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LESSONS FROM KATRINA: RESPONSE, RECOVERY AND THE PUBLIC HEALTH INFRASTRUCTURE

Elizabeth A. Weeks

I. INTRODUCTION

Hurricane Katrina left many challenges and troubles in its wake, including a crisis for the region's health care system, which amply demonstrated the need to improve disaster preparedness for the nation's emergency medical providers. New Orleans's two large public hospitals have been closed since the storm. Essential medical records have been lost or destroyed. Pre-Katrina, half of the region's population lacked health insurance. The numbers of uninsured and

* Associate Professor, University of Kansas School of Law. The author wishes to acknowledge Michele Goodwin for coordinating the symposium and inviting me to speak. This paper also benefited greatly from comments of my symposium co-panelists, Moderator David Guinn, J. Elaine Garrett, Karen G. Gervais, and Mark Lies. Additional insights are attributable to Dr. Richard A. Frankenstei and Dr. James Aiken, my co-panelists on Disaster Management: Preparing for a New Reality, at the American Medical Association, Organized Medical Staff Section educational program, June 9, 2006, Chicago, Illinois. Finally, special appreciation to James Hodge, Executive Director, Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities, for sharing his considerable research on the health care disaster planning.

destitute rose dramatically in the storm's wake as employers were wiped out and, with them, Gulf Coast residents' employer health insurance. Without access to medical services or health insurance, many people were unable to receive necessary treatment, often exacerbating underlying chronic health conditions. Accordingly, the need for medical intervention became even more acute. For health care providers, Katrina's impact is not limited to physical destruction of facilities and buildings. The increased demand for services and increased numbers of uninsured patients creates a severe strain on capacity, particularly for emergency services. The impact extends beyond providers in the flood zone to neighboring states that have taken in the storm's victims. Those host states bear the increased demand from destitute, newly uninsured patients and patients enrolled in out-of-state private and government health plans.

Following the September 11, 2001 ("9/11") attacks on the Pentagon and World Trade Towers, federal and state authorities turned great attention to the nation's disaster preparedness. Many of the laws passed and proposed after 9/11 focused on preparing to respond to public health emergencies. Despite those efforts, Katrina provided vivid lessons about the nation's remaining deficiencies in disaster response planning. The next terrorist attack, bioterrorism disease outbreak, or natural disaster is likely to produce serious, widespread


2 See Kaiser Report 7387, supra note 1, at 1 (estimating that 400,000 jobs were lost and noting that many who lost jobs lost "not only their source of income but also the health insurance coverage that their former employers offered").

3 See Kaiser Report 7387, supra note 1, at 2 (noting closure "Big Charity" Hospital, the largest public hospital in New Orleans and Level I trauma center for Gulf Coast region); see also Robin Rudowitz et al., Health Care in the New Orleans Before and After Hurricane Katrina, HEALTH AFFAIRS, Aug. 29, 2006, at 2 (describing region's health care infrastructure and Charity Hospital's central role in serving a "largely poor, predominately minority population" and very high rates of emergency department visits) abstract available at http://content.healthaffairs.org/cgi/content/abstract/25/5/w393.

4 Kaiser Commission on Medicaid and the Uninsured, Medicaid Facts, A Comparison of Ten Approved Katrina Waivers, Policy Brief, Report no. 7420, Oct. 21, 2005 [hereinafter Kaiser Report 7420], available at http://www.kff.org/medicaid/upload/7420.pdf (last visited Sept. 20, 2006) (noting that individuals enrolled in Medicaid and SCHIP in their "home" states would have to enroll in the "host" states to receive assistance and that "host" state providers cannot be compensated by "home" states); Rudowitz, supra note 3, at 4 (describing Medicaid and other insurance coverage in Louisiana and evacuee states, including Texas, Georgia, and Ohio).
injuries and casualties. Therefore, health care providers play a crucial role in disaster planning. Much additional planning, forethought, and funding needs to be implemented before the next catastrophe, to meet the immediate medical needs of the disaster victims and secure adequate resources to both treat disaster victims and return to normal operations after the crisis has passed.5

II. CONCEPTUAL UNDERPINNINGS

Health care disaster planning is challenging for many reasons, including the difficulty predicting the precise timing, impact, and cost of the next catastrophe. A natural disaster impacts society, the economy, and the health care system differently from a terrorist attack. A sudden, single episode attack imposes different challenges than an emerging or episodic crisis, such as infectious disease outbreak or release of a biological agent. Moreover, the underlying health, economic, and social conditions of the geographic region hit by the terrorist attack or natural disaster alter response priorities and needs.6 But common themes run through all disaster scenarios: First, meeting the needs of the population as a whole, rather than a single individual victim; second, coordinating the response among disjointed government authorities at both the national and state level.

A. Cost of Catastrophes

A brief survey of economic figures from a few recent disasters illustrates the difficulty predicting and measuring the impact of the next catastrophe. Moreover, the numbers change rapidly as the episode evolves and new information is acquired. For example, initial estimates of Katrina’s insured losses in the days immediately after the storm were $26 billion at the high end.7 Later estimates have been as

5 See Laura Landro, Hospitals Step Up Disaster-Preparedness, WALL ST. J., Sept. 6, 2006, at D4 (citing recent Institute of Medicine report and noting that despite “all the progress in improving readiness, experts warn there is still a long way to go” and that many hospitals are so overcrowded “that they can barely handle a multiple car crash, let alone mass casualties”).

6 See Landro, supra note 5, at D4 (citing experts’ warning that regions of the U.S. should prioritize disaster preparedness efforts based on the type of events they might likely face, rather than rely on “all hazards” programs).

7 See, e.g., Mike Comerford, Allstate Mobilizes Adjusters for Hurricane Claims, CHICAGO DAILY HERALD, Aug. 30, 2005, at B1 (citing insurance industry’s initial storm damage estimates, before levees broke, between $10 billion and $26 billion);
high as $200 billion. Even the early, grossly underestimated $26 billion figure would have exceeded the costs of any previous natural disasters in the United States, including Hurricane Andrew in 1992, at $20 billion, and the 2004 hurricane season with several Florida storms, which losses totaled $22 billion. The 1994 Northridge earthquake in California caused $16 insured losses. As one commentator noted: "Hurricane Katrina broke America's heart. No previous natural disaster exacted a greater toll."

Before Katrina, the 9/11 terrorist attack was the costliest U.S. disaster. Total costs of the World Trade Center attack alone, leaving aside the separate plane crash and Pentagon attack, are estimated between $33 to $36 billion, including lost earnings, property damage, and Ground Zero clean-up and restoration. Close to 3,000 people lost their lives in the attack, resulting in estimated $7.8 billion total lost

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Scott Miller, Katrina Damages Piling Up; Some Estimates as High as $16 Billion; State Farm Ready, PANTAGRAPH, Aug. 30, 2005, at C1 (reporting various estimates, ranging from low of 4$ billion to high of $16 billion); Scott Miller, Katrina Claims Pass '04 Storms, PANTAGRAPH, Sept. 3, 2005, at A10 (reporting, just a few days after the storm and levee breaks, that Hurricane Katrina had already resulted in more insurance claims than any storm of 2004).


9 See Jesse Westbrook, Hurricane Could Cost Insurers $60 Billion, ORLANDO SENTINEL, Sept. 10, 2005, at C1 (comparing previous disasters to Hurricane Katrina, including $20.8 billion insured losses from Hurricane Andrew in 1992, $16 billion from the Northridge earthquake in 1994, and $22 billion from the four hurricanes that hit Central Florida in 2004). Converted for inflation, total losses for Hurricane Andrew are estimated at $38.5 billion, and $48.7 billion for the Northridge earthquake. See Holz-Eakin testimony, supra note 8, at 14-15 (testifying that total insured and uninsured losses from Hurricanes Katrina and Rita approach $140 billion and noting that amount far surpasses recent natural disaster costs, even converted to today’s dollars).


lifetime earnings. By contrast, the tsunami that struck eleven countries in South Asia on December 26, 2004, caused a devastating human toll of 300,000 dead or missing but only $8.4 billion in damages. Six hundred and ninety hospitals and health care clinics were destroyed. The relatively modest damages from the tsunami reflect the fact that much of the property loss was uninsured and the underdeveloped insurance markets in the affected countries.

Biological, chemical, or other infectious disease-causing agents would produce different response challenges and costs than a single-episode natural disaster or terrorist attack. Data on the financial impact for health care providers for a recent public health emergency were compiled following the Sudden Acute Respiratory Syndrome ("SARS") outbreak in Toronto, Canada. The 108-day outbreak during the summer of 2003 cost health care facilities $945 million, according to Ontario's Minister of Health. The total includes $395 million in hospital costs, including staff and supplies; $330 million in health care worker costs, including wage-replacement for quarantined workers; and $100 million in lost revenues to hospitals affected by the SARS outbreak.

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12 See id. at 14 (summarizing losses as estimated by Federal Reserve Bank of New York).
13 Michael VanRooyen & Jennifer Leaning, Perspective: After the Tsunami – Facing Public Health Challenges, 325:5 NEW ENG. J. MED. 435, 435 (Feb. 3, 2005) (noting that “[t]he devastation wrought by the tsunami was catastrophic—more than 150,000 people dead, tens of thousands of people missing, thousands of miles of destroyed coastline, and loss of livelihood for millions of distraught survivors”); Robert Willis, Tsunami Had Little Fiscal Impact, SALT LAKE TRIB., April 13, 2005 (citing International Monetary Fund estimates for the region).
14 Peter Fritsch, Cleaning Up After the Tsunami, An ACEH Surprise: Good Government, WALL ST. J., Nov. 2, 2005, at A1 (reporting on tsunami aftermath); see also Denise Gracy, Even Good Health System is Overwhelmed by Tsunami, N.Y. TIMES, Jan. 9, 2005, at 10 (discussing public health outreach following destruction of clinics and hospitals).
15 See Insurance Information Institute, Asian EarthQuake and Tsunami, An Insurance Perspective 2 (March 29, 2005), at http://server.iii.org/yy_obj_data/binary/738638_1_0/AsiaEarthquakeTsunami.pdf#search=%22asian%20earthquake%20and%20tsunami%2C%20and%20insurance%20perspective%22 (last visited Sept. 22, 2006) (noting, as an example, that Indonesians spent average of $8 per capita on non-life insurance in 2003, compared to $1,980 per capita in the United States).
outbreak. In addition, $120 million was spent on disease-tracking, rapid-response teams, and other preparedness for future attacks.  

