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Bioterrorism, Public Health, and International Law

David P. Fidler*

I. INTRODUCTION

The specter of bioterrorism—long the subject of who-dun-it fiction and well-intentioned but inconclusive policy-making—became a terrifying reality for the United States in October 2001. Less than a month after the worst act of terrorism committed against the United States, and less than two weeks after the United States began waging war against the Taliban in Afghanistan, Americans confronted the malevolent use of microbes to inflict death, illness, fear, and economic damage on the United States. The anthrax crisis developed slowly into a full-blown nightmare as each day seemed to bring new cases, terror, and questions about how ill-prepared the country was for the malignancy of bioterrorism.

The United States is still coming to grips—politically and psychologically—with the perpetration of bioterrorism within its borders. Speculating about the impact of the anthrax attacks on political, economic, or legal areas is, thus, fraught with difficulties. As a veteran of biological weapons and bioterrorism discourse prior to the anthrax attacks, I think it is important, even in this fluid time, to engage in preliminary examination of the possible effects of the recent bioterrorism on the relationship between public health and international law explored in this issue of the *Chicago Journal of International Law*.

In this article, I contemplate the potential impact of the anthrax attacks on various areas of international law that affect public health—namely, the international law on the use of force, arms control, terrorism, global infectious disease control,

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human rights, trade in goods, and the protection of intellectual property rights. In addition, I make observations about how the recent bioterrorism may affect the direction and content of global public health efforts. In the end, my analysis generates more questions than answers, but the potential impact of the bioterrorist attacks on international law and global public health is so serious that even preliminary consideration of the matter is warranted.

II. BIOTERRORISM AND PUBLIC HEALTH: BEFORE AND AFTER THE ANTHRAX ATTACKS

For many Americans, the anthrax attacks were a frightening initiation into a threat that experts in the United States have been analyzing since at least the early 1990s. The attacks also introduced many Americans to “public health”—a discipline distinct from healthcare and largely obscure to the average American.¹ Detailing the discourse on biological weapons and bioterrorism before the anthrax attacks is beyond the scope of this article, but I provide an overview in order to focus on the importance of public health to national and international policy in this area.

A. PROLIFERATION OF BIOLOGICAL WEAPONS BY STATES

In the early 1990s, revelations about the former Soviet Union’s and Iraq’s biological weapons programs caused many experts to focus new attention on the proliferation of biological weapons in the international system.² While US intelligence suspected that the Soviet Union and Iraq had developed biological weapons, no one anticipated the enormous scale and sophistication of the Soviet and Iraqi programs.

Evidence of Soviet and Iraqi bioweaponering raised fears that biological weapons proliferation had become a serious international problem. Experts worried not only that “rogue” states might possess biological weapons, but also that state proliferation of biological weapons would make it easier for terrorists to gain access to pathogenic microbes.

These fears partly explain the effort, launched in the first half of the 1990s, to negotiate a protocol to the Biological Weapons Convention of 1972 (“BWC”)³ that would establish a verification mechanism for the BWC’s prohibition on the

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1. For descriptions and definitions of public health, see Institute of Medicine, *The Future of Public Health* 35–55 (National Academy 1988); Lawrence O. Gostin, *Public Health Law: Power, Duty, Restraint* 3–22 (California 2000).
 2. George W. Christopher, et al, *Biological Warfare: A Historical Perspective*, 278 JAMA 412, 416 (1997) (discussing biological weapons program of the former Soviet Union); and Raymond A. Zilinskas, *Iraq’s Biological Weapons: The Past as Future*, 278 JAMA 418 (1997) (analyzing Iraqi biological weapons program).
 3. Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, 11 ILM 309 (1972).

development, production, and stockpiling of biological weapons. Adding momentum to this effort was the completion in 1993 of the Chemical Weapons Convention ("Convention"), which contained a verification mechanism for improving compliance with the Convention's prohibitions.⁴

B. CATASTROPHIC TERRORISM: PREPARING FOR THE UNTHINKABLE

As the effort to deal with biological weapons proliferation by states got underway, policymakers in the United States and other countries began to confront "catastrophic terrorism"—terrorism conducted with weapons of mass destruction ("WMD").⁵ The seminal event that focused attention on catastrophic terrorism in the latter half of the 1990s was the Japanese religious cult Aum Shinriyko's chemical weapon (sarin) attack in Tokyo in March 1995. Later, Japanese authorities revealed that Aum Shinriyko had tried unsuccessfully to develop and deploy biological weapons (botulinum toxin and anthrax) as well. Until Aum Shinriyko's development and use of WMD, verified examples of terrorist groups developing or using chemical or biological agents were few and very far between, leading some experts to downplay the likelihood of chemical or biological terrorism.⁶ With Aum Shinriyko, terrorism crossed the WMD rubicon in a significant and terrifying way.

The United States reacted to Aum Shinriyko's chemical and attempted biological terrorism by focusing on domestic preparedness for catastrophic terrorism. Previous policy responses to the WMD threat concentrated on counter-proliferation strategies aimed largely at states, not terrorists.⁷ Counter-terrorism activities had not, as a general matter, been interested in whether terrorists groups were dabbling with chemical or biological weapons.⁸ At the federal level, the Defense Against Weapons

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4. Convention for the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction, 32 ILM 800 (1993).
 5. Ashton Carter, John Deutch, and Philip Zelikow, *Catastrophic Terrorism: Tackling the New Danger*, Foreign Aff 80 (Nov-Dec 1998).
 6. Jonathan B. Tucker, *Lessons from the Case Studies*, in Jonathan B. Tucker, ed, *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons* 249, 267 (MIT 2000) ("Based on the historical trends identified in this study, however, only a tiny minority of terrorists will seek to inflict indiscriminate casualties [with chemical or biological weapons], and few if any of them will succeed."). For a study of historical cases of bioterrorism, see W. Seth Carus, *Bioterrorism and Biocrimes: The Illicit Use of Biological Agents in the 20th Century* (Center for Counterproliferation Research Working Paper, April 2000 Revision).
 7. James R. Ferguson, *Biological Weapons and US Law*, 278 JAMA 357, 358 (1997) (noting that US policy on biological weapons after the BWC focused on preventing other nations from acquiring biological weapons).
 8. David E. Kaplan, *Aum Shinriyko* (1995), in Jonathan B. Tucker, ed, *Toxic Terror* at 224 (cited in note 6) ("Despite the cult's virulent anti-Americanism and international procurement efforts, U.S. intelligence agencies also failed to recognize the threat at hand. As one counterintelligence official told U.S. Senate investigators, 'They simply were not on anybody's radar screen.'").

of Mass Destruction Act of 1996 symbolized this policy shift toward preparedness for catastrophic terrorism.

