Safe Hospital: The Key to deliver effective Emergency Medical Services

Health facilities can be affected by natural phenomena such as earthquakes, hurricanes, landslides, volcanic eruptions, and floods. They can also be damaged by anthropic (i.e., man-made) events such as fires, gas leaks or explosions. The consequences are devastating: on top of losing their homes and physical shelter, people are left without even basic emergency care. When the tsunami struck Aceh, it devastated a healthcare System that was already under strain due to a 30-year civil war; 106 health facilities were damaged or destroyed (66% were destroyed) in Aceh[1]. Others were so weakened that they had to be evacuated. After the 2003 Algerian earthquake, 50% of the health facilities in the affected region were no longer functional due to damage[2]. In the region of Pakistan worst affected by the 2005 South Asia Earthquake, 49% of health facilities, from sophisticated hospitals to rural primary care clinics and drug dispensaries, were completely destroyed[3].

Given the seriousness of the risk, new health facilities must be built to standards that can help them to withstand the natural hazards that surround them. It is also necessary to assess the vulnerability of existing buildings with a view to identifying their weaknesses, and to plan, design, and carry out the physical interventions or retrofitting needed. The 168 countries that adopted the Hyogo Framework for Action in 2005 recognized the importance of "making hospitals safe[4] from disasters by ensuring that all new hospitals are built with a level of resilience that strengthens their capacity to remain functional in disaster situations and implement mitigation measures to reinforce existing health facilities, particularly those providing primary health care." Incorporating mitigation measures into the design and construction of a new hospital is estimated to account for less than 4% of the total initial investment. Retrofitting a hospital to make it more resilient costs only 1% - but this small investment protects up to 90% of the value (WHO and UN/ISDR,2007)[5]. Given the critical importance of this issue, the UN/International Strategy for Disaster Reduction selected the topic of hospitals safe from disasters as the theme of its two-year global awareness campaign for 2008-2009.

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[1] UN and BRR Report: Tsunami Recovery Status, December 2005

[2] Algeria: Earthquake, Emergency Appeal 14/03, IFRC, June 27 2003

[3] Ministry of Health, Pakistan.

[4] A safe hospital …
will not collapse in disasters situations, killing patients and staff; can continue to function and provide critical services when they are most needed; is organized, with contingency plans in place and a health workforce trained to keep the network operational (WHO and ISDR:2008-2009 World Disaster Reduction Campaign).

[5] WHO and UN/ISDR, Global Campaign "Hospitals Safe from Disasters", Davos, 2008.

Hospitals are more than concrete blocks and steel beams. They are made up of people and services and systems, all of which go into making a safe hospital. The WHO's Health Action in Crises (HAC) has recently elaborated a five-year strategy to build the capacity of the health sector and communities in emergency preparedness and risk reduction. This strategy aims to substantially increase the preparedness of the communities and the health sector to manage health consequences of mass casualty incidents and other emergencies and crises, and provides the conceptual underpinning to these Guidelines (WHO, 2007)[6].

The Emergency Medical Services (EMS) are part of a wider concept that includes not only the limited response to the emergency situation of a patient but that also includes elements of mental health, psychosocial well-being and recovery after major emergencies. The EMS also play a key role in the case of disasters and should be upgraded so as to become the backbone of the medical response for they include pre-hospital as well as hospital activities. They should no longer be regarded as just limited to resuscitation and acute curative care. The EMS are part of the community based services that are governed by the conceptual framework of risk management.

The organization and the management of Emergency Medical Services(EMS) are largely dependent on the country context and on the overall organization of the delivery of medical care. No single system can be considered as the universal reference model. There are 2 major pre hospital care models based from the International Emergency Medicine (IEM) that has become a reference in developing EMS System: the Anglo-American Model[7] and the Franco-German Model[8].

