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With the interplay of politics, institutional interests, and differences of opinion, complex public policy decisions can be difficult enough to make in times of peace and prosperity. In times of turmoil and war, such decisions can be even more challenging. In recent weeks, US citizens have been on edge about the prospects of chemical and biological terrorist attacks. The occurrence of isolated anthrax incidents in Florida, New York City, and now the nation's capital has made it difficult for the country to regain a sense of normalcy in the aftermath of the September 11th tragedies. Americans are looking to their leaders to make sage decisions that will enhance the ability of local, state, and federal assets to promptly and effectively respond to a chemical calamity and to detect a disease outbreak in time to take life-saving intervention. Mr. Chairman, I know that this responsibility weighs heavily on the minds of this committee's members, as well as the broader Senate membership, so I appreciate the invitation to testify on matters that in light of recent events carry a sense of greater urgency and importance.

No matter where one comes out in the debate about whether terrorists can pull off a biological attack that causes massive casualties, the debate itself is moot. One need only consult public health journals to understand that it is only a matter of time before a strain of influenza as virulent as the one that swept this country in 1918 naturally resurfaces. Further confirmation of a looming public health crisis can be secured through reports from the World Health Organization and the Institutes of Medicine, which describe how a growing list of common diseases (e.g., pneumonia, tuberculosis) are becoming resistant to antibiotics. These public health watchdogs are also justifiably worried about the array of new diseases emerging as mankind ventures into previously uninhabited areas. Even with everything in the modern medical arsenal, public health authorities will find it difficult to handle with disease outbreaks in the future. Global travel will facilitate the spread of communicable diseases through huge population concentrations and will in turn hinder use of the traditional means of containing a contagious disease outbreak, namely quarantine.

As for the prospects of a large-scale chemical disaster, one needs to keep in mind what America's first responders and health care workers have to deal with on a

routine basis. According to the US Chemical Health and Safety Investigation Board, between 1987 and 1996, a hazardous chemical incident of some severity took place in 95 percent of US counties. An average of 60,500 chemical incidents occurred per year at fixed facilities and in transit, injuring or killing roughly 2,550 annually. This country is peppered with roughly 850,000 facilities that work with hazardous or extremely hazardous chemical substances. While the chemical industry takes site security seriously and emergency responders in many US cities began long ago take extra security precautions with these sites, my main chemical terrorism concern relates to the possible sabotage of these industrial facilities.

Thus, there is a need for this nation's front line responders¾from firefighters, police, and paramedics to doctors, nurses, laboratory workers, and public health officials¾to be prepared to cope with chemical and biological disasters. This need will remain constant for the indefinite future, regardless of whether or not terrorists turn to chemical and biological weapons to inflict mass casualties.

A Roadmap to Better Coordinated, More Cost-Effective Programs

The appointment of Governor Tom Ridge as Director of the new Office of Homeland Security would seem to be a constructive step that could put improved coordination and streamlining of the federal response bureaucracy on a fast track. That may not be the case, however, if he lacks sufficiently strong budgetary authority. An initial review of section 3(k) of the Executive Order establishing the Office of Homeland Security and the Homeland Security Council does not appear to vest such power in this new office. To aid Governor Ridge in his efforts, Congress should grant him czar-like budgetary authority. Alone, Governor Ridge will have difficulty taming the federal bureaucracy.

The other essential element of streamlining and coordinating government programs lies here, in Congress. Anyone that attempts to tally the number of congressional committees with terrorism prevention and preparedness oversight very quickly runs out of fingers and toes. So long as that is the case, individual federal agencies may continue to exploit the situation to the advantage of their own institutional interests and the detriment of coordinated, cost-effective programming. A consolidation of congressional oversight committees is sorely needed.

Also in order is a reassessment of the true value of politically popular placebo programs like the National Guard's Civil Support Teams. I urge you to consider the evaluation of these teams offered by the public safety and health officials, including members of the National Guard, that I interviewed in 33 cities in 25 states. Their views are presented fully in *Ataxia: The Chemical and Biological Terrorism Threat and the US Response*, a report co-authored with Leslie-Anne Levy and released last October and available at: www.stimson.org/cwc.

