

EDITORIAL

Applying Yesterday's Lessons to Today's Crisis: Improving the Utilization of Recovery Services Following Catastrophic Flooding

Italo Subbarao, DO, MBA, Nathan A. Bostick, MA, MPP, and James J. James, MD, DrPH, MHA

The findings presented by Stimpson, Wilson, and Jeffries are based on research on disaster recovery services following the “hundred-year flood” of 1993 along the Mississippi River and its tributaries. This flood covered about 320,000 mi² (840,000 km²), necessitating the expenditure of \$15 billion to fund delivery of requisite disaster recovery services.¹ Lessons garnered from this study are germane to guiding the provision of disaster recovery services in response to the recent wave of floods that beset the midwestern and southern regions of the United States.

Appropriate flood response planning is essential because these events are the most common type of disaster in the United States.² Worldwide, flooding incidents were 4 of the top 5 deadliest natural disasters in 2007.³ The effects of floods are substantial and include contamination of drinking water; utility outages; obstruction of economic activities; infrastructure limitations such as road closures; physical hazards, including downed power lines, lingering pools of water, structural damage to buildings; and ongoing environmental health risks stemming from mold accumulation within buildings or mosquito and other disease vector overgrowths.⁴ The aggregate impact of flooding can also extend greatly in scope—these events can diminish the nation's food supply, as the recent US floods have, or affect the global economy.⁵ Moreover, the risk of flooding is expected to continue to increase due to global climate change.⁶

Multiple systems-level interventions are therefore necessary to mitigate hazards and promote normal community functionality, including the promotion of health care access, active disease prevention and control, risk communication and public education activities, and the coordination of disaster response and capital recovery efforts.⁷ Affected individuals may need additional assistance in the form of temporary housing, medical and psychological care, and essential goods such as food and clothing. Notably, however, the study by Stimpson et al found that only a small proportion of individuals affected by large-scale flooding events actually sought out available recovery services.⁸

These findings must be considered when formulating future disaster response plans. First, this evidence indicates that disaster planners must undertake more pointed efforts to reduce barriers to accessing recovery services, including addressing communication and transportation issues that may preclude individuals from seeking aid,⁹ as well as ensuring adequate access to health care services¹⁰ and medical records.¹¹ Another potential tactic is to expand partnerships with community organizations, such as faith-based organizations, to engage victims of disaster.¹²

It is also notable that Stimpson and colleagues found that patients' frequency of exposure to disaster circumstances was positively associated with their willingness to seek out recovery services. This may reflect the impact that first-hand experience has on individuals' understanding of associated risks and subsequent risk perceptions.¹³ Some research has indicated that flood-related risk perceptions are not always associated with pre-event planning activities¹⁴; therefore, improved risk communication activities are necessary to improve proactive population preparedness.¹⁵

Stimpson et al have documented an important point that must be considered as the disaster response and public health preparedness community responds to the most recent flooding incidents—the mere availability of response and recovery services will not limit the burden of natural disasters if the victims of these events remain unwilling or unable to use such services. Consequently, our community must take additional measures to engage the public in pre- and postevent outreach activities. Researchers are additionally encouraged to pursue ongoing research into factors affecting individuals' utilization of disaster response services.

We call on researchers within the disaster community to examine the efficacy of preparedness and response activities pertaining to this current round of flooding as compared to the data collected from decades past. Collectively, we must not only learn from lessons of the past but also routinely evaluate our progress to ensure that we are prepared to respond to events as risks continue to evolve. In this regard, it should be noted that funding for the Stimpson et al study was provided

through the National Institutes of Health. Ongoing prioritization of disaster research and availability of funding resources at this level remains essential to enabling policymakers to use evidence-based research to improve planning and response protocols, as well as to enable susceptible populations and organizations to develop actionable disaster plans.

About the Authors

Dr Subbarao is Director, Public Health Readiness Office, Mr Bostick is Senior Research Associate, Center for Public Health Preparedness and Disaster Response, Dr James is Director, Center for Public Health Preparedness and Disaster Response, American Medical Association.

Received and accepted for publication June 20, 2008.

Authors' Disclosures

The authors report no conflicts of interest.

ISSN: 1935-7893 © 2008 by the American Medical Association and Lippincott Williams & Wilkins.

DOI: 10.1097/DMP.0b013e3181842504

REFERENCES

1. Larson LW. The Great USA Flood of 1993. Natural Disaster Survey Report. 1993. National Weather Service Web site. http://www.nwrfc.noaa.gov/floods/papers/oh_2/great.htm . Accessed June 23, 2008.
2. Federal Emergency Management Association. Disaster Management: Flood. <http://www.fema.gov/hazard/flood/index.shtm>. Accessed June 18, 2008.
3. Centre for Research on the Epidemiology of Disasters. 2007 Disasters in

- Numbers. <http://www.emdat.be/Documents/ConferencePress/2007-disasters-in-numbers-ISDR-CRED.pdf>. Accessed June 19, 2008.
4. Landesman LY. *Public Health Management of Disasters*. Washington, DC: American Public Health Association; 2001.
5. Shoen JW. Midwest floods feed grain price inflation: rising demand, slack production send global food costs soaring. MSNBC Web site. June 17, 2008. <http://www.msnbc.msn.com/id/25196080>. Accessed June 19, 2008.
6. Hales S, Baker M, Howden-Chapman P, et al. Implications of global climate change for housing, human settlements and public health. *Rev Environ Health*. 2007;22:295–302.
7. World Health Organization. Health aspects of disaster preparedness and response—panel session 1: water-related hazards. *Prehosp Disaster Med*. 2006;21:s79–81.
8. Stimpson JP, Fernando AW, Jeffries SK. Seeking help for disaster services after a flood. *Disaster Med Public Health Preparedness*. 2008;2:Epub ahead of print.
9. LaPorte M. Storm summit stresses readiness. Transportation, communication among key issues of discussion. *Provider*. 2007;33:17–18.
10. Banks LL, Shah MB, Richards ME. Effective healthcare system response to consecutive Florida hurricanes. *Am J Disaster Med*. 2007; 2:285–295.
11. Smith E, Macdonald R. Managing health information during disasters. *HIM J*. 2006;35:8–13.
12. Pant AT, Kirsch TD, Subbarao I, et al. Faith-based organizations: implications for informal network utilization. *Prehospital Disaster Med*. 2008;23:48–54.
13. McDaniel TL, Kamlet MS, Fischer GW. Risk perception and the value of safety. *Risk Anal*. 1992;12:495–503.
14. Knocke ET, Kolivras KN. Flash flood awareness in southwest Virginia. *Risk Anal*. 2007;27:155–169.
15. Aakko E. Risk communication, risk perception, and public health. *WMJ*. 2004;103:25–27.