TERRORISM PREPAREDNESS: MEDICAL FIRST RESPONSE

HEARING

BEFORE THE

SUBCOMMITTEE ON NATIONAL SECURITY, VETERANS AFFAIRS, AND INTERNATIONAL RELATIONS

OF THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

SEPTEMBER 22, 1999

Serial No. 106–100

Printed for the use of the Committee on Government Reform

Available via the World Wide Web: http://www.gpo.gov/congress/house
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U.S. GOVERNMENT PRINTING OFFICE

63–355 CC WASHINGTON : 2000

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TERRORISM PREPAREDNESS: MEDICAL FIRST RESPONSE

WEDNESDAY, SEPTEMBER 22, 1999

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON NATIONAL SECURITY, VETERANS AFFAIRS, AND INTERNATIONAL RELATIONS,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:06 a.m., in room 2247, Rayburn House Office Building, Hon. Christopher Shays (chairman of the subcommittee) presiding.

Present: Representatives Shays, Allen, and Tierney.

Staff present: Lawrence J. Halloran, staff director and counsel; Marcia Sayer and Tom Costa, professional staff members; and Jason Chung, clerk.

Mr. SHAYS. I'd like to call this hearing to order and welcome our witnesses and our guests.

How does a nation prepare for the unthinkable?

The specter of mass casualties caused by a terrorist's release of radiological, chemical, or biological weapons grows larger on our domestic horizon. In a world made more dangerous by the proliferation of the technologies of mass destruction and by the willingness of some to use them against us, the once improbable has become the inevitable.

Are we prepared?

By most accounts, the answer is no. Despite significant efforts to combat terrorism and improve national readiness, medical response capabilities are not yet well-developed or well-integrated into consequence management plans.

Providers are not trained to diagnose or treat the uncommon symptoms and diseases of unconventional warfare. Public health surveillance systems are not sensitive enough to detect the early signs of a terrorist-induced outbreak. Hospitals and clinics lack the space, equipment, and medicine to treat the victims of weapons of mass destruction.

Combatting terrorism challenges Federal, State, and local governments to coordinate response plans, train and equip critical personnel, and integrate military support.

In previous oversight hearings, we examined Federal spending priorities and the role of the national government in the early response to terrorism. Today, we assess what is being done to help States and localities build a public health infrastructure capable of deterring, detecting, and, if necessary, treating those affected by terrorist events.

For more than symbolic reasons, we asked first responders to testify first, preparing for low incidence, high-consequence events is the daily business of public safety, public health, and emergency management professionals. We have much to learn from them as we design and implement a Federal program to augment their work.

Witnesses from the Department of Health and Human Services' Office of Emergency Preparedness and the Centers for Disease Control and Prevention will then discuss the national program to support local first response, improve public health monitoring, and stock the medical arsenal in the fight against terrorism.

We appreciate their testimony and their willingness to listen to their State and local partners first.

[The prepared statement of Hon. Christopher Shays follows:]

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Statement of Rep. Christopher Shays
September 22, 1999

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Welcome.

Mr. SHAYS. Again, I'd like to welcome our witnesses and introduce them.

We have Ellen Gordon, administrator, Iowa Emergency Management Division, and past president, National Emergency Management Association.

I understand, Ms. Gordon, that you will be leaving a little early because of another appointment.

Dr. David R. Johnson, Infectious Disease Policy Committee, Association of State and Territorial Health Officials and deputy director for public health and chief medical executive, Michigan; Ed Plaugher, chief, Arlington County Fire Department, Virginia, director of Metropolitan Medical Response System, Washington, DC; and Dr. Joseph F. Waeckerle, fellow, American College of Emergency Physicians, chairman, Department of Emergency Medicine, Baptist Medical Center of Kansas City, MO; and, finally, Dr. Tara O'Toole, fellow, Center for Civilian Biodefense Studies, Johns Hopkins University.

At this time, we are going to recognize a very fine member of our committee, Mr. Allen from Maine.

Mr. ALLEN. Thank you, Mr. Chairman, and thank you for holding this hearing, which I expect to be very interesting.

Let me welcome our witnesses from all of the interested groups here today, as well as our distinguished witnesses from the Department of Health and Human Services. We're really glad that you could all be with us today.

When I first heard about this hearing and conjured up an image of what the medical response would be to a terrorist incident involving a chemical or biological weapon, I imagined what most people would probably do—paramedics rushing to a building, putting on the yellow decontamination suits, quarantining an area, and hosing down victims, furniture, and everything else in sight.

But from what I've learned in preparing for this hearing, this may not be the most likely scenario. In fact—and I'm sure our witnesses will elaborate on this—a more likely and potentially deadly case would involve a terrorist incident that goes unnoticed, affecting thousands and thousands of people who do not even know it.

In this scenario, it will be doctors, nurses, and the health care infrastructure that really is the first responders. They will treat increasing numbers of patients with symptoms that may mirror influenza, for example. It will be up to them to determine the existence of the terrorist incident, to work with victims's families and friends to track the source of the agent, and to rapidly implement a plan to protect the health of our society.

But how are we going to prepare the health community for such an incident? This is the question for today's hearing.

I look forward to hearing from all of our witnesses about challenges to the current system, as well as recommendations for improving detection, surveillance, and treatment.

How can we maximize communication and coordination among all levels of government and leverage the assistance of private entities? And how are the exciting new initiatives underway at the Department of Health and Human Services moving us toward these goals?

I know this is a lot to ask of you in a single hearing, so I thank you for your participation. It is a pleasure to meet you and I look forward to working with all of you beyond today's hearing.

Mr. Chairman, thank you again.

Mr. SHAYS. Thank you, Mr. Allen.

Just some housekeeping. I ask unanimous consent that all members of this subcommittee be permitted to place an opening statement in the record, and that the record will remain open for 3 days for that purpose.

Without objection, so ordered.

I ask further unanimous consent that all witnesses be permitted to include their witness statements in the record.

Without objection, so ordered.

At this time, I will invite our witnesses to stand so we can swear them in.

[Witnesses sworn.]

Mr. SHAYS. Thank you. Note for the record that all five of our witnesses have responded in the affirmative, and to say that, though we don't have the traditional red and green light, we have this ridiculous little clock that will only tell me how well you are doing, but we are going to ask that you keep it around the 5-minute range. We do let our witnesses in certain cases go an additional 5 minutes. I know that you've come from different places around the country, so we welcome your participation, but we'd like to have you keep as close to the 5 minutes as you can, but you have 10 if you need it.

We're going to start with you, Ms. Gordon.

STATEMENT OF ELLEN GORDON, DIRECTOR, IOWA DIVISION OF EMERGENCY MANAGEMENT AND IMMEDIATE PAST PRESIDENT, NATIONAL EMERGENCY MANAGEMENT ASSOCIATION

Ms. GORDON. Thank you, Mr. Chairman and Mr. Allen, for the opportunity to appear before you today.

As introduced, I am Ellen Gordon, director of the Iowa Division of Emergency Management, and also representing the National Emergency Management Association this morning and the core membership of the State directors across the country.

Also, I serve on the congressionally established advisory panel led by the Virginia Governor, Jim Gilmore, charged with assessing domestic response capabilities for terrorism involving weapons of mass destruction, so I think the information from this hearing should be very helpful to this panel. However, today it is the State emergency management perspective in which I speak.

We are very concerned, as everyone else is, about the issue of domestic preparedness, and have been working in close partnership with the National Governors Association to provide policy and program recommendations to the Federal Government to enhance our coordination efforts between agencies with domestic preparedness roles and responsibilities.

NEMA and NGA cosponsored a national policy summit this last February that brought together for the very first time policy executives from Governors' offices, State emergency management, and law enforcement.

We are also working with the Department of Justice and FEMA and others to clearly define the role of the States and the Governors in this critically important issue, and to provide information, resources, and tools to States and local governments to enhance our preparedness and response capabilities.

Today I think it is with great pleasure to be in the same room with some of the agencies. I think it is for the very first time that we are here together, and I hope this talks about the future that we, too, can start spending more time in coordinating our efforts together.

This fall and winter we hope to sponsor some regional terrorism workshops, once again in conjunction with the National Governors Association, and out of those workshops we expect to provide additional policy and funding recommendations to Congress and the Federal Government following the completion of those.

The public health systems' preparedness and readiness to respond to weapons of mass destruction incidents is well behind the other efforts undertaken by most fire and emergency service organizations, at least at the awareness level.

One of the reasons that we believe this to be true appears to be a lack of national program direction that provides for coordination with the National Domestic Preparedness Office, the Department of Justice, and FEMA; inadequate funding for local and State preparedness activities; and a concentration of resources funded toward metropolitan areas.

As a whole, the State directors of emergency management believe that most public health systems are unprepared to respond to WMD incidents for the following reasons.

Capabilities at the local level are disparate in terms of competency and capabilities.

Most, if not all, funding for equipment, personnel, and training has been focused into the major urban and metropolitan areas. Terrorism knows no geographic boundaries.

There is little capacity to detect a biological and chemical event early, and by the time the detection and implication are confirmed by CDC or another lab in another State, the threat will have escalated many times over. This is especially true in small rural areas.

There is a lack of strong coordination of information between the medical, emergency management, and law enforcement community.

Not all public health services nor private hospitals are properly equipped to handle WMD issues related to decontamination, mass casualties, and mental health care for victims, first responders, and the community, at large.

In Iowa, as in most States, we are reaching out to our partners in law enforcement, fire, emergency medical services, the State Department of Public Health, and our universities to integrate them all into a State-wide terrorism consequence management strategy. Public health is a critical component of the comprehensive plan, yet collectively we are far from where we need to be to have a strong integrated response capability not only in Iowa, but other States, as well.

States need immediate help of Congress and the Federal Government to bring the public health systems up to appropriate level of readiness and capability, and our ideas are as follows.

One, conduct a national assessment of the public health community's true capability to respond to WMD incident.

Two, integrate public health into response plans, including urban and rural areas, alike.

Three, provide the same level of funding and emphasis that is presently being directed at the first responders by Department of Defense and Department of Justice.

Four, aiding and strengthening capacities to respond, especially at the local level. We recommend that a public health infrastructure be built that would provide labs for sampling and the conducting of disease surveillance, and provide computer linkages between local health agencies, hospitals, and labs, and the State health agencies to monitor and communicate and identify trends. We believe this system would facilitate early protection and early treatment of victims.

Five, provide training and education awareness programs outside of metropolitan areas to public health officials and emergency room personnel and physicians, to name a few.

Last, develop guidance and standardized training to ensure the safety of medical first responders.

It is up to all of us to work harder and more effectively at coordinating all the various players in response and recovery to this very complex issue. Plans must be developed in every State to provide for close coordination and communication between public health, law enforcement, emergency medical services, emergency management, and the education community.

Funding and resources must be enhanced and used more effectively to prepare the Nation's public systems for WMD incidents.

Readying the Nation to respond to domestic terrorism is not a simple task, as we all know, but it must be done for the safety and well-being of citizens throughout this country living in communities large and small depending upon their government to be there when they need it most.

Again, thank you for the opportunity to be here and the opportunity to leave early so I can get to my next appointment.

We stand ready to provide any further assistance to this committee as you deem necessary, and I would be happy to answer any questions.

Mr. SHAYS. Thank you, Ms. Gordon.

[The prepared statement of Ms. Gordon follows:]

TESTIMONY OF

ELLEN GORDON

DIRECTOR, IOWA DIVISION OF EMERGENCY MANAGEMENT AND IMMEDIATE PAST PRESIDENT NATIONAL EMERGENCY MANAGEMENT ASSOCIATION

BEFORE

HOUSE SUBCOMMITTEE ON NATIONAL SECURITY, VETERANS AFFAIRS, AND INTERNATIONAL RELATIONS

SEPTEMBER 22, 1999

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Mr. Chairman and Members of the Committee:

Thank you for the opportunity to appear before you today. My name is Ellen Gordon. I'm the Director of the Iowa Division of Emergency Management and am here today representing the National Emergency Management Association (NEMA) and the state emergency management directors who are its core members. I also serve on a congressionally established advisory panel, led by Virginia Governor Jim Gilmore, charged with assessing domestic response capabilities for terrorism involving weapons of mass destruction. It is the state emergency management perspective that I will speak from today.

NEMA is very concerned about the issue of domestic preparedness and has been working in close partnership with the National Governors' Association to provide policy and program recommendations to the federal government to enhance coordination efforts between agencies with domestic preparedness roles and responsibilities. NEMA and NGA co-sponsored a national policy summit in February of this year that brought together for the first time, policy executives from governors' offices, state emergency management and law enforcement. NEMA and NGA are also working with the Department of Justice, FEMA and others to clearly define the role of the states and governors in this critically important issue and to provide information, resources and tools to states to enhance preparedness and response capabilities should an incident occur. In the coming year NEMA and NGA, with support provided by DOJ, will sponsor a series of regional terrorism workshops where "teams" of state policy and program officials will come together to identify state and regional issues related to domestic preparedness. We expect

to provide additional policy and funding recommendations to congress and the federal government following the completion of those workshops.

The public health systems preparedness and readiness to respond to a WMD incident is well behind the efforts undertaken by the fire and emergency services organizations. The principal reasons appear to be a lack of national program direction that provides for coordination with the National Domestic Preparedness Office, the Department of Justice and FEMA, inadequate funding for local and state preparedness activities, and a concentration of resources and funding towards metropolitan areas.

As a whole, the state directors of emergency management believe that most state public health systems are unprepared to respond to a WMD incident for the following reasons:

- Capabilities at the local level are very disparate in terms of competency and capabilities. The district level is the first level at which medical expertise of a consistent competency is present.

- Most, if not all, funding for equipment, personnel and training has been focused in major urban and metropolitan areas. Terrorism knows no geographic boundaries. NEMA believes every state must have a basic detection and response capability.

- There is little capacity to detect a biological event early and by the time detection and identification are confirmed by a CDC lab the threat will have escalated many

times over. This is especially true in small, rural states. Sending samples to labs in other states is not an option in light of the tight time constraints associated with a biological event.

- There is a lack of coordination of information between the medical, emergency management and law enforcement communities.

- Public health services nor private hospitals are equipped to handle WMD issues related to decontamination, mass casualties, and mental health care for victims, first responders and the community at large. Most public health workers have received little or no training in this area.

In Iowa, as in most states, we are reaching out to our state partners in law enforcement, fire, and the state department of public health to integrate them all into a statewide terrorism consequence management strategy. Public health is a critical component of a comprehensive response plan, yet collectively, we are far from where we need to be to have an integrated response capability in every state. States need the immediate help of Congress and the federal government to bring the public health system up to an appropriate level of readiness and capability by:

- Conducting a national assessment of the public health community's capability to respond to a WMD incident;

- Integrating public health into state level response plans, including urban and rural areas;

- Providing the same level of funding and emphasis that is presently being directed at first responders by DOD and DOJ;

- Strengthening capacities to respond, especially at the local level. We recommend that a public health infrastructure be built that would provide labs to run samples, conduct disease surveillance, and provide computer linkages between local health agencies, hospitals and labs, and the state health agency to monitor and communicate identified trends. This system would facilitate early detection and early treatment of victims;

- Providing training and public awareness programs outside metropolitan areas to public health officials, emergency room personnel, and private sector physicians, particularly in the area of detection;

- Coordinating and funding realistic exercises that engage all key entities and test strengths and identify weaknesses. The Department of Justice's TOPOFF exercise may help in meeting this need;
- Incorporating WMD preparedness into the medical curriculum at universities and other medical teaching facilities; and

- Developing guidance and training to ensure the safety of medical first responders;

It is up to all of us in the public health and safety community to work harder and more effectively at coordinating all the various players in response to this very complex issue. Plans must be developed in every state that provide for close coordination and communication between public health, law enforcement and emergency management. Funding and resources must be enhanced and used more effectively to prepare the nation's public health systems for a WMD incident. Readying the nation to respond to domestic terrorism is not a simple task, but it must be done for the safety and well being of citizens throughout this country, living in communities large and small, who depend on their government to be there when they need it most.

Thank you for the opportunity to be here today. NEMA stands ready to serve as a resource for this committee on domestic preparedness and other emergency management related issues.

Mr. SHAYS. Dr. Johnson.

STATEMENT OF DAVID R. JOHNSON, M.D., DEPUTY DIRECTOR FOR PUBLIC HEALTH AND CHIEF MEDICAL EXECUTIVE, MICHIGAN DEPARTMENT OF COMMUNITY HEALTH, ON BEHALF OF THE INFECTIOUS DISEASE POLICY COMMITTEE, ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICIALS [ASTHO]

Dr. JOHNSON. Good morning, and thank you for the opportunity to be here today.

As mentioned, I am Dr. David R. Johnson, deputy director for public health and chief medical executive for the Michigan Department of Community Health.

I am here today representing the Association of State and Territorial Health Officials [ASTHO] which is an alliance of chief health officers in each of the States and territories. My testimony also reflects perspectives of two of our affiliates, the Council of State and Territorial Epidemiologists and the Association of Public Health Laboratories, as each of us plays a role in ensuring the readiness of local and State public health systems to respond to a weapons of mass destruction event.

My testimony will briefly address the readiness and capacity of health care systems to respond to events involving weapons of mass destruction, the critical role of public health, and we'll close with some policy recommendations.

Successful preparation for a weapons of mass destruction emergency will depend on the development of a well-orchestrated plan to be used in responding to an event. Regardless of the nature of the attack, the role of public health in the planning process will include identification of existing assets and assessment of needs, resource allocation for preparedness, stockpiling of supplies, medical training for treatment, and media training for communication with the public.

Other critical roles in planning include the development and implementation of training and education programs and communication plans.

Health officials are often the first medical personnel to be contacted by the press when an epidemic or other type of public health threat occurs; therefore, rapid, reliable information and communication systems between local health authorities, police, fire fighters, emergency management services, emergency personnel, and Federal agencies are essential.

Currently, CDC is providing a handful of State health departments with funding for emergency preparedness planning to serve as models for the other States. These grants hopefully will also make it easier to work with other relevant agencies.

In Michigan, to use our State for an example briefly, our communicable disease epidemiology division facilitates a relationship between State and local public health communicable disease epidemiology programs somewhat analogous to the relationship between CDC and the States.

Local health departments provide routine onsite monitoring and case investigation. State epidemiologists operate specialized sur-

veillance systems and provide consultive and onsite assistance for the more unusual and life-threatening, urgent situations.

State health departments will coordinate assistance to local health departments to help their facilities as affected localities become overwhelmed.

Because of the likely number of victims involved, State health departments will coordinate the distribution of victims around the State in medical treatment facilities and across State lines to nearby localities.

In a covert event from a suspect biologic or chemical agent, public health's first efforts would be laboratory and epidemiological analysis through the public health surveillance system.

Under most circumstances, the initial detection and response would take place at the local level.

This type of active surveillance is dependent upon the ability of the laboratory to rapidly and accurately analyze samples for evidence, requiring staff with technical expertise, equipment, and supplies, including biosafety level three containment facilities.

Public health laboratories, ideally suited for this critical role, will need constant upgrading of staff skills, equipment, and reagents to perform this function. This will clearly require additional resources, since half of the State public health laboratories, as a recent GAO report noted, do not have enough staff to conduct laboratory analysis of currently known emerging infectious diseases, such as hepatitis C virus and penicillin-resistant Streptococcus pneumoniae.

Training by State and public health laboratory staff of hospital and private clinical laboratory personnel to recognize an unusual pathogen or bacterium is another critical public health role in emergency preparedness. The capacity to rapidly determine if a substance contains a deadly microbe or harmless powder is essential if we want to prevent unnecessary decontamination and expensive courses of antibiotics.

In closing, preparing to meet the needs of civilian victims of a weapons of mass destruction incident requires a coordination of the entire health care community, as well as experts in agencies at all levels of government.

Planning for these types of events requires special emphasis on certain functions not normally included in disease plans. Those functions include special surveillance operations, delivery of vaccines and anti-microbial agents, and other mitigation efforts.

In summary, State and local public health agencies need preparedness planning and readiness assessment, adequate epidemiological resources for disease surveillance, appropriate laboratory capacity and state-of-the-art diagnostic capabilities for biologic and chemical agents, and establishment and maintenance of adequate communications and information networks.

State health departments have demonstrated skill and experience to rapidly mount mass immunization campaigns, administer medications on a large scale, respond to disasters, and generate emergency public communications.

Thank you for this opportunity to testify. I'll be happy to respond to your questions.

Mr. SHAYS. Thank you very much, Dr. Johnson.

[The prepared statement of Dr. Johnson follows:]

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TESTIMONY OF

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MICHIGAN DEPARTMENT OF COMMUNITY HEALTH

ON BEHALF OF

THE ASSOCIATION OF STATE AND TERRITORIAL

HEALTH OFFICIALS (ASTHO)

SUBCOMMITTEE ON NATIONAL SECURITY, VETERANS AFFAIRS,
AND INTERNATIONAL RELATIONS

US HOUSE OF REPRESENTATIVES

TERRORISM PREPAREDNESS: MEDICAL FIRST RESPONSE

September 22, 1999

Good morning members of the Subcommittee and Chairman Shays, I am Dr. David R. Johnson, Deputy Director for Public Health and Chief Medical Executive for the Michigan Department of Community Health. I am here today representing the Association of State and Territorial Health Officials (ASTHO). ASTHO is an alliance of the chief health officers in each of the 57 US states and territories. My testimony also reflects perspectives of the Council of State and Territorial Epidemiologists (CSTE) and the Association of Public Health Laboratories (APHL) as each of us plays a role in ensuring the readiness of local and state public health systems to respond to a weapons of mass destruction (WMD) event. ASTHO greatly appreciates the leadership that you have shown, Congressman Shays, in holding this hearing on terrorism preparedness and medical first response.

The threat of terrorist acts is no longer speculative, but reality. The terrorist bombing of the World Trade Center in 1993, and the Alfred P. Murrah Federal Building in Oklahoma City in 1995 and the 1995 nerve gas attack on the Tokyo subway are seared into Americans' consciousness. Recent conflict with Iraq over weapons inspections remind us that biological and chemical weapons are probably in the possession of a number of hostile governments. Even more frightening, weapons of mass destruction (WMD), including deadly biological agents, are very likely within the capability of a number of non-governmental extremist groups both domestic and foreign.

This means we must also be aware of and prepared for the possibility of a biological or chemical terrorist event here, in the United States. Readiness for such an attack not only means making sure our national security systems are adequate and vigilant, but that each state has a emergency disaster plan that addresses preparedness, response and recovery for the purpose of minimizing catastrophic numbers of casualties.

One of the challenges facing the public health community in the policy debate over bioterrorism readiness has been clarifying the critical role of public health and the gaps faced by health departments to fill that role. The Association of State and Territorial Health Officials (ASTHO), in conjunction with other public health partners, has been involved in defining the essential state health department functions, with performance measures necessary for preparing and reacting as first responders to a bioterrorist incident. Some of those functions would involve: 1) epidemiologic detection and laboratory analysis, 2) compilation and analysis of information, 3) communication, and 4) coordination of outbreak control, which includes essential equipment and treatment facilities. However, for public health departments to be fully prepared to deal with a bioterrorist attack and carry out essential public health services, they must assure that the workforce at the state, regional and local levels are supplied with both the perspective and tools necessary to carry out the job. Practical training that assures appropriate response, reassures the

public, and manages the media effectively will go a long way in reducing fatalities and panic with any emerging infectious disease as well as with a clandestine release of a biological agent.

My testimony will address the recent efforts of state and local health departments to respond to a weapons of mass destruction incident, the readiness and capacity of some local and state health care systems to respond and their ability to interact in the event of a weapons of mass destruction medical emergency. Moreover, the critical role of public health in these types of incidents will be discussed. I will close with some policy recommendations regarding the needs of state public health systems.

Successful preparation for a weapons of mass destruction emergency will depend on the development of a well-orchestrated plan to be used in responding to an event. The implementation of that plan will vary, depending on the nature of the attack. If the incident involves biological agents, public health officials including epidemiologists and infectious disease experts, as well as emergency room personnel and critical care unit personnel will be key players and first responders. If the incident involves chemical or explosive agents, public health officials would be complementary, but not central, to the management of the emergency. However, regardless of the nature of the attack, the role of public health in the planning aspects will include identification of existing assets and assessment of needs, resource allocation for preparedness, stockpiling of supplies, medical training for treatment and communication with the public.

None of this happens smoothly without some type of preparedness plan. Most states, major metropolitan areas, and other large jurisdictions have emergency preparedness plans to cope with major disasters such as tornadoes, hurricanes, earthquakes, plane crashes and the like. However, emergency planning for bioterrorism requires special emphasis on certain functions not normally included in disaster plans. Examples include special surveillance operations, delivery of vaccines and antimicrobial agents and other mitigation efforts. The widespread nature of adverse health effects due to the disruption of critical human infrastructure will require the expansion of the typical disaster management team.

In a covert event from a suspect biologic or chemical agent, public health officials first efforts would be focused on detection, in other words laboratory and epidemiologic analysis of the cases through the public health surveillance system. The appearance of an unusual disease or increased incidence of an ordinary disease in a normally healthy population would probably first be recognized through basic public health surveillance at the state and local level. We saw this in the 1984 salmonella poisoning in Oregon where a terrorist act was detected and thwarted when local public health authorities, carrying out their basic public health surveillance, identified the threat. Identifying a single outbreak or series of

unusual disease occurrences or deaths may be the first clue that a cluster of disease may be related to the intentional release of a biological agent.

Ongoing and comprehensive surveillance is primarily applicable for biologic agents. In contrast for chemical terrorism scenarios, the rapid onset of toxic effects among persons in a single locale within minutes or hours would likely make the bioterrorist event rather obvious.

State health agencies would play a role in the detection phase. In Michigan, the Communicable Disease Epidemiology Division within our Bureau of Epidemiology facilitates a relationship between state and local public health communicable disease epidemiology programs somewhat analogous to the relationship between the CDC and states. Local health departments provide routine on-site monitoring and case investigation; state epidemiologists operate specialized surveillance systems and provide consultative and on-site assistance for the more unusual and life-threatening urgent situations.

In addition, training by state public health laboratory staff of hospital and private clinical laboratory personnel -- to recognize an unusual pathogen or bacterium -- is a critical public health role in emergency preparedness. Many pathogens look similar to naturally occurring substances and could be discarded by a hospital laboratory thereby slowing the recognition of a bioterrorist attack and, most importantly, an effective response. The capacity to rapidly determine if a substance contains a deadly microbe, or harmless powder, is essential if we want to prevent unnecessary decontamination and expensive courses of antibiotics in the case of a bioterroristic hoax, such as we have recently and repeatedly witnessed throughout the nation.

