

Still a threat to the united states

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The tenth anniversary of the 9/11 attacks prompted reflections on the current status of the terrorism threat to the United States. One aspect of an assessment "the threat posed by biological weapons" is especially challenging because of the unique character of these weapons. A prime distinction is the fact that exposure to minute quantities of a biological agent may go unnoticed, yet ultimately be the cause of disease and death.

The incubation period of a microbial agent can be days or weeks; unlike a bombing, knifing, or chemical dispersion, a bioattack might not be recognized until long after the agent's release. Accordingly, bioterrorism poses distinctive challenges for preparedness, protection, and response. The use of a pathogen for hostile purposes became a consuming concern to the American people soon after 9/11. About a half-dozen letters containing anthrax spores were mailed to journalists and politicians beginning one week after the jetliner attacks.

Four letters with spores and threat messages eventually were recovered. All were postmarked Trenton, New Jersey, which meant that they had been processed at the postal distribution center in nearby Hamilton. Two letters were postmarked September 18, one addressed to Tom Brokaw at NBC-TV and another to the editor of the New York Post. The other two letters were stamped October 9 and addressed to Senators Thomas Daschle and Patrick Leahy. As people became infected in September, October and November, local responses revealed gaps in preparedness for a biological attack.

For example, the first confirmation of an anthrax case was on October 4, more than two weeks after the initial letters were mailed. Retrospective

assessments later indicated that by then nine people had already contracted the disease. Their illness previously had been misidentified because of faulty diagnoses or erroneous laboratory. In the end, at least 22 people had become infected, five of whom died. Meanwhile, scores of buildings were belatedly found to be contaminated with spores that had leaked from the letters.

At least 30, 000 people who were deemed at risk required prophylactic antibiotics. [2] Millions more were fearful, many of them anxious about opening their own mail. Since the anthrax attacks, the U. S. government has spent about \$60 billion on biodefense. A large portion of those dollars has gone to biodefense research under the auspices of the National Institute of Allergy and Infectious Diseases (NIAID). The NIAID budget for biodefense research has grown from \$200 million in 2001 to an annual average of \$1. 6 billion since 2004.

United States safer from a bioattack now than at the time of the anthrax attacks? Has the spending been worth it? Key Questions, Discrepant Answers Opinions on these questions differ. While concerned about the danger of backsliding, the authors of an article in Politico now felt "reassured about our preparedness" for a biological attack. [3] At the same time, an opposing assessment was emblazoned in the title of a New York Times Magazine cover story: "Ten Years After the Anthrax Attacks, We Are Still Not Ready. [4] A review of biodefense efforts during the past 10 years in Science magazine blandly acknowledged the obvious: "debate continues over how much safer the country The congressionally chartered Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism (WMD Commission)

issued a report card in 2010 on efforts to address several of its previous recommendations. The administration's failure to "enhance the nation's capabilities for rapid response to prevent biological attacks from inflicting mass casualties" merited a grade of "F" (meaning that no action was taken on this recommendation).

Almost as bad was the "D*" given for continuing inadequate oversight of high-containment laboratories. Reasonable arguments can be made to support varied views about these issues, and all conclusions bear a degree of subjectivity. Yet an assessment of several broad critical contentions can offer clarification. The criticisms are largely expressed in the form of five contentions. Contention #1 : Funding for biodefense has meant fewer dollars for other deserving areas such as public health infrastructure and basic science research.

In 2005, 758 microbiologists signed a letter to Elias Zerhouni, then director of the National Institutes of Health (NIH), objecting to the diversion of funds from public health research to biodefense projects. Zerhouni, joined by NIAID Director Anthony Fauci, rejected the letter's premise of "diversion." An assessment of disputed interpretations suggested that spending on biodefense benefited non-biodefense research as well, but the numbers were so "convoluted" that a clear determination was elusive. [7] An analysis of the biodefense budget for fiscal year 2012 indicates that only 10% of the proposed \$6. billion is dedicated exclusively to civilian biodefense. The other 90% is for projects with both biodefense and non-biodefense implications. The non-biodefense goals, according to analysts Crystal Franco and Tara Kirk

Sell, include " advancing other areas of science, public health, healthcare, national security, or international security. "[8] This tilt toward dual-track benefits has been reflected in past budgets as well. A report in Nature magazine indicated that of the \$60 billion pent on biodefense in the past decade, only about \$12 billion went for programs have benefited substantially from biodefense projects.

Fiscal woes in recent years have in fact resulted in reduced resources for public health and related programs. Economic pressure threatens to shrink biodefense funding as it does funding for much else in the federal budget; however, it is not clear now, nor was it in the past, if fewer dollars for biodefense would necessarily translate into more for public health, basic research, or any other health-related programs. Contention #2: The growing number of facilities for research on select agents specified pathogens and toxins) has heightened chances of an accidental release. Statistics alone make this assertion unassailable.