Briefly, the message from the front line about these National Guard teams is unified and clear: They have minuscule, if not negative, utility. In the mid-May 2000

TOPOFF exercise, the Civil Support Team in Denver insisted that it had identified the mystery biological agent with SMART tickets, which have such high false positive and false negative rates that numerous cities have refused to buy them. The team in Portsmouth lacked the technical expertise to understand the minimal hazard posed by mustard on a chilly, 49-degree day. To veterans of epidemiological investigations and hazardous material operations, the absurdity of these two anecdotes is readily apparent. The deputy director of one city's Office of Emergency Management said, "The good thing about those teams is that it takes them as long as it does to get here."

To further illustrate the problem, called to duty after the planes struck the World Trade Towers, the New York Civil Support Team arrived at the scene roughly 12 hours later and proceeded to conduct environmental monitoring that was redundant of efforts undertaken hours earlier by New York City agencies as well as the US Environmental Protection Agency. The dynamics of a chemical disaster response are such that these teams cannot arrive in time to make a life-saving difference. As for their applicability to a biological disaster, their four-person medical component is a drop in the bucket of what would be needed in a major disease outbreak.

To those accustomed to overseeing billion dollar budgets, this National Guard program might not seem so ill-advised. Please consider how this program's budget could be put to uses that would make a real preparedness difference on the front lines, for example, to begin fixing the glaring lack of decontamination capacity in US hospitals that results in recurrent hospital closures even after small hazmat incidents. In most of the cities that I surveyed for *Ataxia*, the central game plan for hospitals in the event of a major chemical catastrophe was to "lockdown," meaning to shut their doors to incoming patients. For the cost of standing up one National Guard Civil Support Team, 2,333 hospitals or fire stations could be outfitted with decontamination capabilities. With the total 1999 budget for this program, 49,800 local rescue and health facilities could have been armed for decontamination. Civil Support Team funds, in other words, could be used to make a genuine preparedness difference were they applied to overcoming the decontamination bottleneck at US hospitals. Proposals are now circulating for each state to have its own Civil Support Team. Common sense calls for the existing teams to be disbanded, their equipment to be disbursed within the respective states to front-line rescue units and laboratories, where any leftover training monies would also be placed.

The National Guard's Civil Support Teams aside, both Congress and Governor Ridge have their work cut out for them. A series of expert studies and panels, as well as Congress' own General Accounting Office, have labeled the federal preparedness programs a fractured mess and urged a national strategy to guide programs better. For the past several years, over 40 federal agencies have been competing for the money and missions associated with combating terrorism. The section of chapter 7

in *Ataxia* entitled "Preparedness Versus Pork" discusses in more detail how lack of coordination and redundant programs handicap the federal effort. This competition has been confusing for local and state officials, who have difficulty figuring which agency is in charge, not to mention how to decipher the varying sets of priorities and guidelines that accompany the different federal grant programs.

In addition, this sparring among federal agencies has contributed to a drift in the Domestic Preparedness Program away from the initial objectives of its trio of Senate designers, Senators Richard Lugar (R-Indiana), Sam Nunn (D-Georgia, ret.), and Pete Domenici (R-New Mexico). The initial objective was to enhance the readiness of local public safety and public health officials to grapple with an unconventional terrorism attack. Instead, according to Office of Management and Budget figures, this year federal government is spending $8.7 billion to combat terrorism but only $311 million of that amount is making it to the local level in the form of training, planning, and equipment grants for unconventional attacks. More specifically in the area of biodisaster readiness, in 2000, an estimated $206 million from the weapons of mass destruction budget line items were put toward hospital preparations, the public health infrastructure, and biomedical research *combined*. Those interested in a detailed breakdown of that spending can consult table 7.2 in *Ataxia*.

If you take no other message away from my testimony today, let it be an understanding that the key to domestic preparedness lies not in bigger federal bureaucracy, but in getting taxpayers' dollars channeled to readiness at the local level, where training and enhanced response capacities will better arm public safety and medical personnel to contend with disease outbreaks and chemical incidents, whether natural, accidental, or intentional. Federal spending priorities sorely need to be redressed, and unless reforms are made and mindsets change on both ends of Pennsylvania Avenue, a few years from now a great deal of money will have been spent with marginal impact on front-line preparedness.