The importance of timely detection cannot be overemphasized. In the case of many biologic agents, the time lag between exposure to the pathogen and the onset of symptoms may vary from hours to weeks. An effective response will depend on the ability of the clinician to identify and accurately diagnose an uncommon disease or toxin response but also on a surveillance system for collecting and organizing information from clinicians and from functional public laboratories. This will clearly require additional resources since half of the state public health laboratories, as a recent GAO report[1] noted, do not have enough staff to conduct regular surveillance of currently known emerging infectious diseases such as hepatitis C virus and penicillin-resistant Streptococcus pneunoniae.

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[1]General Accounting Office, Surveillance of Emerging Infectious Diseases, GAO/HEHS-99-26, Washington, DC, February, 1999)

Once the public health surveillance system has identified a biologic or chemical agent, the public health response begins. Epidemiological investigation determines when and where the exposure took place and whether cases are still occurring. This ongoing surveillance and epidemiologic analysis usually involves both rapid data analysis from reporting entities and interviews with sick individuals and those who are likely to have been exposed.

It is important to note that state and local health departments depend upon the expertise and support of infection control practitioners within hospitals and clinics. Coordination with these practitioners is essential if state and local health departments are to quickly learn of possible outbreaks.

An analysis of the distribution and number of reported cases provides important clues about the source of infection, which in turn can be used to guide law enforcement and to help physicians in the community make a rapid and accurate diagnosis of new cases and to begin optimal treatment. Therefore, rapid and accurate epidemiological investigation will be a key factor in minimizing suffering and loss of life in these types of incidents.

Preparing to meet the needs of civilian victims of a bioterrorist attack requires the coordination of the health care community as a whole, as well as many other organizations, experts and agencies at all levels of government. Therefore, part of the challenge involves working though the complex maze of multiple bureaucracies to figure out who does what and who reports to whom. Many states have some type of interagency advisory group that meets regularly to discuss threats from and responses to terrorist attacks. In the Commonwealth of Virginia for instance, this group is called the Virginia Department of Health Terrorism Task Force. The Task Force includes the Virginia Department of Health, state police, emergency services, fire services, transportation and the National Guard. The Department of Health's Office of Emergency Services is responsible for notification and warning as well as coordinating all operational response activities, including logistical support. The Virginia Department of Health provides emergency response capabilities through its 35 health districts, four regional morgues and central staff offices.

Communication planning should be a major part of emergency response planning. Media relations cannot be improvised as the gravity of the disaster unfolds. State health officials also play a role in responding to press inquiries. Health officials are often the first medical personnel to be contacted by the press when an epidemic or other type of public health threat occurs. Therefore, rapid reliable information and communication systems between local heath authorities, police, firefighters, emergency management

services (EMS), emergency personnel and federal agencies is essential. Lines of communication between state health departments, the CDC and the FBI among others, must be maintained and tested frequently.

As the investigation progresses, the magnitude of the problem, essential treatment and prevention measures required and environmental impact are continually assessed. If an infectious agent is involved, public health officials may have to house ill individuals in isolation units in hospitals, or in make-shift facilities, attended by medical personnel who are protected by specialized clothing, or who have received advance immunization. Public health officials may also be forced to place a large number of individuals in quarantine and temporarily close large public gathering places and transport centers. Massive distribution of stockpiled vaccine and medical treatments such as antibiotics will also be necessary. For this reason, it is very important that the nation move as quickly as possible to stockpile these materials. Without these treatment tools, there is little that public health can do to reduce the seriousness of the outbreak or ongoing disease transmission.

Under most circumstances, the initial detection and response to a terrorist event will take place at the local level. Faced with an unusual illness of unknown cause, practitioners will need to rely on clinical diagnoses while awaiting the results of confirmatory laboratory tests. While assessing events involving biologic agents, the local health department will rapidly need to review available public health surveillance data to determine the nature and extent of the outbreak. In events involving chemicals, the local health department will work closely with the Local Emergency Planning Committee, which is responsible for coordinating its response efforts with those of state and federal authorities. Local health departments would also actively gather data from health care providers and first responders regarding exposed persons and casualties in the community, deliver and coordinate delivery of medical services, and notify local and state and federal health officials.

Active surveillance is dependent upon the ability of the laboratory to rapidly and accurately analyze samples for evidence. Many clinical symptoms -- naturally occurring as the result of an attack -- will look similar in the earliest stages of disease. Only laboratory analysis can diagnose the pathogen and reveal the terrorist intent. This will require staff with the necessary technical expertise and equipment and supplies, including at a minimum, Biosafety level three containment facilities to work with extremely hazardous etiologic agents. Maintaining state-of-the-art capability for detection and identification as technological advancements occur will be required of at least one laboratory in each state. Public health laboratories, ideally suited for this critical role, will need constant upgrading of staff skills, equipment and reagents.

Patients are likely to be seen by a variety of providers in a number of different locations: emergency rooms, doctor's offices, clinics and hospitals. Practitioners need to have a heightened awareness of the threat of bioterrorism or chemical terrorist event and liberally report any increased occurrences of what appears to be any unusual illness.

Potential routes of exposure include aerosol, food, water, blood and insect vectors. Epidemiologic investigation is essential to establish when, where and how exposure to an agent may have occurred so that appropriate control and treatment measures can be instituted promptly. These measures may include quarantine, decontamination, immunizations and medication. One can easily picture a scenario involving hundreds of victims, which would rapidly overwhelm the health care system's ability to provide adequate isolation facilities, as well as vaccines and pharmaceuticals.

For these reasons, the public health response requires, above all, careful planning at the state level typically coordinated by emergency management teams. Every state has a disaster plan for naturally occurring problems such as tornadoes and earthquakes, but fewer state emergency management teams have meaningfully included state health departments in planning for a bioterrorist attack. Understanding the critical role of public health in such an event can go a long way to reducing the incidence of death and disease if public health resources are leveraged in the best possible ways.

Currently, CDC is providing a handful of state health departments with funding for emergency preparedness planning to serve as models for the other states. These grants, hopefully, will also make it easier to work with other relevant agencies.

Another critical role in planning is the development and implementation of training and education programs. For instance, the Illinois Department of Public Health, in conjunction with other health care organizations, sponsored several Bio/Chemical Terrorism training seminars throughout the state. The seminar, approximately four hours in length is geared towards emergency medical physicians along with emergency and trauma nurses. As of this date, the state has trained over 500 nurses and physicians and a November seminar is planned to provide further training.

Many states have also participated in regular training, including periodic table top and field practice drills, during which they practice implementation of the bioterrorist plan. One lesson learned has been that regular updating of the plan will be needed as intelligence about likely bioterrorist agents becomes available.

There are considerable challenges facing states as they try to fulfill these critical roles in the event of an attack or outbreak. State health departments will coordinate assistance to local health departments as affected localities become overwhelmed. Thus, reporting will need to be electronic and permit receipt from multiple reporting sources such as local health departments, hospitals and clinics. This is also critical with regard to laboratories, which must have communication links to federal, state and local public health agencies. All communications with federal agencies, particularly CDC will need to be seamless, as CDC will have an important role in any bioterrorist event. Furthermore, states will need to play a coordinating role with health care facilities, personnel and isolation beds. Because of the likely number of victims involved, state health departments will need to coordinate the distribution of victims around the state in medical treatment facilities and, in many cases, across state lines to nearby localities.

States also need resources and trained staff to create enhanced electronic information and communication systems that permit rapid assessment, analysis and reporting. State health departments need connections to computer networks with local health departments to allow for the rapid sharing of data on disease occurrence.

States need to strengthen the capacity of epidemiologists through staffing and training to detect outbreaks of a common disease or an unusual occurrence of an unusual disease. Improved communications with the medical community is critical so that physicians will know to report an unusual case or cluster of cases to local or state health officials at once, and conversely so that public health officials can alert doctors about suspected problems.

States also need adequate epidemiologic resources for generic on-going surveillance of unusual diseases or conditions. To conduct such surveillance, state health departments need adequate numbers of epidemiologists trained to recognize both natural and intentional events and institute appropriate measures to control them. States need a source of unencumbered funding for these surveillance systems. Systems that also benefit preparedness for non-terrorist events will also provide benefits for surveillance systems that detect influenza, unintentional food poisoning, or environmental hazards. States also need an adequate number of epidemiologists trained in detection, control and treatment of biological agents.

Public health laboratories are ideally suited for the critical role of identifying biological agents, but need considerable upgrading to carry out their essential detection function, and should have access to rapid detection kits for the most likely biological agents, which are only available to the military. State laboratory facilities need to be upgraded with appropriate equipment and trained personnel. Currently,

many state public health laboratories are not equipped to detect the most likely biological agents such as anthrax and smallpox. Minimally, every state should have a Biosafety Level 3 containment facility to handle most hazardous disease-causing agents.

Additionally, all of the 50 state laboratory personnel themselves need training in both the identification of bioterrorist agents, using the newest detection techniques, and in handling the agent's safety. Many state laboratories will need physical upgrading of their facilities to be truly safe and to accommodate new diagnostic technologies.

Through funding made available recently under CDC's Bioterrorism Program, plans are underway to implement a Laboratory Response Network for Bioterrorism Detection. Those 35, or so, states that have received funding have begun working toward having the capacity to train hospital laboratories and providing a resource for them to send their challenging bacteria to higher level laboratories in the network. But these states, and the other 15 states that have received no funding to date, will require additional resources to develop full capacity. The tests necessary to fully identify a set of biological agents may be technically infeasible for most modestly sized hospital laboratories. Therefore, the hospital laboratory staff will be taught to rule out bioterrorist agents and forward those that they cannot rule out to a public health laboratory that is trained in complete identification of the agent.

Natural and technological crises have the potential to place an intense demand on emergency medical services and/or hospital department resources, and a weapons of mass destruction event could occur without any warning. However, planning for these events now enhances probability of an effective response when the time comes, while also providing tangible benefits to the public in the interim.

Many states have been faced with anthrax hoaxes. As a result many public health departments have actively worked with the FBI to analyze the substances, resulting in a working relationship between public health and law enforcement. As a result, the victims of those hoaxes learned much more rapidly, the outcome of the investigation.

Pre-emergency response planning forges better communications between public health and emergency response sectors, which in many states operate independently. The involvement of partners and other stakeholders in pre-disaster planning facilitates buy-in and clarifies the role of each partner by identifying gaps in the ability to respond and ensuring that existing legal authorities are adequate to implement the plan when the time comes. Improvements in infrastructure made now to address the major elements of emergency preparedness planning can have immediate and lasting benefit.

State health departments have the skill and experience to rapidly mount mass immunization campaigns, administer medications on a large-scale, respond to disasters, and generate emergency public communications. Public health departments are experts in basic surveillance and disease reporting. Many states are in the process of developing emergency response plans and many have had to test their abilities because of anthrax hoaxes. Public health has a foundation on which to build a solid system to deal with biological cataclysm, whether man-made or natural.

Our nation must be aware of and prepared for the possibility of a major bioterrorist event. Readiness for such an attack means that our public health system at the federal, state and local level has the ability and the resources to rapidly identify, investigate and control the consequences of a terrorist event that could effect thousands of Americans. An efficient, effective public health response can mean the difference between chaos, widespread panic, and increased casualties and a significant reduction of disease, disability and death related to such a potentially cataclysmic event.

One of public health's most important roles will be to provide most of the actual response force. At the most basic level, a combination of case finding, interviewing, immunizing, medication delivery, or other hands-on control techniques are needed for the particular biological agent and situation will be largely carried out by state and/or local health department staff. It is our nurses, environmentalists and disease investigators who will actually do the work, if it gets done. Mississippi's recent experience with the chemical contamination of thousands of homes with methyl parathion illustrates this point. Despite the deployment of dozens of federal personnel from several agencies, the majority of the manpower (much of it nursepower) came from the state and local health departments.

In closing, public health's priority areas are:

- Planning. Preparedness planning and readiness assessment at the local and state health department level to assist in the development and implementation of plans to address public health issues following a biologic or chemical terrorist attack
- Surveillance and epidemiologic capacity. Assistance to state and major city health departments to enhance, design or develop systems for rapid detection of unusual outbreaks of illness that may be the result of terrorism involving biologic or chemical agents
- Laboratory capacity. To strengthen the capacity of state and major city public health laboratories to acquire and maintain state-of-the art diagnostic capabilities for biologic and chemical agents, and
- Health alert network. Establishing and maintaining a communications network at the state and local health department level to support the exchange of key information over the Internet, training of health

workers, assuring organizational capacity to respond to bioterrorism and other urgent needs caused by health threats and rapid dissemination of public health advisories to the news media and the public at large.

Thank you for this opportunity to testify and for your interest in this important matter.

Mr. SHAYS. Chief Plaugher, we welcome your testimony.

STATEMENT OF EDWARD P. PLAUGHER, FIRE CHIEF, ARLINGTON COUNTY, VA, AND DIRECTOR, METROPOLITAN MEDICAL RESPONSE SYSTEM, WASHINGTON, DC

Mr. PLAUGHER. Good morning, Mr. Chairman and members of the committee.

Before I give my remarks, I would be remiss if I did not wish the members of the Fairfax County Urban Search and Rescue Team every success and personal safety in their efforts in Taiwan. They began this morning.

I think it is important, as I begin my remarks, to realize that today's fire service is vastly different than yesterday's fire service, and today's needs are vastly different.

In March 1995, after the attack on the Tokyo subway system and prior to the Oklahoma City Federal Building bombing, the Washington, DC Council of Governments Fire Chiefs Committee requested assistance to better prepare the Nation's Capital and the first responder community for a weapons of mass destruction event.

Efforts have been underway since that time and progress has been made in several important areas. Your community now has additional response services and a team that has received specialized training. Equipment has been designed and field exercises have been concentrated at several key facilities or targets, such as the Pentagon.

Some first responder departments have received additional Federal resources, and in those communities even more has been done to assist and prepare the first responders.

In relation to the Metropolitan Medical Strike Team, the partnership with the Office of Emergency Preparedness, U.S. Department of Health and Human Services has been outstanding. With very limited resources, their program has made a difference in our ability to deal with critical life support issues, such as immediate access to essential pharmaceuticals.

The Metropolitan Medical Response System, as it is now know, has, and will continue, with the support of the Office of Emergency Preparedness, to improve our response capability, and is a model program that utilizes a partnership approach to provide essential response capability in incidents of terrorism.

Our partnership, which utilizes the resources and talents of local, Federal, and State assets developed well beyond our original expectations. Further development of the system is underway at this time and will, with continued support of the partners, continue to see improvements.

Several key areas, however, are problematic, to which I will focus the remainder of my remarks.

Early in the development of the Metropolitan Medical Strike Team, now the Metropolitan Medical Response System, the hospital medical community was deemed critical. In the Tokyo incident, self-referral to a medical facility of the incident victim was a major issue, and in most incident pre-planning has been deemed to be a major factor.

Today's hospitals, with few exceptions, have limited or no ability to manage the effects of manmade or natural disasters with large numbers of casualties.

Immediate first response means hospital and medical care, not just law enforcement, fire, and EMS responders. We have not developed the necessary infrastructure to support this critical need.

First responders will do their best to save lives, only to see the lack of facilities, equipment, and trained staff fail to maintain or support the saved life.

Managed care has streamlined the medical system for efficiency and is a system from which we have all benefited. Managed care, in fine-tuning the medical resources are, however, the wrong approach to develop hospital-based resources. This resource is so critical that we must not allow the corporate bottom line to dictate the outcome.

I propose that this need be viewed as similar to other infrastructure needs of critical importance to our Nation, such as interstate highways and air traffic control, both of which, as I understand, are operated by Federal trust funds. These trust funds, which can only be spent to support those program-specific needs for which we, as first responders and communities asked to prepare this community, need critically.

I propose that $2 per day be assessed per occupied hospital bed, which would be used to fund the development of a hospital-based resource system. Every hospital could and would then have the financial resources to support the efforts of the first responders in the event of a disaster, both weapons of mass destruction and terrorism incidents and natural disasters.

Just in the last 30 days, one of Arlington County's three hospitals and its associated emergency room closed its doors. Almost 45 percent of our hospital-based disaster response capability just vanished in less than 48 hours. This erosion of our emergency medical system must be stopped and reversed or the success of the world's best medical care will slide to an unacceptable level.

In addition, research and development must proceed on the development of a detector to aid first responders. My department has had discussions with Oak Ridge National Laboratory regarding this issue and have produced positive preliminary results. However, funding has prevented the concept from moving forward.

The detector would vastly expand the early warning capability of today's smoke detector and could, if applied to a first responder's protective clothing, greatly enhance the protection of our response community and to every occupancy to which it is applied.

Acts of terrorism have vastly changed the community in which we live. We cannot utilize the approach of the past to deal with this very real threat.

As individuals with whom the citizens have placed public trust, we cannot ignore these vital shortcomings to our ability to save lives. Public trust is earned every day.

Thank you for this opportunity to address the committee, and I will be glad to answer any questions.

Mr. SHAYS. Thank you, Chief Plaugher.

[The prepared statement of Mr. Plaugher follows:]

DATE: September 20, 1999

TO: The Subcommittee on National Security, Veteran Affairs And International Relations

FROM: Edward P. Plaugher, Fire Chief – Arlington County

SUBJECT: Metropolitan Medical Strike Team

March 1995, after the attack on the Tokyo subway and prior to the Oklahoma City Federal Building bombing, the Washington DC Council of Government (COG) Fire Chiefs Committee requested assistance to better prepare the national capital area and the 1st responder community for a weapons of mass destruction event. Efforts have been underway since that time and progress has been made in several important areas. Your community now has additional response services and a team that has received specialized training. Equipment has been designed and field exercises have been concentrated at several key facilities or targets such as the Pentagon. Some 1st responder departments have received additional federal resources and in those communities, even more has been done to assist and prepare the 1st responders.

In relation to the Metropolitan Medical Strike Team (MMST), the partnership with the Office of Emergency Preparedness (OEP), US

Department of Public Health Services has been outstanding. With very limited resources, their program has made a difference in our ability to deal with critical life support issues such as immediate access to essential pharmaceuticals. The Metropolitan Medical Response System (MMRS) has and will continue with the support of OEP to improve our response capability and is a model program that utilizes the partnership approach to provide essential response capability to incidents of terrorism. Our partnership, which utilizes the resources and talents of local, regional, state and federal assets, developed well beyond our original expectations. Further development of the "System" is under way at this time and will with continued support of the partners continue to see improvements.

Several key areas however are very problematic and are to which I will focus the remainder of my remarks. Early in the development of the MMST/MMSR Team, the hospital/medical community was deemed critical. In the Tokyo incident, self-referral to a medical facility of the incident victims was a major issue and in most incident preplanning, has been

deemed to be a major factor. Today's hospitals, with few exceptions, have limited or no ability to manage the effects of a man-made or natural disaster with large numbers of casualties. Immediate 1st response means hospitals and medical care, not just Law Enforcement, Fire and EMS response. We have not developed the necessary infrastructure to support this critical need. First responders will do their best to save lives only to see the lack of facilities, equipment and trained staff fail to maintain or support that saved life. Managed care has streamlined the medical system for efficiency and is a system for which we have all benefited. Managed care and the fine-tuning of medical resources are however, the wrong approach to develop hospital-based resources. This resource is so critical that we must not allow the "corporate" bottom line to dictate the outcome. I propose that this need be viewed as similar to other infrastructure of critical importance to our nation such as interstate highways and air traffic control both, which I understand, are operated by federal trust funds. Trust funds, which can only be spent to support those program-specific needs for which we as the 1st responder community/disaster preparedness community deem critical. I propose that two dollars per day be assessed per day per occupied hospital bed which

would be used to fund the development of a hospitals based resources system. Every hospital could and would then have the financial resources to support the efforts of the 1st responder in the event of a disaster.

Just in the last 30 days one of Arlington County's three hospitals and its associated emergency room closed its doors. Almost 45% of our hospital based disaster response capability just vanished in less than 48 hours. This erosion of our emergency medical system must be stopped and reversed or the success of the world's best emergency medical care will slide to an unacceptable level.

In addition, research and development must proceed on the development of a detector to aid the 1st responders. Discussions with the Oak Ridge National Laboratory regarding this issue have produced positive preliminary results. However funding has prevented the concept from moving forward. The detector would vastly expand the early warning capability of today's smoke detector and could if applied to the 1st responder protective clothing greatly

enhance the protection of the response community and every occupation to which it is applied.

Acts of terrorism have vastly changed the community in which we live. We cannot utilize the approach of the past to deal with this very real threat. As individuals to whom the citizens have placed a public trust, we cannot ignore these vital shortcomings to our ability to save lives. Public trust is earned every day.

Mr. SHAYS. Dr. Waeckerle, we'll now hear from you.

STATEMENT OF JOSEPH F. WAECKERLE, M.D., EDITOR IN CHIEF, "ANNALS OF EMERGENCY MEDICINE," FELLOW, AMERICAN COLLEGE OF EMERGENCY PHYSICIANS, AND CHAIRMAN, DEPARTMENT OF EMERGENCY MEDICINE, BAPTIST MEDICAL CENTER, MENORAH MEDICAL CENTER

Dr. WAECKERLE. Good morning, Chairman Shays and Congressman Allen and Congressman Tierney. It is a pleasure to be here.

As said earlier, I'm Joe Waeckerle. I'm a practicing board-certified emergency physician in Kansas City. I currently serve as editor in chief of "Annals of Emergency Medicine," which is a leading journal in emergency medicine. More importantly, I currently serve as the chair of the task force for the American College of Emergency Physicians which is developing strategies for training physicians, nurses, and other personnel. It is a multidisciplinary task force of health care personnel who are focusing on issues which heretofore have not been addressed.

I am here today to testify on behalf of ACEP, the American College of Emergency Physicians, which represents over 20,000 practicing emergency physicians and over 100 million patient visits per year.

Recent U.S. Government initiatives have recognized the threat of weapons of mass destruction and have appropriated funds for initial planning and response programs. To date, these response programs are well founded and provide an important foundation for defense, but, unfortunately, they are incomplete.

ACEP believes that, prior to further program development and implementation at the Federal level, there needs to be a reconsideration and modification to our current approach to domestic planning and preparation.

The contemporary model that serves as a planning framework for our community is the hazardous material or HAZMAT model. The HAZMAT model approach emphasizes a sentinel event occurring, the expectation of rapid detection and identification of the offending substance and reliance on decontamination, especially on scene by first responders to alleviate the situation.

Today, however, we believe that this approach is no longer adequate for some chemical agents and nearly all biological agents. Decontamination may not be indicated in many chemical incidents, as we once thought it to be. Decontamination is time and labor and personnel intensive and requires tremendous resources. It is impractical to decontaminate every individual involved. But perhaps the most important flaw in our current model is the fact that the HAZMAT approach does not address the use of biologic weapons, possibly the greatest threat facing our Nation.

There are four critical links to effective response missing from this approach.

First, we must consider all potential weapons, notably biologics, their specific characteristics, and a different approach to detection, identification, and defensive protective measures.

Second, sophisticated surveillance systems must be established and integrated with our public health infrastructure and our Nation's emergency departments. The development of modern tech-

nology supporting epidemiological warning networks at the local, regional, and national level can provide real-time valid information critical to early detection and identification. In an additional benefit, it would be useful for many of the public health issues of importance to our society today.

Third, specific training for emergency health care personnel is absolutely vital. For biologic weapons, the first responders will not be fire and police but will be health care professionals, especially emergency physicians and nurses. And the scene will not be the streets, but local emergency departments and clinics.

To have an effective emergency medical response to a terrorist attack in the United States, a focused educational effort on health care professionals, especially emergency physicians, nurses, and EMS personnel, is paramount. Only through to be and practice will health care professionals develop the clinical knowledge and degree of suspicion necessary to initiate an effective response.

Fourth and finally, a central Federal coordination office is essential to the development of an effective national response to terrorist attack.

No matter what type of incident, the local community, whether large or small, must respond quickly and appropriately and must have the ability to be self-sufficient for 24 hours as outside assistance may not be available.

Only through adequate planning will the community response be successful. Centralized coordination of the many important Federal initiatives will allow local and State professionals the opportunity to obtain valuable planning, training, and resource information efficiently.

In conclusion, although a terrorist attack is a low probability event for any one city or town, America's emergency medical community believes it is not a matter of if or where but when. The price of freedom in our country is our vulnerability.

We have recognized the threat of terrorism, and we have again to implement deterrent and response strategies appropriately based on existing fire and emergency services.

ACEP believes that we must now modify our approach to include current and future threats of biologic terrorism and other chemical weapons. This more-comprehensive approach will require knowledgeable emergency health care professionals supported by a sophisticated medical surveillance infrastructure at the local level.

ACEP urges Congress to implement education, planning, and response programs facilitated by a central Federal office designed to meet these challenges so that we can all better protect our patients and our country.

Thank you for the opportunity to present to you all.

Mr. SHAYS. Thank you, Dr. Waeckerle.

[The prepared statement of Dr. Waeckerle follows:]

Testimony of Joseph F. Waeckerle, MD, FACEP

Editor in Chief
Annals of Emergency Medicine

Chairman
Department of Emergency Medicine
Baptist Medical Center
Menorah Medical Center

On
"Terrorism Preparedness: Medical First Response"
On Behalf of

The American College of Emergency Physicians

Before the

House Subcommittee on National Security, Veterans

Affairs, and International Relations

September 22, 1999

Chairman Shays and members of the Subcommittee. Good morning, I am Dr. Joseph F. Waeckerle, Editor in Chief of the *Annals of Emergency Medicine*, the Journal of the American College of Emergency Physicians. I am a Board of Emergency Medicine certified physician, and the Chairman of the American College of Emergency Physicians' Nuclear, Biological, and Chemical Task Force, which is developing strategies for training physicians, nurses, and EMS personnel to respond to a terrorist attack. I am here today testifying on behalf of the American College of Emergency Physicians (ACEP), which represents more than 20,000 emergency physicians and their more than one hundred million patients.

I want to thank you for the opportunity to appear before you today to discuss the readiness and capacity of the local, state and federal health care systems to provide needed medical services in the event of a terrorist attack. For emergency physicians this is not an academic debate, we know that someday soon we will face the aftermath of a terrorist attack.

Weapons of mass destruction are becoming increasingly viable alternatives for terrorist groups. The use of these weapons threatens our society with widespread death, disease and societal disruption-- the primary motivators of terrorists. Appropriate planning and preparation guided by health care professionals may significantly limit the number of injuries and deaths from the use of these agents. Inappropriate response may worsen a chaotic and potentially devastating situation.

