

# Anthrax Scare in Buncombe County

## A Lesson in the Basics of Bioterrorism Preparedness

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**I**N OCTOBER OF LAST YEAR I had the unique experience of receiving a phone call from our State Public Health Department advising me that a Mr. Robert Stevens, who had just visited a resort community 15 miles from my office, had been diagnosed with inhalation anthrax. Others in this issue have described the public health response to this alert. It is fair to say that the total corporate energies of the Buncombe County Health Center were completely wrapped up in this anthrax event and its fallout for two or three months. Considering our lack of preparation, I believe that the North Carolina healthcare system in general and its public health system in particular responded remarkably well. However, that experience did teach me a few lessons about bioterrorism, its prevention, and how to respond. I will try to comment briefly on those lessons.

An effective bioterrorism response plan has at its core three key components: a monitoring system to sound the alarm, a trained workforce to respond, and adequate response tools for use by that trained workforce. Let's take those three in order to see how we stack up in North Carolina.

### **A Real-Time Surveillance System**

You can't respond to a bioterrorist attack until you know one has occurred, and we are unlikely to have either notice before, or a public announcement during, an intentional release of a dangerous biological substance. The disease reporting system that we have in North Carolina today has served us well for many years, but it was never designed to serve as a real-time alarm system, which would trigger a public health response in a crisis situation. Our system has tracked the incidence and prevalence of disease entities for dozens of years, providing us with the data used to develop

health programs and set health policies across the country. However, on September 11<sup>th</sup>, 2001, we entered a new world for public health, and now we must change our surveillance system dramatically.

Space limitations prevent me from describing all the new and wonderful improvements already in the design phase for our surveillance system. The need for these improvements in North Carolina's monitoring system, however, is the easiest problem to fix of the three problems described above. We have focused considerable resources on the development of new technology, and I have no doubt that we will soon have a fine, accurate, real-time, and likely even interactive health surveillance system in place across our state.

### **A Well-Trained Workforce**

The second foundation for an effective bioterrorism response in the healthcare field is a trained workforce. On the surface it would appear that all we need to do is put in place appropriate training for our healthcare professionals. Even though they are already overwhelmed and under-staffed, offering this additional training would allow us to check this problem off our work plan and move to other challenges. We have already put in place seven Public Health Regional Surveillance Teams across North Carolina. We have dramatically improved our public health workforce at the state level, and our laboratory capacity is much enhanced. Law enforcement, emergency medical services, hospitals, and private practitioners have all undergone training. Clearly, we are all much better prepared to handle a bioterrorist attack today as a result. The question, however, is not whether we can train people properly to respond, but rather can we maintain their interest and the interest of our elected officials

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in bioterrorism over the long haul? Right after the World Trade Center attack in September of 2001 and the anthrax letters in October of that year, workshops and seminars on bioterrorism abounded. Often you literally could not get into those workshops because of the overwhelming level of attendance and interest. Unfortunately, the interest died almost as fast as it appeared. This writer was perhaps among many who had been scheduled to speak in workshops in January 2002 (only four months after 9/11) only to find them cancelled for lack of pre-registration! We must remember that eight years elapsed between the two separate attacks on the World Trade Center. An uncommon level of dedication will be required to keep our skills sharp while patiently awaiting an event that may not occur for yet another eight years. I predict substantial problems in maintaining the interest level, the funding level, and the proficiency level based simply upon my observations of human nature and historical precedent.

## **A Well-Stocked Tool Kit**

The third foundation for a proper bioterrorist response is an effective tool kit. Of the three problems I have mentioned, this issue is perhaps the most troubling. Some of the tools we need to respond to bioterrorism are quite basic and we know they work very well. For example, we have procedures for collecting environmental samples to determine which agents might be present, and we have laboratory tests to help diagnose the effects of a bioterrorist agent released in our population. The techniques themselves are fundamentally sound, and we can take some confidence knowing that those basic procedures will work. However, some of the other tools we will need in this fight are new to us and whether they will work is yet to be seen. We in public health are used to working together with hospitals, private medical practices, and the Centers for Disease Control and Prevention (CDC). We all speak a common language and have a common focus. In a bioterrorist attack, health practitioners will play a strong role initially to help ascertain and verify that an attack has occurred; but the very moment that announcement is made the focus shifts entirely to law enforcement, and we will be expected to interact with a group of players we hardly know, let alone consider our colleagues. The Federal Bureau of Investigation, the Office of Emergency Preparedness, HazMat teams—all these and more will be crucial in the fight against bioterrorism, but the alliance between healthcare and those new players is without precedent. We must assume that there will be problems and plan accordingly.

