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THE  **NEW** TERROR

Facing the Threat  
of Biological and  
Chemical Weapons

*Edited by*

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*Cover photo:* Riot police don their gas masks and antichemical gloves prior to their inspection at a commune of the Aum Shinrikyo cult in Kamikuishiki (100 km west of Tokyo), March 24, 1995. AFP PHOTO, Yoshikazu Tsuno.

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## Overview

**T**he threat of biological and chemical weapons (BCW) presents a troubling and difficult challenge to society. A conference, held November 16–18, 1998, at the Hoover Institution, Stanford University, addressed the BCW challenge in all its aspects.

Participants with a broad variety of training and experience in science, medicine, intelligence, international and constitutional law, diplomacy, public health, and administration contributed to the conference discussions. But in a fundamental sense all the participants were amateurs on the topic; and that is our good fortune. No recent, major BCW terrorist incidents have occurred at home or on the battlefield with US troops. We hope this record is maintained, but it would be unrealistic and irresponsible to plan on that basis.

Most of the conference discussion addressed concerns about the

use of BCW directly against US society, whether initiated by other governments or by terrorists, foreign or domestic. One cannot, of course, dismiss their battlefield use. The brutally frank admission by Tariq Aziz, reported at the conference by Ambassador Rolf Ekéus, that CW saved Iraq from overwhelming Iranian forces during the Iran–Iraq War of 1980–88, must be taken into account by strategic planners. However, the tactical military value of BCW is limited due to their delayed lethal action and uncertain dispersal patterns.

The existence of a direct threat from abroad to the US homeland is not new. Nuclear weapons (NW) have posed one for more than fifty years, and caused US civil defense exercises in the early years of the Cold War. But the present threat is not posed by just one or two nuclear-armed nations. It is much more pervasive. With modern advances in biotechnology and pharmaceutical manufacturing, there is a threat of attack against US society from a growing number of nations and terrorist units.

John C. Gannon, Chairman of the National Intelligence Council, expressed his hope that the conference would “develop a set of concrete action items to get us moving in harness against the BCW threat.” That was, and is, precisely our aim. Although the BCW threat cannot be eliminated, the conference identified constructive steps—set forth in five essential areas: (1) intelligence, (2) research, (3) inspection, (4) consequence management, and (5) defense—that can reduce the dangers or mitigate the consequences of BCW attacks and perhaps even lead toward establishing a norm for the nonuse of BCW, such as has existed, *de facto*, for NW for more than fifty years. That a “nonuse norm” for NW exists is strongly indicated by the fact that the US, the former Soviet Union, France, and China have all been denied victories in military conflicts in which they nevertheless refrained from using their nuclear arsenals against nonnuclear-armed adversaries. Steps that would raise the cost-to-benefit ratio for the use of BCW would also reduce their attractive-



ness and thereby move the world along a path toward establishing another nonuse norm.

An agenda to deal with the BCW threat is essential, and feasible. Here are the five areas where actions can be effective in reducing the dangers and potential damage from the use of BCW:

1. *Intelligence*: A primary goal of an effective program against BCW is to obtain early and reliable intelligence and, best of all, clues as to the intentions of would-be perpetrators. Clues as to intentions are critically important for discovering emerging BCW threats. The relevant facilities, equipment, and material can have dual purposes. They may be used in legitimate civilian activities, such as manufacturing commercial drugs, pesticides, antibiotics, and vaccines, as well as in manufacturing and stockpiling BCW. Discerning intentions requires a strengthened, robust capability for human intelligence (HUMINT) and clandestine means of acquiring this information. On the domestic front, information gathering and surveillance by Department of Justice (DoJ), Federal Bureau of Investigation (FBI), and local law-enforcement personnel will be critical, but it must remain within legal restraints as mandated by the Constitution, consistent with the core values of our society. Care will be required to avoid the excesses that were practiced during, for example, the years of the “red scare” in the 1950s.

Comprehensive and timely databases maintained by health officials on disease and illness patterns can provide early evidence of hostile actions. Similar efforts by US agriculture officials monitoring crops and livestock conditions and contamination can provide vital intelligence warnings.

