



The Forums Institute for Public Policy

**Domestic Preparedness in the
Age of Terrorism:**
The Roles of Public Health
and Emergency Response Systems

Background Information for...

THE NEW JERSEY POLICY FORUM

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ISSUE: *Bioterrorism and public health preparedness involve governmental and private sector entities at all levels in their efforts to protect the public's health and safety. Current and new federal and state funding for bioterrorism preparedness offers an opportunity to develop public health infrastructure and to support activities related to preparedness. How will New Jersey address the challenges of coordinating and organizing preparedness activities among its public health and public safety systems?*

INTRODUCTION

In the field of psychology, the Cassandra Complex refers to the condition of being able to “tell the future” accurately and consistently and just as consistently being disbelieved. For those researchers, scientists, public health and emergency services personnel who have a history of practicing in the field of public health and preparedness, the Cassandra Complex is all too familiar. They have long held the critical importance of supporting and developing a public health infrastructure – through funding and personnel – in order to assure a level of preparedness among the public health, medical, public safety and emergency response agencies. As summarized by Dr. Michael McGinnis, senior vice president and Health Group director at The Robert Wood Johnson Foundation, the public health system on national, state and local levels has been compromised by years of inadequate funding, training and staffing: “The enhanced complexity of the challenge has led to a public health system that is in a very precariously perched position” (*Advances*, Issue 1, 2002).

With an eerie sense of foreshadowing, Dr. Donald A. Henderson, who was named head of the new Office of Public Health Preparedness¹ at the federal Department of Health and Human Services, testified at a Senate Foreign Relations Committee meeting on September 6, 2001 that: “There is, as yet, no comprehensive national plan, nor an agreed strategy, for dealing with the problem of biological weapons. There is little inter-agency coordination at the federal level and nationally funded programs appear to be as often competitive as cooperative” (Southwick, 2001).

Bioterrorism and public health preparedness involve government at all levels – federal, state and local – represented by a broad range of functions and authority. Fragmentation and lack of coordination between and among these entities is a common emerg-

ing theme when their administrative structure and operational capacity are evaluated. In many ways, states play a crucial role as “middlemen,” bridging the resources and needs of federal and local agencies. At this time, while states finalize their bioterrorism and public health preparedness plans to the federal government, their role in establishing programs and procedures and allocating funds among state agencies and local public health agencies becomes all the more critical. New Jersey's decentralized public health system – with its large number of local public health agencies and departments – and the significant variations among them in operations, funding, staffing and communications needs – makes the development and implementation of coordinated preparedness strategies even more critical.

BIOTERRORISM – THREATS AND RESPONSES

The recent anthrax attacks underscored our country's vulnerability to bioterrorism and the critical importance of preparedness issues for public policymakers on national, state and local levels (Broad and Petersen, 2001). The anthrax contamination – from post offices in New Jersey to the Hart Senate Building in Washington, D.C., to a personal residence in Connecticut – revealed a sophisticated skill in both preparation and dissemination of the spores, and resulted in an aggressive bioterrorist equation. Through these recent experiences medical and public health practitioners have learned that medical management of inhalation anthrax required a very steep learning curve and that little was initially understood about the disease and its containment and management.² It has become clear that the availability of materials and laboratory equipment, along with advances in biotechnology, allow for relatively easy access to biological agents to terrorists, both in the U.S. and abroad. Regarding the serious need for research in the field of bioterrorism, Dr. William L.





Roper, dean of the School of Public Health at the University of North Carolina, Chapel Hill and a former Director at the CDC, points out the although there is a well-trained community of scientists studying infectious diseases, it has only been recently that their studies of infectious diseases focused on the issue of terrorism (Southwick, 2002).

President George W. Bush, in statements made during fall 2001, has introduced several measures to strengthen the force and authority of the Biological and Toxin Weapons Convention (BTWC), including a move to enact “strict national criminal legislation against prohibited BW (biological weapons) activities with strong extradition requirements” (U.S. Department of State, 2001). The BTWC is global in nature; in 1972, the United Nations negotiated the BTWC (promulgated in 1975), a legally binding treaty prohibiting biological weapons. Although the BTWC bans an entire class of weapons, it does not carry any enforcing or monitoring measures (Kadlec et al, 1997).³ At present, international efforts are focused on developing enforcement measures for the BTWC (ibid).