C. "BIO IS DIFFERENT"—PUBLIC HEALTH AS THE CENTERPIECE
FOR INTERNATIONAL AND NATIONAL SECURITY POLICIES

The international efforts to negotiate a BWC verification protocol and US efforts to prepare for catastrophic terrorism eventually confronted the same problem: biological weapons present a fundamentally different challenge from nuclear and chemical weapons. Diplomatic attempts to create a BWC protocol ran into political and technical difficulties that underscored how hard international control of biological weapons was. The BWC protocol negotiations also revealed how important basic public health functions, such as infectious disease surveillance, would be to the successful response to the illegal development and use of biological weapons.

US preparedness for WMD terrorism likewise had to learn that bioterrorism cannot be lumped together with chemical and nuclear terrorism. Responding to bioterrorism would be different from responses to chemical and nuclear terrorism because first responders in bioterrorist cases would be the public health and healthcare systems, not firefighters, law enforcement, and emergency-response personnel. As public health experts concerned about bioterrorism argued, the quality of the nation's public health infrastructure and capabilities had become important for US national security and homeland defense⁹—an argument that traditional national-security thinking inside the Beltway had a hard time grasping.

D. THE ANTHRAX ATTACKS

The anthrax attacks in the United States brought together each strand discussed above in disturbing ways. First, the nation watched as federal, state, and local public health authorities scrambled to deal with the use of anthrax as a weapon of death and terror against civilian populations. As public health experts had predicted, the first line of defense against bioterrorism was the US public health system. Second, the anthrax attacks reinforced the conclusion reached in the mid-1990s that domestic

9. Testimony of Tara O'Toole, Hearing on Terrorism Preparedness: Medical First Response, House of Representatives Committee on Government Reform, Subcommittee on National Security, Veterans Affairs, and International Relations, Sept 22, 1999, available online at <<http://www.hopkins-biodefense.org/pages/library/prepare.html>> (visited Mar 24, 2002) ("The outcome of a bioterrorist attack on US civilians would be an epidemic. The 'first responders' to such an event would be physicians, nurses, and public health professionals in city and state health departments. A covert bioterrorist attack would likely come to attention gradually, as doctors became aware of an accumulation of inexplicable deaths among previously healthy people. The speed and accuracy with which physicians and laboratories reached correct diagnoses and reported their findings to public health authorities would directly affect the number of deaths, and—if the attack employed a contagious disease—the ability to contain the epidemic.").

preparedness for bioterrorism should be a national priority and revealed that the United States was not sufficiently prepared. Third, analysis and speculation about the source of the anthrax used in the attacks led experts to wonder whether the perpetrators obtained the bacteria from Iraq, providing a possible link between the bioterrorism and a state-sponsored biological weapons program.¹⁰ Finally, in Washington, DC, the legislative and executive branches indicated a new willingness to focus on public health as a national security priority, as evidenced by bioterrorism bills passed by both houses of Congress.¹¹

III. BIOTERRORISM AND INTERNATIONAL LAW: WHAT IMPACT WILL THE ANTHRAX ATTACKS HAVE?

The anthrax attacks will affect the United States and the world for years to come and in ways that even the most highly qualified experts would have trouble discerning in the current volatile climate. My focus on the possible impact of these attacks on international law does not imply that this impact is the most important issue on the post-attack agenda. Nevertheless, students and scholars of international law should consider how these acts of bioterrorism may affect international law.

A. THE COMPLEX RELATIONSHIP BETWEEN INFECTIOUS DISEASES AND INTERNATIONAL LAW

As the anthrax attacks demonstrate, bioterrorism involves the malicious use of pathogenic microbes to cause disease, death, and fear in civilian populations. Such use of infectious diseases as weapons of terror implicates a number of areas of international law. The scope of the potential impact is greater still because of the complex, but largely neglected, relationship between international law and infectious diseases. The bioterrorism perpetrated in the United States brings this relationship between infectious diseases and international law to the forefront and underscores why thinking about national and international control of infectious diseases should include consideration of international law.

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10. The connection between the anthrax attacks and Iraq was prominently drawn by a former director of the Central Intelligence Agency. See R. James Woolsey, *Behind the Terror: The Iraqi Connection*, Wall St J Eur 6 (Oct 19, 2001). As this article was being written, federal authorities were focusing their investigations on domestic terrorism as the source for the anthrax attacks.
 11. On January 10, 2002, President Bush signed into law a \$2.9 billion bioterrorism appropriations bill. Still pending at the time of this writing was the conference committee reconciliation of the Public Health Security and Bioterrorism Response Act of 2001, passed by the House of Representatives in December 2001, and the Bioterrorism Preparedness Act of 2001, passed by the Senate in December 2001.

B. INTERNATIONAL LAW ON THE USE OF FORCE: AN ANTHRAX
WRINKLE TO THE RIGHT OF SELF-DEFENSE?

The US-led “war against terrorism” has produced discussion in international legal circles concerning whether US military attacks against Afghanistan, and the multilateral support such attacks received, affect the scope of the right to use force in self-defense.¹² The UN Security Council, the North Atlantic Treaty Organization (“NATO”), the Organization of American States, and countries in their individual capacities have declared that the September 11th terrorists attacks triggered this right to individual and collective self-defense.¹³ Most, if not all, of the statements in support of the United States’ right of self-defense were not conditioned on the September 11th terrorism being state-sponsored. Thus, the scope of the right to self-defense in customary international law and the UN Charter—a subject of controversy in international law for decades—may be expanding to provide a legitimate justification for using force against countries that harbor (as opposed to sponsor) international terrorists.

