

Bioterrorism One Year Later: The Threat and the Opportunity for Collaboration
Commonwealth Fund Conference
October 23, 2002

The use of anthrax last year as a biological weapon and in the manner that it was came to all of us a surprise both as to its effects and in the concern that the event generated across the country. It highlighted, as simulation exercises could not, the extraordinary impact that a biological weapons attack might have – even one that probably involved no more than 10 grams of an aerosolizable anthrax compound. Our entire postal system was crippled; hundreds of thousands purchased antibiotics; the Hart Senate Office Building was closed for fully 6 months; tens of thousands of specimens were obtained and processed in laboratories across the country, extending from Alaska and Hawaii to Maine; and who knows how many persons purchased gas masks. Compared to the disaster at the World Trade Towers, the number of casualties was small but tension, concern and anxiety persisted for months and, by the very nature of the threat, was internalized both personally and directly by citizens throughout the country.

In October, as we reflected on what needed to be done, there was a growing appreciation of the magnitude of the differences in public response between such as the release of a chemical weapon or an explosion and the fear and apprehension generated by an epidemic of a strange, potentially fatal disease. The primary difference, of course, is that the fact of release of a gas or the occurrence of an explosion is immediately apparent and that most of the worst consequences to physical health are apparent within hours or a few days. In contrast, the release of a biological agent is usually undetected and unsuspected until cases begin to occur days to weeks later. The quantity of the agent is extremely small, easily transported and requires only a single human agent to disperse it.

There may be few clues as to who might be the terrorist agent and so, even today, we have not detected the perpetrator of our own act of anthrax terrorism. Most important is the fact that what we have forgotten in our sanitized, industrialized countries is the terror and fear that an epidemic can generate as it persists day after day and week after week—with persons wondering if they might be next and wondering what steps can be taken in prevention.

For those of you who were witness to the polio outbreaks of the 1950s and 1960s, you may recall the concern and anxiety that visited so many towns and cities across the country every summer; that resulted in the closing of swimming pools and cinemas; and generated all manner of nostrums and preventives before a vaccine became available. What many have forgotten is that, in number, the epidemics, so-called, were in the tens to a few hundred. Not since 1918 and the pandemic of swine influenza has our own country or, indeed most other industrialized countries experienced a serious epidemic involving more than handfuls of cases.

Last autumn, as we contemplated what needed to be done to deal with bioterrorism. We realized that interdiction of a terrorist prior to release of material was unlikely. Moreover, it was clear that there were no detection devices that could be deployed to detect a release in reasonable time and that such devices were, at best, dreams, unlikely to be realized for the foreseeable future. In brief, we had little choice but to be prepared to deal with an epidemic after an organism had been deployed. This implied the need for the earliest possible detection of an event, its prompt diagnosis, the provision of medical care for patients and the deployment of public health resources. In brief, it meant, in principle, dealing effectively with an epidemic and this, in turn, implied

the need for strength in response by our public health personnel, a close working relationship between medicine and public health, a laboratory network that was prepared to deal expeditiously with specimens, and coordinate planning in every region of the country to deal with an acute influx of acute, possibly contagious patients and to be able to disperse rapidly needed drugs or vaccines, depending on need. In brief, what we deemed to be most critically needed was a greatly strengthened and organized public health and medical infrastructure. Federal expertise and other resources could bolster a local effort but the bedrock of the response had to be local areas.

What was also dismally apparent was that we had permitted our public health infrastructure to deteriorate over the years: personnel were few in number and most were not adequately trained; laboratory services had withered; many departments at state and local level had neither the staff nor communications equipment to respond promptly or adequately to emergencies of any sort.

The first and highest priority was thus assigned to rebuilding effective public health and emergency management systems. This was consonant with the fact that our country, as well as others, are experiencing increasing numbers of new and emergent infections. AIDS brought home the fact that microorganisms remain a serious threat and that, however sophisticated our laboratories and research facilities, we must sustain an active program to combat and deal with infectious agents, whether occurring naturally or released by a terrorist. Indeed, as several of our health officers have commented to me this year, they have found themselves now much better equipped to deal with the West Nile encephalitis epidemic as a result of planning for a response to a biological weapon.

For the longer term, we believe it is important to strengthen greatly our research base and our capabilities to produce antimicrobial agents and vaccines. As of September last year, we actually had less than 100,000 doses of smallpox vaccine immediately available for use. Today, for emergency use at least, we have sufficient vaccine to meet all national needs. A priority research program is now in place to develop a safer vaccine. Emergency stocks of antibiotics are available to treat, if needed, large numbers of persons who might require treatment should anthrax or plague or tularemia be released. These are so situated so as to be able to reach any town in America within 12 hours. For the coming year, the President has requested the provision of \$1.5 billion in order to begin the development of ten Centers of Excellence where advanced research can be safely conducted on those contagious, lethal organisms that are of concern and where basic research can be expanded to explore basic questions of the pathogenicity of organisms and the nature of man's immune system in dealing with them. Hopefully, from such studies will come not only better mechanisms for dealing with biological threat agents but insights, as well, as to how better we might prevent and treat such as AIDS, malaria, tuberculosis and other diseases that haunt the peoples of the developing world.

As we look to the future, it will be important that we cooperate in the development of this research agenda; that we work together and with the World Health Organization in the development of surveillance programs around the world so as to detect at the earliest possible time, cases and outbreaks of the most serious diseases so as to be in a position to counter them should they come to our own shores.

In brief, I believe that the anthrax attacks of a year ago, serious as they were, have highlighted serious deficiencies in our own health system and have galvanized a greatly

needed effort to address those needs. It is important that we all recognize that, so far as the microbial organisms are concerned, we are all much more a part of one world than ever before. Only 3 years ago, West Nile encephalitis, while prevalent in some parts of Eastern Europe and western Asia, was unknown to America. This year, we have recorded more than 2000 cases and 200 deaths, with all but a handful of our most western States now experiencing cases. Four years ago, you will recall that H5 N1 influenza was a problem among chickens in Hong Kong. But, it resulted in 18 human cases with 6 deaths. Fortunately, as yet, it was contained, as have subsequent recrudescence occurrences. But I believe we all know that it is not a matter of whether a new strain of the virus will cause another pandemic, it is only a matter of when.

Likewise, we know that there are many more sophisticated experiments that are being conducted daily in laboratories throughout the world, hopefully, but not necessarily with good intent; that biotechnology is changing at a logarithmic pace; and that, with a little persistence, one can learn almost anything one might wish from the Internet.

The world of biology is changing rapidly but, while there is hope and anticipation of dealing effectively with all manner of afflictions, there is a dark side to the new developments in biology that we ignore at our peril. The manifestations of that dark side are as likely to be in one of your countries as it is to be in our own.

Cooperation and collaboration among us could not be more important than it is now.