



The Heritage Foundation  
**Background**  
**Executive Summary**

No. 1182

May 26, 1998

## MICROBES AND MASS CASUALTIES: DEFENDING AMERICA AGAINST BIOTERRORISM

*JAMES H. ANDERSON, PH.D.*

The threat of a major terrorist strike involving biological weapons occurring on U.S. soil is not hypothetical. Terrorist groups have used, or threatened to use, biological agents in a variety of circumstances, both domestically and internationally. As many as ten countries possess offensive biological weapons programs, including the People's Republic of China, Iran, Iraq, Libya, North Korea, Russia, and Syria. And the existence of these programs increases the likelihood that biological expertise will be transferred, directly or indirectly, to terrorist groups.

Biological weapons are extremely lethal substances that can be disseminated by various means, including aerial bombs, spray tanks, and ballistic missile warheads. They are easier and cheaper to produce than chemical or nuclear weapons. The lag time between infection and the appearance of symptoms makes it difficult to ascertain the exact time or place of a bioterrorist attack. Urbanization and the growth of modern transportation links increase the likelihood that a major bioterrorist attack will cause mass casualties because densely populated areas make lucrative targets; and transportation links, such as jet travel, make it possible that contagious substances can spread rapidly.

The growth of extremist groups espousing apocalyptic creeds also increases the threat of bioterrorism today. The Japanese cult responsible for the 1995 sarin attack in a Tokyo subway purchased a 48,000-acre range in Australia to test biological agents on livestock; sent members to Africa to obtain samples of the Ebola virus; and built two biological research centers, one in Tokyo and the other at the base of Mount Fuji. This terrorist group is known to have attempted at least four bioterrorist strikes in Japan while planning similar attacks in the United States.

### THE LACK OF PREPAREDNESS AGAINST BIOTERRORISM

Despite the growing danger of bioterrorism, the United States remains ill-prepared to manage the consequences of a major attack on U.S. soil. Deputy Secretary of Defense John Hamre admitted last December, "We are not currently equipped to

---

Produced by  
The Kathryn  
and Shelby Cullom Davis  
International Studies Center

Published by  
The Heritage Foundation  
214 Massachusetts Ave., N.E.  
Washington, D.C.  
20002-4999  
(202) 546-4400  
<http://www.heritage.org>



handle a widespread terrorist attack that would involve biological weapons.”

The Clinton Administration’s counterterrorism plan involves an unwieldy array of more than 40 different federal agencies, bureaus, and offices. A major bioterrorism simulation exercise conducted in March 1998 revealed glaring coordination problems within the response structure. The exercise also suggested the U.S. public health system would be incapable of coping with the aftermath of a major bioterrorist strike.

## REDUCING AMERICA’S VULNERABILITY

The U.S. Department of Defense clearly has an important role to play in reducing the threat of bioterrorism. The Pentagon has designed specialized units to respond to terrorist incidents involving weapons of mass destruction within the United States. But depending on the location of the strike, it could be hours—perhaps even days—before federal units could respond in force. Local police and fire officials (the “first responders”) therefore would bear the onus of initially managing the consequences of such an attack.

Further congressional action is necessary to reduce the danger of mass casualties from bioterrorist attacks in the United States. Specifically, Congress should:

- **Pressure** the Clinton Administration to streamline and clarify the lines of responsibility for preempting, deterring, and responding to bioterrorism.
- **Increase** funding for training and equipping first responders, according to the needs of specific locales.
- **Mandate** national requirements for stockpiling antibiotics, and require the U.S. Centers for

Disease Control to update quarantine procedures.

- **Fund** the development of sensors capable of providing early warning of biological attacks in major U.S. cities.
- **Insist** on greater transparency of Russia’s military biological facilities, as called for in the September 1992 Joint Statement on Biological Weapons, and initiate a focused bilateral program with Russia to channel the expertise of former Soviet biological warfare specialists toward constructive purposes.
- **Boost** intelligence funding required to track terrorist organizations interested in biological agents. Require the intelligence community to publicize the names of former Soviet biological warfare specialists who share their expertise with rogue states.
- **Develop** the equivalent of Megan’s Law for individuals convicted of violating state and federal laws regarding the possession of biological agents.
- **Develop** a sustained public education campaign on the threat of bioterrorism.

## CONCLUSION

The threat of bioterrorism is growing, but a catastrophic attack on U.S. soil should not be considered inevitable. The development of a coherent strategy to defend against this terrorism would help deter bioterrorists and sponsors of state terrorism who otherwise might consider such attacks.

—James H. Anderson, Ph.D., is Defense and National Security Analyst at The Heritage Foundation.



The Heritage Foundation  
**Background**

---

214 Massachusetts Avenue, N.E. Washington, D.C. 20002-4999 • (202) 546-4400 • <http://www.heritage.org>

No. 1182

May 26, 1998

## MICROBES AND MASS CASUALTIES: DEFENDING AMERICA AGAINST BIOTERRORISM

JAMES H. ANDERSON, PH.D.<sup>1</sup>

Throughout human history, the threat of mass contagion has evoked primal fear. Natural pestilence periodically has ravaged cities, states, and even entire civilizations. Rapid advances in genetic engineering in the past few decades have increased the likelihood that disease-causing microbes could overwhelm the U.S. public health system and wreak horrific destruction. Today, the United States faces the nightmarish possibility that terrorist groups would seek to cause mass casualties by unleashing biological agents on U.S. soil.

Biological agents, on an equal-weight basis, are the most lethal substances known to mankind. According to a 1997 U.S. Department of Defense report on proliferation, the “most lethal biological toxins are hundreds to thousands of times more lethal per unit than the most lethal chemical warfare agents.”<sup>2</sup> They can be targeted against people, animals, or crops using a variety of means of delivery, from aerial bombs and spray tanks to ballistic

missile warheads.<sup>3</sup>

Until recently, the intelligence community generally has downplayed the capability of terrorists to effect mass casualties using biological agents, noting that the impact of an attack is difficult to predict, considering the sensitivity of microorganisms to meteorological conditions. Most analysts agreed with the view that terrorists only “want a lot of people watching, not a lot of people dead.”<sup>4</sup> But the 1993 World Trade Center bombing, the 1995 sarin attack

---

Produced by  
The Kathryn  
and Shelby Cullom Davis  
International Studies Center

Published by  
The Heritage Foundation  
214 Massachusetts Ave., N.E.  
Washington, D.C.  
20002-4999  
(202) 546-4400  
<http://www.heritage.org>



- 
1. The author would like to thank Michael Baxter, a Heritage Foundation intern in the Kathryn and Shelby Cullom Davis International Studies Center, for his research assistance with this paper.
  2. U.S. Department of Defense, *Proliferation: Threat and Response*, November 1997, p. 82.
  3. Office of Technology Assessment, *Proliferation of Weapons of Mass Destruction: Assessing the Risks* (Washington, DC: U.S. Government Printing Office, 1993), p. 50.
  4. Brian Jenkins, *The Potential for Nuclear Terrorism* (Santa Monica, CA: RAND, 1977), p. 8.



in Tokyo's subway system, and the 1996 Oklahoma City bombing shattered that conventional wisdom. These attacks indicate an important threshold has been breached; clearly, some terrorist groups want a lot of people watching and a lot of civilians dead.