Into this situation came the anthrax attacks. Clearly, if the involvement of a state actor (for example, Iraq) in the anthrax attacks should come to light, then the United States would be justified under the traditional right of self-defense to use military force against Iraq. State-sponsorship of bioterrorism would not, thus, present a radically new context for the use of force in self-defense because the United States has used force against governments that have sponsored terrorism in the past (for example, the 1986 military strikes against Libya). Similarly, if foreign terrorists are linked to the anthrax attacks, the United States will consider military strikes against any state that harbors them, in keeping with the United States’ interpretation of the right to self-defense in the context of terrorism.

The anthrax attacks may, however, affect the right to use force in self-defense in other ways. The tolerance of the United States, and perhaps other countries supportive of the war against terrorism, for the possession of WMD programs by “states of concern” may be reduced after the anthrax attacks. This new intolerance may lead the United States and other countries to consider the existence of such programs a serious threat to national and international security, and perhaps to contemplate the use of force to destroy such programs before governments use WMD or such weapons find their way into terrorist hands. In this vein, President Bush, in

12. See analysis posted to ASIL Insights, available online at <<http://www.asil.org/insights/insigh77.htm>> (visited Mar 24, 2002).

13. Security Council Res No 1368, UN Doc S/RES/1368 (2001); NATO, Statement by the North Atlantic Council, Press Release 124, Sept 12, 2001, available online at <<http://www.nato.int/docu/pr/2001/p01-124e.htm>> (visited Mar 24, 2002); Organization of American States, Terrorist Threat to the Americas, RC.24/RES.1/01, Sept 21, 2001, available online at <<http://www.oas.org/OASpage/crisis/RC.24e.htm>> (visited Mar 24, 2002).

his State of the Union address in January 2002, declared that the United States “will not stand by as peril draws closer and closer” and “will not permit the world’s most dangerous regimes to threaten us with the world’s most destructive weapons.”¹⁴

Historical precedents for this position exist. First, Israel justified its destruction of an Iraqi nuclear facility in 1981 as an act of anticipatory self-defense. While the international community, including the United States, rejected this justification at the time, later revelations of the scale of Iraqi nuclear, chemical, and biological weapons programs have made the Israeli argument look more legitimate. Second, US and British forces attacked alleged Iraqi WMD facilities in 1998 because of Iraq’s intransigence toward inspections by the UN Special Commission. While the legal authority for this use of force could be based on Security Council resolutions on disarming Iraq of WMD, the 1998 attacks could also be interpreted as acts of anticipatory self-defense in preventing Iraq from re-developing WMD capabilities.

Third, the Clinton Administration justified the US attack on an alleged chemical-weapons facility in Sudan in 1998 as an act of self-defense after the terrorist bombings of US embassies in Kenya and Tanzania. Neither Sudan nor chemical weapons were involved in the embassy bombings, but the United States argued that the attack was a legitimate exercise of its right of self-defense. The collapse of the evidentiary foundation for this justification does not negate this incident as a possible precedent for widening the right of anticipatory self-defense to deal with the threat of biological weapons and bioterrorism.

C. INTERNATIONAL LAW AND ARMS CONTROL: WILL BIOTERRORISM BRING THE BWC PROTOCOL BACK FROM THE DEAD?

As Part II mentioned, the latter half of the 1990s witnessed an effort to negotiate a BWC verification protocol. Although the BWC prohibits the development, production, and stockpiling of biological weapons, experts perceived that its Achilles heel was the lack of a verification regime. From 1995 until 2001, the Ad Hoc Group of States worked to draft a verification protocol. In July 2001, the Bush Administration declared that the protocol was not acceptable because it was too weak and posed threats to the confidential business information of US pharmaceutical

14. Michael R. Gordon, *Broadening of ‘Doctrine,’* NY Times A1 (Jan 30, 2002). The members of President Bush’s now famous “axis of evil” include repressive regimes that sponsor terrorism and that are seeking access to weapons of mass destruction. See President George W. Bush, *State of the Union Address*, available online at <<http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html>> (visited Mar 24, 2002).

companies.¹⁵ Without US support, the proposed BWC verification protocol was effectively dead.

The anthrax attacks raised the question whether these acts of bioterrorism would change the Bush Administration's hostility toward the proposed BWC protocol. At the end of October 2001, the United States reopened talks with European countries on the BWC protocol.¹⁶ While the Bush Administration claimed that the anthrax attacks were not the stimulus for the new discussions, the timing of the US initiative suggested that the attacks may have softened US opposition to continuing the protocol negotiations.

At the BWC's Fifth Review Conference in late November 2001, the Bush Administration demonstrated that its opposition to the proposed BWC protocol had not, in fact, softened. John Bolton, Undersecretary of State for Arms Control, made clear that the Bush Administration would not support further negotiations on the BWC protocol and offered alternative proposals to improve compliance with the BWC.¹⁷ The US proposals do not constitute an alternative arms-control protocol but stress the immediate adoption of national legal and public health measures by BWC states parties to reduce the threat of biological weapons proliferation and bioterrorism. US proposals involving international cooperation, such as supporting the global disease surveillance and response capabilities of the World Health Organization ("WHO"), do not require the negotiation of a new treaty. The anthrax attacks did not, therefore, resurrect the BWC protocol but rather strengthened the Bush Administration's desire to bury it for good.

D. INTERNATIONAL CRIMINAL LAW: WILL INTERNATIONAL LAW CRIMINALIZE BIOTERRORISM?

The anthrax attacks play into another theme in the discourse on biological weapons and bioterrorism—proposals to make the use, development, production, or possession of a biological weapon by any person (including diplomats and heads of state) a crime in international law punishable through the application of universal jurisdiction. The Harvard Sussex Program on Chemical and Biological Warfare Armament and Arms Limitation synthesized this idea in its proposed Convention on the Prevention and Punishment of the Crime of Developing, Producing, Acquiring,

15. Testimony of Ambassador Donald A. Mahley, House Government Reform Committee, Subcommittee On National Security, Veterans Affairs and International Relations, *The Biological Weapons Convention: Status and Implications*, July 10, 2001, available online at <<http://www.fas.org/bwc/news/maht.htm>> (visited Mar 24, 2002).