Recent US Government initiatives have recognized the threats to our country from these weapons. Funds have been appropriated for initial planning and response programs focused on traditional "first responders," such as police and firefighters. These

programs are being built on the existing local infrastructure of fire service and emergency medical service plans. They are well founded and provide an important base but they are incomplete. These preparedness programs are not comprehensive in their design. Of equal concern, the programs do not take into account all major categories of weapons of mass destruction. Moreover, they are not based on a thorough appraisal of the current status of our state and local medical resources and infrastructure, and do not include health care professionals in the planning and preparation for a terrorist attack.

Also, the lack of a centralized office to coordinate federal initiatives severely hampers these efforts. There appears to be currently about 100 departments and agencies within the federal government involved in domestic preparation. To the local and state provider, the lack of coordination among the federal agencies is confusing, ineffective and inefficient.

ACEP believes that prior to further program development and implementation at the federal level, there needs to be a reconsideration and modification to our current approach to domestic planning and preparation.

As with all disaster planning, planning for a terrorist event using weapons of mass destruction will have some deterrence and yield a more effective response. Planning must, however, consider potential agents and their characteristics in light of our current capabilities and resources. The contemporary model that serves as a planning framework for a community response against weapons of mass destruction is the hazardous material (HAZMAT) model. This systems approach is appropriate in situations involving certain toxic or chemical weapons exposure, similar to the hazardous material scenarios from

which it was adapted. However, it is not totally applicable for all chemical weapons and is generally inapplicable for community defense against biological terrorism.

The main deficiencies of the HAZMAT approach lie in its emphasis on a sentinel event, the expectation of rapid detection and identification of the offending substance, and the reliance on decontamination especially on scene by first responders. I was here in Washington, DC several months ago, when a tractor-trailer carrying hazardous material overturned on U.S. route 95. As many commuters in this area found out, the HAZMAT plan is not perfectly coordinated. It took time for local authorities to determine the nature of the substance and to initiate the appropriate response. In this case, and unlike that of a terrorist attack, the driver of the truck was available to provide information on the substance and its origin.

Today we are finding that many of the assumptions upon which the HAZMAT model is based are not valid for some chemical agents and nearly all biological agents. For example, decontamination, a critical core element of the HAZMAT model, is currently under scrutiny. Decontamination is time and labor intensive and requires tremendous resources. If the chemical agents are widely dispersed and thousands are exposed it is impractical to decontaminate every individual involved. In addition, decontamination may not be indicated in many chemical incidents as it was once thought to be. If an individual survives the initial chemical exposure, removal to an uncontaminated area and taking a shower may be all that is necessary.

Perhaps the most important flaw is the fact that the HAZMAT model does not address the use of biological weapons in a terrorist attack. Although terrorist groups have

previously limited their attacks to bombings, future terrorist attacks may use biologic agents, such as anthrax or small pox either alone or in combination with other agents.

Biological agents are relatively cheap to produce and deliver. Individuals with a college science education may easily manufacture lethal or incapacitating organisms in sufficient quantities to cause harm. Most of these organisms have an insidious onset – there is generally a lag time between exposure and the onset of symptoms. In addition, the initial signs and symptoms of the organisms may simulate natural epidemics such as the flu or pneumonia. As such, they will mask a deliberate release and allow the terrorists to escape undetected while the untreated infection incubates and spreads through the population.

Biologic agents approximate the lethality of nuclear explosions resulting in potentially thousands of casualties and widespread panic. In the future the threat is much greater. Advances in technology and genetic engineering will permit any terrorist group access to "designer" biological agents.

Current Federal planning relies on the HAZMAT model to determine and expend resources essential to counteract a chemical or toxic attack using that model. These resources are not necessarily appropriate for all chemical attacks and will be insufficient if a biologic weapon is used.

There are four critical links to an effective response missing from the existing HAZMAT approach:

1) Planning strategies that take into account all types of agents potentially used as weapons of mass destruction, including biological agents,
2) The use of modern medical surveillance systems technology,

3) Training for emergency health care professionals to recognize a terrorist attack and initiate the appropriate response, and
4) A centralized federal office to coordinate planning and training strategies.

With respect to the first critical link, we need more comprehensive antiterrorism planning. We need to include different assumptions regarding potential weapons, their specific characteristics, and a different approach to detection, identification, and defensive and protective measures.

Turning to the second link, surveillance systems that can provide warning of a biologic attack must be in place and up to date. Unfortunately, modern local, regional, state, or national surveillance systems that detect biologic warfare agents have not been developed. Key issues to this deficiency have been the lack of funding and support for the public health infrastructure. While there is no "black box" technology available to rapidly and accurately detect and identify a biologic agent, the development of modern technology supporting epidemiological warning networks, at the local, regional, and national level is possible. These systems can provide a first warning to potential biologic terrorism and would be useful for many other public health issues of importance to our society. Sophisticated surveillance systems must be in place and integrated with our public health infrastructure and our nation's emergency departments. Such coordination will provide real-time, valid information critical to early detection and identification.

As for the third link, specific training for emergency health care personnel is a vital component of enhanced surveillance. The incubation period of infectious agents, the dispersion method, secondary person-to-person transmission, and the natural movement

of human beings in our society makes a biologic attack difficult to recognize unless one is specifically attuned to such epidemiological factors and knowledgeable of their clinical course. The emergency health care community must be sensitized to the signs and symptoms of a biologic attack in order for the nation's public health system to respond successfully.

During a HAZMAT incident the "first responders" are police are firefighters at the scene of the incident. For biological weapons, the "first responders" will be health care professionals, especially emergency physicians and nurses. Unlike HAZMAT, the scene will be local emergency departments and clinics.

Detection, diagnosis, and life saving treatment may be delayed if the initial treating physicians and nurses do not possess the clinical knowledge and level of suspicion to recognize the features of a biologic attack and activate a response. This could be disastrous not only for the patient but also for our entire population.

To have an effective emergency medical response to a terrorist attack in the U.S., a focused educational effort on health care professionals, especially emergency physicians, nurses, and EMS personnel, is paramount. Only through training and practice will emergency health care professionals develop the degree of suspicion necessary to initiate an effective response. Today, most health care providers do not possess the clinical knowledge or level of suspicion to recognize the features of a biologic attack or mobilize an appropriate response. Unless this training is forthcoming, our country will be missing a critical link in the appropriate management of terrorist attack.

With respect to the fourth link, a central Federal planning office is essential to the development of an effective national response to a terrorist attack. The one proposed by

the Attorney General, the National Domestic Preparedness Office, contains the components that state and local providers and health care professionals have been pleading for. Without federal help in planning and coordination, the local community is unlikely to survive a biological terrorist attack. Without proper response and containment, the entire nation could be at risk.

No matter what type of incident, the local community—large or small— must respond quickly and appropriately. Moreover, the community in most instances must have the ability to be self-sufficient for the first 24 hours. State and federal resources may not be available in that time period.

Only through adequate planning, will the community response be successful. Centralized coordination of the important initiatives currently under way in many federal departments and agencies will allow local and state professionals the opportunity to obtain valuable planning and training information efficiently. In addition, such coordination could allow the bureaucracy to be streamlined into a cost-effective office able to deliver the needed expert advice, suggested planning strategies, available resources, and important training in a timely fashion.

Although a terrorist attack is a low probability event for any one city or town, America's emergency medical community believes it is not a matter of "if" or "where" but "when." The price of freedom in this country is our vulnerability.

We have recognized the threat of terrorism and begun to implement deterrent and response strategies. To date, the federal government has used existing fire and emergency services plans and focused planning and training resources for responding to a terrorist attack on conventional first responders: "firefighters and police".

ACEP believes that we must now modify our approach to include current and future threats of biologic terrorism and other chemical weapons. This approach will require knowledgeable emergency health care professionals supported by a sophisticated medical surveillance infrastructure. ACEP urges Congress to implement education, planning, and response programs designed to meet these challenges so that we all can better protect our patients and our country.

Joseph F. Waeckerle, MD FACEP

Joseph F. Waeckerle, MD FACEP, is currently Chairman of the Department of Emergency Medicine at Baptist Medical Center and Menorah Medical Center and Clinical Professor at the University of Missouri – Kansas City School of Medicine. He also is Editor in Chief of *Annals of Emergency Medicine*. He is residency trained and board certified in Emergency Medicine and Sports Medicine with post graduate work in exercise physiology. He is certified in tactical medicine as well. He has a long history of involvement in Emergency Medical Services and Prehospital Care. He was the Medical Director of Kansas City, Missouri EMS System from 1976 through 1979 and then Trustee of the Board of Trustees through 1991. He is currently the Medical Director of Leawood, Kansas EMS System and serves on the Johnson County EMS Council and Johnson County Medical Society EMS Committee.

He has served as President for the Society of Academic Emergency Medicine and Director, Board of Directors of the American College of Emergency Physicians. He was also a Director of the Board of Directors of the Emergency Medicine Foundation.

His positions in disaster medicine include Official Liaison in Disaster Medicine for the American College of Emergency Physicians and Chair of the Task Force on Domestic Preparedness Against Weapons of Mass Destruction which is funded by a grant from the Office of Emergency Preparedness from the Department of Health and Human Services. He is also the Medical Officer for the Kansas City Field Office for the Federal Bureau of Investigation and Medical Officer for the Kansas City Police Department.

His background in Disaster Medicine started in the 1970's as the Director of EMS for Kansas City Missouri when he became involved in mass casualty incidents. He then was the physician in charge of rescue/triage at the Hyatt Skywalk collapse, and for those efforts he received numerous awards and recognition. Since then he has remained very active in the field. He has continued fieldwork at other mass casualty incidents and other large-scale disasters. He has actively lectured and instructed physicians and prehospital personnel in preparation for mass casualty events including the Atlanta Olympic Games. He has written extensively in this area, including the definitive review of disaster planning and preparation in the *New England Journal of Medicine*. He has upcoming reviews of preparation against chemical and biologic weapons in *Annals of Emergency Medicine* and the *New England Journal of Medicine*.

Mr. SHAYS. Dr. O'Toole.

STATEMENT OF TARA O'TOOLE, M.D., SENIOR FELLOW, CENTER FOR CIVILIAN BIODEFENSE STUDIES, THE JOHNS HOPKINS UNIVERSITY, SCHOOLS OF PUBLIC HEALTH AND MEDICINE

Dr. O'TOOLE. Thank you, Mr. Chairman.

I am Tara O'Toole. I am a physician and public health professional. I am here today as a member of the Johns Hopkins School of Health Faculty, where I am a senior fellow in the Hopkins Center for Civilian Biodefense Studies.

I am going to confine my remarks to preparedness for acts of terrorism involving biological weapons, only.

The Hopkins Center for Civilian Biodefense was founded about a year ago under the leadership of D.A. Henderson, in large part out of concern that the distinctive features in responsiveness to acts of terrorism using biological weapons, were not being clearly recognized within the Federal preparedness programs.

Supported by both the Schools of Public Health and Medicine at Johns Hopkins, the center is focused on three strategic areas.

First, increasing awareness of the threats posed by bioterrorism amongst professionals in the medical and public health communities.

Second, building the knowledge base that is needed to respond appropriately to biological weapons of greatest concern. As Dr. Waeckerle mentioned, there is much yet to learn about how best to respond to such events.

Third, we are trying to catalyze the development of operational systems, and particularly public health systems, that would enable us to respond effectively to intentional epidemics.

The center is responsible for convening a national working group that published consensus recommendations on how to medically respond to anthrax and smallpox in the "Journal of the American Medical Association." Additional recommendations on other pathogens of high concern will be forthcoming.

We are also beginning a project to design a template to try and identify the essential elements needed to create the institutional capacity to allow hospitals to respond effectively to bioterrorism.

A terrorist attack on U.S. civilians using biological weapons will cause an epidemic. As Congressman Allen noted in his remarks, the response to such an event would be fundamentally different and involve different kinds of professionals and organizations than a response to terrorist attacks using chemical weapons or conventional or nuclear explosives.

If we are going to construct effective response programs, we must recognize these essential distinctions between bioterrorism and other types of terrorist attacks.

Were a covert bioterrorist attack to occur, it would most likely come to light gradually, as astute clinicians became aware of an accumulation of inexplicable deaths among previously healthy individuals.

Regardless of the specific scenario or the scope of the attack, the medical community and hospitals will be key components of any effective response. In addition, State and local public health agencies

will also have vital roles to play in managing an intentional epidemic.

Indeed, how effectively and how rapidly these public health and medical professionals respond will have critical impacts on the scope and the outcome of the epidemic.

There are now a number of very laudable Federal programs underway which address the challenges associated with bioterrorism. All of these programs—all of them—are designed to support local response efforts. In fact, most analyses and exercises to date, as Dr. Waeckerle alluded to, indicate that Federal resources cannot be mustered for 24 to 48 hours after a terrorist attack; thus, for the first day or two cities and States will be on their own.

To date, there has been very limited involvement on the part of clinicians and hospital leaders in the drills and exercises sponsored by the Federal preparedness programs. This is not because the people running these programs have failed to try to get these participants to the table, but it is the case that to date most doctors have never seen a case of anthrax or smallpox or plague, and most hospital laboratories are not equipped to definitively diagnose those pathogens.

State and local public health agencies have been under-funded for decades, as the Institute of Medicine pointed out in 1988. They have got to be upgraded. This will not be simple. It will require a concerted, long-term effort. There are no silver bullets.

The ability of public health agencies to conduct rapid epidemiological analyses, to identify and track and, if necessary, vaccinate or isolate infected persons, or get them appropriate antibiotics will have a critical impact on our ability to manage the epidemic and limit suffering and death.

I would suggest four areas of attention for your consideration.

First, we need to continue to enhance existing Health and Human Service programs' upgrade for local public health capacity. The recent initiatives of the Centers for Disease Control are critically important in this regard and should be continued and, in fact, enhanced.

A coherent 5-year plan that identifies the most important essential elements of public health response and that helps to ensure the capacity to coordinate regionally among different institutions that will be involved in bioterrorism response would be very helpful.

Again, there will be no quick fix.

Second, we have got to get the medical community and hospitals engaged in response planning and preparedness efforts. Given the financial pressures and competing priorities that beset clinicians and hospitals today, this will not be easy.

It is important, first of all, that the medical community become aware of the threat posed by biological weapons and able to diagnose the most likely pathogens that might be used as weapons.

We would suggest that the effort to make this happen proceed via professional societies such as the American College of Emergency Physicians, and that selected groups within the medical profession, such as emergency doctors, infectious disease specialists, internists, and so forth, be taught, through their professional societies, how to recognize and treat the pathogens of highest concern.

Again, the professional societies have a distribution system and a history of teaching physicians that is likely to be more efficient than curricula developed by for-profit contractors.

Hospitals, as we all know, are beset by many competing pressures, as Mr. Plaugher pointed out. In order to get hospitals to participate in planning efforts, we are going to have to construct a careful menu of incentives and programs that allow them to do so. They are not looking for another mission to pursue. And we have got to make the case that the consequences of a biological attack would be so calamitous that even the low probability of such an event warrants their attention.

We must get hospital leadership engaged, which has been difficult to do to date.

We believe that, in order for that to happen, Federal leadership will be necessary from both the Congress and the executive branch.

Third, as all of my colleagues on the panel have mentioned, coordination and collaboration is essential.

A biological attack is going to provoke the efforts of a huge panoply of agencies and institutions at all levels of government. Coordinating such an affair is not easy, as we all know. There have been mighty efforts made to date to accomplish that on the Federal effort, which I know will continue.

Let us remember that coordination requires resources, time, and money. I would suggest that a deliberate effort to create structures that would allow coordination and collaboration on the local level and would connect those efforts to Federal structures might be very helpful and deserving of consideration.

Finally, human disease is always a social phenomenon with important ethical, legal, and cultural implications. An intentional epidemic will raise difficult questions such as the authority of governments to impose quarantines or isolates individuals with contagious illness, the legal liability associated with vaccinations, the use of military personnel on American soil, and so forth.

Many of the relevant public health laws that would be invoked in such situations date back to the Civil War. Moreover, such authorities differ from State to State quite considerably.

Examination and consideration of these matters should be undertaken now, not in the midst of a national disaster, and I think it would be helpful to get scholars from academia, as well as legal experts in the Department of Justice, and from HHS involved in such a matter.

That concludes my remarks. I'd be happy to answer questions.

Mr. SHAYS. Thank you, Dr. O'Toole.

[The prepared statement of Dr. O'Toole follows:]

Congress of the United States
House of Representatives
Committee on Government Reform
Subcommittee on National Security, Veterans Affairs, and International Relations

HEARING ON TERRORISM PREPAREDNESS: MEDICAL FIRST RESPONSE

September 22, 1999

Testimony of Tara O'Toole, MD, MPH
Senior Fellow, Center for Civilian Biodefense Studies
The Johns Hopkins University, Schools of Public Health and Medicine

Good morning Chairman Shays, distinguished members of the Committee. Thank you for the opportunity to appear before you today to discuss the important topic of "Terrorism Preparedness: Medical First Response". I am a physician and public health professional, and from 1993-1997 served as Assistant Secretary of Energy for Environment Safety and Health. I am currently on the faculty of the Johns Hopkins University School of Public Health and am here today in my capacity as a Senior Fellow in the Johns Hopkins Center for Civilian Biodefense Studies. I will confine my testimony to medical and public health response to bioterrorist attacks on US civilians.

INTRODUCTION

A terrorist attack using a biological weapon against US civilians will require a response that is fundamentally different the response demanded by an attack that employs chemical weapons or explosives – even nuclear explosives. The medical and public health response to a bioterrorist attack will also differ significantly from response to natural disasters such as earthquakes or fires. Construction of effective response programs requires that these differences be clearly recognized.

The outcome of a bioterrorist attack on US civilians would be an epidemic. The "first responders" to such an event will be physicians, nurses, and public health professionals in city and state health departments. A covert bioterrorist attack would likely come to attention gradually, as doctors become aware of an accumulation of inexplicable deaths among previously healthy people. The speed and accuracy with which physicians and laboratories reach correct diagnoses and report their findings to public health authorities will directly affect the number of deaths, and – if the attack employs a contagious disease – the ability to contain the epidemic. Few, if any, practicing clinicians have ever seen a case of smallpox or anthrax or plague. Only a handful of laboratories have the ability to identify definitively the pathogens of greatest concern.

Few, if any, recent disasters on American soil have resulted in large numbers of patients needing immediate and sustained medical care. It is hard to identify a modern event that truly tested the capacity of the US health care system to respond to massive casualties. Nothing in memory is comparable to the situation that would arise if a US city were targeted with, say, an aerosolized anthrax weapon.

In this scenario, hundreds, thousands, or perhaps even tens of thousands of people would need immediate care, and many would require need intensive therapy or ventilators. Hospitals, which thus far are almost entirely absent from any bioterrorism response planning activities, are already overburdened. Few cities have sufficient numbers of unoccupied hospital beds, staff or equipment to absorb a large, sudden influx of severely ill patients.

In any scenario involving biological weapons, the number of people who are ill and need hospital care would likely be exceeded by individuals seeking care because they are fearful of being sick. The Scud missile attacks on Israeli citizens during the Gulf War produced large numbers of people seeking medical care for symptoms of acute anxiety – symptoms that closely mimic early nerve gas effects. Similarly, in their initial stages, many of the diseases delivered by biological weapons resemble common illnesses. Rapid diagnostic tests for diagnosing smallpox, anthrax, etc. would be most helpful; but even the availability of such tools will not prevent the need to distinguish the truly sick from the worried well. Accomplishing this, and triaging affected individuals so as to best deploy limited drugs and equipment, will require significant resources.

In the event that a bioterrorist attack employs a contagious pathogen, provisions must be made to protect health professionals from the diseases afflicting their patients, and to prevent patients from infecting others. Most hospital infection plans are capable of managing a handful of infectious patients – we are unaware of any hospital that has the capacity to effectively isolate many more than that.

No one knows how people would react to an attack with a deadly pathogen. But it is likely that some health care workers would leave their jobs to care for their families; others may leave for fear of their own safety. Maintaining security at hospitals, health care centers, and pharmacies would pose great challenges since many hospital security staff are off-duty police officers who would presumably be needed elsewhere during the crisis.

Media coverage of modern epidemics will have a profound influence on the outcome of response efforts should a biological attack occur. It is easy to imagine the opportunities for misinformation, or contradictory interpretations by various self-appointed or media-anointed "experts" in the context of a terrorist attack on Americans. This would be a situation that lends itself to fueling public mistrust; yet providing the public with accurate, timely information that people not only believe, but act on, could literally save lives.

THE ROLE OF PUBLIC HEALTH IN BIOTERRORISM RESPONSE

Public health agencies at the municipal, county, state and federal levels will be central participants in efforts to recognize and respond to bioterrorist attacks. Public health response activities will be especially essential to shaping the scope and outcome of a bioterrorist attack. Containment of transmissible disease outbreaks in the modern world is a formidable undertaking. The mobility of urban populations, the global availability of high-speed transportation networks, and limitations on public health authorities, are factors that impact on epidemic management.

There is some chance that epidemiologic surveillance systems may be useful in detecting an attack; surveillance systems will be essential, though, in managing an epidemic. Thus, the ability of local and state health departments to conduct rapid epidemiological analyses is a key component of any national response system. Epidemiologic analysis of initial victims may be critical in determining where the attack occurred, who is at risk, and who requires prophylactic treatment.

A key component of efforts to limit the number who become ill will include the identification of contacts requiring vaccination, antibiotics or quarantine. Epidemiologic tracking of the epidemic will be necessary to determine if response efforts are succeeding, where resources should be invested, and whether additional attacks have occurred. History shows that governments' ability to accurately describe the course of disease outbreaks has a great impact on public credibility and on citizens' willingness to follow the recommendations of public health authorities.

Unfortunately, the public health infrastructure in the U.S. has been neglected for decades. In 1988, the Institute of Medicine wrote that "public health in the United States has been taken for granted" and that "our current capabilities for effective public health actions are inadequate."[Institute of Medicine, The Future of Public Health, National Academy Press, Washington, D.C., 1988]. In the ensuing decade, things have only gotten worse. City and state health agencies remain seriously under-funded and understaffed, a situation that presents a real danger in our nation's potential to effectively manage an epidemic among the civilian population. The state grants program initiated this year by the Centers for Disease Control Bioterrorism Preparedness and Response Office is an important step towards strengthening state and local public health capacities.

Collaboration between public health departments and the medical community is also critical to bioterrorism response. The gulf between medicine and public health is well documented and significant. Communication between hospitals and state health agencies is extremely limited. For example, few state health agencies have the ability to determine how many intensive care unit beds in the state are occupied, and few physicians know how to contact government health agencies were they to suspect a case of smallpox or anthrax. Re-establishing the linkages between medical practitioners and hospitals and public health agencies will be extremely important (and is likely to yield dividends beyond bioterrorism response).

THE ROLE OF MEDICINE

There is an enormous need to raise awareness within the medical community of the threat of bioterrorism. During a bioterrorist attack, health professionals will be the first responders. Yet, this critical component of the nation's response capability has thus far received no funding or targeted attention from any federal preparedness program. Moreover, very few medical or

hospital industry leaders with whom we have spoken are even aware that bioterrorism is a problem within their scope of influence.

Physicians are already struggling to keep up with advances in their own specialties -- they are not searching for additional subjects to master. It is likely that many will be reluctant to devote scarce resources to preparing to treat diseases with low probabilities of occurrence. Physicians must be educated about the potentially calamitous consequences of bioterrorism, and the critical role that astute clinicians could play in recognizing such attacks. It is essential that at least a core of practitioners in selected medical specialties - such as emergency medicine, infectious disease, internal medicine, hospital epidemiology, etc.- are aware of the basic clinical manifestations and management of diseases caused by biological weapons.

Should a bioterrorist attack on US civilians occur, hospitals would be the frontline institutions that manage the response, regardless of the type or scale of the attack. The current hospital system is not well prepared to deal with a mass disaster. Economic pressures have reduced staff and the number of available hospital beds. Intensive care and isolation beds are particularly scarce. Drugs and equipment are purchased on an "as needed" basis, which has resulted in reduced stockpiles available for immediate use.

Hospitals have been largely missing from bioterrorism response planning to date. Efforts to include hospitals in exercises sponsored by the Domestic Preparedness programs have not been successful in engaging hospital leaders, who are preoccupied with a welter of urgent issues associated with the changing and financially competitive terrain of modern health care. Most hospitals are not in a position to accept unfunded mandates, and are unlikely to respond to bioterrorism response plans unless the nation establishes a thoughtful menu of incentives and programs that motivate and enable them to do so.

Effective response to a bioterrorist attack that results in hundreds or thousands of patients will require intense coordination and cooperation among dozens of hospitals and Health Maintenance Organizations in a city or region. The protocols and infrastructure for implementing such collaboration should be examined, especially in view of the autonomous and financially competitive nature of health care organizations.

It is critical that response roles and capabilities of hospitals be carefully examined and augmented as appropriate. The Hopkins Center for Biodefense Studies has begun a project to design a "template" that would identify key elements in creating institutional capacities required for effective hospital response. Increasing awareness among hospital leaders and staff of the threat bioterrorism is obviously a key component of building such capacity.

SOCIAL DIMENSIONS OF BIOTERRORISM

Planning for response to terrorist attacks should not neglect the social consequences of epidemics. A deliberate epidemic may continue to produce victims over a period of months or years. Moreover, it may be difficult to predict the danger of additional attacks. If the biological weapon used is a contagious disease, fellow citizens may represent ongoing threats to public safety, or be perceived as such. Managing the response to a bioterrorist attack will exact a physical and emotional toll on the whole population, but especially health care workers and family caretakers, many of whom may fear for their own health. Normal routines and commercial activity are likely to be seriously disrupted, possibly on a citywide or regional basis

and for an extended time period. Proper attention to the psychological needs of people in crisis is essential.

Historically, some disease control measures taken in times of public health emergencies have been at odds with, or perceived as violating, certain democratic principles and processes. For example, mandatory quarantine or enforced vaccination to limit disease spread have been perceived as threats to individual autonomy and the right to privacy, or as discriminatory actions against certain groups. During a crisis, communication failures among different communities and between government officials and citizens can create suspicions and resistance that inhibit the accomplishment of public health objectives. Moreover, differing ideas of what constitutes proper response can also have long-term political consequences, contributing to distrust of government institutions and disengagement from the processes of representative democracy.

