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Crossroads of Emergency Response

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Health Care and Homeland Security: Crossroads of Emergency Response

A Resource Guide and Report of the
Health Care and Homeland Security Conference
July 17–18, 2007

Introduction

Health care reform is again being seriously discussed. Rapidly rising costs, problems with access to care, and questions about quality of care have made this a major issue. At the same time, the post–9/11 and post–Hurricane Katrina world has focused significant attention on improving our medical preparedness and disaster response planning. However, discussions on one issue usually do not consider the other. Homeland security clearly has many areas that involve health care, from the public health infrastructure to health-related industrial capacity. And, of course, the homeland security community relies on the health care community to respond to any disaster involving illness or injury. Health care reform will be a massive undertaking involving standard information systems, health promotion and prevention as well as acute care, access for all with an expanded emergency capacity, and the ability to "surge" hospital care. All of health care reform has homeland security implications, but emergency capability and response, hospital capacity, and public health are especially significant for both. Recognizing this, The Heritage Foundation, supported by the McCormick Tribune Foundation, convened leading health care and homeland security experts to discuss the precarious relationship between the two areas. This report, prepared with the assistance of Martin, Blanck & Associates, is the result of that conference and includes policy recommendations and additional references.

Overview

At the crossroads of health care delivery (and reform) and homeland security emergency preparedness lies the disaster. Whether the disaster is chemical, biological, nuclear, radiological or explosive, man-made or natural, the event will trigger immediate response in the affected population. The first reaction of those in need of medical attention will be to flood the local emergency care system. Our emergency response system relies on first responders (fire, police, ambulance) to treat those in need of care and transport them to first receivers (emergency departments, community hospitals, trauma centers, urgent care facilities).

9/11 and Hurricane Katrina were overwhelming regional disasters—one terrorist and one natural—that affected the entire country in their scope, difficulties of response, lack of communication, lack of preparedness, and oftentimes, lack of leadership. These will surely not be the last major disasters America will face.

What have we learned? Are we prepared for the next crisis of overwhelming proportions?

We have learned about a number of things that can go wrong in disaster response—fragmentation of responsibility, logistics problems, and poor communication channels, to name but a few. The establishment of the Department of Homeland Security (DHS) was the most significant response to 9/11, and the failure of the federal response to Hurricane Katrina four years later highlighted the weaknesses of the relatively new federal agency.

A look at the current state of readiness of the health care and emergency medical systems shows strains on capacity, budgetary constraints, and low priority given to emergency response readiness. Any surge in demand could quickly overwhelm resources. Emergency medical services received only 4 percent of the $3.38 billion distributed by the DHS for emergency preparation in 2002 and 2003. The average hospital received less than $10,000—not enough to equip a single critical care room. To make matters worse, trends in the health care sector foretell even greater constraints in the future.

Emergency planning often focuses on the first response—speed and coordination in the first days of the crisis. Practice drills are short and intense. It is easy to overlook the sustained impact of the real event. An effective plan must also deal with the later surges and continuing aftermath. When supply chains are disrupted, additional people will require care as they run out of medicines, for example. And the effectiveness of care providers can be diminished by failures of communications networks, computer systems, banking systems, transport systems and competing needs of family members.

Nearly two years have passed, yet only one of New Orleans' seven general hospitals is back to pre-Katrina capacity. Four remain closed. Hospital beds are down by two-thirds. The city's trauma center reopened in February 2007.

After tourism and retail, the city's largest private employment sector had been health care. Now, the health care sector's current diminished state is considered a key factor blocking post-Katrina economic revival. Meanwhile, despite pledges of assistance and encouragement from the Secretary of the U.S. Department of Health and Human Services (HHS), Louisiana officials have yet to embark on a significant improvement of their health care system.

Disaster preparedness cannot focus solely on preventing terrorist acts. We know that at some point another disaster, man-made or natural, will come our way. An essential component of national response is the capability to respond quickly and effectively to that next crisis. For that to happen, we need to move now to strengthen the capacity and resilience of our health care delivery services, involving everything from detecting contagious disease outbreaks through organizing the public health response.

Strategic solutions are needed that can garner broad political support. Disincentives and inhibitors in our current systems must be addressed.

The good news is that many of the efforts envisioned to address overall problems in the health care system will also benefit emergency response preparedness and other elements of homeland security. These will likely take time to bring to fruition. In the interim, we need incremental and tactical solutions to provide immediate improvements and lay the groundwork for achieving strategic goals.

The Current State of First Receivers

For a variety of reasons, first receivers today are ill-prepared to treat a sudden surge in disaster victims. We will examine issues facing the emergency departments, the hospitals and other health care facilities, and the medical practitioners who comprise the first receiver community.

a. The Emergency Department Crisis

At present, our emergency rooms are at the breaking point for capacity and delivery of care. The Institute of Medicine's *Future of Emergency Care* report series of 2006 cites the following statistics:

- Demand for emergency care has risen sharply—visits grew by 26 percent between 1993 and 2003.
- Over the same period the number of emergency departments (ED) declined by 425 nationwide.
- Forty percent of hospitals report ED overcrowding on a daily basis.
- As a result, ambulances are diverted half a million times per year from overcrowded EDs to other hospitals, thus delaying prompt care.
- Sharp declines in the number of hospital beds has resulted in frequent patient "boarding"—patients may be held in ED halls or exam rooms for 48 hours or more until an inpatient bed becomes available.
- Critical specialists are not often available when necessary.
- EDs have little to no surge capacity to handle mass casualty events.