Despite the particular impact of the next disaster, certain common themes emerge that challenge policymakers’ and health care providers’ planning and response. First, disaster response requires thinking in terms of populations, not individuals. The population-based, public health approach may be unfamiliar or even antithetical to traditional medical treatment models. The demand surge likely to follow a natural, terrorist, or other disaster would quickly overwhelm health care supplies, facilities, funding, and personnel. Accordingly, medical workers and health department authorities need to consider how to ration and prioritize scare resources for the collective benefit of the entire affected population, even, at times, compromising the best medical outcome for an individual patient.

In addition to adopting public health models, disaster planners must face core constitutional values, namely, federalism. Emergency response calls for coordination among different levels of federal, state, and local governments and private actors. Federal and state governments share responsibility for disaster response, but the lines of authority are not clearly delineated. The federalist structure of government presents challenges for disaster management because state and federal governments each may justifiably claim authority for the response. Worse still, federal and state authorities may each disclaim ultimate responsibility for the catastrophe, pointing fingers at one another in an endless blame-game, as occurred during Katrina. The federalist system also requires coordination among separate state governments. A disaster may impact several states, each of which has separate sovereign authority and discretion to enact different, even conflicting, legal requirements and policy priorities for emergency management.

B. Health Care Versus Public Health

A catastrophe like Katrina calls for a broad range of public health activities. Natural or terrorist disasters on the order of Katrina or 9/11 inflict widespread human injury, creating a sudden, unprecedented demand for medical care. The ultimate tragedy of 9/11, however, was that the injuries were almost all fatal, leaving ready and willing health care providers with no victims to treat, only bodies to be recovered and identified. Katrina’s wrath both inflicted new, immediate emergency needs and seriously exacerbated existing conditions, with lasting, devastating effects for the region’s health care infrastructure. Before describing the range of emergency medical response activities relevant to disaster response, it is important to recognize the conceptual distinction between “health care” and “public health.”

In responding to a major catastrophe, emergency medical providers must abandon their familiar approach to health care delivery. Instead of focusing on caring for one patient at a time, providers should switch to consider the best, overall outcome for disaster victims collectively. Medical professionals will need to think beyond the patient-physician treatment relationship central to providing “health care.” “Health” suggests a “personal, medical matter, a state of freedom from pathology achieved by an individual through the mediation of a doctor.” Physicians diagnose, treat, and provide medical care to their patients. The standard of care strives for the best health outcome possible for an individual patient, irrespective of who else is in the waiting room.

“Public health,” by contrast, focuses on the welfare or safety of an entire population, an approach that may require compromising

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19 Burris, supra note 18, at 44.
individual health outcomes for the greater good of the community at large.\textsuperscript{20} The Institute of Medicine suggests: "Public health is what we, as a society, do collectively to assure the conditions for people to be healthy."\textsuperscript{21} Public health seeks more than the aggregation of individual satisfaction but, rather, the communal good.\textsuperscript{22} In many instances, public health policy is determined by the reality of scarce resources—time, money, personnel, beds, drugs, supplies, and equipment. The objective is to allocate resources most efficiently, in the best interest of the collective population. As a result of that rationing calculus, individual rights and interests necessarily are in tension with communitarian interests.\textsuperscript{23} For example, public health strategies allow an infected patient's freedom of movement or personal autonomy to be severely restricted by quarantine or mandatory vaccination to avoid exposing the rest of the population to infection. Likewise, under a public health model, one person's condition may be allowed to deteriorate while another victim's more pressing medical needs are addressed, contrary to the individual patient standard of care.\textsuperscript{24}

\textsuperscript{20} See Gostin, \textit{supra} note 18, at 81 (describing "alternative philosophical tradition that sees individuals primarily as members of communities...with each individual reliant on the others for health and security").

\textsuperscript{21} INSTITUTE OF MEDICINE, THE FUTURE OF PUBLIC HEALTH 19 (1988); see LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW & ETHICS: A READER 2 (2002) (citing same); see generally Burris, \textit{supra} note 18, at 45.

\textsuperscript{22} See Lawrence O. Gostin, \textit{Health of the People: The Highest Law?} 32 J.L. MED. & ETHICS 509, 510 (2004) ("The field of public health would profit from a vibrant conception of ‘the common’ that sees public interests as more than the aggregation of individual interests").

\textsuperscript{23} See generally GOSTIN, \textit{supra} note 21, at 67-93 (chapter on "Public Health Ethics: The Communitarian Tradition").

\textsuperscript{24} Physicians and other professionals must exercise the kind and degree of learning, skill, and ability of an ordinary member of the profession. \textit{See RESTATEMENT OF TORTS} § 299A (defining professional standard for negligence); \textit{see, e.g.}, Keebler v. Winfield Carraway Hosp., 531 So.2d 841, 845 (Ala. 1988) (defining physicians' duty to "exercise such reasonable care, diligence, and skill as reasonably competent physicians" in the relevant medical community would exercise in the same or similar circumstances"). Generally, a "hospital rendering emergency treatment is obligated to do that which is immediately and reasonably necessary for the preservation of life, limb or health of the patient." New Biloxi Hosp., Inc. v. Frazier, 146 So.2d 882 (Miss. 1962). Moreover, the fact that a physician lacks equipment, training, or capability to treat a patient properly does not excuse failure to exercise due care. Rather, the physician should refer the patient to a competent physician. \textit{See} DAN B. DOBBS, \textit{THE LAW OF TORTS} 636, 638 (2000) (citing cases involving chiropractors). Once a physician-patient relationship is established, a physician may have an ongoing duty to treat and, thereby, be found liable for refusal to treat, unless the physician gives proper notice and withdrawal. \textit{See, e.g.}, Payton v. Weaver, 131 Cal. App.3d 38,
C. State Versus Federal Powers

Much controversy and the finger pointing and blame-game that followed Katrina stemmed from failure to coordinate local, state, and federal response. It was devastatingly unclear which authorities—state or federal—assumed ultimate responsibility for disaster management. The federalism “turf war” that crippled Katrina response and threatens to undermine the effectiveness of future disaster response is a product of our federal system, enshrined in the Tenth Amendment. The framers of the Federal Constitution designed a system of checks and balances not only horizontally among the three branches of government but also vertically between the federal and state governments. The Tenth Amendment checks the centralized, federal power by securing all reserved, traditional state powers to the separate sovereign states. Federal authority is limited to constitutionally enumerated powers and laws that Congress enacts under those powers.

45 (Cal. App. 1982) (finding proper withdrawal even though patient suffered from end-stage renal disease and faced difficulty finding alternative provider). The professional standard does not seem to take into account competing needs of other patients. In summary, the existence of a catastrophic public health emergency, however, might be a relevant “circumstance” that the jury could consider. See Dep’t of HHS, Health Resources and Services Administration, Healthcare Systems Bureau, Division of Healthcare Preparedness, Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) — Legal and Regulatory Issues, Draft Report, at 42 (Sept. 2005) [hereinafter ESAR-VHP Draft], available at http://www.publichealthlaw.net/Research/Affprojects.htm#HRSA (last visited Sept. 22, 2006) (suggesting that “circumstances related to the emergency as a whole play a factor in establishing the standard of care for physicians and medical staff rendering care”).


26 “The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.” U.S. CONST., AMEND. X.

authorities typically follow orders from state governors, acting on their reserved police powers to protect public health, safety, and welfare.\textsuperscript{28} Federal authority to respond to disasters derives from enumerated commerce, spending, or national security powers as stated in the Constitution or enacted by Congress.\textsuperscript{29}

The federalist system presents challenges for disaster management. A local disaster may have a broad economic, humanitarian, or emotional impact on the entire nation, thus calling for centralized response at the federal level. A regional disaster, such as Katrina, may cross state lines and thus call for separate responses from the affected states. The impact on states and their approaches to emergency response and disaster planning may vary widely. Moreover, states may have difficulty coordinating legal, emergency, public health, and other systems within and among their borders. Therefore, federal oversight and coordination might be beneficial to the recovery effort.\textsuperscript{30}

But federal authority for emergency response is limited and subject to interpretation.\textsuperscript{31} Without clear congressional or constitutional authority, federal authorities may exceed their enumerated powers and encroach on traditional state authority. Other practical considerations counsel in favor of allowing state and local governments to take primary responsibility for disaster response. Local responders are closer to the scene and more familiar with their citizens’ needs than detached federal authorities. Accordingly, they are uniquely positioned on the ground to assess and respond.\textsuperscript{32} Decentralized state agencies may also be faster, more nimble, and better able to access information and resources than large federal agencies. Imagine, for

\textsuperscript{28} See Gibbons v. Ogden, 22 U.S. 1 (1824) (describing states’ “immense mass of legislation” for public health and safety); Gostin, \textit{supra} note 18, at 86 (suggesting that “states have ‘plenary’ authority to protect the public’s health under their reserved powers in the Tenth Amendment”).

\textsuperscript{29} See Gostin, \textit{supra} note 18, at 86 (noting that “the federal government, under the national defense or commerce powers of the Constitution, is entitled to act in the context of multistate threats to health and security”).

