



# Designing of Disaster Risk Management Accreditation standards in Iranian's Hospitals

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# Iran

**Location:** Middle East region

**Area:** 1 648 000 km<sup>2</sup>

**Worldwide:** 18th largest country

**Population:** about 80 million

**Iran is exposed to a wide range of natural and man-made disasters.**

“According to EM-DAT, **181** disasters were recorded in Iran from 1900–2007, which caused **155,811** deaths ,and **680,217** injuries, and affected **44,037,516** people.”



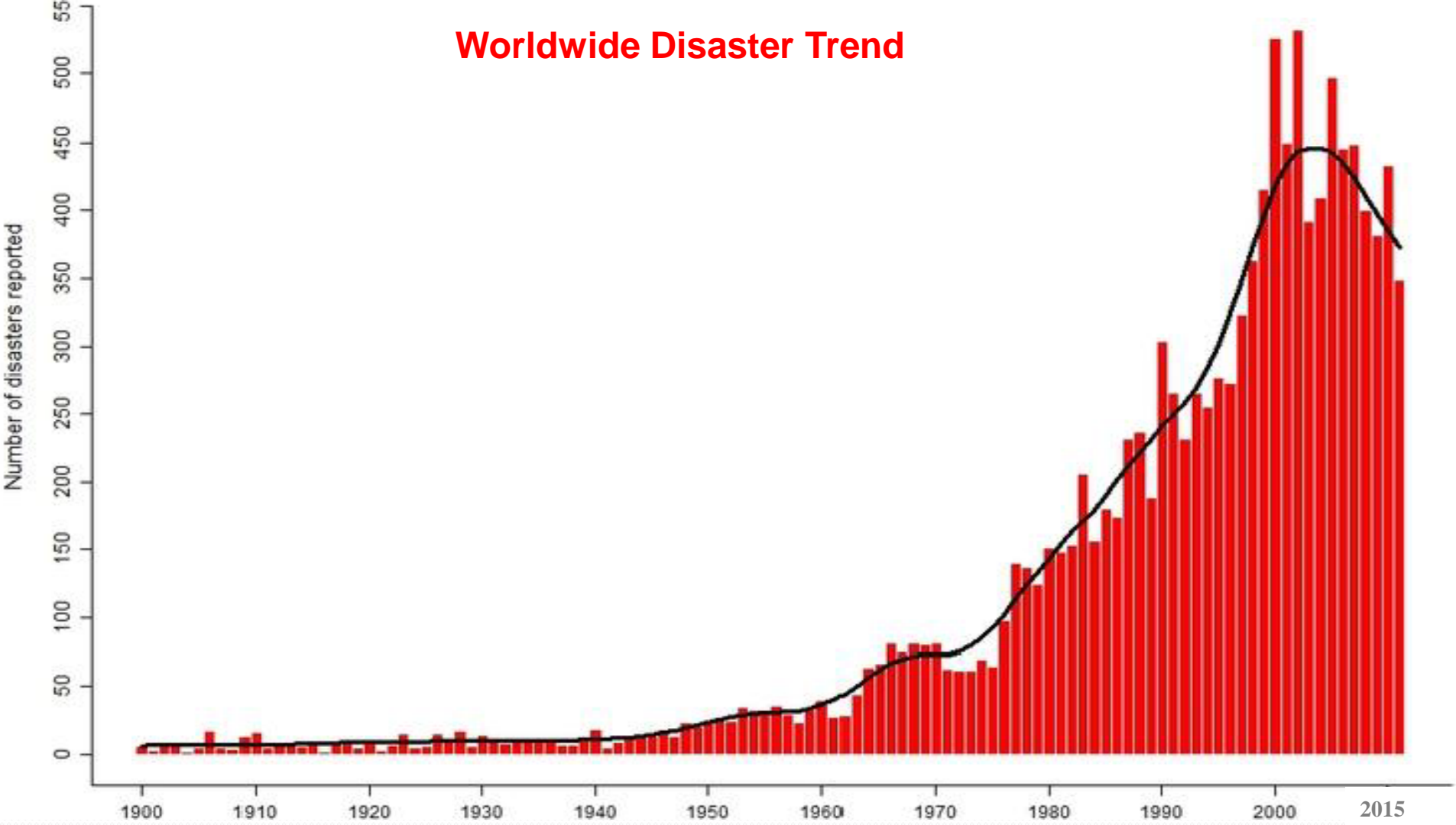
Disasters are inevitable in both developed and developing countries .

