Health Care at the Crossroads

Strategies for Creating and Sustaining Community-wide Emergency Preparedness Systems

Joint Commission
on Accreditation of Healthcare Organizations

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Joint Commission Public Policy Initiative

This white paper is the second work product of the Joint Commission's new Public Policy Initiative. Launched in 2001, this initiative seeks to address broad issues that have the potential to seriously undermine the provision of safe, high-quality health care and, indeed, the health of the American people. These are issues which demand the attention and engagement of multiple publics if successful resolution is to be achieved.

For each of the identified public policy issues, the Joint Commission already has state-of-the-art standards in place. However, simple application of these standards, and other unidimensional efforts, will leave this country far short of its health care goals and objectives. Thus, this paper does not describe new Joint Commission requirements for health care organizations, nor even suggest that new requirements will be forthcoming in the future.

Rather, the Joint Commission has devised a public policy action plan that involves the gathering of information and multiple perspectives on the issue; formulation of comprehensive solutions; and assignment of accountabilities for these solutions. The execution of this plan includes the convening of roundtable discussions and national symposia, the issuance of this white paper, and active pursuit of the suggested recommendations.

This paper is a call to action for those who influence, develop or carry out policies that will lead the way to resolution of the issue. This is specifically in furtherance of the Joint Commission's stated mission to improve the safety and quality of health care provided to the public.

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Preamble

It does not take long for complacency to settle in. Eighteen months after the September 11, 2001 attacks and the subsequent, insidious, selected and deliberate dispersion of anthrax spores, there are clear signs that the focus of American attention has long since moved on. The sense of urgency to prepare has now become a wait-and-see sense. Vigilance eventually gives way to ambiguity. Indeed, the two occasions during the past six months in which the national terrorism level has been raised to Orange (high threat) have generally provoked public mysticism as to what individuals should do to prepare. This confused state of non-readiness is what terrorists lay in wait for. And, the world in which we carry out our daily lives can change in an instant.

This is not our world as we once knew it. It is no longer sufficient to develop disaster plans and dust them off if a threat appears imminent. Rather, a system of preparedness across communities must be in place everyday. Such systems make effective responses to emergencies possible, and they also serve as deterrents to actual attacks. And, they are needed – whatever the level of our sense of security – to facilitate the management of crises that seem to be becoming everyday occurrences.

The concept of community-wide preparedness systems is new to most health care organizations. While most have long prepared and tested disaster plans, health care organizations have operated in isolation, and their disaster plans reflect this mindset.

But now, in the face of an atrophied public health infrastructure and lack of leadership and coordination among other emergency preparedness constituencies, hospitals and other health care organizations are being asked to step up their level of emergency preparedness involvement. This unfortunately is occurring at a time when many of those entities face severe resource constraints and may not always be able to manage current day-to-day patient care demands.

At a recent national symposium on emergency preparedness, Jerome Hauer, acting assistant secretary of the Office of Public Health Emergency Preparedness of the Department of Health and Human Services (DHHS), remarking on the strong likelihood of another terrorist attack in the near future, said, "At the end of the day, it is medical care that will be needed." But if medical care capacity is already in variable and sometimes scarce supply, planning for unexpected surges in demand becomes all the more critical. So, too, does funding and federal leadership for these efforts.

The purpose of this report is to frame the issues that must be addressed in developing community-wide preparedness and to delineate federal and state responsibilities for eliminating barriers, and for facilitating and sustaining — through leadership, funding and other resource deployment – community-based emergency preparedness across the United States.

Introduction

On the day that America experienced its worst violation at the hands of terrorists, the many "first responders" involved in rescuing, treating and protecting the thousands of people who were victimized, or had the potential to be, valiantly performed their jobs. But for many, their efforts were futile in the face of such enormous destruction. Emergency medical personnel and health care workers from nearby and far away were drawn to these scenes of destruction to lend their support and expertise. Hospitals in the vicinity of the World Trade Center, despite being overwhelmed by power outages, disabled telecommunications, and the rush of the injured and those fleeing the smoke-choked streets for shelter, were nevertheless able to summon a response.

And then, while the country was still reeling from the September 11 attack, a different kind of attack, this time with a biological agent, anthrax, unfolded in Florida, New York, New Jersey, Washington D.C. and Connecticut. These disasters, wrought by terrorism, rapidly focused the nation's attention on national security – the need to protect American ideals and resources, and most fundamentally, the very safety and health of the American people. Both for America's leaders and for this nation's communities, this compelling new, or newly apparent, priority brought into sharp relief fundamental new needs for emergency preparedness that would call for leadership and coordination at the community level, which did not then, and largely does not now, exist.

This does not gainsay the continuing extraordinary efforts of the three public safety agencies that this country has long relied on – law enforcement, fire and rescue, and emergency medical services. Nor does it ignore the sometimes heroic efforts of underfunded public health agencies and health care provider organizations in managing extremely challenging situations. But in most communities there is no team, nor teamwork, among all of these players and other municipal and county leaders. And, there is no community emergency preparedness plan, nor program, nor system.

While the cast of emergency preparedness players in a given community can lengthen rapidly, there is no denying the central role that hospitals can and must play in these efforts. However, these are difficult and occasionally overwhelming times for hospitals, even without this expanded responsibility. In fact, many hospitals are struggling to meet the daily demands for their health care services.

It is no longer sufficient to develop disaster plans and dust them off if a threat appears imminent. Rather, a system of preparedness across communities must be in place everyday.

As a matter of public policy, this country has purposefully shrunk the installed capacity of its health care delivery system over the past two decades. This has translated into the closure of many hospitals and even more emergency departments, despite the escalating demands for services. In addition, many hospitals now are experiencing severe shortages of nurses and other essential health care personnel. This is further reducing the capacity of these hospitals to deliver care, including emergency care. Today's hard reality is that hospital emergency departments across the country are overcrowded and, even absent any external disaster, likely to be diverting patients on any given day.

Adding to these problems are sky-high liability insurance premiums for physicians that are limiting the availability of critical specialists in certain jurisdictions. Further, most states in the country, with strapped budgets, are reducing the numbers of people on their Medicaid rolls.[1] Medicare too is threatening more cuts in hospital reimbursement[2] and the numbers of uninsured are on the rise.[3] All of these factors promise to further undermine the ability of hospitals to meet the routine, let alone the extraordinary, needs of their communities.

Add to this brewing cataclysm the need for "surge capacity" – the ability to care for perhaps hundreds to thousands more patients at a given time – in hospitals already full, already stressed, and already searching for more resources to provide care, and the challenge of preparedness becomes even more daunting.

Since the Fall 2001 terrorism attacks, there has been a flurry of activity focused on the preparation of emergency preparedness plans. The emphasis on plans substantially understates what are really needed – emergency preparedness programs. According to a recent report, "Preparedness at home plays a critical role in combating terrorism by reducing its appeal as an effective means of warfare."[4] However, this level of preparedness implies a tightly knit system among the key emergency preparedness participants that simply does not exist in most communities today. "All emergencies are local" is a truism that conveys the responsibility of the community to plan, prepare and respond to an emergency. But as this paper points out, that truism is today far more a call to action than a reality. This paper is a call to action for federal and state governments as well, for weaving the tightly knit system of preparedness also takes resources, leadership and guidance.

Since the events of September 11 and the subsequent anthrax attacks, the federal government has stepped forward to fund the rehabilitation of the public health system, and to a significantly lesser extent, the preparedness efforts of the nation's hospitals. However, although the federal plan enlisted state governments to allocate federal funds to their hospitals well over a year ago, the money has not yet reached hospitals and some local public health agencies. There unfortunately is an oft-repeated refrain of money not making it from Washington to the trenches where it is needed.[5] The money may eventually make it, but the funds are a small sum in comparison to what is actually needed.[6]

In addition to the disputes and confusion over meeting what remains today for many hospitals, an unfunded mandate, hospitals and their communities are struggling to know how to get started. There is a fundamental need for templates or scalable models of community-wide preparedness to guide planning before, and actions taken during and after, an emergency. Several nascent templates are emerging; however, there are none yet that present evidence-based models which are likely to be adaptable to the varied urban, suburban and sparsely populated communities that make up the United States.

Given the urgency for community-based emergency preparedness and the obvious barriers to achieving this goal across the country, the Joint Commission convened an expert Public Policy Roundtable to discuss emergency preparedness issues and to frame specific recommendations, fulfillment of which would permit achievement of a level of preparedness that could truly offer protection and assurances to the American public. Among the specific issues addressed by the Roundtable were the resources and requirements for community-based response systems; the need for collaboration between the medical care and public health establishments, as well as other new partnerships that must be forged; issues of accountability and mechanisms for validating readiness; and the appropriate roles of federal and state governments.

In addition to the disputes and confusion over meeting what remains today for many hospitals, an unfunded mandate, hospitals and their communities are struggling to know how to get started.

Based on those discussions, the following recommendations are proposed:

I. Enlist the community in preparing the local response

- Initiate and facilitate the development of community-based emergency preparedness programs across the country.
- Constitute community organizations that comprise all of the key participants – as appropriate to the community – to develop the community-wide emergency preparedness program.
- Encourage the transition of community health care resources from an organization-focused approach to emergency preparedness to one that encompasses the community.
- Provide the community organization with necessary funding and other resources and hold it accountable for overseeing the planning, assessment and maintenance of the preparedness program.
- Encourage the pursuit of substantive collaborative activities that will also serve to bridge the gap between the medical care and public health systems.
- Develop and distribute emergency planning and preparedness templates for potential adaptation by various types of communities.

II. Focus on the key aspects of the preparedness system that will preserve the ability of community health care resources to care for patients, protect staff and serve the public.