Too many individuals are seeking primary or preventive care from the EDs—the National Hospital Ambulatory Care Survey classified 47 percent of all visits as emergent or non-urgent.

b. The Hospital Crisis

Throughout our nation, communities view their hospitals as a "safety net service." Our 3,000 non-profit, 1,200 state and local government-financed, and 770 for-profit hospitals command a degree of steadfast loyalty and expectation that care will always be provided.

While the emergency departments struggle with crowding, the hospitals that house them are also at the tipping point. Approximately 30 percent of hospitals today are operating in the red.

According to the American Hospital Association (AHA) the following societal and policy changes have placed additional stress on hospitals:

- An increase in use of "just in time" supply practices, while helpful in reducing day-to-day inventory costs, have left hospitals unable to cope with a surge from a disaster.
- A change in the practice pattern of physicians, separating them into community-based office practice and specialty-based hospital practice, has reduced the number of general practitioners in the ERs and hospitals.
- 47 million people are uninsured, according to the latest Census Bureau data, and a far greater number have no regular source of medical care, creating higher demand for hospital emergency care.
- An aging population experiencing increasing levels of chronic illness requires more hospitalization.

The closure of many mental health hospitals has forced individuals with mental health or substance abuse problems to turn to hospitals for their care. One quarter of all people seen in hospitals today have mental health and substance abuse problems according to the AHA.

In the last decade, over 700 hospitals have closed nationwide. As a result, 90 percent of Level One tertiary care hospitals are operating at 90 percent bed capacity. Over three-quarters of emergency physicians reported in the annual American College of Emergency Physicians' survey that their hospital does not have the surge capacity to respond effectively to an epidemic illness or an act of terrorism. Hospitals also lack negative-pressure units for isolating victims of airborne diseases, and personal protective equipment for their staff.

c. The Medical Practitioner Crisis

The medical practitioner (physicians, nurses, physician assistants, nurse practitioners, mental health care workers) is under siege. Costs of liability insurance, decreasing reimbursements, the "hassle factor" of increased red tape and regulation, and the increasing costs of practice are driving individuals out of the system. EDs currently have vacancies in 13 percent of their staff positions. And Community Health Centers have over 2,500 current clinical vacancies across the country.

Today, the health care sector is facing a severe shortage of nurses. Many nurses are approaching retirement age and the nursing profession faces difficulties both attracting new entrants and retaining the existing workforce. As a result, the nurse supply remains flat. This results in serious regional shortages. For example, the state of California has a 15 percent to 20 percent nursing vacancy rate at hospitals today, and there are estimates that it will reach 46 percent by 2020.

Fewer and fewer young people are entering the health care profession just as our population needs more. The 2005 Council on Graduate Medical Education report states that there will be a shortage of at least 90,000 full-time physicians in the U.S. by the year 2020. Medical schools are expected to expand enrollment by a maximum of 7 percent, leaving a shortage of 1,700 new physicians annually. At the same time, nursing schools cannot attract faculty to fill the numerous open teaching positions.

With medical practitioners stretched thin, training in emergency preparedness and disaster medicine falls to a lower priority than meeting current patient needs. There is no medical specialty that addresses disaster medicine. Without the medical professionals developing such a specialty, development and dissemination of expertise in this area will languish.

The Current State of Disaster Response

a. Emergency Management Services (EMS)

Emergency care is highly fragmented. More than 6,000 911 call centers are in operation, supporting 15,000 Emergency Management Service systems with 800,000 responders handling 16 million transport requests per year. EMS systems may be run by police departments, fire departments, city or county governments, or private compa-

nies. These are currently under state and local jurisdiction, as are the standards for the training and certification of EMS personnel.

Senior officials at DHS and HHS have communicated a national policy that puts local EMS Chiefs, Directors, and Administrators responsible for handling response to an incident in the first 24–72 hours with local and regional resources. While the local EMS officials recognize this policy, they are concerned that too many federal agencies have oversight over their activities. The local EMS community seeks one voice and consistent funding. In addition, local EMS personnel believe that they are not made aware of the larger overall emergency preparedness efforts and goals, especially at the federal level. This persistent fragmentation leaves room for confusion and wide variability of performance.

EMS systems received only 4 percent of the $3.38 billion distributed by DHS for emergency preparation in 2002 and 2003.

b. Public Health Departments

Public health departments are not typically thought of as emergency responders, yet for biologic events they fulfill this role. Public health departments are charged with early detection, epidemiologic investigations, and the application of large population measures (e.g., immunizations) to control biologic outbreaks. While funding for public health departments has increased thanks to the anthrax mailings shortly after 9/11, it is still inadequate and a national public health system with rapid communication and notification capability has not been fully developed. Public health and traditional emergency management services are not well integrated, and public health is all too often an afterthought or left out of the planning process entirely.

c. Department of Homeland Security (DHS)

The Department of Homeland Security is responsible for coordinating the overall federal response to disasters, while the Department of Health and Human Services oversees the national medical response. DHS essentially supports HHS efforts. Recently, the Office of the Chief Medical Officer within DHS was also assigned responsibilities for planning the medical response for disasters.

Within the federal organization, the challenges are crosscutting. Since the aftermath of Katrina, the office has undergone organization and scope changes in order to respond more quickly to a severe disaster. On April 1, 2007, DHS announced a new internal reorganization.

