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THE PRESENT THREAT

The threat of biological and chemical weapons is already upon us—and in some ways is even more grave than the threat of nuclear weapons.

The existence of a direct threat from abroad to the U.S. homeland is not new. Nuclear weapons have posed one for more than fifty years. But today we face the new—and in many ways more challenging—threat of attack from biological and chemical weapons (BCW). This 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 U.S. society from a growing number of nations and terrorist units.

Although the BCW threat cannot be eliminated, there are constructive steps we can take to reduce the dangers or mitigate the consequences of BCW attacks and perhaps even move toward establishing a norm for the nonuse of BCW, such as has existed, de facto, for nuclear weapons for more than fifty years. That a "nonuse norm" for nuclear weapons exists is strongly indicated by the fact that the United States, 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 attractiveness and thereby move the world along a path toward establishing another nonuse norm.

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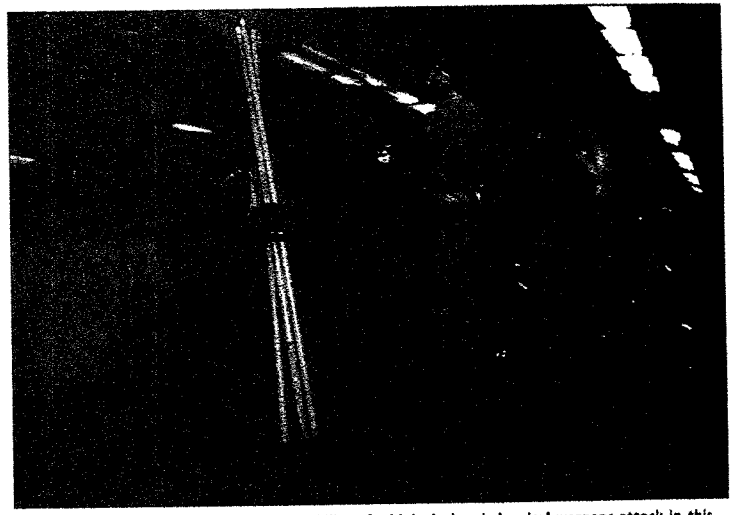

Black Star: Seokyong Lee

South Korean soldiers prepare for the possibility of a biological and chemical weapons attack in this military exercise in a Seoul subway station, August 1999.

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 and clandestine means of acquiring this information. On the domestic front, information gathering and surveillance by the Department of Justice, Federal Bureau of Investigation, and local law-enforcement personnel will be critical, but it must remain within legal restraints as mandated by the Constitution and be consistent with the core values of our society.

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

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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 advanced technologies. The Department of Defense is developing new sensors of great sensitivity for warning and detection. The Department of Energy's weapons laboratories are applying their important assets and experience with nuclear sensors to the advancement of sensor technology for use against BCW, a task currently supported by the 1996 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 United States failed to locate during the Gulf War.

2. *Research.* On both the scientific and the medical fronts, 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 practices 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 saliva tests, nose swipes, or sophisticated sensors. Above all, the biomedical community should get more heavily involved in these efforts.

It is increasingly important 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 in developing protocols for inspections to implement the Biological Weapons Convention (BWC). This is the way a consensus was achieved in the United States to support the signing and Senate ratification (April 1997) of the Chemical Weapons Convention (CWC), a treaty banning all chemical weapons. Regrettably, the Senate added unilateral waivers and exemptions that could weaken the CWC 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 loss of proprietary information. Experience with nuclear weapons has demonstrated a need for effective challenge inspections. The International Atomic Energy Agency 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 that they must build up and maintain sophisticated BCW stockpiles and capabilities.

In both the nuclear weapons and the chemical weapons debates in the United States, 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 on 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, although the United States 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.

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 United States 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 U.S. 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.

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 need to satisfy the stringent criteria under the United Nations 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 economic 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 United States must maintain credibility by forgoing unwarranted threats and by following through on such threats as 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 nuclear weapons 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 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 deliberate BCW attacks. 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 the 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.

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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 chemical weapon program of Colonel Muammar Qaddafi, for instance, has been significantly slowed and limited through such efforts. Preemptive actions, such as the U.S. 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. In addition, it appears equally important to persuade the U.N. 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 the U.N. Charter—even with respect to those states that refuse to ratify the CWC and BWC. ▫

Adapted from the introductory essay in the new Hoover Press book *The New Terror: Facing the Threat of Biological and Chemical Weapons*, edited by Sidney D. Drell, Abraham D. Sofaer, and George D. Wilson.