The chances of something going wrong in any enterprise, assuming no change in operational security, increase with the size of the enterprise. As the number of research facilities increases, so does the chance of an accident. A continuing weakness is the lack of clarity about the number of high security laboratories. In 1983, the Centers for Disease Control and Prevention (CDC) designated four levels of safety for laboratory work with biological agents. A Biosafety Level-I (BSL-I) laboratory allows for work on relatively innocuous agents and a BSL-4 laboratory on the most dangerous.

The two highest containment facilities, BSL-3 and BSL-4, require special security measures including restricted access, negative pressure to prevent air from flowing out of the room, and protective outerwear for operators. BSL-4 laboratories require additional safeguards such as entry through multiple air-locked rooms and positive pressure outerwear with a segregated air supply. A BSL-4 laboratory is required for work on agents that cause lethal disease for which there is little or no treatment (for example, smallpox and hemorrhagic fevers such as Ebola and Marburg).

At present, there are 15 such U. S. facilities planned or in operation, triple the number operating in 2001. [10] Other dangerous agents, including the bacteria that cause anthrax and plague, are worked on in BSL-3 laboratories. The number of these laboratories has skyrocketed since 2001, although the actual figures are uncertain. While an estimated 20 BSL-3 facilities were operating before the anthrax attacks, in the decade since the number has grown to between 200 and an astonishing 1, 400 or more. [11] The huge discrepancy is attributable in part to varied methods of calculation.

Some assessments have counted all BSL-3 laboratories in an institution as a single BSL-3 facility, while others have designated each laboratory as a separate entity. Furthermore, some laboratories with a BSL-3 designation may lack safety features found in others, such as double doors and a requirement that two persons must be present. No national authority is now empowered to mandate a single system of counting or that even the lowest estimated number of BSL-3 laboratories (200) represents a 10- old increase

in the past 10 years, and that safety precautions at some BSL-3 facilities are less rigorous than at others.

Contention #3: The growing number of investigators with knowledge about select agents has increased the chances that an unsavory scientist could launch a bioattack. Along with more high containment facilities has come more scientists who handle select agents. Concern about dangerous individuals among them was heightened in 2008 when the FBI named Bruce Ivins as the perpetrator of the 2001 anthrax attacks. Ivins was a veteran scientist who for decades had worked on anthrax at the U. S.

Army Medical Research Institute for Infectious Diseases (USAMRIID) in Fort Detrick, Maryland. Before charges could be brought he committed suicide, so his guilt or innocence could never be established in a court of law. Still, evidence of his aberrational behavior, including alcoholism, depression, and self-described bouts of paranoia, evidently went unnoticed by his superiors. The Ivins case highlighted questions about the screening of workers with ready access to select agents. The number of those workers just prior to the anthrax attacks has been estimated at about 700.

By 2008, however, the figure had climbed to more than 1,000. As some have suggested, the greater numbers mean that "the odds of one of them turning out to be a bad apple has increased." [13] Ironically, Ivins was not a newly minted investigator, but a long-respected figure in the army's biodefense program. Days after Ivins' death, a USAMRIID spokesperson acknowledged that officials may have been unaware of his problems because they relied in

part on self-reporting. [14] In 2011, a mental health review panel concluded that " Dr.

Ivins had a significant and lengthy history of psychological disturbance and diagnosable mental illness at the time he began working for USAMRIID in The Ivins case has raised concerns that other troubled or nefarious individuals might be working in U. S. laboratories. A recent government-sponsored forum on biosecurity called for periodic behavioral evaluations of personnel with access to select agents that include drug testing, searches for criminal history, and completion by selectees of a security questionnaire. 16] Even while acknowledging the necessity of security measures, the right to privacy and freedom of scientific inquiry must be respected to the extent possible. In any case, behavioral monitoring can never provide absolute protection against the acts of a clever miscreant. Contention #4: Money for biodefense has been misapplied or otherwise failed to produce desired results. Project BioShield was established by congress in 2004 to acquire medical countermeasures against biological, chemical, and radiological vaccines and other drugs that have not necessarily been tested for efficacy on humans.

Beyond the loss of time and money, the VaxGen failure was a public embarrassment. It became a symbol of ineptness early in the new program. Other biosecurity programs have also drawn criticism, including a \$534 million surveillance project called BioWatch. This program included the placement of air samplers for detection of anthrax spores and other agents in more than 30 major U. S. cities. A committee convened by the National Academy of Sciences concluded in 2010 that the program was faced with "

serious technical and operational challenges. " Others flatly criticized its funding as wasted.