PUBLIC HEALTH AND PREPAREDNESS – GENERAL ISSUES

There is general agreement among experts that the role of public health vis-a-vis preparedness must be strengthened and developed in several basic areas:

- The training and education of workforce;
- The capacity of public health laboratories;
- Epidemiology and surveillance;
- Information and data systems to communicate, analyze and interpret health data;
- Communications systems among agencies and the public;⁴
- A framework for coordination and collaboration;
- Policy and evaluation.⁵

“Preparedness for the possibility of bioterrorism, outbreaks of infectious disease, hazardous waste disaster, climate changes and nuclear waste – among other threats – is compromised without a coordinated approach and communications system equal to task” (New Jersey Public Health CARE, 2001 *Report to The Robert Wood Johnson Foundation*). Each type of attack requires a distinct level of preparedness and rapid response mechanisms and requires the collaboration and coordination of multi-

ple individuals, teams and agencies. For example, first responders in an attack of bioterrorism would include epidemiologists, infectious disease specialists, emergency room staff and public health agencies. In the case of a chemical attack, first responders would include fire, police, hazardous materials (HAZMAT) teams and emergency medical technicians. Strongin (2001) makes the point that while a chemical attack would be “instantly obvious,” a biologic attack could take days or weeks to become apparent.

“Public health bioterrorism response plans must be integrated with other response plans and include mechanisms for sharing resources and personnel as needed (Johns Hopkins Center for Civilian Biodefense Strategies, 2002). Surveillance and monitoring through public health agencies are critical for identifying patterns of disease syndromes. The capacity of local public health agencies to report unusual disease events 24/7 and to have appropriately trained disease investigation staff available for immediate deployment is another critical element for preparedness. Communication systems between and among public health agencies, municipal leaders and emergency response personnel are significant aspects of agency infrastructure that also need evaluation and strengthening.

THE ROLE OF PUBLIC HEALTH AND PREPAREDNESS

The first line of health system defense in a terrorism outbreak will be hospital emergency room personnel, including physicians and nurses, and epidemiologists. In the absence of appropriate education and training, these front line workers may be unable to identify the initial symptoms of a disease agent; each misdiagnosed case compounds the spread and intensity of the infectious agent. The backbone of the response is in the public health laboratories and the public health epidemiologists who are able to ascertain causes and identify responsive protocols. Experts in the field focus on the critical need to bridge communication gaps between primary care physicians and public health agencies.

The components of a coordinated surveillance, monitoring, reporting and disease containment plan in the event of a bioterrorist attack are complex and riddled with potential “gaps.” Lessons learned in both “mock” bioterrorism exercises and recent fall 2001 events include: confusion regarding the roles





of various authorities and decision-making processes; stresses on hospital capacity; inadequate lines of communication between and among front-line agencies; and overall insufficient resources (Inglesby, 2001; Texas Institute for Health Policy Research, *Issue Brief*, 2001).

In another recent “mock” terrorist exercise – “Dark Winter” – a smallpox attack was staged to test the capacity of the health care and emergency preparedness systems (O’Toole and Inglesby, 2001). Completed in June 2001, the Dark Winter exercise highlighted several weak links in the preparedness grid, including that federal and state priorities may be unclear, may differ or may even be in conflict with each other. The exercise found that there is vulnerability regarding access to sufficient amounts of vaccine as well as the fact that the health care system lacks both surge capacity to handle such an outbreak as well as a rapid response public health infrastructure (ibid).

Emergency response also requires the strengthening and appropriate expansion of the national pharmaceutical stockpile of vaccines and medications and a stronger research base to improve environmental detectors. Some policy experts agree that the long-term commitment to biodefense research and development requires the joint efforts of the federal Departments of Defense and Health and Human Services.

SYSTEMIC ISSUES IN PUBLIC HEALTH – FUNDING

Americans spend an estimated \$4,000 per capita each year on personal medical care, compared to an estimated \$44 per capita per year to support population-based public health services. Yet during the past century, health researchers suggest that advances in public health and population-based health services such as immunization, monitoring and research, have added an additional 25 years to our life spans. When asked in a recent interview what is the biggest problem facing the public health system today, Bobbie Berkowitz, director of the Turning Point program,⁶ responded that the entire public health system has only about 1 percent of the federal health funding, yet that system bears the responsibility for preventing disease, promoting health and protecting the environment from health threats for the entire public (*Advances*, Issue 1, 2002).

On the issue of public health funding, the 2000 In-

stitute of the Future report found that “At all levels of government, but particularly the local level, officials are hamstrung by limited funding...Although states have been given considerable flexibility in their use of block grants, this restrictive funding mechanism has often compromised the ability of local agencies to meet the particular needs of their communities, especially as the grants are not discretionary.” Any systematic or sustained funding of public health infrastructure – from either federal, state or local sources – has been absent. Federal funding for bioterrorism preparedness offers an exceptional opportunity to make long-term investment in various elements of infrastructure. The roles of state and local public health agencies have never been more critical than during the past year.