16. *U.S. Eager to Bolster Bioterrorism Treaty*, *Intl Herald Trib* (Nov 2, 2001).

17. For a summary of the Fifth Review Conference and the position of the Bush Administration at this meeting, see Graham S. Pearson, *Report from Geneva: The Biological and Toxin Weapons Convention*, 54 *CBW Conventions Bull* 13 (Dec 2001).

Stockpiling, Retaining, Transferring or Using Biological or Chemical Weapons.¹⁸ Making the use, development, or possession of a biological weapon a crime under international law subject to the principle of universal jurisdiction would make the bioweaponeer *hostis humani generis*—an enemy of all humankind.¹⁹ The use of a biological weapon by a state or terrorist organization is, however, already subject to criminal sanctions in international humanitarian law and international law on terrorism. The use by a state (either directly or through state-sponsored terrorism) of a biological weapon against a civilian population would, for example, be a war crime and, depending on the nature of the biological attack, potentially a crime against humanity.²⁰ The use of a biological weapon by a terrorist is already an offense subject to criminal prosecution by any nation party to the UN Convention on the Suppression of Terrorist Bombings, which entered into force in May 2001. The proposal to criminalize the use of biological weapons by states or terrorist organizations, therefore, would build on existing principles condemning and criminalizing this kind of behavior. What the proponents of this proposal seek is direct and express criminalization of the use of biological weapons and the unauthorized development and possession of such weapons on the part of any person. The anthrax attacks bolster the case for making the unauthorized use, development, and possession of biological weapons expressly a crime in international law.

The larger question is whether such a development in international criminal law will significantly affect state and terrorist calculations about the utility of biological weapons. Experience with international criminal law in areas such as armed conflict and torture suggests that the deterrent effect of criminalizing certain state and individual behavior under international law is not great. Likewise, terrorists might not be deterred, given that their activities are already illegal in most jurisdictions in which they operate. Finally, many people terrorized by the anthrax attacks might wonder why international lawyers focus attention on punishing terrorists or state actors rather than working to prevent attacks from occurring.

18. Michael P. Scharf, *Clear and Present Danger: Enforcing the International Ban on Biological and Chemical Weapons Through Sanctions, Use of Force, and Criminalization*, 20 Mich J Intl L 477, 511–21(1999) (draft of the convention is attached as an appendix). See also *International Criminal Law and Sanctions to Reinforce the BWC*, 54 CBW Conventions Bull 1 (Dec 2001).

19. Scharf, *Clear and Present Danger* at 506 (cited in note 18).

20. This result flows from international humanitarian law's principle of the immunity of civilian populations from attack, not from a principle that criminalizes the use of biological weapons. See Rome Statute of the International Criminal Court, art 8.2(b), UN Doc No A/CONF.183/9, (1998) (defining war crimes to include intentionally attacking civilian populations); *id* at art 7.1 (defining crimes against humanity to include murder committed as part of a widespread or systematic attack directed against any civilian population).

E. INTERNATIONAL LAW AND GLOBAL INFECTIOUS DISEASE
CONTROL: WILL BIOTERRORISM RESCUE THE REVISION OF THE
INTERNATIONAL HEALTH REGULATIONS?

Outside the contexts of biological weapons proliferation and bioterrorism, the 1990s were also a decade that witnessed concerns about emerging and re-emerging infectious diseases as a global public health problem. In 1996, WHO declared that the world faced a "world crisis" in infectious diseases for which immediate international action was required.²¹ Part of the action WHO proposed was revising the International Health Regulations ("IHR"), which constitute the only international agreement on international control of infectious diseases binding on WHO member states.²² WHO argued that the global crisis in infectious diseases revealed weaknesses and problems with the existing IHR and that the IHR should be reformed to provide a better international legal foundation for global infectious disease control in the twenty-first century.²³

Prior to the anthrax attacks, the IHR revision process appeared to have made little progress in the years since WHO launched the effort in 1995. I have argued elsewhere that the classical regime on international infectious disease control embodied in the IHR is effectively dead, killed by a combination of technological changes, WHO's indifference, and the jealous guarding of sovereignty by WHO member states.²⁴

Will the anthrax attacks breathe new life into the IHR revision process? Critical to the IHR's purpose is the objective of epidemiological surveillance for infectious diseases. Whether a disease outbreak is man-made or naturally occurring, surveillance is vital for public health authorities to understand what is happening and implement appropriate interventions. The IHR were designed to support an international surveillance network for infectious diseases, which—if it functioned—would contribute to handling not only naturally occurring infectious diseases but also bioterrorism.

The perpetration of bioterrorism in the United States may provide a stimulus for states and WHO to pay more attention to the IHR revision and its objectives. The Bush Administration's new proposals for the BWC protocol negotiations include an emphasis on support for WHO's global infectious disease surveillance and response

21. World Health Organization, *World Health Report 1996* 105 (1996).

22. World Health Organization, *Emerging and Other Communicable Diseases Surveillance and Control*, WHO/EMC/96.1 at 3 (1996–2000).

23. World Health Organization, *Revision and Updating of the International Health Regulations*, WHA Res 48.7 (May 12, 1995).

