
Katrina and the Core Challenges of Disaster Response

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As Hurricanes Katrina, Rita, and Wilma successively lashed the gulf coast starting in late August 2005, nature's fury exposed serious weaknesses in the United States' emergency response capabilities. These problems were not simply the failure of particular places or leaders to be ready for disaster but rather an indication of more fundamental issues. These must be addressed if the country is to be ready for serious challenges that may lie ahead, whether severe natural disasters, outbreaks of emergent infectious disease, or renewed terrorist attacks.

Not all emergencies pose this magnitude of challenge. In the United States, the initial—and usually major—responsibility for disaster response rests with local authorities. This "bottom-up" system of emergency management has a long history and continues to make sense in most circumstances. Because local governments are proximate to disaster sites and have at least some emergency capacity, they can respond quickly to initial alerts. They have detailed knowledge of local conditions, and in many cases have agreements for mutual aid to secure additional help rapidly from nearby jurisdictions.

Aid from state or national sources is provided mainly when local

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capability is inadequate or has been exhausted. State government may have important specialized resources and capabilities, but—farther away—it is usually less able to respond immediately. Its resources may have to travel considerable distance to get to a disaster site. Federal government responders are likely to be even more distant—hence much slower to arrive on a significant scale—and lack both local knowledge and integration with local and state responders. The Federal Emergency Management Agency (FEMA), with relatively few deployable staff, has historically played a much larger role in pre-event planning and post-event recovery than in the management of a disaster in progress. Other federal agencies have more operational resources but are generally deployed as backup. Notwithstanding the reorganization of emergency response at the federal level as a consequence of the establishment of the Department of Homeland Security, the “bottom-up” system remains the “normal” model of disaster response.

Quite clearly, however, the normal model was inadequate to handle the results of Katrina—and showed weakness in managing the fierce but less demanding challenges of Rita and Wilma. Commentators have cited many reasons for this problematic performance. Some criticisms relate to actions in the moment of crisis: unqualified crisis managers in charge, weak leadership by elected executives, and poor or late decision making. Others involve the quality of advance preparation: inadequate emergency plans, poor follow-up to shortcomings revealed by tabletop exercises, and failure to make investments in needed infrastructure. Still others relate to the larger context of national preparedness: overemphasis on terrorism rather than an all-hazards emergency management approach, as well as organizational subordination of FEMA inside the new Department of Homeland Security.

Although each of these explanations has some merit, we see an overarching failure to recognize and prepare for the imperatives of a major disaster. If the United States doesn't specify the strategic problems properly, efforts to reform the emergency response system are likely to fall short in the next situation that strains the normal model.

FOUR CORE CHALLENGES

Recognizing Novelty and Effectively Improvising Necessary Responses

Katrina was not just “another” hurricane. Emergency responders ready themselves for a wide range of urgent circumstances, including hurricanes,

which involve high stakes, danger, and outcomes that are critically contingent on their own effective action. Though quite demanding, many of these situations can be regarded as “routine” emergencies—not because they are in some sense “easy” but because the predictability of the general type of situation permits agencies to prepare in advance and take advantage of lessons from prior experience. Thus, response organizations develop contingency plans, train personnel, practice their skills, ready or stockpile necessary resources, and can—in the event—appropriately customize their response at the margins of the plan. When forecasters predict that hurricane winds will make land fall, emergency organizations trigger a range of programmed actions to protect property, provide temporary shelter and supplies, make rescues as needed, and provide emergency medical care and other assistance. Such anticipatable events are “routine” emergencies for the agencies concerned.

“Crisis” emergencies like Katrina are distinguished from these more common (though possibly very severe) routine emergencies by significant elements of *novelty*. These novel features

may result from threats never before encountered (e.g., an earthquake in an area that has not experienced one in recent memory or an emergent infectious disease like SARS or avian flu); from a more familiar event occurring at an unprecedented scale, outstripping available resources; or from a confluence of forces, which, though not new, in combination pose unique challenges. Katrina was a crisis primarily because of its scale and the mixture of challenges that it posed, not least the failure of the levees in New Orleans. Because of the novelty of a crisis, predetermined emergency plans and response behavior that function quite well in dealing with “routine” emergencies are frequently grossly inadequate or even counterproductive.

“Crises” therefore require quite different capabilities from “routine” emergencies. In crises, responders must first quickly diagnose the elements of novelty (e.g., in New Orleans, the need for assisted evacuation, the likely consequences when the levees failed, and the unexpected use of the convention center for sheltering immobile refugees). Then they need to *improvise* response measures adequate to cope with the unanticipated dimensions of the emergency (e.g., quickly procuring vehicles for evacuation, rescuing

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stranded residents and restoring water and power, and providing food and law and order in an unprepared shelter). These measures, born of necessity, may be quite different from anything responders have done before. Equipping organizations to recognize the novelty in a crisis and improvise skillfully is a far different (and far more difficult) matter from preparing mainly to implement preset emergency plans.