- Prospectively define point-in-time and longitudinal surge capacity at the community level.
- Establish mutual aid agreements among community hospitals and other health care organizations.
- Ensure a 48-72 hour stand-alone capability through the appropriate stockpiling of necessary medications and supplies.
- Fund and facilitate the creation of a credentialing database to support a national emergency volunteer system for health care professionals.
- Make direct caregivers the highest priority for training and for receipt of protective equipment, vaccinations, prophylactic antibiotics, chemical antidotes, and other protective measures.
- Support the provision of decontamination capabilities in each hospital.
- Maintain the ability to provide routine care.
- Make provision for the graceful degradation of care.
- Provide for waiver of regulatory requirements under conditions of extreme emergency.

- Adopt incident management approaches that provide for simultaneous management involvement by multiple authorities and fluidity of authority.
- Make provisions for accommodating and managing the substantial acute mental health needs of the community.
- Directly address the fear created by terrorist acts through targeted education, application of risk reduction strategies and the teaching of coping skills.
- Provide public education about emergency preparedness.
- Actively engage the public in emergency preparedness planning.
- Anticipate the information needs of the community.
- Create redundant, interoperable communications capabilities.
- Develop a centralized community-wide patient locator system.
- Engage the mass media in the emergency preparedness planning process.
- Regularly test, at least yearly, community emergency preparedness plans through reality-based drills.
- Assure the inclusion of all community emergency preparedness program participants in the plan tests.

III. Establish accountabilities, oversight, leadership and sustainment of community preparedness systems

- Develop and implement objective evaluation methods for assessing the substance and effectiveness of local emergency preparedness plans.
- Provide funding at the local level for emergency preparedness planning.
- Explore alternative options for providing sustained funding for hospital emergency preparedness activities.
- Initiate and fund public-private sector partnerships that are charged to conduct research on and develop relevant, scalable templates for emergency preparedness plans that will meet local community needs.
- Disseminate information about existing best practices and lessons learned respecting existing emergency preparedness initiatives.
- Clarify the applications of EMTALA, HIPAA, EPA and other regulatory requirements in emergency situations.
- Coordinate domestic and international emergency preparedness efforts.

This paper provides supporting documentation for its conclusions, describes specific recommendations, and assigns accountabilities for carrying out these recommendations.

I. Enlist the Community in Preparing the Local Response

A New Context for Disaster Planning

The Joint Commission has long required accredited organizations to create disaster plans and to test them at least twice a year. For many organizations, these requirements have often seemed like "make-work." Only in those communities where actual disasters have struck has all of the actual preparation appeared to have been worth it. But the events of September 11, 2001 have created a new world for America's communities and a new context for disaster preparedness for health care organizations.

Almost propitiously, the Joint Commission had -- during 2000 -- been working to upgrade and reframe its traditional disaster preparedness standards into an expanded community-based emergency management framework. These new requirements were introduced in January 2001. The urgency to move these new requirements forward had resulted from a series of conversations with senior military and health care officials.

The expanded framework of expectations now in place seeks to transition hospitals and other health care organizations from an organization-focused mindset of disaster preparedness to one that encompasses the entire community and its resources. The planning process is expected to systematically address the full range of potential disasters – including terrorism -- identified through a "hazard vulnerability assessment," that is conducted in collaboration with the organization's community. The standards also require that organizations define an internal command structure that links with the community command structure. A final new requirement, stemming from the 2001 Houston flood experience and the September 11 experience, requires the health care organizations in the community to work cooperatively to create a mutual aid context for planning and response efforts.

Underlying the new Joint Commission standards is the fact that, in an emergency situation, health care provider organizations must work with each other and with other public safety and support entities to manage the casualties that have occurred and to minimize the risk of additional casualties. Managing a mass casualty or bioterrorism situation is no job for a single provider organization.

Managing a mass casualty or bioterrorism situation is no job for a single provider organization. This is, in fact, the responsibility of "the community" – an as yet ill-defined composite that, at a minimum, includes emergency medical services, fire, police, the public health system, local municipalities and government authorities, and local hospitals and other health care organizations.

This is, in fact, the responsibility of "the community" – an as yet ill-defined composite that, at a minimum, includes emergency medical services, fire, police, the public health system, local municipalities and government authorities, and local hospitals and other health care organizations. Emergency planning must be local – that is, based in the community – because almost all disasters and mass casualty situations are local. The sobering reality is that many communities will be on their own for the first 24-72 hours after such an event.

Enlisting the Community

There thus exists a fundamental need to formalize an organization of community resources. That organization should comprise those authorities, agencies, providers, industries and other vital community elements that are critical to mounting an effective emergency response and protecting the community. This new "community organization" must then have the authority, and with this, both the necessary funding and accountability for planning, assessing and maintaining community-wide emergency preparedness -- in effect, making the plan a program. Further, the program that is brought to life must have an ongoing reality, one in which the participants become familiar with their respective roles and a capabilities because they are working and interacting with each other on a regular basis. Such operational preparedness programs need not be theoretical. Among the obvious opportunities for ongoing collaborative efforts are community-wide health promotion and disease prevention activities, management of disease outbreaks, and intervention in community-wide emergency department overcrowding situations.

Community-wide emergency preparedness programs do exist, and some are quite elaborate. However, they are few in number, and almost all exist is large metropolitan areas. By contrast, most of America's communities are "waiting for someone to call the meeting."

Creating a detailed emergency preparedness plan, or program, particularly in the face of uncertain resource support is – to be sure – a daunting challenge. Indeed, planning templates that might serve as reference points for inexperienced project leaders are virtually non-existent. And the challenge is heightened still further by the fact that the core participants are in many ways strangers to each other, and each, by virtue of their unique responsibilities, is used to being "in control."

Yet, the planning process – the building of the relationships that will become the program – is a fundamental exercise in give-and-take. This is indeed a process in which primacy and control are relinquished to create a greater good. The new give-and-take relationships also set the stage for the management of actual disasters. Such management is almost always situational. That is, the nature of the situation dictates the command structure and who will be "in control."

Community-wide preparedness also has its pragmatic virtues, particularly in optimizing the deployment of available resources. For example, communication and collaboration among local hospitals make it much less likely that multiple hospitals will be depending on the same community resources for their own emergency planning purposes.

The potential response capability may in fact be called upon to expand in relation to the reach of the devastation brought by a catastrophic event. Such an event may cross multiple jurisdictions, necessitating a broader coordinated response among community-based emergency preparedness programs. However, the effectiveness of a broad response cannot be fully realized unless the basic community programs are first put in place.

Forging New Partnerships

Some of the partnerships that must be forged face long-standing historical obstacles. There, for example, exists a long-standing gulf between medical care and public health. These two health care sectors have never had an effective working relationship.[7] One focuses on the care of the individual, the other on the health of the population. Their funding sources reflect these differing orientations – medical care is dependent of private funding; public health on public funding. But these old divisions must be bridged in order to ensure an integrated emergency response – in order to create a tightly woven preparedness system. Some of the ways in which the medical care and public health sectors can and should begin to collaborate are in developing health surveillance systems, in facilitating inter-organizational communication systems, and in the training of care providers to recognize signs and symptoms of exposure to chemical, biological or radiological agents.

There have also been frictions, of varying degree, between fire and police, between emergency management agencies and public health agencies, between emergency medical services and hospitals, and between city and county government authorities, among others. But these frictions can and must be overtaken by a new partnership mentality, and additional partners need to become engaged.

Tactics	Accountability
• Initiate and facilitate the development of community-based emergency preparedness programs across the country	➔ emergency management agencies ➔ hospitals ➔ public health agencies

There are now encouraging indications that this is beginning to happen. For example, since September 11, the military have been involved in training civilian health care personnel and in participating in hospital emergency drills.[8] And, in New York City, city and state public health agencies, hospitals, emergency medical services, city emergency management officials, and others have established new working relationships that undergird a state-of-the-art preparedness system.

An Exemplary Effort

In the aftermath of the terrorism attacks in New York City, the Greater New York Hospital Association (GNYHA) has taken a leadership role in forging a cross-disciplinary, cross-jurisdictional partnership among responding authorities, agencies and providers. In creating the Emergency Preparedness Coordinating Council, the GNYHA has helped its member organizations -- and local, state and federal public health and emergency management agencies -- to become better prepared, and able to offer an integrated response to a disaster.[9] According to the GNYHA, many of the initiatives that the Emergency Preparedness Coordinating Council has spearheaded have focused on the collection of data -- before, during and after an emergency – that are critical to waging an effective response and recovery. Among these initiatives, the Council has developed an emergency contacts directory to improve communications among key personnel across responding organizations and agencies. The Council has also facilitated the implementation of syndromic surveillance systems at both the state and local levels. In addition, the Council has aided the New York State Department of Health in the development of a Web-based capacity-monitoring system to gauge bed and supply availability, and staffing levels at area hospitals. The Web-based system also collects patient information to serve as a patient locator system in the event of a mass casualty event.

Taking the lessons learned from the World Trade Center disaster and the subsequent anthrax attacks, the GNYHA and its Emergency Preparedness Coordinating Council have focused on helping local health care organizations and public safety agencies to improve upon those response elements that went wrong. For instance, telecommunications capabilities in the vicinity of Ground Zero were lost. To ensure effective communications in the event of another disaster, the Council has worked with the Office of Emergency Management (OEM) to purchase and distribute 800 Megahertz radios, and has established a dedicated channel for health care organizations to communicate with one another and with OEM. The Council has also taken a prominent role in informing and educating health care personnel in the detection of and response to biological, chemical and nuclear events.