24. David P. Fidler, *International Law and Global Infectious Disease Control*, Commission on Macroeconomics and Health, Paper No WG2:18, available online at <http://www.cmhealth.org/docs/wg2_paper18.pdf> (visited Mar 24, 2002).

programs,²⁵ of which the IHR revision is supposed to be a part.²⁶ The Bush Administration also emphasized the importance of global infectious disease surveillance and response in signing the so-called "Ottawa Plan" in November 2001 with seven other nations and the European Union.²⁷

I doubt, however, whether rejuvenated attention to the IHR revision will emerge after the anthrax attacks. First, the substantive approach in the IHR revision may not be worth preserving, even in light of the new reality of bioterrorism.²⁸ The Bush Administration's emphasis on the need for multilateral support for WHO's disease surveillance network and strategy for disease outbreak containment does not necessarily equal support for the IHR revision process. WHO built and continues to refine its "Global Outbreak Alert and Response Network"²⁹ without the revised IHR in place. It is not true that, as WHO asserts, the IHR "serve as the legal framework for WHO's alert and response activities"³⁰ because the existing IHR do not authorize much of the activity WHO is undertaking in its global outbreak alert and response network. Further, the revised IHR are not necessary to make this network operate because it is already operating.³¹

Second, the anthrax attacks highlighted weaknesses in infectious disease surveillance in the United States, which means that the likely response of US policymakers will be on national rather than international infectious disease surveillance capabilities. Other countries watching the ordeal in the United States will also turn first toward national public health problems before worrying about the IHR revision process. This dynamic is revealed in the Ottawa Plan. The anthrax attacks jolted the health ministers of the participating countries into multilateral discussions about protecting their countries from bioterrorism. The IHR revision, however, does not figure into the Ottawa Plan's multilateral cooperation against bioterrorism.

25. Federation of American Scientists, *Strengthening the Ban on Germ Weapons*, Press Release, Nov 7, 2001, available online at <<http://www.fas.org/bwc/news/FASPressRelease7Nov2001.html>> (visited Mar 24, 2002).

26. *Global Health Security*, 76 Weekly Epidemiological Record 166, 168 (2001).

27. US Department of Health and Human Services, *Secretary Thompson Joins Health Ministers in "Ottawa Plan": Countries Forge New Partnership to Strengthen Public Health and National Security*, Press Release, Nov 7, 2001, available online at <<http://www.hhs.gov/news/press/2001pres/20011107a.html>> (visited Mar 24, 2002). The agreement establishing the Ottawa Plan is not a treaty binding on the signatory states but merely a political agreement setting out objectives for future multilateral cooperation to combat bioterrorism.

28. Fidler, *International Law and Global Infectious Disease Control* at 28–34 (cited in note 24).

29. World Health Organization, *Global Outbreak Alert and Response Network*, available online at <<http://www.who.int/emc/pdfs/network.pdf>> (visited Mar 24, 2002).

30. *Global Health Security*, 76 Weekly Epidemiological Record at 168 (cited in note 26).

31. Fidler, *International Law and Global Infectious Disease Control* at 30 (cited in note 24).

F. INTERNATIONAL LAW AND HUMAN RIGHTS: HOMELAND SECURITY VS CIVIL LIBERTIES?

The September 11th terrorist attacks sparked legislative action in the United States for new anti-terrorism measures giving law enforcement officials the power to prevent and punish terrorist activities.³² These new law enforcement powers created concern about how much civil rights and liberties protected by constitutional and international law would suffer to improve "homeland security." The anthrax attacks exacerbate this tension between homeland security and the protection of civil liberties because they represent a new development in the fight against terrorism. In addition, the anthrax attacks create human rights concerns particular to public health that deserve attention.

Discourse on bioterrorism has addressed the need to balance effective public health responses in emergencies with individual rights and liberties.³³ Public health officials recognize that they may need to infringe on individual rights in order to control effectively an outbreak caused by bioterrorism. The powers public health officials need in the context of bioterrorism range from the moderate (for example, access to private medical records to track an outbreak) to the draconian (for example, quarantine of populations).³⁴ Potential infringements on individual rights increase if terrorists use a pathogen that is communicable from person to person. Fortunately, anthrax is not communicable in this way, which means that the anthrax attacks did not result in major governmental infringements on individual rights.

The anthrax attacks illustrate, however, the importance of the framework established in international law for infringing on civil and political rights to protect public health. Regional and international treaties on civil and political rights recognized the need for public health to have the power to override individual rights in order to deal with infectious diseases long before bioterrorism concerns emerged.

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32. Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, Public L No 107-56, 115 Stat 272 (2001); Detention, Treatment, and Trial of Certain Non-Citizens in the War Against Terrorism, Presidential Doc, 66 Fed Reg 57833 (2001).
 33. Barry Kellman, *Biological Terrorism: Legal Measures for Preventing Catastrophe*, 24 Harv J L & Pub Pol 417, 475-488 (2001); Juliette N. Kayyem, *U.S. Preparations for Biological Terrorism: Legal Limitations and the Need for Planning*, BCSIA Discussion Paper 2001-4, ESDP Discussion Paper ESDP-2001-02, John F. Kennedy School of Government, Harvard University (Mar 2001); David P. Fidler, *The Malevolent Use of Microbes and the Rule of Law: Legal Challenges Presented by Bioterrorism*, 33 Clinical Infectious Diseases 686, 688 (2001).
 34. Centers for Disease Control and Prevention, *List of Powers Public Officials Need to Respond to Bioterrorism* (on file with author) (listing public health powers required for control of persons). See also Center for Law and the Public's Health, *Model State Emergency Health Powers Act*, Dec 21, 2001, available online at <<http://www.publichealthlaw.net/MSEHPA/MSEHPA2.pdf>> (visited Mar 24, 2002) (draft model state statute on public health emergency powers prepared for the US Centers for Disease Control and Prevention).

What the treaties on civil and political rights establish, however, is a framework that public health authorities need to follow in order to ensure that individual rights and liberties are infringed only when necessary and in the least restrictive way possible.

International law on civil and political rights disciplines public health power in four ways: (1) the public health authority being exercised must be prescribed by law; (2) the authority must be applied in a non-discriminatory manner; (3) due process of law must be accorded before an individual's rights are infringed, unless an emergency situation exists, and then due process should be accorded as soon as possible after infringement; and (4) the infringement of rights must be necessary from both a scientific and a public health standpoint, and the infringement must be the least restrictive possible under the circumstances.³⁵

In the twentieth century, the exercise of public health powers that infringe individual rights faded in developed countries as public health and healthcare systems improved. Bioterrorism raises the possibility that these powers must be dusted off and used in ways that again encroach on individual civil and political rights. The treaty disciplines outlined above have not been prominent in either public health or international human rights law in the last fifty years. The anthrax attacks, and the specter of bioterrorism involving highly communicable pathogens such as smallpox, place the tension between effective public health responses to infectious disease emergencies and civil rights and liberties high on the agenda of public health, constitutional law, and international law.