Scalability and Surge Capacity

In many disasters, as Katrina well illustrated, responders must cope with far greater numbers of endangered people or more extensive damage than typical of a routine emergency. Crisis impacts may occur intensively in a delimited area or be spread across a wide geographic region. To scale up operations to handle this surge of demand, emergency agencies require access to resources in larger quantities than normal and frequently to specialized equipment or personnel. If an emergency lasts for days or weeks, there must be enough people and resources to cope with exhaustion.

No local jurisdiction—or even state—could bear the expense of keeping these assets in reserve for a large-scale disaster that might never occur there. When such an event strikes, therefore, it is virtually inevitable that the jurisdictions affected will have to import and effectively absorb support from surrounding areas or—in very severe circumstances such as Katrina—from around the nation. While plans can be put in place to provide surge capacity for transport, food and water, medical facilities, and personnel, crises may throw up unexpected demands for resources (or predictable demands for which inadequate supply is available) for which improvised scale-up is essential. The sudden need for many buses to evacuate auto-less, elderly, or handicapped people from New Orleans indicates the critical need for the right kind of resources, in sufficient amount, to be available in timely fashion whether or not the emergency plans of local, state, or federal response agencies are adequate.

Addressing the need for surge capacity requires careful advance assessment of potential needs, allocation of sufficient budgetary resources notwithstanding competing demands for funds, detailed logistical planning for transporting resources to disaster sites (or people away from disasters to shelter and care)—and, quite likely, skillful improvisation in the moment of actual crisis.

Integrated Execution in Real Time

In a major disaster like Katrina, as local agencies confront extraordinary operational demands, emergency responders from adjoining jurisdictions, the state, and many far-flung locations are likely to converge on the scene. Not only must they perform their own tasks, they must also collaborate to ensure effectiveness and avoid interference, conflict, or endangerment of others. This demands skillful coordination of aid workers, equipment, and organizations across professions, agencies, jurisdictions, levels of government, and the public and private sectors—even though many of these people and organizations have had little or no prior experience working together.

This need has been recognized by Congress in the 2002 statutory requirement for a National Incident Management System (NIMS), a flexible template for leading crisis operations that enables organizations to frame and rapidly implement response actions under enormous pressure. The underlying model for NIMS (called the

Incident Command or Incident Management System, ICS or IMS) was initially devised 35 years ago in California to fight wildland fires and has since spread to other states and emergency professions.

IMS has important strengths in organizing emergency response. It factors critical emergency tasks, establishing a clear division of labor and assignment of functional responsibility. It unambiguously defines the chain-of-command, provides a manageable span of control for each function, and establishes a resource allocation decision-making structure—critically important to avoid dispute about “who’s in charge” and to enable rapid deployment and direction of personnel and equipment. It systematically promotes information flows up, down, and across the organization—and to the public. As a result, IMS is highly flexible in response to incident type, scale, and location. It has been applied to wildland and urban fires, industrial explosions, earthquake response, hospital emergency room operations, and hostage scenarios.

However, as Katrina revealed, even basic diffusion of NIMS has not

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been completed to jurisdictions that have not previously used the system or to professional disciplines that have been unaware or unenthusiastic. Nor were the procedures for federal operations and intergovernmental collaboration that were nominally in place effectively applied.

Handoffs Across Boundaries

In a crisis, as action scales up and becomes more complex, leadership or certain responsibilities may need to be transferred from those initially in charge to others with different skills or more resources. Yet frequently this evolution of crisis response produces substantial friction between organizations or jurisdictions, even when emergency plans or statutes theoretically provide for such transitions. In the case of Katrina, these frictions were apparent as the city and mayor clashed with the state and governor, as both criticized the federal response, and as numerous voices criticized FEMA's performance. The mere existence of laws, emergency plans, or NIMS does not ensure that responsible officials will know or play their roles effectively or that conflicts will not arise in interpreting the rules. Personal preparedness by key officials, as well as establishment of functional relationships among them, is essential. Preparedness requires anticipation of the potential need for such handoffs and readiness to make (or accept) transfers of responsibility when the initial allocation is unworkable in the face of a particular disaster.

CONCLUSION

Katrina has shown that the United States has not progressed as far as some believed in building better emergency response capacity in the aftermath of September 11 and the establishment of the Department of Homeland Security. Focusing intensely on the core strategic problems identified above would be an important step forward.

In confronting these problems, however, the United States faces serious obstacles. These include the division of authority in our federal system of government; different constellations of stakeholders at different levels of government and within jurisdictions; "feast or famine" budgeting for emergency preparedness; autonomy of, and lack of coordination across, different functional or policy domains; and insufficient integration of the private sector in the emergency response system.

Approaches to improve response practices are more complex than can be discussed well in this space. These include accelerated and more intensive implementation of the National Incident Management System, careful examination of the legal arrangements that structure the delegation of authority between government levels and jurisdictions in crisis events, sustainable budgetary commitments to build emergency response capabilities at all government levels, more attention to integrating the private sector in the response system, and enhanced training and exercise opportunities for emergency responders so that they develop not only the capacity to execute emergency plans but also the nimbleness needed to improvise effectively in crisis. ■

