Looking back after ten years, what stands out to you most about the 2001 anthrax attacks?

What stands out most to me about the 2001 anthrax attacks is the notion that from that point on, bioterror was a reality and no longer an abstract concept. Although discussions had been under way among public health officials in preparation for such an event, and our National Institute of Allergy and Infectious Diseases (NIAID) had a limited research portfolio in the area, the attacks really were a wake-up call.

Looking back, I am also struck by the uncertainty we all felt at the time.

Today, we know and can dispassionately describe exactly what happened. We know that of the people potentially exposed to anthrax in 2001, 22 people were infected, five of whom died. We know now that the attacks were unlikely a concerted effort by a group or organization intended to broadly affect our society and large numbers of people. We know that the attacks likely stemmed from the actions of a single individual who was probably mentally unstable. Today we know the anthrax attacks had a relatively limited and short-lived impact in terms of morbidity and mortality.

However, at the time the entire event was surrounded by uncertainty. No one had any idea who perpetrated the anthrax attacks or what the extent of their impact would be. With the timing of the anthrax attacks coming only weeks after 9/11, the uncertainty was accompanied by a gripping fear of what might happen next. People worried as they rode the Metro or shopped for their groceries that something unknown and unexpected would happen again, and that they and their families were at risk.

How would you characterize the overall response to the attacks? What were the biggest challenges you faced?

I had a dual perspective as a scientist and science administrator and as a government spokesperson. As a scientist and science administrator, I headed the effort at NIH to fund and conduct biomedical research to develop countermeasures to protect people against a range of potential agents of bioterrorism. In addition, I served as one of the primary spokespersons for the Federal government, which involved providing the public with information about what we knew and did not know as the situation unfolded day by day. As a spokesperson, it was important for me to provide information in a way that would help calm public fears.

The overall response from a biomedical countermeasures standpoint was good, though not perfect, especially given the fact that this was new ground for us. The situation had been discussed and planned to an extent, but never tested.

I would describe the overall response as a “leaping into action” on the part of scientists and public health officials. We quickly brought together leading scientific experts and developed two important paths forward: the NIAID Strategic Plan for Biodefense Research and the NIAID Biodefense Research Agenda for CDC Category A Agents, a document that describes the Institute’s accelerated research plan for the most threatening bioterrorism agents. These were developed within five months after the anthrax attacks — and have since been used as a starting point for updates and progress reports for the future.

We asked the important questions in ways that I think were calm, measured, and scientific: Are there enough antibiotics? If not, why not, and how do we procure more? Where do we stand with regard to vaccines? Should we scale-up existing countermeasures? Do we need new countermeasures? Are there countermeasures on the horizon that will help us...
achieve our goals or not? How do we develop new countermeasures? What are the readily available options, and what is missing?

Without a doubt, the biggest challenge we faced was to separate the science from the hysteria. We had to ensure that our focus remained on rational planning and on determining the most appropriate, scientifically based actions at the time.

What are you most proud of about the anthrax response?

One of the things I am most proud of is the fact that we were able to put the situation into perspective and maintain our focus on the scientific and public health issues that we were confronting. We understood at the time that anthrax would not be the end of the story — that preparedness and development of biomedical countermeasures should not stop with anthrax. The response to the anthrax attacks morphed into a much broader effort that encompassed not only preparedness for anthrax and other potential deliberate biothreats, but also for naturally emerging and re-emerging infectious diseases that threaten both public health and national security.

In this regard, we decided to build basic and translational science capacity, and the intellectual and physical infrastructures to develop biomedical countermeasures in response to a broad range of deliberate and naturally occurring emerging and re-emerging infectious diseases. We were able to convince government officials that even though we need to address individual agents, nature is the worst bioterrorist. Through the anthrax response, we built both a physical and an intellectual infrastructure that can be used to respond to a broad range of emerging health threats.

The result is that today we are in a much better position — from the perspective of both the research pipeline and public health preparedness — than we would have been had we addressed anthrax alone. Our improved ability to respond to emerging health threats was reflected in subsequent years as we addressed SARS, the threat of H5N1 influenza, and the 2009 H1N1 influenza pandemic.

What would you like to have been in place at the time that would have improved the response?

At the time, I would have liked to have had biotechnology and pharmaceutical companies experienced in infectious disease countermeasures research, development, and production already invested in responding to unexpected public health threats — rather than having to build that investment from scratch. Before the anthrax attacks, industry was reluctant to develop biomedical countermeasures for an unpredictable market.

What were the biggest challenges or gaps at the time? How have those changed or been addressed during the past decade?

Major gaps existed in at least two areas.

First, there were major gaps in the science. There were fundamental gaps in basic research as well as in applied science with regard to vaccines, diagnostics, and therapeutics to respond to unexpected infectious disease emergencies.

Second, we did not have a clear public health response system in place for handling unexpected public health emergencies. Before, we were completely dependent upon pharmaceutical companies, which based their strategies on products for which there were predictable markets. The challenge was getting industry to invest in biomedical countermeasures for public health threats with unpredictable timelines.

Since the anthrax attacks, we have made substantial and wise investments to address these gaps. Selected examples include:

- The NIAID National Biocontainment Laboratories (NBLs) and Regional Biocontainment Laboratories (RBLs) provide high-level biocontainment facilities for research on biodefense and emerging infectious diseases. The biosafety labs also are available in the event of a bioterrorism or infectious disease emergency to assist national, state, and local public health efforts.

- The NIAID Regional Centers of Excellence (RCE) for Biodefense and Emerging Infectious Diseases supports research focused on countering threats from bioterror agents and naturally emerging infectious diseases. Each Center is comprised of a consortium of universities and research institutions serving a specific geographical region.

- The Biomedical Advanced Research and Development Authority (BARDA), within the HHS Office of the Assistant Secretary for Preparedness and Response, helps address the need for chemical, biological, radiological
and nuclear (CBRN) countermeasures by assisting the development and purchase of vaccines, therapeutics, and diagnostics for public health emergencies.

Project BioShield, managed by BARDA, helps enable procurement and advanced development of medical countermeasures for CBRN agents, as well as for pandemic influenza and other emerging infectious diseases. BARDA also manages the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE).

The NIAID Concept Acceleration Program (CAP) enables coordination of teams of scientific, medical and product development experts to guide investigators working on multi-use medical products for biodefense, drug resistance and emerging diseases with the goal of nurturing promising concepts that might otherwise not be pursued.

If there were another anthrax attack today, how would the response be different from 2001?

Things are very different today. Without question, if there were another anthrax attack today, our response would be significantly more coordinated. Today we have the Office of the Assistant Secretary for Preparedness and Response (ASPR), a major component of HHS. The title of this office reflects something we did not have before, a “preparedness and response” focus. Now we have a coordinated multi-agency effort that is plugged into the intelligence community, the Department of Homeland Security and, importantly, the scientific community. To underscore this point, the 2009 influenza pandemic demonstrated a substantially more coordinated public health response than we experienced after the anthrax attacks.

What are the biggest threats and challenges to bioterrorism preparedness today?

The biggest threat to bioterrorism preparedness today is complacency. If a health threat does not happen, be it naturally occurring or deliberate, we tend to make it a lower priority. The worst thing we can do is to make something a priority after it happens. After it happens is too late; you are playing catch-up. Preparedness for a threat must be a priority before it happens.