\textsuperscript{30} See GAO Report No. 06-365R, \textit{supra} note 25, at 3 (“As we recommended in 1993, we continue to believe that a single individual directly responsible and accountable to the President must be designated to act as the central focal point to lead and coordinate the overall federal response in the event of a major catastrophe”).

\textsuperscript{31} See \textit{infra} notes 69-71 and accompanying text (describing authority of President and Secretary of Health and Human Services to declare emergencies under various statutory definitions).

\textsuperscript{32} See Gostin, \textit{supra} note 18, at 87 (suggesting that “[s]tates and localities probably would be the first to detect and respond to a health emergency and would have a key role throughout”).
example, the effect of replacing local fire departments with a central, federal fire authority. The response would be utterly ineffective for even a routine house-fire not to mention widespread conflagration. Consider the bureaucratic delay that would result as federal authorities receive notification of the emergency, approve federal intervention, deploy federal firefighters, and transport personnel to the emergency location. This example might seem far-fetched until one considers similar, heretofore unthinkable delays and problems in federal response to the Gulf Coast emergency after Katrina.

In addition to federal-state coordination, a federally declared disaster would also call for response from numerous, disconnected federal agencies and divisions. A different sort of turf war could ensue without a plan for coordination and mutual support among agencies and branches of the federal government. Recognizing those issues, the Bush administration passed a range of disaster preparedness legislation following the 9/11 attacks. The core legislation, the Homeland Security Act of 2002, focused on inter-agency and inter-governmental coordination among federal, state, and local authorities. The Act created a new umbrella federal agency, the Department of Homeland Security (“DHS”). DHS brought parts of more than 100 other agencies under its authority, including the Federal Emergency Management Agency (“FEMA”) and Department of Health and Human Services (“HHS”), and its subdivision, the Centers for Medicare and Medicaid Services (“CMS”). Other federal agencies central to disaster management include the Centers for Disease Control and Prevention

33 See, e.g., Robert Block, Congress Begins FEMA Hearings, WALL ST. J., Sept. 15, 2005, at A12 (“FEMA has become synonymous with the government’s bungled response to the hurricane, with a number of politicians saying part of the problem is that the agency is no longer cabinet-level but rather a small cog in the mammoth Department of Homeland Security”); see also The Federal Response to Hurricane Katrina: Lessons Learned, available at http://www.whitehouse.gov/reports/katrina-lessons-learned.pdf (last visited Oct. 27, 2006) (Department of Homeland Security study conducted under presidential directive, describing the failure of HHS to maintain health and social services during the disaster and their need to better coordinate these services with FEMA); see e.g., FARBER & CHEN, supra note 10, at 12 (“FEMA, the federal government’s primary disaster-response agency, had no effective supply-tracking system. . . . Planning and coordination were so poor that truck drivers didn’t know where to go, and emergency-management officials didn’t know what was en route or when it might show up”) (citing United State Senate Committee on Homeland Security and Governmental Affairs)).

34 See generally infra Section III (discussing Homeland Security Act of 2002 and other post-9/11 federal legislation).
of Defense ("DOD").

Turning now to state authority for disaster response, a range of traditional reserved powers and state laws are implicated. States, in their separate sovereign capacities may define rules and standards differently, set different regulatory and budgetary priorities for public safety, health care, public health, and welfare services. States may allocate authority and assign duties differently from state to state, creating challenges in identifying the relevant actors and coordinating disaster response across state lines. Traditional state powers include police, fire, and other health and public safety authorities. In fact, “most public health activities take place at the state and local levels: surveillance, communicable disease control, and food and water safety.”

Absent legislation creating FEMA, DHS, or other federal authorities, emergency management of local disasters squarely sits within states’ traditional reserved powers.

In addition, states are responsible for regulating businesses and professionals operating within their borders. States define qualifications for and grant licenses to health care professionals. They may also inspect and approve health care facilities. Business organizations, including medical practice partnerships and hospital corporations, operate under state laws. States may enact legal requirements particular to hospital organizations, including requirements for bylaws, governance rules, and staff privileging standards. In addition, medical professional standards of care and other liability rules are defined by widely varying state tort laws.

Other state laws also bear on health care disaster response. For example, workers’ compensation systems that provide no-fault alternatives for workplace injuries, including occupational diseases, could compensate health care workers exposed to biological agents or infectious disease. States also traditionally have broad authority to regulate the business of insurance, including health insurance, subject to sweeping federal preemption under the Employee Retirement Insurance Security Act ("ERISA"). Also, state welfare programs,

35 Gostin, supra note 18, at 87.
36 See, e.g., Dent v. West Virginia, 129 U.S. 114 (1889) (recognizing state’s authority to provide for the general welfare of its people includes licensing medical professionals who practice in the state).
37 Employee Retirement Insurance Security Act of 1974, 88 Stat. 832, 29 U.S.C. § 1001 et seq.; see also McCarran-Ferguson Act, 15 U.S.C. § 1012 (declaring that the business of insurance should be “subject to the laws of the several States which relate to the regulation or taxation of such business”).
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including Medicaid, the joint federal-state indigent health insurance program, vary from state to state in terms of eligibility, coverage, payment, and administration. An interstate or national disaster management plan should consider how to coordinate the wide variety of state business, tort, insurance, and other laws governing public safety, emergency, medical, and welfare systems.

III. LEGAL RESPONSES TO DISASTERS

Disaster management during a major public health emergency calls for unique legal responses. Authorities may require special powers to effectively protect public health and safety. Those powers and responsibilities implicate both the public health and federalism concerns described above.\(^{38}\) Public health intervention may necessarily infringe on constitutionally protected rights and liberties. Accordingly, states may need to enact special laws authorizing officials and emergency responders to impose on individual rights in ways that would be impermissible under normal circumstances but are necessary given the exigency of the situation. At the same time, federal intervention, including federal financing for disaster preparedness, may be the best way to ensure adequate, coordinated response and safeguard the nation’s health and safety. Katrina was the first real-life test of the post-9/11 laws authorizing special state emergency powers and providing federal funding for public health emergencies. The experience highlights what worked and what remains to be addressed in both areas.

A. State Responses

After 9/11, public health advocates and disaster planners proposed expanding states’ emergency response powers.\(^{39}\) With that goal in mind, CDC representatives and other public health experts initiated drafting of the Model State Emergency Health Powers Act (“MSEHPA”) by a collaboration of scholars, governors, legislators, public health commissions, and attorneys general, in consultation with major stakeholders, including businesses, civil liberties organizations,

\(^{38}\) See supra Section II (describing conceptual underpinnings of disaster response).

and medical practitioners.\textsuperscript{40} MSEHPA would increase state and local public health authority to protect individuals and manage property during a state of emergency. As of October 24, 2006, forty-four states and the District of Columbia had passed laws incorporating at least some MSEHPA or similar provisions.\textsuperscript{41}

MSEHPA is inherently controversial because of civil liberties implications.\textsuperscript{42} Public health interventions authorized by the Model Act, including quarantine, surveillance, forced treatment, property condemnation and destruction, and conscription of medical personnel necessarily infringe on individual rights. The Supreme Court, however, has repeatedly recognized the authority of states to intrude on individual liberties, as long as there is a legitimate purpose and the infringement is no greater than necessary to achieve the purpose.\textsuperscript{43}

MSEHPA incorporates five basic public health powers: preparedness, surveillance, property management, protection of persons, and public information and communication.\textsuperscript{44} The Model Act grants the state’s governor the power to declare a “Public Health Emergency.” “Public Health Emergency,” for purposes of MSEHPA,


\textsuperscript{41} The Model State Emergency Health Powers Act, Legislative Surveillance Table (maintained by The Center for Law & the Public’s Health at Georgetown & Johns Hopkins Universities, CDC Collaborating Center Promoting Health through Law), available at http://www.publichealthlaw.net/Resources/Modellaws.htm (last visited Sept. 22, 2006).


\textsuperscript{43} See, e.g., Jacobson v. Massachusetts, 179 U.S. 11 (1905) (upholding state law on mandatory vaccination); Addington v. Texas, 441 U.S. 418 (1979) (approving involuntary civil commitment of mentally ill person).

\textsuperscript{44} See Gostin, supra note 40, at 83 (listing powers).
is defined broadly as "an occurrence or imminent threat of an illness or health condition that...is believed to be caused by bioterrorism or the appearance of a novel or previously controlled or eradicated infectious agency or biological toxin" that poses a high probability of a large number of deaths or serious disabilities in the population. The governor of the state may terminate the declaration of Public Health Emergency by executive order, and the declaration terminates automatically after thirty days unless renewed. In addition, the state legislature may terminate the declaration by a majority vote in both houses.

The public information and communication provisions of MSEHPA are intended to assist public health authorities in detecting and tracking public health emergencies. Health care providers, coroners, and medical examiners are required to collect and report, within twenty-four hours of an encounter, detailed patient information, including name, date of birth, sex, race, occupation, home and work addresses, and "any other information needed to locate the patient for follow-up." The "any other information" provision is dangerously broad, but MSEHPA attempts to safeguard privacy and liberty rights, providing that information sharing "shall be restricted to the information necessary for the treatment, control, investigation, and prevention of a public health emergency.

Although many state legislatures have embraced at least some of MSEHPA's provisions, the Model Act has been widely criticized. Various constituents, including physicians, public health authorities, and civil libertarians, suggest that MSEHPA "treats American citizens as if they were the enemy." In particular, MSEHPA raises

45 MSEHPA § 104(m).
46 MSEHPA § 405(a) - (c).
47 See MSEHPA, art. III, §§ 301 (reporting), 302 (tracking), 303 (information sharing).
48 See MSEHPA § 301(c) (regarding manner of reporting).
49 See MSEHPA § 303(c) (regarding information sharing on "reportable illnesses, health conditions, unusual clusters, or suspicious events").
constitutional questions about the scope of executive power and possible infringement of civil liberties. Opponents charge that MSEHPA "in effect, empowers the Governor to create a police state by fiat" and "[u]nder this Act, any governor could appoint himself dictator by declaring a 'public health emergency'". Moreover, critics assert that MSEHPA gives governors' broad powers to declare and terminate an emergency, with only limited checks on that power from the state legislature.