PREPAREDNESS ON THE FEDERAL LEVEL

Policy analysts, researchers and pundits have long debated the capacity of the public health system to monitor and respond to emerging threats to the public’s health. In 1999, Ellen Gordon, former President of the National Emergency Management Association (NEMA) and Director of the state of Iowa’s Division of Emergency Management testified before a U.S. House Subcommittee that the public health system preparedness and readiness to respond to a terrorist incident of weapons of mass destruction was “well behind fire and emergency services organizations” (NCSL, 2002). Gordon listed reasons for these preparedness disparities including:

- Lack of coordination with the National Domestic Preparedness Office;
- Lack of coordination with the Department of Justice;
- Lack of coordination with the Federal Emergency Management Agency (FEMA);
- Inadequate funding for state and local preparedness activities;
- Poor or little training for local public health and hospital personnel in providing services as a first responder.

The U.S. General Accounting Office in its September 2001 report *Bioterrorism: Federal Research and Preparedness Activities* points out the limitations of a system comprised of over 40 federal departments and agencies that have some role in combating terrorism. Not only is there the significant challenge of coordinating activities, but there is also the fact





of competitions for funding among some agencies and divisions. Some of the major federal departments and agencies that play a significant role include the Departments of Health and Human Services, Justice, Commerce, Energy, Defense, Veterans Affairs, Environmental Protection and the Federal Emergency Management Agency. Within the federal Department of Health and Human Services (HHS) alone, agencies working on BT include the following:

Primary Focus on Research Activities

- The Agency for Healthcare Research and Quality (AHRQ)
- The Food and Drug Administration (FDA)
- The National Institutes of Health (NIH)

Primary Focus on Preparedness Activities

- The Centers for Disease Control (CDC)
- The Office of Emergency Planning (OEP)

The CDC is the lead public health agency providing assistance to state and local governments under the Federal Response Plan. Within CDC, the Bioterrorism Preparedness and Response Program (BPRP) (initiated in 1999) works with expansion of the public health infrastructure at the federal, state and local levels. Several of the CDC-BPRP initiatives include:

- Upgrading capacity
- The Health Alert Network (HAN)
- The National Electronic Disease Surveillance System (NEDSS)
- The National Pharmaceutical Stockpile Program (NPSP)⁷

HAN is a nationwide, integrated information and communication system for the distribution of health alerts, dissemination of prevention guidelines, distance-learning and other information to defend against bioterrorism. HAN links local health departments to one another and to other emergency preparedness organizations and groups. The NEDSS is designed to rapidly report unusual outbreaks of disease so that trained epidemiologists can investigate to determine if there has been a deliberate pathogen release. The NPSP ensures the availability and rapid deployment of life-saving pharmaceuticals, antidotes, other medical supplies and equipment necessary to counter the effects of biological and chemical agents (National Association of County and City Health Officials, 2002; www.naccho.org).

The National Laboratory System is a demonstration program funded by CDC. Its research focus is on public health threats related to bioterrorism, food-borne diseases and emerging infectious diseases (Strongin, 2001). A partnership system that brings together DHSS, the Department of Defense, the Federal Emergency Management Agency and the Department of Veterans Affairs is the National Disaster Medical System. The system is put in place to provide medical response, patient evacuation and medical care for mass casualty incidents (ibid).

FEDERAL ACTIVITIES

As expected, a primary focus for the nation's 107th Congress is terrorism. According to the National Governors' Association, in the aftermath of September 11 ten bills and joint resolutions have been signed into law and close to 200 other bills have been introduced. The House has announced the formation of a "Working Group on Terrorism" to be chaired by U.S. Rep. Saxby Chambliss (R-GA).⁸ The Public Health Threat and Emergency Act of 2000 designated \$1.4 billion on public health preparedness.

Through the federal HHS Department, \$1.1 billion in funding is available to states for bioterrorism preparedness. The funding aims to help state and local officials strengthen their capacity to respond to bioterrorism and other public health emergencies resulting from terrorism. According to HSS, funds will be used to build effective and responsive public health systems through the design of comprehensive bioterrorism preparedness plans, the upgrading of infectious disease surveillance and investigation, the enhancement of the readiness of hospital systems, the expansion of public health laboratory and communications capacities and the improvement of connectivity between hospitals and city, local and state health departments to enhance disease reporting (HHS *News Release*, January 31, 2002). The funds come from the \$2.9 billion bioterrorism appropriations bill signed into law on January 10, 2002, by President Bush.

President Bush's FY 2003 budget proposes \$5.9 billion for improvements in the nation's public health system. This total includes \$591 million to enhance preparedness at the nation's hospitals to respond to activities of biological or chemical terrorism. The figure represents a 284 percent increase over the amount funded in 2002 (HHS *News*, Febru-





ary 5, 2002). The President's budget also includes an additional \$100 million for bioterrorism training for health care professionals, poison control centers and emergency medical services for children. The package includes \$60 million for bioterrorism-related education and training for physicians, nurses and other health care professionals, \$21 million to support the states' poison control centers and \$19 million to help prepare emergency medical services systems to meet the special needs of children in a bioterrorism incident.