A bioterrorist attack will undoubtedly raise many important political and legal questions and issues involving civil liberties, the authorities of state and federal health officials, liability in the event mass vaccination is necessary, etc. An effort to identify and better understand such issues would be useful.

FEDERAL BIOTERRORISM RESPONSE PROGRAMS

All Federal response plans in place and under development – including those of the Departments of Defense and Health and Human Services – are designed to *support* local resources and capabilities. It is estimated that 24-48 hours will elapse before federal resources arrive on the scene. During this initial – and for bioterrorism, most crucial – phase of response, local hospitals and health agencies are on their own. Thus, it is extremely important that the federal efforts to augment state and local bioterrorism response capacities be continued and expanded to include as partners the medical and public health communities.

In recent years, a number of laudable federal efforts aimed at augmenting terrorism preparedness on the local level have gotten underway. Some of these programs have been criticized for being poorly coordinated on the federal level, an observation not without foundation. Such criticism may reflect, in part, the complexity of the technical issues and the unusual panoply of actors that would be engaged in terrorism response activities. Both of these aspects – the technical difficulty of the issues and the challenge of integrating diverse organizations and cultures – are magnified in the context of bioterrorism.

Three aspects of current federal programs deserve emphasis. The first is the pressing need to upgrade the capacity of local public health systems to respond to an intentional epidemic. The second is the imperative to engage the medical community, including hospitals, in bioterrorism response planning and preparedness. The third aspect of federal efforts that requires thought and attention is the institutional "connectedness" that will be essential to mount an effective response to acts of bioterrorism.

1. *Upgrade Local and State Public Health Capacities*

   The creation of the Bioterrorism Preparedness and Response Office within CDC establishes an important nexus for scientifically informed policy. The grants program run by the Office of Bioterrorism Response targets state health departments – a critical, and thus far neglected, component of bioterrorism response. The Bioterrorism Preparedness and Response Office in

the Centers for Disease Control and Prevention (CDC) has recently embarked on a number of important bioterrorism related initiatives. Such programs include the development of national pharmaceutical and vaccine stockpiles, the strengthening of CDC's diagnostic laboratory capacity, the augmentation of CDC's epidemiologic capacity and the improvement of disease surveillance systems.

It is vital that this program continue and be expanded. Upgrading the nation's public health system is a significant undertaking. A five-year plan that identified the core public health functions essential to effective bioterrorism response would be useful to establish priorities and set realistic budget targets. Such a plan might also help ensure that state-based systems can be integrated into regional and national responses. Efforts to implement critical capacities should not be sacrificed to attempts to create ambitious, long-term projects. For example, sensitive surveillance systems designed to detect bioterrorist attacks will be expensive and difficult to create. Arguably, such systems may not make detection of outbreaks more rapid or more certain than detection by alert clinicians who can recognize disease caused by biological weapons and know how to contact responsible public health officials. More important, in our view, is creating the capacity to efficiently track and respond to disease outbreaks on the local and state level once they occur.

2. *Engage the Medical Community in Bioterrorism Response Planning*

The Nunn-Lugar Domenici Domestic Preparedness Programs have thus far focused primarily on responses to terrorist attacks using conventional explosives or chemical weapons. Training exercises focused on chemical attacks or conventional explosions have appropriately targeted traditional "first responders" – firefighters, emergency response technicians, law enforcement personnel and the like. Few cities have considered or practiced responding to an attack that employs biological weapons. Thus, the medical community, hospitals, and even state health departments have been missing from training and exercises sponsored by the Domestic Preparedness Programs. Furthermore, even when bioterrorism scenarios are considered, clinicians and hospital leaders are seldom involved.

The Office of Emergency Preparedness (OEP) within HHS is in charge of a number of programs that carry out important medical missions during natural disasters. The National Disaster Medical System (NDMS) is designed as a partnership between the public and private sectors during emergencies and includes resources from the Departments of Defense, Veterans Affairs and the Federal Emergency Management Agency as well as HHS. OEP's role within the NDMS might provide important support functions following a bioterrorist attack, including logistical support and coordination of hospital resources.

The NDMS is specifically envisioned as a supplement to state and local medical resources. About 7000 volunteers nationwide comprise Disaster Medical Assistance Teams (DMATs), which are typically mobilized during natural disasters or discrete events such as the bombing of the federal building in Oklahoma. DMATs usually include about 30 people, only one or two of whom is a physician, and are trained to interact with traditional emergency response personnel. These teams might provide valuable support during an intentional epidemic. Other OEP capabilities, including mental health services and mortuary services, might be extremely useful resources. How such teams would interface with hospitals or local health departments; how and whether such volunteer teams could be mustered during a large epidemic; and how any public health or medical unit will interact with federal programs are all areas needing attention.

It is not easy to engage the medical community in bioterrorism response planning and preparedness. From a practical standpoint, the task of educating clinicians about the possibilities and medical implication of biological weapons is probably best addressed by professional societies. Hospitals and large HMOs are unlikely to devote scarce resources to bioterrorism preparedness in the absence of vigorous Congressional leadership and the engagement of key authorities within the hospital community. Whether all hospitals should be prepared to respond to bioterrorism or whether a limited number of institutions should be selected to pursue more advanced capabilities is an open question.

3. *Coordination among Institutions Involved In Bioterrorism Preparedness Planning and Response*

Institutional coordination is an important aspect of response planning. The lack of a precise understanding of roles and responsibilities among federal agencies involved in terrorist response is well recognized. Local institutions are not, in general, in better shape, and have far fewer resources to devote to planning activities.

Coherent state-wide plans embracing all relevant parties – including hospitals, emergency response systems and government health agencies – in functional consortia would be extremely useful. CDC and OEP and state preparedness initiatives must address issues of coordination and collaboration that result in a constructive reexamination of strategies and plans.

All fifty U.S. states responded to the Federal Centers for Disease Control and Prevention 1999 Request for Proposals to strengthen public health response to bioterrorism; however, to date very few representatives of the medical or hospital communities have participated in planning projects or are even aware of the threat posed by bioterrorism. It is critical that the leadership from both the medical and public health communities become engaged soon, to ground the process in an accurate understanding of technical and institutional issues, and to incorporate a realistic and thoughtful analysis of the social repercussions of public health options.

Coordination between the health sector and law enforcement authorities is especially important, given that a bioterrorist attack will necessarily involve a high-profile, high stakes criminal investigation and will raise profound national security issues. Efforts to ensure adequate communication and collaboration among health authorities and law enforcement deserve a high priority given the lack of practical experience in such collaboration and the significant organizational and cultural differences among these sectors.

MISSION AND FOCUS OF THE JOHNS HOPKINS CENTER FOR CIVILIAN BIODEFENSE STUDIES

The Johns Hopkins Center for Civilian Biodefense Studies is dedicated to fostering the development of medical and pubic health policies and structures to prevent the use of biological weapons and protect the civilian population from bioterrorism. The Center's principal focus is upon those bioweapons that have the potential to cause catastrophic, potentially destabilizing epidemics.

Begun in September 1998, the Center is dedicated to a sustained examination of the policy and operational issues associated with medical and public health implications of bioterrorist threats. The Center is committed to providing opportunities for informed dialogue among a diverse array of policy experts and health practitioners. The Center itself possesses a unique array of expertise and experience in medicine, public health, and government, which makes it well-poised to carry out its goals.

The Center's approach includes three focus areas:

Raising awareness – increase national and international awareness of the medical and public health threats posed by biological weapons, thereby augmenting the potential legal, political and moral prohibitions against their use.

Building the knowledge base – develop a broad appreciation of the threat posed by the biological agents of greatest concern, and possible medical and public health management options through analysis of expected clinical manifestations, available treatment strategies, epidemiology, and potential methods of prophylaxis. Disseminate this knowledge throughout the medical and public health communities.

Catalyzing development of effective, practical systems to respond to epidemics – inform the planning and preparation for possible bioterrorist attacks, and by so doing, lessen their potential effects and attractiveness as instruments of terror. Engage the medical and public health communities in comprehensive planning in critical areas such as epidemiological characterization of intentional epidemics, the care and treatment of casualties, communication of information to the public, and the pursuit of unmet research and preparedness needs.

To further these ends, since its establishment one year ago, the Center has accomplished the following:

- Delivered more than 75 presentations to audiences in 27 cities.
- Co-sponsored with the Department of Health and Human Services the "National Symposium on the Medical and Public Health Responses to Bioterrorism," attended by over 900 people from medical, public health, military, intelligence and media communities.
- Convened an expert, national Working Group to analyze appropriate medical and public health strategies for dealing with the most dangerous biological weapons. Consensus recommendations on anthrax and smallpox are detailed in peer-reviewed articles in the *Journal of the American Medical Association*. Articles on plague, botulism, tularemia and the hemorrhagic fevers are in progress.
- Established a website and quarterly newsletter that provide general and technical information on medical and public health aspects of bioterrorism to professionals and the general public.
- Testified before Senate and House committees and briefed Congressional staff and members of Congress.
- Began identifying key elements and processes for developing an effective medical and public health response to bioterrorism which can serve as a template for operational efforts.

- Began a historical investigation of the social and medical responses to past epidemics aimed at illuminating probable public reactions toward official interventions.

- Participated in many government and scientific advisory committees addressing various aspects of bioterrorism. Institutions include the National Academy of Sciences, Institute of Medicine, Department of Defense, Infectious Diseases Society of America, World Health Organization, and Maryland Institute for Emergency Management.

RECOMMENDATIONS

A number of steps must be taken to develop the appropriate level of readiness at the local, state and federal level to effectively deal with the threat of bioterrorism:

1. *Augment Local Public Health Capacity*
   Investment of talent and money in the HHS bioterrorism response programs in CDC and OEP should continue and indeed, should be significantly increased. More attention should be directed towards identifying and implementing the essential elements of bioterrorism response, and toward making sure that Federal efforts can effectively plug into local resources.

   We agree with the assessment of the Deutch Commission that federal efforts to respond to terrorist attacks are uncoordinated. We encourage all agencies involved with the public health response to bioterrorism to seek greater cooperation and a more explicit understanding of responsibilities and capabilities. However, this should not obscure the fact that the HHS programs now underway bring different elements to the nation's response capability and are of great potential value. There is plenty for everyone to do.

2. *Improve Clinicians' Awareness of the Threat of Bioterrorism and the Diagnosis and Treatment of Diseases Caused by Biological Weapons*

   The medical community must be brought into the planning and preparations for bioterrorism. In the event of a bioterrorist attack, local health resources – physicians, nurses, and the technicians and administrators who support them, will carry the weight of the response. Yet none of the preparedness programs now in place include any appreciable engagement of physicians or hospitals.

   Increasing health professionals' awareness of the medical manifestations of biological weapons and educating clinicians about what to do should they suspect a biological attack must be a top priority. This can be accomplished most efficiently if curricula are designed and distributed through professional societies such as the American College of Emergency Physicians, the American Colleges of Physicians, the Infectious Disease Society of America, etc., rather than by for-profit contractors.

3. *Engage Hospitals in Bioterrorism Preparedness and Response Planning*

   With very few exceptions, hospitals are not yet participants in any response planning efforts. Given the competing priorities facing health care institutions, initiatives to make hospitals aware of the bioterrorist threat and of their critical role in bioterrorism response must engage

leaders within at the appropriate levels of authority and influence. As the path towards constructive integration of hospitals into response planning becomes better defined, proper heed should be paid to the resources hospitals will require to fulfill their roles and missions.

4. *Assess the Impact of the Media*

Careful anticipation and study of the influence of the media on the events following a bioterrorist event is needed. The media's impact on the epidemic and its concomitant potential to generate or quell public panic has great salience for any practical response planning. Consideration should be given to advance preparation of educational videos, and briefings for reporters. Protocols for providing the public with rapid and accurate medical information in the event of an attack should be determined.

CONCLUSION

If a bioterrorist attack occurs on U.S. soil, the ensuing response will engage all levels of government, most federal agencies, and multiple professional communities, most particularly health care providers and public health professionals. It will take place in an atmosphere of great tension, uncertainty and fear. Decisions will have to be made and coordinated very rapidly. Planning and implementation of effective response strategies must take into account the complexity of this challenge and the essential multidisciplinary, inter-institutional nature of the problem. There is an urgent national need to develop a holistic picture of what such a response should include and how it might be organized, recognizing the importance of crafting strategies that are locally-based and flexible enough to accommodate specific contexts and unexpected conditions.

Mr. SHAYS. We're going to start with Congressman Allen, and we'll have a number of questions to ask all of you. Thank you.

I appreciate the fact that you all tried to summarize your statements, but I think you still got the main points out. Thank you.

Mr. ALLEN. I want to thank you, also. I have been to a lot of congressional hearings, but I have to say that you all did a very good job of making suggestions for areas in which we need to work, an excellent job of pointing to the areas where we need to pay some attention.

You've left me with a whole range of areas I'd like to talk about.

I think what I'll do is just flag for you the areas of institutional capacity that a couple of you have raised, and the question of how to engage the medical community. I think that is the absolutely central issue.

Let me flag that and leave it aside for a moment and go to questions about laboratories. It seems that part of the problem in incidents of bioterrorism is how do we figure out what is going on. And so that raises issues about the capacity of State labs, hospital labs, to detect some of these agents.

Can you sort of—and I think this is open to any one of you—even if every State had a laboratory capable of analyzing these agents, aren't we still talking about delays and travel time and—should every State have one hospital or one State public health department that is capable of doing this? What do you envision as a way to deal with this detection issue as quickly as possible?

That's for anyone who would like to answer.

Dr. JOHNSON. A couple of thoughts on that from a State public health perspective.

Mr. SHAYS. If I could interrupt, it would probably make sense for all of you to answer, because you all have different perspectives on the issue, even if it is a short response.

Dr. JOHNSON. There are several levels to a response to that important issue.

First of all, obtaining the appropriate samples, both environmental samples and human specimens, is something for which training will be needed. That has to happen at the local level. It has to happen both from public health authorities, but, more importantly, from medical first responders and emergency medical personnel. Knowing what specimens to get and where to send them, who to call, is an important part of this whole process.

I think clearly our perspective would be that, at a minimum, at a State level, and certainly even at below the State level at certain metropolitan areas, and so forth, there has to be the laboratory capacity to rapidly assess both biological and chemical agents.

We're pleased that we are just now beginning to receive some Federal support to develop that capacity in the State of Michigan, and other States are, as well.

But I'd say at this point my quick assessment would be that there is a great deal of variability across the country as to the level of that capacity presently.

Mr. PLAUGHER. Mr. Allen, I have been very fortunate for the last 2 years in working with Oak Ridge National Lab on the reinvention of the household smoke detector. We have 77 million smoke detectors in this country that are more than 10 years old and need

to be replaced, and now is the time to look at new technology to see if we can avoid false alarms and those type of things associated with it.

I also have an obligation to try to return home every night to 64 people who protect Arlington County, and that's the fire fighters and paramedics, so that if there is some way that I can design a detector that will provide them personal protection, as well as better protection for our residents—and so I went to Oak Ridge and asked them could they, in fact, do that, knowing full well that that was a huge, huge obstacle.

It was amazing, because their response was, "Absolutely, and we can use existing technology to do that."

And so we've continued to explore with Oak Ridge a couple of very exciting technologies, but we have run into a funding issue, and we no longer can pursue the project because we simply don't have the funds to do that. And it will do both of those items with—they are different technologies, but remember, now, we threw out to them this quest of ours to do the two-pronged approach in our dialog with them.

I've had a chance to actually visit in Florida the Oak Ridge Lab that is designed to do detector enhancements, primarily for the Department of Energy facilities, but it is pretty remarkable the concepts they're talking about. They're talking about a detector that is similar to what we know as today's smoke detector that would be able to detect over 40,000 different substances, and we are also talking about a detector that would be capable of detecting bios and other type of things that—again, there are two entirely different technologies.

So we think this is critical. We think the detector's capability is absolutely essential.

Mr. ALLEN. Are you saying you wouldn't need different detectors for different biological agents?

Mr. PLAUGHER. They have started research on what are called "forescens," and forescens are individual microorganisms that are designed to specifically react to certain presence of certain things, such as anthrax and those types of things, and then they simply glow. The task is to measure the glow to make sure that you're not getting false positives and that sort of thing.

It is some pretty exciting stuff, but, again, they've run into a funding problem.

Mr. ALLEN. Thank you.

Dr. WAECKERLE. I've had the unfortunate experience of actually responding to some events, both chemical and biologic, in my career. The crux of a response is, as we've all stated to you, detection and identification of the offending substance.

To date, the Institute of Medicine emphasizes in a recent report that was requested by the Office of Emergency Preparedness that we have no current technology that allows us to detect and identify rapidly, with high sensitivity and specificity, meaning accurately and validly, any chemical or biologic agents in the field.

We therefore must rely on technology of the future to help us.

Preston, in his book, "The Cobra Event," talks about a black box that identifies DNA sequencing of biological agents. Well, it's great

for a book and it sold a lot of copies, but it is not real yet. I would like it to be real, as I think we all would.

That, therefore, to answer your question, Congressman Allen, requires us to go to conventional methods such as gathering cultures and submitting them to State and Federal labs.

In our responses, we've been hamstrung because of the fact that we had no State labs or local labs which can rapidly and validly identify organisms while we are at the scene, which therefore causes us not to know what we are dealing with and whether or not we should be administering antibiotics prophylactically or appropriately to the victims.

We now have the capability of calling the CDC and the FBI, because they have lab capabilities, but it still takes 8 to 24 hours to receive information.

So you are correct in your question, which is pointing out what are the deficits and where do we need to go. We need to go to two areas. One is to develop better technology, and the other is to have a better infrastructure in public health labs and agencies to support us at the local level.

The problem with responding to—having the Federal family respond is that they may not be able to get there, depending on the incident—again I reiterate—for 24 to 48 hours, and the past history of every natural and terrorist event in the United States has demonstrated that to be a very real concern.

Dr. O'TOOLE. Well, there's no question that the labs need upgrading. I think, though, it is very difficult to answer simply whether there should be one lab in each State. One could certainly argue that a State like California needs more than one and perhaps you can regionalize the effort in other areas of lesser populations.

My understanding——

Mr. ALLEN. I always am thinking about the State of Maine.

Dr. O'TOOLE. Lucky you, Congressman.

I understand that the State laboratory directors have been working with the Centers for Disease Control to come up with such a strategy, and your question might be well directed toward Dr. Lillibridge when he testifies.

I will point out, however, that, again, in terms of bioterrorism, no one is going to be sending a lab sample anywhere unless a clinician has a suspicion that there is a diagnosis that might be related to a biological weapon.

I have great respect for the national laboratories. I served as Assistant Secretary for Energy for 4 years. Nonetheless, I think there is very limited usefulness for these rapid detection systems in the context of bioterrorism, as opposed to rapid laboratory diagnostic systems.

Again, a strategy has to take into consideration specific aspects of the different organisms.

It is quite feasible, for example, to train every hospital laboratory to be able to diagnose anthrax definitively. That is not a good idea in the case of smallpox. Among other reasons, you don't want just anybody handling smallpox and contaminating a laboratory of a hospital.

So, again, one needs to have a very measured strategy. Figuring out that strategy has to be a matter of thoughtful consideration.

Mr. ALLEN. Thank you very much.

Mr. SHAYS. Thank you, Congressman Allen.

This committee is the National Security Subcommittee that oversees national security and veterans affairs for programs, and we have special responsibility to look at terrorism, both at home and abroad. And we're probably one of the committees that actually has that responsibility both on an international and national level, and local, as well.

It is really the primary focus of the committee. I am almost overwhelmed, the more we get into this, the different groups that we need to set up. I mean, we have metropolitan medical response systems, we have disaster medical assistance teams, we have the National Guard teams, we have special forces and their ability within an hour to go to almost any area of the country. I mean, all of this is reassuring, in one way, because it tells me we are thinking about it.

In all of our view—and I think all of us share that we have a long way to go.

What interests me is that this is a hearing on nuclear, chemical, and biological, and all of you kind of have focused a bit on the biological, which isn't a criticism but is kind of, in a sense, an affirmation that the biological represents the most mysterious, I think.

You have a fire, you can basically assess it. You have a flood, you can basically assess it. If a building collapses, you basically can assess it. A chemical explosion, horrific, long-term, incredible implications, but you know what happened.

The chemical and biological, though, could happen—both chemical and bio could happen without our knowing, correct? It's not just biological. What represents the threat with biological is that it would continue to grow and fester, where the chemical would basically be an event that would happen. We would know about it pretty soon.

Let me ask you this first part. Would we know chemical before we would know biological?

Dr. WAECKERLE. There are characteristics, sir, that you would look for in a chemical event that are unique and would guide you to an appropriate response in a more timely fashion than a biological event.

The characteristics of a chemical event, for the most part, is it will be a sentinel event, as you correctly pointed out. Despite the fact that it could be clandestinely spread, it will manifest itself pretty quickly through what we call "toxidromes," in other words, a toxic substance demonstrated in patients by presentation that is fairly characteristic, and therefore we can address it.

Unfortunately, for most chemical incidents, all its reliance heretofore on antidote and contamination may not be correct or warranted to the degree that we thought.

Mr. SHAYS. Let me not get into that. I just want to—in terms of detection, because we didn't have the reassurance for the Gulf war veterans that we were on top of whether our Gulf war veterans were exposed to chemicals.

My sense is that if you don't respond within a few days to the chemical, the damage is done, and then you may not even be able to know it happened.

Dr. WAECKERLE. Actually, if you don't respond within a much shorter timeframe than that for most chemical warfare—weaponized chemical agents, then the patient will, unfortunately, suffer death or disease and you can no longer intervene. There is a very short time window of opportunity.

Mr. SHAYS. I think we all have a sense of how horrific a nuclear explosion would be and the implications of that both in the short term and long term.

I'd like to just have you define to me the difference, and then I'm going to ask the respondents how they would deal with it. Maybe that will be my next round. Just in terms of chemical and biological, short answers, the differences. I want the differences.

Dr. WAECKERLE. Well, I'll start, and Dr.——

Mr. SHAYS. Let me just tell you what I think is the obvious, and then——

Dr. WAECKERLE. Please.

Mr. SHAYS. The chemical and biological both may not be detectable right away.

Dr. WAECKERLE. I think, for the most part, chemical events using the agents that we are aware of will be manifest within minutes to hours; biologic agents, contrast, you're right, are insidious and may not manifest for days to weeks.

Mr. SHAYS. Both can be introduced into the community in small dosage and have horrific effects.

Dr. WAECKERLE. Certainly more so biologics than chemicals. Chemicals have to have a certain dose effect, and to do so they have to be spread or dispersion methods have to be used for these chemicals to affect large populations.

Chemical events are dramatically different because they will manifest themselves quickly. They are best utilized by a terrorist in a confined space to capture a confined population, and they will manifest themselves—at least the ones that we have been exposed to and ones—for example, the sarin gases and et cetera, and the weaponized agents—they will manifest themselves almost, relatively speaking, almost immediately, and the astute clinicians that are well-trained and health care professionals should be able to identify, from the symptoms and signs of the patients, what chemicals have been used.

Mr. SHAYS. Would a chemical linger like biological?

Dr. WAECKERLE. A chemical enter?

Mr. SHAYS. Would a chemical exposure—would the exposure of the chemical linger indefinitely?

Dr. WAECKERLE. Only certain chemicals, because most of the chemicals that are weaponized will either kill you or not kill you, depending on your exposure and the chemical, itself. There are only a couple of chemicals that have long-term, lasting effects, and those are a couple of the pulmonary agents and the skin—what we call "blister agents."

Mr. SHAYS. You make an assumption, though, that a terrorist would choose to have it be a pretty high dosage. There's also a concern that you could have low dosage that would have a long-term negative impact.

Dr. WAECKERLE. That's correct, but that would not—at least in the scenarios that I'm sure you've considered, that wouldn't nec-

essarily be a benefit of them in the weapon because it won't manifest high death and disability in a sensationalized fashion.

The other thing, of course, is that to chronically expose people to chemicals would require a dispersion method that is not readily available.

Mr. SHAYS. Usually terrorists want a quick impact. I understand that. But, going now to biological, biological can start small and just continue to grow and fester almost indefinitely. And then is the concern that it goes up proportionately or geometrically?

Dr. O'TOOLE. Again, it depends upon the agent. A contagious disease, which can spread from person to person——

Mr. SHAYS. I thought any biological would be contagious. I made a wrong assumption?

Dr. O'TOOLE. No. All biological agents are infectious in the sense that, you know, they affect the human body once they are inhaled or injected or imbibed, but not all are transmissible from person to person. That would be a contagious disease. Smallpox is a highly contagious disease. Were someone to use smallpox——

Mr. SHAYS. Anthrax is not?

Dr. O'TOOLE. Anthrax is not.

Mr. SHAYS. And both are biological?

Dr. O'TOOLE. Correct. So, in the case of an anthrax attack, you would see a sudden number of very sick and dying individuals some time between 24 hours to 48 hours after the attack, and then people would continue to get sick, depending upon when they fall ill, which is highly variable in anthrax infection for the next 60 days. But you would get this sudden boom and people who are deathly ill coming into your emergency departments, unlike smallpox, which would start with the trickle of people looking like they had chickenpox or some other viral illness with fever and malaise.

But if you didn't catch the smallpox, isolate the people and the contacts who had been infected early on, then the infection would grow and grow.

During the smallpox eradication campaign the WHO held in the 1970's, each case of smallpox infected between 10 and 20 contacts. So the number of people infected goes up by a log with each generation.

Mr. SHAYS. That is pretty much geometric.

Dr. O'TOOLE. Yes.

Mr. SHAYS. I'm going to recognize Mr. Tierney after I allow Dr. Johnson and Chief Plaugher to just respond to the question I've asked from your perspectives, but then, when I come to my second round of questions, I would love to visualize the impact of a biological or chemical effect on the public health network, because, you know, what I wondered is if you—how many medical centers we are going to need, medical response areas, in light of your point about extra bed spaces. That would be a gigantic loss. And would we want to imagine a system where we could literally transport people who are in hospitals who are getting other services out of those hospitals to other hospitals around the country so that then those hospitals could just focus on the biological response, or something like that. I'd love to have you walk me through that.

Maybe, Dr. Johnson and Chief Plaugher, you could respond to the question that I asked.

Dr. JOHNSON. Certainly. Just very briefly, in terms of the differences between chemical and biological, I agree with what my colleagues have said about those important differences.