Other MSEHPA provisions, including those authorizing the governor to take possession of or destroy private property, including medical facilities and resources, are controversial and implicate both property and liberty rights. From a professional autonomy perspective, the state's authority to compel emergency responders, including health care professionals, to assist in the event of an emergency, is troubling. But the demand surge likely to result from a major catastrophe may compel states to restrict professional autonomy in favor of public welfare. Others charge that enforcement provisions are unnecessarily harsh, authorizing law enforcement to threaten or use deadly force to possess or destroy property and compel vaccination or quarantine. The right to refuse medical treatment is rooted in state (The Emergency Health Powers Act Turn Governors into Dictators urging readers to sign petition against legislation, suggesting that "you will be charged with a crime" unless individual submits to mandatory medical exam or vaccination, or physician performs exam).


52 See AAPS, supra note 50, at 2, 5.

53 See Gostin, HEALTH AFFAIRS, supra note 39, at 87 (identifying and rebutting those concerns).

54 See ESAR-VHP Draft, supra note 24, at 24 (noting, for example, District of Columbia's law requiring "health care providers within the District to reasonably assist with the emergency response").
common law and constitutional rights to bodily integrity.\textsuperscript{55} Adding to the potential for abuse, public health authorities exercising powers under MSEHPA enjoy immunity from liability in state courts.\textsuperscript{56}

B. Federal Response

The events of fall 2001 highlighted the need for coordinated emergency planning and preparedness for future terrorist attacks. Federal and state public health authorities had committed some resources to bioterrorism preparedness prior to 9/11,\textsuperscript{57} but they made substantial additional appropriations following the airline hijackings and subsequent bioterrorism threats. In 2001, Congress passed the Public Health Threats and Emergencies Act, which allocated $500 million to the Department of Defense for grants and cooperative agreements with states and local governments to address emergency and bioterrorism preparedness.\textsuperscript{58} In addition, the CDC’s bioterrorism preparedness funding jumped from negligible to $194 million in fiscal year 2001.

Following 9/11, Congress quickly passed several pieces of legislation to better prepare the country to predict and respond to future homeland terrorist attacks. In October 2001, President Bush signed the “Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism” Act (“USA PATRIOT Act”), which was primarily a national security law aimed at preventing and prosecuting terrorism.\textsuperscript{59} The USA PATRIOT Act included the First Responders Assistance Act, which designated ambulance companies and hospitals as “first responders” eligible for grants to

\textsuperscript{55} See Reich, \textit{supra} note 51, at 401-02, nn.103-04 (citing cases).

\textsuperscript{56} See MSEHPA § 804(a) (providing immunity from liability for death, personal injury, or property damage, for governor, public health authority, or any other state official, expect in cases of “gross negligence or willful misconduct”).


prepare to respond to acts of terrorism. In January 2002, President Bush signed a $2.9 billion bioterrorism appropriations bill, which provided $1.1 billion to states to improve terrorism-related public health emergency response preparedness.

The central piece of post-9/11 federal legislation was the Homeland Security Act of 2002, which brought more than 100 agencies, including some functions of HHS and FEMA, under the new cabinet-level DHS. The Act involved the largest restructuring of the federal government since the creation of the Department of Defense ("DOD") in 1947. DHS oversees the nation's preparedness and defense initiatives for future terrorist attacks, including biological and chemical weapons attacks. Hospitals, public health agencies, and other health care entities receive funding for response planning. In

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addition, the Act supported several drills and mass destruction exercises in major cities to test the response readiness of public health and other essential services.\textsuperscript{65}

The Homeland Security Act called for the creation of a fully integrated national emergency response system, or National Response Plan ("NRP"), adaptable to any domestic terrorist attack or natural disaster. The NRP includes a National Incident Management System ("NIMS") to coordinate federal, state, and local entities' prevention, preparedness, response, and recovery plans. The President's declaration of an "Incident of National Significance" invokes special federal powers and coordinated assistance under NIMS. For example, in the case of a declared emergency, local, private hospitals could draw medical and other staff, facilities, and supplies from other hospitals, including federal Veteran's Affairs facilities. In addition, the Secretary could waive states' medical professional and facility licensing requirements to allow providers to cross state lines and establish makeshift hospitals and clinics. The NIMS envisions memoranda of agreement ("MOUs") among federal agencies and between federal and state authorities to allow advance planning of response efforts, reciprocal duties, and cross-reimbursement among emergency medical responders.\textsuperscript{66}

Other post-9/11 legislation aimed specifically at health care preparedness. The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 ("Bioterrorism Preparedness Act" or "the Act") addresses various concerns, including national and local emergency planning, coordination, and reporting; stockpiling of medical supplies, including bioterrorist countermeasures or antidotes;


enhanced controls over biological agents and toxins; and improved access and availability of medical treatment. The Act appropriated $1.6 billion in federal grants to implement state plans and conduct local preparedness activities, such as improving communications infrastructure, training laboratory and other health care professionals to screen for novel medical conditions, enhancing surveillance and detection activities, and increasing stockpiles of medical equipment and supplies.

The Bioterrorism Preparedness Act authorizes federal authorities, in an emergency area, during an emergency period, to waive or modify certain state and federal laws governing health care providers to ensure adequate availability of medical services in the event of a homeland security emergency. An “emergency period” must be declared by either the President, under the federal Robert T. Stafford Disaster Relief and Emergency Assistance authority, or the Secretary of Health and Human Services (“HHS”), under Section 319 of the federal Public Health Service Act. Secretary Leavitt acted under Section 319 to declare a Public Health Emergency (“PHE”) in the Gulf region states of Alabama, Florida, Louisiana, Mississippi, and

67 See 42 U.S.C. § 1135(a) (2005) (stating purpose as ensuring availability of “sufficient health care items and services” during an emergency and exempting health care providers from sanctions for “furnish[ing] such items and services in good faith,” even if “unable to comply with one or more requirements described in subsection (b),” which include conditions of participation and EMTALA sanctions for improper transfer); see also Jason W. Sapsin, Introduction to Emergency Public Health Law for Bioterrorism Preparedness and Response, 9 WIDENER L. SYMP. J. 387, 298-99 (2003) (summarizing provisions of Emergency Preparedness Act).


69 See 42 U.S.C. § 1320b-5(a)(1), (b) (2005) (authorizing Secretary “to temporarily wave or modify” the application of certain laws “to ensure to the maximum extent feasible ... that sufficient health care items or services are available to meet the needs of individuals” in “any emergency area and during any emergency period,” as so defined in the Act).

70 See Pub. L. No. 107-188, § 143(g)(1) (defining “emergency area” as geographical area in which “emergency period,” as defined in the Act, exists). The Bioterrorism Preparedness Act amended section 319 of the Public Health Service Act, granting broad authority to the Secretary of HHS to declare a “public health emergency” (“PHE”) at the federal level.
Texas after Hurricane Katrina.\textsuperscript{71} Specifically, authorities may waive or modify Medicare and Medicaid conditions of participation, state licensure requirements, and provider payment limitations and prerequisites under federal health programs.\textsuperscript{72}

The Bioterrorism Preparedness Act also allows federal authorities to waive sanctions for violations of the federal Emergency Medical Treatment and Active Labor Act ("EMTALA").\textsuperscript{73} EMTALA requires Medicare-participating hospitals to provide appropriate, nondiscriminatory medical screenings to all individuals with emergency medical conditions, without regard to a patient’s ability to pay or Medicare eligibility.\textsuperscript{74} Specifically, hospitals must screen "any individual regardless of diagnosis (e.g., labor, AIDS), financial status (e.g., uninsured, Medicaid), race, color, national origin (e.g., Hispanic or Native American surnames), handicap, etc." \textsuperscript{75} EMTALA was


\textsuperscript{72} 42 U.S.C. § 1135(b)(1)(A), (3) (2005) (authorizing U.S. Secretary of Health and Hum. Services to waive or modify certain requirements); see Project Bioshield § 9 (amending language of § 1135(b)(1)(A), regarding EMTALA and sanctions for improper transfers and adding § 1135(b)(7), regarding waiver of certain privacy provisions of Health Insurance Portability and Accountability Act of 1996); see also 42 C.F.R. § 489.24(a)(2) (2005) (providing that sanctions “for inappropriate transfer during a national emergency do not apply to a hospital with a dedicated emergency department located in an emergency area”).


\textsuperscript{74} Final Rule, Medicare Program; Clarifying Policies Related to the Responsibilities of Medicare-Participating Hospitals in Treating Individuals with Emergency Medical Conditions, 68 Fed. Reg. 53222, 53222 (Sept. 9, 2003) (summarizing EMTALA requirements); Sara Rosenbaum & Brian Kamoie, Finding a Way Through the Hospital Door: The Role of EMTALA in Public Health Emergencies, 31 J.L. MED. & ETHICS 590, 590 (2003) (noting that “EMTALA imposes on all Medicare-participating hospitals a singular, legally enforceable duty of care, entitled all individuals who seek care at hospital emergency departments to an appropriate (i.e., nondiscriminatory) examination and to either stabilizing treatment or a medically appropriate transfer if an emergency medical condition is identified”); see 42 USC § 1395dd(b)(1) (codified EMTALA provisions).

