

December 15, 2003

The next threat: Chemical and biological attacks

Weaknesses in U.S. defense expose homeland to catastrophic assault

More than two years have passed since the terrorist attacks of September 11, 2001, yet each day, Americans see evidence of how that date has changed their lives: in the tighter security at airports and buildings, in the daily news reports describing the latest developments in the ongoing military campaign in Iraq, in the national terror alert level displayed on headline news banners.

At the same time, Americans also witness the inexorable return to complacency. Since the fall of the World Trade Center towers, Ground Zero in lower Manhattan has represented a still-raw wound in the American psyche, a poignant reminder of the evil the nation's enemies harbor toward the United States and the American way of life. The recent unveiling of proposed architectural designs for that sacred earth, however, demonstrates society's desire to move on by covering the scarred terrain with graceful monuments. Whatever may be the ultimate fate of that consecrated soil, the American people cannot gloss over the continuing terrorist threat by donning rose-tinted glasses.

The danger remains, and far too little action has been taken to prevent future assaults, particularly those involving chemical and biological weapons. While critics denounce the biological and chemical threat as far-fetched, the idea of terrorists using commercial jetliners as bombs was considered just as extraordinary less than 28 months ago. The nation must address widespread weaknesses in both the public health system and in restricting access to chemicals and equipment that could assist terrorists in executing their murderous plans. Failure to act could well contribute to a catastrophe that far surpasses the fatalities of September 11, 2001.

Scope of the threat

Chemical and biological terrorism is no longer relegated to novels. It represents a clear and present danger that the United States must defend against—or face the consequences.

The terrorist organization al Qaeda has publicly announced its desire to obtain such weapons for use against the United States and, in fact, has succeeded in achieving limited biological and chemical capabilities, according to the U.S. intelligence community. An unclassified report dated May 2003 indicates that a document uncovered in Afghanistan revealed crude procedures for manu-

facturing mustard agent, sarin and VX. A training video from the Afghan terror camps showed tests by al Qaeda of cyanide-based chemical agents. Additionally, the Central Intelligence Agency (CIA) believes that the group has explored the potential use of agricultural aircraft for large-scale dispersal of biological agents such as anthrax.

On another front, the war against Iraq was predicated on alleged intelligence indicating that Saddam Hussein had significant stockpiles of chemical and biological weapons, representing an imminent threat to U.S. security. To date, coalition forces have yet to uncover concrete proof of the Iraqi biological and chemical weapons program. Prior to the 1991 Persian Gulf War, Iraq possessed an extremely sophisticated biological and chemical warfare program, ranging from research to weaponization—despite claims by the Iraqi government to the contrary. As late as 1997, the inspection team mandated by the United Nations, UNSCOM, remained concerned that Iraq had retained its stocks of biological agents and related manufacturing capabilities, as well as a portion of its chemical weapons stockpile.

Meanwhile, the nation cannot afford to ignore the large quantities of highly toxic industrial chemicals found right here in the homeland. There are 15,000 chemical facilities in the United States that handle large quantities of toxic or flammable substances—many of them near major metropolitan areas and almost all located next to major thoroughfares. Terrorists could attack these facilities with conventional explosives, producing death and injury in nearby communities on a cataclysmic scale. Consider the gas leak at a pesticide plant in Bhopal, India, in 1984: The accident killed more than 3,800 people and injured approximately 11,000.

Obstacles to biological and chemical attack

A full-fledged assault using chemical or biological agents as weapons of mass destruction (WMDs) presents many serious technical and operational challenges at various stages in both the production and dissemination processes.

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Many toxic chemicals are used in commercial manufacturing, making them widely available and relatively easy to adapt as weapons, but those most suitable for mass-casualty attacks are difficult to produce. To begin, the provisions of the 1993 Chemical Weapons Convention restrict the availability of the components used to synthesize these agents by requiring national declarations and routine on-site inspections, as well as state-party-initiated challenge inspections, although weaknesses in the present inspection process would allow a truly determined terrorist to obtain the necessary materials. Manufacturing these substances can be both technically difficult and dangerous, leading some experts to conclude that terrorists would need a sophisticated laboratory infrastructure, given the technical processing requirements and the hazardous waste materials produced.

