



**County of San Mateo
Report to the Board of Supervisors on
Public Health Preparedness
For a
Biological or Chemical Terrorist Event**

**Scott Morrow, MD, MPH
Health Officer**

Report on Public Health Preparedness for a Biological or Chemical Terrorist Event

Background

The attacks of last September and October made both our national and local vulnerabilities clear. The October anthrax attacks were particularly illuminating as to our inadequate response capacity. While no actual attack occurred here, our collective resources were pushed to their limits. At that time we were only facing a perceived threat and our response system almost collapsed. While we have been aggressively attempting to address these vulnerabilities and gaps in capacity over the last year, much more needs to be done. The federal government has recognized that the Public Health infrastructure throughout the nation has badly deteriorated over the last 30 years and that this deterioration has caused a national security risk. In an attempt to remedy this situation, homeland security funds have been made available to begin to build up an adequate Public Health infrastructure. The federal government has made it clear that these funds related to Public Health infrastructure are only to be used to enhance capacity and cannot be used to supplant existing local or state funding. This report provides context to the Board and general public as to the state of our Public Health preparedness by describing:

- the Public Health role and responsibilities in disaster response;
- some key findings from the State's Little Hoover Commission;
- the unique aspects of bioterrorism preparedness and how it differs from other disaster preparedness activities;
- requirements of the federal funding for public health capacity-building; and,
- local accomplishments in the last year.

Public Health's Role

The Health Services Agency is responsible for planning for and responding to the medical/health aspects of natural and man-made (chemical, biological, or nuclear, also known as Weapons of Mass Destruction (WMD)) disasters. These medical/health responses can be divided into three categories: Pre-event response, immediate response, and sustained response.

Pre-event activities include maintaining disaster readiness in Health Services Agency divisions, planning and maintaining a relationship with the local Office of Emergency Services, local law enforcement, fire services, and local medical providers, exercising the plan, and providing training and education in medical/health disaster activities to community physicians, hospital personnel, and first responders (law, fire, and ambulance personnel).

Immediate response activities include fire service and ambulance paramedic response to provide emergency medical care at the emergency scene and to transport victims to hospitals and alternative treatment sites, coordination of emergency care provided at hospitals and alternative treatment sites, protection of water and food supplies, and

protection of the environment by identification, containment, decontamination, and disposal of hazardous materials.

Our most difficult task relates to the need for a sustained response. This is particularly critical in a biological event. The sustained response consists of coordination of sustained medical response at hospital facilities and alternative treatment sites including acquiring medical mutual aid resources, provision of health care services at shelters, provision of accurate public information related to preventing illness and injury in relationship to the specific disaster incident, prevention and treatment of communicable diseases, providing information and resources for managing mental health needs related to the disaster, and addressing our clients' needs relative to the specific disaster.

Findings from the Little Hoover Commission

California's Little Hoover Commission initiated a review of our state of readiness with a belief that the events of September 2001, in the context of the security threats emerging in a global economy and a post-cold war world, fundamentally alter the role of state and local governments in the area of homeland defense.

Much of what the Commission heard during their review supported the assertion that state and local officials must think differently than in the past. Local officials must think differently about the resources that should be dedicated to emergency response and the expertise that must be engaged in preparing organizations and individuals for that response. Local officials also must think differently about the time they have available to respond. It is likely that swift decisions, based on thorough preparation, can reduce the multiple potential consequences of a single act.

What follows are two major findings of the Commission.

Finding: California has not verified the ability of local agencies to respond adequately to multiple, large-scale disasters, particularly attacks engineered to cause massive casualties, destruction and chaos. While some counties are more ready than others, there is no baseline level of readiness and there is no way of knowing who is really ready.

It is frequently said that all disasters, like all politics, are local. It is recognized that first responders will always be local, and that even the best mutual aid system will take time to deliver assistance. A federal response to bioterrorism, for instance, *might* be strong, but it will not be immediate. Local agencies need to be capable of sustaining their own response for many hours or even for many days. Emergency response officials reported they were as well prepared as they could be, but *none* felt they were as well prepared as they should be. The actual level of preparedness varies markedly from county to county.