Lessons Learned

The events of September 11 were instantly recognizable as disasters, and each prompted immediate action by all first-responders. In New York, calls went out across the city, the state, and surrounding states for hospitals to ready for victims. But some emergencies are not readily apparent. Rather, they unfold over days or weeks. The anthrax attack in the fall of 2001 was just such an emergency, and it raised important issues of cross-disciplinary and cross-jurisdictional coordination and authority as the impact of the attack unfolded.

Letters mailed in October of 2001 that contained highly virulent, weaponized anthrax constituted the first bioterrorism attack in this country to which the Centers for Disease Control and Prevention (CDC) had to respond.[10] A total of 22 confirmed or suspected cases of anthrax infection --11 inhalational, which led to five deaths, and 11 cutaneous cases – resulted from the anthrax attack.[11] While the investigation into the perpetrator of the "anthrax letters" remains open, the public health response and medical care for those affected are now a case history of lessons learned.

Tactics	Accountability
• Constitute a community organization that comprises local government officials, emergency management officials, public health authorities, health care organizations, police, fire, public works (e.g. water, electricity), emergency medical services, local industry leaders, and other key participants – as appropriate to the community – to develop the community-wide emergency preparedness program	➔ community organization participants
• Encourage the transition of community health care institutions from an organization-focused approach to emergency preparedness to one that encompasses the community	➔ community organization
• Provide the community organization with necessary funding and other resources and hold it accountable for overseeing the planning, assessment and maintenance of the preparedness program	➔ federal and state government agencies

The first challenge in responding to the anthrax attack was in making the initial diagnosis. Few clinicians have presence-of-mind awareness of the signs and symptoms of bioterrorism agents, such as anthrax, smallpox, and plague. In fact, in a recent study of preparedness among family physicians for bioterrorism, only one-quarter of those surveyed felt prepared, and still fewer, 17 percent, reported that their local medical communities could respond effectively.[12] However, prior training in bioterrorism was a significant positive factor in the responses of physicians who perceived themselves to be ready to respond to an attack.[13]

The first diagnosis of anthrax in the 2001 attack was made by an astute physician who suspected the disease; the confirmation was subsequently made by a laboratory worker who had undergone bioterrorism preparedness training. But the general unfamiliarity of medical professionals with bio-agents contributed to the misdiagnosis and delayed treatment for two other infected patients, both postal workers from the Brentwood postal facility in Washington, D.C., who sought medical attention for their severe flu-like symptoms.[15]

In addition to the fatal delays in diagnosis, there were significant breakdowns in communications across health care disciplines and public health authorities in the anthrax attack response. In particular, the ability or willingness of the public health system to communicate and work with the medical care system arose as an issue. When the first case of inhalational anthrax in a Brentwood postal worker was preliminarily diagnosed at a D.C.-area hospital and reported to public health officials, these officials, doubting the diagnosis[16], did not immediately act to notify other area hospitals. At an early evening news conference the following day, officials "played down" the patient's condition, saying it was "unconfirmed."[17] Potentially important opportunities for screening emergency department visitors were lost across the D.C. area.

Emergency preparedness is already a way of life in some countries; it needs to be woven into the fabric of American life to a much greater extent than it is today.

Aside from local grass roots efforts, there was no infrastructure in affected areas that would have made it possible for vital clinical information to be shared in an emergency situation across the medical care community, or between public health authorities and practicing clinicians. Stories were told about physicians, even in prominent teaching hospitals, having to get their medical information from CNN during the height of the crisis.[18]

The communications failure between and among public health officials and the medical community, and the limited base of expert information among those providing critical advice, had a tragic impact on postal workers in Washington D.C.'s Brentwood postal facility who were repeatedly reassured that no risk of anthrax contamination was posed to them.[19] Two eventually died from inhalational anthrax.

In New Jersey, the health commissioner decided to ignore CDC recommendations and administer prophylaxis to all postal workers at two Trenton-area postal facilities.[20]

The Hart Senate Office Building was closed, as were other Senate office buildings, and, even briefly, the House of Representatives, until the risk of anthrax exposure had been clarified.

Until credible, standardized bioterrorism response protocols are established and widely disseminated, the risk of promulgation of conflicting information and diversity in responses will continue to exist. This fundamental missing link could eventually undermine the public trust in the limited infrastructure now in place.

Getting There

Americans, their families, and their community institutions increasingly tend to lead insular existences, but insularity is the antithesis of what will be needed to create emergency preparedness programs across America's communities. Emergency preparedness is already a way of life in some countries; it needs to be woven into the fabric of American life to a much greater extent than it is today.

Tactics	Accountability
• Encourage the pursuit of substantive collaborative activities that will also serve to bridge the gap between the medical care and public health systems	→ health care and public health membership organizations → federal government agencies
• Develop and distribute emergency planning and preparedness templates for potential adaptation by various types of communities	→ federal and state government agencies

What needs to be done?

First, someone does need to call the first meeting, to bring the parties together. The participants will vary by community, but the logical conveners are relatively few: the local emergency management agency, the local public health agency, and/or the local hospital(s). In small, sparsely populated communities, the hospital may be the only logical convener.

Second, community planning templates need to be developed and disseminated. The disaster-based experience that is needed to develop meaningful templates is, fortunately, limited in this country, but available knowledge from experiences in the United States and elsewhere needs to be harvested and translated into scalable models that lend themselves to ready adaptation by communities of various types. Emergency preparedness plans that are created out of whole cloth are unlikely to offer comprehensive protection for a community.

Third, emergency preparedness at the community level takes resources, especially money. Despite the ballyhooed billions of federal dollars being poured into terrorism prevention and preparedness efforts, very few of these dollars are making their way down to the local community level. The funding allocated to public health is highly appropriate, but at the planned funding levels will only restore most public health departments to a baseline functional state. Meanwhile, most hospitals, which are required by the Joint Commission to be engaged in emergency planning and preparedness activities, have yet to see their first nickel of federal terrorism preparedness funds. Over time, the emergency preparedness engine simply cannot run without fuel.

One might well ask whether such an extensive community-preparedness effort, and the funding and other resources required to support such an effort, are really necessary or justified. Today, the perceived terrorism vulnerabilities are clearly focused on the country's major metropolitan areas. Nevertheless, it is well to remember that the primary objective of terrorism is to create fear. Little imagination is required to understand the potential psychological impacts on the populace of even a few selected terrorism attacks on typical small towns across America.

Recommendations

Tactics	Accountability
• Initiate and facilitate the development of community-based emergency preparedness programs across the country	➔ municipalities ➔ emergency management agencies ➔ hospitals ➔ public health agencies
• Constitute a community organization that comprises local government officials, emergency management officials, public health authorities, health care organizations, police, fire, public works (e.g. water, electricity), emergency medical services, local industry leaders, and other key participants – as appropriate to the community – to develop the community-wide emergency preparedness program	➔ community organization participants
• Encourage the transition of community health care institutions from an organization-focused approach to emergency preparedness to one that encompasses the community	➔ community organization
• Provide the community organization with necessary funding and other resources and hold it accountable for overseeing the planning, assessment and maintenance of the preparedness program	➔ federal and state government agencies
• Encourage the pursuit of substantive collaborative activities that will also serve to bridge the gap between the medical care and public health systems	➔ health care and public health membership organizations ➔ federal government agencies
• Develop and distribute emergency planning and preparedness templates for potential adaptation by various types of communities	➔ federal and state government agencies

II. Focus on the key aspects of the preparedness system that will preserve the ability of community health care organizations to care for patients, protect staff and serve the public.

Preparedness Priorities

Developing a community-based preparedness program requires forethought of a wide variety of issues that could determine the outcome of a response. These include education of first responders, provider organization staff, and the public; creation of redundant, reliable communication systems; definition of roles and responsibilities among responders; definition of available human, equipment and supply resources; and incident management and coordination, among others. Among these are a series of truly critical elements of the preparedness system that are integral to the ability of a community to successfully mount an effective response. These are elaborated upon below.

1. Define Surge Capacity

Surge capacity – the ability to expand care capabilities in response to sudden or more prolonged demand – is perhaps the most fundamental component of an emergency preparedness program. Surge capacity encompasses potential patient beds; available space in which patients may be triaged, managed, vaccinated, decontaminated, or simply located; available personnel of all types; necessary medications, supplies and equipment; and even the legal capacity to deliver health care under situations which exceed authorized capacity. Surge capacity has both point-in-time and longitudinal dimensions, and these differ from each other. That is, capacity that can be mobilized for a time-limited period to accommodate the needs emanating from an acute disaster will eventually be needed by patients having more "routine" care requirements such as surgical procedures, cancer chemotherapy, or the delivery of a child. Thus, the capacity needed to manage longer-term disasters, e.g., a biological attack, may eventually be in direct competition with the ongoing care needed by the people in the community.

It is important that surge capacity – both in its point-in-time and longitudinal dimensions – be prospectively determined as part of the emergency planning process. There is also a basic need to define an agreed-upon set of units, or measures, of surge capacity at the federal level or, at the very least, at the state level. Such definition is essential to the communication of needs within and across communities.

Current Capacity

The American Hospital Association (AHA) reports that there are 900 fewer hospitals today than there were in 1980.[21] Through the 1980s and 1990s, the expansion of managed care and increasingly stringent federal reimbursement policies progressively leveraged hospitals to close and consolidate, and to reduce overall capacity in an effort to create greater efficiencies in the delivery system. Today, with the aging of society and the corresponding increase in patient acuity, many hospitals are now challenged to meet a typical day's demand for their services.