Belatedly, senior defense and law enforcement officials are recognizing the growing danger of bioterrorism. Gordon Oehler, then director of the Nonproliferation Center of the Central Intelligence Agency (CIA), testified before Congress in March 1996 that

Extremist groups worldwide are increasingly learning how to manufacture chemical and biological agents, and the potential for additional chemical and biological attacks by such groups continues to grow.<sup>5</sup>

In January 1998, Defense Intelligence Agency chief Lieutenant General Patrick Hughes testified that chemical and biological weapons have a "high probability of being used over the next two decades."<sup>6</sup>

Despite this awareness, the United States still is ill-prepared to manage the consequences of a major bioterrorist strike. Deputy Secretary of Defense John Hamre admitted last December, "We are not currently equipped to handle a widespread terrorist attack that would involve biological weapons."<sup>7</sup> A March 1998 bioterrorist exercise involving government officials from more than a dozen federal agencies considered the impact of a deadly virus along the U.S.–Mexico border. This simulation predicted such an attack would cause

thousands of deaths and widespread panic. The exercise also revealed the inability of local and state officials to cope with a major bioterrorist strike and highlighted a disturbing lack of inter-agency coordination among federal officials.<sup>8</sup>

The conventional military prowess of the United States is not sufficient to offset the danger posed by bioterrorism. Secretary of Defense William Cohen noted in March 1998,

Our American military superiority presents a paradox...because our potential adversaries know they can't win in a conventional challenge to the U.S. forces, they're more likely to try unconventional or asymmetrical methods, such as biological or chemical weapons.<sup>9</sup>

Clearly, the Clinton Administration and Congress must develop and articulate a comprehensive strategy to defend against bioterrorism that is based on an accurate assessment of threat, the prudent allocation of resources, and a determined respect for the rule of law. If properly implemented and sustained, such an approach would help deter terrorists and the sponsors of state terrorism who otherwise might consider biological attacks on U.S. citizens.

## THE INCREASING THREAT OF BIOTERRORISM

Biological agents, which include disease-causing microorganisms called pathogens and poisonous chemicals produced by microorganisms called toxins,<sup>10</sup> are pound for pound the most lethal

5. Jonathan Tucker, "Policy Approaches to Chemical and Biological Terrorism," in Brad Roberts, ed., *Terrorism with Chemical and Biological Weapons* (Alexandria, VA: Chemical and Biological Arms Control Institute, 1997), p. 98.
6. Quoted in Walter Pincus, "CIA Chief Calls Hostile States' Weapons Buildup Threat to National Security," *The Washington Post*, January 29, 1998, p. A7.
7. Bradley Graham, "U.S. Gearing Up Against Germ War Threat," *The Washington Post*, February 14, 1997, pp. A1, A16.
8. Judith Miller and William Broad, "Exercise Finds U.S. Unable to Handle Germ War Threat," *The New York Times*, April 26, 1998, pp. 1, 10.
9. William Cohen, speech, National Press Club, March 17, 1998.
10. Toxins are considered biological agents under the terms of the 1972 Biological Weapons Convention and the Biological Weapons Anti-Terrorism Act of 1989.



Table 1 B 1182

### Examples of Biological Agents

Agent	Incubation Period	Symptoms
<b>Anthrax</b> ( <i>bacillus anthracis</i> )	1–5 days	High fever, fatigue, vomiting, labored breathing, bleeding lesions
<b>Brucellosis</b>	5–60 days	Fever, chills, joint infections
<b>Ebola virus</b>	4–16 days	High fever, delirium, joint pains, bleeding from orifices, convulsions
<b>Plague</b> ( <i>yersinia pestis</i> )	2–3 days	Fever, chills, headache, delirium
<b>Tularemia</b> ( <i>francisella tularensis</i> )	2–10 days	Fever, prostration, weight loss
<b>Smallpox</b>	10–14 days	Malaise, fever, headache, backache, vomiting, rash, lesions
<b>Botulinum toxin</b> ( <i>clostridium botulinum toxin</i> )	1–5 days	Nausea, diarrhea, respiratory paralysis, blurred vision
<b>Ricin</b>	2 hours	Abdominal pain, vomiting, diarrhea, dehydration

**Sources:** Colonel David Franz, David McClain, and Major Julie Pavlin, "Clinical Recognition and Management of Patients Exposed to Biological Warfare Agents," *Journal of the American Medical Association*, August 6, 1997; Leonard Cole, "The Specter of Biological Weapons," *Scientific American*, December 1996.

substances known to mankind. They can be targeted and delivered against innocent people, as well as their food or water supply. And the means of delivery ranges from sprays and bombs to ballistic missiles.<sup>11</sup> The young, the elderly, and the infirm are especially vulnerable to bioterrorism's insidious reach because of their weakened immune systems.

Anthrax in particular is considered an attractive agent for terrorists who seek to cause mass casualties. The anthrax bacillus, though not contagious, forms a durable, long-lasting spore that will kill its host unless antibiotics are administered immediately. According to official reports, the accidental

release in 1979 of a small amount of anthrax at a Soviet biological warfare plant near Ekaterinburg (formerly Sverdlovsk) killed 68 people, although some experts believe the casualty total was higher.<sup>12</sup> The threat anthrax poses is staggering. A 1993 Office of Technology Assessment study estimates that, under ideal conditions, a single airplane delivering 100 kilograms (220 pounds) of anthrax spores over the District of Columbia could cause between 1 million and 3 million fatalities.<sup>13</sup>

Bioterrorism on U.S. soil is not a hypothetical threat. In fact, in 1984 the Rajneeshee religious cult spread salmonella typhimurium in ten restaurants in Wasco County, Oregon. According to the

11. Office of Technology Assessment, *Proliferation of Weapons of Mass Destruction: Assessing the Risks*, p. 50.

12. Transcript, "Diane Sawyer Reports," *Prime Time Live*, ABC News, at <http://www.abcnews.com/onairdev/primetimeline/transcripts/pt10225.html>, February 25, 1998.

13. Office of Technology Assessment, *Proliferation of Weapons of Mass Destruction: Assessing the Risks*, p. 54.



Table 2 B 1182

### Examples of Biological Terrorist Incidents

Date and Site	Group	Incident
April 1997 Washington, D.C.	Counter Holocaust Lobbyists of Zion	Anthrax hoax
May 1992 Minnesota	Minnesota Patriot's Council	Planned to assassinate local law enforcement personnel with ricin
April 1990–March 1995 Japan	Aum Shinrikyo ("Supreme Truth")	Attempted various attacks with botulinum and anthrax
Mid-1980s Sri Lanka	Tamil secessionist group	Threatened to infect humans and crops with pathogens
August 1984 Oregon	Rajneeshee religious cult	Infected 751 people with salmonella in Wasco County
October 1984 Paris, France	Red Army Faction	French authorities find flasks of clostridium botulinum in terrorist safehouse
November 1970 Maryland	Weatherman organization	Sought to steal biological agents from Ft. Detrick to poison a city's water supply
1950s Kenya	Mau Mau	Used plant toxins to kill livestock

Sources: W. Seth Carus, "The Threat of Bioterrorism," *Strategic Forum* No. 127, September 1997; Joseph Douglass, Jr., and Neil Livingstone, *America the Vulnerable*, 1987; "Army Tells of Plot to Steal Bacteria From Ft. Detrick," *The New York Times*, November 21, 1970.

U.S. Centers for Disease Control and Prevention (CDC), the food poisoning affected 751 people. The group also tried to infect the town's water supply.<sup>14</sup> The attack was part of a larger scheme to win control over a local land dispute. Although the Rajneeshees' attack attracted considerable media attention, it is only one of many bioterrorist incidents on record. As Table 2 illustrates, terrorist groups have used or planned to use biological agents in diverse circumstances, both domestically and internationally.