An overall information system and technical tools for detecting and identifying developing threats (or actual attacks) can be upgraded in significant ways. Possibilities exist for detecting small quantities of agents with compact, covert, autonomous, as well as remote, sensors—using technologies such as DNA swipes and chemical chromatographs. DARPA (Defense Advanced Research

Projects Agency), in the Department of Defense (DoD), is developing new sensors of great sensitivity for warning and detection. The Department of Energy's (DoE) weapons laboratories are also important assets, and are applying their experience with nuclear sensors to the advancement of sensor technology for use against BCW, a task currently supported by the federal Nunn-Lugar-Domenici legislation. Better intelligence of traditional types will be important against delivery systems and, in particular, against theater or short- and intermediate-range ballistic missiles, such as the SCUDs and their derivatives that (together with their launchers) the US failed to locate during the Gulf War.

2. *Research:* On both the scientific and medical frontiers, a strong research base is vital to stay ahead of naturally occurring bacteria and viruses as they mutate into forms that evade current antibiotics and vaccines. A strong public health system supporting good health practice will help provide a database and a system on which to build for recovery. Improved techniques are needed for simply and reliably detecting infections during the early incubation period, for example, by using sputum tests, nose swipes, or sophisticated sensors. Above all, the biomedical community should get more heavily involved in these efforts.

The community of physicists was shocked by the atomic bombs detonated over Hiroshima and Nagasaki, and by concerns of fallout from atmospheric testing. Physicists quickly became intensely involved in efforts to control and reduce the dangers of NW through contributions both to technical issues and to public understanding. They are still "working the problem" in an effort to extend the over-half-century of nonuse and to reduce the danger of such weapons.

The biomedical and chemical communities have, most fortunately, escaped a similar shock introduction to the BCW danger involving the US, if not the rest of the world. It is now increasingly important, however, for doctors and scientists with relevant expertise to become more deeply involved in helping address what can

and cannot be done technically, in developing ethical standards for their own activities, and in educating the public. An “extended” Hippocratic oath by the scientific and medical community, taking a moral stand against any actions violating the international BCW conventions, could be a powerful influence.

3. *Inspection:* The involvement of industry will be key to any success in efforts to develop protocols for inspections to implement the Biological Weapons Convention (BWC). This is the way a consensus was achieved in the US to support the signing and Senate ratification (April, 1997) of the Chemical Weapons Convention (CWC), a treaty banning all CW. Regrettably, the US implementing legislation adds unilateral waivers and exemptions that could weaken the regime and undercut its effectiveness. Implementing the BWC is a more difficult challenge because constraints based on the quantity of a biological agent are not effective, given the rapid rate at which such agents multiply. In addition, the pharmaceutical industry is extremely sensitive to the potential for loss of proprietary information. Experience with NW has demonstrated a need for effective challenge inspections. The International Atomic Energy Agency (IAEA) has recently developed a strengthened safeguard regime and is currently negotiating bilateral agreements with member states for its implementation. This is a difficult, but not impossible, problem to address for BCW. The value of routine inspections has been called into question, however, and should be determined on the basis of sound and objective criteria, to avoid unwarranted burdens. Emphasis should also be placed on the high costs to would-be proliferators if these efforts fail and they feel, somehow, that they must build up and maintain sophisticated BCW stockpiles and capabilities.

In both the NW and CW debates in the US, serious opposition to ratification of treaty limits or to accepting verification protocols has been based, in part, on the fear that success in negotiating a set of provisions and treaties will lull us into false confidence that we

are safe or have accomplished more than, in reality, has been achieved. This points up the importance of not making excessive claims, of insisting upon effective verification as a necessary part of any control regime, and of diligent enforcement of compliance measures. Violations of treaties must not go unpunished. Furthermore, as former Secretary of State George P. Shultz noted during the conference, although the US should support the treaties and abide by them, it should at the same time proceed in its national-security planning with contingency preparations for appropriate responses to potential treaty violations and noncompliance.