I'd emphasize once again that detection in the case of biological agents being used is extremely important, and we heard a description of a couple of potential scenarios where, if we don't have a high index of suspicion and we don't have clinicians or others in the health care field thinking that this may be a possibility and putting together sometimes some subtle clues about a small series of patients they may encounter, if that doesn't happen, then we don't trigger our other systems. We don't trigger our public health system.

And so that training and that ability to recognize that something unusual is going on and then the willingness and the understanding to report to local, State and other health authorities, those are very critical links with the biological attack.

Mr. SHAYS. I think I was most interested—the thing that caught my eye the most was the fact that we, in some metropolitan areas, have public health specialists who just monitor the types of events in terms of pharmaceutical needs or the type of entries into hospitals, is there an over-event of a certain kind of illness that then would trigger a concern.

I imagine that is happening in some metropolitan areas but not in others?

Dr. JOHNSON. I would agree with that assessment. I think there is a great deal of variability about how closely this kind of monitoring is taking place.

Mr. SHAYS. But since Federal dollars pay for that, I would think it would be a good way to start getting to the detection area.

Chief, do you want to respond?

Mr. PLAUGHER. Yes. Your question was about the difference, chemical and biological——

Mr. SHAYS. How it impacts.

Mr. PLAUGHER. And how it impacts. I think you also have to add in whether there is a warning or whether, you know, it is without warning or is yet to be detected with just the event, itself.

I also think you have to throw into the matrix the issue of the hoaxes, which can also be equally devastating to a community, just the panic. If somebody says, "I have done this," and, in fact, we have no way to know whether they have or have not, and we might have to mass inoculate a large number of people for just a simple hoax issue.

So I think it is a very complicated matrix that we are trying to deal with, with little if any—the resources necessary to be successful. You know, we're continuing to basically shoot in the dark at several of our concepts.

But I think that, obviously, from what we have known in recent events, such as the Tokyo, and you have a chemical event that's very noticeable, people were immediately down, the responders also went down. People suffered in medical communities. They also went down because of a lack of preparedness to deal with those type of things.

You know, the pandemics that we've had in this Nation from the biologics, as well as the recent development of very sophisticated

biologics, also gives us concern for our ability to detect, but also to then adequately respond with the medical care necessary.

National stockpiles of pharmaceuticals, to the extent and the size and capacity of those, how do we administer those, they are all very, very complicated issues that we, as part of the responder community—because then we have to step out of our first responder role, but we are still part of the response community, and how do you deal with mass treatments of folks and that sort of stuff. And we have folks who are licensed to administer medicines and that sort of thing, paramedics, those types of things. So it is a very, very complicated thing.

So your question is simple and straightforward, but the answer is very complex and very difficult because of the nuances of the situation.

Mr. SHAYS. Thank you.

Mr. TIERNEY. Mr. Chairman, this is an interesting issue and we could be here all day.

I want to thank all of you for your testimony and the seriousness with which you present this issue.

I have, obviously, a range of interests. Let me try to get to them.

We have, obviously, an issue of protection aspect of that. Chief, you indicated that on the technology part of it you've already got Oak Ridge working on that. I assume that we're talking Federal dollars there for the most part?

Mr. PLAUGHER. That's correct, and there are a couple of issues, not only in Oak Ridge but Sandia and in some of the other national labs that are working on several protective capabilities, as well as decontamination substances and those types of things.

Mr. TIERNEY. So what we need to do here is to make sure that it has been adequately funded and that those efforts go forward?

Mr. PLAUGHER. Absolutely.

Mr. TIERNEY. With respect to personnel who would be obligated to identify or at least recognize that, I would assume that those go back a little bit to the training exercise here. What are we doing about the curriculum at various medical colleges, public health people that teach public health or paramedics, or whatever? Are we doing anything about having that become part of the curriculum.

Dr. WAECKERLE. Actually, that's the task force that I'm chairing is the Multidisciplinary Consortium of Health Care Professionals. It currently includes doctors, nurses, paramedics, EMTs, fire, police, toxicologists, and, unfortunately, a few groups who are invited to come to the table. But, as each of my colleagues has stated to you, we are not—the clinicians, which will be essential in the detection of especially biologic attacks, are not properly prepared.

I might add to that the hospitals and hospital personnel and the administrators and some of the major organizations in the country have not seen the wisdom of being involved and signing up, as well.

Mr. TIERNEY. Let me try to break this in two parts, if I can. The first part is those people coming into the system as people that will treat people or diagnose people. Is there anything now to deal with the curriculum at those institutions?

Dr. WAECKERLE. We have just completed the first phase of our grant process when this multidisciplinary has defined the core con-

tent essential to health care professionals who would be faced with these challenges.

The second part was soliciting funds for—we hope to obtain them through HHS and CDC to establish the core curriculum.

The third phase would be then to offer to the professional societies, which we believe, as Dr. O'Toole has suggested, is the best strategy and not through private companies, education of all the health care professionals based on——

Mr. TIERNEY. Let me break in. I want to get back to that level of people entering the system, so we're talking about the institutions that will be teaching these new people as they come through.

You are developing a curriculum. It hasn't been implemented yet.

Dr. WAECKERLE. That's correct.

Mr. TIERNEY. I would guess that we would want to have some assurance it was implemented right across the board. Since many of these institutions are private, you know, it is going to be difficult to require them to add this to their curriculum.

Dr. WAECKERLE. That's a major challenge of the strategy that—we looked at these and we called these ''barriers and challenges.'' I would be happy to supply the committee with the report if you so wish. But the major barrier is how to ask—notice I used the word carefully—the health care professionals to obtain this information so that they are competent.

The strategies——

Mr. TIERNEY. These are people that want to be professionals. These are people that aren't professionals yet. These are the people that are in school training to become that. So the question is how do you get those institutions to require that they take that kind of background training?

Dr. WAECKERLE. Well, Congressman, that's very observant. The issue with that is we have to train the people in bits in the emergency departments——

Mr. TIERNEY. How do we get at that?

Dr. WAECKERLE. The medical students? Is that what you're getting to?

Mr. TIERNEY. I mean, getting to the fact that there are two different tracks to go on—people that are coming up through the pipeline and the trained people that are already in the pits.

So my question on this part of it right now is, What are we going to do about having a curriculum that those people have to take so that they don't become people that have to be trained later. Do you get all that?

Dr. WAECKERLE. I have it, and I appreciate it. Thank you.

Mr. TIERNEY. So that's the idea. And I guess where I'm leading with this is it is something that we ought to think about conditioning Federal education aid to these institutions to have them adding this to their curriculum once it gets developed as appropriate.

Dr. O'Toole.

Dr. O'TOOLE. Yes. I think awareness is growing amongst educational institutions that this has to be done. The board that licenses or grants certification to internists, for example, this year inserted questions involving biological weapons into its licensing and certification exam, and we have had conversations with other

similar entities who are looking around for guidance on what they should do here.

There isn't, as Dr. Waeckerle suggested, any simple way of plugging new curricula into already overcrowded medical school curricula, but that is where, you are quite right, things have to start flowing from.

Mr. TIERNEY. So that would be one point, and you're already looking at that.

The other point would be adding on the your favorite subject, which is people that are already in the pits. That is something that I think was recommended to be done through the professional organizations.

What kind of a role would you envision State or Federal Government having on that effort, or would they have none and just leave it to the professional organizations, in your view?

Dr. O'TOOLE. Well, professional organizations will need money to develop the curricula that are tailored to emergency physicians or to internists and so forth, such as the curricula that Dr. Waeckerle developed to help people in the pits.

There are a number of different-flavored pits out there in medicine these days, and the curricula should be tailored to different specialists' concerns.

Mr. TIERNEY. Let me ask this. I have a number of States that I'm aware of around the country that are sitting on incredibly large surpluses in their budgets. Is there an effort afoot to educate these State governments, the legislatures and the Governors' offices, and get them focused on this issue so that their resources are directed in this way?

I think people tend to think it is going to be a crisis in biological agents and chemical and look to the Federal Government, when, in fact, as you are pointing out, a lot of the response is very, very local.

I don't know of a lot of States that are focusing on this or putting parts of their budget toward this issue.

Dr. Johnson.

Dr. JOHNSON. I think that is beginning to happen, and I think that the national leadership on this, we're starting to recognize or appropriate that, and that's stimulating some of that education and awareness at the State level.

Mr. PLAUGHER. I agree. I have written two letters to my own State, the State of Virginia, and asked them for assistance in this regard. The first letter they lost. The second letter they've chosen to not respond to.

But then, because I am very stubborn, I said, "Well, I won't accept that," so I started talking to a couple of my Senators that I know in my community, State Senators I know in my community, and asked them to work through legislation in the last legislative session in Richmond to even study the issue, and so they proposed a resolution before the State Senate asking the State Health Department to study this issue.

The response that came back was that we don't have the $50,000 to study our capacity to deal with this in the State of Virginia, chemical or biological, and it just died for lack of funding.

So, you know, again, I hear what you're saying and I agree with you absolutely that the States have an absolutely critical role in this whole issue.

I find it difficult to get the proper emphasis on it, and so I appreciate that.

Mr. TIERNEY. The last question, I'm very concerned with what is going on with our community hospitals, even before we get into this issue. In State after State they are being gobbled up, in many cases by for-profits. They are being consolidated, and people have to travel a great distance to get to an emergency room, great distance to get to a hospital bed.

That seems to be directly in contravention to the needs that we have here if some sort of crisis sets in.

Are you aware of any effort afoot to have individual States develop a plan of available emergency areas and hospital beds so that they are reasonably spread throughout the respective States and would address a situation like this? And, if not, what do you think we could do to help facilitate that?

Dr. O'Toole.

Dr. O'TOOLE. The State of Maryland has done fairly extensive analysis of how they would respond to a weapons of mass destruction and has surveyed the resources and availability of hospital beds, and the picture is fairly alarming, even in as relatively rich a State as Maryland.

I would suggest that, given the many demands on the State health departments, it is going to be very difficult for them to muster the resources to actually address the kind of response needs that come up in these weapons of mass destruction scenarios. Politically, I think it is going to be very difficult for that to ever take place.

We have begun conversations with various hospital groups and people from hospitals. We've gotten a lot of interest from some hospital leadership in being engaged in conversations that would move toward an understanding of what needs to be done.

It is very complicated. On a given day, it might not be prudent to move everybody out of the intensive care unit at Johns Hopkins and make that the center of a response to a smallpox attack, for example. There probably has to be some flexibility in any plan.

Whether you want to designate one or a group of hospitals in a region to be the centers of response to a weapons of mass destruction attack or put all hospitals to some minimum threshold level of capacity is still an open question.

What you do with the staff in an attack is going to be very, very problematic. You have, first of all, to protect them from being afflicted with the same malady that is besetting your patients. Many people are probably going to leave their posts out of fear for their own health or to go and make sure their families are OK. Many of the people who staff hospitals today are working women, and if you are going to put them on 12-hour shifts to handle an emergency you have to figure out what you are going to do with their kids meanwhile.

So there is a whole host of questions that are just beginning to be investigated. Again, no simple answers yet. What we need to do is, first of all, muster the resources to address those questions

thoughtfully and get everybody to the table who needs to be there to discuss them.

Mr. SHAYS. Thank you very much.

Mr. PLAUGHER. To answer your question, every day in northern Virginia, which is probably one of the most prosperous places in the Nation, runs out of hospital beds for us to take emergency patients to. It is an acute crisis, particularly not only the day-to-day aspect of trying to find a bed for a patient that is suffering a heart attack or any other type of unfortunate incident, but I know last winter, when we had a mini flu situation going on in the Washington metropolitan area we couldn't find any beds. We were really trying to figure out what to do with people. It was horrible, and I am, as a fire chief, also responsible for emergency medical services in my community, and I've got patients and no place to take them to.

This is without the terrorist incident. I mean, this is without the catastrophic event. I mean, this is just day in and day out.

Mr. TIERNEY. I think the problem I see in many States is that there has not been the kind of planning that the State convention is doing. I don't see the greater majority of States getting out there and taking an analysis of how these hospitals are consolidating, how they are shutting down, what the picture looks like.

In my own State, we've gone from over 130 hospitals to less than 60. And there is no plan for those 60 that remain, whether they're all in one place, one part of the State or another, what their services provide.

I think it is incumbent on us to somehow encourage some real sensible planning that takes into account, among just the ordinary needs day-to-day, and this kind of catastrophic event that might occur and we reasonably should be planning for.

Mr. PLAUGHER. Again, as in my previous remarks, I said 45 percent of our emergency room capacity just up and closed 1 day. They came to us and said, "We're going to give you a 60-to 90-day notice." Forty-eight hours they closed the doors because of advice of legal counsel and said there's too much liability because our staff was walking away and getting better jobs and that sort of thing, so they just closed.

Again, that means we have to readjust how we deal with the day-in and day-out needs, much less—if we were right now, to this day, to have another incident where a group of visiting dignitaries visiting the Pentagon are injured in an incident, which we had about 15 of them, the local hospital that we used that day would not be there. So, I mean, this is a pretty serious, serious situation.

Mr. TIERNEY. I agree.

Mr. SHAYS. We want to get to our next panel, but I would like to just visualize, if someone wants to run through a scenario. I want to pick—let's pick a city that—Dr. Johnson, you are based where?

Dr. JOHNSON. I'm based in Lansing, MI, the capital city.

Mr. SHAYS. OK. How many hospitals are there?

Dr. JOHNSON. We have four hospitals in the city.

Mr. SHAYS. And the population?

Dr. JOHNSON. Population, several hundred thousand. It sort of depends on which communities you include in that.

Mr. SHAYS. OK. So it is around 200,000, give or take?

Dr. JOHNSON. In the cities.

Mr. SHAYS. Give me a biological event. This is East Lansing?

Dr. JOHNSON. This is Lansing.

Mr. SHAYS. Lansing. In Lansing, give me a biological event that could happen.

Dr. O'TOOLE. OK. Terrorist releases anthrax at a football game. How many people——

Mr. SHAYS. And Michigan State is right next door, right?

Dr. JOHNSON. Michigan State is in East Lansing. Right. There would be 75,000 people at the football game.

Mr. SHAYS. And how far away is that?

Dr. JOHNSON. They're contiguous.

Mr. SHAYS. OK. Can we do it at the football game?

Dr. O'TOOLE. We're at the football game. People, presumably from all over the State, and, indeed, maybe from all over the country, are at this game.

Mr. SHAYS. Yes.

Dr. O'TOOLE. Some time between 24 and 48 hours later, people start getting sick. Within a period of time, depending upon the astuteness of the clinicians in the emergency department, doctors start noticing that they have previously healthy people coming in with cough, fever, in large numbers. They send them home thinking it is some kind of common viral illness.

Twenty-four hours later they come back and they are dying. They are very desperately ill. No one knows why.

Dr. JOHNSON. I'll just interrupt to say that this won't be in East Lansing, necessarily, or in Lansing.

Dr. O'TOOLE. Right. This will be all over the area.

Dr. JOHNSON. Right.

Mr. SHAYS. And some who might have flown back to St. Louis or something.

Dr. O'TOOLE. Absolutely.

Mr. SHAYS. It wouldn't be a high incidence there, so they wouldn't maybe pick that up.

Dr. O'TOOLE. No.

Mr. SHAYS. But in this case, I don't want to say "at least," it is not contagious, correct?

Dr. O'TOOLE. Correct.

Mr. SHAYS. In this circumstance.

Dr. O'TOOLE. Correct. Depending upon the astuteness of the clinicians and what the informal mechanisms doctors in different hospitals have for talking to each other, and how connected the medical community is to the public health community, eventually—probably pretty quickly, within a matter of hours, I would think, doctors are going to realize that something very unusual was going on. At that point, at the very latest, the public health agencies will be contacted.

Mr. SHAYS. How does that happen?

Dr. O'TOOLE. Well, that's a good question. It mostly doesn't happen. There has been a tremendous disconnect between the medical community and the public health community over the past decade, for all kinds of reasons, including the diminution in resources available to the public health agencies.

Hopefully, somebody will think to call the public health people at the State or local level, but it is unlikely that they are going to call and say, "Listen, I think I have anthrax," which in most States is a reportable disease. They are going to say, "There's something strange going on here. Can you help me? Have there been any other cases around town that look like this?"

Mr. SHAYS. Describe for me how many people in your hospital beds—you have 40, probably have 800 hospital beds in your community or——

Dr. JOHNSON. Probably a touch more than that, but that's the right number.

Mr. SHAYS. And two-thirds of them would be full?

Dr. JOHNSON. At any given time in the middle of flu season and——

Mr. SHAYS. Football season?

Dr. JOHNSON. Football season.

Mr. SHAYS. OK. So now how many would probably be knocking on the door of that hospital?

Dr. JOHNSON. Well, I suppose it would depend. To carry out this scenario, it would depend on the efficiency with which the organism was dispersed at the football game. You could potentially have hundreds to thousands of people.

Mr. SHAYS. Let's just stay there are six entrances and the terrorists cover two entranceways or two exits, so let's just say one-third of the people really were exposed.

Dr. O'TOOLE. First of all, it is important to——

Mr. SHAYS. Let's just say 20,000.

Dr. O'TOOLE. Let's say only 10 percent of them are in East Lansing getting sick on this given day. It is important to realize that there hasn't been a mass disaster involving a lot of sick people, as opposed to a sudden accumulation of dead bodies, in American history in recent times. How a hospital would respond even to 200 sudden very sick people is an open question, I think, in most communities.

Also, at that point you're not——

Mr. SHAYS. A hospital to respond to 2,000 would be——

Dr. O'TOOLE. It would be overwhelming.

Mr. SHAYS. Chief?

Mr. PLAUGHER. They'd shut their doors.

Mr. SHAYS. They would shut their doors?

Dr. O'TOOLE. Absolutely. Security would become a major problem.

At that point, the public health community will come into the picture. In the recent outbreak of St. Louis encephalitis in New York, for example, it was an astute clinician who realized she was seeing two cases of something unusual, called Marcy Layton in the New York City Health Department. Dr. Layton and her colleagues came down, talked to the patients and their families to find out if there was any commonality between these patients. Somewhere in the course of taking the history of the patients and the public health investigation, it would probably be determined that everybody who is sick was at the football game, so now we know something happened at the football game.

Mr. SHAYS. And, to continue that story, the dead crow in Greenwich, someone noticed it and wondered why and gave it to the examiner, and they found encephalitis there, but that's—someone might not have taken that route.

Dr. O'TOOLE. That's right. So some of this is circumstantial, it is happenstance, and it is going to vary from situation to situation. But that points out why awareness among many different kinds of professionals is so critical.

At that point, the ability of the public health department to come in and do rapid and accurate epidemiological analyses ask what was the common feature that unites all of this? OK. Now you've got to get that it was the football game where you think something happened. Maybe you've even diagnosed anthrax by now.

What you have to do now is muster a massive logistic campaign, get everybody who was at that stadium antibiotics. Once you are actually ill from anthrax and manifesting symptoms, it is too late for medicine to save you, so you've got to go out and find all 70,000 people, now spread probably all over the world, and get them antibiotics without causing a mass panic.

Mr. SHAYS. Let me just kind of rob this question but ask you this. Would anthrax with some be like that and with others it could be a week or two?

Dr. O'TOOLE. Yes.

Mr. SHAYS. OK.

Dr. O'TOOLE. What happens is you inhale the spores of anthrax into your lungs. They then travel to the lymph nodes in the middle of your chest, where they germinate, and that's when they start causing symptoms.

Mr. SHAYS. That's how they germinate differently in others?

Dr. O'TOOLE. For different time periods, for reasons we do not understand.

In the Russian outbreak of anthrax in 1979, which was caused by an accidental release of anthrax from one of their military facilities, people became symptomatic anywhere from 24 hours to about 40 days afterward.

Mr. SHAYS. You may have already had 300 deaths.

Dr. O'TOOLE. Absolutely.

Mr. SHAYS. I'm prepared to go to the next panel. I mean, we could keep you here a long time.

Let me just give each of you the last word.

Dr. Johnson.

Dr. JOHNSON. I appreciate the opportunity to go through a brief scenario like this. I think that highlights the challenges that we face, and the support we are all going to need from medical care providers all the way through local and State health departments to not only detect but to handle situations like this. We look forward to working with you on that.

Mr. SHAYS. Thank you.

Mr. PLAUGHER. Operation of a medical emergency disaster system, which we call "MEDS" is absolutely critical for our Nation. We have serious needs across the board for health care, and I think that we need to just simply try to figure out an approach that makes sense that will make it a consistent funding source and a consistent approach so that it is uniform, so that as you visit and

relax and enjoy your vacation some place, you can rest assured that the community is there to support you and your family's needs, not based upon how good a State does or does not approach this concern.

Dr. WAECKERLE. Thank you for the opportunity to be here. There are a number of challenges which we have identified today, and it is a multifaceted approach by multidisciplinary personnel.

The only thing I might add to submit to you for your consideration is a current issue of the "Journal" which I serve has devoted the whole content to this area.

While I know I can't submit for the record a whole issue of the "Journal," there are manuscripts written by——

Mr. SHAYS. We'll submit it for the record.

Dr. WAECKERLE. Thank you.

Then the whole issue of the "Journal" is available to you for your information and perusal.

Dr. O'TOOLE. Well, I would just reemphasize the need to get the medical community and hospital leadership in the game, involved in response preparedness, and also accentuate the critical importance of cooperation and collaboration and the need for resources to make that happen and, finally, just thank you for your attention.

Mr. SHAYS. Well, thank you all. We appreciate your being here.

Our final panel is comprised of Dr. Robert Knouss, Director, Office of Emergency Preparedness, U.S. Department of Health and Human Services; and Dr. Scott L. Lillibridge, Director, Bioterrorist Preparedness Response Program, National Center for Infectious Disease, Center for Disease Control, Department of Health and Human Services.

Again, I want to say that I appreciate much that our Federal officials, who traditionally go first, were willing to go second. I think both doctors realize that it will help us better understand your testimony. So it is appreciated and it is also very beneficial to the committee.

I will ask you to stand so I can swear you in, as we do all our witnesses.

[Witnesses sworn.]

Mr. SHAYS. Dr. Knouss, we'll have you start, and, again, thank you for your patience.

STATEMENT OF ROBERT F. KNOUSS, M.D., DIRECTOR, OFFICE OF EMERGENCY PREPAREDNESS, DEPARTMENT OF HEALTH AND HUMAN SERVICES

Dr. KNOUSS. Thank you very much, Mr. Chairman. I really want to commend you for holding these hearings. These are some very important subjects, and obviously, in terms of preparedness of our country, we are just now beginning, and there is a substantial road ahead of us as we try to address the issues that you are already highlighting this morning.

I am Robert Knouss. I direct the Office of Emergency Preparedness. I'm going to try to summarize some of the things that I have provided in my testimony, and I want to provide a little bit of background.

Presidential Decision Directives 39 and 62 have given the Federal Bureau of Investigation the lead in crisis management and the

Federal Emergency Management Agency the lead for consequence management in the event of the release of a weapon of mass destruction.

The Department of Health and Human Services is the lead for health and medical preparedness as one aspect of consequence management, and an annex to FEMA's Federal response plan describes the role of HHS and other departments and agencies of the Federal Government in responding to the threat or the actual release of one of these horrific weapons.

I would like to go to some of our approaches at the present time to preparing our country for being able to address the challenges of the release of one of these weapons, and I want to mention that a fundamental truth in emergency preparedness and response is that all disasters are local. This was emphasized on several occasions by the previous panel.

As a result, our approaches for preparedness and response have to be part of the developing local and State response resources, while assuring that the Federal response capabilities are able to support their efforts.

The detonation of a large bomb or the release of a chemical agent will have very serious obvious but localized effects. They can produce mass casualties with severe medical consequences with high mortality rates.

Health care, to be effective, must be rapid and appropriate. In other words, there would be an immediate medical, public health, and environmental emergency. Immediate response would be directed at saving lives and reducing the longer-term health consequences.

Biological weapons, on the other hand, require a different type of response than that required by chemical weapons, particularly if the agent is covertly released.

Victims may only recognize the need to seek care days after their exposure to the biological agent, as was being discussed in the example that you used of the release of anthrax at a football game in East Lansing.

There would be no readily identifiable incidents and the medical and public health communities could be challenged with overwhelming demands for curative and preventive treatment to the affected population.

Determining what the agent is, who may have been exposed, and when, and whether or not the agent is transmissible from person to person becomes a local challenge with national impact particularly if the agent is contagious.

And, with your permission, Mr. Chairman, I would like to just use an illustration. I included this chart in the testimony that I presented to you. I don't know what the chart number is. I believe it is chart No. 6 in my testimony.

Basically, it is helpful to try to illustrate the differences between a chemical and biological weapon, because frequently in our responses and in our response planning we tend to lump these all together as a single kind of response to a terrorist act.

The release of a chemical agent will precipitate a very rapid requirement on our first responder community, as Chief Plaugher was indicating. Therefore, for chemical weapons in the initial

stages of the response, mainly the public safety and fire response communities will be involved for the detection and extraction of victims, for administration of an antidote, for decontamination of victims at the site, for triage of their medical problems, for provision of primary care at the scene, and for safe transportation to definitive care facilities.

On the other hand, the initial response, when we're dealing with a biological agent, is going to fall—the burden is going to fall—on the public health community. So now we have public safety and public health communities at the local level that are involved.

On the right-hand side of the chart, I have indicated are really some of the initial challenges to the public health community, because of the need to be able to detect that an incident has occurred, if there is a silent release. Much of that can be done through surveillance systems that would be set up and, with the help of enhanced laboratory capability, the causative agent identified.

Then, as part of our response, must be able to offer preventive health services or prophylaxis in the form of vaccinations or antibiotics for protecting the population that may have been exposed but has not yet become ill.

Both of these kinds of weapons would create an enormous demand on the health care system.

Mr. SHAYS. Let us just ask a question here.

Dr. KNOUSS. Sure.

Mr. SHAYS. I love to see parallels. It really on the first, the chemical/biological, it is really detection identification would be true for both?

Dr. KNOUSS. Yes.

Mr. SHAYS. OK. So when I see detection on the right, I could say detection/identification. So those are two that are similar.

The next thing is extraction of victims in chemical. That would be the next thing that would happen in chemical.

Dr. KNOUSS. These aren't necessarily given in the sequence that they would be happening.

Mr. SHAYS. The administration of antidote, that makes sense. Decontamination of victims, triage, provision of primary care. I guess——

Dr. KNOUSS. And all of that would be happening at the scene.

Mr. SHAYS. Eventually with biological you'd see some of the same. Ultimately, you'd have some provision of primary care.

Dr. KNOUSS. You may or may not, because the incident scene is going to be very different. Mainly——

Mr. SHAYS. I say eventually.

