

Bioterrorism: Are We Really Safe?

Biological warfare is a topic that many people tend to sweep under the rug and ignore. Shortly following the infamous 9/11 attacks, anthrax claimed five lives around the nation, but people do not live in fear of bioterrorism. The probability of another terrorist attack before the end of 2013, as explained by Mark d'Agostino and Greg Martin in "The Bioscience Revolution," is high and most likely to come in the form of bioterrorism due to its relatively low production cost and availability (1). Due to the likelihood of such an attack, the need for good biodefense mechanisms is apparent. Luckily, while most average citizens have spent their time ignoring this threat, the United States government has been avidly preparing biodefense protocols at the federal and state levels. These procedures are often thorough, but rely on the abilities of hospitals and physicians, which is where the problem truly lies. This problem can be seen when analyzing the protocols in hospitals and physicians abilities to diagnose and treat bioterrorist agents. Because of this, the government's detailed protocols can be rendered useless and the nation lacks several essential tools to deal with a bioterrorist attack. In order to protect the nation in case of a bioterrorist attack, changes are needed to better hospital procedures and to educate physicians on the diagnosis and treatment of harmful biological weapons. These changes are most likely to be made through the redirection of the funds that are already used for biodefense. If these changes are not made, however, the United States and all its citizens could suffer in a bioterrorist attack.

Bioterrorism first became important in national protocol in the early 2000s. The beginnings of CDC bioterrorism protocol began in April 2000, as described in "Biological and Chemical Terrorism: Strategic Plan for Preparedness and Response." The plan outlined in the protocol would focus on five main areas of concern: preparedness and prevention, detection and surveillance, diagnosis, response, and communication. These five areas of focus were correctly

identified as key points, but the CDC only used their protocol as job descriptions to smaller agencies. These descriptions were simply vague phrases such as “enhance epidemiologic capacity to detect and respond to biological attack” without explaining how to do so. This lack of specificity became troublesome in October 2001 when, according to the article “Recognition Of Community-Acquired Anthrax: Has Anything Changed Since 2001?,” there were 22 cases of anthrax caused by bioterrorism. These attacks caused a brief national panic and a public outcry for better government protection, thereby demonstrating the need for protocol reform.

Because of the panic caused by the 2001 bioterrorist attacks, federal protocol was quickly revised and now provides detailed descriptions of what needs to be done in case of an attack. The job descriptions in CDC protocol now provide a basic course of action for states and emergency relief organizations. This protocol is found on the CDC website in the Bioterrorism section, where it is separated into response and preventative measures. In the response section, entitled “Communicating in the First Hours,” the CDC provides different protocol for each type of major agent. Anthrax, for example, has special public health announcements that emphasize fast diagnosis and treatment with antibiotics. Although response protocol is detailed, the CDC’s primary goal is to prevent a bioterrorist attack from being devastating. They aim to accomplish this by providing a 34 page template for healthcare facilities to base protocol upon. This template, entitled “Bioterrorism Readiness Plan: a Template for Healthcare Facilities,” suggests having labs ready to begin the identification, transportation ready, treatment plans, and sterilization methods. This detailed template has effectively developed the national protocol since the 2001 attacks.

This federal protocol is passed down through the agencies, most notably the CDC, to the state government public health departments where procedures are further solidified and readied

for action. In the state of Wisconsin, for example, these procedures are highly developed and are created by the public health department, as CDC protocol dictates. The public health department's most developed procedure is for unknown substances, which is how anthrax is most likely to be used. In the event of an unknown substance, the procedure indicates that possible victims must be transported to the emergency room and treated by hospital personnel. A second plan, also derived from the Wisconsin Emergency Response Plan, gives more detailed instructions to hospitals and clinics in the state. For example, the protocol indicates that hospitals must have "guidance for controlling patients suspected or confirmed to have an airborne infectious disease, protective clothing needed while caring for these patients, and patient management." This represents the type of procedures that states have in place in case of a bioterrorist attack and shows that these protocols provide detailed job descriptions to functioning units that should serve as a basis for reacting to a bioterrorist attack.