The Office of Health Affairs (OHA) was created and is led by the Chief Medical Officer, who now has the title of Assistant Secretary for Health Affairs and Chief Medical Officer. The Office of Health Affairs has three main divisions each directed by a Deputy Assistant Secretary:

- *Weapons of Mass Destruction (WMD) and Biodefense* will lead the Department's biodefense activities, including the Bioshield and BioWatch programs (transferring to OHA from the Science and Technology Directorate) and the National Biosurveillance Integration System (transferring to OHA from the Infrastructure Protection component of DHS).
- *Medical Readiness* will coordinate contingency planning, medical readiness of first responders, WMD incident management support, and medical preparedness grant coordination.
- *Component Services* will provide policy, standards, requirements, and metrics for the Department's occupational health and safety programs and provide protective and operational medical services within the Department.

As the Office of Health Affairs tackles its new mission, the following challenges have been identified:

- Lack of integration and coordination at the federal-state-regional-local level;
- The need to create a culture of preparedness both within government and within its citizenry;
- Missing elements in the BioShield program—a comprehensive effort to develop and make available

modern, effective drugs and vaccines to protect against attack by biological and chemical weapons or other dangerous pathogens;

- Lack of a biological scenario among the 15 National Planning Scenarios devised for the National Response Plan (NRP);
- The need to create curricula and training for those involved in emergency preparedness;
- Abundant preparedness fatigue;
- No certification/accreditation by hospitals or institutes for planning efforts;
- Reduced resources.

These issues are repeated within the policy department at DHS. Officials within the department believe that the National Incident Management System (NIMS)—which consists of a nationwide template to enable federal, state, local, and tribal governments, as well as private-sector and nongovernmental organizations, to work together effectively and efficiently to prepare for, prevent, respond to, and recover from catastrophic incidents—is only a "Rolodex." The NIMS is a framework, not a solution, and communities are failing to plan or to build in self-sufficiency, flexibility, and coordination.

Another area in need of further review is the Target Capabilities List that is an internal part of the National Response Plan. The NRP establishes a comprehensive all-hazards approach to enhance the ability of the United States to manage domestic incidents. The plan incorporates best practices and procedures from incident management disciplines—homeland security, emergency management, law enforcement, firefighting, public works, public health, responder and recovery worker health and safety, emergency medical services, and the private sector—and integrates them into a unified structure. It forms the basis of how the federal government coordinates with state, local, and tribal governments and the private sector during incidents. The Target Capabilities List—a capabilities list planning tool used by local-state-regional-federal agencies to prepare their communities in the areas of public health, environmental health, triage, fatality management, surveillance, etc.—has been developed but not implemented. So far, only federal officials appear to be interested in the effort; states and local officials have not embraced the effort.

At the White House, the Office for Biodefense Policy of the White House Homeland Security Council, which is responsible for bio-surveillance, countermeasures, mass casualty planning, and community preparedness, reported the following challenges:

- Limited capability for surveillance of animals (where most disease incidents appear first) and humans;
- Limited insight into disease/threats in real time;
- No capacity for surveillance of large populations, particularly overseas;
- Lack of ability to deliver mass countermeasures in an expedited manner;
- Lack of ability to handle mass casualty event;
- No venue to engage the local citizenry.

Progress Being Made

While the state of health care and homeland security regarding emergency preparedness appears to be somewhat dire, planning at all levels has shown significant progress.

a. Local Level

The National Association of Community Health Centers (NACHC) and the National Association of Community Health Officials (NACHO) represent Community Health Centers (CHC), which serve the most vulnerable of the U.S. population, often in more rural communities. By design, they serve all who seek care regardless of ability to pay.

NACHC represents 1,100 Community Health Centers in over 3,000 communities, serving 16 million patients annually. The CHCs provide comprehensive primary and preventative health care including health screening, immunizations, dental care, pre-natal and neo-natal care, diabetes management, HIV prevention and education, mental health and substance abuse counseling, as well as health care services for migrant workers and homeless individuals. Some 71percent of patients fall at or below the federal poverty level in income.

Both organizations report that they are now included in the local, regional, and state emergency preparedness planning process. Integration has been enhanced at the local level and equipment, protocols, laboratory capacity, and transmission of results have all improved. Health departments nationwide are using the NIMS. They report that most communities have plans, live exercises and drills, mass distribution strategies, and means to integrate health affairs with law enforcement emergency response.

Established as a "safety net" in the 1960s, CHCs help alleviate the overcrowding of hospital emergency rooms by providing an alternative to high-need populations for primary care. The Bush Administration and Congress have nearly doubled annual federal spending for CHCs since 2000 to almost $2 billion. Six years ago, CHCs served 5 percent of the population; that has now grown to 10 percent.

CHCs provide additional support capabilities for local communities facing an emergency. Eighty percent of CHCs have a disaster plan, often developed in conjunction with the local health department plan. CHCs also have a historical track record in responding to past emergencies including hurricanes, wildfires, and earthquakes. Their capabilities include:

- Increased ED surge capacity—both on and off-site,
- Mental health services for responders and others,
- Outreach to rural and hard to reach populations,
- Ability to dispatch mobile clinics,
- Telemedicine patient treatment,
- Ability to distribute medications or administer vaccines,
- Alternate care sites.

b. State Level

The National Guard has traditionally provided civilian support to governors of states. During Hurricane Katrina, the Guard provided 50,000 troops. Their goal in the medical arena is to provide triage, treatment, and transportation. In the "Lessons Learned" report after Katrina, the Guard was more fully integrated into the NRP and specifically into the state planning process by communities.

c. Regional Level

On July 19, 2007, at the Senate Committee on Homeland Security and Governmental Affairs hearing, it was reported that Department of Defense (DOD) liaison officers are stationed at all Federal Emergency Management Agency (FEMA) district offices to better coordinate the DOD and DHS response.

d. Federal Level

The National Response Plan and National Incident Management System are currently being reviewed by DHS. The Secretary of Homeland Security is conducting an interagency review to:

- Assess the effectiveness of the NRP,
- Identify improvements,
- Recommend modifications,
- Reissue the document.