Finding: The State has not adequately maintained its public health assets to meet the needs of a growing population.

Perhaps the largest single weakness revealed by the terrorist attacks is our Public Health system. What was once characterized by a robust commitment to public health monitoring, early detection and containment of diseases has largely been supplanted by reliance on health maintenance organizations and insurance-based health care. Local health departments receive far less state money today for disease surveillance than they did 50 years ago, especially after accounting for inflation. Local funds, which are the major source of funds available for these activities, are inadequate. While there are many adverse consequences due to the decline of the Public Health system, one of the more significant is that the relationship between medical providers and local health departments has deteriorated substantially during this time. This particular public policy experiment has failed.

The Unique Aspects of Bioterrorism

San Mateo County and most of California now follow the “all-hazard” approach to disaster planning. The basic planning activities are similar for natural disasters and manmade WMD disasters, but there are distinct differences for WMD and particularly for biological events that need to be taken into account in planning.

Scale of the emergency-Much of the planning, prior to September 11th, was based upon what has happened in the past, with emergency officials slowly increasing their capabilities to respond to benchmark disasters. But unlike fires, floods, and earthquakes, terrorist attacks are designed to produce maximum levels of chaos, destruction and fear. Most experts concede that our planning to date has been based upon what has occurred, and *not upon what reasonably can occur*. The scale of this type of disaster can be unimaginable. This is best illustrated with a biological agent such as smallpox, which killed over 300 million people in the last century. Granted, the probability of a smallpox attack is low, but the potential consequences are so great that we cannot ignore the threat. A high-ranking federal official has stated that a coordinated attack with smallpox could take the nation “beyond the point of recovery”.

Timing-Traditional disasters have more distinct beginnings and ends. In an earthquake, or an explosion, the event which causes the disturbance is over in a short period of time. In a biological event, there would be no distinct beginning and no distinct end. The action that would release the organisms would probably not be noticed for at least several days. Our first indication would be that people would be getting sick, each at his or her own rate, and it would take awhile to understand what was occurring. If the organism is communicable (i.e., can be spread from person to person), a type of chaos could arise whereby other people, even friends and neighbors, are viewed as threats. Everyone, including emergency responders, would feel ongoing vulnerability. Unlike physical damage that occurs, it is almost impossible to quantify the damage from this type of scenario.

Damage to Infrastructure-Most disasters result typically in massive physical infrastructure damage and relatively few human casualties. In a biological event, there would be little, if any, physical damage, but the result could be massive human casualties.

Intensity of Response-Most disaster response is very intense but usually very short-lived. Injured people get to where they need to go and are taken care of. There is usually a large initial need for law enforcement, fire, and health resources that rapidly diminishes to baseline. In a biological event, the response will need to be very intense and will need to be sustained for a long period of time. This will cause physical, emotional, and psychological fatigue in the public and responders.

Self-sufficiency-Like with many disasters, we are incapable of fully responding to a biological event on our own. We are dependent on outside resources to assist us. Our reliance on this mutual aid system is fine, because it is highly unlikely for a natural disaster to devastate or paralyze large portions of the country. However, if a biological attack were particularly well coordinated, it could impact the entire country or even the entire world. In that situation there would be no outside help and we would have to get by on our internal resources. This requires us to be self-sufficient at a much higher level than we have been in the past.

Coordination-Response to a WMD event requires unprecedented cooperation and coordination between systems that currently are not well coordinated now and to a degree that is not yet well appreciated by the vast majority. While there are some natural links, and while we have a history of cooperation in San Mateo County, the health, fire, and law enforcement links must be strengthened immensely.

Public Health as a first responder-Typically Public Health has dealt with the later aspects of a disaster. In WMD, Public Health will become a first responder. This is a cultural and worldview change that both within and outside local health departments, will need to be accommodated.

