

These are some controversial issues in disaster medicine outlined in some of the key questions about medical and public health preparedness, which are aimed at pinpointing and arriving at common definitions and understandings standard in the US disaster response. The purpose of this paper is not only to introduce these questions, but also to encourage debate and provide final answers to these terms and issues. The goal is to get beyond vague and poorly defined concepts, such as “preparedness” and “quarantine”, and open a dialogue to effectively begin to define, analyze and measure key parameters that define our ability to respond to and mitigate disaster.

**Keywords:** disaster; emergencies; health; hospitals; preparedness; quarantine; response; United States (US)

*Prehosp Disast Med* 2005;20(2):s28-s29

### Using Design Effects from Previous Cluster Surveys to Guide Sample Size Calculation in Emergency Settings

R. Kaiser,<sup>1</sup> B.A. Woodruff,<sup>1</sup> O. Bilukha,<sup>1</sup> P.B. Spiegel,<sup>2</sup> P. Salama<sup>3</sup>

1. Centers for Disease Control and Prevention, Atlanta, Georgia USA
2. United Nations High Commissioner for Refugees (UNHCR), Switzerland
3. United Nations Children's Fund (UNICEF), USA

**Introduction:** The standard survey design used in humanitarian emergencies (30 clusters with 30 individuals each) is being used increasingly to measure outcomes other than acute malnutrition; however, research design effects for these outcomes have not been evaluated thoroughly. Being able to accurately estimate design effects is critical when calculating the most efficient sample size for such surveys. **Methods:** Design effects and rates of homogeneity for seven nutrition and health outcomes were reviewed from nine population-based, cluster surveys conducted in emergency settings.

**Results:** In children, the median design effects for mortality, acute malnutrition, and anemia were 1.25, 1.4, and 1.5, respectively. Median design effects for the cumulative prevalence of acute respiratory disease and diarrhea, and for measles vaccination coverage were much higher: 3.6, 3.4, and 5.1, respectively. Four of the eight surveys that assessed crude mortality showed design effects below two; the median was 1.7. Re-analysis of mortality data from Kosovo and Badghis, Afghanistan, showed that given the same number of clusters, changing sample size had a relatively small effect on the precision obtained for the estimate of mortality.

**Conclusions:** In the majority of surveys, assuming a design effect of 1.5 for acute malnutrition in children and 2 or less for crude mortality would produce a more efficient sample size. In addition, increasing the sample size in cluster surveys without increasing the number of clusters may not result in substantial improvements in precision.

**Keywords:** cluster; design; effects; emergency; refugees; sample size

*Prehosp Disast Med* 2005;20(2):s29

### Complex Emergencies: Epidemiological Models and Models of Response

Frederick Burke, Jr

Johns Hopkins University Medical Institutions, Baltimore, Maryland

USA

Complex emergencies (CEs) are the most common, human-induced disasters and represent a major challenge to the humanitarian community. This presentation first will define the three major epidemiological country models of CEs: (1) developing; (2) chronic; and (3) developed, and how they differ for planning purposes. Secondly, the existing international response models: (1) multi-national; (2) unilateral; and (3) the Responsibility to Protect (R2P) models, in terms of their characteristics, objectives, and controversies will be discussed.

**Keywords:** complex emergencies; disasters; model; response

*Prehosp Disast Med* 2005;20(2):s29

### Health Needs Among Sudanese Internally Displaced Persons (Special Session on Humanitarian Crises of 2003–2004)

L. Amowitz,<sup>1</sup> G. Kim,<sup>2</sup> E. Noji<sup>3</sup>

1. International Medical Corps, Santa Monica, California USA
2. Harvard Medical School, Boston, Massachusetts USA
3. Centers for Disease Control and Prevention, Atlanta, Georgia USA

**Introduction:** Sudan has the largest displaced population in the world with approximately 3–4 million internally displaced persons (IDPs), and an additional 400,000 Sudanese refugees abroad. During the last 18 months, human rights violations have been on going and widespread in the Darfur region of Sudan.

**Objective:** Using a combination of quantitative and qualitative methods, the International Medical Corps (IMC) will perform an in-depth and credible real-time assessment of health and basic needs among the >2 million IDPs in the South and West Darfur regions of Sudan. These assessments will help to identify better the basic needs and the gaps in humanitarian aid services, paying close attention to the specific needs of women.

**Methods:** All study participants for this population-based assessment will be selected using systematic random sampling or a combination of systematic random sampling and cluster sampling as some IDP camps will not be accessible due to safety issues or Government policy. Approximately 1,200 households will be selected randomly and sampled in proportion to their distribution in IDP camps. The survey addresses demographics, the prevalence and extent of certain abuses including sexual violence both by combatants and non-combatants, the prevalence of suicidal ideation, suicide and depression rates, and women's roles in society and primary health needs and gaps.

**Conclusion:** A discussion of the findings of this survey to be completed in January 2005 will include the wide-ranging implications of establishing patterns of abuse and the health needs of survivors/victims, identifying specific policy recommendations regarding the needs and/or vulnerabilities of the Sudanese IDPs, and identifying specific policy recommendations for gender-based and mental health needs.

**Keywords:** humanitarian aid; internally displaced persons; public health; Sudan

*Prehosp Disast Med* 2005;20(2):s29