

# The role of hospitals in enhancing public health security: perspectives from the Eastern Mediterranean Region

ARTICLE BY **S SIDDIQI**

Division of Health Systems and Services Development, Eastern Mediterranean Regional Office, World Health Organization,

**Q HUDA**

Emergency Preparedness and Humanitarian Action Unit, Eastern Mediterranean Regional Office, World Health Organization

**E ELASADY**

Division of Health Systems and Services Development, Eastern Mediterranean Regional Office, World Health Organization

**Abstract:** Hospitals are an integral part of a healthcare system and their ability to mount an effective response in the face of threats to global health security depends largely on the performance of the health system itself. In the last two decades, 15 of the 22 countries in the Eastern Mediterranean Region (EMR) covering 85% of the population have been directly or indirectly involved in conflict situations. Six EMR countries Afghanistan, Iraq, Sudan, Palestine, Somalia and Lebanon have or are currently experiencing complex emergencies. Although the basic approaches for reducing impact of disasters are preparedness and mitigation, and response, the past practices in the Eastern Mediterranean have historically focused upon post-disaster response and humanitarian assistance efforts and the need to work on disaster risk and preparedness has tended to “fall between the cracks”.

The critical role of hospitals in protecting public health security has been recognized in the region for some years. The key interventions include: thus far (a) adoption of a strategic framework to safeguard hospitals and health facilities from external forces; (b) Adoption of the regional strategy and implementation of a region-wide survey for safer hospitals and health facilities in 2003; (c) mounting an emergency response to operationalize hospitals in the event of natural disasters and catastrophic emergencies; and (d) development of an e-Atlas of Disaster Risk.

The broad directions for ensuring an effective role of hospitals for protecting public health security in countries of the EMR include (a) ensuring that hospitals, especially those that are newly constructed are resilient to the risks of natural disasters; (b) ministries of health should ensure that the hospitals are well prepared and capacities developed to effectively to respond to disasters and emergencies; and (c) development partners and civil society organizations should help minimize the consequences of disasters by better collaboration with the national government to achieve great harmony and alignment in the event of a disaster.

Public health security is defined as the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of national populations and global public health security concerns populations living across geographical regions and international boundaries (WHR 2007).<sup>1</sup> In a rapidly changing global landscape, no country or region can be considered to be a health sanctuary that is safe from the threat of global health insecurity. In a highly mobile, interconnected and interdependent world the natural disasters and conflicts as well as the threats of the rapid spread of infectious diseases and radio nuclear and toxic wastes is ever increasing. Are the healthcare systems and particularly hospitals prepared to face these challenges is a question that has yet to be adequately dealt with.

The Eastern Mediterranean Region (EMR) is home to over 500 million population living in 22 independent as well as occupied states. There are approximately 8,500 big and small, public and private hospitals in the region. Hospitals are an integral part of a healthcare system and their ability to mount an effective response in the face of threats to global health security depends largely on

the performance of the health system itself.

The purpose of this paper is to raise awareness and propose strategies for enhancing the preparedness of hospitals in the EMR so that they are able to expeditiously to respond in the event of threats to public health security in and beyond the region.

## Health security challenges

International health security threats include emerging and rapidly spreading diseases, including the lurking danger of outbreaks of avian influenza and the impending threat of an avian influenza pandemic, environmental change, the danger of bioterrorism, sudden and intense humanitarian emergencies caused by natural disasters, civil strife including ever increasing political instability, chemical spills or radioactive accidents, the impact of HIV/AIDS. The Commission on Human Security report places health crisis during conflict and humanitarian emergencies, infectious diseases, and the health problems of poverty and inequity among the health problems considered the most germane to human and health security.<sup>2</sup>

## Health security challenges in the Eastern Mediterranean Region

War, internal conflict and sparks of violence in the EMR have increased the vulnerability of populations. In the last two decades,

<sup>1</sup>Associated Press; *Egyptian Daily Star*, 13 July, 2006

15 of the 22 countries covering 85% of the population have been directly or indirectly involved in conflict situations. Six EMR countries Afghanistan, Iraq, Sudan, Palestine, Somalia and Lebanon have or are currently experiencing complex emergencies, comprising 19% of the regional population, that have left over 200,000 dead and over 3 million displaced, in addition to very poor health status indicators. United Nations Emergency Relief Coordinator described the complex emergencies in Somalia, Sudan and Palestine – all in EMR – as the three most challenging, current, humanitarian situations in the world.<sup>1</sup> In addition, Yemen, Syrian Arab Republic, Egypt, Lebanon, Somalia, Iran and Pakistan have experienced floods, droughts, earthquakes and landslides. More recently the major earthquakes in Iran and Pakistan affected large numbers of people and had significant material losses.

