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Mr. Chairman and distinguished members of the committee: thank you for the opportunity to appear before you today. I am a physician and public health professional, who served from 1993-97 as Assistant Secretary of Energy for Environment Safety and Health. I am now a member of the faculty of the Johns Hopkins Bloomberg School of Public Health and am Director of the Johns Hopkins Center for Civilian Biodefense Studies. The Center, begun in 1993 under the leadership of Dr. D.A. Henderson, is jointly sponsored by the Hopkins Schools of Medicine and Public Health.

This morning, I would like to review the nation's response to date regarding the handling of the anthrax cases among postal workers and others. I will try to use specific events and anecdotes to illustrate what has gone wrong, what has gone right, and what we might do to better prepare the country to respond to bioweapons attacks on civilians. My intent is not to assign blame or to offer unconstructive criticism of agencies or of the many public health professionals who are now working extremely hard on our behalf in difficult circumstances. It is imperative however that we use the experience of the past few weeks to better understand the weaknesses and vulnerabilities of the response to date and that we respond to such analysis with appropriate and constructive actions – including appropriate federal investments in public health infrastructure and other aspects of bioterrorism preparedness. Recognizing the successes and achievements of these hectic days is equally important, lest our understanding of what is going on be unbalanced and misleading.

The anthrax attacks we have experienced are likely not the end of the story of America's struggle with biological weapons. They are the prologue to the story. We must learn from the tragedies and confusion of the past weeks so that we can do better and improve our response to such attacks. We can do better – much better. But as we are witnessing, preparation is essential if we are to mitigate the effects of bioterrorism.

Communication is Inadequate

One of the most obvious realities surrounding the occurrence, investigation of and response to the anthrax cases has been the pervasive uncertainty and confusion. Much of this confusion stems from the many questions for which we have, as yet, no answers: who did this? how many letters were contaminated with anthrax? From whence were they mailed? Who was in contact with the letters?

There are also a host of what I will call “science questions”: questions we might be able to answer after some research – which of course takes time - but for which we now have only partial answers or unproven ideas, perhaps supported by available knowledge, but never tested out in situations quite like those we face.

There are in addition, a whole set of questions that seem to arise from inconsistent or confusing responses on the part of government officials to queries raised by the media and by people directly affected by the anthrax mailings and by ordinary people trying to make sense of what is happening and what they should do to protect themselves and their families.

It is to be expected that we do not have satisfying answers to all our questions. We have to act based on what we know. We should acknowledge that no one anticipated the exact situation we now face. But the truth is that overall, the government has done a terrible job communicating what is going on. The result has been confusion among many local public health officials which is reflected in inconsistent reactions, public frustration and skepticism about the basis for recommendations. If such communications problems persist, we may expect to see an erosion in the public’s confidence in government decisions.

Shielding the Public from Hard Facts?

It may be that in some instances government officials – and let us keep in mind that hundreds of people in different settings from different agencies and different states and cities and counties have represented and spoken on behalf of “government” in past weeks – have been concerned about frightening the public or inciting mass panic and irrational behavior if either the facts, or the full range of uncertainties about the anthrax attacks were known. The tendency to shield people from bad news underestimates the ability of the public to rationally respond to disturbing information. Over-protectiveness offends the sensibilities of regular people who face difficult circumstances on a daily basis. It also undermines trust in subsequent messages because people will continue to wonder “What info is being withheld from me? What knowledge am I being ‘protected’ from?”

All evidence - from the current crisis and from studies of past disasters – indicates that the public is not prone to panic.

“Reasoned calm” and “reluctance to panic” characterize the general state of the public, according to two national polls conducted in late October (USA TODAY/ CNN/Gallup; Newsweek).

A late Oct poll of Florida residents found >50% with little or no concern about contracting anthrax.

Reports of mass testing for exposure and distribution of prophylactic antibiotics among employees of affected institutions indicate an orderly process while hundreds and sometimes thousands of individuals waited their turn in line.

So called “panic-buying” is not that at all. Buying gas masks and Cipro from the individual’s point of view = a reasonable attempt to secure protection in the context of a proven, stark vulnerability to terrorism.

Concerns about “fitting” masks and antibiotic doses to children also suggest that some individuals are attempting to protect dependents, thus fulfilling their social role and responsibilities in uniquely trying circumstances.

Insufficient Information Outreach to Critically Affected Groups

In thousands of workplaces, employers are struggling to understand what they should do to protect mailhandlers and other employees from anthrax exposure. Our center has gotten inquiries from people looking for advice. One NGO was told it would cost approximately \$20,000 dollars to do an environmental survey – and this organization had no easy way of evaluating whether the proffered service would be effective. The government has yet to issue any guidance on these matters. Local health departments have been left to devise their own sampling strategies, which will inevitably result in a wide variety of approaches of uncertain efficacy.

It is also the case that there are too few informed medical and public health professionals answering the questions of those directly affected by the anthrax attacks. We hear of people who were possibly exposed to anthrax deciding to discontinue antibiotics because of side effects. In other instances, it is not clear that people have been adequately informed of possible side effects of these powerful drugs or told what to do if they arise. There are great concerns that not all postal workers at risk have received antibiotics –fewer people showed up at distribution centers than were expected in some cases.

Lack of Connectivity among Public Health Officials

It is very possible from what we hear that the people most frustrated by the poor

communications surrounding the anthrax cases are state and local health public health officials. There has been a pervasive lack of precise information filtering down to health officials on the county or city level about what mail rooms should be closed or surveyed; how environmental surveillance for anthrax is to be conducted; who should get antibiotics for how long, what kind of protective equipment is adequate, etc. Most local health departments are neither trained or equipped to make these kind of judgments on their own – only 20% of local health departments in one survey had written bioterrorism response plans. Yet it is clear that CDC cannot be expected to be everywhere at all times either.