In many developing countries the pre-hospital activities are not coordinated with hospital activities. Coordination is vital to maximize the limited resources in the community to effectively respond to the emergency. The appropriate management of emergency patients on site is not often happened. Simple first-aid skills could save another human life. Therefore, this training should not be restricted to medical personnel but also extended to public safety personnel (police, fire, security, traffic enforcers), schoolteachers, community volunteer, drivers, and industrial workers. As a strategy, first aid training certification can be made as a pre requisite to secure a license or part of pre employment requirement and be renewed in an annual basis for update. Public information campaign should be launched to create awareness. All medical and paramedical staff should be trained accordingly. More advanced training such as Paediatric advance life support (PALS), Basic disaster life support (BDLS) etc. should be as much as possible offered to all medical staff having a responsibility

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[6]. WHO HAC, Mass Causality Management Systems. 2007.

[7] Non physicians, such as Emergency Medical Technician (EMT) or paramedics (EMT-Ps), initiate emergency care in the field and transport critically ill or injured patients to hospital-based emergency departments (EDs), where emergency
physicians (EPs) provide definitive emergency care.

[8]Emergency care brings the hospital to the patient, delivering EPs and technology to the scene in hope of providing a higher level of care. In this model, EPs (often anesthesiologists) provide emergency care (usually resuscitation and pain control) in the pre hospital setting. Patients are triaged and admitted directly to inpatient services.

to manage emergency patients or working in the medical care delivery system as front line medical practitioners in the community.

Another important element for delivering effective emergency medical services is the coordination of the various agencies dealing with medical emergency patients. Without proper contact and coordination, emergency situations often leads to a tremendous loss of time, to lack of effectiveness, to waste of resources, duplication, uncoordinated and inappropriate response. This is particularly detrimental in mass casualty situations, which create chaos in receiving hospitals/mobile clinics. In parallel to internal health sector networking (mainly among hospitals) there is an absolute need for a network regrouping all partners involved in the management of emergency situations, especially the private sector. The coordination of transport means from all sectors and agencies is becoming a priority in more and more countries. This process is part of the "integration strategy". This allows for mobilising effectively and coordinating all resources in case of mass casualty situations.

Emergency medical services require the intervention of several agencies and the contribution of professionals coming from various disciplines. The assessment of the needs and priorities over time as well as the assessment of the capacity of the partners should be conducted on a regular basis. New partners should be assessed focusing on their skills and capacity using short form of assessment tools. Monitoring of activities should be implemented to ensure that the process remains relevant, efficient and on the track. Regular feedback should be given for quality improvement and upgrading of its EMS system.

The absence of legal framework and of regulations leaves the door open for a potential anarchic situation or at least inhomogeneous or incompatible approaches. Conflicts of authority or mandate between partners of various agencies and sectors are always a source of inefficiency and are the root cause of lack of coordination between the partners. The Ministry of Health should take a lead role to ensure the operation runs within the country's legal framework following international guidelines and standards.

The EMS system is an integral element of disaster preparedness and planning in all levels from the simple community disaster plan up to a bigger national level disaster plan to respond to major disasters. It plays an important role in initial response and transportation and is essential in establishing a regional disaster
preparedness plan in coordination with public safety agencies, government, private sector, and the medical community. Public support is invaluable in constructing a successful EMS system; involvement is required to plan a system that works for everyone. Public education is a key component of the overall policy.

The collaboration between the private and the public sector in order to use efficiently and effectively available medical resources of the community should be promoted as much as possible. The policy should be not to attract all patients to casualty department of hospitals but rather to select patients requiring emergency care and referring the non-emergency patients to other services. An improved cooperation between the private and the public health sectors is desirable.

ADPC advocates that the key in establishing an EMS System is integrating the main principles and practices in its current system and not re inventing the wheel by developing a system from scratch. One has to look in to their respective existing set up whether in the ministries of health or public safety services. Promoting a sense of ownership between all the organizations and stakeholders working with a common goal and objective is a strategy in which it is possible to ensure the cooperation and active participation of each member.

ADPC publication on Strategy & Recommendations in Organizing & Managing Emergency Medical Services (ADPC, 2007)[9] could be used a reference document to manage the development and the strengthening of EMS to select priorities and to develop an action plan that will lead to sustainability of the system and its integration into the overall organization of the services offered by the health sector.

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[9] ADPC, Strategy & Recommendations in Organizing & Managing Emergency Medical Services, in developing countries in managing daily emergencies & disasters: An ADPC Perspective. Bangkok, July 2003