Recent revelations about Iraqi and Russian biological weapons programs, coupled with evidence of a Japanese cult's use of biological agents, have heightened concerns about bioterrorism. Specifically:

- **Iraq has admitted developing a biological weapons program.** Before the 1991 Persian Gulf War, Baghdad flight-tested a remote-controlled fighter designed to disperse biological weapons.<sup>15</sup> Iraq admitted to stockpiling a variety of biological agents, including anthrax,

14. W. Seth Carus, testimony before Joint Hearing of the Select Committee on Intelligence and the Senate Judiciary Subcommittee on Technology, Terrorism, and Government Information, 105th Cong., 2nd Sess., March 4, 1998, p. 9.

15. Richard Preston "The Bioweaponers," *The New Yorker*, March 9, 1998, p. 60.



botulinum toxin, aflatoxin, ricin, and gas gangrene.<sup>16</sup> Iraq also claims to have destroyed ballistic missile warheads and aerial bombs filled with botulinum toxin, anthrax, and aflatoxin.<sup>17</sup> An April 1998 assessment by a team of independent experts, however, deemed Iraq's reporting of its biological weapons program to be "incomplete and inaccurate."<sup>18</sup> Recent evidence also indicates Iraq dispatched scientists to assist Libya in developing its germ warfare program.<sup>19</sup>

- **Russia has demonstrated a continuing interest in biological weapons.** Despite ratifying the 1972 Biological and Toxin Weapons Convention, the Soviets funded a massive biological weapons program known as *Biopreparat*. At its zenith, Biopreparat reportedly employed 25,000 people at 18 major facilities.<sup>20</sup> According to Ken Alibek, former first deputy chief of research and production for the Soviet biological weapons program, "Russian scientists have created genetically altered antibiotic-resistant strains of plague, anthrax, tularemia and glanders."<sup>21</sup> Some experts believe this altered form of anthrax could defeat the vaccine U.S. military personnel are scheduled to receive.<sup>22</sup> Heightening U.S. suspicions, the Russians steadfastly refuse to open their military biological facilities to inspection.

- **Aum Shinrikyo ("Supreme Truth") demonstrated a keen interest in bioterrorism.** Shinrikyo's 1995 chemical attack on the Tokyo subway, which killed 12 and injured 5,000, attracted intense media attention. Less well-publicized was the group's keen interest in bioterrorism.<sup>23</sup> Shinrikyo had purchased a 48,000-acre range in Australia to test biological agents on livestock; it sent members to Africa to obtain samples of the lethal Ebola virus; and it built two major biological research centers, one in Tokyo and the other at the base of Mount Fuji. The group attempted at least four separate bioterrorist strikes before its Tokyo nerve gas attack in 1995.<sup>24</sup> In two of the cases, it tried (unsuccessfully) to disseminate biological agents in Tokyo using modified automobiles. It also had planned to attack New York and Washington, D.C.<sup>25</sup>

Nuclear, chemical, and biological agents frequently are lumped together under the rubric of "weapons of mass destruction" (WMD). This label often masks important differences among the three types of weapons. The distinguishing characteristics of biological agents merit special scrutiny, considering the evolving nature of terrorism, demographic trends, and the inherent vulnerabilities of open societies. Specific factors related to biological weapons increase the potential for bioterrorism. For example:

16. R. Jeffrey Smith, "Poison, Germ Weapons Would Not Be Direct Targets," *The Washington Post*, February 22, 1998, p. A28.
17. *Ibid.*
18. Barbara Crossette, "Experts Dispute Iraq's Claim It Ended Germ War Effort," *The New York Times*, April 10, 1998, p. A10.
19. Michael Evan, "Iraqi Scientists Helping Libyan Germ Warfare," *The Times* (London), January 6, 1998.
20. David Hoffman, "Russia Challenged to Disclose Status of Biological Weapons," *The Washington Post*, February 26, 1998, p. A17.
21. Ken Alibek, "Russia's Deadly Expertise," *The New York Times*, March 28, 1998, p. A23.
22. William Broad, "Gene-Engineered Anthrax: Is It a Weapon?" *The New York Times*, February 14, 1998, p. A4.
23. For a comprehensive treatment of Shinrikyo, see David Kaplan and Andrew Marshall, *The Cult at the End of the World* (New York, NY: Crown Publishers, 1996).
24. Carus, p. 10.
25. David Kaplan, "Terrorism's Next Wave," *U.S. News and World Report*, November 17, 1997, p. 30.



- **Biological weapons have an unmatched destructive potential.** Pound for pound, biological agents are the world's most lethal substances. As Richard Betts, director of national security studies at the Council on Foreign Relations, puts it,

Nuclear arms have great killing capacity but are hard to get; chemical weapons are easy to get but lack such killing capacity; biological agents have both qualities.<sup>26</sup>

The lethality of biological agents makes it unnecessary for terrorists to maintain large stockpiles. Some biological agents are self-replicating, which sets them apart from chemical and nuclear weapons. Increasingly sophisticated genetic engineering techniques also raise the haunting possibility of terrorists exploiting antibiotic and vaccine-resistant bacteria, as well as biological agents altered to facilitate aerosol dissemination.<sup>27</sup>

- **Technology for dispersing biological agents is becoming more sophisticated.** Analysts often have downplayed the potential for bioterrorist strikes to inflict mass casualties, considering the difficulties associated with disseminating biological agents. Although aerosol dissemination presents technical challenges, they are not insuperable. In fact, the U.S. Army's Chemical Corps tested this technique more than 30 years ago. According to W. Seth Carus, a proliferation expert at the National Defense University,

These tests demonstrated—to the extent possible with the technology then available—that biological agents could be disseminated as an aerosol cloud and

infect a large area with potentially lethal infective doses.<sup>28</sup>

According to the Department of Defense's 1997 report on proliferation, in 1990 Iraq attempted to modify spray tanks capable of delivering 2,000 liters of anthrax via remotely piloted aircraft.<sup>29</sup> In Japan, the Shinrikyo cult bought a Russian helicopter and two remotely piloted vehicles capable of disseminating biological agents.<sup>30</sup> Spurred by market pressures, technology for dispersing biological agents, such as that used by farmers to spray insecticide, is certain to improve. It would be a serious mistake to think terrorist groups would not seek to exploit such enhancements.

- **The lag time between infection and the appearance of symptoms generally is longer for biological agents than with chemical exposures.** The incubation period will vary, depending on the biological agent. For the plague, the incubation period is two to three days; for anthrax, one to five days. Terrorists seeking to cover their tracks will find this lag time appealing; so might states seeking plausible denial or attempting so-called false flag operations, in which one power wrongly implicates another. Clearly, the gap between infection and the appearance of symptoms will complicate efforts to pursue bioterrorists. Law enforcement officials, in fact, took more than a year to ascertain that the 1984 salmonella outbreak in Oregon resulted from intentional contamination.<sup>31</sup>
- **Lethal biological agents can be produced easily and cheaply.** The construction of even a crude, low-yield nuclear weapon requires considerable time, money, and expertise. The likelihood that even a well-financed terrorist

26. Richard Betts, "Weapons of Mass Destruction," *Foreign Affairs*, Vol. 77, No. 1 (January/February 1998), p. 32.

27. U.S. Department of Defense, *Proliferation: Threat and Response*, November 1997, pp. 82–83.

28. Carus, p. 3; see also Preston, "The Bioweaponers," p. 60.

29. U.S. Department of Defense, *Proliferation: Threat and Response*, p. 33.

30. *Ibid.*, p. 50.