\textsuperscript{75} Health Care Financing Admin. ("HCFA"), Department of Health & Human Services ("HHS") Interpretive Guidelines – Responsibilities of Medicare Participating Hospitals in Emergency Cases app. v at v-19 (May 1998); see Lee supra note 61, at 151 (quoting same).}
enacted in response to widespread "patient dumping" or the practice of denying treatment to patients needing emergency services, especially indigent and uninsured patients.\textsuperscript{76} Without the PHE waiver, EMTALA could severely hamper disaster response by exposing hospitals to sanctions for refusing to treat patients at damaged or over-burdened facilities. Hospitals might also anticipate sanctions for immediately diverting patients for quarantine at designated infectious-disease centers before providing otherwise required EMTALA screening or stabilization.

The temporary waivers are designed remove some obstacles to providing emergency medical services and thereby increase the supply of health care providers in the event of an emergency. For example, a hospital or physician who opted out of becoming a Medicare-participating provider to avoid rigorous and costly compliance obligations may be willing to sign up for the limited purpose of providing emergency care in the event of a homeland security attack or other public health emergency. The state licensing waivers allow hospitals in an affected state to address the demand surge for medical care by recruiting temporary help from out-of-state, otherwise unlicensed medical professionals. In addition, locations such as hotels or sports arenas could be used as temporary hospitals or clinics without meeting state facility licensing requirements. The EMTALA waiver does not relieve hospitals’ duty to provide emergency medical care without regard to payment but does allow coordinated community response plans, for example, by designating certain hospitals as trauma, infectious-disease, or other specialized facilities to which patients could be diverted.

Project Bioshield was a response the anthrax and SARS threats that occurred after the 9/11 attacks.\textsuperscript{77} Project Bioshield aims to

\textsuperscript{76} H.R. Rep. No. 241, 99th Cong., 2d Sess., pt. 3, at 5 (1986); see id. at 27 (discussing Committee’s concerns regarding "increasing number of reports" of hospitals refusing to provide treatment or transferring patients in unstable conditions); see also Maria O’Brien Hylton, The Economics and Politics of Emergency Health Care for the Poor: The Patient Dumping Dilemma, 1992 B.Y.U. L. Rev. 971, 1013 (1992) (suggesting that increasing number of dumping cases involve patients with insurance, but inadequate coverage, including patients discharged when insurance runs out and AIDS patients); Bleys W. Rose, Emergency Rooms Get Federal Relief; Relaxation of 1986 Rules Intended to Help Hospitals Deal with Financial Burden of Uninsured May Cut Losses, THE PRESS DEMOCRAT, Nov. 3, 2003, at D1 (noting that Congress enacted EMTALA “in response to complaints from public hospitals that for-profit facilities were ‘dumping’ uninsured patients on their emergency rooms”).

\textsuperscript{77} See supra note 17 and accompanying text (describing Toronto SARS episode).
improve pharmacological interventions to protect the public against chemical, biological, radiological, or nuclear attacks. Project Bioshield Act of 2004 ("Bioshield I") authorized $5.6 billion over ten years and streamlined the procurement process for government purchasing and stockpiling of vaccines and drugs to treat anthrax, smallpox, botulism, and other biological agents as well as radiation and chemical weapons exposures.

Bioshield I provided grants for biodefense medical research, including $1.5 billion per year since 2003 for National Institutes of Health studies on treatments for smallpox, anthrax, Ebola, and other pathogens. In addition, the law provides incentives for pharmaceutical companies to conduct research and development for new vaccines and treatments, including expedited FDA approval and guaranteed federal market for the new products. The law also allows distribution of best available treatments, including drugs and devices not yet FDA-approved, in some cases. Project Bioshield also supports surveillance, intelligence, and law enforcement efforts. Under the Bioshield I, federal authorities deployed new environmental detectors and expanded existing disease surveillance techniques. The intelligence community was authorized to use new scientific methods for foreign weapons study, and law enforcement authorities may employ novel scientific forensics for investigating biological crimes.

In April 2005, Senator Lieberman proposed Project Bioshield Act of 2005 ("Bioshield II"), which would include additional financial incentives for developing countermeasures. The act also

79 See Project Bioshield I, supra note 75, §§ 319F-1, 3, 319F-2, 510 (outlining policies and strategies);
82 See HHS Fact Sheet – Project Bioshield, supra note 80 (summarizing key provisions on day President Bush signed legislation into law).
83 Project Bioshield II Act of 2005, s. 975, 109th Cong. (introduced by Senators Lieberman and Hatch on April 29, 2005).
would provide immunity from liability for pharmaceutical companies and health care providers using fast-track or provisionally approved products. An alternative government compensation fund would be established for persons injured by the vaccines and other drugs. No action has been taken on the bill since it went to subcommittee on July 21, 2005.

C. Katrina Response

Hurricane Katrina and the New Orleans levee collapse tragically and starkly demonstrated the nation’s lack of disaster preparation. As one commentator noted, “After the levees broke, we watched every single system associated with the life of a city fail: the electrical grid, the water system, the sewer system, the transportation system, the police force, the fire department, the hospitals, even the system of disposing of corpses.” Health care providers, in particular, faced a range of issues responding to and recovering from Katrina. The catastrophe provides still-emerging lessons for health care response and the resulting financial strain on health care providers in the disaster region and beyond.

Specifically for the medical system, the disaster illuminated fundamental weaknesses in the current, gap-ridden approach to health care financing in the United States. Even before Katrina, fifty-one

84 See Choo, supra note 17, at 39 (“Anyone looking for lessons about the value of preparedness does not need to look far. A good place to start is the U.S. Gulf Coast, still reeling from the devastation caused by Hurricane Katrina when it hit on Aug. 29”).

85 Nicholas Lemann, In the Ruins, NEW YORKER (Sept. 12, 2005).

86 See id. (discussing combined impact of region’s pre-Katrina health and poverty problems, physical damage to health care facilities, staffing shortages, lost medical data, disaster-related health and mental health care needs, and other factors on health care infrastructure); Two New Orleans Hospitals Beyond Help; Head of Hospitals: $440 Million Needed to Replace Facilities, CNN.COM, Oct. 5, available at http://www.cnn.com/2005/US/10/05/neworleans.hospitals/ (last visited Sept. 24, 2006) 2005 (reporting that two main public hospitals, Charity and University, serving New Orleans were damaged beyond repair and will close); see also Kaiser Report 7387, supra note 1, at 3 (discussing effects of “Big Charity” hospital closing, which “served as the primary safety net hospital for thousands of New Orleans residents”; “51 percent of its patients were uninsured and another 32 percent were covered by Medicaid”).

percent of the Gulf region population lacked health insurance. Medicaid, the joint federal-state health insurance program for the indigent, covered thirty-two percent of the Gulf region’s residents.\(^8\) Katrina exacerbated the problem of the uninsured and exposed the drawbacks of health insurance that lacks portability.\(^8\) After the storm and flooding, the number of uninsured rose dramatically. Most Americans receive health insurance from their employer-based group plans. But as businesses were washed out of the region, so too were their employees’ jobs, salaries, and benefits, including health insurance.\(^9\) In addition, people covered by government health care programs, such as Medicaid, lost coverage because Medicaid eligibility is tied to state residence. Therefore, Louisiana residents who evacuated to other states lost coverage unless they reapplied in the state to which they were displaced.\(^9\) Some newly uninsured Katrina victims may retain sufficient assets that will prevent them from meeting Medicaid

\(^{8}\) See Kalb & Murr, supra note 1 (citing statistics); see also Sara Rosenbaum, U.S. Health Policy in the Aftermath of Hurricane Katrina, JAMA, Jan. 25, 2006, at 437 (citing similar figures).

\(^{9}\) See Rosenbaum, supra note 88, at 437, 438 (noting that “[f]or decades the Gulf Region population has lived daily with the consequences of the nation’s gap-ridden approach to health care financing” and “[d]espite Medicaid’s strengths, it lacks Medicare’s nationwide, uniform coverage potential and interstate portability”); Ricardo Alonso-Zaldivar, A Long Road to Recovery; Shut Out on Healthcare After the Storm, L.A. TIMES, Oct. 9, 2005, at A1 (discussing paradox of workers losing employer health insurance yet not qualifying for government health care programs, such as Medicaid); Dana P. Goldman & Mark A. Schuster, Commentary: Health Costs of Katrina, RAND CORPORATION, Oct. 11, 2005, available at http://www.rand.org/commentary/101005UPI.html (last visited Sept. 24, 2006) (appearing in United Press International) (noting that victims “deprived of paychecks and employer-sponsored health insurance” are “[s]uddenly unable to pay their medical bills” and “now face a health care crisis”); Kaiser Report 7387, supra note 1, at 1 (suggesting that “Katrina has raised both the number of people in poverty and the number of uninsured living in the States hit by Katrina as well as in the States of refuge”).

\(^{90}\) See Kaiser Report 7387, supra note 1, at 1 (“An estimated 400,000 jobs have been lost; many of those who lost their jobs and lost not only their source of income but also the health insurance coverage that their former employees offered”); Miller, Katrina Claims Pass '04 Storms, supra note 7, at A10 (quoting State Farm employee, “I’ve had people call and say they’re not only homeless, but they’re also jobless because the place they worked is just gone”).

\(^{91}\) See Rudowitz, supra note 3, at 4 (reporting that Louisiana sent notices to 20,000 Medicaid enrollees in March 2006, informing them that their Louisiana Medicaid would end June 30, 2006 and that those people may become uninsured unless they are eligible for and able to enroll in their new states’ Medicaid programs).
income-eligibility limits in whichever state they currently live.\footnote{See Alonso-Zaldivar, supra note 89, at A1 ("Under present rules for Katrina victims, if you are destitute, the government will pay your medical bills....But if you’re an adult who had a job that included health benefits and you lost the job because of the storm, the government can’t seem to help").} Other flood victims may be sufficiently destitute to qualify but not meet residency requirements in the states to which they have temporary migrated. Medicare beneficiaries may have lost identification cards or medical records crucial to obtaining medical care.