Finally, some of the tools we will be expected to use in this fight worked well in earlier times in a less complicated world, but it is unclear that they can continue to be effective. In the event of a smallpox release, our response will center

around the age-old program of isolation, quarantine, and vaccination. I personally have been floating around public health since 1966, and to date I have had no experience whatsoever with implementing a quarantine. Further, I do not know anyone in my circle of colleagues with such experience—and I am one of those guys who's supposed to make it happen! Quarantine worked extremely well many years ago when populations generally were isolated and much less mobile. At the turn of the century and for many years thereafter, isolation and quarantine were very effective tools here in North Carolina, but will those same tools work today? To be effective, a quarantine would have to be imposed with lightning speed as soon as the need was established. If information leaked out prematurely—and it usually does—then many people in the quarantine area would pack and leave before the quarantine could be put in place. Further, I have serious doubts that elected officials in our many small communities across this state would be willing to act on a request for law enforcement agency help in enforcing a quarantine if there had not already been a number of deaths in other areas around the state. A quarantine is of no value unless it is implemented quickly, encircles the problem completely, and is airtight. Make no mistake, when the time comes, I will be out there with my colleagues attempting to use this time-proven tool, but if I had to bet my retirement on the outcome, then I wouldn't be holding my breath for that treasured gold watch!

A smallpox release would initially trigger an attempt to quarantine, isolate, and vaccinate according to the CDC "ring vaccination" plan. When those attempts fail then our next strategy is mass immunization.

CDC has asked local health departments to develop community plans to vaccinate everyone in their jurisdictions within five days. The sheer logistics of getting the entire population through a series of vaccination stations in a single five-day period is staggering. Calculations for my own Buncombe County and its 200,000 residents indicate that we will need over 2,000 workers to pull off this incredible task. The vaccine is far from perfect; there currently exists no trained workforce that even remembers how to administer the vaccine with its bifurcated needle; the vaccine is currently classified as an "investigational new drug" with a consent form currently ten pages long; there are people across this state who will die from this shot if it is administered, and many more will be disabled. However, I have more confidence in our ability to immunize the entire United States in that very brief period than I have in our capacity to isolate and control smallpox cases locally in the event of an attack.

Should that attack occur, it is also very likely that we will not be faced with a strain of smallpox with which we are familiar and for which pure vaccine has been prepared. It is apparent that the former Soviet Union has developed weaponized versions of smallpox that would make superior weapons in the hands of bioterrorists. Thus it is likely a more

virulent strain of smallpox would be the strain of choice. Further, I would not expect there to be a single case or a few scattered cases around the country, but rather a continuing stream of infected individuals released into the population by terrorists, quickly rendering local or regional approaches to control ineffective.

## **Conclusion**

In closing, I need to remind the reader—and myself—that our country has set incredibly ambitious goals in the past and achieved them ahead of schedule. If we can put a man on the moon then I believe we can overcome the technical and

human challenges that confront our healthcare industry as a result of the threat of bioterrorism. The technology to improve our monitoring system is available, and we are already training our work force for a proper response. While our response tool bag is full, we need to be honest with ourselves and admit that some of those tools are a little rusty and others are untried. However, the consequences for being ill prepared simply are too great to allow us to fail. Success cannot be achieved by the public health workforce alone. It will require an unparalleled level of collaboration between the public and private sectors, and between health care and law enforcement. Nevertheless, in this brave new world of terrorism, we simply cannot fail those who count on us to protect them and keep them healthy.