply finding the political will. The financial costs of transparency do not threaten to take resources away from biodefense capabilities in any significant way. Of course, as

Gronvall points out, US biodefense capabilities to date have been encumbered by inefficiencies in the biodefense enterprise, and efforts to improve the system could benefit from an added dose of high-level political attention. Yet just as biodefense capabilities and biodefense transparency need not compete for common resources, they also need not distract political attention away from each other.

In fact, if executed in the right way, biodefense transparency and biodefense capabilities complement each other in mitigating biological weapons threats. While biological weapons programs may be widely accessible, the political risks and opportunity costs entailed in pursuing this type of weaponry mean that countries must have compelling motivations for doing so. One motivation would be the belief that biological weapons hold a distinctive military utility. Robust and effective biodefense capabilities reduce this motivation because they deny the potential efficacy of biological weapons. Another motivation would be the pursuit of strategic parity—to develop a retaliation-in-kind capability—in the belief that one's adversaries possess biological weapons. Effective biodefense transparency, of course, precludes this second motivation. Hence, biodefense capabilities and biodefense transparency dissuade against the development of biological weapons better in tandem than either one can alone; the positive nonproliferation effects of the two are not fungible.

It has become conventional wisdom that effective protection against biological threats requires a range of measures. On the national level, strong leadership and vision are necessary to coordinate the disparate elements into a finely tuned system of mutually reinforcing components. On the

international level, the greater number of actors makes coordination more complex, yet progress has been made in the recent past. Through the contributions of the intersessional process beginning in 2003, the Biological Weapons Convention (BWC) regime began to serve as a unique international forum for twenty-first-century biological threat reduction. The two intersessional work programs between the treaty's 2001 and 2011 review conferences received criticism for focusing too much on topics that were not traditionally considered within the BWC's scope, such as the threat of bioterrorism, rather than on the task of ensuring compliance by state parties. Yet one of the intersessional process's great strengths was that, in addressing such topics, it included a wider collection of stakeholders in the global biological threat reduction mission. This included not only state delegations but also intergovern-

mental organizations, specialized national agencies, scientific institutions, and nongovernmental experts and organizations—a truly unprecedented diversity of participants brought together to strategize collectively.

Indeed, the intersessional process leading up to the Seventh BWC Review Conference in December 2011 helped to create what might be considered a new generation of multilateral nonproliferation and disarmament diplomacy. While the state parties must work to strengthen the BWC in many areas, they should continue to leverage the BWC regime to reinforce and enlarge the global network of stakeholders involved in mitigating biological threats. This would, among other things, also contribute to the important task noted by Kelsey Gregg of improving global awareness of the BWC and of biosecurity risks.

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