G. INTERNATIONAL LAW AND TRADE IN GOODS: FEAR VERSUS SCIENCE?

After the anthrax attack in Florida, Russia banned the importation of livestock and meat from Florida out of fear that such products may be infected with anthrax.³⁶ Florida disapproved of this Russian trade restriction because Florida officials did not think that the restriction was justified scientifically.³⁷ Russia eventually lifted its ban after meetings between US and Russian agricultural officials.³⁸

This episode indicates that bioterrorism may affect international law on trade in goods. In the World Trade Organization ("WTO"), for example, member states have

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- 35. Siracusa Principles on the Limitation and Derogation of Provisions in the International Covenant on Civil and Political Rights, UN Doc E/CN.4/1984/4 (1984); Lawrence O. Gostin and Zita Lazzarini, *Human Rights and Public Health in the AIDS Pandemic* 47 (Oxford 1997) (discussing Siracusa Principles); David P. Fidler, *International Law and Infectious Diseases* 169, 174–175 (Clarendon 1999) (discussing disciplines on public health infringements on civil and political rights).
 - 36. *Florida—Russia Bans Meat From State, Officials Say*, LA Times A22 (Oct 19, 2001).
 - 37. Evan Perez, *Questions of Security: Florida Officials Defend Food Safety After Russian Ban*, Wall St J A9 (Oct 19, 2001).
 - 38. *Russia Lifts Ban on Florida's Meat, Livestock, 73 Feedstuffs* 5 (Oct 29, 2001).

the right to restrict trade in order to protect human, animal, and plant life or health.³⁹ The exercise of this right is subject, however, to scientific and trade-related disciplines. The scientific disciplines require sufficient scientific evidence and a scientific risk assessment supporting trade-restricting health measures.⁴⁰ Further, WTO member states must base trade-restricting health measures on applicable international standards, unless they have scientific evidence that such standards are inadequate.⁴¹ The trade-related disciplines mean that trade-restricting health measures must be non-discriminatory and the least trade restrictive measures possible.⁴²

These rules were not designed to deal with the potential adverse trade consequences of bioterrorism. The rules remain relevant in the bioterrorism context, however, because they seek to ensure that trade-restricting health measures protect health, are based on scientific opinion rather than fear, and minimize the impact of *bona fide* measures on flows of international trade. Although Russia has not joined the WTO, the United States addressed Russia's ban against livestock and meat imports from Florida as though the dispute would be handled under the Agreement on the Application of Sanitary and Phytosanitary Measures ("SPS Agreement"). The United States pointed out that Russia's ban exceeded applicable international standards set by the Office International des Epizooties ("OIE") for dealing with anthrax.⁴³ The SPS Agreement recognizes the OIE as the standard-setting international organization for animal health.⁴⁴ In other words, Russia's ban was not justified by the scientific standards internationally recognized as applicable in this context.

This episode reinforces the importance of science and public health as a component of international legal analysis. Bioterrorism is a great producer of fear. International trade law on protecting human, animal, and plant life and health seeks to ensure that science and public health principles drive government decisions rather than fear or protectionism disguised as fear. The anthrax attacks underscore the importance of these disciplines in international trade law.

39. General Agreement on Tariffs and Trade, Apr 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Final Act Embodying the Results of the Uruguay Round, Annex 1A, art XX(b); and Agreement on the Application of Sanitary and Phytosanitary Measures ("SPS Agreement"), Apr 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Annex 1A-4.

40. SPS Agreement at art 2.2 (cited in note 39) (scientific evidence requirement) and art 5.1 (risk assessment requirement).

41. *Id.* at art 3.1 and 3.3.

42. *Id.* at art 2.3, 5.5, and 5.6.

43. *Russia Lifts Ban on Florida's Meat, Livestock*, 73 *Feedstuffs* 5 (cited in note 38).

44. SPS Agreement at Annex A(1) (cited in note 39).

H. INTERNATIONAL LAW AND INTELLECTUAL PROPERTY RIGHTS: IS BIOTERRORISM BAD FOR PATENTS?

The anthrax attacks generated an enormous increase in demand from federal and state governments and the private sector for ciprofloxacin ("Cipro"), the antibiotic of choice to treat anthrax. Cipro is still under patent protection, and the holder of the patent is Bayer, a German pharmaceutical company. In response to the public health emergency caused by the anthrax attacks, Canada licensed the generic production of Cipro without Bayer's permission, effectively overriding Bayer's patent, and the United States threatened to do the same.⁴⁵ The US government was concerned about Bayer's ability to meet demand as well as the prices Bayer charged for its patented antibiotic.

The controversy over whether to use a compulsory license to manufacture generic Cipro fed into an acrimonious global debate about the ability of developing countries to use compulsory licenses to manufacture generic antiretrovirals in the face of growing HIV/AIDS epidemics. Prior to the anthrax attacks, the United States (largely supported by the European Union) fought developing countries and non-governmental organizations tooth-and-nail to prevent developing countries from utilizing compulsory licenses to manufacture generic antiretrovirals and other patented infectious disease drugs. Activists for greater access to HIV/AIDS therapies in developing countries have not missed the hypocrisy revealed by the US willingness to break a patent in the context of bioterrorism at home compared with US opposition to developing countries using compulsory licenses to help deal with diseases ravaging many developing countries on a historically unprecedented scale.

The WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS") allows WTO member states to use compulsory licenses to deal with public health emergencies.⁴⁶ The anthrax attacks demonstrate that bioterrorism can trigger a public health emergency that may require governments to break patents. At the same time, the scale of the public health emergency in the United States caused by anthrax (twenty-two cases with five deaths) pales in comparison to the millions of HIV/AIDS-related deaths developing countries are suffering annually.⁴⁷ Surely, if the

45. Gardiner Harris, *Questions of Security: Bayer Is Accused of Profiteering on Cipro*, Wall St J A6 (Oct 26, 2001) (reporting Secretary of Health and Human Services Tommy Thompson's "threat to defy Bayer's patent unless the company lowered its price"); Amy Harmon and Robert Pear, *Canada Overrides Patent for Cipro to Treat Anthrax*, NY Times A1 (Oct 19, 2001).