Public fear-People are rightly frightened by invisible organisms that cause disease and death. The likelihood of mass hysteria and public panic is high and will need to be dealt with by accurate and timely communication, strong leadership, the appearance of equity, and the perception of the availability of treatment.

Training-Willful release of lethal organisms is not typically what fire and law enforcement personnel or even health providers have to deal with. There are huge training needs for health, fire, and law enforcement.

Security-Security is always important in a disaster. However, in a WMD event, law enforcement will be asked to protect and secure things like antibiotics, vaccines, healthcare facilities, and alternative treatment sites. The demands for security at many non-traditional facilities will likely create conflicts and require rigorous triage. Communication of those needs and agreements ahead of time will be important.

Surveillance-Biological attacks will most likely be covert. That means that mechanisms and systems that do not currently exist will need to be developed to try to identify attacks as soon as possible. Since the impact of most biological agents can be modified with antibiotics or vaccines, early detection is critical.

Laboratory and Pharmacy- While these ancillary health services play a vital role in disaster response in a natural disaster, they play a central role in a WMD event. Most chemical and biological agents can be treated with either antibiotics or antidotes. Having these pharmaceuticals available and in amounts large enough to respond is critical. Laboratories will not only be used to diagnose individual patients but will be used to track the spread of biological agents and measure the level of contamination in the environment.

Civil Liberties-Just as security needs will change, security teams may have to protect people from each other and keep some people forcibly separated from others. It is very likely that the imposition of restrictions of civil liberties such as travel restrictions both by air and motor vehicle, isolation and quarantine of people, facilities, and other places will be implemented. Under particular scenarios, there is a very real likelihood of imposition of martial law.

Simultaneity of events-Natural disasters have allowed us to neatly contain our activities into a three-stage time frame: preparation, response and recovery. The recent attacks demonstrated the chaos which may result when public agencies and the public must respond to an emergency while simultaneously recovering from another and preparing for a third. The uncertainty of terrorism alone increases demands on the system. For example, not knowing whether an attack is over could seriously undermine the willingness of local agencies to share resources under a mutual aid system that has proven to work well in discrete and isolated events.

Multiplicity of threats-Different types of events pose unique management challenges. The layering of multiple and different events impose more daunting challenges than emergency response systems have experienced. The challenges of responding to weapons of mass destruction that may involve chemicals, explosives and diseases impose considerable complexity on decision-makers and on responders.

Requirements of the federal funding

These differences, along with the central role Public Health plays in disease control and surveillance, have caused a major emphasis of the homeland security initiative to be placed on improving Public Health capacity. The federal funding is directed at local and state jurisdictions solely and expressly for the purpose of building Public Health response capacity. We will be receiving a little over \$1 million annually from the federal government for this purpose. While this funding is necessary to achieve a capacity increase, it is insufficient to allow us to fully meet the critical capacities required. The CDC has required a base level of capacity be developed in the following areas over the

next several years. We do not have this base level of Public Health capacity in San Mateo County. The following describes what are being called the critical capacities.