As a reflection of this challenge, hospital emergency departments in many cities are frequently overcrowded and likely to be diverting ambulances on any given day. According to a recent AHA survey, 62 percent of all hospitals and 79 percent of urban hospitals are at or over emergency department (ED) capacity.[22] More than half of urban hospitals report that they have been on "diversion" – diverting ambulances – for a portion of time.[23]

Overcrowded emergency departments are a clear and visible symptom of a destabilized health care environment, and raise clear and compelling questions as to whether any real surge capacity exists in these communities. The underlying causes of this problem are well known -- inadequate numbers of hospital beds, limited access to primary care, unavailability of physician specialists, and major shortages of other key clinical personnel, especially nurses.

In many communities, accurate, standardized measurement of bed capacity has become an immediate need. Available hospital bed capacity is typically determined through a daily midnight census of occupied inpatient beds. Measuring bed capacity in this way fails to account for the inflow and outflow

Tactics	Accountability
Surge Capacity	
• Determine standardized, universal measures of surge capacity.	➔ federal and state government agencies ➔ community organization
• Prospectively define point-in-time and longitudinal surge capacity at the community level	➔ community organization
• Identify latent space and human resources capacities	➔ community organization
• Establish mutual aid agreements among community hospitals and other health care organizations	➔ health care organizations ➔ community organization
• Ensure a 48-72 hour stand-alone capability through the appropriate stockpiling of necessary medications and supplies	➔ health care organizations ➔ community organization
• Standardize equipment, supplies and medication doses to facilitate the provision of safe, efficient care	➔ health care organizations ➔ pharmaceutical companies ➔ community organization
• Fund and facilitate the creation of a credentialing database to support a national emergency volunteer system for health care professionals.	➔ federal government

occurring throughout the hospital all day long and almost certainly overestimates available capacity. The Agency for Healthcare Research and Quality has embarked on a study to determine useful, relevant measures that can predict the imminent onset of emergency department overcrowding. Overcrowding in most or all of a community's emergency departments which results in widespread ambulance diversions is, one could argue, itself a community disaster which should cause activation of the community's emergency preparedness plan.

Too Few Caregivers

A severe shortage of nurses is already compromising access to health care services today,[24] and a potential shortage of more than 400,000 nurses is projected by 2020.[25] Given this reality, it is unclear how additional nursing services can be made available in the face of a natural or terrorist disaster.

Several major initiatives are underway to attract potential nurses into health care. Most notable among these is the recently enacted, but only modestly funded thus far, Nursing Reinvestment Act. This Act contemplates support both for nursing school faculty and for aspiring students, and provides for nurse recruitment campaigns. However, the long-term impacts of these initiatives are difficult to gauge. DHHS Secretary Tommy Thompson recently called for more robust funding for the Nurse Reinvestment Act, and also the Nursing Reserve Corps. – a roster of volunteer nurses who may be deployed to a disaster site or mass vaccination clinic if and when such needs arise. However, the actual availability of these nurses during a disaster remains uncertain. Depending on the extent of the disaster or the occurrence of concurrent disasters, many of these nurses may be needed in their own communities. Even absent a local disaster, provider organizations in a given community may not be able to release volunteer nurses from their staffs without compromising their own care capabilities.

In addition to the shortage of nurses, there are acute shortages of pharmacists, laboratory technicians, respiratory therapists, and, increasingly, physicians.

A planned source of surge capacity in the event of a disaster is the National Disaster Medical System (NDMS). NDMS is administered by the Office of Emergency Response (OER), which will transition from DHHS to the Department of Homeland Security in March 2003. NDMS teams include nearly 8,000 volunteer health care professionals from around the country who have been organized into general and specialty teams to help local communities respond to a disaster.

In many communities, accurate, standardized measurement of bed capacity has become an immediate need.

There are currently 27 primary care teams who can, under ideal circumstances, respond to an emergency call within 12 to 24 hours. Four teams specialize in responding to an incident caused by a chemical or bioterrorism attack. There are also burn teams, mental health teams and disaster mortuary teams that can assist in a mass casualty event. But for the same reasons that a threshold number of nurses may not be available to travel to a disaster, neither may the health care workers who comprise the NDMS teams.

Truly adding to the capacity of available personnel in a disaster or emergency response may necessitate drawing upon medical, nursing and allied health students. DHHS is also encouraging health care organizations to consider retired physicians and nurses in their personnel surge capacity planning.[26] Finally, there is also a clear role for the lay public in caring for themselves or family members in the face of a disaster. Even today, 70-90 percent of routine care is being provided by family members or other non-professional caregivers.[27] While the lay caregiver role certainly has its limitations, an educated public is an important potential resource.

At the same time, a disaster must not become a disorganized free-for-all for well-intended, would-be caregivers. In the immediate aftermath of the September 11 events, physicians and nurses came to the disaster sites and nearby hospitals from near and far to offer their services. But nobody knew who they were. Had their services been needed, there was no existing mechanism to document their knowledge, skills, and experience – i.e., their credentials. Nor was there any way to objectively catalogue the special competencies that were then on-site and those that were still needed.

The subsequently enacted Public Health Security Act includes a provision for the creation of a national emergency volunteer system for health care professionals. However, DHHS has not yet funded this initiative. The events of September 11 dramatize the urgency for moving this project forward. A national credentialing system built upon a common technology platform and using consensus credentialing standards would also provide rapid access to information on volunteer clinicians – both in the planning process and during an actual event.

Space and Supplies

Space is a further critical consideration in defining and developing surge capacity. Space needs are defined in large measure by the uses for which the space might be deployed. Such uses include a wide range of potential activities which should be catalogued and addressed in the emergency preparedness plan. Among the diverse potential needs for space are triage, decontamination, mass vaccination, temporary mortuary, counseling, and patient care. In some instances, temporary expansion of hospital capacity will be most appropriate, e.g., through converting single patient rooms to doubles, and use of cafeteria, meeting room and office space. In other cases, nursing homes, clinics,

rehabilitation centers, and surgery centers will be appropriate to the needs. And in still other instances, hotels, closed hospitals, armories, auditoriums and similar facilities can be utilized. Finally, caring for people in their own homes is an important source of surge capacity, and may be a particularly attractive alternative in the event of a biological attack with an infectious agent. Fully cataloging space options is also particularly important in light of the distinct possibility that hospitals and other organized settings of care may themselves become disaster casualties.

As important as the need for identifying space options, is the need to assure the availability of adequate reserves of medications, equipment and other supplies. While immediate outside support may be forthcoming, a given community may be on its own for hours to days following a disaster.

By way of example, although a "push pack" is promised within 12 hours of request, pharmaceutical supplies from the Strategic National Stockpile (SNS) may take up to 48 hours to reach the locations in which they are needed. DHHS suggests that hospitals maintain enough antibiotics on hand to supply hospital staff, first responders and patients for the first 48 hours of an emergency. Distribution of the SNS supplies also requires that there be local capacity to quickly unload, transport and administer the drugs across the affected region.

There is finally an important need to standardize equipment and supplies to the extent possible. With the potential for enlisting volunteer medical personnel or borrowing staff from other hospitals in the region, such standardization will reduce the likelihood of errors and untoward events and facilitate the provision of care. Examples include standardizing switches, dials and gauges on oxygen equipment, and standardizing packaged doses of pharmaceuticals.

2. Preserve the Organization -- Protect the Staff

"When I had a chance to look outside the command center, I saw all the doctors and nurses watching and waiting," said Mary Thompson, the incident commander and chief operating officer at Bellevue Hospital in Manhattan, following the September 11 attack on the World Trade Center.[28] "I realized if there was a biological component to this attack, they would all be contaminated. If that had been the case, I would have had to call all new surgeons."[29]

Despite their eagerness to respond, health care workers face real risks in doing so. Staff members need to be trained and be provided proper equipment to reduce the risk of an unsafe response – to themselves and to the organization.

There are important lessons too be gained from this potential scenario. Sadly, one of those lessons is that there is no "face value" to terrorism. Every event must be regarded with great caution and suspicion – a bomb may be a "dirty bomb," an explosion could be accompanied by a release of the biological agent.

Despite their eagerness to respond, health care workers face real risks in doing so. Staff members need to be trained and be provided proper equipment to reduce the risk of an unsafe response – to themselves and to the organization. These staff must also have the highest priority for prophylactic antibiotics, chemical antidotes, and other practical therapeutic measures.

Each hospital should have a decontamination capability in place to manage workers and patients and to preserve the ability of the organization to provide care. Although there has been some debate as to the need for such a broad-based capability, the practical reality is that the determination of contamination will often not occur until the patient has undergone a screening examination and initial stabilization.

Reducing the risk to caregivers and preserving the capability of the organization to treat patients also underlies current planning regarding smallpox vaccinations. The President has authorized a pre-event vaccination program beginning with the voluntary vaccination of approximately 500,000 first responders and health care workers. A growing number of hospitals have abstained from the pre-event vaccination program, citing the unnecessary risk to health care workers and others from the vaccine in absence of a clear smallpox threat.[30]

The responsibilities of hospitals and other health care organizations to their employees extend beyond physical protection. An emergency response can be as emotionally anguishing as it is physically punishing. The care and support for organization staff must encompass their mental health needs as well. Hence, there is a particular need for sensitivity to personal concerns and obligations when workers, for instance, may be separated from their families and loved ones for long hours and even days. Communications support, attention to child-care needs, provision of transportation alternatives, and even direct on-site personal support can all help to alleviate worker stress. In fact, health care organizations may be well served by gathering information about staff concerns and obligations before an event occurs. For example, sixty-two percent of St. Vincent's Catholic Medical Center's emergency department nurses are spouses or partners of first responders in the New York City region.[31] On September 11, they were asked to perform their duties on a day that must have been both professionally and personally anguishing.