The Route to Enhanced Readiness Nationwide

While the signs of a chemical disaster would materialize very quickly, perhaps the first challenge facing the health care community in a biological disaster would be figuring out that something is amiss. Many diseases present with flu-like symptoms, and the physicians and nurses who could readily recognize the finer distinctions between influenza and more exotic diseases are few in number indeed. As medical science eradicated a series of diseases, medical and nursing schools concentrated training on the ailments that health care givers are more likely to see.

Exotic disease recognition problems are not limited to the medical community. In the nation's laboratories, microbiologists and other technicians who analyze the samples (e.g., blood, throat cultures) that physicians order to help them figure out what ails their patients are much more likely to have encountered exotic diseases in textbook photographs rather than under their microscopes. Thanks to the laboratory

enhancement program initiated by the Centers for Disease Control and Prevention (CDC), the ability to identify out-of-the-ordinary diseases more rapidly is on the rise in several dozen laboratories across the country. However, such is not the case in the 158,000 laboratories that serve hospitals, private physicians, and health maintenance organizations and form the backbone of disease detection in this nation. Enhanced training certainly contributed to the early diagnosis of the first anthrax case in Florida. A CDC official has noted that the Florida Department of Health laboratory in Jacksonville where the blood sample taken from Bob Stevens was identified as anthrax had recently completed a special course in the identification of biowarfare diseases.

Still, an illustration of the need for better education of health care professionals about bioterrorism matters can be found in the far too many recent reports of physicians prescribing antibiotics for patients worried about a possible bioterrorist attack. Of all people, physicians should understand how such prescriptions could backfire, not just in adverse reactions to the antibiotics if citizens begin self-medicating their children and themselves when they come down with the sniffles, but in the lessened ability of those very drugs to help their patients in a time of true medical need. Moreover, over-prescription of antibiotics contributes to the rise in the number of antibiotic-resistant diseases.

To date, Domestic Preparedness Program training, now administered by the Justice Department, has managed to draw some health care personnel, mostly emergency department physicians and nurses, into the classroom in the cities where training is being provided. To enhance the disease detection and treatment skills of the medical community nationwide over the long term, however, a different strategy is required. If a long-term difference is to be made, then more comprehensive instruction in medical, nursing, microbiology, and other pertinent schools is required. Knowledge of exotic diseases should be necessary to obtain diplomas, and the topic should become a mainstay of the refresher courses offered to maintain professional credentials. Those involved in setting the curricula for these schools should waste no time in adjusting their course offerings, requirements, and other professional activities accordingly. In the near term, compressed training should be made available to all practicing US physicians via presentations during grand rounds or via satellite hookup. Both forms of training, by the way, already exist, so it is just a matter of making it more widely available. Moreover, in conjunction with the CDC and the Association of Public Health Laboratories, the American Society of Microbiology is developing protocols to assist clinical microbiology laboratories in identifying bioterrorist agents. Although the protocols have yet to be published, volume number 33 in the *Cumulative Techniques and Procedures in Clinical Microbiology* series addresses bioterrorism issues and is available from the American Society of Microbiology.

Similarly, for chemical and biological disaster readiness, preparedness standards need to be established for the various response disciplines and training needs to be institutionalized in fire and police academies, as well as in paramedic schools across the country. Roughly six years into the domestic preparedness effort, the time has passed for Washington to turn training over to the appropriate professional and local entities that will take preparedness forward more systematically and cost effectively. The hand-off should be concentrated in these organizations (e.g., the National Fire Protection Association, the Accreditation Council for Graduate Medical Education) and curtailed elsewhere, so that various branches of the federal government, not to mention enterprising contractors and universities, stop churning out redundant training programs at taxpayers' expense. Already, over 90 such training courses exist. Without such reform, ineffective spending will continue at both the federal and local levels and training lacking in standards will be implemented unevenly, in pockets. Specification of standards and institutionalization of training clearly make more sense than that.