This protocol, enacted by the state and federal government agencies in case of a bioterrorist attack, relies heavily on the ability of hospitals to enact their own procedures in case of an attack, but hospitals in this nation have weak, if any, protocol in place for a bioterrorist attack. This weak protocol was proven in a small sampling of national hospitals when I called to ask about their bioterrorism procedures. Many of these hospitals could not supply a clear answer about whether or not there is even any protocol in place and certainly did not address subject areas such as transportation, treatment, sterilization, or identifying agents. These vague responses support the assertion that hospitals are not adequately performing the jobs required for dealing with bioterrorism and, therefore, are rendering government protocol ineffective. One of the worst responses came from the Ochsner Hospital in New Orleans, Louisiana. Initially, the operator did not understand what a bioterrorist attack procedure would be or what department would have an

answer to my question. She proceeded to connect me to the lab department, where lab personnel also were unable to answer my question, and I also spoke to representatives from both the “micro” and security departments. The security department was unable to differentiate between a bioterrorist attack and a terrorist attack. This confusion, resulting from the simple question “What protocol does the hospital have in place in case of a bioterrorist attack,” proved several things: that the hospital does not have a proper procedure in place to carry out the CDC job that has been delegated to it and that many personnel do not even know the basics of the procedure. Because many hospitals replied in a similar manner, it demonstrated that several hospitals in different areas of the country are equally unprepared to deal with bioterrorism. Therefore, hospital standards need to be redefined and enforced in order to provide better protection.

Further down the chain of response to a bioterrorist attack are the physicians in the hospitals that would be providing treatment and diagnoses for victims, but these physicians are not as thoroughly prepared as they need to be. For example, a study conducted by the Uniformed Services University (USU) in 2009, outlined by Mark B. Stevens and Blake Marvin, demonstrates that physicians lack the ability to diagnose inhalation anthrax. Anthrax is a large biological threat to our nation’s security because, according to PubMed Health, inhalation anthrax typically kills 90% of victims. Typically, physicians have issues diagnosing it earlier because it mimics other respiratory infections. It was this infection that killed five people in the 2001 attacks, proving the infection’s lethality and the need for physicians to be able to treat it. One of these fatal cases, as well as two others from the same outbreak, was used in the USU study. In the study, physicians across the country were mailed the details of each case without being told it was anthrax and requested to give their best three diagnoses, as well as whether or not they would hospitalize the patient, request a blood culture, or obtain a chest film (672). As

reported, only 3% of the physicians that replied even suggested anthrax and many would not have hospitalized the patients or requested blood or film (672). Because this would cause the infection to not be properly identified, this shows that physicians are lacking essential skills to deal with the most probable and known bioterrorist agent, and therefore require better, or further, training.

One way that physicians could be better trained to deal with possible bioterrorist agents is by learning the small signs that set those infections apart from others. By knowing this, the physicians should be able to have a certain series of tests or questions to ask their patients in cases of suspicious illness that could be the work of possible bioterrorism. Mark A. Callahan's article, "Accuracy Of Screening For Inhalational Anthrax After A Bioterrorist Attack," explores possible symptoms that could be associated with inhalation anthrax. The article uses data from a study that looked at 13 reports of 28 cases of inhalation anthrax from 1920 to 2001 (337). This article suggests that what indicates anthrax is "presence of non-headache neurological symptoms," dyspnea, nausea, vomiting, and "any abnormality on lung auscultation" (337). This data shows that there are facts available to train physicians how to diagnose bioterrorist agents. Therefore, physicians need to receive this training or have the information readily available.

The means to supply physicians with the tools they need to receive this basic training, as well as the support of a standard hospital procedure, should come from a redirection of funds. These funds already exist; the government allocates millions of dollars to different departments in order to develop biodefense mechanisms. Crystal Franco and Tara K. Sell explore the funding in their article "Federal Agency Biodefense Funding: FY2012-FY2013." They explain that much of this money goes to the CDC. The CDC then, according to Charles Warzecha, a director for Wisconsin's Public Health Department, gives funds to the states to improve their biodefense

protocol. Warzecha also explained that the state will then give this money to more local departments to develop more government protocol. Federal funding has increased steadily since the 2001 anthrax attacks, as seen in Franco and Sell's article. In the years between 2001 and 2004, biodefense cost \$14.5 billion and in 2012 alone \$5.54 billion is in the budget. This increase in the budget corresponds with the improvement of biodefense. Today, government protocol is efficient, but hospitals still need improvement. By using the biodefense budget to improve hospitals and physicians, the nation's biodefense will become effective in dealing with bioterrorism.

In a world threatened by terrorists, the state of this nation's biodefense system is essential to the safety of the American people. Due to their availability and low production costs, a likely form of terror is biological weapons, a threat America is unprepared to face. This unpreparedness does not stem from pages upon pages of detailed government protocol, but from the lack of hospital protocol and the inability of physicians to diagnose and treat the biggest bioterrorist agents. Initially, the government protocol was inefficient as well, but following the 2001 anthrax attacks, funding increased exponentially and government protocol has improved. If this same method was applied to hospital procedures, then America would be much better prepared to face a bioterrorist attack. However, if this does not change then America could face disaster if bioterrorists strike. As a citizen of the United States, the reader has a duty to question their local hospital on their procedure and, if it is lacking, to demand reform. In the event of an attack, it would be the common citizens, such as the reader, that would suffer the most.

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