In addition to receiving communications support in reaching family and loved ones, frontline workers need real-time, current information about an event that is in progress. Keeping staff apprised of "what's going on" within the organization and across responding organizations helps them anticipate downstream needs and gain a sense of control over their own environment. In addition, maintaining contact with the "outside world" through the Internet and broadcast media can help staff avoid feelings of detachment.

3. Ensure Care for the "Other" Patients

In a massive disaster, there is the potential that many chronically and acutely ill patients could lose access to their physicians or settings where they usually receive care or obtain medications. This happened in New York City on September 11 when the affected portion of the city was declared a "federal zone," prohibiting entry by unauthorized individuals and vehicles. New York University Downtown Hospital became the home care provider of only choice for the residents of an apartment building across the street when home care agency nurses could not breach the federal zone.[32] Fortunately for these home care patients, a hospital was located across the street.

In order to gain capacity to care for more victims in the wake of an emergency, hospitals may cancel scheduled surgeries and defer other planned diagnostic, therapeutic and rehabilitative activities. This may buy time, but it will not buy long-term capacity. Scheduled surgeries have been scheduled for sound reasons and cannot be delayed indefinitely.

Tactics	Accountability
Direct Caregiver Protection	
• Make direct caregivers the highest priority for training and for receipt of protective equipment, vaccinations, prophylactic antibiotics, chemical antidotes, and other protective measures	➔ health care organizations ➔ community organization
• Provide direct caregiver support to meet mental health and other personal needs	➔ health care organization
• Support the provision of decontamination capabilities in each hospital	➔ federal and state government ➔ hospitals ➔ community organization
• Assure direct caregiver access to current information about the emergency on a continuing basis	➔ health care organizations ➔ community organization

Delivering mothers will still need access to hospital obstetric and neonatal units, cancer patients to radiotherapy units, stroke patients to rehabilitative services, and so on. In the face of the requirement for a sustained response to an emergency, and once every option has been exercised for the transfer and treatment of patients in various settings and at various levels of care, something less than the usual standard of care in the affected community must become acceptable.

Graceful Degradation

Like the electrical utility that plans for "brown-outs" in order to avoid "black-outs,"[33] hospitals and other provider organizations – when stretched beyond their limits, must begin to plan to engineer their failures. The goal of such efforts is to achieve "graceful degradation" of the health care system's care capabilities as opposed to catastrophic failure of its services. Under such scenarios, patients may need to be treated and boarded in hallways. Their privacy will be compromised, but their wounds will still be treated. Care and access to caregivers may even become rationed. The goal of graceful degradation is to avoid having the health system become a victim of the assault – from becoming incapacitated and unable to deliver care of any kind. The hospital, in essence, must engineer its failures – those that it can allow – while maintaining its ability to provide care.

At the same time that graceful degradation of health care services is occurring, the care providers and health care organizations must be exempted from the day-to-day rules of operation and regulations that otherwise would prohibit them from caring for patients in such fashions. Indeed, they must be legally protected from reciprocal actions that may occur, for instance, for violations of privacy or delivery of sub-standard care once a state of emergency has been declared.

Tactics	Accountability
Meeting the Care Needs of All Patients	
• Maintain the ability to provide routine care.	➔ health care professionals ➔ health care organizations ➔ community organization
• Make provisions for the graceful degradation of care in all emergency preparedness plans.	➔ health care organizations ➔ community organization
• Provide for waiver of regulatory requirements and other standards expectations under conditions of extreme emergency.	➔ federal and state government agencies ➔ accrediting bodies

4. Manage the Incident

Often referred to as "command-and-control" or incident command systems, the established authorities that have taken on responsibilities for managing emergency responses have often taken on an unnecessarily militaristic tone.[34] Command and control may, indeed, be necessary, but so to are effective coordination and communication. The basic need is for an integrated response that is managed through either an incident command system or, when circumstances warrant, a unified management approach.

The variability of emergencies and the evolution of responses to them over time necessitate that the incident management system provide for fluidity of authority to adjust to changing needs. These characteristics of emergency management may also require that there be multiple, but unified authorities managing the response. Application of such an incident management system does not preclude others from having authority and responsibility within their domains of expertise or experience. Rather, it assures that there is an emergency management structure in place that is responsible for coordinating resource deployment, sharing vital information, and managing the logistics of an integrated response. The incident management system should also establish the common terminology that community participants in the emergency management program are expected to use, in order to reduce the risk of miscommunications.

Although definitive studies have not been conducted to establish the evidence base for the incident command system approach, it proved to be an integral element of the generally effective responses to the earthquake and fire disasters that have historically beset California, and in the September 11 attacks in New York City and Washington D.C.

The importance of such systems is also emphasized by their absence. During the 2001 anthrax attacks, there was no incident management system of any kind. Nor was there any coordinated response among various authorities within localities or across multiple jurisdictions. So disjointed was the response that differing information was provided by various responsible public health offices as to how to recognize and treat anthrax infections.

Tactics	Accountability
Incident Management • **Adopt incident management approaches that provide for simultaneous management involvement by multiple authorities, and fluidity of authority as a function of the scale and nature of the emergency situation.**	➔ **community organization**

Recognizing the need for a functional conduit of accurate information, the District of Columbia Hospital Association worked with emergency physicians across the National Capital Region to organize daily conference calls that created interfaces among the health care providers, local public health representatives, the D.C. Department of Health, and the CDC.[35]

5. Consider the Threat to Mind, as well as Body

Significant consideration must be given to the psychological effects of a disaster. It is estimated that for every one physical casualty caused by a terrorism incident, there are four to 20 psychological victims.[36] The September 11 attack has been described as a "mental health catastrophe."[37] In just one of the hospitals proximate to the attack in New York City -- St. Vincent's Catholic Medical Center -- staff in the psychiatric department provided counseling and support to more than 7,000 people and received more than 10,000 calls to their help line during the first two weeks following the disaster.[38]

Results of a survey conducted by the RAND Corporation three to five days after the September 11 attack clearly demonstrated that individuals need not be in the vicinity of a catastrophic event to experience substantial event-related stress.[39] With eyes glued to the graphic television coverage across the nation, 90 percent of adults surveyed reported having some symptoms of stress.[40] While 60 percent of those in close proximity to the sites of attack reported high degrees of stress, 36 percent of respondents living more than 1,000 miles away from the World Trade Center also reported substantial stress.[41]

Though initially traumatized, the vast majority, through their own resiliency, will suffer no significant residua;[42] however, some will manifest symptoms of post-traumatic stress disorder (PTSD). Even then, most PTSD sufferers typically recover rapidly.[43] However, in the rare event that PTSD persists, it requires evaluation and treatment.[44] Other trauma-related disorders are more common.[45] These include unexplained physical symptoms, sleep disturbances, increased use of alcohol and cigarettes, and increased family conflict and violence.[46] But, because these symptoms are often associated with the stresses of daily living, they may easily be overlooked and not associated with the traumatic event.[47]

Tactics	Accountability
Mental Health Management • **Make provisions for accommodating and managing the substantial acute mental health needs of the community when a natural or terrorist event occurs.**	➔ **mental health professionals** ➔ **health care organizations** ➔ **community organization**

Psychological victims often also include those involved in treating the physical casualties. In fact, disaster responders, including medical personnel, are a high-risk group for developing trauma-related disorders. In addition to assuring access to personal protective equipment (PPE), vaccination and prophylactic treatments for first responders and frontline health care workers, health care organizations need to direct attention to mitigating the stress-related psychological effects of disaster response on these individuals.

Throughout the duration of the response, responders should be given – even if it must be mandated for some – rest periods. Over-dedication is a risk factor for developing PTSD.[48] Further, care providers should be encouraged to "naturally debrief" – that is to talk with their colleagues, friends and families about their experiences.[49] First responders and other high-risk groups should also be evaluated over time following the disaster to monitor their recovery and detect any signs of an "abnormal response."[50]

The preparedness program should also anticipate and address the "fear factor" inherent in terrorism. The goal of terrorism is, after all, to instill fear and erode society's sense of security. A recent incident in which 250 people were exposed to radioactive material in Goiannia, Brazil illustrates the psychological impact of a terrorizing event. Five thousand of the first 60,000 people who sought medical care after awareness of the incident spread, though unexposed, developed the physical symptoms (rash and nausea) that mimicked those of radiation exposure. All told, 125,000 people sought medical screening for radiological contamination – a 500-to-1 ratio of patients screened to patients exposed.[51]

Fear, though, can be assuaged through targeted education, application of risk-reduction strategies, and the teaching of coping skills.[52]

6. Enlist the Public

While the fear bred by a disaster or terrorist incident may far exceed the deleterious effects of the occurrence itself, it would be unfair to characterize that fear as unreasonable. In the face of real threats to safety and the absence of credible and helpful information, public fear may indeed be reasonable.[53] But, contrary to common perception, widespread panic is rare in response to disasters.[54]

Significant consideration must be given to the psychological effects of a disaster.

Nevertheless, prospective, and later concurrent, education and information sharing is an essential element of strategies to ensure calm and promote constructive behaviors, particularly in the event of an unprecedented attack.[55] A recent report issued by the National Academy of Sciences emphasizes that, in the event of a terrorist incident, it is essential that trusted spokespersons inform the public immediately and with expert authority, to both educate the public and assuage public concerns.[56]

Ideally, the public should be enlisted as a capable, active partner in the preparedness system.[57] An educated public plays a potentially vital role in infectious disease containment and bioterrorism surveillance. When individuals are aware of the signs and symptoms of a suspected biological agent, they are more likely to seek medical attention when it is warranted, and not otherwise unwittingly overwhelm the health system and hinder its ability to care for those most in need. They are also then able to engage in risk reduction activities to help contain an infectious outbreak.