Establishing an Early Warning Capability for Disease Outbreak Detection

With modern data collection and analysis capabilities, one need not rely solely on the ability of laboratories and medical personnel to pick up the telltale early signs of a disease outbreak. In a few areas of the United States, public health and emergency management officials are teaming to test ways to get a head start on detection. The concept focuses on early signs of syndromes (e.g., flu-like illness, fever and skin rash) that might indicate the presence of diseases of concern. They are compiling historical databases to supply a baseline of normal health patterns at various times of the year, against which contemporary developments can be measured. Since people feeling ill tend to take over-the-counter medications, consult their physicians, or request emergency medical care, some areas are beginning to track the status of health in their communities via select Emergency Medical Services call types (e.g., respiratory distress, adult asthma); sales of certain medications (e.g., over-the-counter flu remedies); reports from physicians, sentinel hospitals, and coroners about select disease symptoms or unexplained deaths; or some combination of these markers. This tracking allows abnormal activity levels can be detected. For instance, should EMS calls rise above the expected rate in the fall season, public health officials and emergency managers would get the earliest possible indication that something was amiss, which would enable them to cue medical personnel and laboratories to search more diligently for what might be causing a possible disease outbreak. This concept of syndrome surveillance will be key to allowing public health officials to get the jump on prophylaxis and other control measures. For more on this approach, see the groundbreaking work of New York City's Department of Public Health and Office of Emergency Management, which is summarized in box 6.7 of *Ataxia*.

What is now called for is a more systematic approach to institutionalizing syndrome surveillance across the nation. A model should be refined and then made available nationally, along with funds to allow metropolitan areas to conduct the necessary historical analysis and establish the computer database, communications, and other components needed to put syndrome surveillance in place. Again, the data and the computing capabilities are available; it is just a matter of harnessing them for the purposes of early disease outbreak recognition. In their own ways, the Kennedy-Frist and the Edwards-Hagel bills address these matters. Coordination of congressional action is necessary so that the most readiness can be gained for taxpayers' dollars.

The Need for Regional Hospital Planning

The next challenge facing a metropolitan area in the midst of a chemical disaster or a major disease outbreak would be contending with the flood of humanity that would seek health care services. If one examines what transpired in Tokyo after Aum Shinrikyo's 20 March 1995 morning release of sarin in the subway, demand for patient care would peaked rapidly and then began subsiding by mid-afternoon on the day of the attack. The best medical care in the world can be found in this country, but in general US hospitals are at present poorly prepared to handle either a chemical disaster or an epidemic. With regard to a pandemic, those familiar with what is happening on the front lines of health care in America know that US hospitals already have difficulty handling the patient loads that accompany a regular influenza season. Ambulances wait for hours in emergency department bays, unable to unload patients until bed space is available. The press of genuinely ill and worried citizens clamoring for medical attention in the midst of a plague or smallpox epidemic would so far outstrip a normal flu season that local health care systems could collapse.

To prevent hospitals from being quickly overwhelmed, it will be critical for regional health care facilities to have a pre-agreed plan that divides responsibilities and locks in arrangements to bring emergency supplies in the interim until federal assistance can arrive. In the era of managed care, hospitals compete with each other for business and rely on just-in-time supply of inventory, keeping an average of two or three days supplies on hand. Since community-wide hospital planning has fallen by the wayside, precious time could be wasted if hospitals lack prior agreement as to which facilities would convert to care of infectious disease cases¾particularly important if a communicable disease is involved¾and which ones would attend to the other medical emergencies that would persist throughout an epidemic. Business competitors, in other words, must convert within hours to work as a team.

