been considered impossible, ethically inappropriate, or both, to identify experimental and control groups essential for hypothesis testing for the conduct of scientific randomized controlled clinical trials.

Objective: The aim of this study was to identify a number of performance and outcome indicators and define optimal disaster response and management decision-making for various disaster scenarios using simulation optimization.

Methods and Results: A system model of medical disaster management was designed, and victim models and performance and outcome indicators were developed. Various mass-casualty and large-scale disaster scenarios were developed, including: (1) a hospital emergency incident/disaster; (2) a CBRNE incident; (3) an airplane crash and airport disaster; (4) a mass gathering; and (5) a military battlefield mass casualty. Using "Discrete Event Driven Simulation", multiple replications were made for different decision-making modalities, different resource allocations, and different disaster response procedures. Statistical analysis and optimization techniques were applied to achieve the best available setting of parameters of the simulation model. In such a way, the "Medical Disaster Management Simulator" runs the "missing experimental studies" in a simplified artificial simulated disaster environment.

Conclusions: Simulation optimization is an adequate tool for judging and evaluating the effectiveness and adequacy of health and relief services provided during disaster medical response. Evidence-based recommendations and codes of best practice were formulated for optimal medical disaster and military battlefield management in different large-scale event scenarios as well as for teaching, training, and research in medical disaster management.

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(A146) Disaster Patient Tracking – Local, State and Federal Interoperability during a Multi-Hospital Evacuation Exercise

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Introduction: Associated with hospital evacuation is the need to track multiple patient evacuees from point of origination to final hospital reception. Patient tracking, a component of the hospital emergency operations plan, is vital to patient care; family association, resource management, financial reimbursement, risk management, and repatriation. Tracking strategies and plans can include a variety of vendors, hardware, software, and coordination issues. Hospital evacuee tracking plans and platforms exist at multiple jurisdictional levels but may not be interoperable.

Methods: Three patient tracking platforms representing a local, state and federal application were used during a multi-hospital evacuation exercise, initiated in New Orleans, Louisiana, May 2010. Simulated patients were flown and tracked to multiple patient reception centers in the southern United States, including the Federal Coordinating Center in Shreveport, Louisiana, and receiving National Disaster Medical System hospitals. This review summarizes tracking operations, patient data characteristics captured and interoperability at the Shreveport reception location.

Results: 7 New Orleans hospitals entered 51 patients for evacuation into Louisiana's web-based, At-Risk-Registry (ARR) database including 8 patient identifiers each. ARR data was shared with federal and Louisiana Region 7 patient evacuee receivers for flight manifest construction and reception planning. 34 ARR evacuee patients were indicated for the Shreveport, Louisiana, reception site. 34 patients with 6 identifying characteristics were entered from ARR into EMTrack, the local patient tracking system. A C130 arrived with a TRAC2ES manifest of 20 simulated patients with 6 patient data characteristics. The local tracking system was reconfigured for the hardcopy manifest; simulated patients were received at the airport; transported and received at local hospitals.

Conclusions: Tracking system interoperability may be challenged by tracking technologies, jurisdictional requirements and degree of implementation at the local, state and federal level. Tracking should be standardized based on national recommendations with local systems remaining flexible for just-in-time requirements.

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(A147) Pediatric Medical Surge: An Exercise Evaluation Guide

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A guide was created by the Chicago Healthcare System Coalition for Preparedness and Response to help hospitals and health facilities design, implement, and evaluate emergency exercises following the US Homeland Security Exercise and Evaluation Program (HSEEP) format. The HSEEP provides a standardized policy, methodology, and terminology for exercise design, development, conduct, evaluation, and improvement planning. As a part of a toolkit for hospital use, the pediatric at-risk population is represented with an Exercise Evaluation Guide titled "Pediatric Medical Surge". Pediatric Medical Surge is defined as the rapid expansion of the capacity of the existing healthcare system in response to an event that results in an influx of children and an increased need for personnel (clinical and non-clinical), support functions (laboratory and radiological), physical space (beds, alternate care facilities), and logistical support (clinical and non-clinical equipment and supplies). The Exercise Evaluation Guide is fully customizable and includes the following activity sections: (1) Pediatric Pre-Event Mitigation and Preparedness; (2) Incident Command; (3) Pediatric Bed Surge Capacity; (4) Pediatric Surge Staffing Procedure; (5) Pediatric Decontamination; (6) Receive, Evaluate, and Treat Pediatric Surge Casualties; (7) Provide Pediatric Surge Capacity for Behavioral Health Issues; and (8) Demobilization. Each of these sections includes a number of exercise tasks and details the potential tasks/observation keys that are completely modifiable in an electronic format. All or a limited number of these activity sections can be used in an exercise. Following the Activity and Tasks, a section for Observations is provided, and