Dr. KNOUSS. Eventually, yes.

Mr. SHAYS. In other words, it's almost like I draw a line on the chemical and biological, and then I can start putting down some of what I see over chemical. I'm asking, I'm not telling.

Dr. KNOUSS. They really aren't parallel situations, because in a chemical release these are going to be happening very rapidly.

Mr. SHAYS. That's not the question. I'm just asking this. I'm asking if ultimately everything that happens—most everything that happens with chemical would happen with the biological, it just wouldn't happen as soon. Wouldn't you ultimately transport to a care facility in the biological?

Dr. KNOUSS. Yes. Now, yes, that's essentially what I'm trying to illustrate at the bottom of this, that both of these events create an enormous demand on the health care delivery system, the hospital system.

Mr. SHAYS. OK.

Dr. KNOUSS. And so we really have three communities that are involved and the level of preparedness has to be enhanced—the public safety and emergency medical services community, the public health community, and the health services delivery community.

Mr. SHAYS. OK.

Dr. KNOUSS. Frequently, what we forget even in a chemical incident is that there is going to be an enormous demand placed on the health care delivery system, and if events such as a mustard exposure occurred, the long-term consequences and the long-term impact on the health care delivery system is going to be felt for a year or years to come.

Mr. SHAYS. Thank you.

Dr. KNOUSS. Moving away from this particular illustration of the fact that we really have the need to be able to emphasize public safety, public health, and health services response capabilities, I want to just turn for a moment to our metropolitan medical response systems that were mentioned on several occasions by the first panel, and that is that in one of these events, the traditional roles and relationships of emergency organizations are going to be stressed, obviously.

Mr. SHAYS. This is chart five?

Dr. KNOUSS. This is chart No. 5. Correct.

For an effective response, law enforcement and emergency management and fire, emergency medical services, hospitals, public health, mental health, environmental organizations, the military, National Guard, and others must be effectively linked to all levels of government.

We have been trying to focus attention on increasing the capacity of local jurisdictions to initiate the response to the release of a weapons of mass destruction through the creation of metropolitan medical response systems. To date, we have entered into contracts with 47 metropolitan jurisdictions in the United States to help them plan their response to a chemical or a biological weapons release, to increase their pharmaceutical supplies, to equip their first response personnel, and to train their health care providers. We hope to be able to do this eventually in 120 large metropolitan areas around the United States. In fact, the President has included support for an additional 25 cities in his fiscal year 2000 budget request.

That gives you a kind of overview of just a few of the issues that we are trying to deal with.

What I'd like to do in the remaining minute or two that I have is respond to your request that we try to identify areas requiring improvement or challenges.

First, I truly believe that we need a greater commitment of participation of the health sector, particularly the hospital community. That need was illustrated in a variety of the comments that were made by the first panel.

The health care systems in most cities are not centrally organized, they are not easily accessible for systems planning, they are generally unprepared for weapons of mass destruction events, and they lack incentives to prepare.

Many local communities lack a single public official who has direct authority over hospital preparedness and response, as well as public health systems. This has made developing comprehensive systems in cities difficult.

While first responder systems are receiving significant funding, there is little identified for WMD-related medical response, let alone hospital facility modifications, equipment, staff, training, and exercises.

Mr. SHAYS. Why don't you take each of the ones you want to talk about, because I think you have, like, five of them, and then just ad lib on each of those.

Dr. KNOUSS. OK. The second is that linking emergency response, public safety, mental health, public health, and health care systems will continue to be difficult and will require special attention if communities are to be effectively organized and prepared to respond to a WMD event.

I say that for a variety of different reasons. Most of our communities have their first responder, their law enforcement and their fire/EMS organized in fairly similar ways under a public safety structure, even though there are variations between communities in that structure, as well. But frequently the health systems fall outside. Public health systems have very, different organizational structures throughout the United States.

In some cases, States are responsible for local public health systems; in other States the local public health systems, as in the case of North Carolina, are largely as we've seen during these floods, is completely independent from State control.

So with the public health structure we have highly variable organizational structures. In the first responder community it is a little bit different. And to bring them together at the city, metropolitan, or county level is, indeed, sometimes very challenging.

Third, health care professionals require increased weapons of mass destruction-related knowledge, skills, and competence, including new credentialling and certificate measures.

Dr. Waeckerle spoke to that issue. I would like to add a few more comments if the opportunity presents itself during our response.

But suffice it to say that one of the keys that we think exists to being able to encourage health professionals to seek an education in the area of treatment of these kinds of exposures during a weapons of mass destruction release is to try to influence the content of their board certification and licensure examinations.

By doing that, we are going to call more attention to the fact that self-education and continuing education, as well as curriculum development for their basic professional training and continuing education is a professional responsibility.

We would take the same approach with our hospitals through accreditation standards that might be applied by the Joint Commission for Accreditation of Health Care Organizations.

Building local weapons of mass destruction response systems through the continued support of metropolitan medical response

systems is essential and, as I mentioned, we have made a budget request for continued development of these systems around the United States.

Finally, I would just mention that we must pursue civilian research solutions to technical scientific gaps and problems related to weapons of mass destruction detection, prevention, and medical treatment. Just recently, through support that we have given to the National Academy of Science's Institute of Medicine, we have published a research agenda for the Nation for dealing with what technological developments are required through the coming years in order to be able to best ensure the ability of our civilian population to respond.

Mr. SHAYS. That has a better cover than the magazine. [Laughter.]

It looks sinister, at least.

Dr. KNOUSS. That provides a terrific lead-in, but I think I won't spend my time on that. But I would like to leave these copies for the committee.

As I sit here today, Mr. Chairman, in summary, I cannot tell you that the Nation is prepared to deal with the large-scale medical effects of terrorism, but we are working very diligently to prepare local medical systems and public health infrastructures to enhance the national health and medical responses, to provide for a national pharmaceuticals stockpile, but I want to mention that there is no silver bullet.

The issues are complex and cross-cutting between various cultures—I talk about that in terms of government cultures—disciplines in the public and private sectors.

The Department of Health and Human Services—I want to reiterate this—our Secretary is committed to assuring that communities across the country are prepared to respond to the health consequences of a weapons of mass destruction.

Again, Mr. Chairman, I want to thank you for this opportunity to be here.

Mr. SHAYS. Thank you very much.

[The prepared statement of Dr. Knouss follows:]

STATEMENT OF ROBERT F. KNOUSS, M.D.
DIRECTOR, OFFICE OF EMERGENCY PREPAREDNESS
DEPARTMENT OF HEALTH AND HUMAN SERVICES

BEFORE THE
SUBCOMMITTEE ON NATIONAL SECURITY, VETERANS AFFAIRS
AND INTERNATIONAL RELATIONS
OF THE
COMMITTEE ON GOVERNMENT REFORM
UNITED STATES HOUSE OF REPRESENTATIVES

SEPTEMBER 22, 1999

Mr. Chairman, I am Dr. Robert Knouss, Director of the Department of Health and Human Services' (HHS) Office of Emergency Preparedness (OEP). I appreciate the opportunity to present an overview of the role of the Office of Emergency Preparedness in preparing for, and responding to, the consequences to the health and well-being of our citizens following the release of a Weapon of Mass Destruction (WMD).

Concern about the threat of terrorism within the United States has grown since the bombings of the World Trade Center in New York City and the Murrah Federal Office Building in Oklahoma City. President Clinton has underscored the importance of addressing the threat of the use of WMD by establishing a National Coordinator for Security, Infrastructure Protection and Counterterrorism, and by requesting substantial appropriations to support crisis and consequence management activities against the release of a WMD.

Presidential Decision Directives 39 and 62 have given the Federal Bureau of Investigation (FBI) the lead for crisis management and the Federal Emergency Management Agency (FEMA) the lead for consequence management. The Department of Health and Human Services (HHS) is the lead for health and medical preparedness, one aspect of consequence management. An annex to FEMA's Federal Response Plan describes the role of HHS and the other departments and agencies of the federal government in responding to the threat or the actual release of a WMD.

As a member of the national security team, the Secretary of Department of Health and Human Services, the Honorable Donna Shalala, is committed to developing a strong local, state, and federal capacity to respond to the health consequences of a terrorist attack, particularly ones using a chemical or biological weapon. As the HHS action agent for preparedness and response, OEP is expanding the development of local emergency system capabilities to respond to

the potentially grave health consequences of a WMD attack. The HHS budget request reflects this priority in its counter terrorism initiatives. Dr. Lillibridge will describe the Centers for Disease Control and Prevention's (CDC) initiatives and program activities, including its programs to strengthen state and local detection, surveillance, laboratory identification and information networking capabilities, in addition to its activities to create a national stockpile of vaccines and pharmaceuticals. The National Institutes of Health (NIH) is addressing related biomedical research priorities, Food and Drug Administration (FDA) activities include both research and product approval related to treatment of WMD exposures, and the Substance Abuse and Mental Health Services Administration (SAMHSA) provides crisis intervention services which address the mental health consequences of terrorist acts.

HHS Principles of Response : "A Bottom –Up" Approach

A fundamental truth in emergency preparedness and response is that all disasters are local. As a result, our approaches for preparedness and response must be targeted to developing local and state response resources while assuring that the Federal response capabilities are able to support their efforts.

The detonation of a large bomb, or the release of chemical agent, will have very serious but localized effects. They can produce mass casualties with severe medical consequences and high mortality rates. Health care, to be effective must be rapid and appropriate. In other words, there would be an immediate medical, public health, and environmental emergency. The immediate response would be directed at saving lives and reducing the longer term health consequences.

Biological weapons require a different type of response than that required by chemical weapons, particularly if the agent is covertly released. Victims may

only recognize the need to seek care days after their exposure to the biological agent. There would be no readily identifiable incident site and the medical and public health communities could be challenged with overwhelming demands for curative and preventive treatment to the affected population. Determining what the agent is, who may have been exposed and when, and whether or not the agent is transmissible from person to person becomes a local challenge with national impact; particularly if the agent is contagious.

Several years ago, HHS began emphasizing that the Nation was not prepared to deal with the health effects of biological terrorism, and that should such a terrorist event occur, metropolitan areas and their citizens would bear the brunt of coping with its effects. Because local communities and governments would shoulder the initial burden of responding to a major attack, whether covert or overt, our strategy has been to develop complimentary medical response system capabilities at local and national levels. This "bottom-up" (as opposed to "top down") approach recognizes the need for: (Chart 1)

1. Local capability and capacity building to reduce preventable mortality and morbidity caused by terrorist attacks;
2. Rapid and appropriate assessment and intervention;
3. State and national augmentation of local health systems;
4. Recognition that health needs come first in response actions; and
5. Protection of the health and medical infrastructure.

In virtually all aspects of federal and state support for WMD events the focus is on supporting local needs (Chart 2), whether in a single community or multiple ones simultaneously.

HHS Strategy

To address the unique challenges posed by terrorist threats, HHS

supports a systems approach that concentrates on five elements to strengthen and enhance local, state and national capabilities to respond to terrorist events. The Fiscal Year (FY) 1999 HHS operating plan for counter terrorism initiatives includes activities in five major areas (Chart 3):

1) deterrence of biological terrorism by regulating shipments of certain biological organisms and toxins and by ensuring safe design and secure operation of laboratories that handle these dangerous organisms;
2) enhancement of the public health infrastructure to improve surveillance for unusual outbreaks of illness through upgrading state and local capabilities for detection and reporting, epidemiologic and laboratory capacity, electronic communications, and by upgrading capabilities at CDC;
3) creation and maintenance of a stockpile of pharmaceuticals and other materials;
4) research and development in areas such as genomic research on potential bioterrorism agents such as anthrax, smallpox, tularemia and plague, development of rapid diagnostic methods, development of antiviral therapies, and development of new vaccines; and
5) improvement of the medical and public health response capability by additional city contracts for Metropolitan Medical Response Systems, and enhancing the infrastructure of HHS emergency preparedness and the National Disaster Medical System.

Linking Response Systems- Metropolitan Medical Response Systems

Traditional roles and relationships of emergency organizations will be stressed by a WMD incident. For an effective response law enforcement, emergency management, fire, emergency medical services, hospitals, public

health, mental health, environmental organizations, the military/ National Guard, and others must be effectively linked at all levels of government (Chart 4).

OEP focuses its attention on increasing the capacity of local jurisdictions to initiate the response to the release of a WMD through the creation of Metropolitan Medical Response Systems (MMRS). To date, contracts have been awarded to forty-seven (47) metropolitan jurisdictions (Chart 5) in the United States to plan their response to a chemical or biological weapons release, increase their pharmaceutical supplies, equip their first response personnel and train their health care responders.

Eventually the largest 120 metropolitan areas should be supported to develop these systems. In fact, the President has included support for an additional twenty-five (25) cities in his FY 2000 request.

The purpose of the MMRS is to ensure that a metropolitan area's health system is able to cope with the human health consequences that can result from a terrorist act. Because each city has a public safety and public health system with unique characteristics, our MMRS development contracts emphasize that each area will develop its enhanced medical and health response system within its current emergency response structure. These systems provide an integrated pre-hospital, hospital and public health response capability in local jurisdictions. Each system must ensure that health workers be able to recognize WMD injuries, know the proper treatment, be able to ensure that medical facilities maintain their functional capacities, and plan the integration of state and federal responders when they arrive. (Chart 6)

Although the initial emphasis was focused on the medical management of chemical incidents, we are now giving equal priority to bioterrorism medical response planning and preparedness. Response to a biological terrorist act

requires additional systems responses at the local, state and federal levels - working together:

1) Local areas, together with federal medical assets of the National Disaster Medical System (NDMS), would prepare to provide mass patient care, including the establishment of auxiliary, temporary treatment facilities;
2) Local areas would prepare to provide mass immunization or prophylactic drug treatment with pharmaceuticals initially provided by NDMS' National Medical Response Teams (NMRTs), and then from a national pharmaceutical stockpile;
3) Local governments, with the assistance of NDMS mortuary teams, would prepare to provide respectful and safe disposition of the deceased;
4) The Centers for Disease Control and Prevention (CDC) would assist local and state governments to identify the bioagent and the at-risk population; and
5) OEP would mobilize the National Disaster Medical System and other federal assets to respond by providing pharmaceuticals, vaccines, and medical and mortuary response teams to assist the already overburdened local health care system.

Our response activities are carefully coordinated with those of CDC, our principal response partner in the Department. For example, we have been working closely together on developing the list of principal chemical and biological threat agents, the development of the content of the national stockpile and the development of an operational plan for responding to both chemical and biological threats and releases. This plan, when completed, will describe how the Department will support local and state health agencies as part of the federal response.

Emergency Support Function #8

FEMA's Federal Response Plan contains 12 emergency support functions, including activities such as, firefighting, mass care and urban search and rescue. This chart (chart 7) shows the 12 ESFs and the agencies that head them. HHS is the primary federal agency for managing health and medical services under this plan. ESF #8 ensures the coordination of health, medical, mental health and environmental health services provided by the federal government during disasters. Twelve departments and agencies support HHS in this mission.

Assuring needed health and medical services in disaster situations includes: health surveillance and assessment; providing medical care personnel, equipment and supplies; in -hospital care; patient evacuation; food/drug/medical device safety; protecting against chemical, biological and radiological health hazards; mental health assistance; public information; vector control; providing potable water and solid waste disposal; and victim identification and mortuary services.

OEP's Role and the National Disaster Medical System

OEP also manages the National Disaster Medical System (NDMS), a partnership between HHS, the Departments of Veterans Affairs and Defense, and FEMA. Seven thousans (7,000) private citizens across the country volunteer their time and expertise as members of response teams to provide primary medical and certain types of specialized care to disaster victims and more than 2,000 non-federal hospitals participate.

Disaster Response Teams

Our response capability is organized into teams, such as primary care Disaster Medical Assistance Teams (DMATs), specialty medical teams (for example, those which concentrate on pediatric or burn care) and Disaster Mortuary Teams (DMORTs). Our 25 Level-1 DMATs can be federalized to deploy within hours. They can be self-sufficient at a disaster scene for 72 hours, providing on site medical services. This means that they carry their own pharmaceutical and medical supplies, food and water, shelter, and communication and other mission essential equipment.

Our mortuary teams can assist local medical examiners to identify and deal appropriately with the remains of those who do not survive major disasters, or in the aftermath of airline and other transportation accidents when requested by the National Transportation Safety Board.

Special National Medical Response Teams for WMD

Over the last two years, we have provided additional training and specialized equipment to four of our DMATs to develop the required capabilities to respond to terrorist attacks. They are known as National Medical Response Teams (NMRTs). Three of these teams, located in North Carolina, Colorado, and California, are capable of rapidly deploying to an incident site and providing medical treatment after the release of a chemical or biological weapon. They can each respond with a cache of specialized pharmaceuticals to treat up to 5,000 people exposed to a chemical weapon. They also have specialized personal protective equipment, detection devices and patient decontamination capabilities.

A fourth NMRT, actually the prototype team, is located in the Washington,

D.C. metropolitan area and remains locally to respond in our Nation's capital. This team is composed of medical responders from across the Washington, D.C. metropolitan area. It was prepositioned to respond, should the need have arisen, during recent State of the Union addresses, the 1997 Inauguration, and most recently, during the celebration of the 50th anniversary of NATO. The team is based in and managed by the Arlington, VA fire department. Mr. Ed Plaugher, Chief of the Arlington County Fire Department and head of our Washington, DC area NMRT, will be testifying in the next group of witnesses today.

Areas Requiring Improvement/ Challenges

I would now like to respond to your request to discuss what is needed to further the nation's ability to respond to a large scale medical emergency resulting from a WMD event. In preparing to meet this challenge, we have been encouraged by the new partnerships and methods that are being forged throughout the country. However, there are a number of issues that remain that continue to demand attention. These include:

1) Greater commitment and participation of the health sector, particularly the hospital community is needed.

The health care systems in most cities are not centrally organized, they are not easily accessible for systems planning, are generally unprepared for WMD events, and lack incentives to prepare.

Many local communities lack a single public official who has direct authority over hospital preparedness and response, as well as public health systems. This has made developing comprehensive systems in cities difficult. While first response systems are receiving significant funding, there is little identified for WMD-related medical response, let alone hospital facility

modifications, equipment, staff training, and exercises. There is minimal incentive for health care entities to invest in preparing for low probability events when they cannot recoup their expenditures through direct patient billings. We must find ways to engage the health sector and have them fulfill their key role as a public safety partner in the community.

2) Linking emergency response, public safety, mental health, public health and health care systems will continue to be difficult and will require special attention if communities are to be effectively organized and prepared to respond to a WMD event.

The MMRS approach to linking these diverse systems in local jurisdictions is beginning to yield successful development of integrated planning and preparedness from the first 27 cities funded. Diverse and unique city-specific plans and approaches have emerged as each city has configured its solutions for meeting the national MMRS performance standards to what works for their city.

Here in Washington, D.C., we are beginning to see the emergence of a successful effort to bring together diverse jurisdictions and service elements from Maryland, Virginia, and Washington, D.C.. Other areas such as the Twin Cities in Minnesota and the Hampton Roads area in Virginia have come together around common goals for planning for WMD events without regard to individual jurisdictional boundaries. OEP is working on a unique pilot development project with the State of Maryland for state-wide planning and use of resources for WMD events.

3) Health care professionals require increased WMD- related knowledge, skills, and competence, including new credentialling and certification measures.

The specter of treating mass casualties resulting from a WMD event is

new to health professionals. Traditional academic and experience-based training has not prepared most practitioners to recognize, triage, and treat large numbers of victims of chemical or biological terrorism.

We have taken three key steps to address these issues. First, we funded a multidisciplinary professional task force, led by the American College of Emergency Physicians, that has been developing educational objectives, curriculum and competency standards for physicians, nurses, and emergency medical technicians who will be the first to treat victims of a WMD release. Second, building on work done for the 1996 Olympics, we have funded the development of national clinical treatment guidelines for use by civilian health care providers in treating victims of chemical and biological agents. And third, we have made significant progress in identifying applied problems and finding solutions, by practitioners, through the funding of contracts to MMRS affiliated responders, health care providers, and other HHS agencies. These efforts include:

- developing new, rapid and easy methods for preparing large quantities of nerve agent antidote at very low cost in hospital pharmacies;
- providing support to the Center for Civilian Biodefense at Johns Hopkins, and contributing to their landmark efforts to publish and widely disseminate educational and practical clinical and public health guidance about selected biological agents to physicians in a series of peer-reviewed medical journal articles;
- developing simple standard methods for mass decontamination of casualties using standard fire-fighting apparatus and developing cold weather decontamination protocols;
- development and evaluation of guidelines for hospital WMD procedures.

4) Building local WMD response systems through the continued support of Metropolitan Medical Response Systems (MMRS) is essential.

The MMRS program is unique among existing Federal approaches to preparing jurisdictions for WMD events in that, while providing resources for equipment and training, its emphasis is on developing integrated response planning and preparedness across response service elements. The MMRS approach provides the planning core and the "glue" to pull together public safety, emergency management, public health, and health care for effective lifesaving local response to WMD events.

We must prepare local systems beyond the first response, to include health and medical response systems to care for the responders and/ or the city's citizens if they become victims. The President's request for $16 million in fiscal year 2000 for the establishment of 25 new MMRS cities is critical to the overall success of the domestic preparedness program.

5) We must pursue civilian response systems solutions to technical and scientific gaps and problems related to WMD detection, prevention, and medical treatment with vigor.

There are numerous civilian needs that cannot be filled by traditional battlefield or hazardous materials technology or response approaches. OEP supported the development of a comprehensive WMD civilian health and medical response research agenda, which was recently published by the Institute of Medicine (IOM) of the National Academy of Sciences. The IOM report identified over 60 specific needs summarized in eight recommendations. This Report provides a realistic roadmap for future research and development and serves as a critical foundation to the development of our Department's

integrated long-term strategy for improving civilian response to the health and medical consequences of chemical and biological agents. Many federal agencies, including the Office of Science and Technology Policy within the Executive Office of the President, are using this report as a framework for assessing and coordinating counter-terrorism related R&D. Within HHS. the NIH is pursuing WMD-related research on diagnostics, genomics and bio-informatics, therapeutics, and new vaccines. FDA activities include both research and new product approval mechanisms related to treatment of WMD exposures, and SAMHSA is addressing the complex field of crisis intervention following acts of terrorism.

Summary

As I sit here today, I cannot tell you that the nation is prepared to deal with the large-scale medical effects of terrorism. But we are working very diligently to prepare local medical systems and public health infrastructures, enhance the national health and medical response, and provide for a national pharmaceutical stockpile. There is no "silver bullet". The issues are complex and cross cutting between various cultures, disciplines, and the public and private sectors. The Department of Health and Human Services is committed to assuring that communities across the country are prepared to respond to the health consequences of a WMD event.

Mr. Chairman, that concludes my remarks. I would be pleased to answer any questions you may have.