The Gulf region suffered from a poor overall level of health and welfare, even before the storm. Nearly half of Orleans Parish and one-third of Jefferson Parish were low-income.\footnote{See Rudowitz, supra note 3, at 1 (defining low-income as family income below 200% federal poverty level).} Forty-one percent of the population suffered from chronic conditions, such as heart disease, hypertension, asthma, diabetes, and cancer. Storm-damaged facilities and evacuation of health care providers exacerbated existing access to care challenges.\footnote{Kaiser Report 7387, supra note 1, at 2 ("The capacity of primary care providers to serve low-income populations remaining in directly affected areas has been reduced or eliminated").} Disabled and chronic-disease patients requiring regular treatment to manage their diseases could not access medical and social services and, in some cases, could not be located. Loss of crucial personal documents, medical records, and pharmaceuticals added to the challenges.\footnote{See FARBER & CHEN, supra note 10, at 5.} Mental health needs rose for storm victims facing loss of homes, lives, property, employment, and other upheaval.\footnote{See Kalb & Murr, supra note 1 (discussing existing area’s existing health care problems – “nickname: ‘the stroke belt’” – and additional chronic disease, mental health, and public health needs of Gulf Coast residents); see also Nobody Left Behind: Disaster Preparedness for Persons with Mobility Impairments, available at http://www.nobodyleftbehind2.org (last visited Oct. 27, 2006) (assessing the impact of Hurricane Katrina).} The New Orleans health care infrastructure was severely crippled by the storm. The two largest public hospitals, Louisiana State University Hospital and “Big” Charity, were damaged beyond repair and closed for months following the flood.\footnote{See Rudowitz et al., supra note 3.}

The government response to the health care crisis in the flooded Gulf Coast was rapid and fairly comprehensive. Immediate emergency funding and temporary waivers were enacted to address the region’s health care needs during and immediately after the catastrophe. In addition, federal authorities debated and eventually enacted long-term
financial and other support for patients and providers. Nevertheless, the impact on the region’s economy, generally, and health care infrastructure, specifically, will likely be severe and lasting. 

Health care providers as far away as Houston, Atlanta, and beyond are struggling to return to normal operations and remain solvent now that the flood waters have receded.

After the levees broke, the federal government quickly appropriated $62.3 billion in emergency assistance, most of which went to FEMA. Many observers expressed concern that FEMA money was put to questionable use. Both Democrats and Republicans called for investigation into spending of hurricane relief funds. Subsequent relief packages were scaled back under budget and other pressures. As far as health care providers are concerned, FEMA offers little assistance. The federal disaster relief program pays only for the cost of rebuilding disaster-damaged hospitals and expressly excludes direct-care and administrative costs of treating disaster victims.

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98 See generally Kalb & Murr, supra, note 1 (discussing various factors affecting region’s health care system); NPR Transcript, supra note 1 (same).
99 See Kaiser Report 7387, supra note 1, at 3 (noting that “[h]ospitals located in communities receiving large inflows of individuals displaced by Katrina are facing increased demand”; Houston’s Harris County hospital district, in particular, has assumed care of 23,000 evacuees living in the Astrodome, and Baton Rouge’s population has doubled); Andy Miller, Evacuees’ Access to Medicaid Eased, COX NEWS SERVICE, Sept. 7, 2005 (noting top Georgia public health official’s “warn[ing] that treating Katrina’s victims on top of metro Atlanta’s perennially packed emergency rooms may finally break the system”).
101 See Angie C. Marek and Edward T. Pound, A Flood of Money, 139 U.S. NEWS & WORLD REPORT 13, Oct. 10, 2005, at 24 (describing a $236 million 6-month contract with Carnival cruise lines for the use of three ships to shelter and feed evacuees and emergency workers which were currently at half-capacity, and a now-halted $2 billion contract to buy 120,000 trailers as emergency housing where 109 Louisiana families have been relocated).
102 See id. (reporting that one month after the hurricanes struck, DHS established an Office of Hurricane Katrina Oversight and appointed Matthew Jadacki, formerly a senior official at FEMA, as head of the auditing office).
103 See David Rogers, White House to Trim Katrina Spending Request, WALL ST. J., Oct. 19, 2005, at A8 (reporting White House plans scale back “Katrina spending requests to keep next relief package in the $20 billion range and offset the costs with equivalent savings”).
104 See Disaster Relief Act of 1974, Pub. L. No. 93-288, § 402(a), codified as 42 U.S.C. § 5121 (authorizing President to make contributions to State or local
Consistent with the post-9/11 preparedness legislation, post-Katrina, the Bush Administration's focus was ensuring that providers could meet the immediate health care needs of the flood victims. But federal authorities support stopped short of providing lasting financial stabilization to the fragile health care infrastructure. Secretary Leavitt's declaration of public health emergencies in Alabama, Florida, Louisiana, Mississippi, and Texas authorized those states to waive certain Medicare, Medicaid, State Child Health Insurance Program governments "to help repair, restore, reconstruct, or replace public facilities belonging to such State of local governments which were damaged or destroyed by a major disaster"); Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by Pub. L. No. 106-390, October 30, 2000, codified as 42 U.S.C. § 102 ch. 68 (2000) (authorizing funding for rebuilding costs). But see FEMA, Public Assistance, Response and Recovery Policy No. 9525.4, sect. 7(B)(2) (Aug. 17, 1999), available at http://www.fema.gov/rrr/pa/9525_4.shtm (last visited Sept. 24, 2006) (defining facilities' "ineligible costs" as "Cost of emergency medical treatment of any kind"; "Cost of follow-on treatment of disaster victims"; "Increased administrative and operational cost to the hospital due to increased patient load"; and "Costs associated with loss of revenue"). University and Big Charity, for example, likely will qualify for FEMA rebuilding grants. In addition, FEMA may provide individual patients up to $26,500 per patient funds to cover health care costs. But health care providers are required to bill patients or their insurers for treatment-related costs. In the wake of Katrina, FEMA funds were sought for other previously unauthorized disaster-response costs, including paying base salaries of disaster-area local government employees. See Louisiana Faces Cash Crisis; White House Says It Will Ask Congress to Ease Funding Rule, CNN.COM, Oct. 5, 2005, available at http://www.cnn.com/2005/US/10/05/katrina.responders/ (last visited Sept. 25, 2006) (citing Louisiana Governor Kathleen Blanco that Louisiana has $1 billion deficit and is running out of money to pay police officers, firefighters, and other emergency workers). Over objections of civil-liberties organizations, FEMA also pledged to reimburse churches and other faith-based organizations that provided emergency housing, food, supplies, and other support to flood victims. Allen Cooperman & Elizabeth Williamson, FEMA Plans to Reimburse Faith Groups for Aid; As Civil Libertarians Object, Faith Groups Weigh Whether to Apply, WASH. POST, Sept. 27, 2005, at A1, available at http://www.washingtonpost.com/wp-dyn/content/article/2005/09/26/AR2005092601799.html (last visited Sept. 25, 2006) (noting First Amendment objections and charities' concerns that private donors would be deterred if the organizations were receiving federal funds).

("SCHIP"), and patient privacy requirements, just as contemplated by the Bioterrorism Preparedness Act.

In addition, HHS promised full payment and exemption from sanctions for Medicare and Medicaid providers furnishing medical services in good faith but unable to fully comply with program requirements due to the disaster. EMTALA sanctions were waived for transferring a patient for medical assessment from a public health emergency location to a facility in a less hazardous locale. Also, certain patient privacy requirements under the federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA") were lifted to allow health care providers to speak with family members, even if the patient was unable to give consent. Standard pre-authorization requirements for Medicaid, Medicare, and SCHIP were waived to enable emergency treatment of new enrollees. Government health care program claims processors were instructed to respond immediately to disaster-affected providers' requests for accelerated or interim payments.

The Secretary's declaration allowed states to relax laws related to professional and facility licensing, credentialing, and certification in the disaster region to address the demand surge. Physicians and other licensed medical providers were authorized to treat patients in Louisiana and other affected states without fearing regulatory sanctions or liability for unlicensed practice of medicine or other professions, as contemplated by the Emergency System for Advance Registration of

107 See supra notes 67-72 and accompanying text
109 Id.
111 Dowdell, supra note 108.
112 Id. In addition, state licensing requirements were waived to allow physicians, nurses, and other health-care professionals licensed in other states to provide emergency services in the disaster area and some patient privacy rules under the federal Health Improvement Portability and Accountability Act ("HIPAA") were lifted to allow providers to talk with family members about a patients' condition even if the patient could not consent and to help patients without access to identification or records. Id.
Volunteer Health Professionals ("ESAR-VHP"). In addition, non-licensed, makeshift facilities, such as department stores, hotels, and tents, could be used as hospitals. The Secretary also declared that crisis services provided to Medicare and Medicaid beneficiaries in non-certified facilities would be fully reimbursed.

