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## The Challenge of Biological Terrorism

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# The Challenge of Biological Terrorism\*

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## Abstract

A well respected author has created an excellent overview of the threat of bioterrorism - yesterday, today and in the not so distant future. The text not only provides a succinct analysis of the threat but also presents issues of concern such as the imbalance between funding for bioterrorism and funding for all-hazard public health readiness. He includes several Appendices that are useful to planners and researchers alike. He leaves the reader with several prioritized agendas for action and the feeling that dark times are coming upon the world either from bioterrorists, unregulated research, or natural causes initiated by accidents. Overall the book serves as a good augmentation reference for university courses in natural and technological hazards.

**KEYWORDS:** bioterrorism, risk, assessment, threat, analysis

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\*Thanks to Claire Rubin for introducing me to this book. I believe it is an excellent addition to the material I teach graduate students in the course EMSE 234 entitled "Risk Assessment and Management of Natural and Technological Hazards" at The George Washington University.

## **The Challenge of Biological Terrorism**

By Anthony H. Cordesman

Washington, D.C.: The CSIS Press, 2005

xii + 208 pp., notes, bibliographical references, 9 tables

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This is one of the better overviews of the biological terrorism issues confronting our world today. The text is well-referenced, low on hyperbole, and strong on explicit risk management recommendations. The author, Anthony H. Cordesman, is a distinguished expert and author of over 30 books in various fields of national security. He is currently a senior scientist at the Center for Strategic and International Studies (CSIS) in Washington, D.C. He has broad knowledge of the Middle East and extensive experience dealing with the political dimensions of national security, having previously served with the State Department, the Defense Department and the staff of Senator John McCain.

In *The Challenge of Biological Terrorism* the author conveys a frank and balanced representation of the complex threats of biological terrorism and its agile evolution. His commentary offers deeper insight into a perplexing issue: why does the US still have so much to do in order to effectively deter and defend against this threat despite huge investments to resolve the problem to date? In his preface on page xii, the author states, "It is far easier to throw money at a problem than it is to fix it." Difficulties include misaligned interagency reporting and measurement systems, high degrees of information / intelligence compartmentation, lack of productive collaborative processes between technical experts and political policy makers and lack of cooperation among police, intelligence and military organizations despite the creation of a new Intelligence Czar.

The author, in a *simple* way, discusses: When to Cry "Wolf," What to Cry, How to Cry "Wolf," and the international cooperation to achieve continuity with our allies. However, there is *nothing simple* about the devilish details.

Bioterrorism terrorists sometimes express a morbid fascination with the manner by which biological agents can cause horrifying agony and death on a massive scale. Bioterrorism can impose a high degree of dread. However, the sequence of events leading to a successful bioweapons attack on a medium or large scale requires a complex series of processes – each technically difficult in its own right with each step risking revelation of the impending operation. There are

many potential indicators including procurement / manufacturing or getting access to a virulent agent (perhaps a dual-use agent), scaling up production to produce a sufficient volume for attack, weaponizing it, storing it in a manner that the agent is not released or does not lose its strength, periodic testing it in a closed environment, gaining access and control of a practical delivery system, transporting and activating the agent, disseminating the agent onto its intended target and taking defensive measures for protecting the perpetrators from becoming the first casualties. It has similarities to other acts of terrorism in the collateral harm it can do to both the immediate attack targets as well as secondary targets. The author points out that a bioterrorism incident may occur in an adjacent nation-state where controls are poor, then spread rapidly across U.S. borders. Effective mitigation requires extending influence beyond one's own borders.

Lethality may be less of an important objective when the attack is more motivated by *terrifying* factors of psychological and economic significance. The author illustrates that small attacks, including widely dispersed attacks, have economy and a degree of simplicity to the perpetrator yet can greatly amplify costs to the targeted state. This can be true especially in terms of the psychological and economic consequences. The author uses the “Amerithrax” attacks against the U.S. in the Fall of 2001. These killed only four people and infected a total of 18, but they also led to widespread panic, the closure of U.S. government and postal facilities, massive public expenditures and preventive actions like treating approximately 20,000 people for possible exposure to anthrax.

The author recommends that one should focus more on improving defense and response against axisymmetric low-level bioterror threats. This has greatest utility when such expenditures also improve the nation's resiliency in the face of natural biological threats such as epidemics or man-made threats such as transportation accidents of hazardous material (HAZMAT) carriers.

In the past, uncertainty has plagued definitive criterion for expected lethality and a host of other technical and operational processes that have little margin for error. But such barriers, that deterred bio-terrorists from being successful in the past, are coming down due to the nearly impossible task of controlling access to dual use technology and the unmitigated dissemination of biotechnology information on the Internet. Politics laced with religious zeal and rationalizations of terrorism are removing past thresholds of violence previously constraining terrorists' potential. Suicidal fanatics can increase the perpetration of extremely violent attack scenarios because their plans do not require the complexity of escape and survival after the incident. The author clearly sounds the alert, warning us that something should be done and prescribing that which can be done.