RESPONSE CHARACTERISTIC

BOTTOM-UP, NOT TOP DOWN

RAPID AND APPROPRIATE

AUGMENTED REGULAR SYSTEM

HEALTH NEEDS FIRST

PROTECT THE INFRASTRUCTURE

" BE PREPARED "

CHART #1

WEAPONS OF MASS DESTRUCTION
CONSEQUENCE MANAGEMENT
RESPONSE OPERATIONS

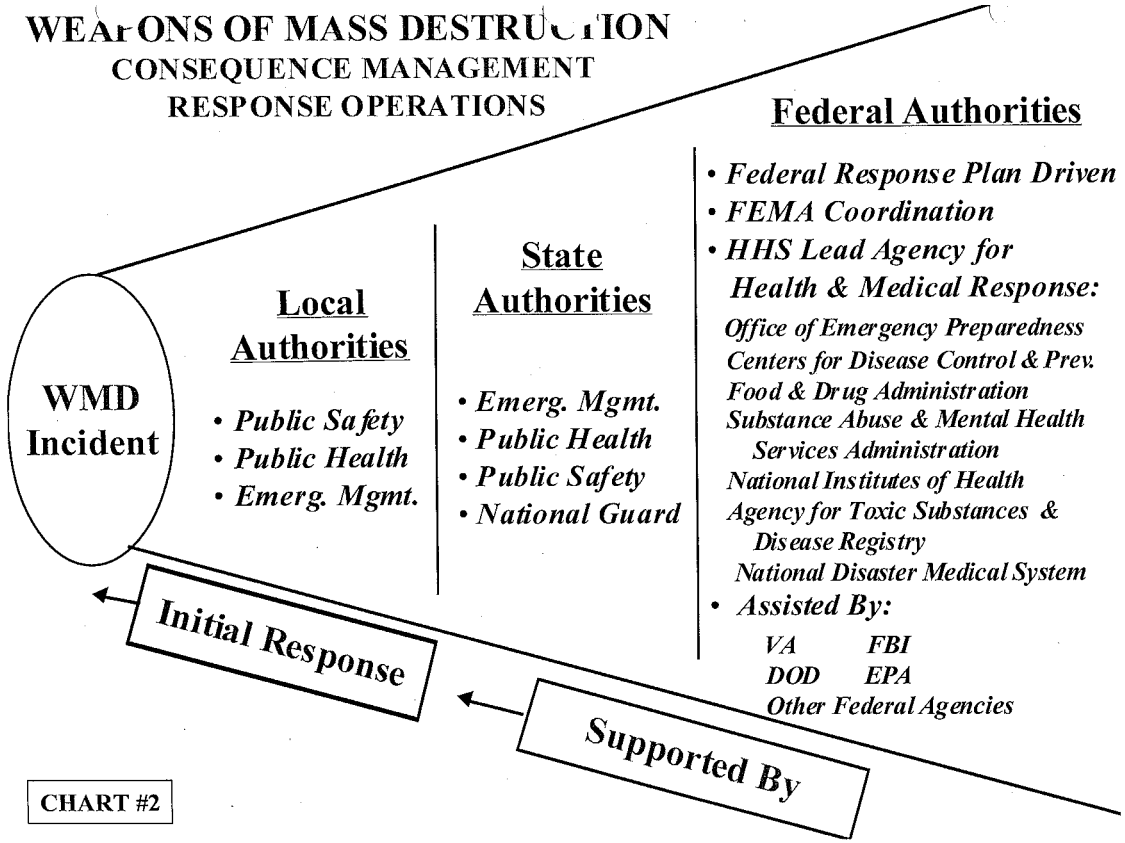


CHART #2

FY 1999 Strategic Plan

HHS supports a systems development approach that concentrates on five elements to strengthen and enhance HHS' ability to prepare and respond to terrorist events

(1) Deterrence of biological terrorism
(2) Enhance the public health infrastructure
(3) Create and maintain a stockpile of pharmaceuticals and other materials
(4) Enhance research, design, development and approval of diagnostic antibiotics/antivirals and vaccines
(5) Strengthen medical response capability (Local & National)

CHART #3

LINKING RESPONSE SYSTEMS

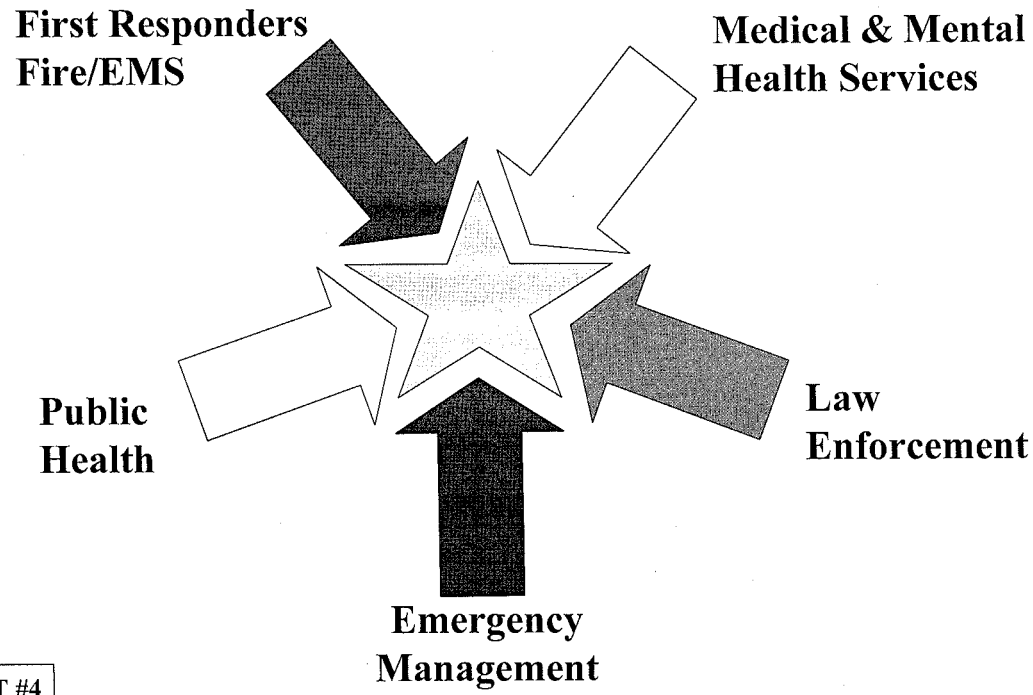
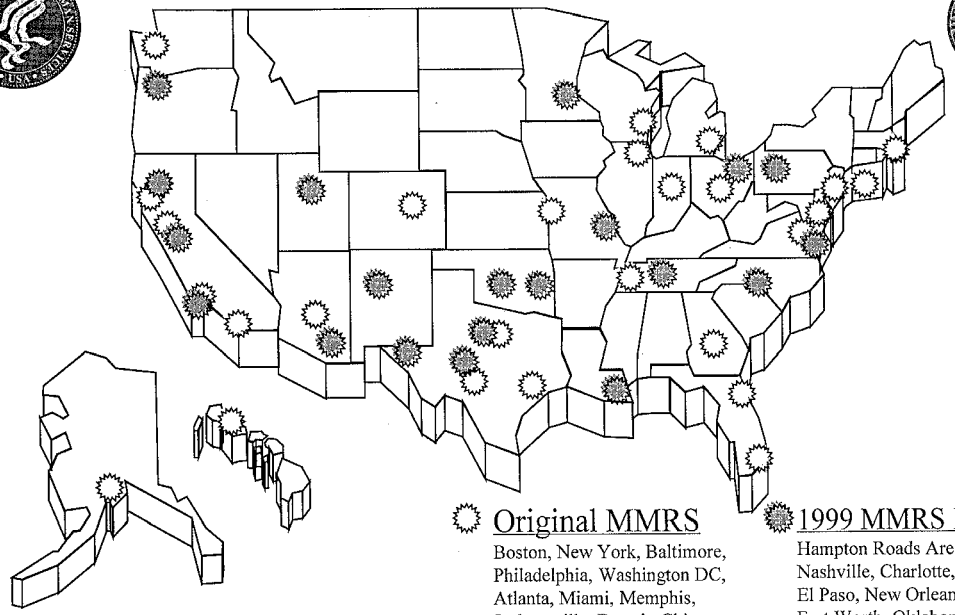


CHART #4

Metropolitan Medical Response Systems



Original MMRS

Boston, New York, Baltimore, Philadelphia, Washington DC, Atlanta, Miami, Memphis, Jacksonville, Detroit, Chicago, Milwaukee, Indianapolis, Columbus, San Antonio, Houston, Dallas, Kansas City, Denver, Phoenix, San Jose, Honolulu, Los Angeles, San Diego, San Francisco, Anchorage, Seattle

1999 MMRS Expansion

Hampton Roads Area, Pittsburgh, Nashville, Charlotte, Cleveland, El Paso, New Orleans, Austin, Fort Worth, Oklahoma City, Albuquerque, St. Louis, Salt Lake City, Long Beach, Tucson, Oakland, Portland (OR), Minneapolis/St. Paul, Tulsa, Sacramento

CHART #5

Requirements Specific to Chemical & Biological Responses

CHEMICAL

- Agent detection and identification
- Extraction of victims
- Administration of antidote
- Decontamination of victims
- Triage
- Provision of primary care
- Transportation to definitive care facilities

BIOLOGICAL

- Detection
- Surveillance
- Laboratory identification
- Mass immunization / prophylaxis

C/B HEALTH SYSTEMS

- Pharmaceutical stockpile
- Mass patient care
- Mass fatality management
- Environmental health cleanup

CHART #6

Federal Response Plan
Emergency Support Functions

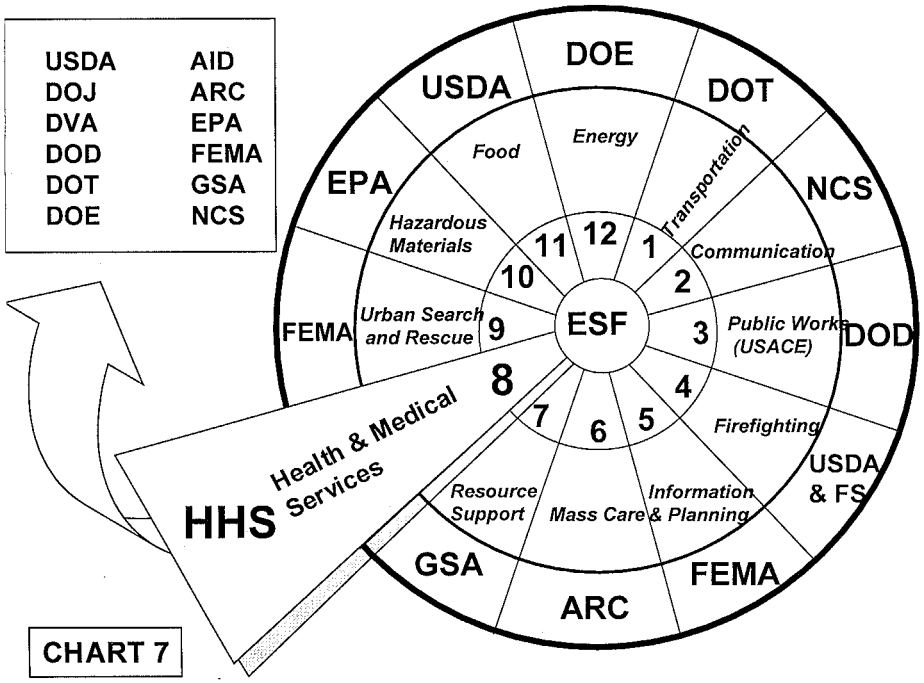


CHART 7

Mr. SHAYS. You got me a little concerned when I asked you to ad lib, because actually the first one you took longer than if you had read it, so you did a nice job. Thank you.

Dr. Lillibridge, thank you.

STATEMENT OF SCOTT R. LILLIBRIDGE, M.D., NATIONAL CENTER FOR INFECTIOUS DISEASES, CENTERS FOR DISEASE CONTROL AND PREVENTION, DEPARTMENT OF HEALTH AND HUMAN SERVICES

Dr. LILLIBRIDGE. Thank you, sir.

I'm Dr. Scott Lillibridge from the Center for Disease Control and Prevention. I am the Director of the Bioterrorism Preparedness and Response Program.

I'd like to thank you for the opportunity to be here to discuss enhancing national public health capacities to respond to bioterrorism and the opportunity to listen to the first panel's comments.

I will describe the actions that CDC is taking as part of the DHHS effort to increase public health preparedness, enhance laboratory services, and expand disease surveillance to improve our Nation's response to this important issue.

In the past, an attack with a biologic agent was considered very unlikely; however, now it seems entirely possible.

It is CDC's responsibility to provide national leadership in the public health and medical communities in a concerted effort to detect, diagnose, respond to, and prevent illness, including those that occur as a result of bioterrorism or any other deliberate attempt on one of our citizens.

In 1998, CDC issued, ''Preventing Emerging Infectious Diseases—'' with a special cover—''A Strategy for the 21st Century,'' which describes CDC's plan for combatting today's emerging diseases and preventing those of tomorrow.

The plan also emphasizes the need to be prepared for the unexpected, whether it be a naturally occurring event such as a worldwide influenza epidemic, or the deliberate release of anthrax by a terrorist.

Increased vigilance and preparedness for unexplained and unexpected illnesses are an essential part of the public health effort to protect the American people against bioterrorism.

To this end, as part of CDC's overall bioterrorism plan, we are providing approximately $40 million, through cooperative agreements with States and large metropolitan health departments, to enhance preparedness and response to such an attack.

Because the initial detection of bioterrorism will most likely occur at the local level after a period when patients have incubated the disease, it is essential to educate and train members of the medical community who may be the first to examine and treat these victims.

CDC will promote the development of new disease surveillance networks, which will better link critical care facilities, components of the emergency medical system, to public health agencies and authorities.

In response to bioterrorism related outbreak, the most likely scenario will be that CDC, the Department of Defense, Department of Justice, and security agencies will be alerted to the event only after

State or local health officers, medical practitioners, or other workers in the health sector of identified a cluster of cases or diseases that are highly unusual and potentially unexplained.

For this reason, CDC will work to provide State and large metropolitan health departments with training, tools, financial resources for outbreak control and investigations.

To ensure the ready availability of drugs, vaccines, prophylactic medicines, and chemical antidotes and equipment that might be needed in a medical response to a biological or chemical terrorist incident, CDC is working to establish a national pharmaceutical stockpile to be utilized when necessary and appropriate to contain the spread of disease in such an outbreak.

In the event of a biological or chemical terrorist attack, rapid diagnosis will be critical so that prevention and treatment measures can be implemented rapidly.

CDC is providing assistance to State and major metropolitan health departments to improve capacity to diagnose these agents. CDC is also working with public health partners, such as the Association of Public Health Laboratories, to implement a network of laboratories to provide for most immediate and local diagnosis in the event of a suspected bioterrorism attack.

In order to assure the most effective response to a bioterrorism event, CDC coordinates and communicates closely with the Department of Justice, FBI, NDPO, and many others in the Federal infrastructure, such as HHS, OAP, FDA, NIH, and FEMA, and many other partners in this response effort.

Strengthening communication among clinicians, emergency rooms, infection control practitioners, hospitals, pharmaceutical companies, and public health personnel is of paramount importance. The health alert network component of the CDC, State and local preparedness initiative will provide national electronic communications from public health officials working to detect and respond to bioterrorism and other unexplained health threats.

CDC is working to ensure that all levels of the public health community are prepared to work in coordination with medical and emergency response communities to address these important threats.

In conclusion, the best public health method to protect our citizens against the adverse health effects of terrorism is the development, organization, and enhancement of life-saving public health tools. Expanded laboratory, surveillance, outbreak response, health communications, and training, and public health preparedness resources at the State and local level are necessary to ensure that we can respond when the alarm is sounded.

Thank you very much for your attention. I will be happy to answer any questions you may have and am delighted to have this opportunity to speak. Thank you.

Mr. SHAYS. Thank you very much.

[The prepared statement of Dr. Lillibridge follows:]

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30333

STATEMENT OF

SCOTT R. LILLIBRIDGE, M.D.

NATIONAL CENTER FOR INFECTIOUS DISEASES

CENTERS FOR DISEASE CONTROL AND PREVENTION

DEPARTMENT OF HEALTH AND HUMAN SERVICES

BEFORE THE

SUBCOMMITTEE ON NATIONAL SECURITY, VETERANS AFFAIRS,

AND INTERNATIONAL RELATIONS

COMMITTEE ON GOVERNMENT REFORM

U.S. HOUSE OF REPRESENTATIVES

September 22, 1999

I am Scott Lillibridge, from the National Center for Infectious Disease, Centers for Disease Control and Prevention (CDC). Thank you for the invitation to discuss enhancing national public health capacity to respond to bioterrorism. I will describe the actions that CDC is taking as part of the DHHS Plan for Health and Medical Preparedness, to increase public health preparedness, enhance laboratory services, and expand disease surveillance to improve our Nation's response to this important issue.

Vulnerability of the Civilian Population

In the past, an attack with a biological agent was considered very unlikely; however, now it seems entirely possible. Many experts believe that it is no longer a matter of "if" but "when" such an attack will occur. They point to the accessibility of information on how to prepare biologic weapons and to activities by groups such as Aum Shinrykyo, which, in addition to releasing nerve gas in Tokyo's subway, experimented with botulism and anthrax.

An attack with an agent such as smallpox could pose threats to large populations because of the potential for person-to-person transmission, enabling spread to other cities and states. Such a disease would quickly culminate in a nationwide emergency. International involvement would be sure to follow. The control of such an epidemic requires a coordinated effort of the entire public health community.

CDC has significant experience in responding to explosion and chemical related terrorism events and emergencies. Chemicals are plentiful and many of the world's worst disasters have involved

the release of industrial compounds. However, special risks are attendant with biological terrorism. For example, when people are exposed to a pathogen like plague or smallpox, they may not know that they have been exposed, and they may not feel sick for some time. This delay between exposure and onset of illness, or the incubation period, is characteristic of infectious diseases. The incubation period may range from several hours to a few weeks, depending on the exposure and pathogen. During this period, patients may continue to travel, visit family and friends, or attend public meetings at a time when they may be highly contagious. Consequently, a disease may be well established in the population before the first cases appear ill and require medical attention.

Public Health Leadership

As the Nation's disease prevention and control agency, it is CDC's responsibility to provide national leadership in the public health and medical communities in a concerted effort to detect, diagnose, respond to, and prevent illnesses, including those that occur as a result of bioterrorism or any other deliberate attempt to harm our citizens. This task is an integral part of CDC's overall mission to monitor the health of the U.S. population. This mission unfolds every day in various forms, such as outbreak response, concern for worker safety, and critical work in global health.

In 1998, CDC issued *Preventing Emerging Infectious Diseases: A Strategy for the 21st Century*, which describes CDC's plan for combating today's emerging diseases and preventing those of tomorrow. It focuses on four goals, each of which has direct relevance to preparedness for

bioterrorism: disease surveillance and outbreak response; applied research to develop diagnostic tests, drugs, vaccines, and surveillance tools; infrastructure and training; and disease prevention and control. This plan emphasizes the need to be prepared for the unexpected -- whether it be a naturally occurring influenza pandemic or the deliberate release of anthrax by a terrorist. Copies of this CDC plan have been provided to the Subcommittee previously.

CDC is continuing to build on these efforts. An example of this is the strategic plan that CDC is developing with its partners to define the specific activities that will need to be conducted over the next several years to ensure that the country is prepared to respond to any threat or actual act of bioterrorism.

Strengthening Public Health Readiness to Address Bioterrorism

Unlike an explosion or a tornado, in a biological event, it is unlikely that a single localized place or cluster of people will be identified for traditional first responder activity. The initial responders to such a biological attack will most likely include county and city health officers, hospital staff, members of the outpatient medical community, and a wide range of response personnel in the public health system. Thus, protection against terrorism requires investment in the public health system. This point is underscored in a report, commissioned by the Department of Health and Human Services Office of Emergency Preparedness (OEP) and recently released by the Institute of Medicine and the National Research Council, *Chemical and Biological Terrorism: Research and Development to Improve Civilian Medical Response*, which stresses the need for long-term public health improvements in surveillance and epidemiology infrastructure.

Increased vigilance and preparedness for unexplained illnesses are an essential part of the public health effort to protect the American people against bioterrorism. Toward this end, CDC, working in collaboration with State and local health departments, many other public health partners, and other Federal agencies, has begun the effort to upgrade public health capabilities locally and nationally to respond to biological and chemical terrorism.

Areas For Public Health Action.

As part of CDC's overall bioterrorism plan, in September 1999 CDC is providing approximately $40,000,000 through cooperative agreements with State and large metropolitan health departments to enhance preparedness and response to a terrorist attack involving a biological or chemical agent. This program, along with other extramural and intramural strategies, focuses on strengthening components of the public health infrastructure to improve the national capacity to address biological and chemical terrorism:

- ***Detection of unusual events - Public Health Surveillance.*** Because the initial detection of bioterrorism will most likely occur at the local level after a period when patients have incubated the disease, it is essential to educate and train members of the medical community -- both public and private -- who may be the first to examine and treat the victims. State and Federal epidemiologists must be trained to consider unusual or rare threat agents when a suspicious outbreak occurs and must be prepared to address questions related to their transmission, treatment, and prevention. It is also necessary to upgrade the surveillance systems of State and local health departments, which will be

relied upon to identify unusual patterns of disease occurrence and to locate any additional cases of illness as the disease spreads throughout the community and beyond.

CDC will promote the development of new disease surveillance networks which will better link critical health care facilities and components of the emergency medical system to public health agencies. CDC will also pilot and evaluate new surveillance systems to improve the nation's ability to detect low incidences of unexplained illnesses or track critical health resource utilization.

- ***Investigation and containment of outbreaks***. In the response to an outbreak caused by an act of bioterrorism, the most likely scenario will be that CDC -- as well as DOD and security agencies -- will be alerted to the event only after State or local health officers, medical practitioners, or other workers in the health sector have identified and validated a cluster of cases that are highly unusual and potentially unexplained.

For this reason, it is imperative that State and local health departments have sufficient resources to conduct disease outbreak investigations. Through the cooperative agreements and other mechanisms, CDC will provide State and large metropolitan health departments with tools, training, and financial resources for local outbreak investigations, and help develop rapid public health response capacity at the State and local levels. Additionally, in the event of a suspected or an actual attack, CDC will assist in

identifying threat agents and their modes of transmission, in instituting control measures, and in providing consultation on medical management.

To ensure the ready availability of drugs, vaccines, prophylactic medicines, chemical antidotes, medical supplies, and equipment that might be needed in a medical response to a biological or chemical terrorist incident, CDC is working to establish a National Pharmaceutical Stockpile, to be utilized when necessary and appropriate to contain the spread of disease in the outbreak.

- ***Laboratory diagnosis.*** In the event of a biological or chemical terrorist attack, rapid diagnosis will be critical, so that prevention and treatment measures can be implemented quickly. In fiscal year 1999, CDC is providing cooperative agreement assistance to State and major metropolitan health departments to improve capacity to diagnose biologic threat agents. In addition, CDC is making additional awards to enable selected State health laboratories to function as reference facilities for the identification of chemical threats. CDC will also evaluate existing rapid assay technology for identifying critical biological agents and develop rapid toxic screening that can assess whether humans have been exposed up to 150 different chemical agents. CDC will develop guidelines and quality assurance standards for the safe and secure collection, storage, transport, and processing of clinical samples.

Finally, CDC is working with public health partners such the Association of Public Health Laboratories to implement a network of laboratories which will be used to provide the most immediate diagnosis of biological and chemical agents in the event of a suspected terrorist attack. This network will ultimately include hospital laboratories, commercial reference laboratories, State and local health laboratories, and highly specialized Federal facilities. It will not only enhance public health capacity to address bioterrorism, but also contribute to the overall public health capacity to address naturally occurring infectious diseases.

- ***Coordination and Communication.*** In order to assure the most effective response to a bioterrorism event, CDC works closely with Department of Justice, including the FBI and the National Domestic Preparedness Office. In addition, there is ongoing coordination with OEP, the Food and Drug Administration, the National Institutes of Health (NIH), the Department of Defense (DOD), the Federal Emergency Management Agency, and many other partners in this process.

Internationally, global health security will be enhanced as CDC, in collaboration with the World Health Organization, the Department of State, and various ministries of health, responds to reports of unexplained illnesses, unusual pathogens, and other outbreaks that might threaten the lives of U.S. citizens.

Strengthening communication among clinicians, emergency rooms, infection control practitioners, hospitals, pharmaceutical companies, and public health personnel is of

paramount importance. The Health Alert Network component of the CDC state and local preparedness initiative will provide a robust national electronic platform for communications, information access, delivery of targeted health alerts, and distance learning for use by public health officials working to detect and response to bioterrorism and other unexplained health threats.

In the event of an intentional release of a chemical or biological agent, rapid and secure communications will be especially crucial to ensure a prompt and coordinated public health and medical response. Further, in the event of such an attack, we will need to ensure that the public is provided with accurate and timely information. An act of terrorism is likely to cause widespread panic, and on-going communication of accurate and up-to-date information will help calm public fears and limit collateral effects of the attack.

- ***Preparedness and Planning.***

  CDC is working to ensure that all levels of the public health community -- Federal, State, and local -- are prepared to work in coordination with the medical and emergency response communities to address the public health consequences of biological and chemical terrorism. CDC will assist in developing local public health bioterrorism preparedness plans that are well integrated into existing emergency response plans at the local, State, and Federal level. CDC is creating diagnostic and epidemiological performance standards for State and local health departments and will help States conduct drills, exercises, and laboratory readiness for bioterrorism.

CDC is working to assure that first responders are better prepared against biological and chemical exposures. CDC has significant experience in the areas of detector technology, personal protective equipment, including protective clothing and respirators, and the necessary training to work in hazardous environments. The challenge before us is to expand these capacities to better protect first responders from perils of biological and chemical terrorism.

In addition, CDC, NIH, DOD, and other agencies are supporting and encouraging research to address scientific issues related to bioterrorism preparedness. The overall strategy for such research is coordinated through the Research and Development subgroup of the Interagency Weapons of Mass Destruction Preparedness Group. For example, for several of the agents identified as possible threats for bioterrorism, we need to create rapid, simple, low-cost diagnostic kits that can be used in the field to test large numbers of people exposed to a biological or chemical agent within a short time frame. In some cases, new or enhanced vaccines, antitoxins, or innovative drug treatments are also required. Moreover, we need to learn more about the pathogenesis and epidemiology of these rare diseases. We also have only limited knowledge about how artificial methods of dispersion may affect the infection rate or the harmful nature of these agents.

Disease experts at CDC are considering various strategies for preventing the spread of disease during and after bioterrorist attacks. Strategies under evaluation include creating protocols for immunizing at-risk populations, isolating large numbers of exposed individuals, and reducing occupational exposures; assessing methods of safeguarding

food and water from deliberate contamination; and exploring ways to improve linkages between animal and human disease surveillance networks since threat agents that affect both humans and animals may first be detected in animals.

CDC is enhancing its ongoing efforts to foster the safe design and operation of Biosafety Level 3 and 4 laboratories, which are required for handling highly dangerous pathogens. In addition, CDC is helping to limit access to potential terrorist agents by administering the Select Agent Rule, *Additional Requirements for Facilities Transferring or Receiving Select Agents* (42 CFR Section 72.6), which regulates shipments of certain hazardous biological organisms and toxins.

Conclusions

In conclusion, the best public health method to protect, respond to, and defend the health of our citizens against the adverse health effects of terrorism is the development, organization, and enhancement of life-saving public health tools. Expanded public health laboratory capacity, increased surveillance and outbreak response capacity, and health communications and training, with focused public health preparedness resources at the state and local level are necessary to ensure we will be able to respond when the alarm is sounded.

Thank you very much for your attention. I will be happy to answer any questions you may have.

Mr. SHAYS. Mr. Tierney.

Mr. TIERNEY. Thank you, and thank both of you for your testimony.

I just want to revisit an area that we left off after the last panel, and that is the access and availability of hospital space, emergency rooms.

Dr. Knouss, I'm sorry I had to step out for 1 second. You may have covered this. Can you talk a little bit about what is being done at the national level to encourage the appropriate amount of planning for emergency and hospital bed space and where do we go from here on that?

Dr. KNOUSS. That is a very broad question and a very difficult problem to address currently. What was being described is is that much of our bed capacity is already taken in the country and we don't have the excess, immediately expandable, capacity that we used to have in the system.

In addition, many hospitals have not seen the need to invest in being able to be prepared for one of these events. There are a variety of different reasons for that, including the relative increase in the level of surpluses that are available to health care institutions and an assessment that is being made, frankly, by many hospital administrators that this is a very low probability event in their community; therefore, the justification for spending large amounts of money in preparation is really not warranted.

The way we are trying to deal with some of these issues is first, through the education of the health professionals, because, as they become knowledgeable about what the potential impact of one of these events might be, they obviously are going to have an influence on how that hospital administrator is going to respond to the need to prepare.

Second, we're looking at trying to deal with accreditation requirements, the standards that are going to be applied by the Joint Commission on Accreditation of Health Care Organizations, to be able to make some engineering recommendations as to how hospitals can best address the need to be able to protect themselves and, at the same time, provide access to their facilities during one of these events.

But, third, we are trying to fortify, strengthen the National Disaster Medical System, which was designed essentially during the mid-1980's as part of the contingent military hospital system to deal with large-scale casualties overseas. If casualties had to be brought back to the United States in large numbers for health care here, we would have to be able to expand the capability and distribute part of that health care burden as a shared responsibility of the entire private hospital system in the United States.

This system was later expanded to include the concept of what do we do if we have a large California earthquake with 100,000 casualties.

Essentially, it is a system designed to provide for primary care at the scene of an incident, transportation of mass casualties to distant hospitals, and then provide health care in 100,000 hospital beds in a system of over 2,000 volunteer hospitals around the United States managed both by DOD, Federal coordinating centers, and those of the Department of Veterans' Affairs. In this system,

we are able to transport victims for those hospital care and essentially provide access to a far greater number of hospital beds, if necessary.