Even successful production of chemical weapons would not ensure a successful attack. The chemicals must be engineered for effective dispersal: released either as a vapor for inhalation exposure, for instance, or as a large-droplet spray or liquid for penetration through the skin.

Biological weapons present similar challenges. Strict controls make it difficult to obtain highly infectious seed stock for most agents. Some toxins are easy to obtain and produce, but would require such huge quantities to achieve mass casualties that a potential terrorist would likely attract suspicion before he or she could disseminate the agent. Once a terrorist group obtained seed stock, it could easily cultivate a stockpile of the biological agent; processing the agent into a lethal form that could be effectively weaponized, however, requires significant technical expertise in several scientific disciplines. Producing a form with particles small enough for aerosol distribution—the most effective delivery method—demands extensive scientific knowledge and expertise. Liquid forms are easier to produce, but difficult to deliver without

diluting the agent's infectiousness. Conversely, dry forms are easy to deliver, but are harder to manufacture, less stable and pose greater risk to the individuals working with them.

Despite these technical difficulties, members of the scientific community warn that advances in science and technology are making the manufacture and dissemination of chemical and biological weapons increasingly easier. Delivery systems for the common pesticide *Bacillus thuringiensis*, for instance, could be used to disseminate the deadly *Bacillus anthracis*, or anthrax, instead. "A decade ago, it was harder, but science and technology have advanced so swiftly that it isn't that hard today, and it's only going to be easier in the future," said Dr. Peggy Hamburg, Vice President of Biological Programs with the Nuclear Threat Initiative (NTI) in Washington, D.C., and former Assistant Secretary for Planning and Evaluation with the U.S. Department of Health and Human Services (HHS). Some of the chemical and biological weapons experts who have cited these technological difficulties base their assessments on experiences gained before the United States halted its biological and chemical weapons program in 1969. "The world has changed since then," said Dr. Hamburg. "At one time, people took comfort in these arguments, but today, the necessary technology, knowledge and materials are increasingly available."

Vulnerabilities in the U.S. defense

Gaping holes in homeland security further contribute to the risk of chemical and biological attack.

The General Accounting Office (GAO) released a report in October 2003 that describes the alarming ease with which federal investigators purchased safety and manufacturing equipment that could be used to produce and release biological warfare agents. The U.S. Department of Defense (DOD) offered these items for public sale over the Internet at prices far below their market value. Examples of items acquired include a biological safety cabinet, a centrifuge,

a bacteriological incubator and an evaporator, which could be used in manufacturing biological weapons, as well as biological and chemical protective gear, which could protect terrorists during later stages of production or while disseminating the agents. GAO used a fictitious company and fictitious individual identities to purchase approximately \$47,000 of equipment for about \$4,100. The possibility that biological source agents like anthrax could have fallen into the wrong hands makes the easy, economical purchase of biological equipment and protective clothing a grave threat to national security.

Perhaps more alarming is the lack of security at U.S. chemical plants discovered by a reporter in the Northeast. The journalist visited 60 separate sites across the United States, and in every case, he gained access not only to the facilities, but also to their stockpiles of flammable and toxic chemicals—chemicals that could affect millions of people if released into the atmosphere. In many cases, entry gates and doors were unprotected, if not open or unlocked; unguarded rail lines and drainage ditches offered access; fences were falling down or nonexistent; and security cameras were inoperable. According to the American Chemistry Council (ACC), which represents 154 of the nation's largest chemical companies, the council has been addressing these weaknesses through the implementation of an extensive security program that addresses site, transportation and information technology security, and ACC member organizations have some of the tightest security in the industry. Even so, the council's Responsible Care® Security Code only applies to ACC members. The stakes are so high that a security breach at one chemical facility is unacceptable.

