

Save Accident Victims of Nigeria (SAVAN) and the Richmond Ambulance Service (RAA) started a collaborative partnership in 2005 after meetings during the World Association for Disaster and Emergency Medicine (WADEM) Congresses in Australia in 2003 and in Edinburgh in 2005. With sustained verbal and e-communications during this period, their partnership has moved SAVAN from just an in-hospital non-governmental organization (NGO) in Nigeria, to a prehospital NGO with ambulances, donated by the RAA, manuals, and e-library materials for a paramedic training institution. More than 2,000 accident victims in Nigeria have benefited from SAVAN, while professionals such as doctors, nurses, and other volunteers have benefited from training. The partnership has evolved to such a level that spare parts for the ambulances and other consumables are being provided to avoid a scenario of grab and go.

United States citizens should be assured that their efforts and materials are saving the lives of fellow citizens in a developing nation like Nigeria, even though they may not know it. This fulfills the biblical injunction of being a “Good Samaritan”.

Keywords: global; non-government organization; partnership
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Colombian Nationwide Emergency Medical Services Legislation Project

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Colombia has a high burden of injury due to road traffic injuries, social violence, and natural disasters. Despite these problems, the infrastructure of prehospital systems in Colombia was very precarious until 2000. During this year, an inter-institutional project was put in place in order to create an organized emergency system and basic infrastructure for prehospital care in Colombia. The objective of this report is to describe the preliminary experience in developing this project and to share this methodology with all the international emergency medical services (EMS) community as an example of capacity building.

Representatives from several EMS groups organized a consensus meeting, and invited representatives from all possible stakeholders, including rescue volunteers, physicians, government representatives, and general actors from the EMS community and beyond. Working groups were created to develop guidelines consistent of and documents to support the governmental organization process for a national EMS system.

Since 2002, national prehospital guidelines, legislation (including EMS training and resources requirements), and prehospital care quality improvement tools have been released. These include three national ministry of health decrees and resolutions and 44 basic prehospital guidelines.

Inter-institutional projects, including governmental and academic medical societies are excellent ways to organize tools for capacity building in countries with high burden of injuries.

Keywords: capacity building; Columbia; legislation; injury; emergency medical services; prehospital; preparedness

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Capacity Planning of Ambulance Services in the Netherlands

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Introduction: The geographical distribution and capacity of ambulance services for 25 regions in the Netherlands is described by the use of a two-step model. In 2008, the model was actualized and a number of pre-limiting conditions were ascertained. Among these is the condition that 97% of the Dutch population should be reached within 12 minutes.

Methods: The two-step model first optimizes the geographical distribution of ambulance stations based on population coverage, using a drive-time model based on real-time ambulance velocities that predicts the average drive time for each possible trajectory. In the second step, the capacity per station is determined. In the capacity model, a Poisson distribution is fitted of two hour-block. The number of ambulances is calculated in order to meet <5% service failure. An uncertainty analysis is performed to investigate the sensitive parameters of the model.

Results: To meet the assumption of 97% coverage for each region, a total of 206 stations is needed. During working hours, 494 ambulances are needed to meet the demand of 930,000 ambulance calls per year. The capacity model is sensitive for the components for geographical preparedness and the amount of planned services.

Conclusions: The new macro-planning of the ambulance services is based on uniform assumptions for each region in the Netherlands and should provide an improved service level of EMS. The two-step model is a useful tool for capacity planning at the macro-level.

Keywords: ambulance; capacity building; emergency medical services; Netherlands; planning

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Workshop Utilizing Action Cards to Improve Disaster Preparedness in the University Hospital

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Background: Major earthquakes with a magnitude of 7–8 are 60% likely to occur in the next 30 years on the southern coast of Japan's main islands. Severe damage is predicted, and Mie University Hospital is expected to play a major role in the medical response for the disaster. Since ordinary Japanese hospital personnel do not have military backgrounds, and the hospital has not been prepared, developing disaster preparedness is extremely challenging. Providing a disaster manual is not sufficient.

Objective: In order to build a disaster preparedness system, workshops for hospital executives were convened.

Methods: According to a scenario (e.g., train crash, earthquake) given by a facilitator, as a team, the participants were encouraged to discuss and to fill in their responses on a template of the action card.

Results: The survey after the workshop indicated that each participant could identify his/her own roles as well as the

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.