Regionally, hospitals must plan to handle an overflow of patients and provide prophylaxis to thousands upon thousands of people. Whether the approach involves auxiliary facilities near major hospitals, the conversion of civic or sporting arenas to impromptu hospitals, or the use of fire stations or other neighborhood facilities to

conduct patient screening and prophylaxis, such a plan needs to be put in place. Other factors that regional hospital planning must address are how to tap into local reserves of medical personnel (e.g., nursing students, retired physicians), how to break down and distribute securely the national pharmaceutical stockpile, and how to enable timely delivery of emergency supplies of everything from intravenous fluids to sheets, tongue depressors, and food. Obviously, regional hospital plans that address how to overcome problems of decontamination, training, security, critical medical supplies (e.g., respirators, antidotes), and burden-sharing would also be of great utility should a chemical disaster bring a surge of patients to health care facilities.

The Role of the Federal Government

Washington's willingness to fund preparedness efforts at the local level across the country will be critical to chemical or biological disaster readiness. With a few exceptions, the federal government's role in responding to a chemical or biological terrorism attack would fall under the general heading of mid- to long-term disaster recovery assistance. FEMA's capabilities have risen steadily over the last decade and little, if anything, would need to be added to its existing capabilities and regular Stafford Act assistance activities. Local officials noted that they would probably call upon federal assets to help decontaminate a site after a chemical disaster, but that does not mean that additional federal capacity needs to be built. Prior to the 1995 Aum Shinrikyo attack, as chapter 4 of *Ataxia* describes, numerous Pentagon and Environmental Protection Agency teams that could be brought in to assist a stricken community already existed. While little, if any, additional federal capacity needs to be constructed to aid local and state authorities in a chemical disaster, appreciable work remains the area of biological disaster readiness at the federal level. Aside from continuing to infuse funds into the improvement of the public health system at the local and state levels, the federal government needs to sort out once and for all who is in charge and attend to its important roles in the development and production of essential medicines and in the provision of medical manpower during an emergency.

Calling the Shots in a Public Health Crisis

How many FBI special agents or Federal Emergency Management Agency (FEMA) officials know off the top of their heads the appropriate adult dosages of ciprofloxacin for prophylaxis in the event of a terrorist release of anthrax? Darned few, if any. No, the FBI excels at catching criminals and FEMA at providing mid- and long-term recovery support to communities stricken with all manner of disasters. An outbreak of disease is first and foremost a public health problem, so let's not be confused about who should be calling the shots in an epidemic¾public health officials. Yet, this simple fact is certainly not reflected in what is taking place with regard to bioterrorism preparedness, inside or outside the beltway.

Inside of Washington's beltway, concepts of crisis and consequence management not

only linger, they predominate. With an apparent lack of budgetary authority and proposals circulating anew to have the Justice Department retain a leadership and coordination role despite the Bush administration's earlier appointment of FEMA in this capacity, it is fair to say that Governor Ridge's office will have difficulty presiding over the tug of war about which federal agency should lead the federal component of unconventional terrorism response. In America's cities, counties, and states there is also a fair amount of jostling as to who exactly would have the authority to make certain decisions during an epidemic. Only a handful of states, unfortunately, have untangled the cross-cutting jurisdictions left over from more than a century of contradictory laws passed as authorities scrambled to deal with the different diseases that were sweeping the country. Prompt, decisive action could make a lifesaving difference in the midst of an outbreak, but the experience of various terrorism exercises and drills gives ample reason to believe that precious time would be squandered as local, state, and federal officials squabbled over who has the authority to do what.

These circumstances beg for a clear vision and a firm hand to untangle this mess and put the people who know the most about disease control and eradication¾public health officials¾unquestionably in charge of any biological disaster, whether natural or manmade. FEMA, the FBI, the Pentagon, and other federal and local agencies should be playing support roles, not reshaping and second-guessing the directions of public health professionals as they manage the crisis *and* consequences of a major eruption of disease.

Research, Development, and Production of Medications

Long before the current concerns about bioterrorism, I was at a loss to explain how the federal government could have known about the extent of the Soviet Union's biowarfare program—including the production of tons of agents such as smallpox and antibiotic resistant plague and anthrax—as early as 1992 and not kicked this nation's vaccine research, development, and production programs into a higher gear until 1997. The extent of the problem is illustrated by the fact that only one company is under contract to produce the anthrax vaccine, no company currently produces the plague vaccine, and it was not until recently that steps were taken to meaningfully jumpstart smallpox vaccine production. Such matters should have been promptly addressed if only to enable protection of US combat troops, not to mention producing enough vaccine to cover the responders on the domestic front lines, namely the medical personnel, firefighters, police, paramedics, public health officials, and emergency managers who would be called upon to aid US citizens in the event of a biological disaster.