Basic approaches for reducing impact of man-made and nature disasters are preparedness and mitigation, and response. Though both elements are critical, past practices in the Eastern Mediterranean in disaster management have historically focused upon post-disaster response and humanitarian assistance efforts and the need to work on disaster risk and preparedness has tended to “fall between the cracks” of the grander frameworks of development cooperation and emergency.

### Role of hospitals in promoting public health security

Hospitals are facing new and emerging threats – both man-made and natural – with increasing frequency. Some of these are foreseeable, such as floods, cyclone, earthquakes and conflicts, while others are emerging as new threat such as pandemics and the risk of chemical or nuclear fallouts. Hospitals thus need to maintain and regularly upgrade “all-hazards” plans that provide the framework for managing the consequences of a range of events that include both natural and man-made disasters.

Most experience and evidence in delineating the role of hospitals in promoting public health security comes from the economically developed countries.<sup>4,5,6</sup> Disasters from a management standpoint can be – fixed versus prolonged events. Hospitals and their communities must plan to create surge capacity for each of these two distinct types of events. Traditional disaster planning has largely concentrated on “fixed occurrence” events, such as those created by transportation accidents or the terrorist attacks. However, in the face of the growing threat of natural disasters and emerging infectious diseases such as “avian flu,” hospitals require to update their emergency management plans. Hospitals must be able to effectively extend their ability to deliver uninterrupted medical care in the face of a prolonged event involving large numbers of victims.

The public looks to hospitals to play a critical role in the event of a disaster. A critical aspect of preparedness to the challenges of public health security is that of surge capacity. Surge capacity is a healthcare system’s ability to rapidly expand beyond normal services to meet the increased demand for qualified personnel, medical care, and public health in the event of large-scale public health emergencies or disasters and hospitals are an important component of the healthcare system, which can play a critical role in minimizing the damages as a result of public health insecurity. As such, hospitals must be able to accommodate the surge in demand for care in order to screen, stabilize and provide definitive care for affected persons. Hospitals can increase their patient care capacity in relatively short periods of time by “*surging*

*in place.*” This involves several actions such as: (a) rapidly discharging existing patients; (b) cancelling scheduled procedures; (c) taking steps to increase the number of patient care staff in the facility; (d) reconfiguring available space in a healthcare facility for use in the initial management of disaster victims; (e) extending emergency department capability by using lobby and waiting room areas, as well as other patient care.

While this type of strategy can provide for a temporary ability to increase patient care capacity, most hospitals cannot sustain such a surge for extended periods of time.

Individual facilities would quickly become overwhelmed if the disaster involved large number of victims presenting over a prolonged period of time, such as would be seen in large scale event like tsunami, South Asia earthquake, pandemic influenza which would require the development of community surge capacity, involving the development of alternative care facilities. This type of community surge capacity is complicated and costly to achieve and involves advance planning for logistical support, the development of protocols, and the determination of specific mission goals.

However a hospital’s ability to deliver “optimal” medical care in the setting of any threat to public health security, regardless of its cause, is in largely contingent upon a regularly available supply of key medical equipment, supplies and pharmaceuticals, as well as adequate staffing. In addition, the performance of hospitals in any disaster situation does not depend upon only the surge capacity. It also relate to the structural sustainability of the facility itself and the skill of health workforce at large specially care givers. It has become very important to make these health facilities resilient so that they can cope through the big events both structurally and functionally. This has been one of the major challenges in developing countries, where hospitals themselves have succumbed to the damage and destruction caused by natural disasters and sometimes man-made disasters.

### Hospitals in the EMR and their potential to tackle health security

According to the information available there are over 8,500 hospitals of which just over 50 percent are in the public sector (Table 1). Almost two-thirds of these hospitals are in the three countries – Egypt, Pakistan and Iran. Most large hospitals and hence hospital beds are in the public sector, the only exception being Lebanon where 90 percent of the hospital beds are in the private sector.

The critical role of hospitals in protecting public health security has been recognized in the region for some years. Although the efforts undertaken are only in their early stages of development a systematic approach is being followed. The key interventions include

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#### ***Adoption of the regional strategy and implementation of a region-wide survey for safer hospitals and health facilities in 2003***

Reducing a health facility’s risk to natural hazards and emergencies has been a focus of WHO’s Eastern Mediterranean Region for several years. The regional strategy for the safer hospitals and health facilities adopted in 2003, established a regional baseline for disaster risk reduction (Box 1). Subsequently, a region wide survey was conducted to determine the level of

emergency preparedness and risk management in the member states, allowing WHO to step up advocacy for more comprehensive country programmes that include a component on reducing the risk of natural hazards on health facilities and again in terms of structural, functional and health workforce components. Based on the findings of the survey the strategy basically focused on three main agenda: (a) the resilience of the structure of health facilities itself; (b) the functionality of the facilities including adequately skilled health workforce; and (c) coordinating and leading the process with other stakeholders for more sustainability including the national authority.