To address Katrina’s uninsured problem, Congress considered a disaster relief Medicaid proposal, modeled on New York State’s expansion of state Medicaid coverage following 9/11. The New York program, which covered 350,000 people in the four months following the attack, offered simplified applications, on-the-spot eligibility determinations, and immediate enrollment. The proposed Emergency Health Care Relief Bill Act of 2005, sponsored by Senators Grassley and Baucus, would have provided immediate, five-month Medicaid coverage for all flood victims. Income, residency, and other eligibility requirements would be waived. Like the New York program, application requirements would be streamlined and simplified. In addition, the federal government would pick up the entire tab for the special Medicaid coverage, unlike the existing

113 See supra note 24 (citing same).
114 See Rudowitz et al., supra note 3, at 4 (describing temporary locations of New Orleans’ public hospitals, including an abandoned department store and a suburban hospital).
115 See Lloyd Dixon & Rachel Kaganoff Stern, Compensation for Losses from the 9/11 Attacks 94 – 95 (Rand Institute for Civil Justice 2004) (describing Disaster Relief Medicaid ("DRM") and noting that New York City’s Medicaid computer system and eligibility records were damaged on 9/11, requiring authorities to develop new eligibility cutoffs, which were higher than traditional Medicaid); Sara Rosenbaum, New Directions for Health Insurance Design: Implications for Public Health Policy and Practice, 31 J.L. MED & ETHICS 94, 99 (2003) [hereinafter New Directions] (describing post-9/11 emergency health care funding).
Medicaid program, which is jointly funded by states and the federal government.\(^{118}\)

The Bush administration, however, opted for a different approach, allowing flood-affected states to apply for individual waivers to state Medicaid plans. The White House opted to negotiate "directly with governors, one state at a time," believing it more efficient to support the state programs already in place, not to build major new systems.\(^{119}\) Critics suggested that requiring individual negotiations was inefficient and would delay coverage to needy beneficiaries.\(^{120}\) The Medicaid waiver programs allow displaced and newly uninsured victims of the flood to obtain Medicaid in the states to which they evacuated under streamlined application processes.\(^{121}\)

Temporary Medicaid was designed to address both the uninsured patient and provider payment problems. The approach, however, leaves significant potential gaps. For providers, compensation is tied to the patient, as opposed to a grant or lump-sum

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\(^{118}\) *Katrina Care*, supra note 117, at 18A (noting full federal reimbursement to states); *MH Support*, supra note 117, at 1 (quoting co-sponsor Senator Grassley: "The federal government will assist Louisiana, Mississippi, and Alabama by paying 100 percent of Medicaid and child health care program costs through 2006").

\(^{119}\) See David S. Broder, *Waiting for Action; Right Words but Little Practical Help for Poor*, WASH. POST, Sept. 22, 2005, at A25 (quoting CMS’ Mark McClellan: "The best and fastest was to provide help to evacuees is to support the state programs in place and support the local health care providers already in place, not to take time to build new systems"). *But see Katrina Care; Speedy Coverage for Evacuees*, MINN. STAR TRIBUNE, Oct. 8, 2005, at 18A [hereinafter *Speedy Coverage*] (arguing merits of Grassley-Baucus proposal and noting that "negotiating waivers state by state is crazy," time-consuming, "risks wild variation," and imposing unsustainable costs on Gulf Coast states).

\(^{120}\) See Broder, supra note 119, at A25 (suggesting that "the Bush Administration, rather than backing this simple and effective measure [i.e., extending Medicaid coverage to all victims], is insisting on a slower, more cumbersome approach, requiring each state to negotiate its own waiver from the rules limiting eligibility to Medicaid beneficiaries"); *Speedy Coverage, supra* note 119, at 18A (summarizing Grassley-Baucas bill as "call[ing] for a fast, streamlined application process").

payment directly to hospitals or other health care providers facing the demand surge.\footnote{See Kaiser Report 7387, supra note 1, at 7 (advocating temporary Medicaid as solution to loss of health insurance coverage by Katrina victims because funds “follow the person” and approach is “the most accurate mechanism for targeting federal assistance to the areas, providers, and low-income individuals who most need it”).} Benefits are not portable, meaning that patients must re-apply and qualify if they leave or are evacuated to a different state. Coordination of financing between home and host states for patients who move was not addressed in the plan. The waivers are temporary and not intended to become a permanent, new federal entitlement.\footnote{See Speedy Coverage, supra note 119, at 18A (noting temporary nature of both Bush and Grassley-Baucus plans and suggesting, “Anyone can understand the administration’s reluctance to create a big new federal entitlement, especially in the costly field of health care”).} Eight states plus the District of Columbia and Puerto Rico received Medicaid waivers. In addition, six states’ waivers included uncompensated care pools, in addition to temporary Medicaid,\footnote{Kaiser Report 7420, supra note 4, at 2 (noting that the pools are available for expenses incurred from Aug. 24, 2005, to Jan. 31, 2006).} intended to reimburse states for the cost of medical care provided to uninsured evacuees. The funds were given to states in block grants, with no obligation to pay specific providers. In addition, few details were developed regarding funding levels or sources for the pools or methodologies for prioritizing or paying providers.\footnote{See Health Care for Katrina Victims, N.Y. TIMES, Oct. 4, 2005, at A26 (reporting that “White House has said it will reimburse health care providers who treat victims who are not covered by Medicaid. But it has not wais how much the payments would be or how providers could access the so-called uncompensated care fund”); Kaiser Report 7420, supra note 4, at 2 (noting that that “critical components,” including funding and payment mechanisms for uncompensated care pools are not specified).}

Like government payers, private health insurers took steps to ensure uninterrupted medical and dental coverage for their enrollees and payment to providers. Private health plans extended due-dates or granted grace-periods for premium payments and waived certain medical and pharmacy restrictions.\footnote{Gloria Gonzalez, Health Insurers Waive Rules for Katrina Victims, 39 BUS. INSURANCE 37, Sept. 12, 2005 (listing CIGNA, Blue Cross & Blue Shield, Aetna, Delta Dental Insurance, and Humana Inc. as companies extending their coverage despite a lapse in payment).} Many plans suspended prior authorization, pre-certification, referral, or notification requirements for hospital admission. Some companies deemed all physicians caring for affected members as in-network providers regardless of their actual
status.\textsuperscript{127} Other plans allowed patients to obtain early refills of prescription medications and facilitated mail-order refills to replace damaged or lost medications.\textsuperscript{128}

IV. REMAINING ISSUES

The legislative and policy measures implemented after Katrina provide a starting point for emergency response planning. Myriad issues remain, however, and full consideration of the public health and federalism challenges is beyond the scope of this Article. Two of the most pressing needs—ensuring adequate medical response and payment to providers—deserve special attention. The health care infrastructure may fail to meet the immediate and long-term needs of disaster victims if those issues are not addressed prospectively, before the next catastrophe.

The Katrina response failed, first, to adequately address the largest remaining disaster response issue for the nation’s emergency medical providers: Demand surge.\textsuperscript{129} The next major catastrophe—whether a terrorist attack, such as 9/11; natural disaster, such as Katrina; or infectious disease outbreak, such as Avian Flu—will likely cause acute injuries and exacerbate underlying chronic health conditions of a large number of people. As one reporter presciently noted in the days before Katrina, in reference to a potential Avian Flu outbreak: "[T]he most significant problem in 1918 [at the height the nation’s major smallpox epidemic], as it would be today, was the sheer inability of hospitals to deal with a sudden demand in patient demand."\textsuperscript{130}

Demand surge implicates public health models, calling for medical first responders’ scarce professional and other resources to be allocated among the disaster victims. Emergency medicine triage models allow first responders to prioritize the victims and ensure that

\textsuperscript{127} Id.
\textsuperscript{128} Id.
\textsuperscript{129} See Institute of Medicine, \textit{The Future Emergency Care in the United States}, June 14, 2006, at http://www.iom.edu/?ID=16107 (last visited Dec. 12, 2006) (reporting results of there related studies; \textit{Ambulances Find Overwhelmed ERs “At Breaking Point,”} \textit{WALL ST. J.}, June 15, 2006, at D6 (describing IOM study, nothing that “nationwide crisis comes from just day-to-day emergencies. Emergency rooms are far from ready to handle the mass casualties that a bird-flu epidemic or terrorist strike would bring”).
\textsuperscript{130} Marc Santora, \textit{When a Bug Becomes a Monster}, \textit{N.Y. TIMES}, Aug. 21, 2005 (describing New York City’s readiness to respond to avian influenza outbreak).
the most serious cases are treated before those whose health will not deteriorate dramatically if treatment is delayed. The goal of providing optimal care to the affected population as a whole may require compromising best practices or optimal medical care of any given patient. That approach might be ethically intolerable or legally suspect under “normal” circumstances but necessary and appropriate in disaster scenarios.

To avoid or limit some of the tragic resource allocation choices, disaster preparedness should focus on improving health care providers’ response capacity and patients’ access to care. Post-9/11 federal legislation provides funding for hospitals and clinics to stockpile drugs and other medical supplies. Federal preparedness grants are also available for training and preparedness measures. The Homeland Security Act made considerable strides in coordinating disparate branches of levels of government. But the severe criticism of FEMA, DHS, and other federal agencies during Katrina suggest the need for further consideration of the NRP and other organizational functions. In particular, additional issues need to be addressed to ensure adequate, coordinated response and uninterrupted access to care both during the immediate catastrophe and after in order to return the health care infrastructure to normal operations after the crisis has passed.

131 See generally GUIDO CALABRESI & PHILIP BOBBITT, TRAGIC CHOICES 17 – 18 (1978) (discussing “how the world decides that suffering shall come to some persons and not to others” when faced with scarce goods, the distribution of which “entails great suffering or death”).

Waivers of facility and professional licensing requirements, as proposed in MSEHPA and included in Secretary Leavitt's Katrina Section 319 PHE declaration, somewhat alleviate staffing and facility shortages. Waiving state licensing requirements, however, addresses the problem only after medical professionals have arrived and been deployed to provide care at the scene of the disaster. Waivers do not ensure adequate volunteer response or verification of the identity, qualifications, and competence of the volunteers. Spontaneous volunteers, like those who appeared on the scene of the Oklahoma City bombing, World Trade Center attacks, or other recent disasters, were ready and willing to lend assistance but lacked organization, identification, credentials, and, ultimately, utility. Telecommunications interruptions, as occurred after 9/11, make it difficult to verify credentials and tie up already over-burdened systems. The presence of many, uncoordinated volunteers can actually hinder effective emergency response.\(^{133}\)

To address those issues, a division of HHS, Health Resources and Services Administration, in September 2004, asked experts at the Center for Law and the Public's Health at Georgetown and Johns Hopkins Universities to draft a legal framework for advance registration of volunteer health professionals, or ESAR-VHP.\(^{134}\) The proposed framework would allow health care providers to pre-register through state authorities as volunteer responders thereby ensuring an effective, trained, and coordinated mobilization of health care workers. The ESAR-VHP proposal addresses federalism problems associated with various states' licensure standards and public health and safety powers, without undue encroachment of federal authority. States would still define the standards and qualifications for licensure of medical professionals within their respective borders but could authorize out-of-state workers to provide care in specific situations. As an additional nod to state sovereignty, the call for volunteers would be triggered by the state governor's, not the president's, order or declaration of a public health emergency.

