

Editorial

Concluding thoughts on the new nature of disaster management

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Environmental cataclysms will be with mankind even after we have learned to prevent man-made disasters. Prior to Hurricane Katrina, disaster planning, preparedness, and responses were mostly theoretical and based on our preconceived notions of what a disaster should be [1] and were mostly untested, except on relatively small scales. Katrina has changed that in many ways. We knew Katrina was coming, and we knew with uncanny precision how it would affect us. We watched it approach, arrive, and depart. We articulated what we should do and we found out vividly what we couldn't do despite our best intentions.

Virtually all our previous responses to environmental disaster involved protecting citizens from adverse effects and then resuscitating survivors after the fact [2]. Now, we have found that most of that paradigm has been rendered moot and radically new concepts have taken their place. As pointed out by the authors of the reports presented here, virtually all of our previous 'disaster plans' – including those in hospitals – were woefully inadequate and failed miserably [3]. Unless we learn the present and future logistical problems of environmental disasters, we cannot effectively plan for them.

Part of that process is deciding whether we are more interested in constructing or blaming. Americans are notorious for blaming public officials for inadequacies, real or imagined [4]. Public servants are a convenient target for blame when things go wrong, but if there is any blame, it is rarely unilateral. More to the point, assigning blame is by its nature anticonstructive, and we need more construction – not more blame. Accordingly, Americans speculated on blame, fueled by the same media process that spawned tabloid news, but on a separate level we maintained construction. We all pitched in and tried to make it better as well as we could, including money and time donated through multiple *ad hoc* relief agencies [5]. And we learned.

Health care providers, rendered powerless by lack of facilitative technology and hardware, opened their imaginations and thought 'outside the box' to make things

work. If sick patients could not be extricated in traditional ways, then more nontraditional routes mobilized them. Field expediency moved mountains previously thought immobile. Concepts that did not work were quickly abandoned and other more effective modes were identified by rapid trial and error. When public officials failed, private citizens rallied [6].

We learned that trauma is not the major issue after the event. Thus, the traditional horde of do-gooders flooding into the area to help actually hindered, as it did after the 9/11 disaster in New York City [7]. It was not previously clear that there is no practical way to evacuate a major city, and any attempt to do so also limits mobility within the disaster area [8]. All roads and airports are jammed. There is no way to get anywhere after any government air transport is facilitated. Ultimately, escaping citizens were told they might be safer staying in their homes than trying to flee [9]. Others refused to leave the perceived safety of tried and true, placing themselves and rescuers in jeopardy. Accordingly, a major problem will be dealing with transportation of and living arrangements for thousands of victims, not treating their illnesses. Additionally, the issue of integrating thousands and potentially millions of people into new social and physical environments must be dealt with.

We are learning about the nature of 'martial law', rarely used in the past, and how it applies to the future. Use of federal troops for domestic support is problematic because of its potential abuse of civil liberties and its legality problems. If anything, however, the Katrina disaster has shown that it will be necessary for some centralized authority to take control of disaster management much earlier than we previously thought. Society must give up some of its individual liberties to promote order and avoid anarchy during national emergencies. The military has the organizational ability to do many things that civilians cannot, no matter how well intentioned they may be. It must be remembered, however, that military stabilization is a very cold, dispassionate business, performed by humorless, authoritative proponents carrying weapons [10]. Are we willing to pay that price for order [11]?

We are learning that communications ability must be a reality long before any disaster occurs, and that we must not try to figure it out after the event. It seems clear that the event caused major network outages, which could have been prevented with more planning [12]. Satellite backbones do not yet have the carrying capacity to provide core infrastructure, but this will come in time. Also, wireless LAN (local area network) and WAN (wide area network) will become important for local communication. Relatively antiquated communication modes such as amateur radio have enjoyed resurgence, and coupled with satellite Internet capability they may well revolutionize our effective response to disaster care [13].

Perhaps most of all, we are slowly learning that entitled individuals living in very comfortable circumstances may very well find themselves in dire straits even if they see disaster coming and have time to plan. Power can go out for huge areas for days or weeks. Potable water flow can cease. Damage can be done from almost any front. It is now clear that private citizens must move to establish a drill to protect themselves and their families now [14]. At the very least, a supply of drinking water must be secured, as must a small power generator to provide electricity for essentials and a supply of stabilized gasoline (lasts for years) to run the generator and power automobiles for essential and emergency travel.

This is the future of disaster management.

Competing interests

The author(s) declare that they have no competing interests.

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