The public may indeed assume even more basic life-saving roles in emergency situations. In a mass casualty event, rescuers and emergency medical services may quickly become overwhelmed. When this has occurred, members of the public have, in fact, saved the majority of victims in the search and rescue phase of a disaster response.[58] Lay individuals may, and often do, become active caregivers when medical resources become thin – visiting the ill in their homes, distributing antibiotics, even conducting epidemiological investigations and outbreak reporting.[59]

It almost goes without saying that the mass media can and should play a central role in conveying information that will permit the general public to optimize their contributions to the emergency response. Civic organizations, professional networks and social groups are also potential conduits for information, as well as resources that can be enlisted to aid in a response effort.[60]

Tactics	Accountability
Public Engagement	
• Provide public education about emergency preparedness	➔ federal and state governments ➔ community organization
• Actively engage the public in emergency preparedness planning	➔ community organization

7. Identify Communication and Information Needs and Meet Them

Information management -- the ability to communicate, what to communicate, to whom and when – lies at the heart of the emergency response. For health care organizations, the information needs of its constituents – the general public, patients and their families, the staff and their families, first responders, the media, community officials, and public health agencies, among others – should be anticipated.

The experiences of September 11 and the subsequent anthrax attacks underscored the criticality of communications in mounting an effective emergency response. In this situation, vulnerabilities in the communications infrastructure quickly surfaced.

Immediately following the World Trade Center attack, telephone lines were down, and cell networks became jammed. New York-area hospitals were deluged by calls from families and friends of the missing who, without a centralized patient locator system, were virtually impossible to find on a real-time basis.

This experience dramatized the need for redundant communications capabilities in emergency situations. Various options for backing up telephone communications exist. These include two-way radios and dedicated channels, wireless personal digital assistants (PDAs), cell phones, satellite phones, pagers, and Internet connectivity and designated Web sites.

Tactics	Accountability
Information Management	
• Anticipate the information needs of community organization participants and the public.	→ community organization
• Create redundant, interoperable communications capabilities.	→ federal and state governments → community organization
• Develop a centralized community-wide patient locator system.	→ community organization
• Prospectively identify trusted spokespersons to communicate with the public in the event of a natural or intentional disaster.	→ community organization
• Engage the mass media in the emergency preparedness planning process and, in the event of an emergency situation, utilize the media to communicate accurate information and helpful instructions.	→ community organization
• Develop an "information stockpile" to support communications activities.	→ community organization

Protocols for using various communications modalities should be pre-determined and consistent across the preparedness system, and all should be inter-operable. A centralized patient locator system, such as that being developed under the leadership of the Greater New York Hospital Association in New York, is another vital communications infrastructure asset.

A critical issue in the analysis of the 2001 anthrax response is the way in which information was – and was not -- managed and communicated. This resulted in a crisis in confidence in the public health system.[61,62,63] Information was not being coordinated among public health agencies involved in the response, nor between public health agencies and the medical community charged with evaluating and treating potential anthrax victims.[64,65,66] Attempts by the authorities managing the response to "spin" the information to reduce perceptions of risk, and perhaps to gloss over errors or a lack of expertise, served to erode public trust.[67]

The identification and use of credible, expert spokespersons to take the lead in communicating with the public, as well as with the medical community, is a key aspect of effective communications and underlies the ability to elicit the desired responses. Sources of scientific and relevant expertise should be prospectively identified to ensure the authenticity of the information being imparted.

The news media can be a critical partner in the dissemination of information, and are logical additional participants in the development of community-based emergency preparedness plans. In any event, it is essential to involve media representatives early in communication and information-sharing processes. Media understanding of the information and the underlying issues offers the greatest prospect for accurate, sensitive, and constructive reporting to the public. The media may also – by default – become the principal initial conduit of clinical information for medical care providers. In this regard, an "information stockpile"[68] of credible information that is available in various formats – public service announcements, brochures, fact sheets, Web communications – should also be developed to support outreach efforts.

The news media can be a critical partner in the dissemination of information, and are logical additional participants in the development of community-based emergency preparedness plans.

8. Test, Learn, Improve and Be Ready

The Joint Commission emergency management standards require each accredited health care organization to conduct drills of its emergency management plan at least twice yearly. While such drills are sometimes viewed as "make-work," they are in fact a critical element of the emergency preparedness process. And as the complexity of the planning process escalates from an individual organization basis to a community base, the need for carefully crafted, full-scale drills in which all of the participants are involved becomes even greater. Further, the drill is more than just an exercise; it is a special opportunity to learn how the preparedness plan and response can be improved. In that regard, it is essential that appropriate metrics for drill evaluation be prospectively identified.

Further, the more realistic the drill is, the better the learning and improvement opportunities will be. Indeed, some have suggested that if a drill is not planned to truly inconvenience the participants and the community – as a real emergency would – then its value is already compromised.[69] At the same time, it bears recognition that mini-emergencies – often occasioned by emergency department overcrowding across communities – are everyday realities in many parts of the country and certainly provide ample justification for activation of basic elements of a community's emergency preparedness plan. Such activation can both help to address temporary clinical care crises and also permit continuing refinement of preparedness plans.

Tactics	Accountability
Emergency Preparedness Program Testing	
• **Regularly test, at least yearly, community emergency preparedness plans through reality-based drills for the purpose of identifying opportunities for improving and refining the plan**	→ **community organization**
• **Prospectively establish appropriate metrics for objectively assessing the effectiveness of the plan**	→ **community organization**
• **Assure the inclusion of all community emergency preparedness program participants in plan tests**	→ **community organization**
• **Activate the preparedness plan in response to real-world health care crises, e.g. community-wide emergency department overcrowding**	→ **community organization**

Of the two drills the Joint Commission requires each year, one is expected to be a community-wide drill. Such drills can be costly. As a means to cost-share or defray the costs, accredited health care organizations are encouraged to seek partners in the community who will also benefit from the drill. Local government, public health authorities, emergency medical services, fire and police – all of the key participants in the local preparedness system -- should be involved in and share in the accountability for community-wide drills.

The University of Maryland Medical System recently conducted a full-scale drill, dubbed "Free State Response," in partnership with the U.S. Air Force and the Maryland Emergency Management Authority. All told, the drill cost between $200,000 and $300,000, but in the view of the medical system, that money bought "profound knowledge."[70] In addition to revealing where existing vulnerabilities lay, the drill inculcated the emergency management plan into the minds of the medical system's staff – where it could more easily be retrieved during an actual disaster.[71]

Recommendations

Tactics	Accountability
Surge Capacity	
• Determine standardized, universal measures of surge capacity.	→ federal and state government agencies → community organization
• Prospectively define point-in-time and longitudinal surge capacity at the community level	→ community organization
• Identify latent space and human resources capacities	→ community organization
• Establish mutual aid agreements among community hospitals and other health care organizations	→ health care organizations → community organization
• Ensure a 48-72 hour stand-alone capability through the appropriate stockpiling of necessary medications and supplies	→ health care organizations → community organization
• Standardize equipment, supplies and medication doses to facilitate the provision of safe, efficient care	→ health care organizations → pharmaceutical companies → community organization
• Fund and facilitate the creation of a credentialing database to support a national emergency volunteer system for health care professionals.	→ federal government

Tactics	Accountability
Direct Caregiver Protection	
• Make direct caregivers the highest priority for training and for receipt of protective equipment, vaccinations, prophylactic antibiotics, chemical antidotes, and other protective measures	➔ health care organizations ➔ community organization
• Provide direct caregiver support to meet mental health and other personal needs	➔ health care organization
• Support the provision of decontamination capabilities in each hospital	➔ federal and state government ➔ hospitals ➔ community organization
• Assure direct caregiver access to current information about the emergency on a continuing basis	➔ health care organizations ➔ community organization
Meeting the Care Needs of All Patients	
• Maintain the ability to provide routine care.	➔ health care professionals ➔ health care organizations ➔ community organization
• Make provisions for the graceful degradation of care in all emergency preparedness plans.	➔ health care organizations ➔ community organization
• Provide for waiver of regulatory requirements and other standards expectations under conditions of extreme emergency.	➔ federal and state government agencies ➔ accrediting bodies
Incident Management	
• Adopt incident management approaches that provide for simultaneous management involvement by multiple authorities and fluidity of authority as a function of the scale and nature of the emergency situation.	➔ community organization
Mental Health Management	
• Make provisions for accommodating and managing the substantial acute mental health needs of the community when a natural or terrorist event occurs.	➔ mental health professionals ➔ health care organizations ➔ community organization

Tactics	Accountability
Public Engagement	
• Provide public education about emergency preparedness	➔ federal and state governments ➔ community organization
• Actively engage the public in emergency preparedness planning	➔ community organization
Information Management	
• Anticipate the information needs of community organization participants and the public.	➔ community organization
• Create redundant, interoperable communications capabilities.	➔ federal and state governments ➔ community organization
• Develop a centralized community-wide patient locator system.	➔ community organization
• Prospectively identify trusted spokespersons to communicate with the public in the event of a natural or intentional disaster.	➔ community organization
• Engage the mass media in the emergency preparedness planning process and, in the event of an emergency situation, utilize the media to communicate accurate information and helpful instructions.	➔ community organization
• Develop an "information stockpile" to support communications activities.	➔ community organization
Emergency Preparedness Program Testing	
• Regularly test, at least yearly, community emergency preparedness plans through reality-based drills for the purpose of identifying opportunities for improving and refining the plan	➔ community organization
• Prospectively establish appropriate metrics for objectively assessing the effectiveness of the plan	➔ community organization
• Assure the inclusion of all community emergency preparedness program participants in plan tests	➔ community organization
• Activate the preparedness plan in response to real-world health care crises, e.g. community-wide emergency department overcrowding	➔ community organization

Part III. Establish Accountabilities, Oversight, Leadership and Sustainment of Community Preparedness Systems

A Question of Accountability

With the current heavy focus on emergency preparedness planning, little attention is being paid to mechanisms for assessing the actual readiness of communities for emergencies. Indeed, states have been required to submit "plans for planning" for emergency preparedness as the principal condition for receipt of federal funding. However, actual readiness will not be defined simply by the creation of a plan or even by its periodic testing. Readiness must eventually be assessed by objective parties against prospectively established standards. Such standards must include expectations for evidence of maintenance of readiness over time.