Federal, state, local, and tribal authorities, along with private-sector and non-governmental organizations (NGO)s are participating in the review and revision process.

Also, the Department of Health and Human Services released the National Strategy for Pandemic Planning IV on July 18, 2007. It outlines a number of initiatives and reports on their progress:

- In April 2007, the National Institutes of Health awarded $161 million to help expand surveillance programs.
- The Centers for Disease Control has invested $180 million to help high-risk countries strengthen their capacity to recognize, diagnose, and report influenza outbreaks.
- In April 2007, the Food and Drug Administration (FDA) approved the first human H5N1 vaccine.
- In January 2007, HHS awarded $132.5 million to three vaccine makers to develop adjuvanted vaccines against the H5N1 influenza virus.
- In January 2007, HHS awarded $103 million to develop a new influenza antiviral drug, peramivir, which has proven effective in laboratory tests.
- HHS has dramatically increased its federal stockpile (surgical mask, respirators, ventilators, etc.)

Last, on July 26, 2007, HHS issued guidance in the *Federal Register* for the "Emergency Use Authorization of Medical Products." This notice is defined as a "critical new tool for medical and public health communities and is applicable for both civilian and military use." The EUA allows a relevant medical product which has not yet been approved by the FDA to be used during an emergency.

Inhibitors to Progress

a. Spiraling Costs

Underlying the ED, hospital, and practitioner capacity crises is the general financing problems that plague the health care sector. The U.S. health care sector represents $2.2 trillion of the economy—half of which is spent on Medicare and Medicaid and other public programs and the other half on private sector spending. This amounts to one-sixth of the entire U.S. economy. Unlike virtually every other sector of the economy, the normal operation of market forces, which routinely control costs, is largely absent. Especially absent is consumer choice. Out of every $100 spent on health care coverage, for example, only $3.50 is spent directly by individuals and families.

The biggest challenge facing health care, then, is rising cost. Currently, health care consumes more than 16 percent of GDP, and the federal government's portion amounts to 8.6 percent of GDP. That federal share is expected to grow to 20 percent of GDP by 2050. In real terms, health care sector spending is growing 2.5 percent faster than the economy. The number of those eligible for Medicare will be doubling from 40 million people to 80 million over the next 30 years, beginning with the first wave of the baby boom generation in 2011. And as a demographic sector, those over 65 account for a disproportionate percentage of health care expense. The aging of the population, the retirement of the baby boomers, expansion of the entitlement programs (e.g., the new Medicare Prescription Drug Program and rising Medicaid enrollment), and lower fertility rates have led the U.S. to a point where our healthy and growing economy cannot as easily absorb the cost of this rapid demand for medical services as it did in the past 30 years. There is a broad consensus among health policy analysts that Americans are facing an unsustainable growth in the cost of health care, particularly in Medicare and Medicaid.

Cost pressures are one of the inhibitors to development of robust emergency response approaches, but also one of the main drivers for health care reform. Strategic solutions to constrain health care spending, or, even more importantly, to enable individuals and families to secure value for money, may enable more efficient approaches to homeland security and medical emergency response requirements.

b. National versus Local Risk Assessment

Pushing down planning responsibility for first response to the local level creates a disincentive to invest. At the national level, there is clearly substantial risk that a major disaster of some sort will occur in the next few years. For a locality, the risk of a disaster in that particular community is much less. It is very difficult to justify taking money away from pressing local needs to address an event that is highly unlikely to occur. So while it makes sense to insist that local communities form specific local plans, a regional or national approach to stockpiling and positioning resources to support first response seems a wiser and more economical approach. Rapid deployment plans would be needed. Some of the strategic technology solutions to improve health care will also facilitate more centralization of expertise and real-time dissemination to remote locations. Telemedicine is an example of this capability.

c. Identification and Funding of Federal Public Health Priorities

It is easy to forget our health care delivery system's interdependency with public health initiatives. Certain activities are vital to the national interest and should be funded at the federal level. An example is surveillance of animals and humans for emerging diseases. There should be a single federal agency charged with identifying critical public health priorities and educating legislators and the public on the dangers and objectives. By funding these at the national level, resources are assured for activities that are in the national interest and practitioners and other health care entities can be adequately compensated for their efforts and contributions to achieving public health objectives.

d. Pay and Incentives for Health Care Practitioners

Current pay and incentives for doctors, in both the public and the private sectors, are oriented toward performing procedures and prescribing drugs, rather than preventing illness, managing medical conditions effectively, or achieving satisfactory health outcomes. Financing influences delivery.