In related bioterrorism funding support, \$20 million for FY 2002 from HHS is for a nationwide network of Centers for Public Health Preparedness. The Centers initiative was started in September 2000, when the CDC partnered with the Association of Schools of Public Health, state and local public health agencies and other academic and community partners to begin development of a national system. The goal of the Centers network development is to enhance bioterrorism preparedness and to strengthen the nation's public health infrastructure, which has long been under-funded and fragmented. New York City's Center for Public Health Preparedness, which is a collaboration between Columbia University's Mailman School of Public Health and the New York City Health Department aided in the deployment of 800 public health nurses (who had just received training in preparedness by the Center in August 2001) to manage NYC shelters in the aftermath of the September 11 terrorist attacks (*HHS News*, February 5, 2002). At present there are 15 centers throughout the country to be funded under HHS' 2002 bioterrorism initiatives (www.phppo.cdc.gov).

STATE-LEVEL ACTIVITIES – A BRIEF OVERVIEW

“Most state and local public health agencies are not fully prepared to serve as the first line of defense against terrorism and other public health threats. Many systems lack some of the key components – including strong state and local health departments, highly trained professionals, sophisticated disease monitoring and reporting systems, up-to-date laboratories, electronic information systems to communicate rapidly with other emergency responders, resources to treat victims (such as adequate medicines and vaccines) and tools to prevent the spread of disease (such as the ability to isolate or contain contagious people) – identified as necessary to respond adequately to natural or man-made

threats” (Dietrich, et al, 2002). In a 2001 survey of directors of public health departments in cities of 100,000 people or more conducted by Mathematica Policy Research, the directors gave themselves a ranking of 35 (out of 100) when asked to rate their capacity to fulfill essential public health functions (Satel, 2001).

According to the National Conference of State Legislatures' Health Policy Tracking Service, ten states have introduced legislation based on recommendations of the CDC's “Model State Emergency Health Powers Act.”⁹ The model act provides specific emergency powers to state governors and public health authorities in order to respond to public health risks. For the 2002 session, at least 29 states have established public health preparedness as a legislative priority (NCSL, 2002). Although supporters of the Act believe it is needed to update and clarify current public health laws that differ widely among the states, others are concerned that several provisions of the Model Act could violate individual rights to autonomy and privacy (Cubanski and Schauffler, 2002)

NEW JERSEY – THE PRIORITY OF DOMESTIC SECURITY

The state of New Jersey, its civic leaders and citizens were deeply affected not only by the terrorist attacks at the World Trade Center and the lives lost in the airplanes that crashed in the attacks, but also with the anthrax “hot spots” in New Jersey's post offices. In the days and weeks following these major tragedies, the state's emergency services, public safety and public health teams were challenged by reports of suspicious packages, deliveries and activities. With the state's emergency response and public health resources severely compromised by their round-the-clock responsibilities related to the terrorism, each threat – real or perceived as such – added another stress point to an already-stressed system. As was learned over the years in terrorism exercises, mass casualties and emergencies quickly overload the response system. The state's leadership has begun to address and implement counter-terrorism measures. For example, on April 12, 2002, Governor McGreevey and New York Governor Pataki announced a bi-state initiative to increase security measures at area airports, working through the Port Authority of New York and New Jersey.





The Office of Counter-Terrorism in Governor McGreevey's Office is responsible for administering, coordinating and leading New Jersey's counter-terrorism and preparedness efforts. In January 2002, Kathryn Flicker was appointed Assistant Attorney General for Counter-Terrorism; in this role, Flicker will work in partnership with federal, state and local law enforcement agencies, as well as business and industry leaders to identify and implement security plans and policies (www.state.nj.us; Governor's Office *Press Release*, January 24, 2002). The state Office of Counter-Terrorism also serves as a liaison with the Federal Homeland Security Council. Recently, the Homeland Security Advisory System was announced by Tom Ridge as a way to provide a comprehensive and effective means to disseminate information regarding the risk of terrorist attacks to federal, state and local governments, private industry and the public. The advisory system characterizes appropriate levels of vigilance, preparedness and readiness in a series of graduated, color-coded "Threat Conditions."