46. WTO Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS"), art 31. On TRIPS and health, see Carlos Correa, *Unfair Competition Under the TRIPS Agreement: Protection of Data Submitted for the Registration of Pharmaceuticals*, 3 Chi J Intl L 69 (2002); Alan O. Sykes, *TRIPS, Pharmaceuticals, Developing Countries, and the Doha "Solution,"* 3 Chi J Intl L 47 (2002).

47. As of November 16, 2001, the anthrax attacks caused twenty-two total cases of anthrax (ten cases of inhalational anthrax with four fatalities and twelve cases of cutaneous anthrax with no fatalities). *Update: Investigation of Bioterrorism-Related Anthrax, 2001*, 50 Morbidity and Mortality Weekly Report

United States can legitimately claim that the anthrax attacks trigger the right to use compulsory licenses under TRIPS, then developing countries can legitimately claim that HIV/AIDS and other infectious disease crises, such as tuberculosis and malaria, are public health emergencies that allow them to use compulsory licenses.

Bioterrorism in the United States, and the US government's threat to break the patent on Cipro, affected the global debate on developing countries' ability to use compulsory licenses under TRIPS. At the WTO Ministerial Meeting in Doha, Qatar in November 2001, WTO member states issued a declaration on TRIPS and public health that supported the position of developing countries and repudiated the previous stance of the United States and the European Union.⁴⁸ As the *Wall Street Journal* stated, this declaration constituted a "landmark shift" for the United States and European Union.⁴⁹ The anthrax attacks are not the only factor that explains this dramatic development,⁵⁰ but the US attitude on patent protection in the bioterrorism context contributed to the political and legal retreat of the United States from its previous hard-line position on patent protection under TRIPS.⁵¹

1008 (Nov 16, 2001). According to UNAIDS, in 2001 the total number of HIV/AIDS deaths was three million and the number of infections was forty million. UNAIDS, *AIDS Epidemic Update: December 2000* 3 (UNAIDS 2000), available online at <http://www.unaids.org/worldaidsday/2001/Epiupdate2001/EPIupdate2001_en.doc> (visited Mar 24, 2002).

48. World Trade Organization, Declaration on the TRIPS Agreement and Public Health, WT/MIN(01)DEC/W/2, Doc No 01-5770 at para 5(c) (2001) ("Each Member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency, it being understood that public health crises, including those relating to HIV/AIDS, tuberculosis, malaria and other epidemics, can represent a national emergency or other circumstances of extreme urgency.").
49. Helene Cooper and Geoff Winestock, *Tough Talkers: Poor Nations Win Gains in Global Trade Deal, as U.S. Compromises*, Wall St J A1 (Nov 15, 2001).
50. Prominent among the other factors forcing this astonishing retreat of the United States and European Union was the global campaign for access to essential medicines launched by non-governmental organizations, such as Médecins Sans Frontières. See Médecins Sans Frontières, *Campaign for Access to Essential Medicines*, available online at <<http://www.accessmed-msf.org>> (visited Mar 24, 2002); Ellen 't Hoen, *TRIPS, Pharmaceutical Patents, and Access to Essential Medicines: A Long Way From Seattle to Doha*, 3 Chi J Intl L 27 (2002). Action at the domestic and constitutional legal levels has also played a role in the access debate. See Mary Ann Torres, *The Human Right to Health, National Courts, and Access to HIV/AIDS Treatment: A Case Study from Venezuela*, 3 Chi J Intl L 105 (2002).
51. Geoff Winestock and Helene Cooper, *WTO Envoys Agree to Ease Access to Key Drugs—Public Health Outweighs Patents as Deal Paves Way for Broad Trade Talks*, Wall St J A17 (Nov 13, 2001) (noting importance of US and Canadian threats to break Cipro patent in the global battle over drug patents).

IV. DEEPER CONCERNS: WILL BIOTERRORISM RESHAPE GLOBAL PUBLIC HEALTH?

Analyzing the relevance of the anthrax attacks to various international legal areas is important, but such bioterrorism also generates concerns that touch upon the future of national and global public health policy. The anthrax attacks have the potential to affect the direction and content of national and global infectious disease control, and this potential impact may not be for the better.

A. NATIONAL PUBLIC HEALTH AND BIOTERRORISM: PRODUCTIVE SYNERGY OR FAUSTIAN BARGAIN?

In my work on the interface between public health and bioterrorism prior to the anthrax attacks, I noticed tension in the public health community about how to deal with the growing focus on bioterrorism.⁵² This tension concerned how bioterrorism preparedness efforts may affect the overall public health mission. On the one hand, public health experts perceived that bioterrorism was a concern and sensed that addressing bioterrorism might bring more attention and resources to a public health system suffering from political and financial neglect. On the other hand, public health experts worried that the bioterrorism bandwagon might misdirect public health priorities and spending and adversely affect the public health system in the long run. The consensus attitude before the anthrax attacks was that public health should support bioterrorism preparedness and build the best public health system possible to deal with any infectious disease outbreak.

The anthrax attacks will profoundly affect the strategy to craft synergy between bioterrorism preparedness and public health capabilities. The acts of bioterrorism demonstrated how the nation's public health system is important for national security. In the aftermath of anthrax, the national security community in Washington, DC may take control of public health by making bioterrorism the most important public health priority. We may witness a shift from a weak national commitment to public health to a strong effort on homeland security, in which public health plays an important part. The bioterrorism agenda, as determined by national and homeland security concerns, will dominate and drive the future direction of US public health. The frenetic activities in Washington, DC in the aftermath of the anthrax attacks to improve US public health for purposes of bioterrorism provide powerful evidence to support this observation.

52. Edward P. Richards, *Bioterrorism and the Use of Fear in Public Health*, presented to ACLME Health Law Teachers Conference, Case Western Reserve School of Law, June 2000, available online at <http://biotech.law.umkc.edu/blaw/bt/epr_bioterror01.pdf> (visited Mar 24, 2002); Elizabeth Fee and Theodore M. Brown, *Preemptive Biopreparedness: Can We Learn Anything from History?*, 91 Am J Pub Health 721 (2001).