For emergency medicine, in particular, public and private officials should look toward changing current compensation. Compensation and measurement systems must be adapted to encourage greater efficiency and effectiveness in the delivery of care. In pursuing health care reform, policymakers should give special consideration to emergency response objectives and means of compensating practitioners for their roles in planning, training, and carrying out these essential activities. The medical profession too must be directly engaged. Without a disaster health specialty or dedicated advanced trauma centers, it is more difficult to generate and disseminate this vital expertise across the health care sector.

e. Information and Communication Gaps

Information and communication systems are still fragmented across the health care sector. Resolving the fragmentation will require leadership to ensure coordination and significant investment in both information systems and communications network infrastructure. The development and widespread usage of an electronic medical record, with proper regard for patient privacy and liberty, should be a key element of health care reform initiatives to reduce administrative costs and errors. As more medical records and data flow across networks and are stored on information systems or portable media, the requirements for ensuring data recovery, privacy, and security are paramount. Ensuring the availability of these systems in crisis scenarios will need full consideration in the development and execution of emergency plans.

New Answers

While progress is being made in medical emergency planning at the local, state, regional, and federal levels, many inhibitors remain to be addressed. Strategic solutions are needed to ensure a robust and resilient health care sector for the decades to come. Large, complex problems do not lend themselves to quick fixes. Addressing health system issues often requires long-term commitment, sustained effort, and strong leadership to achieve success. Many of the strategic solutions will depend on generating public and political support for these initiatives. One way to build support and test the viability of strategic solutions is through pilot or demonstration projects.

Incremental and tactical solutions provide quick fixes to strengthen readiness. Immediate steps can be taken in both the health care and homeland security sectors to resolve minor issues under discussion while providing the foundation for the longer-term strategic solutions.

As tactical and strategic solutions to improve health systems are agreed on and implemented, we must ensure that they address requirements for emergency response.

a. Strategic Solutions

While there are many actions that may be taken quickly, it is important to focus on the overall goals and select those activities required to move key strategies forward.

Below are six strategic solutions for the health care sector followed by three strategic solutions for the homeland security sector. Even though the health care solutions fall short of full reform, taken together, these strategic solutions should improve the nation's position of readiness for a major disaster. Tactical solutions supporting each strategic goal are identified by a T and their number in the listing of tactical solutions that follows this section.

In addition, an interim strategic solution is offered to deal with the potential catastrophic event that occurs before any of the strategic, or many of the tactical solutions, can be fully implemented. We need to envisage the potentially dire circumstances of our current unprepared status.

Health Care Sector

- *Healthier population*

  A healthier population is both an overall objective of the nation's health care system and a means of reducing costs by helping people avoid and control expensive treatment for advanced diseases. Preventive medicine and public health measures can be employed to encourage a healthier population. Obesity and diabetes are on a trend-line to reach an epidemic status. Ultimately, individuals are responsible for their own health, and the task of the policymaker is to ensure that market incentives are in place to reward healthy behavior. Moreover, legal, regulatory, or structural barriers to the operation of these incentives should be systematically removed. Public and private programs that offer attractive incentives encouraging healthy consumer choices can have substantial long-term payoff. A healthier population will reduce both financial stress and constraints that impede surge capacity needed to handle disasters. A healthier population is also better able to weather disasters and other emergency conditions.

  Tactical solutions that will help drive our population in a healthier direction include targeted public health spending (T-11), demonstration projects for community health initiatives (T-15), and structural reform of the health care markets and the provision of rational incentives (T-10).

- *Long-term financial viability of the health benefit structure*

  Health care costs will continue to grow as a percent of GDP. Nonetheless, policymakers can moderate, and in some cases, actually reverse, health care costs by making significant changes in the private health insurance markets, re-targeting and rationalizing existing government subsidies and tax policies in the health care system, and restructuring health care entitlements. Demonstration programs and experimentation with a variety of approaches can provide the data necessary to develop political support for change.

  A number of tactical solutions can be considered as ways to improve health care financial viability. Among these are expanded choices for individuals and families in their access to health care coverage (T-4), wider adoption of changes in the health insurance markets that would result in the introduction of the free market forces of consumer choice and competition, resulting in a health insurance market that would function more like the popular and successful Federal Employees Health Benefits Program than the conventional employer-based health insurance (T-7), health saving plans (T-5), tax breaks for individuals who do not have, or cannot get, employer-based health insurance (T-4), and better targeting of entitlement funding, including the introduction of income-related subsidies for persons enrolled in Medicare and a reduction of the growing dependence on Medicaid for long-term care services (T-8).

Other tactical solutions can contribute to financial viability by identifying areas of waste (T-2), by providing cost data to enable more informed consumer decisions (T-9) and by piloting alternative approaches to paying for health results (T-16 and T-17).

- *Supply of nurses and physicians*

  The future of our health care system is also jeopardized by personnel shortages. A number of changes are needed to encourage young men and women to choose the medical profession.

  Broadly speaking, a general reform of the health care financing system that expands patient choice, reduces physician dependence on third-party payment for routine medical services, and facilitates the restoration of the traditional doctor–patient relationship would make entry into the medical professional more desirable than it is today. Beyond that, tactical changes include updating federal loan and grant laws for colleges and medical schools (T-10), incentive reforms to improve compensation in understaffed practice areas (T-11), and funding to ensure that medical staff are compensated for working in high priority areas for public health initiatives (T-13).

- *Emergency medicine expertise*

  Emergency medicine can be strengthened through establishment of a formal disaster emergency medicine specialty. This is the responsibility of the medical profession. As research and training are focused on this topic, more effective and comprehensive emergency medical response strategies will be developed and the expertise can be shared across the health care community.