We are currently facing similar concerns about whether the US can and will maintain an effective nuclear deterrent under a Comprehensive Test Ban Treaty (CTBT). These concerns lie at the heart of much of the current debate about ratification of the CTBT. So far, the US is doing what needs to be done to maintain its nuclear deterrent responsibly. The Stockpile Stewardship Program is receiving strong support, and the DoE weapons laboratories are addressing the technical challenge with seriousness of purpose. Success in this program can serve to increase faith in our nation's ability to avoid being lulled into a false sense of security by the BWC and CWC, as a result of advancing their prospects. At present, US concerns over protecting national security and proprietary information are still hampering progress in establishing acceptable "rules of the road" for the BW and CW treaty regimes.

4. *Consequence management:* A great deal remains to be done to enhance national, state, and local programs for managing the consequences of BCW attacks. The US must build a bottom-up system from the local level, making effective use of national resources, such as databases, information banks, and communication systems. We have to develop an effective process for making crisis decisions, both in periods of true catastrophe and in situations where panic is the greatest danger. A public affairs policy must also be crafted that applies available resources and benefits fairly in accord with US law

and codes of social justice, and that also establishes a proper balance between transparency and secrecy in making information available to ensure proper public awareness of dangers and actions without causing panic. We must honor our values as a society in any restriction on citizens' freedoms, including the right to travel, while at the same time preventing victims of contamination from contributing to the further spread of disease. This is a complex problem of information management and deserves serious and timely attention. Preparations for consequence management should also highlight the risks that will be faced by would-be perpetrators should they initiate BCW attacks.

5. *Defense:* Defense encompasses both passive and active efforts. Passive defenses, including equipment, preparations, and training of medical response and clean-up teams, can play an important role. Ongoing efforts for active defenses are also essential, but need continued, careful evaluation of their realistic potential and the prospect of operational countermeasures. Sanctions, and in particular trade as well as military sanctions, can be important, although their effectiveness against indigenous terrorist groups as opposed to state actors is highly doubtful. Export controls over critical substances and equipment are essential; the multilateral efforts of the Australia Group are far preferable to unilateral, and hence ineffective, measures.

Preemptive or preventive strikes have been, and will likely continue to be, taken regarding BCW. Accepted rules concerning such actions are elusive, however, and unilateral measures would be subject to satisfying stringent criteria under the United Nations (UN) Charter. Nations that act preemptively will have to be prepared to balance their unilateral aims against their international policy goals, as well as to defend their conduct by revealing intelligence as a basis for action—in addition to meeting the conventional requirements of proportionality and necessity for acting against a BCW threat. Such issues have to be addressed on a case-by-case basis. The eco-

conomic and scientific strength of a nation, and even more its credibility, are important factors in its ability to dissuade, discourage, or even prevent a BCW attack. For this and other reasons, the US must maintain credibility by forgoing unwarranted threats, and by following through on such threats it does make—while insisting on, and subjecting itself to, strict accountability. As to what specific means, nuclear or otherwise, will or will not be employed in undertaking reprisal actions, little can be gained by explicitly “tipping one’s hand.” The prospect, however, that the fifty-year norm against use of NW would come to an end in response to the use of BCW is patently unappealing. Our policy should clearly show that we will seek to rely on other credible options, but it should stop short of ruling out any single action absolutely and totally.

Finally, examining the full range of issues relating to BCW conveys one overriding lesson. In every major respect, apart from battlefield use in open military conflict, the dangers posed by BCW—and the measures needed to manage and thereby reduce those dangers—are similar in principle to the dangers posed by—and the measures needed to manage—peacefully generated biological and chemical hazards.

The dangers created by chemicals to which humans are exposed include carcinogens, acids, poisonous gases, abrasives, and imbalances in the atmosphere. These may be generated by natural forces or caused by commercial or other nonaggressive, human activities. Animals, insects, and other living creatures—and even plants—also can injure or kill people with chemicals they expel or inject, including chemicals that attack the digestive, nervous, or other essential systems.

Similarly, the dangers created by natural and nonmilitary developments in the biological field are formidable. Malaria, for example, kills millions of people worldwide every year. Viruses and other disease-creating organisms mutate naturally and become resistant to methods of control. Standard vaccines and antibiotics are rapidly

becoming incapable of neutralizing certain organisms, creating the risk—some would say the inevitability—of major outbreaks of particular diseases.