31. Carus, p. 3.





<b>Table 3</b>		B 1182
<b>Sampling of Biological Weapons Programs</b>		
<b>China</b>	Maintains biotechnical infrastructure capable of supporting biological warfare program. Believed to possess offensive biological warfare capabilities.	
<b>Iran</b>	Suspected of possessing biological agents. Believed to be developing more advanced biological warfare capabilities.	
<b>Iraq</b>	Maintained most advanced program in Middle East prior to Gulf war. Capable of quickly restarting production of biological agents if U.N.-sponsored inspection regime is lifted.	
<b>Libya</b>	Program believed to be in research and development stage. Iraqi scientists believed to have assisted with germ warfare program.	
<b>North Korea</b>	Known to have pursued biological warfare research and development for years.	
<b>Russia</b>	Maintained world's largest offensive biological weapons program during the Cold War. Russian leaders admitted that the biological warfare program continued after end of the Cold War.	
<b>Syria</b>	Maintains a biotechnical infrastructure capable of supporting a biological warfare program.	
<p><b>Sources:</b> U.S. Department of Defense, <i>Proliferation: Threat and Response</i>, November 1997; Michael Evan, "Iraqi Scientists Helping Libyan Germ Warfare," <i>The Times</i> (London), January 6, 1998.</p>		

could marshal the requisite expertise and resources to build such a weapon appears small. Moreover, lethal chemical agents are generally both more difficult and expensive to manufacture than biological agents. Many biological agents suitable for terrorist strikes can be cultivated easily. For example, the Patriot's Council, the Minnesota-based militia group that schemed in 1992 to assassinate a deputy U.S. marshal and a sheriff, reportedly manufactured enough ricin toxin from a book recipe to kill 125 people. Detailed techniques for extracting ricin from castor beans are available in numerous publications. The cost of procuring lethal biological agents is also relatively low. Kathleen Bailey, a former assistant director of the U.S. Arms Control and Disarmament

Agency, estimated a significant biological arsenal could be cultivated in a 15-foot square room with \$10,000 worth of equipment.<sup>32</sup>

- Several states maintain offensive biological weapons programs.** As many as ten countries possess offensive biological weapons programs, including the People's Republic of China, Iran, Iraq, Libya, North Korea, Russia, and Syria (see Table 3).<sup>33</sup> The existence of these programs greatly increases the danger of bioterrorism. States seeking to sponsor bioterrorist acts always have the option of sharing their expertise with extremist groups. For their part, terrorists groups interested in bioterrorism may attempt to lure disgruntled scientists to support their causes.

32. Leonard Cole, "The Specter of Biological Weapons," *Scientific American*, December 1996, p. 61.

33. Louis Salome, "Saddam the Threat, Not Arms," *The Washington Times*, February 23, 1998, p. A12.



- **Biological agents are easier to produce clandestinely than are either chemical or nuclear weapons.** Biological research can be used for peaceful or malevolent purposes. The equipment required for the production of biological agents for either purpose is generally the same, which raises the so-called dual-use problem. As former director of central intelligence John Deutch emphasized,

[A]ny modern pharmaceutical facility can produce biological warfare agents as easily as vaccines or antibiotics.<sup>34</sup>

The dual-use problem also makes it easy for countries to conceal their biological weapons programs. For example, recent reports suggest U.S. intelligence “underestimated the amount of botulinum Iraq made by at least a thousand-fold and the amount of anthrax Iraq had made by at least a factor of eight.”<sup>35</sup> Even small terrorist groups could develop lethal biological agents, or genetically altered agents, clandestinely. As Richard Preston, a noted authority on bioterrorism, observes,

Genetic-engineering work can be done in a small building by a few Ph.D. researchers, using tabletop machines that are available anywhere in the world at no great cost.<sup>36</sup>

- **Global transportation links facilitate the potential for biological terrorist strikes to inflict mass casualties.** In 1918 and 1919, a globe-girdling strain of influenza killed 22 million people, including 500,000 Americans. The advent of rapid transportation links has made the world even more vulnerable to the rapid spread of contagious diseases. Thanks to the reach and rapidity of modern jet travel, a person carrying the Ebola virus, for example, could infect hundreds or thousands of people

across several continents in a matter of hours. To be sure, the contagion potential of biological agents would not appeal to terrorists intent on narrowly focused attacks. But for a nihilistic or apocalyptic group aiming to cause mass casualties, this potential would be very attractive.

- **Urbanization provides terrorists with a wide array of lucrative targets.** In densely populated areas, even a partially successful biological attack would have a devastating impact. The potential to generate mass panic is greatest in city environments. Third World cities are particularly vulnerable to bioterrorism, considering their high population densities, inadequate sewage systems, and dearth of modern medical facilities. This vulnerability has important implications for the U.S. military, which must plan for a variety of contingency missions in Third World cities.
- **The diaspora of Russian scientists has increased the danger that rogue states or terrorist groups will accrue the biological expertise needed to mount catastrophic terrorist attacks.** The dissolution of the Soviet Union focused considerable attention on the dissemination of nuclear weapons expertise; this led Congress to pass the Nunn–Lugar Cooperative Threat Reduction Act in 1991. Even though it has received comparably less attention, the dispersion of biological weapons know-how also presents grave risks. Commenting on his former colleagues, the former first deputy chief of research and production for the Soviet biological weapons program, Ken Alibek, stated,

They are everywhere today. Most are in Russia. But some are overseas, abroad. And we have lost control of them.<sup>37</sup>

34. John Deutch, “Worldwide Threat Assessment Brief to the Senate Select Committee on Intelligence,” Statement for the Record, February 22, 1996, p. 16.

35. R. Jeffrey Smith, “Iraq’s Drive For a Biological Arsenal,” *The Washington Post*, November 21, 1997, p. 1.

36. Preston, “The Bioweaponers,” p. 62.

37. Tim Weimer, “Soviet Defector Warns of Biological Weapons,” *The New York Times*, February 24, 1998, p. A8.



According to media reports, some of these scientists work in North Korea, while others assist Iranian and Pakistani WMD programs via modem.<sup>38</sup>

- **The emergence of global, real-time media coverage increases the likelihood that a major biological incident will induce panic.** A major biological attack on U.S. soil would unleash an avalanche of media attention. Grossly inaccurate or sensational media coverage of even a limited bioterrorist incident, including a well-planned hoax, could induce widespread panic and confusion. In a world already awash with low-level violence, bioterrorists seeking to gain attention for their cause may find this potential for pandemonium particularly appealing.

The convergence of these trends portends that the threat of bioterrorism is increasing significantly. The development of sophisticated law enforcement techniques, which include electronic surveillance, may offset some of the risk within the United States. But the use of such techniques is necessarily bound by constitutional safeguards to preserve civil liberties and personal freedoms. An increasing number of law enforcement officials have become fatalistic about the potential for a terrorist attack involving WMD within the United States. Commenting on this nightmarish potential, Robert Blitzer, director of the terrorism section of the U.S. Federal Bureau of Investigation, asserted last November that

The consensus of people in the law enforcement and intelligence communities is that it's not a matter of *if* it's going to happen, it's *when*.<sup>39</sup>

## THE STATE OF U.S. PREPAREDNESS AGAINST BIOTERRORISM

Part of the reason the U.S. intelligence community has been slow to recognize the growing potential for bioterrorism on U.S. soil is because it tends to assume that potential adversaries may constrain their actions by the moral norms that ordinarily bind civilized states. Although civilized states consider the offensive use of biological weapons morally abhorrent, this does not mean that all potential U.S. adversaries do. Indeed, the fact that Americans find the mere thought of bioterrorism revolting may make such attacks especially appealing. The growth of groups espousing apocalyptic creeds increases the probability that WMD will be used against Americans at home and abroad.<sup>40</sup>

In July 1995, President Bill Clinton issued Presidential Decision Directive (PDD) 39 on terrorism; parts of it have been declassified. The document asserts that

the United States shall give the highest priority to developing effective capabilities to detect, prevent, defeat and manage the consequences of nuclear, biological or chemical (NBC) materials or weapons use by terrorists.<sup>41</sup>

This long-overdue document helped reaffirm and clarify the general lines of responsibility for responding to a terrorist incident involving WMD.