  Beyond medical professionals creating a formal disaster medicine specialty (T-17), policymakers can help by establishing an institute at the National Institutes of Health for emergency medical research (T-19), and funding physician training in emergency medicine (T-18). There are state initiatives that are worth examining. The Maryland Trauma Center model should be emulated (T-16) as a strategic way of focusing and distributing emergency medicine expertise.

- *Strategic use of information systems*

  Information systems can improve workflow, save operational expenses, and eliminate costly and wasteful paperwork. They can also improve accuracy and reduce both medical and administrative errors. Security, privacy, availability, disaster recovery, and resiliency must be designed and built into these systems.

  Electronic medical records (T-12) are a key initiative that will enable significant improvements in public health. Other tactical solutions for improved emergency readiness that have a strong dependency on information systems include: medical surveillance systems (T-32), medical distribution systems (T-33), situational awareness (T-34), a health professional registry (T-13), self-help and self-diagnosis information (T-28), and communications systems (T-23).

- *Emergency regulatory relief*

  Laws and regulations must be modified to provide regulatory relief to enable prompt action during emergencies. Relief from medical liability for practitioners (T-22) and revision of Standards of Care (T-25) during an emergency will make it both easier and less risky for medical practitioners to provide care.

Homeland Security Sector

- *Leadership in crisis*

  DHS needs to provide more integrated training and opportunities for local, state, and regional entities to understand their role in a crisis. Leadership means setting priorities at the national level and ensuring effective communications channels that allow ideas and mandates to flow both up and down the chain. Accountability and measurement are also required.

  A key component enabling realistic plans and prioritization is the baseline assessment (T-24). A pre-hospital focus providing leadership to first responders (T-25) will reduce the load on emergency rooms dur-

ing disasters. DHS leadership is essential in plans for Plug and Play surge capacity (T-20), alternative care centers (T-21), and public education campaigns (T-26). Effective communication (T-23) and internal coordination (T-29) are critical both in planning for and reacting to disasters. Coordination of grant funding (T-27) and public health funding (T-11) can ensure that important priorities are not neglected. The DHS Target Capabilities List (T-31) and isolation and quarantine plans (T-30) require local adoption. Accountability is enhanced through requiring performance metrics and standards (T-1) and assessment rating tools (T-3).

- *Health diplomacy*

  The federal government needs to lead health diplomacy efforts around the globe. An effective health diplomacy program can earn global goodwill and contribute to a reduced terrorist threat over time.

  Tactical solutions include targeting of public health funding to include issues important globally (T-11), use of medical surveillance systems (T-32) and medical distribution systems (T-33) to assist other nations, and disseminating medical expertise and research results in the disaster medicine specialty (T-17).

- *Real-time assessment/awareness and education capability*

  DHS needs to lead the effort to educate citizens regarding the true and accurate situation occurring around them. First responders and the National Guard depend on first-hand accounts in order to deploy assets and resources accurately. Often during times of crisis, reports are greatly exaggerated or inaccurate and thus hinder the response effort.

  Real-time assessment can be aided by situational awareness efforts (T-34), and real-time systems including medical surveillance (T-32) and medical distribution (T-33).

Interim Strategy

- *Interim strategy for severe crisis containment*

  Health care delivery systems are unprepared for severe disaster or emergency events on a wide scale in the immediate future. Strategic initiatives will take years to unfold. What if something catastrophic happens tomorrow?

  We need to have contingency plans ready to respond on a moment's notice in the event of a dire emergency. DHS should have access to contingency military field services (T-35).

b. Tactical Solutions

Immediate steps can be taken in both the health care and homeland security sectors to resolve minor issues under discussion while providing the foundation for longer-term strategic solutions. Many of the tactical solutions address broader issues causing stress on the health care sector. Steps to alleviate these conditions may also strengthen disaster and emergency response capacity.

Health Care Sector

1. *Establish measurable performance standards for any new congressional health care program spending.* Allow for greater transparency and efficiency in allocation of congressional monies for health care by identifying and clarifying the mission of the program dollars, and the performance of federal agencies in the achievement of that mission. This will allow improved tracking of health care programs and their performance.
2. *Intensify scrutiny of waste in existing federal health programs*. A more systematic identification of wasteful, duplicative health care spending would allow these dollars to be recaptured.
3. *Promote transparency on pricing, quality, and performance*. Federal and state officials should encourage private-sector organizations, including consumer groups and even medical societies, to institute Web-based evaluations of hospitals, clinics, and other medical providers. To a large extent, this is already happening with health insurance plans in the Federal Employees Health Benefits

Program, with plan ratings or evaluations by organizations such as *Consumers' Checkbook*, and the National Association of Retired Federal Employees (NARFE). Such ratings could also be posted on government sites. State and federal officials themselves could post provider pricing for medical services, especially for state-regulated hospitals and other facilities that get taxpayer funds. This would allow individuals and families to better understand the real options available to them, as well as encourage improvement in performance and greater competition among hospitals, especially for elective procedures.

4. *Dramatically expand private health insurance coverage by giving tax breaks for individuals and families without employer-sponsored insurance.* Provide persons who do not and cannot get health insurance through the place of work with tax relief, enabling them to buy affordable health insurance. This would eliminate the massive tax penalty that burdens persons trying to buy health coverage on their own. The greater the reliance on private health insurance, the less likely will it be for persons to use the hospital emergency room for non-urgent medical services.