As for the effort that was mounted, many nongovernmental experts have been taken aback at the structuring and relatively meager funding of the Joint Vaccine Acquisition Program. With a $322 million budget over ten years, this program aims

to bring seven candidate biowarfare vaccines through the clinical trials process. Giving credit where it is due, one must acknowledge that this program—as well as Defense Advanced Research Projects Agency-sponsored research into innovative medical treatments—is making headway. However, the federal government must find ways to shrink the nine to 15 year timeline that it takes to bring a new drug through clinical trials to the marketplace. Food and Drug Administration officials are already wrestling with how to adjust the clinical trials process for testing of new vaccines and additional bumps are to be expected on the road ahead.

Next, the National Institutes of Health and the pharmaceutical industry, not the Defense Department, are this country's experts at clinical testing and production of medications. My point is not that the Defense Department should not have a role—perhaps even a lead role since the candidate vaccines originated with the US Army Medical Research Institute for Infectious Diseases—but these other important players need to be at the table if an accelerated program is to be achieved. As I noted, Governor Ridge will have his hands full, no matter which direction he turns. Moreover, close congressional oversight of this particular aspect of the nation's biological disaster readiness is warranted.

On the chemical side of the house, by the way, the picture is similarly discouraging. The Pentagon now turns to one company for supply of the nerve agent antidote kits, known as Mark 1 kits, that the Health and Human Services Office of Emergency Preparedness has encouraged cities participating in the Metropolitan Medical Response System program to purchase. Many a city is still waiting to receive the Mark 1 kits ordered long ago, and when they do, these kits will have a considerably shorter shelf life than the kits made available to the military.

Emergency Medical Manpower Needs During a Major Disease Outbreak

Secretary of Health and Human Services Tommy Thompson stated on September 30th in an interview with "60 Minutes" that his department has "7,000 medical personnel that are ready to go" in the event of a bioterrorist attack. While that statement may be true in theory, in practice it may not hold. Somewhat lost in the late 1990s rush to soup up federal teams for hot zone rescues was the one major non-FEMA federal support capability that would clearly be needed after an infectious disease outbreak and perhaps after a chemical incident as well—medical assistance. The National Disaster Medical System was one of several improvements made to federal disaster recovery capabilities over the last decade, a time during which the federal government demonstrated that it could bring appreciable humanitarian and logistical assets to bear after natural catastrophes and conventional terrorist bombings. While these events flexed the muscles of the FEMA-led recovery system, including the deployment of Disaster Medical Assistance Teams, they did not even approach the type of monumental challenge that a full-fledged infectious disease outbreak would present. Prior to Secretary Thompson's recent statement, officials

from the Health and Human Services Department and the Pentagon have also stated that they could mobilize significant medical assets quickly.

Yet considerable skepticism exists that these two departments combined could have met the medical aid requests made from Denver after the release of plague was simulated during the mid-May 2000 TOPOFF drill, much less a call for even more help. During that hypothetical event, health care officials quickly found their medical facilities sinking under the patient load and concluded that 2,000 more medical personnel were needed on the ground within a day to prevent the flight of citizens that would have further spread the disease. Getting that number of physicians and nurses to a city and into hospitals and field treatment posts would be a tremendous logistical achievement. No one that interviewed for *Ataxia*, including members of the Disaster Medical Assistance Teams and other medical and public health professionals, felt that the federal government could deliver 2,000 civilian medical professionals within the required timeframe. For its part, the Pentagon has yet to articulate clearly or commit to civilians at the federal or local level just how much medical manpower it could deliver and in what timeframe.

