

Project ER One: Designing Emergency Rooms for All Hazards

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The findings from Project ER One, commissioned by the United States government to design and build a new type of emergency care center is presented. It is optimized to manage the medical consequences of terrorism and emerging infectious diseases, while maintaining its fundamental mission to provide emergency care to the community it serves.

ER One is optimized along three dimensions: (1) capacity; (2) capability; and (3) protection. Capacity is the ability to scale up 1–5 times the normal number of patients without encountering gridlock. Specialized capability provides an enhanced ability to manage conditions not ordinarily encountered, but can occur from a planned attack or an emerging infectious disease, chemical contamination, radioactive contamination, or highly and purposefully contagious illnesses. Protection ensures that the facility can continue to function despite being a target of a direct attack or suffering collateral damage from an attack nearby.

More than 300 design concepts for an all-risks emergency care center were identified by multiple national task forces. Key concepts, such as concourse vehicular access, screening portals at entrances, universal isolation, multi-modal decontamination, and rooms large enough to handle multiple patients simultaneously, will be discussed. Schematic design has been completed for an actual facility to be built that would be able to handle 100,000 emergency patients/year in routine operations and scale up to 1,500 patients/day during a mass-casualty incident. Design features and practical applications for renovation and/or building new emergency rooms also will be presented.

Keywords: all-hazards; capability; capacity; emergency room; protection
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An Integrated Plan to Augment Surge Capacity

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Objectives: The New York City Department of Health and Mental Hygiene has requested that area hospitals take inventory of available beds and ensure a minimum 20% surge capacity availability for a mass-casualty incident or infectious disease outbreak. Member facilities of the Central Brooklyn Centers for Bioterrorism and Preparedness Planning (CBPP) have chosen to cooperate in merging resources to address potential public health incidents affecting Central Brooklyn, New York. Together, CBPP hospitals have endeavored to meet the aforementioned requests.

Methods: The staff of the CBPP facilities were required to perform parallel inventories of the capacity of the units, that were or had the potential to become inpatient units. Concurrently, an inspection to identify negative pressure isolation bed surge and ventilator capacity was performed. Steps to prepare potential surge capacity for rapid mobilization, including the retrofitting of decommissioned units were taken and policies for its activation were determined.

Results: After performing preparatory steps, the final census identified a bed surge capacity of 30% within the CBPP. The surge capacity plan of each facility was communicated and integrated with that of the other CBPP facilities.

Conclusions: The CBPP hospitals have demonstrated the process of performing an inventory, recognizing potential space for supplementing surge capacity, and preparing the space and policy for its activation. An integrated plan has been formulated to engage increased demand to physical infrastructure by partnering multiple, unaffiliated health-care facilities. This process provides an example of the creation and execution of plans within and between facilities that augment their ability to respond to a public health incident.

Keywords: hospital; inventory; planning; policy; public health; surge capacity

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Preparedness of Hospital Physicians for a Mass-Casualty Incident: An Ongoing Survey in Germany

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Objectives: The goal of this study was to evaluate the preparedness of hospital physicians for a mass-casualty incident.

Methods: An online survey containing 16 questions was e-mailed to the head of the Departments of Surgery, Internal Medicine and Anaesthesia in all Level 1–3 Trauma Centers in Germany. Preliminary results of the first two months of data are collected and presented. Participants included 65 physicians working in internal medicine, 126 in surgery and 190 in anesthesia. Replies were analyzed statistically using the one-way Analysis of Variance (ANOVA) and the Turkey-Kramer Multiple Comparisons test.

Results: The questionnaire was completed by 381 physicians. Of these, 127 (33%) were unaware of the particular details of their hospital's disaster management plan, while 38 (10%) were unaware of the plan itself. A total of 48% of the responding physicians did not know their area of responsibility in case of an internal emergency (fire, burst pipe, power failure). Surgical residents and specialists had less training in nuclear, biological, or chemical agents compared to the other physicians ($p > 0.01$).

Conclusions: The preparedness level of physicians in hospitals for mass-casualty incident is inadequate. Surgeons have significantly less formal training in chemical, biological and nuclear exposures than do other specialists. The emergency medical training of physicians must be adapted to respond to the increase in catastrophes and terrorist threats.

Keywords: education; Germany; hospital; physicians; preparedness; training

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Hospital Preparedness for Emergencies in Nepal

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The Hospital Preparedness for Emergencies (HOPE) Course is a four-day course developed by a team of leading experts from throughout the Asia Pacific region. The course