5. *Promote Health Savings Accounts (HSA).* Encourage an expansion and broader use of HSAs by persons employed by state and local governments. This option encourages consumers to wisely spend their out-of-pocket health care dollars while providing catastrophic coverage. It allows persons to pay doctors directly for routine medical services while relying upon insurance for the coverage of larger items. This approach would not only allow greater efficiency of service at the point of delivery, it would also reduce the existing third-party payment pressures on doctors and other medical professionals. Now increasingly popular in the private sector, this option should also be available for state and local government employees.

6. *Promote rational incentives for employees enrolled in employer-based coverage*. Employers should allow consumers to choose health plans that provide financial incentives, including reduced premiums, copayments or deductibles for employees to enroll in plans that provide prevention or wellness services, including screening for blood pressure, cholesterol or diabetes, as well as regimens that promote diet, exercise, smoking cessation, and body mass reduction. New incentives for tests and screenings would encourage positive changes in behavior, improve workforce health, and thus reduce health care costs.

7. *Adopt statewide health insurance market reforms that would expand coverage, guarantee portability of private health insurance, and increase efficiency*. The state health insurance markets are highly concentrated, dominated by a few plans, overregulated, balkanized, and dysfunctional. Not only does the status quo obstruct efficient access to affordable coverage for millions of Americans, it also contributes to rising costs of uncompensated care and emergency room over-crowding. State officials can address this problem by creating a single statewide health insurance market for individuals and small businesses, contracting out to private third-party administrators to enroll individuals and families in health insurance, and encouraging employers to switch financing from defined benefit to defined contribution. The third-party administrators would be designated as the employer's plan for purposes of federal tax and employment law. This would enable individuals and families to choose the health plans they want tax-free, to own the plans, and to keep them when moving from job to job. This dramatic increase in the portability of health insurance would increase access to care, reduce the incidence of un-insurance, and thus contribute to a reduction in current usage of hospital emergency rooms for non-urgent care. Beyond that, of course, such a reform would encourage intense competition among health plans for beneficiaries, as in the Federal Employees Health Benefits program (FEHBP), thus keeping costs under control while sharply expanding consumer choice.

8. *Restructure Medicare payment and institute income-related subsidies for Medicare enrollees.* Today, with the exception of Medicare Part B, the Medicare payment for enrollees is the same, regardless of income. This means that wealthy retirees living on corporate pension plans are entitled to the same level of taxpayer subsidy that poor retirees get. In order to make this program more sustainable, Congress should adopt income-based, sliding-scale, payment for all of Medicare. This will ease the pressure of Medicare spending on other sectors of the health care economy.

9. *Reform physician payment in the entitlement programs.* Medicare and Medicaid payment is flawed and outdated. Particularly in the case of Medicaid, it is discouraging physician participation or the acceptance of new patients. Congress should revisit and restructure the Medicare payment system, and the states should do the same with Medicaid. The proper course is to provide a flat payment for medical services in Medicare, and allow physicians to balance bill. For special areas, such as emergency medicine, Congress should target additional funding for physicians in emergency medicine. In tandem with a reformed health insurance market focused on value and results, physician payment would change as demand changed, resulting, for example, in greater demand for physicians who provide preventive medicine.
10. *Provide special incentives to nurses and physicians and other medical professionals who wish to specialize in emergency medical care or disaster-related medicine.* Congress could make special provision for federal loans and grants for colleges and medical schools to encourage young men and women who choose to specialize in emergency care, or who are willing to commit to a public service assignment based on the need for emergency medicine skills. Similar to military service, the participants in this program can be subject to "Reserve-like" call-up in the event of a terrorist attack or other national emergency. The medical Reserve would also be a resource to receive emergency training and preparation in the event of a regional catastrophe.
11. *Revisit public health spending.* Congress should identify key public health goals to ensure practitioners and health care providers are compensated for achieving clear public health objectives. Some examples of public health initiatives that could lower overall costs would: develop quality measures; increase and track vaccination rates; and develop a systematic approach to chronic disease management in the areas of heart disease, mental health, and diabetes in publicly funded programs.
12. *Promote the widespread use of an Electronic Medical Record.* Americans should have a "Visa-like" portable card to store an electronic medical record. A portable personal record will reduce costs and make it more likely that information is readily accessible in a disaster. Security and privacy issues would, of course, need to be addressed as part of this initiative.
13. *Health Professional Registry*: Federal and state officials should maintain a registry of doctors and nurses and medical professionals, including retirees and those who have left the medical profession, who may be able to volunteer in the event of a national, state, or regional emergency.
14. *A new federal/state partnership to provide insurance coverage for low-income population.* The federal and state governments spend tens of billions of dollars on the uninsured, mostly compensating hospitals and other health care facilities for the costs of caring for those who are uninsured and unable to pay for medical services, once again, often in hospital emergency rooms. The federal government should offer grants or incentives to state officials to help them expand health insurance coverage, through the private sector, and thus reduce these uncompensated care costs. This kind of federal–state cooperation could result in more efficient and less costly health care for lower income individuals.
15. *Experiment with community health initiatives*. Using a clinical trial–like methodology to test different funding and incentive approaches, Congress could determine what works best in achieving community-based health goals through federally funded community health centers. Demonstration projects could be designed and rigorously evaluated. Results of these projects could help inform policymakers in evaluating proposals for reform.
16. *Experiment with new funding strategies for the provision of trauma care.* One model is the world-class trauma operation administered by the state of Maryland. It has developed an efficient system to maintain available trauma center beds. Maryland's comprehensive model views hospital-based emergency medical services as a "necessary public service similar to police, ambulance and fire." Maryland developed the Emergency Medical Services Operating Fund (EMSOF) and the Maryland Trauma Physician Services Fund. Both programs are funded in creative ways. For example, the Physician Services fund is supported by a $2.50 per year surcharge to the state vehicle registration fee.