During the New Jersey state legislature's 2000-2001 session, the New Jersey Domestic Security Preparedness Act was passed (P.L. 2001,c.246; N.J.S.A. App. A.9-64 et seq.) The Act establishes a program of laboratory services in the Department of Health and Senior Services to detect and analyze biological and chemical agents that may be or have been used in the commission of terroristic acts or any other technological disaster. Under the Act, the state appropriated \$8,950,000, which includes:

- \$2.7 million for the New Jersey state police to equip a counter-terrorism unit;
- \$2 million to fund, train and equip a domestic emergency response team in the Department of Military and Veterans Affairs;
- \$1.8 million to fund the program of laboratory services;
- \$1.45 million to fund a program of disease surveillance and epidemiological investigation;
- \$1 million for emergency medical services (EMS).

New Jersey's nine-member Domestic Security and Preparedness Task Force reports directly to the Governor and was created by the New Jersey Domestic Security Preparedness Act (signed into law October 4, 2001). The Task Force has as its charge to develop recommendations on the most effective ways to prevent and fight terrorism, including:

- Strengthening public safety partnerships at all levels;
- Increasing training and standards for intelligence and security personnel;
- Providing the necessary manpower to protect the state's health, safety and economic infrastructure such as airports, roadways, power plants and water and sewer facilities;
- Maximizing financial resources to prevent and fight terrorism – local, state, federal and private support.

The Johns Hopkins Center for Civilian Biodefense Strategies, in offering guidelines for bioterrorism preparedness and response, stresses the importance of identifying existing gaps in linkages, coordination of response and communications among hospitals, public health agencies and emergency response workers. The Center's guidelines also advise that transportation plans be agreed upon with municipal leaders that facilitate movement of emergency vehicles, entrance to and egress from hospitals and care centers, and rapid deployment of essential health care workers from their homes and off-site locations to primary hospital and health care sites. Regarding communications, guidelines focus on the requirement that primary and back-up communications systems be put in place to insure that civil authorities can contact key medical, public health and emergency response workers at all times in the event of a public health emergency (www.hopkins-biodefense.org).

NEW JERSEY, PUBLIC HEALTH AND PREPAREDNESS

In speaking at a CDC regional meeting on public health preparedness in 2001, New Jersey Department of Health and Senior Services Senior Assistant Commissioner Jim Blumenstock offered a profile of New Jersey that included:

- Population of 8,414,350
- The most densely populated state in the U.S. (1,134 per square mile)
- Situated in the midst of the Northeast Corridor
- Home to Newark International Airport, the busiest airport in the tristate area (31 million travelers per year)
- Major shipping yards and ports of entry (5000 vessels per year)





- Highly industrialized with 90 of the nation's 100 largest companies
- Three nuclear generating stations
- Active military bases
- Performing arts and sports venues

The facts and numbers illustrate the challenges of protecting the public's health and safety throughout the state. New Jersey's public health policymakers have focused efforts on planning for the possibility of a biological terrorism attack and improving collective response capacity and strategies. In 1999, the New Jersey Department of Health and Senior Services (DHSS) received a \$1 million, one-year grant (that has been renewed annually) from the CDC to strengthen the state's overall public health system in its ability to respond to public health threats. The funds are targeted in three areas:

1. Expanding surveillance systems;
2. Creating a 24-hour-a-day rapid communication system linking all levels of government, the health care community and emergency response personnel;
3. Expanding laboratory capacity to test for biological agents that may be used in a terrorist attack.

FEDERAL BIOTERRORISM ALLOCATIONS TO NEW JERSEY - 2002

According to funding allocations established by the federal Department of Health and Human Services, New Jersey's bioterrorism allocations are as follows:¹⁰

<i>Federal DHHS Bioterrorism Allocations for New Jersey</i>	
CDC First BT Allocation (20%)	\$4,745,522
CDC Second BT Allocation (80%)	\$18,986,089
CDC BT Total	\$23,732,611
HRSA Hospital First Allocation (20%)	\$701,954
HRSA Hospital Second Allocation (80%)	\$2,807,815
HRSA Hospital Total	\$3,509,769

Source: www.hhs.gov. 2002

State plans for the federal bioterrorism funding were due by April 15, 2002. The funding for states and communities is divided into three parts:

- The first portion is through the Centers for Disease Control (CDC) and is targeted to support bioterrorism, infectious diseases and public health emergency preparedness activities statewide. Each state's allocation will consist of a \$5 million base award, supplemented by an additional amount based on its share of the total US population;
- The second portion of funding will be provided through the Health Resources and Services Administration (HRSA) and will be used by states to create regional hospital plans to respond in the event of a bioterrorism attack. Funds will be allocated using a formula similar to that of the CDC's;
- The third portion of funding will be provided by the federal HHS' Office of Emergency Preparedness (OEP) to support the Metropolitan Medical Response System (MMRS). MMRS funding will add 25 new cities to those locations that have received funding in the past. MMRS contracts are aimed at improving local jurisdictions' ability to respond to the possible release of a chemical or biological disease agent. Since 1999, with MMRS, funding 97 cities have developed systems that integrate local emergency response systems, including local public health departments, law enforcement agencies and medical care providers.