- Establish and maintain a process for strategic leadership, direction, coordination, and assessment of activities to ensure local readiness, interagency collaboration, and preparedness for bioterrorism, infectious disease outbreaks and other Public Health threats and emergencies. This critical capacity has 7 major tasks to accomplish.
- Conduct integrated assessments of Public Health system capacities related to bioterrorism, other infectious disease outbreaks, and Public Health threats and emergencies to aid and improve planning, coordination, and implementation. This critical capacity has 3 major tasks to accomplish.
- Develop and exercise a comprehensive Public Health emergency preparedness and response plan for emergencies caused by bioterrorism, other infectious disease outbreaks, Public Health threats and emergencies. This critical capacity has 6 major tasks to accomplish.
- Ensure that local preparedness for and response to bioterrorism, and other infectious disease outbreaks, Public Health threats and emergencies are effectively coordinated with State response assets. This critical capacity has 3 major tasks to accomplish.
- Plan for the receipt, management, and distribution of the National Pharmaceutical Stockpile. This critical capacity has 5 major tasks to accomplish.
- Rapidly detect a terrorist event through a highly functioning, mandatory reportable disease surveillance system, especially monitoring illnesses and conditions possibly resulting from bioterrorism, other infectious disease outbreaks, and other Public Health threats and emergencies. This critical capacity has 7 major tasks to accomplish.
- Rapidly and effectively investigate and respond to a potential terrorist event as evidenced by a comprehensive and exercised epidemiologic response plan that addresses surge capacity, delivery of mass prophylaxis and immunizations, and pre-event development of a specific epidemiologic investigation and response needs. This critical capacity has 6 major tasks to accomplish.
- Rapidly and effectively investigate and respond to a potential terrorist event, as evidenced by ongoing effective local response to naturally occurring individual cases of urgent Public Health importance, outbreaks of disease, and emergency Public Health interventions such as emergency chemoprophylaxis or immunization activities. This critical capacity has 3 major tasks to accomplish.
- Develop and implement a local program to ensure rapid and effective laboratory services in support of the response to bioterrorism, and other infectious disease outbreaks, Public Health threats and emergencies. This critical capacity has 5 major tasks to accomplish.
- Ensure adequate and secure laboratory facilities, reagents, and equipment to rapidly detect and correctly identify biological agents likely to be used in a bioterrorist incident. This critical capacity has 5 major tasks to accomplish.
- Ensure effective communications connectivity between the local Public Health department, the California Department of Health Services, healthcare

organizations, law enforcement organizations, public officials, and others as evidenced by: a) continuous high-speed connectivity to the internet, b) routine use of e-mail for notification of alerts and other critical communications, and c) a directory of Public Health participants, their roles, and contact information. This critical capacity has 4 major tasks to accomplish.

- Ensure a method of emergency communication for participants in Public Health emergency response that is fully redundant with e-mail. This critical capacity has 2 major tasks to accomplish.
- Ensure the ongoing protection of critical data and information systems and capabilities for continuity of operations. This critical capacity has 2 major tasks to accomplish.
- Ensure secure electronic exchange of clinical, laboratory, environmental, and other Public Health information in standard formats between the computer systems of Public Health partners. Achieve this capacity according to the relevant IT Functions and Specifications. This critical capacity has 3 major tasks to accomplish.
- Provide needed health/risk information to the public and key partners during a terrorism event by establishing critical baseline information about the current communication needs and barriers within individual communities, and identifying effective channels of communication for reaching the general public and special populations during Public Health threats and emergencies. This critical capacity has 5 major tasks to accomplish.
- Ensure the delivery of appropriate education and training to key Public Health professionals, infectious disease specialists, emergency department personnel, and other healthcare providers in preparedness for and response to bioterrorism, other infectious disease outbreaks, and other Public Health threats and emergencies. This critical capacity has 5 major tasks to accomplish.

As you can see, each of these critical capacities is associated with 2 to 7 major tasks that need to be accomplished. The completion of each major task will require many steps by dedicated staff. The purpose of the planning is to begin to identify those steps, the staff who will carry them out, and how to coordinate the entire process both internally and externally. A number of staff from Public Health, Emergency Medical Services, and the Information Services Department have been temporarily reassigned to assist with developing the action plan that will be submitted to the State by October 14, 2002. The private medical community, AMR, and the Office of Emergency Services are assisting with the task of completing the plan. We implemented a draft work plan to allow us to complete the much more complex state plan.

We will add 9.5 staff to enhance public health capacity with the homeland defense funding. They will include: a disaster response planner who will assist with the development of and ensure completion of the plan; a physician who will work to improve our relationships with the local medical community; a Hazardous Materials specialist who will work to improve coordination between Public Health and local fire and law enforcement; an epidemiologist who will work on enhancing our surveillance capacity; a

public health nurse who will provide added capacity in communicable disease control; a microbiologist who will work to enhance lab capacity; a health educator to assist with risk communication efforts; two clerical positions to assist in all the areas; and an ISD analyst to improve and provide for redundant communication and connectivity.