#### **Development of a strategic framework to safeguard hospitals and health facilities from external forces**

The Eastern Mediterranean Regional Office of WHO has recently developed a strategic framework under which member states can work to safeguard hospitals and health facilities from these external forces based on the forward looking Hyogo Framework for Action –2005–2015, endorsed by 168 nations at the 2005 World Conference on Disaster Reduction in Kobe, Japan.<sup>7</sup> This calls for “making hospitals safe 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 implementing mitigation measures to reinforce existing health facilities, particularly those providing primary healthcare.” The World Health Organization, as the UN’s specialized agency for health, is responsible for the technical and scientific content and for activities carried out under this umbrella.

#### **Mounting an emergency response to operationalize hospitals in the event of natural disasters and catastrophic emergencies**

The region has witnessed countless examples of disasters or emergencies that leave health services struggling to continue

Country	Hospitals		Beds per 10,000 population
	Public	Private	
Afghanistan	NA	NA	4.2
Bahrain	9	9	27.4
Djibouti	NA	NA	NA
Egypt	1,288	2,024	21.0
Iran	598	119	17.2
Iraq	205	76	13.3
Jordan	41	56	19.0
Kuwait	15	7	19.0
Lebanon	30	100	34.3
Libya	84	NA	37.0
Morocco	124	269	8.7
Oman	54	3	20.2
Pakistan	976	587	10.0
Palestine	22	23	13.4
Qatar	9	23	25.2
Saudi Arabia	213	113	22.0
Somalia	NA	NA	NA
Sudan	334	140	7.3
Syria	150	376	14.7
Tunisia	167	70	17.6
UAE	27	29	18.8
Yemen	172	85	7.0

\*Source: Hospital (EMRO database); Bed per 10 000 population (Demographic, Social and Health Indicators of Countries of the Eastern Mediterranean; WHO-EM/HST/206/E; 2008)

TABLE 1: HOSPITALS AND HOSPITAL BEDS IN THE EASTERN MEDITERRANEAN REGION – 2005

- ✚ Policy changes require advocacy and outreach, which are integral components of this strategy to improve the resiliency of hospitals and health facilities. WHO will work to raise awareness among diverse segments of the population – both within and outside the health sector – about the critical importance of this issue and/or to lobby for reducing vulnerability.
- ✚ Acknowledging that effective disaster preparedness is not possible without strong intra and inter-sectoral collaboration between different stakeholders, public and private, and establish partnerships and alliances with a wide variety of sectors and professions, thus bridging the gap between development and relief to reach its goal.
- ✚ Information and knowledge management for individuals and sectors, thus helping to bring about change in health risk reduction and ensuring that access is widely available through different platforms and technologies.
- ✚ The proliferation of information on health sector risk reduction must be catalogued, classified and transformed into guidelines and standards that promote consistent messages and sound technical practices. Best practices must be systematically collected and disseminated.
- ✚ Technical support and cooperation to countries to build capacity that will reduce risk and help make health systems and the overall health network safe from disasters.

#### BOX 1: ESSENTIAL ELEMENTS OF THE REGIONAL FRAMEWORK

providing medical care despite damage to health facilities. Often they are unable to function at a time when services are most needed. In a worst-case scenario, collapsed health facilities have claimed the lives of patients and health staff.

The Eastern Mediterranean Regional Office has been particularly active in helping countries operationalize hospitals or specific functions within hospitals, such as emergency services, that become disrupted in the event of any threat to public health security. The support to provided following the Earthquake in Bam in Iran in 2003 or the conflict in Lebanon in 2006 are just a few examples of such support. Box 2 provides a brief illustration of the kind of challenges to hospital infrastructure and health workers that arise as a result unforeseen emergencies.

#### **Hospital Safety Index**

A hospital safety index has been adapted and modified based on the index developed by PAHO to assess level of preparedness of the hospitals and health facilities in regard to the resilience from disasters. The index provides opportunity to calculate the present status of the health facilities and also to identify the gaps so on the basis of which further improvement can be done to make the health facilities more resilient. Indicators have been developed against each element of the index. Indicators developed for the following elements that are being assessed to evaluate the safety of the hospitals and health facilities: (a) hazard analysis; (b) structural safety; (c) non structural safety; (d) functional safety; (e)

health workforce. The preliminary assessment will be done in countries based on a scoring system to get a quantitative grade of the safety of the hospitals.