Disasters have various consequences for both the public and the government, such as social, economic, and human health problems, both for public and government

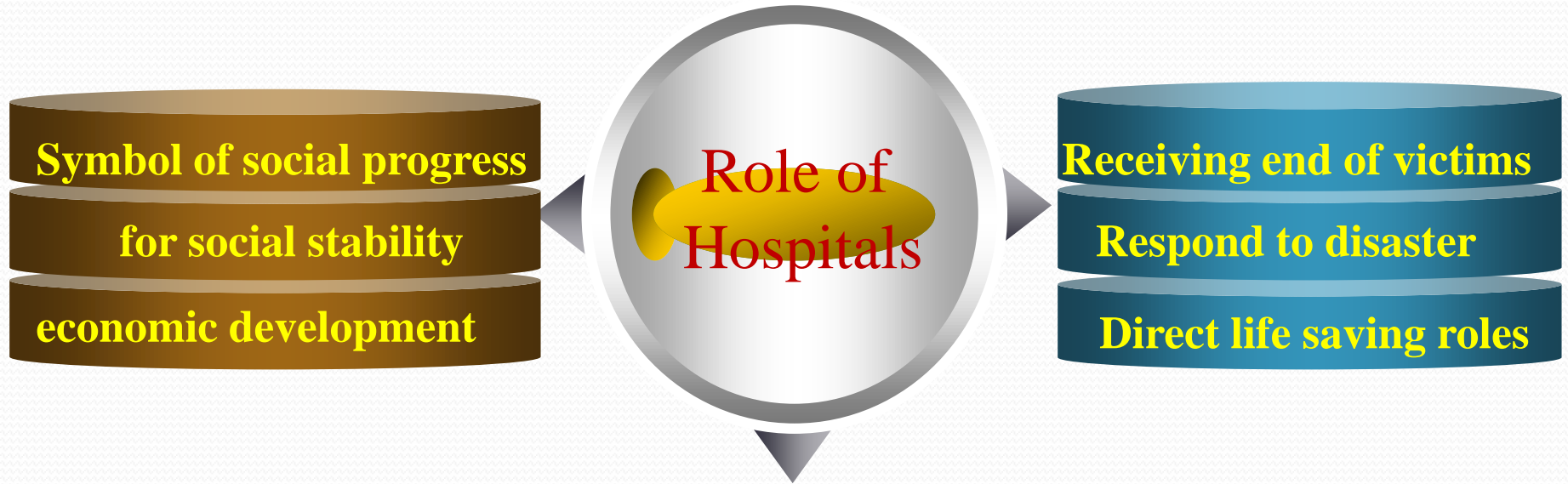


**Earthquake  
Kermanshah  
Iran, 2017  
12 November  
436 death  
more 2000  
injured**

# Worldwide Disaster Trend



# Role of Hospital in Disaster and Emergency



# Hospital

Hospitals, depending on the nature and specific conditions, including :

- ❑ the dependency of patients admitted to vital medical equipment
- ❑ the inability of patients during disaster to escape
- ❑ the presence of susceptible devices
- ❑ the presence of hazmat substances

including fire, power failure and hospital information system, epidemics, and others.



Various natural disasters such as floods, earthquakes, landslides, etc.,  
traffic accidents, airplane crashes, etc

Internal  
Disaster

External  
Disaster

**Hospitals** are expected to be prepared to sustain a safe environment for patients as well as for staff, continue effective operations, and adequately provide for the medical needs of casualties in the face of a disaster.

**But**????





ISNA PHOTO  
Pouria Pakizeh



ISNA PHOTO  
Pouria Pakizeh

## Earthquake Kermanshah Iran, 2017

- ❑ Destruction of 2 Hospitals in Sarpol-i Zahab and Islamabad Gharb
- ❑ Destruction 100 Health Home centers



# Hospital Safety Index (HSI)

Safety score (maximum)	Safety score (minimum)	Safety class
امتیاز ایمنی (حداکثر)	امتیاز ایمنی (حداقل)	سطح ایمنی
100	91	10
90	81	9
80	71	8
70	61	7
60	51	6
50	41	5
40	31	4
30	21	3
20	11	2
10	0	1

**ارزیابی ایمنی بیمارستان در برابر بلایا و قویبت ها**

0.00	سطح ایمنی عملکردی
0.00	سطح ایمنی عناصر غیرسازه ای
0.00	سطح ایمنی عناصر سازه ای
0.00	امتیاز ایمنی (وزن داده شده)

**ارزیابی ایمنی بیمارستان در برابر بلایا و قویبت ها**

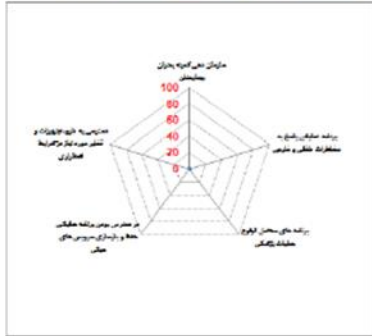
0.00	سطح ایمنی عملکردی
0.00	سطح ایمنی عناصر غیرسازه ای
0.00	سطح ایمنی عناصر سازه ای
0.00	امتیاز ایمنی (وزن داده شده)