The issues of accountability and oversight currently hover in the background. Governors have been defined as being accountable for submitting their state emergency preparedness work plans to DHHS. This at least creates presumptive accountability on the part of individual governors for state-wide emergency preparedness. At the same time, it very much leaves open the issue as to how the individual governors will simultaneously and objectively determine the effectiveness of that preparedness. State public health agencies, both as recipients of significant funding and as critical participants in the development of community preparedness initiatives, also lack the objectivity necessary to thoroughly assess the functionality of community preparedness programs in their states.

The appropriate time to establish an effective, objective oversight mechanism for evaluating community emergency preparedness programs and assuring that they are meeting reasonable standards expectations is not after this country has experienced multiple plan failures. There are already sufficient lessons from the past to underscore the importance of preventive measures in this area as well.

Sustainable Funding

Following the 2001 terrorism attacks, Congress appropriated $40 billion to be expended through 2002 on terrorism preparedness efforts; $135 million of these funds were earmarked for hospitals. Most hospitals are still awaiting receipt of those funds, which, owing to the manner in which states allocate such funds, are currently unaccounted for or are hung-up in state budget hearings.[72]

Tactics	Accountability
• **Develop and implement objective evaluation methods for assessing the substance and effectiveness of local emergency preparedness plans and the actual readiness of community organizations to manage disasters and terrorist events**	➔ **federal government**

In the President's 2003 budget, $535 million is earmarked for hospital preparedness.[73] The budget also includes $3.5 billion in terrorism preparedness funds for first responders to acquire new technologies, equipment and communications systems, and to conduct drills among first responder agencies. Unfortunately for hospitals, the President's budget limits the definition of first responders to firefighters, local law enforcement, rescue squads, ambulances and emergency medical personnel.[73]

All FY2003 terrorism preparedness funding, though, remains "on the table" in anticipation of budget allocation hearings. Many expect that with a potential war with Iraq and the stumbling U.S. economy, the level of funding for preparedness activities will likely be reduced.[76]

While it remains to be seen what actual funding hospitals will receive in the near term, there is clearly a need for a sustainable funding mechanism to support their emergency preparedness efforts. As the most critical care delivery component of a tightly woven preparedness system, hospitals will require funding for development, as well as for maintenance and fortification of their preparedness programs. In the absence of adequate federal funding, and with hospitals' inability to rely on private funding to bolster their preparedness efforts, some have suggested exploration of creative "taxation" approaches, such as a hospital surcharge on patient visits, to provide a sustained funding stream that will permit hospitals to meet public expectations of their emergency preparedness capabilities. Indeed, if "at the end of the day, it is medical care that will be needed,"[77] hospitals and other organizations in the care continuum are going to require the means to provide it.

Tactics	Accountability
• **Provide funding at the local level for emergency preparedness planning, specifically including adequate funding for hospitals, and assure that the funds actually reach the local level.**	➔ **federal and state governments**
• **Explore alternative options for providing sustained funding for hospital emergency preparedness activities.**	➔ **hospitals** ➔ **federal and state governments**
• **Initiate and fund public-private sector partnerships that are charged to conduct research on and develop relevant, scalable templates for emergency preparedness plans that will meet local community needs in a variety of urban, suburban, and sparsely populated settings.**	➔ **federal and state governments,** ➔ **academic health centers** ➔ **established community organizations** ➔ **accrediting bodies**

Guiding the Effort

There is – as already noted – also the need for credible guidance, in the form of templates or models, to jumpstart and facilitate community preparedness program development. Many involved in developing community-wide preparedness programs have little idea as to what constitutes an acceptable, let alone, ideal model. And the fact is that response capabilities and basic needs and structure vary substantially among urban, suburban, and rural communities and even within those communities.

A nascent national template for emergency management has now emerged through the enactment of the "Public Health Security and Bioterrorism Preparedness and Response Act." Preceding the enactment of the bioterrorism legislation, all states were required to submit their bioterrorism preparedness work plans to DHHS as a prerequisite for allocation of state funding. Among the 17 critical benchmarks DHHS required in the state plans were the designation of a senior public health official within the state to serve as the executive director of the State Bioterrorism Preparedness and Response Program; establishment of an advisory committee that includes representatives from state and local health departments, other appropriate government agencies, emergency medical services, police and fire departments, hospitals, community health centers, and other health care providers, among others; and the preparation of a timeline for development of both state and regional plans for responding to incidents of bioterrorism, other infectious diseases, and other public health threats and emergencies. Each state is also to establish a hospital planning committee, designate a coordinator for hospital bioterrorism planning, and develop a plan for a potential epidemic involving at least 500 patients. While these macro state plans are necessary, they are far from sufficient to meet local community planning needs. Once again, most disasters and terrorist events will be local, and the effectiveness of the response will be determined at the local level.

Tactics	Accountability
• **Disseminate information about existing best practices and lessons learned respecting existing emergency preparedness initiatives to community organizations, hospitals and other health care organizations.**	→ **federal and state governments**

Another template developed by federal authorities is the model plan recently released by the Centers for Disease Control and Prevention (CDC) for vaccinating the U.S. population following a smallpox outbreak. The model plan was sent to all 50 states to aid in the rapid creation of voluntary smallpox vaccination clinics that would permit the vaccination of one million people within 10 days. The plan provides information on the supplies and resources that will be provided by the federal government; security considerations; suggested clinic organization and logistics; estimated personnel needs; clinical issues and considerations; sample consent forms and public education materials; and a template for delivery of mass patient care should that become necessary.[78] The model plan does not, however, provide direction as to the acquisition of resources – either financial or human – to create and operate mass vaccination clinics. This too is a necessary template but one which is targeted to a specific potential problem.

The federal government is also investing in the creation of a model facility for emergency preparedness. "Project E.R. One" is a federal initiative to develop the design features of an all risks ready emergency facility -- one built specifically for scalability, threat mitigation, and management of the medical consequences of terrorism. E.R. One will utilize new information, building, materials and engineering technologies, and will embed concepts of modularity and flexibility so as to be configurable to any threat. Leading Project E.R. One is the Washington Hospital Center, which is the largest hospital in Washington D.C. The hospital is located less than two miles from the U.S. Capitol and so is the likely hospital to receive large numbers of victims from an attack on this country's seat of government.

Other preparedness models are being developed in the private sector.[79] However, public-private sector partnerships offer the best overall prospect for research on and development of relevant, scalable models that will meet local community needs in a variety of urban, suburban, and sparsely populated settings. There is considerable urgency to move this work forward.

Indeed, if "at the end of the day, it is medical care that will be needed," hospitals and other organizations in the care continuum are going to require the means to provide it.

Knowing What Works

Federal and state governments have additional important roles to play in advancing emergency preparedness across the country. In addition to the public education and communications facilitation roles earlier identified in this paper, government agencies are important conduits for the dissemination of best practices in emergency preparedness, as well as lessons learned. Specific areas with which hospitals, in particular, are struggling include decisions regarding the types and quantities of personal protective equipment (PPE) that should be stocked, and the design of decontamination capabilities. Further, clarification as to the application of the Emergency Medical Treatment and Active Labor Act (EMTALA)and Health Insurance Portability and Accountability Act (HIPAA) regulations, as well as those of the Environmental Protection Agency (EPA) (e.g. regarding water run-off requirements) in emergency situations are needed. Such clarifications – if practical and realistic – would be welcome by the health care community and would substantially enhance the credibility of and confidence in the federal government in its regulatory role.

There is finally a need for coordination of domestic and international preparedness. After all, germs know no boundaries. A bioterrorism attack in the U.S. could readily spread abroad either accidentally or intentionally via international trade, travel or other means; likewise what began abroad could wind up in the U.S. The globalization of emergency preparedness systems could also serve as a defense against the increasing threat of naturally occurring infectious disease.

Tactics	Accountability
• Clarify the applications of EMTALA, HIPAA, EPA and other regulatory requirements in emergency situations.	→ federal government
• Coordinate domestic and international emergency preparedness efforts.	→ federal government

Tactics	Accountability
• Develop and implement objective evaluation methods for assessing the substance and effectiveness of local emergency preparedness plans and the actual readiness of community organizations to manage disasters and terrorist events	➔ federal government
• Provide funding at the local level for emergency preparedness planning, specifically including adequate funding for hospitals, and assure that the funds actually reach the local level.	➔ federal and state governments
• Explore alternative options for providing sustained funding for hospital emergency preparedness activities.	➔ hospitals ➔ federal and state governments
• Initiate and fund public-private sector partnerships that are charged to conduct research on and develop relevant, scalable templates for emergency preparedness plans that will meet local community needs in a variety of urban, suburban, and sparsely populated settings.	➔ federal and state governments, ➔ academic health centers ➔ established community organizations ➔ accrediting bodies
• Disseminate information about existing best practices and lessons learned respecting existing emergency preparedness initiatives to community organizations, hospitals and other health care organizations.	➔ federal and state governments
• Clarify the applications of EMTALA, HIPAA, EPA and other regulatory requirements in emergency situations.	➔ federal government
• Coordinate domestic and international emergency preparedness efforts.	➔ federal government

Conclusion

Fulfilling the Promise of a Homeland Defense

Hospitals and the communities in which they operate have long managed to fulfill their obligations to treat and protect patients, even in the face of dire circumstances. Community and hospital fortitude has been witnessed in New York City on September 11, in Houston during the 2001 floods, and during the recurrent earthquake and fire disasters in California.