#### **Development of an e-Atlas of Disaster Risk**

One of the tools being developed and refined in the EMR is an e-Atlas of Disaster Risk, which uses geographic information systems and various disaster models to assist disaster management decision-makers, particularly those in the Member States of this Region that regularly experience disasters, to reduce health risks to vulnerable populations. This tool can help predict the magnitude of a disaster on a specific population, assess where damage might be the greatest and forecast specific resources that may be required.<sup>8</sup>

#### **Strategic directions for enhancing the role of hospitals in ensuring public health security**

Protecting critical health facilities, particularly hospitals of disasters, is not only essential to meeting the Millennium Development Goals but also a social and political and necessity in its own right.<sup>9</sup> Reducing the vulnerability of hospitals and enhancing their role in protecting public health security is not only possible but is critical and necessary since it is a health, social, economic and in many instances a political issue. At the same time healthcare providers often are being victimized by such situations which jeopardize the public health security concern at large.

The following broad directions are proposed for ensuring an effective role of hospitals for protecting public health security in countries of the Eastern Mediterranean:

First, national governments and their ministries of health should ensure that all hospitals, especially those that are newly constructed or are reconstructed following damage or destruction are resilient to the risks of natural disasters. Indeed this is a cost effective intervention, which will prevent the hospitals to stop functioning in the event of threats to public health security and in the long run is likely to bring health, social and economic benefits to the country. Also it needs thorough assessment incorporating all the relevant areas also the stakeholders.

Second, the ministries of health should ensure that the capacities of the hospitals are developed to effectively to respond in the event of disasters and emergencies. This requires several steps that include:

- + needs policy support to ensure political commitment and coordination among stakeholders for the overall process of assessment and also the development;
- + development of tools and instruments and their use in assessing institutional capacity to respond to emergencies as a means of better preparedness;
- + training and capacity development of staff to be able to handle such challenges effectively;
- + development of disaster preparedness plans by hospitals and making resources available prior to, during and following disasters to be able to effectively implement the plans;
- + development of a means of monitoring hospital performance in terms of its surge capacity in the event of threat to public health security;
- + creating awareness among communities and the population at large regarding their role and support to hospitals;

#### *The Earthquake in Pakistan in 2005 and its consequences on the health and hospital infrastructure*

On October 9, 2005 in a matter of seconds an earthquake of the magnitude of 7.6 on the Richter scale jolted the northern part of Pakistan destroying 85% of the infrastructure in towns such as Balakot. Strong aftershocks threatened the structures already damaged by the quake. More than 73,000 people lost their lives and over 150,000 were injured. The demand for emergency medical care was overwhelming. Almost 400 facilities, which comprised half of the health infrastructure, ranging from sophisticated hospitals to small rural clinics were destroyed or damaged. Thirteen of the destroyed facilities were hospitals and four of these were referral hospitals.

*The need for constructing earthquake resilient hospitals was acutely felt in such a catastrophic emergency.*

*The conflict in Lebanon and its effect on health workers*



PARAMEDICAL SCHOOL DESTROYED BY THE EARTHQUAKE IN PAKISTAN



HOSPITAL IN LEBANON AFTER WAR IN 2006

In September 2007, the month long conflict in Lebanon left 1,100 dead and 5,000 injured according to the Lebanese Higher Relief Committee. Although the health and hospital infrastructure remained largely intact, nevertheless such facilities are more than just brick and mortar. Health workers were overburdened, faced a highly insecure working environment, and saw their numbers reduced as many survivors were absent dealing with personal and family issues.

*The need for specialized training to deal with non-routine emergencies and to enhance surge capacity in such situations became apparent.*

#### BOX 2: CHALLENGES TO HOSPITAL INFRASTRUCTURE AND HEALTH WORKERS IN THE EVENT OF PUBLIC HEALTH INSECURITY

- + identifying the best practices within the region that can serve as model for the countries having similar context. This will also ensure the exchange and export of required technical assistance to improve the system.

Third, the development partners and civil society organizations in developing countries have a dual role to play – to help countries to better prepare to minimize the consequences of disasters by supporting the development of institutional capacity. And in the event of a disaster, to better collaborate with the national government to achieve great harmony and alignment and avoid uncalled for duplication in supporting hospitals and health facilities whether it relates to their reconstruction or increasing their response capacity. □

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