The ability to communicate rapidly and reliably is a fundamental feature of modern business practice. Cell phones, blackberries, and email are expected, routine equipment in the modern world. *Yet America has failed to invest in such basic communications tools for its public health system.* Half of the 3000 local health departments are not connected to the Internet. Two weeks ago CDC's Internet connectivity failed – there was no web site or email communication in or out of CDC. There was and is no back-up system, no redundancy in this crucial communication link. If a system is “something that talks to itself” (to use Kevin Kelly's definition), then the United States does not have a public health “system”. The much-touted Health Alert Network (HAN) was developed through the dogged insistence of the National Association of City and County Health Officials. But HAN is proving disappointing in the current crisis. Information moves too slowly along these channels to be of much practical use.

The ability to link local, state and federal health officials in a robust, real-time communication network is critical to bioterrorism response. The US has not developed a strategy for accomplishing this, let alone begun to realistically fund such an effort.

Lack of Public Health Surge Capacity

We have thus far diagnosed 18 cases of anthrax, 12 of which are inhalational, resulting in three deaths. Thirty-seven additional people have tested positive for exposure. At least 13,000 persons are taking prophylactic antibiotics. Anthrax surveillance is underway at more than 200 postal facilities nationwide. CDC is considering whether to do environmental testing at thousands of mailrooms in the Washington DC area, and 20 federal buildings have tested positive for anthrax including the Supreme Court and a Senate Office building.

What has remained invisible amid all this is the toll this is taking on the public health

work force itself. CDC has mobilized to devote extraordinary resources to the problem. We hear of CDC laboratory personnel literally living in the lab, getting only catnaps for days on end. State laboratories are overwhelmed by the over 2000 instances of “suspicious” powders needing analysis. In states where anthrax cases have arisen, local health officials are doing little else other than “all anthrax all the time”. A doctor in a West coast state where there have been no anthrax cases reported that when he tried to call the public health department to find out what to report a suspicious mailing, he was told he was number 450 in the line to talk to someone.

What we are seeing is a public health system that does not have the capacity to respond to a surge in demand for services. If 18 cases of anthrax have taxed our public health system to this extent, what can we expect in the wake of a large attack involving thousands of victims? Most of the public health officials being pulled into duty have no training in bioterrorism. Most states and cities are improvising as they seek ways to meet the demand. We are also now seeing governors apply hiring freezes to state payrolls in reaction to the economic downturn, a trend which will erode even current response capacity.

Medical Community Out of the Loop

There is some good news. From the small number of anthrax cases seen thus far, it appears that prompt medical diagnosis and proper treatment might reduce the fatality rate of inhalational anthrax to levels below the 80% predicted by historical evidence. Thus it is extremely important that clinicians be aware of the risk factors known to be associated with anthrax cases and be informed about the signs and symptoms and treatment of such cases.

Doctors have, for the most part, been left out of the information loop. The New York City Department of Health and CDC have both distributed web-based bulletins describing the features of identified cases, actions taken, and recommended procedures for collecting clinical specimens. But it appears that these bulletins are not reaching many physicians, most of whom do not have time to surf the web. CDC physicians did appear via teleconference at a meeting of 4000 infectious disease physicians last weekend. The detailed clinical information provided was very useful to doctors – yet this data is not yet widely available.

Lessons Learned: What the Anthrax Attacks Indicate We Must do to improve US Biodefense Capabilities

The events of the past weeks suggest important lessons. If we are wise, we will use these experiences to improve the nation's ability to respond to future attacks and thereby lessen the suffering and death and disruption of bioterrorism. The following responses could significantly improve US biodefense capability:

We must understand that public health is now an essential aspect of national security. We must establish a strategic plan to upgrade the capacity of federal, state and local health departments to respond to bioweapons attacks and must prepare to invest the resources needed to implement such upgrades. Assessments underway by the Hopkins Center indicate that the cost of essential improvements will be in the many billions of dollars.

Communication in the midst of public health crises must become a strategic priority. HHS should undertake a planning and development effort to ensure that federal, state and local health agencies are prepared to meet the information needs of the public, the media and professional communities. This will require the identification of appropriate spokespersons as well as a clear map of how information should flow during a crisis and the equipment necessary to rapidly move large amounts of data among many disparate communities. Policies regarding the release of information pertinent to criminal investigations or national security sensitivities should be worked out in advance and processes to adjudicate what information is withheld from the public should rapidly move decisions up the line of authority. Efforts to "spin" information in order to shield the public from disturbing information should be avoided.

Coordinate the fragmented efforts of Federal, state and local public health agencies. In addition to developing the communications system needed to link disparate health agencies so that information can be rapidly transmitted and exchanged, we should require regular and sophisticated drills and exercises involving multiple health agencies and elected officials. Such drills have proven very useful in revealing coordination problems among response agencies and in suggesting solutions.

Train public health officials in bioterrorism response and encourage professionals to participate in government service

Plans and guidelines directing the public health and the medical response to bioterrorism are rudimentary or absent in many locales. Many health agencies cannot afford to spare staff to send them to training sessions. This is also true for many medical professionals and hospital employees. Congress must recognize the financial and staffing pressures on these sectors and devise means of encouraging bioterrorism preparedness planning, and training in these vital sectors. Doctors typically learn

from peers and from publications and meetings hosted by professional societies. We must find ways to rapidly educate practicing physicians about new and emerging health threats.