The author explains in some detail the current problems with threat analysis based on both recent and ancient history. He demonstrates using time lines to analyze a major incident – 2001 Amerithrax – exposing discontinuities that remain unanswered to this day. Through Bin Laden's published materials, he leaves no doubt that Al Qaeda is interested and has rationalized the use of mass casualty bioweapons. He provides a chronological number of actual incidents where authorities interdicted the movement of fissionable material by smugglers. These leave one to wonder what percentage of such movements has not been interdicted. The inclusion of the nuclear smuggling data in a bioweapons text seemed somewhat off focus yet one can rationalize that many of the sequential logistical elements of a successful dirty bomb attack are similar to the complexities of a bioweapons attack. He points out that Al Qaeda has some track record mixing explosives with toxins or other poisonous agents. The pattern fits.

Drawing from the “Report to the Presidential Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction”<sup>1</sup>, the author highlights a quandary: vast amounts of information are available in the open literature about potentially weaponable biological agent developments, yet the U.S. intelligence community seems poorly configured to harvest and analyze the essential elements from such an overall flood of information. Very specialized collection teams and procedures are required to deal with the bioweapons subject matter expertise.

The author provides a check list to respond to the threat of low-level biological attack. Action items include: Improve government capabilities for warning, intelligence, detection, defense and response. Analyze low-level bioterrorism attacks using parametric models that account for uncertainty. Improve risk and incident communication to the public – including building trust. Improve national and international controls and safeguards on access to the biological agent supplies, equipment and facilities. Strengthen legal enforcement frameworks to give authorities the ability to take earlier action to deter or preempt illicit bioweapons' activities. Propose an international tracking and vetting system to keep more systematic tracks of individuals with special expertise including vetting and clearing workers and researchers. Include the potential of attacks on agriculture and food in the surveillance system because of the stealth, public health issues and, most of all, the very high economic consequences to the agricultural industry. Finally, include more flexible containment and decontamination capabilities for local responders in contingency plans.

The author stresses that there is a great degree of uncertainty associated with high-level attacks, whether the agent of choice is anthrax, smallpox, plague, or other agents. Lack of empirical data for high-level attacks puts officials and the public at the mercy of *worst case* scenario specialists, who scare people into sub-optimizing their response capabilities. Over time such scare-mongers simply lose

credibility as people become numb to escalating, horrific but unsubstantiated claims. Design of agents, optimizing their dissemination and predicting their lethality are highly variable propositions. However, the author infers that it may not matter because of serious axisymmetric affects on emotional responses of society causing political, economic and societal disruption. Confronted by a major bioweapons attack the chances of rampant civil disobedience and violence are great, and the government's delayed information and response can make matters of trust problematic.

The author emphasizes that there are also significant uncertainties in the complex processes of manufacturing, processing, weaponization, and dissemination. Dual use technology is widely available and extraordinarily difficult to track and control. The author emphasizes this point by relating experiences of Project BACUS (1999-2000) where a team, by using equipment and supplies from catalogues, hardware stores and commercial suppliers, created 2 lbs of *Bacillus Thuringiensis* and *Bacillus Globigii* – similar to anthrax – and milled the agents down to weaponable size. The project was successfully completed allegedly undetected by law enforcement or intelligence services.

The author presents the seven recommendations of the Fink Report <sup>2</sup> that are options for improving control of dual use technology. He also quotes findings of the Jason 1997 Summer Study that illustrated the agility of bioweapons technology and the required race to keep up with its latest iterations. The author concludes with seven recommendations to improve readiness against high-level biological attack including improving models, broadening the base of analysts, sharing more information among international participants, improving processes of net technical assessment, improving indicators and analysis for warning and response, and bridging capabilities of international organizations in both human disease and animal and plant disease specialty areas.

The author presents a serious concern that biological attacks can use proxy targets that deny the opportunities for early detection, deterrence and defense. The author reiterates the CDC recommendations for preparedness and prevention, detection and surveillance, diagnosis and agent characterization, and response and recovery. He reviews estimates of U.S. expenditures in these areas based on published budget documents and inferences. However, there is no common burden sharing in the game - other nations are not contributing anywhere close to U.S. levels. He gives recommendations to create a more balanced approach to resourcing issues including more transparent plans, better international cooperation, creation of regional and international centers, improved capabilities to rapidly exchange data, and developing independent sources of comparative analysis of national and international programs, levels of effort and strategies.

The author highlights the apparent diversion of resources towards terrorism when more likely hazards still exist naturally. In March 2005, more than

750 scientists wrote an open letter of concern about this issue to the Director of the National Institute of Health. The author stresses that we must make international cooperation work and gives several initiatives that seem to make good sense but have yet to generate much resources and traction. Preparedness and response to bioweapons attack remain largely reactionary rather than preemptive for most nations of the world. The author provides some valuable *Appendices* including multiple scenarios, a summary of the U.S. bio-defense programs, and supporting data for the letter written to the Director of the National Institute of Health in March 2005, pleading the case for more balanced resourcing.

## References

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