Whether the linkage between public health and homeland security produces the synergy public health experts tried to craft before the anthrax attacks remains to be seen. I suspect that public health officials recognize the national security importance of public health *and* worry that bioterrorism will transform US public health in unwelcome and unanticipated ways. Creating the synergy in the post-anthrax environment will require that the national security, homeland security, and public health communities develop a partnership of equals. This partnership requires learning and adjustment by all sides, but public health has more to fear because of its historical weakness and obscurity compared to the power and resources the federal government possesses for national security and the money and political capital being poured into homeland security.

B. GLOBAL PUBLIC HEALTH AND BIOTERRORISM: WHITHER THE UNITED STATES?

The global public health debacle of HIV/AIDS and the general global crisis in infectious diseases led experts in the late 1990s and early 2000s to argue that the United States must become more engaged in global public health.⁵³ Sometimes these arguments connected public health with national security by claiming that both naturally-occurring infectious diseases and bioterrorism constituted a national security threat to the United States.⁵⁴ By and large, the arguments that infectious diseases represented a national security threat made little impact in Washington, DC. The only arguments that resonated in Washington related to bioterrorism and biological weapons proliferation, which represented the most traditional form of national security threats.⁵⁵ In the wake of the anthrax attacks, the White House and Congress solidified prior spending patterns by preparing to spend billions of dollars for homeland defense against bioterrorism.⁵⁶ This mounting national and homeland security effort will dominate US attitudes toward global public health for the

53. See, for example, Jordan S. Kassalow, *Why Health is Important to U.S. Foreign Policy*, Council of Foreign Relations and Milbank Memorial Fund Report (May 2001), available online at <<http://www.milbank.org/Foreignpolicy.html>> (visited Mar 24, 2002).

54. National Intelligence Council, *The Global Infectious Disease Threat and Its Implications for the United States*, NIE 99-17D (2000).

55. Compare, for example, the sums Congress appropriates annually for WMD defense, see Amy E. Smithson and Leslie-Anne Levy, *Ataxia: The Chemical and Biological Terrorism Threat and the US Response* xix (Henry L. Stimson Center, Report No 35) (October 2000) (stating that the federal budget for defense against WMD terrorism in fiscal 2000 was \$1.4 billion), with the US contribution to the UN-brokered Global Fund to Fight HIV/AIDS, Tuberculosis, and Malaria, see Global AIDS and Tuberculosis Relief Act, Pub L 106-264, § 141 (2000), codified at 22 USCA § 6841 (2001) (appropriating \$200 million for fiscal years 2001 and 2002 for the Global Fund).

56. For example, President Bush's proposed fiscal year 2003 budget includes \$5.9 billion for domestic bioterrorism preparedness, a four-fold increase from previous spending levels. Judith Miller, *Bush to Request A Major Increase in Bioterror Funds*, NY Times A1 (Feb 4, 2002).

foreseeable future. We may witness a shift in the United States from a weak global perspective on naturally occurring infectious diseases that largely affect other countries to a strong national concern about the malevolent use of pathogenic microbes against Americans. US engagement in global public health will, thus, not stray far from the objective of protecting the homeland from bioterrorism, as evidenced by US participation in the Ottawa Plan, even though millions of people in developing countries will continue to suffer and die annually from infectious diseases unrelated to bioterrorism.

As the victim of bioterrorism, the United States understandably needs to focus on homeland defense and the public health contribution to that objective. As people experienced with the bioterrorism debate prior to the anthrax attacks understood, US vulnerability to bioterrorism is enormous. Federal and state governments have almost endless intelligence, law enforcement, and public health work to do to protect Americans from bioterrorism. The combination of the September 11th violence and the anthrax attacks leaves the US government with no choice but to focus energetically on a comprehensive homeland defense.

The focus on homeland defense will filter through to US attitudes toward the role of international law in public health. The United States will attempt to use international law to fight bioterrorism rather than to grapple with the global crisis in naturally occurring infectious diseases. Making sure bioterrorism is criminalized globally will supercede the need to build a global infectious disease surveillance system. Given the fusion of public health and national security in the wake of bioterrorism, the United States will not hesitate to use its power, influence, and resources to make the fight against bioterrorism central to its outlook on the role of international cooperation and international law in global public health.

Infectious disease problems in the developing world will be even less important to the United States in the post-anthrax world than they were previously. The lack of US leadership and engagement with global public health will handicap efforts by other states, international organizations, and non-governmental organizations to advance multilateral cooperation on global public health problems. Even if the 2001 anthrax attacks prove to be an isolated phenomenon, the experience of bioterrorism on US soil will distract US attention from traditional public health challenges around the world. The slow, frustrating, and incomplete progress made in raising US awareness about the global crisis in infectious diseases in the 1990s may now be another victim of bioterrorism in the United States.

V. CONCLUSION

Revolutionary developments have periodically transformed the relationship between international law and public health, especially infectious disease control. The triumph of "germ theory" in the late nineteenth century triggered the establishment of a great body of international law on public health issues. Sanitary-reform movements

and the later development of vaccines and antibiotics gave states and international health organizations powerful new weapons in the global battle against infectious diseases.

The latest revolutions have, however, been more sinister for global infectious disease control—the HIV/AIDS pandemic, emerging and re-emerging infectious diseases, and the rise of anti-microbial resistance. As I have argued elsewhere, these and other developments simultaneously raise the profile of international law and create great uncertainty about international law's contribution to global infectious disease control.⁵⁷ To this parade of public health horrors we now must add bioterrorism. The prior debates about whether the threat of bioterrorism was real and whether international law should play a role in addressing the threat have vanished in the death, illness, and terror inflicted by the anthrax attacks. Where these acts of bioterrorism take the relationship between public health and international law in the future remains to be seen; but at the moment, the portents are not good.

57. Fidler, *International Law and Global Infectious Disease Control* at 39 (cited in note 24).