The U.S. Department of Justice, as delegated to the FBI, has the lead for crisis management of domestic terrorist incidents in the United States. It also manages the Domestic Emergency Support Team, an interagency group activated in 1995 to provide expert advice to domestic agencies during crisis incidents involving WMD. The U.S. Department of State has the lead role in managing

38. James K. Campbell, Commander, U.S. Navy, "Chemical and Biological Weapons Threats to America," written testimony before the Senate Judiciary Subcommittee on Technology, Terrorism, and Government Information and Senate Select Committee on Intelligence, April 22, 1998, p. 9.

39. Kaplan, "Terrorism's Next Wave," p. 28. (Emphasis in the original.)

40. Walter Laqueur, "Postmodern Terrorism," *Foreign Affairs*, Vol. 75, No. 5 (September/October 1996), pp. 32-33.

41. White House, Presidential Decision Directive 39, June 21, 1995, available at <http://www.fas.org/irg/offdocs/pdd39.htm>.



terrorist incidents abroad as well as the Foreign Emergency Support Team.

Under the rubric of “consequence management,” PDD 39 also outlines the responsibilities of the federal government for responding to the aftermath of a terrorist attack involving WMD. These include

measures to protect public health and safety, restore essential government services, and provide emergency relief to governments, businesses and individuals affected by the consequences of terrorism.<sup>42</sup>

Should an attack occur on U.S. soil, the onus of consequence management would fall on the Federal Emergency Management Agency (FEMA). FEMA is responsible for ensuring that the

Federal Response Plan is adequate to respond to the consequences of terrorism directed against large populations in the United States, including terrorism involving weapons of mass destruction.<sup>43</sup>

The Federal Response Plan is a generic template designed to coordinate the delivery of federal assistance—personnel, technical expertise, and equipment—in the event of natural disaster or federal emergency.<sup>44</sup>

Although the general lines of responsibility appear reasonably clear, the Clinton Adminis-

tration’s plan to cope with the threat of bioterrorism still suffers from several weaknesses. The reactive nature of the Administration’s approach has helped spawn an “alphabet soup” of counterterrorism programs (see partial listing in Table 4). The sheer number of actors involved has created immense coordination problems in the unwieldy counterterrorism architecture, which includes more than 40 different federal agencies, bureaus, and offices, according to September 1997 study by the U.S. General Accounting Office.<sup>45</sup> In theory, the U.S. National Security Council is supposed to coordinate disparate elements of the counterterrorism effort by managing various working groups. The reality is very different. A government bioterrorist simulation conducted in March 1998 revealed serious interagency coordination problems.<sup>46</sup> According to former CIA director James Woolsey, who recently served as the co-chair of a classified study on terrorism and WMD, “The system is not well organized at all.”<sup>47</sup>

The Clinton Administration’s plan for reducing the danger of bioterrorism also suffers from a misplaced faith in arms control. The Administration has backed an ill-conceived attempt to strengthen the Biological and Toxin Weapons Convention (BWC) with a legally binding protocol. The parties to the original agreement, which entered into force in 1975, agreed “never in any circumstances to develop, produce, stockpile or otherwise acquire or retain” biological weapons.<sup>48</sup> Fifteen years after

42. Federal Emergency Management Agency, “Appendix A, Terrorism Incident Annex to the Federal Response Plan,” *Federal Response Plan*, FEMA 229, Chg. 11, April 1995, p. 70.

43. White House, Presidential Decision Directive 39.

44. FEMA groups federal resources into 12 emergency support functions: transportation; communications; public works and engineering; fire fighting; information and planning; mass care; resource support; health and medical services; urban search and rescue; hazardous materials; food; and energy. See Federal Emergency Management Agency, “Rapid Disaster Response: Executive Overview,” *Federal Response Plan*, FEMA 229, Chg. 11, April 1995.

45. “Combating Terrorism: Federal Agencies’ Efforts to Implement National Policy and Strategy,” NSIAD-97-254, September 26, 1997.

46. Judith Miller and William J. Broad, “Exercise Finds U.S. Unable to Handle Germ War Threat,” *The New York Times*, April 26, 1998, p. 1.

47. Quoted in David Kaplan, “Everyone Gets into the Terrorism Game,” *U.S. News and World Report*, November 1997, p. 32.

48. Article 1, Convention on the Prohibition of Bacteriological and Toxin Weapons, 26 UST 583, TIAS 8062 (entered into force for the United States on May 26, 1975).



Table 4 B 1182

### Federal Response Units for Incidents Involving Weapons of Mass Destruction

	Agency	Background
<b>Domestic Emergency Support Team (DEST)</b>	FBI-managed interagency team	Activated in 1995 to provide expert advice to domestic agencies responsible for managing weapons of mass destruction incidents.
<b>Federal Emergency Support Team (FEST)</b>	Department of State	Activated in 1986 to manage foreign incidents involving weapons of mass destruction.
<b>Nuclear Emergency Support Team (NEST)</b>	Department of Energy	Activated in 1974 to provide technical assistance to the FBI on nuclear incidents. Fields mobile search teams to locate radiological devices.
<b>Metropolitan Medical Strike Teams (MMST)</b>	Department of Health and Human Services	Prototype teams established in 1996 to provide on-site response and transport of patients to hospital emergency rooms. Intended to cover 100 cities.
<b>Chemical Biological Incident Response Force (CBIRF)</b>	Marine Corps	Activated in April 1996 and based in Camp Lejeune, North Carolina, to treat and evaluate casualties, and provide local security, detection, and decontamination.
<b>Technical Escort Unit (TEU)</b>	Army	Origins from World War II; provides response worldwide for escorting and disposing chemical and biological weapons.
<b>Rapid Assessment and Initial Detection Teams (RAID)</b>	National Guard	To be funded in 1999; to provide rapid assessment of biological and chemical incidents, and supply initial detection equipment. Ten teams to be stationed in areas determined by FEMA.

**Sources:** Bradley Graham, "U.S. Gearing Up Against Germ War Threat," *The Washington Post*, February 14, 1997; White House, Presidential Decision Directive 39, June 21, 1995; Lisa Burgess, "U.S. National Guard to Participate in Bio-Chem Defense," *Defense News*, March 23-29, 1998.

the BWC was signed, Congress passed domestic implementing legislation, the Biological Weapons Anti-Terrorism Act of 1989. This law made the

prohibitions of the BWC binding on U.S. citizens.<sup>49</sup> Unfortunately, the BWC still lacks a verification regime or enforcement mechanism.

49. The act states: "Whoever knowingly develops, produces, stockpiles, transfers, acquires, retains, or possesses any biological agent, toxin, or delivery system for use as a weapon, or knowingly assists a foreign state or any organization to do so, shall be fined under this title or imprisoned for life or any terms of years, or both." Biological Weapons Anti-Terrorism Act of 1989, Public Law 101-298.



