

## Metrics for Measuring Disaster Preparedness

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Considerations in the creation and establishment of a systematic method for evaluation of the actual level of preparedness for medical response will be presented including; (1) the concept of metrics and measures of performance as they apply to response operations involving medical systems; (2) the concepts of “lessons learned” vs. “lessons observed”; (3) standardization and evaluation; and (4) determination of when an organization is “good enough”. Additional discussion will focus on: (1) how these factors can be applied to medical disaster response; (2) how metrics can be standardized and evaluated; (3) the role of standards in the United States to involve the Joint Committee on Accreditation of Healthcare Organizations (JCAHO) to assist in development and implementation; (4) determining who are the best users of metrics; and (5) what group of people will benefit the most from the use of metrics.

An enormous amount of time and resources are invested regularly in the development and implementation of exercises to improve the preparedness level of medical systems to deal with a variety of disasters. In the United States (US) in 2003, the passage of the Bioterrorism Preparedness Act (HR 3448) provided states with \$1.5 billion to achieve the minimum levels of preparedness for a mass-casualty, bioterrorism incident. However, there does not exist an established systematic method to assess and evaluate the actual capabilities or level of preparedness of the medical system. In addition, there lacks a standard set of metrics to effectively assess the response performance during actual incidents (i.e., earthquake response, influenza outbreak).

A “qualitative” review of US mass-disaster exercises from 2000 and 2003, known as the Top Officials Exercise (TOPOFF) was conducted. Surveys of internal and external comments from policy leaders provided key observations. One observation was that there are no universal standards to measure the outcome and success of the exercise.

**Keywords:** bioterrorism; exercises; medical; metrics; observations; preparedness; standards; system

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## The Use of an Emergency Response Tabletop Exercise to Foster Collaboration among Regional Public Health Partners and Academia

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At the request of the New York State, Department of Health, Metropolitan Area Regional Office (MARO), the Columbia University Center for Public Health Preparedness (CPHP) facilitated an exercise involving the MARO and the county health departments of the Lower Hudson Valley region that

was intended to facilitate understanding of each agency’s emergency response capabilities and highlight the impact that mutual aid can have on public health preparedness. The event was the culmination of more than two years of relationship building between Columbia University, the MARO and local health departments. During that time, the CPHP developed emergency preparedness training courses and drills with the MARO and the health department partners.

For the latest event, a low-stress, weather emergency scenario was developed by the CPHP for the exercise, with guidance from senior MARO staff. To add an element of realism, the event was held at the State Emergency Management Office’s Emergency Operations Center in Poughkeepsie, New York. As the scenario unfolded, a CPHP faculty member asked relevant questions regarding what planning, response, recovery, and evaluation measures each participant and county would take to ensure the safety of their community and staff. The CPHP personnel observed and recorded the reactions of each agency, specifically noting internal and external notification processes and the agencies’ roles, responsibilities, and capacities in addressing the needs of local communities. Each participant was given a four-page evaluation form at the conclusion of the exercise and the CPHP staffers completed an eleven-page observation form.

Taken together, the response data provided a clear, informed understanding of the region’s emergency preparedness needs and capacities, and highlighted areas for improved cooperation. The importance of collaboration between all levels of public health agencies, their emergency response partners, and academia cannot be underestimated, especially with the new threat of global terrorism.

Recognizing the significance of maintaining and strengthening existing relationships, the CPHP, MARO, and local health departments met to facilitate understanding of regional emergency operations. As a result, many new areas of collaboration were discovered including equipment allocation, regulation enforcement, and communication technology. Participants concluded the exercise better positioned within their agencies and the region to respond not only to acute public health needs, but also to maintain essential public health services during an emergency.

**Keywords:** emergency; response; tabletop exercises

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## Systems Approach to Optimizing Disaster Response

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**Introduction:** Medical response to a disaster generally is typified by a rapid introduction of all available materiel and personnel. Unfortunately, it also is typified by a significant amount of wasted assets early during the response period. A need for these wasted assets, then becomes vital during the later stages of a response.