The public health infrastructure and methods needed to respond to naturally occurring and nonmilitary biological and chemical hazards overlap significantly with those required to deal with deliberately used BCW. The medical data needed to evaluate the incidence of injury or disease are the same for both peaceful and defensive purposes. The detection and evaluation technologies that are being developed in both the chemical and biological fields will serve equally critical roles, regardless of the source or motives behind the substances endangering the population. The infrastructure needed to deal with chemical and biological hazards is also the same: (a) properly equipped response teams able to circumscribe, neutralize, and decontaminate areas; (b) a system for informing the affected public, and for isolating and treating injured or contagious individuals; (c) the production, distribution, and administration of necessary medications; (d) securing public cooperation without causing panic; and (e) the development of long-term protection in the form of protective devices and treatments. The dilemmas and difficulties identified in several of the presentations at the conference, concerning such issues as the distribution of limited human and material resources to cope with chemical and biological emergencies, present the same difficult questions, irrespective of the cause of the emergency posed.

Important differences do exist between nondeliberate and deliberate chemical and biological hazards with respect to the measures that may be possible to regulate, deter, and defend against them. States that are threatened by identifiable regimes or terrorists may be able to slow or diminish the effectiveness of BCW programs by limiting the availability of necessary prerequisites, such as equipment, chemical precursors, biological media, or delivery systems. The dangerous Libyan CW program of Colonel Muammar Qad-

dafi, for instance, has been significantly slowed and limited through such efforts. Preemptive actions, such as the US attack on the Shifa pharmaceutical plant in Khartoum, Sudan, in August 1998, may also be possible.

Although potentially valuable, these measures are only feasible in the case of known enemies whose intentions are discernible and pose a substantial threat. The growing threat posed by BCW is largely composed of situations that fall outside this narrow category. In many, if not most, situations, it will be impossible to determine whether and where potential users are developing BCW, and it may often be impossible to know who is responsible for such attacks, or even whether a particular incident or outbreak of disease was deliberately caused.

The relative ease of access to BCW—even by nonstate actors—and the difficulties of using such weapons as a deterrent, strongly support the policies adopted in the CWC and BWC, prohibiting not only use but also possession and development. For the same reasons, however, it is essential to assume that no practical means exist to prevent all violations. Consequently, effective deterrence can only be assured through the imposition of severe sanctions for proven violations of the conventions. Significantly, no sanction has yet been imposed for such violations or use by states, groups, or individuals, and no prospect exists for including any in the conventions. Therefore, an effort to adopt an international convention to criminalize serious violations of the CWC and BWC is worthy of serious consideration—as has been suggested by the Harvard-Sussex Program on Chemical and Biological Warfare Armament and Arms Limitation in their proposal for a “Convention on the Prevention and Punishment of the Crime of Developing, Producing, Acquiring, Stockpiling, Retaining, Transferring or Using Biological or Chemical Weapons” (Harvard Draft Convention). In addition, it appears equally important to promote an initiative to persuade the UN Security Council to adopt a resolution for the mandatory imposition



of appropriate, punitive measures by member states for BCW violations—as a threat to international peace and security under Chapter VII of the UN Charter—even with respect to those states that refuse to ratify the CWC and BWC.

The materials in this volume are arranged in six parts to reflect the major subject-matter areas covered at the conference. Part One describes the dimensions of the BCW problem, with chapters on biological and chemical agents and a description of likely BCW attack scenarios. Part Two covers the role of intelligence. Part Three deals with the current status of efforts to build BCW control regimes—including chapters providing background on the history and use of BCW, international treaties, and UN experience with inspections in Iraq. Part Four presents discussion of the legal constraints that exist on the regulation of BCW, especially US constitutional limitations and the tradition of not permitting the military to play a significant role on US territory. Part Five covers the subject of preparing for BCW attacks, with descriptions of existing initiatives at both the federal and local levels, as well as potential difficulties. Finally, Part Six deals with efforts to prevent such attacks, including coverage of strategic and legal options. Each part of the book opens with brief introductory remarks and concludes with a commentary that attempts to summarize the principal points made by participants at the conference sessions.