In fact, this agreement suffers many of the same flaws as the Chemical Weapons Convention, which Congress ratified in 1997.<sup>50</sup> In varying degrees, such countries as Iran, Iraq, Libya, North Korea, and Russia have maintained active biological offensive weapons programs despite being full parties to the BWC accord. In fact, the Soviet Union set up its massive Biopreparat biological weapons program one year after signing the BWC.

The protocol being promoted by the Clinton Administration would not remedy the substantive weaknesses of the BWC; it also would fail to reduce the threat of bioterrorism. The protocol, which would require a burdensome and expensive inspection regime, raises serious constitutional and national security questions about opening U.S. facilities to foreign inspectors. More fundamentally, it would not address the fungible nature of biological research that makes potential weapons programs inherently unverifiable. The Iraq case has demonstrated how difficult it is to unmask a country's biological weapons capability. An April 1998 assessment by a team of independent experts deemed Iraq's reporting of its biological weapons program "incomplete and inaccurate."<sup>51</sup> Iraq's apparent ability to conceal elements of its biological weapons capability, even after Operation Desert Storm and years of intrusive inspections sanctioned by the United Nations (U.N.) Security Council, suggest the futility of the BWC protocol backed by the Administration.

The Clinton Administration also has failed to develop a public education program to explain the dangers posed by bioterrorism and government efforts to reduce this peril. This shortcoming is alarming, especially because the specter of bioterrorism has attracted considerable attention. It has become a frequent topic of newspaper stories

and magazine articles, many of which express serious doubts about the government's ability to deter bioterrorist attacks, let alone manage the horrific consequences. The absence of a modulated public education campaign increases the likelihood of mass panic in the aftermath of such a strike.

### **The Department of Defense's Role in Domestic Preparedness**

The Pentagon's interest in the threat of biological warfare and bioterrorism has received sporadic attention. Part of the reason for the intermittent attention is psychological. "The biological warfare threat can appear so formidable and frightening that it can engender a posture of inaction," as noted by an October 1997 Defense Science Board study.<sup>52</sup> The military's planning has improved somewhat since the post-Gulf war discovery of Iraq's extensive biological weapons program. Secretary of Defense Cohen has pledged to increase funding for battlefield protection against chemical and biological weapons. Recently, the Department of Defense decided to inoculate its entire active and reserve force against anthrax.

The military's ability to assist state and local officials in coping with bioterrorism on U.S. soil has lagged. As Colonel David Franz, deputy commander of the U.S. Army Medical Research and Materiel Command, testified recently before Congress,

We have, generally, fewer tools and less information to protect citizens from terrorism than we have had to protect a defined military force from the classical biological warfare agents.<sup>53</sup>

To help remedy these shortcomings, Congress passed the 1996 Defense Against Weapons of Mass

50. For an assessment of the weaknesses of the Chemical Weapons Convention, see Baker Spring, "The Chemical Weapons Convention: A Bad Deal for America," Heritage Foundation *Committee Brief* No. 25, April 15, 1996.

51. Crossette, "Experts Dispute Iraq's Claim."

52. Defense Science Board 1997 Summer Study Task Force, *DOD Responses to Transnational Threats*, Vol. 1 (Washington, DC: Office of the Under Secretary of Defense for Acquisition and Technology), p. 48.

53. David Franz, Colonel, U.S. Army, testimony before Joint Committee on Judiciary and Intelligence, U.S. Senate, 105th Cong., 2nd Sess., March 4, 1998, p. 2.



Destruction Act sponsored by Senators Sam Nunn (D-GA), Richard Lugar (R-IN), and Pete Domenici (R-NM). This act directed the Department of Defense, in conjunction with other federal agencies, to manage a training and equipment program in 120 cities over a five-year period.<sup>54</sup> The law was designed to nurture, at the local level, the expertise to cope with the consequences of major terrorist strikes involving WMD. As of April 1998, the program had reached roughly 25 percent of the designated cities. The program has experienced “growing pains,” particularly with respect to allocation and funding of equipment.<sup>55</sup>

In addition to managing the cities’ training program, the Department of Defense relies on several highly trained units to respond to terrorist incidents involving WMD. These units include, for example, the U.S. Army’s Technical Escort Unit and the Marine Corps’ Chemical-Biological Incident Response Force.<sup>56</sup> Both are designed to provide specialized support in the event of a biological or chemical incident.

In March 1998, the Department of Defense announced plans to give the National Guard a greater domestic role in responding to terrorist strikes involving WMD. The Pentagon’s fiscal year 1999 budget request includes money to field ten 22-member Rapid Assessment and Initial Detection (RAID) teams to respond to chemical or biological attacks. Secretary Cohen asserted,

This new initiative will be the cornerstone of our strategy for preparing America’s defense against the possible use of weapons of mass destruction.<sup>57</sup>

Although the creation of RAID teams is

important, they should not be considered the “cornerstone” of U.S. policy. Instead, the cornerstone should be the training and equipping of the “first responders,” the local police and fire officials who will arrive at the scene hours, perhaps even days, before federal or state assets can be deployed in force. The first few hours are critical in responding to chemical and biological attacks; the time represents a narrow window in which local officials can manage the casualties from the attack and reduce the risk of mass panic.

### The Role of the Centers for Disease Control

In addition to the Department of Defense, the Centers for Disease Control and Prevention has a vital role in the consequence management of biological attacks. Unfortunately, the U.S. public health system lacks the resources to handle such a contingency. Indeed, the system has problems even with the resurgence of infectious diseases, such as tuberculosis. A recent White House-backed interagency working group on infectious diseases finds that at least “29 previously unknown diseases have appeared since 1973 and 20 well-known ones have reemerged, often in new drug-resistant or deadlier forms.”<sup>58</sup>

These findings raise serious questions about the ability of the U.S. public health system to cope with major biological terrorist attacks. Dr. Donald Henderson, dean emeritus of the Johns Hopkins School of Public Health, argues that the

United States is ill-prepared to confront a terrorist attack using biological weapons, and health officials need more money to prepare against such attacks.<sup>59</sup>

54. In addition to the Department of Defense, other federal agencies involved in the Domestic Preparedness program include the Department of Energy, Federal Bureau of Investigation, FEMA, Environmental Protection Agency, and the Public Health Service.

55. Zachary Selden, “Confronting the Threat of Biological Weapons,” *Defense Working Group Backgrounders*, Progressive Policy Institute, March 1998, p. 5.

56. Graham, “U.S. Gearing Up Against Germ War Threat.”

57. “Military Adding 10 ‘Chem-Bio’ Response Teams,” *The Washington Post*, March 18, 1998, p. A3.

58. Laurie Garrett, “The Return of Infectious Disease,” *Foreign Affairs*, Vol. 75, No. 1 (January/February 1996), p. 73.

59. Lawrence K. Altman, “Smallpox Vaccine Urged to Fight Terrorist Attacks,” *The New York Times*, March 11, 1998, p. A21.