Federal legislation designated Newark as one of 120 cities in the U.S. vulnerable to bioterrorist attack. New Jersey's efforts related to active disease and surveillance are conducted state-wide, but particular focus has been on the city of Newark, and Bergen and Middlesex counties. According to the federal HHS, the New Jersey cities of Jersey City and Newark, New Jersey, received funding from the Office of Emergency Preparedness for Metropolitan Emergency Bioterrorism Preparedness (FY 1997 through FY 2001) (www.hhs.gov).

New Jersey's Public Health and Environmental Laboratories (PHEL) have been expanded and upgraded since 1999 in order to make possible rapid and accurate diagnostic testing for disease organisms, such as those causing anthrax and plague. The capital plan for the PHEL includes renovation of a 1,500 square foot Biocontainment Suite and completion of a program, feasibility study and business plan for a new laboratory complex.





Included in Governor McGreevey's FY 2003 budget proposal is an appropriation of \$25 million to fund a series of recommendations issued by the Medical Emergency and Disaster Prevention and Response Expert Panel (MEDPREP) to:

- Establish an incident command structure to respond more effectively to emergencies and disasters;
- Provide necessary training to healthcare workforce on the clinical diagnosis and management of those exposed;
- Purchase and distribute antibiotics, antidotes and personal protective and decontamination equipment;
- Support necessary drills and training exercises;
- Expand laboratory testing capacity;
- Provide surge capacity testing and backup services and inventory statewide mental health programs. (New Jersey Hospital Association, March 26, 2002).

NEW JERSEY – PUBLIC HEALTH INFRASTRUCTURE

The state of New Jersey is one of 17 states that operates a decentralized public health system where authority and direct responsibility for many public health functions are set at the local level. New Jersey's governmental local public health system has more than 500 local boards of health, 115 local health agencies and 2500 local governmental public health professionals responsible for directly providing or contracting for public health services. Such an independently operating system does not facilitate the levels of coordination and integration of service delivery that is required in the new environmental demands of sophisticated monitoring, surveillance and rapid response and reporting. According to New Jersey policy experts, the goal of obtaining a consistent and reliable picture of public health in general and of public health financing in particular is compromised by the parameters of its administrative and operational structure and by the variety of accounting structures among different localities.¹¹

Nowhere is the need for consistent and coordinated delivery system as critical as the local governmental level. In their comprehensive analysis of New Jersey's local public health system, Freund and Liu (2000) found that the organizational structure of local health is primarily municipal (45.2 percent) or

contractural (37.4 percent). Yet county health departments (14 departments, or 12.2 percent of local public health providers) serve more of the state's population (40.2 percent) than any other group (1998). Over half (58.8 percent) of the local health departments in New Jersey had annual budgets of less than \$500,000 and almost three-quarters of them (73.5 percent) administered their operations on annual budgets that totaled less than \$1 million (ibid). The staff size of local health agencies in New Jersey ranges from 1 FTE to over 300 FTE's.

NEW JERSEY – PUBLIC HEALTH FUNDING

In New Jersey, the largest proportion of public health services is funded by local taxes and other revenues (75 percent). The remaining portion is funded by federal and state monies, including Public Health Priority Funding (PHPF). State PHPF is available to local health agencies serving a minimum population of 25,000. PHPF state funding supports priority health services delivered by local health agencies. State law at N.J.S.A. 26:2F-6.1 sets forth a formula upon which funding amounts are based for each of the state's 566 municipalities. PHPF levels of funding have ranged between \$3 to \$4 million for several years. For 2002, eligible local health departments will receive \$4.1 million in PHPF, with funding ranging from approximately \$2000 for some jurisdictions to over \$300,000 for those municipalities with great need. (See, www.state.nj.us/health.)

Public health financing in New Jersey may be broken down as follows:

- Approximately 3 percent of all health financing comprises the public health budget;
- Of that percentage, an estimated 2.1 percent support the delivery of medical services;
- Less than 1 percent of the state's health dollars support essential public health activities.

Limitations in New Jersey's public health infrastructure and funding include:

- The disproportionate "gap" between funding for personal health care vs. funding for the 10 essential public health services;¹²
- The problems related to the fact that categorical funding drives program services;
- The difficulty in obtaining a reliable and





consistent picture of public health financing, which in turn is compromised by:

- Variations and differences in administrative structures and in accounting operations among local agencies.

WORKFORCE ISSUES

In 1998, a survey reported that there were 2,240 FTE's in local health agencies. A Health Research and Services Administration (HRSA) report in 2000 on Public Health Workforce Enumeration found New Jersey in the lower third of states in ratio of public health workers to the state population.