The ESAR-VHP is merely a draft proposal, however, and work remains to implement a widely recognized pre-registration system. A number of states have entered interstate compacts to recognize


\(^{134}\) See generally ESAR-VHP Draft, supra note 24.
licensure reciprocity or similar mutual aid during declared emergencies.\textsuperscript{135} Even if a health care provider is waived-in or granted a reciprocal license to practice in the state, hospitals and health care facilities may require additional screening or credentialing before allowing the provider to treat patients.\textsuperscript{136} A uniform law or coordinating body regarding licensure and credentialing of medical personnel would greatly improve disaster response.

Another concern with volunteer response is tort liability for medical malpractice, especially if health care providers are treating patients in less than optimal conditions in terms of facilities, supplies, and staffing. Patients who are harmed by treatment delays or triage decisions may seek to recover from medical providers. Even if providers' treatment and resource-allocation decisions are justifiable from a public health perspective, injured patients might nevertheless assert that the care fell below the applicable state tort-law standard.\textsuperscript{137} The threat of liability could deter otherwise willing volunteers. Medical malpractice cases are a product of state tort law, specifically negligence standards, which vary widely from state to state. Conduct that is considered negligent in one state may be within the range of acceptable conduct in another. Negligence cases are highly dependent on the particular facts and circumstances, as evaluated by the jury on a case-by-case basis. With their liability left to the reasoned judgment of a jury of their peers evaluating the circumstances of the disaster, potential tort defendants may take little comfort and avoid volunteer work.

Special tort rules designed to protect good Samaritans and other volunteers may not be available to protect emergency first responders.\textsuperscript{138} Although providing little comfort to medical providers,

\textsuperscript{135} See, e.g., ESAR-VHP Draft, \textit{supra} note 24, at 32-34 (signed by 48 states and several territories, recognizing license reciprocity during declared emergency, subject to governor's limitations); Interstate Civil Defense and Disaster Compact (“ICDDC”) (mutual aid agreement among several states for license reciprocity during enemy attack, bioterrorism event, or natural disaster).

\textsuperscript{136} See Joint Commission on Accreditation of Health Care Organizations (“JCAHO”) standards for hospitals (including provisions for granting disaster privileges for out-of-state providers on minimal proof of qualifications, e.g., hospital identification card, current out-of-state license and valid photo i.d., willingness of another hospital employee to vouch for the provider's identity).

\textsuperscript{137} See \textit{supra} note 24 (discussing professional standard of care and relevance of emergency circumstances in defining standard).

\textsuperscript{138} See DAN B. DOBBS, THE LAW OF TORTS 663-64 (2000) (suggesting that all states have enacted Good Samaritan statutes that "reduce[ ] the duty of care otherwise owed by license health care providers when they are rendering certain professional
the best legal protection from liability in a public health environment is to apply a different standard of care. The existence of an emergency is one of the circumstances that juries can be instructed to consider in deciding whether an actor's conduct was negligent. Likewise, juries could be instructed to consider the physician or other medical professional's conduct in light of the exigency of the disaster situation and lack of usually available medical resources to adjust the professional standard of care accordingly. That approach, however, still exposes volunteers to the costs of defending a suit and risks of adverse jury determinations. Therefore, merely redefining the standard of care to reflect the circumstances of the disaster may not fully offset liability fears from deterring volunteer response.

Alternatively, states might grant immunity from liability to medical first responders, either by enacting new immunity protections or extending existing governmental or official immunity to volunteers responding to a public health emergency disaster. Or states might indemnify volunteer health professionals, acting as a public professional liability insurer, covering both the costs of defending against any lawsuits that are brought and the amount of any damages awarded to the victims. Another approach to the liability concern would be a no-fault compensation system, such as workers' compensation or the 9/11 Victims' Compensation Fund. Victims would not be allowed to sue physicians or other volunteer health care providers but instead would receive compensation for any injuries from a government fund.

Another issue largely unaddressed is the financial impact of demand surge on providers' billing and accounting systems. The unprecedented volume of claims, including potentially novel clinical presentations, would tax existing coding, billing, and reimbursement systems. The expected payment delays and denials might be financially unsustainable on hospitals' typically thin operating margins.

assistance at the scene of an emergency occurring outside the professional's regular practice” and surveying states' laws).

139 See ESAR-VHP Draft, supra note 24, at 44 (citing New Jersey and Maryland as examples of states that extended governmental immunity protections to volunteers).

140 See id. at 45 (citing New York as state adopting defense and indemnity guarantees to volunteers).


142 See generally Elizabeth A. Weeks, After the Catastrophe: Disaster Relief for Hospitals, 85 N.C. L. REV. 223 (2006).
The increased demand for medical care resulting from a catastrophe seemingly would be a boon to health care providers, at least to the extent that patients have medical insurance and insurers honored the claims. Hospitals typically provide medical care to patients upfront and seek payment from third-party payers after-the-fact. Increased demand for services should mean higher potential collections. But due to a combination of factors, including existing financial strain on hospital emergency departments; higher-than-normal level of uninsured patients, payment delays, and administrative burdens following a catastrophe; and the current approach to hospital payment, "a major disaster is more likely to produce financial liabilities than lucrative revenue streams for hospitals."

To address the payment issue and ensure uninterrupted access to care both during and after the disaster, policymakers should consider implementing a federal hospital relief plan. As with other preparedness laws, federal, rather than state, authorities should bear the financial burden of protecting the health care infrastructure. States impacted by a disaster would quickly exhaust their resources and be unable to offer assistance. Moreover, the cost of ensuring continued access to care is best spread across the nation's taxpayers. The plan could include immediate cash assistance to cover operating costs during and immediately after the crisis. The government should also offer temporary financial support, in the form of "loans," to sustain hospitals

143 See David Drahove, The Economic Evolution of American Health Care 31-32 (2000) (describing typical third-party payment structure of employer health insurance, noting that "[n]o one should expect patients to consider the cost of medical care when insurance is paying for it," and that they "will consent to almost any treatment recommendation"); Victor R. Fuchs, Who Shall Live? Health, Economics, and Social Choice 81 (1999 expanded ed.) (discussing factors contributing to high cost of hospital care, including fact that "[o]nly a small fraction...is paid for directly by patients; the bulk comes from so-called third parties, of which the government is the most important, picking up over half the total bill"); Joseph Newhouse, Pricing the Priceless 9 - 13 (2002) (describing typical patient control over provider choice and minimal control of insurers over price); Thomas Bodenheimer & Kevin Grumbach, Paying for Health Care, JAMA, Aug. 24, 1994, at 635-36 & fig. 2 (describing typical third-party payment structure); Elizabeth Belmont et al., Disaster Checklist: Emergency Preparedness, Response & Recovery Checklist: Beyond the Emergency Management Plan, 37 J. Health L. 503, 547 (2004) (The majority of income for most healthcare institutions comes from patient insurance reimbursement (either private or government-sponsored)); Sherman Folland et al., The Economics of Health and Health Care 13 (3d ed. 2001) (noting that by 1997, more than 80% of health care expenditures was paid by third-party payers, either private or government).  

144 See Weeks, supra note 142, at 230 (describing hospitals' financial pressures).
as they await reimbursement from private insurers, government health care programs, and other funding sources. Finally, the government could provide a backstop to cover the catastrophic uncompensated care costs resulting from the crisis, similar to the uncompensated care pools offered under individual state Medicaid waivers following Katrina. The three-faceted approach would ensure that the immediate crisis of a terrorist attack or natural disaster does not spiral into a lasting crisis in availability of emergency medical care.\footnote{See Saul Levmore, \textit{Coalitions and Quakes: Disaster Relief and Its Prevention}, 3 U. Chi. L. Sch. Roundtable 1, 30-32 (1996) (discussing pros and cons of pre- and post-disaster relief and comparing problem of uninsured patients who cannot afford critical care as support for pre-disaster approach) [hereinafter Levmore, \textit{Quakes}]; Rosenbaum, \textit{New Directions}, supra note 115, at 95 ("How to assure the availability of accessible, timely and quality medical care in the face of terrorism and other public health emergencies represents an enormous public health challenge"); Weeks, \textit{supra} note 142, at 296 (recommending funding approach); see generally Fuchs, \textit{supra} note 143, at 13-14 (discussing access to care problems faced by particular groups in society, the poor, urban "ghetto" dwellers, and rural population, and general access problem faced by individuals and families lacking income or insurance to pay for care).}

\section*{V. CONCLUSION}

The victims of hurricane Katrina continue to face enormous challenges. The Gulf region's pre-catastrophe overall level of poor health and chronic disease has grown more acute as health care facilities forced to close during the disaster due to property destruction, staffing shortages, and other challenges struggle to reopen and resume the previous level of services. Staffing shortages remain an issue, as many health care workers, like other Gulf residents, are unable or choose not to return to the flood-ravaged region. In addition, the level of destitute and uninsured people in the area has increased dramatically since the storm, due to loss of jobs, welfare benefits, and other social supports.

The failed government response to flood victims' medical and other basic human needs in the wake of the disaster compel further planning, funding, and coordination for the next public health emergency. The importance of addressing those issues extends beyond the next catastrophe to ongoing challenges in the nation's health care infrastructure under normal conditions. Although federal and state authorities have taken significant steps toward emergency medical response preparedness, additional work remains to be done. The saving grace, if one can be gleaned, is that the lessons learned from Katrina
will benefit not only the floods’ victims but also the public’s overall health.