In 1972, for example, the United States ceased giving routine smallpox vaccinations. Dr. Henderson, who led the global effort to eradicate smallpox, believes the United States should increase its store of smallpox vaccine by 20 million doses.<sup>60</sup>

Other public health system issues germane to bioterrorism require urgent attention beyond the vaccine deficiencies. As late as 1995, U.S. laws and regulations provided few barriers to prevent an individual from legally procuring biological agents. The 1996 Anti-Terrorism and Effective Death Penalty Act made it a crime to threaten the use of biological weapons and established tighter regulations concerning the transfer of biological agents. As Senator Jon Kyl (R-AZ) emphasized in recent hearings before the Senate Judiciary Committee, although the CDC published the regulations required by the act, it “failed to provide the funds needed to implement and enforce safeguards designed to prevent the diversion of lethal agents into the hands of terrorists.” Senator Kyl added,

For all *practical* purposes, we today appear to be in the same position as we were in 1995 with regard to the lack of controls over transfers of dangerous biological agents within the United States.<sup>61</sup>

The overall structure of the public health system is incapable of managing the consequences of a major bioterrorist strike. Frank Young, former director of the Office of Emergency Preparedness in the Public Health Service of the U.S. Department of Health and Human Services, argues that the U.S.

emergency system overall is geared to respond to small numbers of people injured primarily due to trauma, includ-

ing transportation accidents, medical emergencies such as heart attacks, and localized cases of violence. The responses to these types of emergencies are not as relevant to injury caused by chemical and biological attack.<sup>62</sup>

Thus far, the Clinton Administration has failed to address these structural shortcomings.

## REDUCING AMERICA'S VULNERABILITY TO BIOTERRORISM

Senior Clinton Administration officials now concede an increased likelihood of a terrorist strike involving WMD occurring on U.S. soil. Yet it has not formulated a realistic response to this potentially catastrophic danger. Addressing the threat posed by WMD in general, and bioterrorism in particular, requires two guiding principles.

**First**, congressional oversight is necessary to ensure an effective counterstrategy based upon defense-in-depth. Federal agencies would require, at the very least, several hours to respond to an incident involving biological weapons. As result, the initial onus of managing the consequences of a major attack would fall on the first responders. Depending on the severity of the incident, state and federal expertise and resources could be applied, as appropriate. A defense-in-depth approach to domestic preparedness would help prevent the development of a “Maginot Line” mentality.<sup>63</sup>

The vulnerability of the United States to biological attack is linked with a broader strategic vulnerability. As a matter of national policy, the Clinton Administration has decided to keep the United States defenseless against ballistic missile attack. Yet long-range missiles can carry nuclear,

60. *Ibid.*

61. Senator Jon Kyl, statement submitted to Judiciary Subcommittee on Technology, Terrorism, and Government Information,” U.S. Senate, 105th Cong., 2nd Sess., March 4, 1998. Emphasis in the original.

62. Frank Young, “The Essential Tasks of Emergency Preparedness,” in Roberts, *Terrorism With Chemical and Biological Weapons*, p. 115.

63. The Maginot Line was a defensive fortification built on the eastern border of France before World War II to deter an invasion by Nazi Germany. Named after France’s then minister of war, it proved unsuccessful.





biological, or chemical weapons to U.S. territory. In fact, former Soviet scientists have revealed that Moscow had a program to put biological weapons on missiles.<sup>64</sup> In preparing the U.S. defense to cope with the consequences of bioterrorism on U.S. soil, Congress should not lose sight of the threat posed by long-range missiles.

**Second**, congressional oversight is necessary to ensure close coordination among federal, state, and local officials. No single agency would be capable of countering the threat of bioterrorism; public health, law enforcement, and intelligence and military agencies would have important roles to play. For this reason, Congress should review the panoply of counterterrorism programs constantly to ensure they do not work at cross-purposes with one another. Congressional oversight is necessary to meld disparate parts of the strategy together, minimize bureaucratic turf battles, prevent duplication of effort, and identify potential security gaps. Specifically,

**1. To clarify responsibilities for counterterrorism efforts and strengthen response capabilities, Congress should:**

- **Pressure the Clinton Administration to streamline the lines of responsibility for preempting, deterring, and responding to bioterrorism.** The threat of bioterrorism has national security, law enforcement, and public health implications. The absence of top-down leadership has created overlaps and gaps in the overall counterterrorism architecture. For example, the FBI wants to build a multimillion-dollar biolab, even though the U.S. Army and CDC already have more than a dozen such facilities.<sup>65</sup> Congressional oversight can help reduce potential waste and duplication.
- **Increase emphasis on training and equipping “first responders” according to the specific needs of individual locales.** No matter how well-trained or

quickly mobilized they are, federal response teams never will match the responsiveness of local officials. Congressional efforts to train and equip first responders therefore must remain a top priority. This assistance must be tailored specifically to address local circumstances. Clearly, the requirements for New York City are not the same as for Wichita, Kansas. A “cookie-cutter” approach will not serve the interests of local or federal officials. And jurisdictional issues will prevent the federal government from mandating cooperation. Federal and state officials will be successful to the extent they sustain working partnerships with local officials. In this vein, Congress needs to develop a follow-on program to the Nunn–Lugar–Domenici program to train and equip officials in 120 cities.

**2. To pressure Russia to curb its biological weapons program, Congress should:**

- **Insist that Russia open all its biological facilities to international inspectors.** In 1990, President Mikhail Gorbachev officially “canceled” the Soviet Union’s biological weapons program. In 1992, however, President Boris Yeltsin acknowledged Russia still was conducting biological warfare research. The United States should insist firmly on greater transparency, as called for by the September 1992 Joint Statement on Biological Weapons issued by the United States, Great Britain, and Russia. Specifically, the United States should insist that Russia open to inspection its military biological facilities at Kirov, Sergeev Posad, Strizhi, and Ekaterinburg.
- **Require the federal intelligence community to publicize lists of former Soviet biological warfare specialists who share their expertise with rogue states.** This requirement would make it easier to track

64. Preston, “The Bioweaponeers,” pp. 56, 65.

65. David Kaplan, “Everyone Gets into the Terrorism Game,” p. 32.



and monitor scientists willing to sell their deadly know-how to terrorist organizations. Drawing attention to these individuals could help dissuade others from following in their tracks; it also would focus international scrutiny on states that maintain biological weapons programs.

- **Review and scrutinize funding for projects at the International Science and Technology Center based in Russia and Ukraine and explore the practicality of funding more projects to focus biological weapons expertise on peaceful purposes.** The United States provides financial support for the International Science and Technology Center, an intergovernmental organization that gives weapons experts from the former Soviet Union an opportunity to redirect their talents toward peaceful activities. Thus far, this center has focused largely on nuclear expertise. The United States should consider funding more projects related to biological expertise as a means of channeling such know-how for legitimate purposes.
- **Fund programs designed to enlist the expertise of former Soviet scientists in bilateral U.S.–Russian research projects of mutual concern.** The International Science and Technology Center is not the only venue to attract Russian biological warfare expertise. During the Cold War, Soviet scientists reportedly discovered a fungus capable of destroying opium poppies without affecting any other crops. A three-year program under the auspices of the Vienna-based U.N. Drug Control Program is testing the validity of this claim.<sup>66</sup> The United States should not wait for the U.N. to finish its study. Congress should initiate a focused bilateral program, enlisting the expertise of former Soviet biological

warfare specialists, aimed at studying such mutual concerns as naturally occurring diseases.

### 3. To strengthen the U.S. public health system's level of preparedness, Congress should:

- **Mandate national requirements for stockpiling the medical supplies that would be necessary in the event a major bioterrorist strike occurred.** The CDC should develop contingency plans in the event that it became necessary to vaccinate a large portion of the civilian population against anthrax or other lethal agents. Doxycycline, one of the antibiotic treatments of anthrax, could be stockpiled at secure storage facilities at relatively low cost. Similar plans are possible regarding the country's supply of smallpox vaccine. The current stock of smallpox vaccine would protect only 6 million or 7 million people. Alarming, there is no extant capacity to manufacture a new vaccine.<sup>67</sup> Yet, at relatively modest cost, the stockpile of smallpox vaccine could be expanded to cover a much broader range of possible contingencies. Congress therefore should welcome President Clinton's recently announced decision to order the stockpiling of vaccines and provide adequate funding for this program.
- **Request the Centers for Disease Control and Prevention to review its quarantine procedures.** If a major bioterrorist incident occurred, it could become necessary to quarantine thousands of people to prevent the spread of disease. Plans could be developed and tested using computer simulation and modeling. As with other contingency plans for managing the consequences of the use of WMD, close

66. Peter Ford, "At Heroin's Source, Hope Rises for a Way to Cut Opium Crops," *The Christian Science Monitor*, March 18, 1998, p. 6.

