

roles of his/her colleagues. Making action cards of their own words promoted active participation of members. As a result, the existing manual was revised and updated. The hospital could respond adequately to an earthquake with a magnitude of 5.4.

Conclusions: A workshop for disaster preparedness that utilized action cards was practical and useful to introduce a disaster response system to non-specialists in disaster medicine. **Keywords:** earthquake; Japan; preparedness; university hospital; workshop

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Creation of Surge Capacity by Early Discharge of Hospitalized Patients at Low Risk for Untoward Events

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Introduction: Hospitals in the US are expected to function without external aid for up to 96 hours during a disaster. However, there is concern that there is insufficient capacity in hospitals to absorb large numbers of acute casualties. We wanted to determine the potential for creation of inpatient bed surge capacity from the early discharge (reverse triage) of hospital inpatients at low risk of untoward events for duration of 96 hours.

Methods: In a health system with three capacity-constrained hospitals representative of US facilities (academic, teaching affiliate, community), a variety (n = 50) of inpatient units were canvassed prospectively in rotation using a blocked randomized design over 19 weeks. Intensive care units, nurseries, and pediatric units were excluded. Assuming a disaster occurred on the day of enrollment, patients who did not require any (previously defined) critical intervention (CI) over four days were deemed suitable for early discharge.

Results: Of 3,491 patients, 44% did not require any CI, and were suitable for early discharge. Accounting for additional routine patient discharges and the full utilization of staffed and unstaffed licensed beds, Gross Surge Capacity was estimated at 77%, 95%, 103%, for the three hospitals. When factoring likely continuance of non-victim emergency admissions, the net surge capacity available for disaster victims was estimated at 66%, 71%, 81%, respectively. Reverse triage comprised the majority (50%, 55%, 59%) of surge beds. Most realized capacity was available within 24–48 hours.

Conclusions: Hospital surge capacity for standard inpatient beds maybe greater than previously believed. Reverse triage, if appropriately harnessed, can be major contributor to surge capacity.

Keywords: capacity building; disasters; early discharge; hospitals; capacity building; surge capacity
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Improvised Oxygen Supply System for Pandemic and Disaster Use

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Introduction: A pandemic influenza outbreak will greatly strain the surge capability of medical system worldwide. The availability of oxygen will be a lifesaving medical intervention. Little capability exists for oxygen delivery to patients in non-standard hospital beds. The volume of oxygen clinically used is staggering. A hospital H tank of oxygen only will last for one hour supplying 25 patients with oxygen at 4 liters per minute (lpm). There is a great need to develop methods of surge capacity for oxygen.

Methods: A large Dewar of liquid oxygen was used to supply an oxygen distribution system made of commonly available, inexpensive materials. This system was tested in various configurations and the practical limits of this supply system were established.

Results: The system can be designed and built easily. The materials are readily available and large metropolitan areas can support many such systems. It will power multiple ventilators at a constant pressure without malfunction. A ward delivery system supplying 30 beds at up to 6 lpm each can be assembled safely. The construction methods and safety issues will be described.

Conclusions: A practical method of supplying oxygen for use during a pandemic can be assembled easily. This will be lifesaving in the event of a serious outbreak of respiratory illness. **Keywords:** disaster; emergency health; oxygen; oxygen supply system; pandemic

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Augmentation of Hospital Emergency Department Surge Capacity: Recommendations of the Australasian Surge Strategy Working Group

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Introduction: Emergency medicine has produced guidelines, training, and leadership for disaster response management for more than a decade. To date, there have been limited guidelines published for emergency physicians needing to provide a rapid response to a surge in demand.