However, America's communities, its public health infrastructure, and its health care delivery system are literally living far closer to the brink of disaster than they have since the turn of the 20th century. Public health agencies have progressively been shriveled by decades of underfunding and inattention, and the health care delivery system, or non-system as some claim – despite its consumption of over 14 percent of the Gross Domestic Product – has far less relative capacity to meet the acute care needs of this country's citizens than it did three decades ago. Anyone who is skeptical of this characterization need look no further than the results of the recent nationally sponsored bio-terrorism drills, TOP-OFF and Dark Winter. In both of these drills, the local health care systems were quickly overwhelmed.

The world, and indeed the country, in which Americans live has changed forever. However, neither Americans nor their communities have accommodated to, or even accepted, the reality that acts of terrorism which can result in mass casualties are today far closer to them than what once seemed like strange and barbaric acts in distant and distinctly different lands.

The potential for intentional, terrorist disasters in this country today is great. What if – as American Public Health Association Executive Director Georges Benjamin has speculated – the transmission of anthrax-containing letters had continued further into the fall of 2001, rather than mysteriously ceasing. How difficult could that have been? The person who perpetrated this set of terrorist acts has still never been found.

Whether or not the federal and state governments and some of the nation's large cities are truly prepared for major disasters or terrorist events, the vast majority of America's communities are not. These often leaderless entities – the accountable emergency preparedness organizations referenced throughout this paper – are largely unsophisticated, inexperienced, underfunded and unprepared. These communities, where – ready or not – the rubber will actually meet the road if disaster strikes, are today far more like oil-and-water mixtures than well-oiled machines.

The United States was complacent before September 11. Notwithstanding the occasional Orange alerts since then, the American mindset again appears to be steadily returning to comfortable complacency. That is a prescription for great danger, if not disaster.

Even if the commitments and actions called for in this paper were aggressively pursued beginning today, the amount of resources and the amount of time needed to ready America's communities is extremely worrisome. This country should not need another major disaster in order to understand the degree of its vulnerability. The time to begin to develop true emergency preparedness capabilities across America's communities is now.

Acknowledgements

The Joint Commission sincerely thanks the roundtable members for providing their time and expertise in the development of this report.

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End Notes

[1]Pear, Robert, "Most states cutting back on Medicaid, survey finds," *New York Times*, January 14, 2003
[2]Pear, Robert, "Government proposing cuts in many Medicare payments," *New York Times*, September 22, 2002
[3]Hudson Thrall, Terese, Scalise, Dagmara, "America's uninsured," Hospitals & Health Networks, November 2002: 30-40
[4]Hart, Gary, Rudman, Warren B., Flynn, Stephen, "America Still Unprepared – America Still In Danger," report of an independent task force sponsored by the Council on Foreign Relations, 2002: 12.
[5]Congressional testimony by Dennis S. O'Leary, M.D., before the Committee on Energy and Commerce Subcommittee on Oversight and Investigations, October 10, 2001
[6]The American Hospital Association, "Cracks in the Foundation: Averting a Cr in America's Hospitals, 2002
[7]Congressional testimony by Thomas Inglesby, "The State Public Health Preparedness for Terrorism Involving Weapons of Mass Destruction: A Six Month Report Card," before the Committee on Government Affairs, April 18, 2002
[8]Dennis Schrader, vice president for project planning and development, University of Maryland Medical System, speaking at the national conference, "Homeland Defense: Blueprints for Emergency Management and Responses," October 23-25, 2002, Washington DC
[9]Greater New York Hospital Association Website, www.gnyha.org, viewed October 1, 2002
[10]Congressional testimony by Thomas Inglesby, "The State Public Health Preparedness for Terrorism Involving Weapons of Mass Destruction: A Six Month Report Card," before the Committee on Government Affairs, April 18, 2002
[11]Inglesby, Thomas, O'Toole, Tara, et al, "Anthrax as a biological weapon, 2002," *JAMA*, May 1, 2002: 2236-2252
[12]Chen, Frederick J., Hickner, John, et al, "On the front lines: Family physicians' preparedness for bioterrorism," *The Journal of Family Practice*, September 2002: 745-750.
[13]Ibid
[14]Ibid
[15]Borio, Luciana, Frank, Dennis, "Death due to bioterrorism-related inhalational anthrax," *JAMA*, November 28, 2001
[16]Chen, Kathy, Hill, Greg, et al, "Seven days in October spotlight weakness of bioterror response," *Wall Street Journal*, November 2, 2001
[17]Ibid
[18]Inglesby testimony, April 18, 2002
[19]Chen, Kathy, Hill, Greg, et al
[20]Ibid
[21]The American Hospital Association, "Cracks in the Foundation: Averting a Crisis in America's Hospitals," 2002
[22]Ibid
[23]Ibid
[24]Joint Commission on Accreditation of Healthcare Organizations, "Health Care at the Crossroads: Strategies for Addressing the Evolving Nursing Shortage," 2002: 6
[25]Buerhaus, Peter, Staiger, Douglas, Auerbach, David, "Implications of an Aging RN Workforce, *JAMA*, June 14, 283 (22): 2948-2954

[26]Jerome Hauer, Office of Public Health Emergency Preparedness, DHHS, speaking at the national conference, "Homeland Defense: Blueprints for Emergency Management and Responses," October 23-25, 2002, Washington DC

[27]Glass, Thomas, Schoch-Spana, Monica, "Bioterrorism and the people: How to vaccinate a city against panic," *Clinical Infectious Diseases*, January 15, 2002: 34.

[28]Ibid, 56

[29]Ibid, 56

[30]Manning, Anita, "Are we prepared for smallpox?" *USA Today*, March 6, 2003

[31]Mark Ackermann, senior vice president, St. Vincent's Medical Center, New York, NY, speaking at the national conference, "Homeland Defense: Blueprints for Emergency Management and Responses," October 23-25, 2002, Washington DC

[32]Leonard Aubrey speaking at the Joint Commission roundtable meeting, December 10, 2001

[33]Dale Woodin, deputy executive director, American Society of Health Care Engineering, speaking at the national conference, "Homeland Defense: Blueprints for Emergency Management and Responses," October 23-25, 2002, Washington DC

[34]Joint Commission's roundtable meeting, December 10, 2001

[35]Barbera, J.A., Macintyre, A.G., "Medical and Health Incident Management System: A Comprehensive Functional System Description for Mass Casualty Medical and Health Incident Management," Institute for Crisis, Disaster and Risk Management, The George Washington University, Washington D.C., October 2002.

[36]Warwick, Marion C., "Psychological effects of weapons of mass destruction," *Missouri Medicine*, January 2002.

[37]Joseph T. English, MD, quoted in *Psychiatric News*, January 4, 2002: 4-5

[38]Rosack, Jim, "Mental health effects of terrorism," *Psychiatric News*, January 4, 2002: 4-5

[39]Shuster, M.A., Stein, B.D., et al, "A national survey of stress reactions after the September 11, 2001 terrorist attacks," *New England Journal of Medicine*, November 15, 2001

[40]Ibid

[41]Ibid

[42]Ursano, Robert J., "Post Traumatic Stress Disorder," editorial, *New England Journal of Medicine*, vol. 346, No. 2, January 10, 2002: 130-131.

[43]Ibid

[44]Ibid

[45]Ibid

[46]Ibid

[47]Ibid

[48]Robert Ursano, MD, professor and chairman of the Department of Psychiatry, Uniformed Services University School of Medicine, speaking at the national conference, "Homeland Defense: Blueprints for Emergency Management and Responses," October 23-25, 2002, Washington DC

[49]Ibid

[50]Ibid

[51]Ibid
[52]Ibid
[53]Glass, Schoch-Spana
[54]Ibid
[55]Ibid
[56]National Acadamy of Sciences Committee on Science and Technology for Countering Terrorism, National Research Council, "Making the Nation Safer: The Role of Science and Technology in Countering Terrorism", National Academy Press, Washington, D.C., June 2002.
[57]Glass, Schoch-Spana
[58]Ibid
[59]Ibid
[60]Ibid
[61]Inglesby testimony, April 18, 2002
[62]Glass, Schoch-Spana
[63]Chen, Kathy, Hill, Greg, et al,
[64]Barbara
[65]Inglesby
[66]Chen, Kathy, Hill, Greg, et al,
[67]Glass, Schoch-Spana
[68]Ibid
[69]Joint Commission's roundtable meeting, December 10, 2001
[70]Schrader
[71]Ibid
[72]Hauer
[73]"Protecting the Homeland," from the President's 2003 Federal Budget, 2002: 18
[74]Ibid, 18
[75]Ibid, 17.
[76]Associated Press, "Counties seek more money for efforts against terror," *New York Times*, January 21, 2003
[77]Hauer
[78]Centers for Disease Control and Prevention, "Smallpox Vaccination Clinic Guide," September 16, 2002
[79]Barbara, Macintyre

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