67. Anita Manning, "U.S. 'Not Ready' for Biological Threats," *USA Today*, March 11, 1998, p. 3A.



coordination with FEMA and other federal agencies is imperative.

- **Explore the practicality of deploying sensors capable of providing early warning of biological attacks in major U.S. cities.** In summer 1998, the Department of Defense will deploy a system of biological agent detectors (the “portal shield”) at select U.S. military bases in South Korea and the Middle East.<sup>68</sup> U.S. citizens living in major metropolitan areas should be afforded a comparable measure of warning. Congress should fund a pilot program to develop and test sensors expressly for the purpose of providing advance warning to major metropolitan areas in the United States.

#### 4. To improve intelligence gathering and early warning systems, Congress should:

- **Provide increased funding for human intelligence to penetrate and disrupt terrorist organizations.** The United States needs to improve its intelligence collection efforts against terrorist groups that have the capability of launching biological attacks. PDD 39 directs

the Intelligence Community to reduce U.S. vulnerabilities to international terrorism through an aggressive program of foreign intelligence collection, analyst, counter-intelligence and covert action in accordance with the National Security Act of 1947 and E.O. [Executive Order] 12333.<sup>69</sup>

Unfortunately, the Clinton Administration’s assertive language has not been matched with sufficient resources. Congress

therefore should increase funding to strengthen human intelligence programs designed to penetrate and disrupt extremist groups with the capability to commit bioterrorism.

- **Require the intelligence community to exploit “open source” intelligence.** The intelligence community has long held an institutional bias against “open source” intelligence, such as that in newspapers, Internet sites, books, magazines, and foreign radio broadcasts. This bias is unfortunate, for open-source intelligence can be a valuable resource. For example, private civil rights groups, such as the Anti-Defamation League and Klanwatch, maintain extensive files on extremist militia groups. A researcher working outside the government accurately predicted the Tokyo subway attack.<sup>70</sup> In 1996 testimony before Congress, CIA and FBI officials admitted they were unaware that Shinrikyo had been developing chemical and biological weapons. This oversight occurred even though the cult had 50,000 members worldwide and \$1.5 billion in assets. Congress should fund CIA and FBI programs designed to exploit the potential of open source intelligence to monitor extremist groups interested in WMD.
- **Develop the equivalent of Megan’s Law for individuals convicted of violating state and federal laws regarding the possession of biological agents.** Megan’s Law was developed to alert local communities of the presence of convicted child molesters. Because national security concerns sometimes outweigh an individual’s right to privacy, the same principle should

68. John Donnelly, “Bases in Korea and Mideast to Get Bio-Warning Networks,” *Defense Week*, January 26, 1998, p. 1. For a summary of biological and chemical detectors being developed and fielded, see U.S. Department of Defense, *Proliferation: Threat and Response*, pp. 66–69.

69. White House, Presidential Decision Directive 39.

70. Kyle B. Olson, “The Matsumoto Incident: Sarin Poisoning in a Japanese Residential Community,” Chemical and Biological Arms Control Institute, February 1995.



be applied to individuals who violate laws and traffic in biological agents. Such a law would require local law enforcement officials to be notified of the presence of persons convicted of such federal and state related crimes.

**5. To address public education issues related to the threat of bioterrorism, Congress should:**

- **Pressure the Clinton Administration to develop a sustained campaign to educate the public on bioterrorism.** At a press conference in November 1997, Secretary Cohen held aloft a five-pound bag of sugar to dramatize how little anthrax would be needed to inflict mass casualties in a city like Washington, D.C. Media stunts may serve to dramatize national security threats, but they should not be confused with a sustained campaign to heighten awareness about the danger of bioterrorism. Such a campaign would explain, in a sustained and carefully modulated fashion, U.S. counterterrorism policy as well as the nature of the bioterrorist threat. This could be achieved through a variety of different mediums, including public service announcements on television and radio. The overall approach should be coordinated at the National Security Council level. Although some analysts might find this approach alarmist, a carefully modulated educational campaign could serve, in fact, as an important confidence-building measure and reduce the possibility of mass panic.<sup>71</sup>
- **Require the Clinton Administration to assess the potential impact of saturation media coverage following a major bioterrorist strike.** A bioterrorist strike at home or abroad would generate sensational media coverage. Even hoaxes can attract considerable media attention, as

demonstrated in 1997 when the headquarters of B'nai B'rith, a national Jewish organization, received a petri dish labeled anthrax. U.S. policymakers need to think through the media implications of a major bioterrorist strike. Congress should mandate an independent assessment by a team of government, media, and disaster relief experts to explore the potential impact of media saturation after a terrorist attack involving WMD.

## CONCLUSION

The development of a clearly articulated, comprehensive strategy to defend against bioterrorism must be based on an accurate threat assessment, prudent allocation of resources, and respect for the rule of law. If properly implemented and sustained, this approach could help deter terrorists and sponsors of state terrorism who otherwise would consider biological attacks. Conversely, the perception that the United States is poorly prepared to cope with bioterrorism is likely to encourage groups to exploit this strategic vulnerability. Unfortunately, this latter perception currently prevails.

The potential for nuclear terrorism has gained much attention already, and deservedly so. To help offset the danger of nuclear terrorism, the U.S. Department of Energy created its Nuclear Emergency Search Teams in 1974. The government must pay greater attention to the horrific potential of bioterrorism. As it stands today, the United States is unprepared to handle a concerted attack involving biological agents. Even a single biological terrorist strike in a densely populated urban area could cause catastrophic damage and widespread panic.

Clearly, the threat of bioterrorism is not the only national security danger the United States faces. But this threat is linked with other strategic vulnerabilities. As a matter of national policy, the Clinton Administration has kept the United States

71. For further ideas aimed at reducing the possibilities for mass panic, see Michael Eisenstadt, "Enhancing Public Preparedness for Chemical and Biological Terrorism," *Policywatch* No. 308, April 3, 1998.



defenseless against long-range missiles. These missiles can be tipped with nuclear, chemical, or biological weapons. In fact, former Soviet scientists have revealed that Moscow had a program to put biological weapons on missiles.<sup>72</sup> The United States requires a defense-in-depth against the threat of biological strikes, whether it stems from terrorists operating on U.S. soil or in hostile states armed with long-rang missiles.

Counterterrorism programs invariably attract intense media interest and legislative activity in the aftermath of major terrorist attacks. A sustained, comprehensive effort is necessary to address the

threat posed by bioterrorism. By moving to address extant vulnerabilities without compromising constitutional freedoms, Congress and the Clinton Administration have the opportunity to prevent bioterrorism from occurring on U.S. soil. The United States should reject the grim insinuation that a catastrophic terrorist strike involving weapons of mass destruction somehow is an inevitable rite-of-passage into the 21st century.

—James H. Anderson, Ph.D., is Defense and National Security Analyst at The Heritage Foundation.

---

72. Preston, "The Bioweaponeers," pp. 56, 65.