**Available online** http://ccforum.com/content/10/1/104

Editorial

# Katrina: an introduction

David Crippen

Associate Professor, Director, Neurovascular ICU, Department of Critical Care Medicine, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania, USA

Corresponding author: David Crippen, crippen@pitt.edu

Published: 14 December 2005
This article is online at http://ccforum.com/content/10/1/104
© 2005 BioMed Central Ltd

*Critical Care* 2006, **10:**104 (doi:10.1186/cc3936)

History is a science, no more and no less

*Professor JB Bury*
*Inaugural lecture as Regius Professor of Modern History*
*University of Cambridge, 1903*

The Gulf Coast Disaster of September 2005 has changed the entire paradigm of how we view public health. Our previous visions of disaster relief were predicated on the premise that the most effective after care would involve treating the direct effects of catastrophic, unpredicted trauma. Survivors would be readily amenable to first aid at the scene, followed by evacuation from the area. Involved hospitals and care stations had tables of organization to manage disasters and held regular drills to ensure familiarity with them. Organizational routes to import volunteers were planned years in advance. It was thought that the aftermath of a natural disaster would be quelled in direct proportion to the amount of effort put into direct action at the scene.

From a historical perspective, there were some major differences between other recent calamities and the Gulf Coast disaster. On 7 December 1988, a severe earthquake struck Armenia, a small country in the former republic of the Soviet Union [1]. The quake, lasting 20 s, was estimated to be as destructive as 120 atomic bombs, destroying 21 towns and 302 villages in seconds. It killed 25,000 people, injured 19,000, and rendered 540,000 homeless [2]. Following the quake, virtually every public service, including water, electricity, transport, fire rescue, and health care, was either destroyed or damaged beyond use. All communication became unreliable. However, considering the circumstances, the local public services' response to the injured was rapid and reasonably effective. Rescuers maximized whatever facilities were available, set up first aid centers, triaged patients, and transported the injured back to areas outside the immediate damage area however possible. They were content to do what we could with what they had, and the outcome seemed as good as could be expected. The basic paradigm of disaster care changed little.

On 11 September 2001, an unexpected man-made disaster hit New York City. Again, traditional forces were mobilized as they were designed to do [3]. However, we noticed some remarkable quandaries. The capability of the systems did not seem to match the quality and extent of the disaster [4]. The number of actual survivors was too small to utilize effectively the existing network of receiving facilities [5]. Mobilization of technologically advanced rescue systems to the scene generated manpower excesses and logistical difficulties that outweighed the benefit [6]. Search and rescue volunteers entering the site were found to be not only ineffective but also counterproductive [7]. Designated facilities were capable of doing a little for many, but not so capable of doing a lot for few. Rescue systems maintained sensitivity but lacked specificity. For both of these previous disasters existing services functioned as they were designed to, but they were designed based on concepts of disaster that had not yet been realized.

The Gulf Coast disaster shattered all our previous conceptions. We knew what it was, saw it coming, set up our systems in advance, watched it strike, and then we watched our systems repeatedly fail. Bureaucratic inefficiency and road congestion prevented efficient pre-emptive escape. Administrative personnel did not follow their own disaster plans. Rescuers in place were compromised by the enormity of the event. There was no way to get rescuers or materials in or survivors out of the area. Communications were intermittent and unreliable. Existing shelters were either destroyed or rendered inhospitable. Emergency shelters large enough for the mass of survivors were poorly designed for that purpose. Riots and looting complicated the continuing rescue effort.

The consequences extended further than any other disaster in modern American history. What was thought to be a public health crisis quickly evolved into a public welfare dilemma. There were no systems in place to manage thousands of homeless people in the long term and move them to safety from unprovisioned and uninhabitable expedient shelters.

Provision of housing, food, clothing, law enforcement, schools, jobs, social welfare, and control of infectious disease were unexplored issues in the care of huge populations made homeless by widespread catastrophe.

These inconsistencies in our preconceived notions of how to deal effectively with disasters must be faced head on. Accordingly, this section of *Critical Care* utilizes a multidisciplinary cast of expert observers, some of whom were physically present in the Gulf Coast disaster area, to examine some of the important lessons. Issues covered include the following: dealing with bureaucratic inefficiency; systems inadequacy from within and without the disaster area; dealing with the specter of military intervention and the potential of martial law; and understanding communications issues – what we have, what we need, and what we can expect in the future. History must be written by and for the survivors. We can no longer afford to ignore Toynbee's famous quip: 'Those who forget history are doomed to repeat it.'

## Competing interests

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

## References:

1. Armenian HK, Melkonian AK, Hovanesian AP: **Long term mortality and morbidity related to degree of damage following the 1998 earthquake in Armenia.** *Am J Epidemiol* 1998, **148:**1077-1084.
2. Crippen D: **The World Trade Center Attack: similarities to the 1988 earthquake in Armenia – time to teach the public life-supporting first aid?** *Crit Care* 2001, **5:**312-314.
3. Simon R, Teperman S: **The World Trade Center attack. Lessons for disaster management.** *Crit Care* 2001, **5:**318-320.
4. Mattox K: **The World Trade Center attack disaster preparedness: health care is ready, but is the bureaucracy?** *Crit Care* 2001, **5:**323-325.
5. Roccaforte JD: **The World Trade Center attack: observations from New York's Bellevue Hospital.** *Crit Care* 2001, **5:**307-309.
6. Cook L: **The World Trade Center attack: the paramedic response – an insider's view.** *Crit Care* 2001, **5:**301-303.
7. Martinez C, Gonzalez D: **The World Trade Center attack: doctors in the fire and police services.** *Crit Care* 2001, **5:**304-306.