Weaknesses in the public health system further contribute to the nation's susceptibility to biological or chemical attack. First, the majority of medical and other emergency responders are not adequately trained to recognize the symptoms associated with potential biological weapons, which would provide additional time for the dis-

ease to spread. Second, these first responders need practical emergency response plans that will protect them and enable them to fulfill their duties in an attack. This necessity has prompted the HHS to work with states to identify health-care workers and first responders to receive smallpox vaccinations, forming response teams that can provide critical services in case of a smallpox attack. Additionally, a biological or chemical assault could easily overwhelm hospitals and emergency rooms. Even the nation's most sophisticated trauma centers can only decontaminate about 20 patients at once, and the panic associated with a chemical or biological attack would overpower the health-care facilities in the area. In 1995, when the cult Aum Shinrikyo released sarin gas in the Tokyo subway system, roughly 4,000 people not affected by the gas rushed to nearby hospitals, overwhelming the facilities.

Actions for Corporate America

Private industry must take an active role in defending against the biochemical threat. The vulnerabilities are legion, and the stakes are monumental. The federal government alone cannot assume responsibility for safeguarding the nation from this potentially catastrophic threat, particularly when private entities control many of the elements involved in the country's defense.

Corporate America can take decisive steps to enhance national preparedness for a biological or chemical strike:

- ***Perform a vulnerability assessment of all company facilities.*** First and foremost, an organization must identify weaknesses and correct them. Employing an outside expert to evaluate the existing security program will help provide an unbiased analysis of strengths and shortcomings. Remediation efforts should begin with those vulnerabilities that could have the greatest impact on business continuity. Failing to plug security holes at a facility will increase the likelihood that a terrorist—or

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some other criminal—will target that site. Terrorists and common criminals alike strike where they think they can succeed.

- **Lead industry-wide initiatives for more stringent security regulations.** Few companies support stricter regulation, even when aimed at improving public safety. Unfortunately, self-governance often does not work. Trade organizations—especially those representing industries comprising the nation's critical infrastructure—must collaborate to develop a set of industry-wide security standards in the name of responsible citizenship.
- **Hold government officials accountable for implementing security initiatives.** Thus far, the U.S. Congress has made little progress in enhancing homeland security measures. Many elected leaders claim to focus on this paramount issue, but the American public must evaluate their voting records and determine how committed they truly are. The threat against the United States requires government officials who care more about protecting the American people than about serving the interests of campaign donors.
- **Become involved in efforts to fight WMD proliferation.** One such organization is the Nuclear Threat Initiative (NTI), a nonprofit, nonpartisan group created to reduce the global threat from nuclear, chemical and biological weapons. NTI is building public support for a priority action agenda that will strengthen the nation's defenses against biological attacks and secure and destroy stockpiles of chemical weapons, as well as securing nuclear materials and weapons at the source. Additionally, the Council on Foreign Relations and the Carnegie Endowment for International Peace are two independent think tanks that also address non-proliferation of WMDs in recommending U.S. foreign policies.

- **Develop a local network to educate the public and create a community-wide emergency response plan.** Protecting the nation ultimately begins at the community level. Businesses across the spectrum need to band together to face this challenge. Members of corporate risk management and security departments can cooperate with local emergency responders to educate the general public about the nature of the biological and chemical threat and how to respond in the event of an emergency. Careful planning can help minimize chaos and even casualties.

The United States continues to face heightened risk of chemical and biological attack. The country's enemies have already announced their intentions; failure to prepare will constitute folly on the part of the American people. Whether it takes the form of a sophisticated assault involving a biological agent or a brute-force attack that dispels deadly chemicals through conventional explosives, the potential for devastating consequences is extraordinary.

Many weaknesses in the U.S. biological or chemical defense exist, affecting a wide range of industries and contributing to national vulnerability, but little corrective action has been taken. Members of the private sector must develop partnerships with local emergency responders and build upon these networks by cultivating relationships with law enforcement and military. Most municipalities have done nothing to prepare for a biological or chemical assault, including learning about the risks involved. As society leaders, private businesses must educate the community at large and communicate the urgency of the situation.

The time for action is now—before disaster strikes.



The Lipman Report Editors