Because of the complexity of the entire project, a lack of adequate existing resources that can be dedicated to developing the work plan, and the very short time frame for completion, the final state plan that will be submitted will not be ready until just prior to the October deadline.

Local Activities

Over the last year we have made some progress on several of these areas without federal or state support. Due to the wisdom and the foresight of the County Manager, after last Fall's attacks a special fund was set up, that was used to improve our readiness. These county funds were used to safeguard the community. In addition, our local partners (law enforcement, fire, ambulance and hospitals) have worked very well together, enabling us to make progress in several priority areas.

During the last year we have made significant progress on the development of a local stockpile of pharmaceuticals. The stockpile, as a local and immediately available asset, is now in place. We were able to establish the stockpile because of the very strong cooperation, collaboration, and fiscal commitment of the Hospital Consortium, all the hospitals located within the county, and the Health Services Agency.

We are currently engaged in developing a full field exercise to test response to a potential WMD event. To accomplish this, we have received training and technical assistance from the Bechtel Corporation. The field exercise is planned for November 2003. In the interim, there will be joint table-top exercises with OES, law enforcement, fire, the ambulance provider, and the hospitals in November 2002 and April 2003 to test our capacity and ready ourselves for the 2003 exercise.

We are actively planning to deploy enhanced surveillance systems to rapidly detect biological threats. We will be testing a system, called RSVP, that was developed by Sandia National Labs in New Mexico. The pilot will take place at local Kaiser facilities.

With the assistance of city governments and OES, we have now identified alternative treatment sites in each city. These sites would be used if the need for treatment or prophylaxis overwhelms traditional health care delivery sites. According to the level of emergency need, the county has between 20 and 127 pre-designated alternative treatment sites.

By working with the County's Information Services Department we have considerably increased our ability with communicate to local health care providers and the public. We have upgraded our phone system to be able to handle large volumes of incoming calls. Medical alerts will be dispatched through an enhanced broadcast fax capability. Staff

have been trained to be able to post updated public information quickly on the County's Public Health web site.

We have done some initial development of training material and some initial training of local medical providers, local law enforcement and fire personnel. These trainings have given these responders the basic information they need to identify and respond to a biological or chemical event. Most of these occurred in the late Fall of 2001. More training sessions are planned.

Conclusion

This report has attempted to provide context about the state of our Public Health preparedness by describing the Public Health role and responsibilities in disaster response, the unique aspects of bioterrorism preparedness, the means by which federal funds will support needed capacity enhancements, and local accomplishments in these areas during the past year.

Since September 11th, we have found ourselves in new circumstances which demand our full and immediate attention. We cannot afford to be blithely ignorant of these new threats. Public Health has been moved into the role of first responder in addition to all of its other tasks. Public Health, and the systems with which it interacts, must adapt to that new role. In addition, because of the nature of the threat, I believe that we must become more self-reliant than we ever thought necessary. We have a lot of work to do.

Education and training are large parts of our task. We have to ensure appropriate education and training for key Public Health professionals, and medical, fire, and law enforcement personnel. Planning is another large part. Response to a WMD event requires unprecedented cooperation and coordination between systems that aren't properly coordinated now and to a degree that is not yet well appreciated by the vast majority. Joint planning, at a level never before envisioned, will have to take place and all systems that provide emergency response resources must become cognizant of the differences WMD events --- particularly biological attacks --- entail, and incorporate this information into overall planning efforts.

San Mateo County currently does not have the basic Public Health capacity required by the CDC. Fortunately, we have a rare opportunity to improve the state of Public Health infrastructure and the capacity of Public Health to respond with homeland defense funds. This funding allows us to achieve a significant capacity increase, but it is insufficient to allow us to fully meet the critical capacities. The federal money, spent appropriately, will assist us in becoming better prepared to deal with a WMD event, and it will provide an enhanced level of safety and security for our community. Unfortunately, it will not take us to the level of preparedness that we need to reach. As we move through the planning and assessment process, our current weaknesses will become clear. A complete updated preparedness report will be presented to the Board next summer. That report will more fully quantify gaps and make recommendations on addressing them.