In the January 7, 2002 *New Jersey Register* the state DHSS proposed new rules – N.J.A.C. 8:52, Public Health Practice Standards of Performance for Local Boards of Health in New Jersey – at 34, N.J.R. 241. The substance of the rules, which were introduced after an extensive analysis and writing process which involved input from the leading public health groups and associations, mayors and municipal leaders in the state, provide for moving the local boards of health to a systems-based set of practice standards modeled after the National Public Health Performance Standards Program.

The Practice standards support the ten essential public health services and build on the strengths of local public health agencies to create county-wide systems for health profiling, assessment and improvement planning, specialized regional expertise and capacity, and the regionalization of resources of the state's 115 local public health departments. The plan provides for the development of roles and responsibilities for each local health agency based upon a community needs assessment and determines priorities of those needs with available resources. It also enables local health agencies to form partnerships to impact health outcomes and to improve the health of local populations (34 N.J.R. 241). In order to gauge continuous quality improvement and monitor the effectiveness of the changes proposed under the new rules, the state DHSS will phase different components of the new rules over a four-year period.

The state of Maryland, for example, in its efforts to regionalize public health activities, will establish six new regional Rapid Response Teams to respond to and effectively assess major emergencies. The state will focus on three key areas: timely exchange of

information; coordination of security and prevention efforts, and review and update of emergency response plans (Black, 2001).

Jurisdictional issues became part of lessons learned in states at the epicenter of the recent terrorist attacks. The National Association of County and City Health Officials report on bioterrorism and local public health case examples. Dr. Michael Richardson, Senior Deputy Director of the Washington, D.C. Department of Health, discussed the major jurisdictional and authority issues that had to be overcome because D.C. sits in a metropolitan area where four jurisdictions affect it. In New Jersey, several municipalities experienced the same issues concerning whether or not state or municipal police had authority over the response to a terrorist incident. Washington, D.C. public health officials also found that surge capacity is difficult to manage at the local level. Regarding communication of risk to the public, public health officials from Florida, Washington, D.C. and Nevada all agreed that more than one method of communicating with the general public is critical (NACCHO, 2001). Also critical is the implementation of a 24-hour resource center where the public can communicate directly with a health care professional about symptoms and concerns.

In addition to funding made available to local health agencies under the auspices of the Public Health Priority Funding Act (N.J.S.A. 26:2F), the state DHSS is providing state categorical funding to build capacity through the distribution of \$480,000 in e-public health and \$1,261,300 in tobacco settlement monies. The \$480,000 is being used to build information technology capacity and to improve connectivity between LINC'S agency computer systems and the Department's statewide LINC'S-HAN (Local Information Network Communications System-Health Alert Network) network to allow LINC'S agencies to share information within their organizations, with other local health agencies, physicians, hospitals and with other community organizations. In the future the LINC'S network will support data access, reporting, active surveillance and rapid response to public health threats. The \$1,261,300 is being used to enhance tobacco control activities in a county-wide or city area with LINC'S agencies as the grantee responsible for coordinating the local health agencies response.

Federal funds are another mechanism that New Jersey's health department will be exploring to support the building of the local governmental public health infrastructure. The state DHSS has already secured





funding for this purpose in its Federal "Public Health Preparedness and Response for Bioterrorism," and "Epidemiology and Laboratory Capacity for Infectious Diseases" grants. In addition, the Department anticipates that the efforts undertaken to develop the proposed new rules, will make New Jersey an attractive candidate for federal funds through the "Public Health Threats and Emergencies Act," should these funds become available.

Three current New Jersey Senate and Assembly Bills related to preparedness are:

- A-830 Conaway, Jr., H.C. (D-7) and Connors, J (D-7) – Establishes the New Jersey Public Health Emergency Study Commission. The bill was referred to the Assembly Health and Human Services Committee on January 8, 2002.
- A-1715 DiGaetano, P. (R-36) – Appropriates \$3.8 million under the "Public Health Preparedness Act." On February 4, 2002, the bill was referred to the Assembly Health and Human Services Committee.
- A-2188 Caraballo, W. (D-29) – Authorizes the Commissioner of Health and Senior Services to reallocate pharmaceutical supplies among hospitals and nursing homes in a public health emergency to ensure an adequate supply.

- The reporting of suspicious cases of illnesses, disease clusters and atypical patterns of hospital use to public health authorities;
- The routine evaluating of quantities of pharmaceutical and antibiotic supplies;
- The development of sophisticated and reliable internal and external lines of communication and collaborative strategies with other hospitals, public health authorities, public safety personnel, public health authorities and key preparedness resources, including the state epidemiologist, the laboratories and the CDC.