Now, that kind of system will function if the incident is concentrated in one geographic area. Obviously, if we're faced with something that affects the entire country at the same time, all of our resources are going to be pressed, and the only alternative that we would have under those circumstances is temporary expansion of local hospital capabilities.

Mr. SHAYS. Mr. Allen.

Mr. ALLEN. Thank you both for being here.

I want to talk a little bit about anthrax. Two sorts of questions. One—let me ask them both, and then you can deal with them in turn.

Is it possible to say with any degree of certainty that there are a limited number of biological agents that would be likely to be used in any incident of terrorism?

If you think about kind of the agent, the way it reacts, its availability, its cost, you know, as a practical matter—I know there must be hundreds or thousands that are potential, but, as a practical matter, are there a few that we should be concentrating on?

The related question is that I understand that in the Health and Human Service's operating plan for anti-bioterrorism there are descriptions of additional funding set aside for research into new vaccines, particularly a new anthrax vaccine. Obviously, this committee has been interested in that whole issue, and the chairman has held hearings on the Department of Defense anthrax vaccine.

Can you talk to us about what future research is planned and, in particular, whether we need to develop all sorts of vaccines for a variety of agents or even all sorts of vaccines for the different strains of anthrax that could be developed?

Maybe one at a time start with that issue, to the extent you can. I'd appreciate it.

Dr. LILLIBRIDGE. Sure. I'd be glad to.

I think your question raises the issue of priority, which agents offer the most opportunities for preparedness or where do we have the most vulnerabilities.

CDC looked at this issue about 3 months ago as we began to engage in earnest in this area, and came to the conclusion that there were certain biologic agents for which there were tremendous vulnerabilities in the public health community in terms of hospital preparedness, antidotes, stockpile, preparedness, surveillance, and a whole host of activities.

These biological agents were smallpox, anthrax, plague, botulinumtoxin, tulauemia, and the agents of viral hemorrhagic fever.

After looking at the public health impact of a release of these agents, caucusing with the appropriate intelligence agencies, law enforcement agencies, Department of Defense, disease experts, and set about engaging to hone our preparedness effort toward getting the antidotes, strategies, and programs in place to address we came to the conclusion that these agents that would have catastrophic impact were they to be released.

Mr. ALLEN. Can I just interrupt you and ask a quick followup? Why smallpox? I would think, No. 1, it would be hard to produce, and I also assume that everyone over 15, or whatever it is, has been vaccinated in this country. But maybe I'm wrong.

Female VOICE. Not true.

Mr. ALLEN. Not true? Then that's part of the answer.

Dr. LILLIBRIDGE. Routine vaccinations for smallpox stopped about two decades ago or more.

Mr. ALLEN. That long?

Mr. SHAYS. You forgot how long ago you were in school. [Laughter.]

Mr. ALLEN. It was more than two decades ago. [Laughter.]

Dr. LILLIBRIDGE. And, simply put, smallpox exploits unique vulnerabilities, one, because it has been eradicated. We have no great degree of immunity in the population. We have limited response capacities. Third, it is contagious by respiratory route, so it can move from person to person without the help of terrorists.

Mr. ALLEN. Do you want to comment on the need for additional research for anthrax?

Dr. LILLIBRIDGE. Let me mention a few things.

The Department has looked into that issue and CDC is looking at recommendations on the use of the anthrax vaccine. We have partnered with the Advisory Committee on Immunization Practice [ACIP], the organization that sets the gold standard for immunization practice for the United States, to begin to look at this issue in earnest.

We have research needs; and, issues related to indications in civilian populations for prophylaxis and the use of first responders.

CDC information from this activity to be forthcoming in the next 2 to 4 months as ACIP begin to look at research that has been unpublished in the past, review the literature, and convenes groups of experts in that area.

Mr. ALLEN. One quick followup. Is there any effort to look at the DOD vaccination program that is underway now and use whatever information? I realize it has been questioned, the information about side effects or reactions, I should say. Is there any effort to look at that big pool of people that is now being vaccinated?

Dr. LILLIBRIDGE. That's a good question, and every effort is going to be made to look at their research and experience in that area as part of this effort.

Dr. KNOUSS. I'd just like to add another perspective on anthrax vaccine, because we tried to address that issue as we were looking at the research agenda, and anthrax is one of the two vaccines that we would like to invest some more money in further development.

The difficulty with the current vaccine when we're talking about the civilian population, or even parts of the civilian population is that the current vaccine requires six doses for primary immunization and then annual boosters.

What would be very helpful at this point is to have a vaccine that only requires one or two doses to establish primary immunity and, like smallpox, vaccination schedules would only require revaccination on a very long-term basis in order to maintain immunity.

So really what we are talking about, if it were deemed at some point that we do need to have a wider availability of that vaccine

and a higher level of immunization within the population, is a vaccine that is a far more patient-friendly than the one we have now.

Mr. ALLEN. Nothing more.

Mr. SHAYS. I'm going to just ask a few questions, and I don't think they require a lot of response, but preface it by saying I was an intern in Washington in 1968 when really the first plane was hijacked to Cuba, and then you had a rash of planes hijacked for about 10 years, and we don't see it happening now. Admittedly, security improved, but still we still see pilots leave their doors open sometimes when they fly and it doesn't happen.

The concern, I would think, is not only that—once you had a terrorist attack, it might just open the door, just like these shootings in schools. All the sudden you start seeing crazy people do crazy things.

So what most feel, that I speak with in government and outside, that it is not a matter of would a terrorist attack happen, it is kind of when and where, and so it is so important that we are talking about these issues.

In terms of hospital beds, I want to define what is—can we have—when you go to a hospital, the reason why hospital beds are expensive is all the support staff. It's not the room. In fact, I have a hospital that has a whole floor and they have rooms, but they don't have hospital beds.

But in this kind of circumstance, could we actually warehouse rooms, beds, shut them off, wall them off, and then bring in support staff from around the country? Would that meet the hospital bed requirement?

Dr. KNOUSS. That is certainly one of the possibilities for some communities where that kind of excess physical capacity exists but personnel are not available to operate it.

Mr. SHAYS. Is anyone suggesting that we literally have a whole hospital floor with nurses and so on who will never be called on until there is a disease?

Dr. KNOUSS. No. No one is suggesting that. But cities are looking, including New York City at what kind of alternate treatment facilities could be established as extensions of the capacity of its public hospital system that could be accessed through the existing public hospital system in adjacent facilities, that could be readily converted and staffed in the event that patient care requirements increased dramatically and very rapidly.

The approach we are taking at the present time, Mr. Chairman, is asking each community to try to look at the health care alternatives that it has available, because the solution for one community may not be the ideal solution for another community.

Mr. SHAYS. These are very important to ask. I'm just trying to really visualize what we mean by emergency hospital bed and what would be required to have that.

Veterans facilities, we need to—I mean, they're where we don't need them in some cases and not where we need them in the populous, but I have a sense that, because these are government facilities, we'd have a little more opportunity here to basically stockpile pharmaceutical products, maybe stockpile unused bed space.

Dr. KNOUSS. Well, the issue of stockpiling unused bed space has not come up in any of the conversations that I have participated

in, but it is an interesting concept, and I think it is necessary to take a look at that as we're looking at the total scope of the possibilities for expansion of our capability.

Mr. SHAYS. Is transportation—in this day and age, we can transport sick people and still provide them with care in transit. Is that accurate?

Dr. KNOUSS. Well, the second idea that we've had about addressing that requirement—and we talked to the city of New York about this—is actually moving out the chronically ill patients so that the acutely ill patients from one of these incidents might be able to be put in one of those beds near the scene. The people that have more stable conditions could be the ones transported out of the——

Mr. SHAYS. Do we need laws to require that that happen to protect hospitals?

Dr. KNOUSS. Without asking that question specifically of our lawyers, I don't know. I wouldn't want to answer the question. I think it is one of the legal issues that we have to look at across the board, and there are a whole variety of them, including quarantine laws.

Mr. SHAYS. When I'm sometimes bored when I'm running I think of absurd circumstances, like literally an embassy that, over the course of 5 years, they could build a bomb and construct a bomb and wonder what are the legal requirements, if you were a law enforcement officer, if you would have the right, under extreme circumstances, to enter a building without having a search warrant and so on if you had to, in event of catastrophe.

I guess my point triggered into that point is, Are we starting to think of what kind of laws we need now to anticipate events that could potentially be catastrophic?

Dr. KNOUSS. Yes, we are. In fact, there is a whole subgroup of one of the National Security Council committees that is looking specifically at that issue of legal authorities.

Mr. SHAYS. I'm all set to conclude, Dr. Lillibridge, but would you just have any comments that you would make on the questions I asked, or is it kind of out of your area?

Dr. LILLIBRIDGE. Thank you. Just a few comments.

On the issue of bed utilization, there are two things that come up time and time again that we've heard from Dr. Johnson and Dr. O'Toole about the need for local preparedness planning to get considerations of the health people into the disaster management planning so that there are plans for utilization of this space and for the rapid development rapidly of additional places that maybe don't require hospital level of care. It could be hotels, makeshift areas, gymnasiums for patients who didn't require the full range of system care.

That won't happen without preparedness planning on bioterrorism at the local level.

Mr. SHAYS. Thank you.

Do you have any final comments you'd like to make?

Dr. KNOUSS. My only observation, Mr. Chairman, is that this is an enormously challenging area. It requires a level of coordination to develop our response capabilities that is heretofore unknown, really, at least in my experience, and I think almost in anyone else's that one talks to.

We have a long way to go yet, and I appreciate very much this opportunity to be able to share our thoughts.

Thank you.

Mr. SHAYS. Thank you very much.

Dr. LILLIBRIDGE. Thank you, Mr. Chairman.

Just a few closing remarks.

This month is the first month of the initiation of the CDC grants program to work with States on a cooperative basis. At the end of this month we will have 50 States enrolled in a preparedness program that will include one of the key areas or all five of the key areas that we envision, being preparedness, labs, surveillance, health alert network, and that this effort will need to be sustained over a period of time as we begin in earnest to ensure preparedness at a national level.

Thank you.

Mr. SHAYS. Thank you very much.

I notice that Massachusetts shows up a lot, and Connecticut does. That's something that's——

Dr. LILLIBRIDGE. Must be a typo. [Laughter.]

Mr. SHAYS. With that, I'd like to adjourn. Thank you very much.

Dr. LILLIBRIDGE. Thank you, sir.

[Whereupon, at 12:20 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Additional information submitted for the hearing record follows:]

INTEGRATING EMS
and
HAZARDOUS
MATERIALS

Presented by:
Deputy Scot C. Graham
Director Richard Ponko

SPECIAL THANKS TO

- Westmoreland Co. Commissioners
  - R. Vidmer, T. Marrolt, T. Balya
- Westmoreland Co. D.P.S.
  - Director Jim Corcoran
  - Deputy Robert Ceroni
- Westmoreland Co. HMRT
  - Chief William Wright - HMRT 800
  - Members And Officers Of HMRT
- Mutual Aid EMS
  - Board of Directors
  - CEO Joseph Yencha

HISTORY
of the
WESTMORELAND
COUNTY
HMRT

HISTORY
of the
MUTUAL AID EMS
TEAM 300

WORKING
TOGETHER

WORKING TOGETHER
TEAM WORK

- When approaching any haz-mat function we are one team, working under one command, towards one goal
  - policies and procedures
  - drills and training
  - command functions
  - no duplicate services

WORKING TOGETHER
SEPARATELY

- We do have separate functions when not on haz-mat calls
  - 800
    - rapid intervention
    - crash fire rescue
    - heavy rescue
  - 300
    - rehab
    - specialized rescue
    - disaster response

WORKING TOGETHER
EQUIPMENT

- 2 - chief's cars
- 1 - Rescue 800
- 2 - Hazard 800
- 2 - command post
- 2 - support
- 3 - decon
- 1 - rehab bus

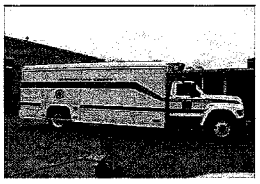
WORKING TOGETHER
EQUIPMENT

- 2 - chief's cars
- 1 - Rescue 800
- 2 - Hazard 800
- 2 - command post
- 2 - support
- 3 - decon
- 1 - rehab bus

- combined efforts afford 13+ vehicles available for haz-mat response

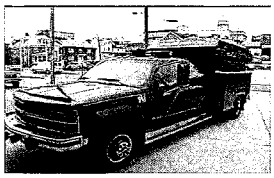
RESCUE 800

HAZARD 800

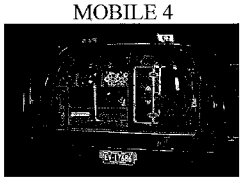


COMMAND POST 800

Special Services Unit
MOBILE 6



Special Services Unit
MOBILE 4



Special Services Unit
DECON TRAILER

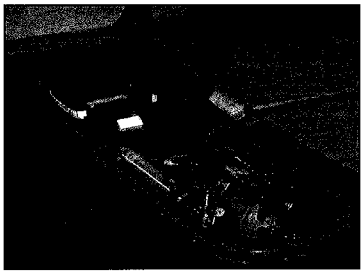
MEDICAL
SECTOR
SERVICES

MEDICAL SECTOR SERVICES
PRE ENTRY PHYSICALS

- Medics complete an exam on all personnel entering a warm or hot zone
  - question and answers
  - over-hydration
  - baseline vitals
    - physician approved process with tagging out procedures

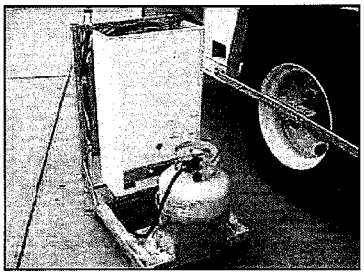
MEDICAL SECTOR SERVICES
RAPID INTERVENTION

- A medic is part of the two-out team
  - role is to become part of the team and provide medical experience and guidance
  - medical personnel coordinate amount of decon needed for patient



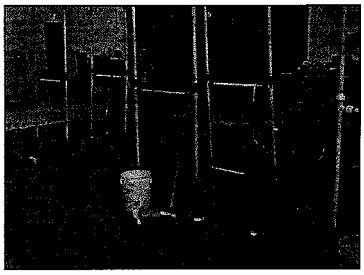
MEDICAL SECTOR SERVICES
DECONTAMINIATION

- Decon is performed by medical personnel
  - start decon, start post physical
    - awareness, injury, and equipment
  - personnel
    - refresh and continue
    - undress and rehab
    - further decon
    - emergency procedures



MEDICAL SECTOR SERVICES
DECONTAMINIATION

- The HMRT personnel are taken out of the decon line and undressed and sanitary concerns are met



MEDICAL SECTOR SERVICES
POST ENTRY PHYSICAL

- Medics complete a post-entry physical on all HMRT members exiting warm and hot zones
  - the process begins at the decontamination section
  - re-hydration takes place
  - baseline vitals are observed
    - physician approved process with tagging out procedures

MEDICAL SECTOR SERVICES
REHABILITATION

- Completion of work cycle equals rehab
  - no matter who you are
    - command staff
    - section officers
    - support staff
    - warm and hot zone
  - physical and emotional needs are met

MEDICAL SECTOR SERVICES
REHABILITATION

- Services provided
  - rest
  - heating cooling
  - CISD
  - food
  - water
  - conversation
  - personal needs

MEDICAL SECTOR SERVICES
MEDICAL TREATMENT

- Immediate treatment can be provided for
  - trauma emergencies
  - medical emergencies
  - chemical emergencies
  - comfort items (contact lens care, porta-john)
- All care is coordinated with teams medical director

MEDICAL SECTOR SERVICES
LIASON

- Provides initial care of the contaminated patient. Care is turned over to the local provider.
- Provides a member to go along for technical support
- Provides intelligence information to the local EMS provider

MEDICAL SECTOR SERVICES
LIASON

- Local EMS is encouraged to become part of the team
  - assisting with pre and post physicals
  - rehab stations
  - safety
  - logistics

TOMORROW'S SERVICES

TOMORROW'S SERVICES
WEAPONS OF MASS DESTRUCTION

- Training all personnel on:
  - Department of Defense
  - Department of Justice
    - R/I, OPS, IC, EMS TECH, HM TECH
    - mass decon
- Stockpiling equipment
- Preplanning

TOMORROW'S SERVICES
DIGITAL CAMERAS

- Digital cameras to transmit pictures from the scene to a remote location
  - command post
  - hospital
  - resources

TOMORROW'S SERVICES
UNCHARTED TERRITORY

NO IDEA
IS
A BAD IDEA

FUNDING

FUNDING

- LEPC
- Corporate
- Donations
- Fund raisers
- Foundations

EMS & TERRORISM RESPONSE

SEPTEMBER 28, 1999
DAVID PAUL BROWN
MONTGOMERY COUNTY EMS DIRECTOR

Montgomery County, PA We're The Other Guys:

- Limerick Nuclear Power Plant.
- The Most SARA Title III Sites in State.
- Largest Shopping Mall in the USA.
- Nearly 750,000 People with 550,000 daily traffic volume.

Many Challenges Or Opportunities:

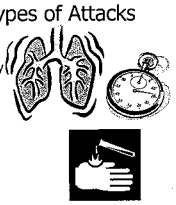
- Graterford State Correctional Institute
- Major Pharmaceutical Headquarters of Merck, RPR, SKB and more.
- Valley Forge National Park
- PA Turnpike-Hub of East / West & NE Extension & I-76 & I-476
- Multiple High Rise Office Complexes

Let's Cover 4 Sections On EMS Terrorism

- Dispatch-Detection-Training
- On-Scene Response / Mitigation
- Patients Distribution-Hospitals
- Health Assessments Return to Daily Operations, After Action Reports & Debrief

Comparison / Types of Attacks

- Chemical & Nuclear Weapons are usually immediate onset.
- Biological Weapons may not show signs for hours or days.
- Most are aerosols, some are absorbed thru the skin.



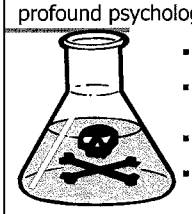
Dispatch-Detection

- Dispatcher Training to identify possible signs, questions to attempt to define outbreak origin.
- Automatic Call-ups of County,Regional Resources-State & Federal Agencies
- Rapid dispatch of Haz-Mat & EMS Tx Teams, PEMA, Dept. Of Health.

On-Scene Response & Mitigation

- Scene Safety & Control
- Assessment of Hazards
- PPE & Provider Confidence
- Triage
- Decontamination
- Treatment
- Transport

A Terrorists Job is to produce profound psychological stress!



- Large Numbers of Deaths
- Deaths of Loved Ones, Especially Children
- Fear of Disease Striking Rescuers
- Secondary Devices to Hurt Responders

Trained To Respond

- EMS Responders should have:
- Haz-Mat OPS, SCBA, DOD or DOJ WMD
- Training With PPE on-board & annual health screenings
- Need to function within the ICS & Unified Command
- Resource books on responding ambulances & have access to medical command expertise.

Clues to a Possible Attack

- Large Outbreak of "Flu Like Symptoms"
- High Volume of Patients with Severe Respiratory Ailments
- Dead Animals of Various Types-No Living Creatures Around the Scene
- Multiple Simultaneous Epidemic Outbreaks-Crossing County/State Lines

Responders Should Assess Capabilities For Initial Size-up.

- SCBA may be initial response by all
- Detector Tubes and papers and combination meters can measure some substances
- Military Monitoring & Tx equipment may give more options
- EMS needs access, training & fit testing
- These are probably not on first arriving apparatus and need time to measure.
- Early call-up thru PEMA-ambulatory injured won't wait

Terrorism Incidents Are Crime Scenes!!!!!!

- EMS is careful to avoid moving any items or "evidence". Are ready to speak about & document initial scene views.
- Be prepared to deal with many local, State & Federal agencies who will respond whether you call them or not.
- Have a pre-determined medical PIO who works with the incident PIO.

Dispatch/EMS/County/State Health Departments

- Gather Data About Events or Eating Over Last 3 Days?
- Travel History?
- Employment History
- Any Infectious Contacts?

All Hazards Plans

- Specialties Were All The Rage / Now Combination Units(More With Less)
- Haz-Mat Teams Have Many of the Items for Standard Air Monitoring & Decon
- EMS is Accustomed to HEPA Masks, Gowns and Some PPE.
- Medical Management of Citizens and Responders (Real or Perceived) will Overtake most EMS & Health Sites.

Terrorism PPE & Confidence

- Level A-PP-SCBA,Total Encapsulating Suit, Gloves(I&O), Boots
- Level B-PP-SCBA, Hooded Chemical Resist Coveralls, Gloves(I&O), Boots
- Full or Half Face PAPR,Coveralls, Gloves(I&O)

Approaching Scene

- Uphill, Upwind Approach Is Important
- Arriving Personnel Should Report Findings & Begin To Request Resources
- Establish ICS & Consider Unified Command, Use Forward CP-Request Common Radio Channels For Incident
- Request Resources For Response From A Pre-Assigned Level Chart At Dispatch

Incident Flowchart

- Incident Occurs
- Evacuate Area/Entry By Level A Team
- Detect & Identify Agent
- If Unable to ID-Level A Gear Stays On
- If ID'ed Above IDLH or Cartridge Not Available-Stay In Level A or B Full PP SCBA
- If Below IDLH Select Cartridge And Use Respirators and Calculate Change-Out Schedule

Respirators & Cartridges

- If IDLH is Below Risk Than Respirators & Cartridges May Be An Option
- Organic Vapor Cartridges Have Been Tested To Absorb Known Tear Gases, Nerve Agents & Mustard Agents
- Typically The Cartridge Is Paired With A HEPA Filter to Capture Particulates.
- Min. Service of 16 Hours for OV Cartridge.

Triage, Decon, Treatment

- Because of Limited Resources, Triage Should be towards Allocating Resources
- Triage Should Focus on Those That are Able to Evacuate & Appropriate Distribution to Available Hospitals
- Decon Should be Done by Haz-Mat Team Use Proper Solutions-Walking & Stretcher Lines
- Treatment is Focused on Decon, ABC's, Respiratory Support & Counter Acting Drugs

EMS Treatment Issues

- Respiratory Support, BVM, O2, Albuterol
- ALS Medications In Large Quantities, Atropine, Epinephrine, Diazepam,
- Arrange With Hospitals to amass doses to send out with first units.
- Pre-Study Resources For "Nests" Of Medicines For Response MARK 1-2PAM Kits-Atropine & Pralidoxime Chloride

Transport

- Patients That Are ACAP Without Critical Symptoms May Be Distributed By Bus.
- Critical Patients Need An Ambulance -1 on 1
- When Deciding Transport, Consider Costs To Recover Vehicle & Contents

Delivery To Hospitals

Police & Decon Teams May Need To Assemble At Hospitals To Deal With Drive-In Patients That Have Left The Scene.

Distribution To Facilities Is Critical to Operations and Survival Of Patients

Facilities Need Training & Equipment to Protect ER Staff-2nd Decon Facilities.

Hospital Staff May Need The Same Training As Responders In Use Of Respirators.

Recovery-After Action

- CISM & Infection Hazard Counseling
- Provide Health Exams & Prophylactic Treatments Such As Antibiotics
- Establish A Mechanism To Place Ambulances & Staff Back In Service
- Provide After Action Reviews & Reports To Determine Actions Next Time
- Assist Police & State/County Health Departments In Completing Reports

Montgomery County Work

- LEPC & EMS Developed EMS Haz-Mat Kits, includes PPE, SCBA, Decon, Books
- Trained DOD & DOJ Terrorism Instructors & Terrorism 3rd Class Cities
- MCPS FEMA/PEMA Grant in Procss for $17,350 to Plan, ICS/UC Drill, Workshops/WMD
- MCPS Processing DOJ Grant up to $200,000 Which Would Include Drills & Equipment For Responders & Hospitals

EMA's Support

- EMS Will Play A Critical Role In Any Major Response-Support Their Cause
- Identify Challenges Faced By EMS Including; Involvement In Your Plans, Staffing, Training, Equipment Caches.
- Address Issues Such As Mutual Aid, Insurance & Liability Issues, ICS & Procurement Before An Incident

Resources:

Jane's Chem-Bio Handbook
703-683-3700
DOJ-Self Study-Terrorism
Medical Response To Chemical Warfare & Terrorism
USAMRIID Handbook On Medical Management Of Biological Casualties
USAMRIID Home Page:www.usamriid.army.mil
The Beacon-National Domestic Preparedness Newsletter
202-324-8186

Remember What We Are Here For.....

Thank You!!!!!

Questions?????

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Pennsylvania Conference on Emergency Management

Haz-Mat Emphasis on Terrorism

South Central Pennsylvania
Counter - Terrorism
Task Force

South Central Pennsylvania

- Adams County
- Cumberland County
- Dauphin County
- Franklin County
- Perry County
- York County

Resources

- 4 Certified Haz-Mat Teams
- 1 Spill Response Team
- Gov't based HM Teams
- Several Industrial Tech Support Teams
- 300+ Independent Fire Companies

Concept of Operations

- Training
- Response Matrix
- Development of Teams
- Equipment

Training

- Basic operational level training using NFA and DoD programs.
- Haz-Mat Team training which meets or exceeds NFPA 472 TIA.
- Training for local government and elected officials.
- Major exercises based on the CREST program.

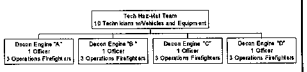
Response Matrix

- Rapid deployment of resources
- Applicable to other disciplines
- Type of Incident and number of Causalities

Specialized Teams

- Rapid Needs Assessment Team
- Specific expertise, tasked to identify immediate unmet needs.
- Incident Support Team
- Command
- Logistics
- Planning
- Finance
- PIO

Haz-Mat Strike Teams



Response Example #1

- Anthrax letter received at reproductive clinic results in 911 call
- Initial response of local Fire, EMS and HM
- Trained personnel determine incident is contained and can be controlled with local resources

Response Example #2

- 911 calls for victims of exposure at summer festival, Fire, EMS and HM respond
- Dozens of victims, County Strike Team deployed to assist
- Additional Strike Teams dispatched to local hospitals for decon of walk in PT's

Equipment

- Haz-Mat Teams
  - CAM 2 detectors
  - Detector Tubes
  - CPC
- Decon Companies
  - Tyvek F w/boot
  - APR's w/canister
  - Detector Tubes
  - Thread adapters
  - Modesty garments

Problems !

- Communications
- Backfill & smells and bells
- Ownership

Summary

- Early activation of the Response Plan
- Sustained operational capability
- Ability to integrate with Federal assets