Quite frankly, the time has come for the Pentagon to stop being coy about what medical assets it could bring bear in a domestic emergency. Articulation of this capability, even if it needs to be done in classified forums, is necessary for sound planning on the civilian side. Furthermore, there have been no large-scale dress rehearsals to confirm whether civilian or military medical assets could muster that many medical professionals that quickly, or even over a few days. Even so, the 2,000 figure from the Denver segment of TOPOFF seems almost quaint when compared to one US city's rough estimate that 45,000 health care providers—many of whom would have to be imported—would be required to screen and treat its denizens.

The only way to find out whether the federal government is truly up to the most important role it may have to perform after a bioterrorist attack or a natural disease outbreak is to hold a large-scale medical mobilization exercise. Despite the expense, Congress should mandate a realistic test of how much civilian and military medical assistance can be delivered, how fast. Unlike TOPOFF, where federal assets were pre-picked and pre-staged, the terms of the exercise should specify that teams deploy as notified. While the general nature and identity of the exercise location(s) would certainly be known beforehand and the timeframe of the drill agreed within a window of several months, local officials should trigger the onset of the exercise. In short, dispense with the tabletop games that allow everyone the comfort of claims of what they could do and see what a real exercise brings. A genuine and probably sobering measure of federal capabilities could be taken, and the lessons of the exercise could inform the structure of federal and local plans and programs.

Conclusions

In the 33-city survey done for *Ataxia*, cities felt far better prepared to contend with a chemical disaster than they did a biological one. The higher state of chemical disaster preparedness is not surprising given that over 650 hazmat teams, which would form the core of an on-scene response, already existed nationwide prior to the onset of federal domestic preparedness programs. Local officials consistently identified the need for enhancement of hospital readiness, the institutionalization of training, the replenishment of personal protection gear, the maintenance of key equipment items, and the regular conduct of major field drills as critical to improving overall chemical disaster preparedness.

When it comes to biological disaster readiness, one need not resort to hyperbole when it comes to how difficult it would be for major US cities to handle a pandemic; the truth is sobering enough. Even though the basic components of the ability to handle a disease outbreak¾hospitals, public health capabilities at the federal, state, and local levels, and a wealth of medical professionals¾are already in place, there is ample room for improvement. The pragmatic steps that the federal government should take are clear.

Mr. Chairman, Members of the Committee, Washington can take the smart route to enhance chemical and biological disaster preparedness nationwide or it can continue to go about this in an expensive and inefficient way. The keys to national chemical and biological disaster readiness lie not in bigger budgets and more federal bureaucracy but in common-sense policies and programs such as the following:

The sufficiency of existing federal programs, response teams, and bureaucracies needs to be assessed and redundant and spurious ones need to be eliminated. In the interim until an assessment of the sufficiency of existing assets is made, a government-wide moratorium on any new rescue teams and bureaucracies should be declared, with the exception of the enhanced intelligence, law enforcement, and airport security measures that are being contemplated.

The bulk of federal funds need to be devoted to enhancing readiness at the local level, where an increase in skills, training, and equipment would make a genuine life-saving difference. Even if terrorists never strike again in this country, such investments would be well worthwhile because they would improve the ability of hometown rescuers to respond to everyday emergencies.

Defense Department programs related to the development and production of new vaccines, antibiotics, and chemical antidotes need to be put on a faster track, incorporating as appropriate industrial expertise in such matters.

The federal government should continue to revive the nation's public health system, an endeavor that involves sending funds to the local and state levels, not keeping them inside the beltway. In addition, the federal government should fund regional hospital planning grants and additional tests of disease syndrome surveillance system, followed by plans and funds to establish such capabilities nationwide.

Appropriate steps should be taken to see that firefighters, police, paramedics, physicians, nurses, laboratory workers, and public officials benefit from training that is institutionalized in the nation's training academies, universities, and schools.
Last, but certainly not least, Washington needs to develop a plan to sustain preparedness over the long term. Drills at the local and federal levels are necessary because plans that sit on the shelf for extended periods of time are often plans that do not work well when emergencies occur.
On behalf of the local public health and safety officials who have shared their experience and common sense views with me, I urge Congress to waste no time in passing legislation that brings the burgeoning federal terrorism preparedness programs and bureaucracies into line and points them in a more constructive, cost-effective direction.