Emergency room capacity issues have implications for surge capacity events related to threats of bioterrorism and/or mass casualties. Hospital emergency rooms throughout the country are challenged by a substantial increase in patient volumes in emergency rooms. In New Jersey, during the five-year period from 1995 to 1999, the annual number of emergency room visits increased from 2.5 million to 2.7 million. In addition to the increase in patients, the emergency rooms are experiencing a shortage of available in-patient beds in other areas of the hospitals, which causes a "logjam" of patients in the emergency room (Birritteri, 2002). Factors such as the shortage of nurses have reduced the number of hospital beds that can actually be used to handle incoming patients. Several New Jersey hospitals are addressing the issue by expanding emergency room facilities and nurse recruitment strategies, as well as exploring information technology to map the flow of patients and open beds.

PREPAREDNESS AND THE ROLES OF HOSPITAL AND EMERGENCY ROOM CARE

During the past decade, hospitals throughout the county have been affected by overall changes in the health care financing and delivery system. Hospitals have been affected by shifts in types and levels of reimbursement at both the public and private sector levels and have re-aligned resources in areas such as emergency room capacity and laboratories as a result of managed care. The American Hospital Association, in November 2001, estimated that hospitals would need over \$11.3 billion to prepare for a major nuclear, biological or chemical attack (*AHA News*, 2001). Hospitals are also in need of infrastructure improvements including infectious disease containment systems (*HHS News*, 2002). Such preparations include the education and training of front line medical staff to assure that they are aware of the need for the following:

CONCLUDING REMARKS

Most experts agree that the collective and coordinated response at all levels of government is necessary to defend against bioterrorism and other threats to public safety. It is equally important to establish clarification and definition of appropriate roles and responsibilities among federal, state, local and private entities in order to remedy fragmentation and duplication of efforts.

States, however, are especially challenged by planning, coordinating and policy-making decisions related to preparedness. New Jersey and most other states are currently confronted by massive budget shortfalls and the funding and resource issues that flow from them. The process of developing infra-





structure and mobilizing resources for preparedness and emergency response in order to protect the public's health and safety is complex and requires bal-

ancing sometimes equally compelling – but competing – concerns, and is a work in progress.

ENDNOTES

- ¹ The Federal Department of Health & Human Services created the Office of Public Health Preparedness in November 2001 to coordinate a national response to public health emergencies.
- ² Reference is made to two National Health Policy Forum *Issue Briefs* on the subject by Strongin (2001) and Salinsky (2002), which focus respectively on bioterrorism and preparedness; and the role and status of the public health infrastructure.
- ³ Iraq and the Soviet Union are among several countries that covertly developed and increased their biological weapons programs.
- ⁴ Recent experiences related to the anthrax contamination have also pointed out the importance of communication linkage among public health experts, governmental authorities and the media in order to effectively inform the public about risk and emerging public health threats.
- ⁵ Dr. Jeffrey P. Koplan, Director, Centers for Disease Control and Protection, elaborated on each of these points speaking for a Public Health Training Network Broadcast sponsored by ASTHO, in partnership with HHS, CDC, HRSA and FDA (2002).
- ⁶ *Turning Point: Collaborating for a New Century in Public Health* is a national program office of The Robert Wood Johnson Foundation. Dr. Berkowitz is director of the program which brings technical assistance to local public health departments and other agencies. The Foundation also funds the *State Health Leadership Initiative*, which has its national program office at the National Governors' Association Center for Best Practices. The Leadership Initiative works to develop the leadership capacity of state health officers in their administrative and policymaking positions.
- ⁷ Reference is made to the National Pharmaceutical Stockpile Program Fact Sheet at www.bt.cdc.gov/DocumentsApp/NationalStockpile/NationalStockpile.asp.
- ⁸ The National Governors' Association website (www.nga.gov) is a resource for tracking federal legislative initiatives on terrorism and preparedness.
- ⁹ The ten states are: California, Illinois, Kentucky, Minnesota, Missouri, Nebraska, New York, Pennsylvania, Tennessee and Utah, as of February 2002.
- ¹⁰ This federal Public Health Infrastructure Funding will come in two parts: the first 20 percent for initial planning and response and the remaining 80 percent after the plan is submitted.
- ¹¹ Reference is made to NJ Policy Forum *Issue Brief* on New Jersey Public Health Financing, 2000, for a detailed analysis of public health system structure and funding.
- ¹² The ten essential public health services are:
 1. Monitor health status to identify and solve community health problems.
 2. Diagnose and investigate health problems and health hazards in the community.
 3. Inform, educate, and empower people about health issues.
 4. Mobilize community partnerships and action to identify and solve health problems.
 5. Develop policies and plans that support individual and community health efforts..
 6. Enforce laws and regulations that protect health and ensure safety.
 7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
 8. Assure a competent public health and personal health care workforce.
 9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
 10. Research for new insights and innovative solutions to health problems.





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