17. *Establish a new disaster medicine specialty*. Within the medical profession, disaster medicine/disaster health should be formally designated as a medical specialty. Focused on a wide variety of disaster-related health impacts, this new specialty would fill roles in trauma centers and emergency departments.
18. *Physician training.* The medical profession should also establish routine emergency medical training for physicians and other health care providers. A disaster requires the physician/health care provider to move out of the safety of the hospital or office setting and into a makeshift area often lacking basic medicines, medical supplies, light, water, food, and communication.
19. *Emergency medicine research*. An Institute of Emergency Medicine should be established as part of the National Institutes of Health and dedicated to spearheading emergency medical research efforts. This institute should work closely with the Centers for Disease Control and Prevention to devise more comprehensive emergency medical response strategies.
20. *Plug and Play Surge capacity*. The U.S. Department of Health and Human Services should create teams that can be quickly deployed to cover surge capacity requirements in the event of a terrorist attack or natural disaster. Members of the disaster medicine specialty and CHC specialty areas should be considered for these roles, as well as physicians and other medical personnel enrolled in a registry to volunteer for service.
21. *Alternative care centers.* Clearly, hospitals and EDs do not have the surge capacity to respond to a medium- or large-scale disaster. Local communities themselves must plan for the establishment of alternative care centers to cope with a large surge of victims needing assistance, including those who need mental health services after the trauma of such an event.
22. *Provide liability and licensure requirements relief.* Policymakers must provide medical liability relief for doctors, nurses, and other medical professionals, including volunteers, delivering care in a crisis situation. Likewise, medical professionals should also be granted relief from licensure requirements during that period. Medical personnel caring for the victims of a terrorist attack or national emergency should not have to contend with the added worry of a malpractice suit.

Homeland Security Sector

23. *Communications chain.* 9/11 and Katrina after-action reports, both official and anecdotal, clearly delineated the lack of communication from the local to regional to state to federal level. The communications chain of command needs to be an integral part of any community-based disaster planning effort.
24. *Baseline Assessment.* A baseline assessment is the underpinning of readiness planning. To assess readiness and set priorities for funding and action, we need to thoroughly understand the current state of readiness. DHS needs to aggressively and fully document the nation's baseline ability to respond to disasters. The facts presented in the "Current State" section of this report suggest that a comprehensive baseline will identify many gaps in readiness.
25. *Focus more on pre-hospital issues*. The goal should be to focus on initiatives that limit the requirement to rush individuals to a hospital during a disaster. Emergency medical and community volunteer services that can identify and deliver care to the scene should be developed as a priority. Developing these programs could include sharing best practices and credentialing and employing emergency assets across community and state boundaries.
26. *Public education and public relations campaign for citizens*. The more resilient and self-reliant a community, the better will citizens be able to withstand a disaster. Local community programs that help build a "culture of preparedness" among the American citizenry are essential.
27. *Better coordination of grant funding.* Federal and state DHS entities need to better coordinate the limited grant funding for training, exercises, and equipment to ensure that communities' needs are met.
28. *Self-help/self-diagnosis.* Local communities need to train the population on practical medical self-diagnosis and treatment techniques. Emergency medicine expertise, including input from CHC staff, and use of strategic information systems can facilitate this effort.

29. *Internal coordination.* Coordination between the National Protection and Preparedness Division of DHS and the Office of the Chief Medical Officer at DHS would allow for a fuller understating of what facilities are available for use during a disaster.
30. *Isolation and quarantine plans.* Communities should be required to institute isolation and quarantine plans. While communities plan for emergency response, few are considering the necessary steps of isolation and quarantine measures as ways to contain a pandemic.
31. *Implement the DHS Target Capabilities List.* Much work has been completed to define the Target Capabilities List, but few local, regional, or state communities have implemented this preparedness effort.
32. *Institute medical surveillance systems.* Both active and passive measures are needed to ensure accurate and timely data collection and data analysis efforts. Currently, the U.S. has limited medical surveillance systems in place with almost no ability to perform surveillance overseas.
33. *Medical distribution system.* The federal government needs to step up efforts to provide for the rapid and accurate distribution of stockpiled medicines and equipment during emergency efforts.
34. *Improve situational awareness among leaders and decision-makers.* Situational awareness involves the real-time acquisition, representation, and interpretation of relevant information to make sense of current events, anticipate future developments, make intelligent decisions, and stay in control. Many of the after-action reports of both 9/11 and Katrina referred to the inability of key leaders to make the right decisions at the right time. Clearly, involving leadership individuals in live emergency drills and ensuring they fully understand their scope and authority is critical to disaster preparedness.
35. *DOD contingency military field facilities.* As an interim measure, DHS should be prepared to call in DOD units domestically to deal with catastrophic health events such as smallpox, avian flu, or other highly contagious pathogens or to help treat victims of nuclear attacks. The military must be highly skilled at setting up emergency military facilities in an "ad hoc" environment and assist in delivering emergency care to individuals who are sheltering in place. If community health facilities are totally unprepared, this scenario is preferable to utter chaos.

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