**وقوع هر یک از انواع مخاطرات در بیمارستان**

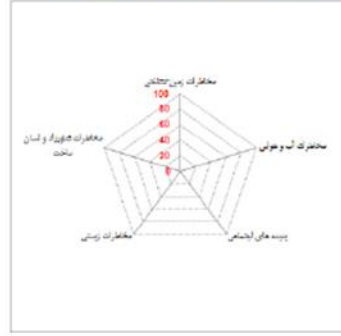
0.00	زمین شناختی
0.00	آب و هوایی
0.00	پدیده های اجتماعی
0.00	ریسکی
0.00	فناوری و انسان ساخت
0.00	کل مخاطرات

A remarkable product of this campaign was the evaluation forms for the safe hospital, the Hospital Safety Index (HSI), which was initially developed by the Pan American Health Organization. The HSI is a rapid and low-cost tool to assess the probability of a hospital or health facility remaining operational in emergency situations

شماره 2: ارزیابی ایمنی بیمارستان در برابر بلایا و قویبت ها



شماره 1: احتمال رویه هر یک از قویبت های مخاطرات در بیمارستان



According a Study : Average hospital safety index of 421 hospitals in 2016

- ❑ 43% regarding all of the three mentioned dimensions.
- ❑ Approximately 19.4% of the hospitals were unsafe
- ❑ 80.6% staged moderate safety.
- ❑ None of the hospitals had high safety status.

Several studies and systematic review have shown that the preparedness of hospitals in Iran to deal with disasters and emergencies is low and middle.



**What should be done ? ●**

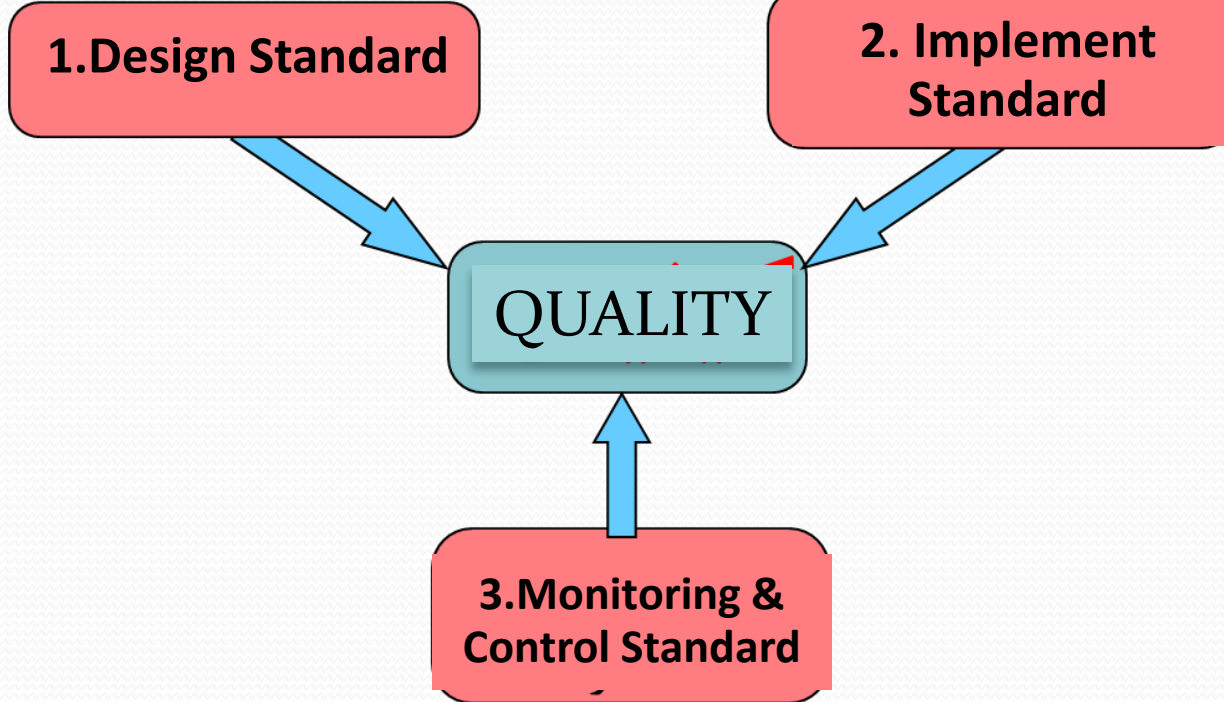
Have we got good  
DRM Standards?

**1.Design Standard**

**2. Implement  
Standard**

**QUALITY**

**3. Monitoring &  
Control Standard**



# History of Disaster Risk Management Standards in Iran



In recent years, We have **change paradigm** from Disaster management(Response) to Disaster risk management (Prevention & Mitigation)



Disaster Life Cycle

**HYGO**  
**2005-2015**

The model of  
safe and  
resilient  
hospitals'

**Hospitals  
Safe from  
Disasters  
2008**

a global campaign  
to raise awareness  
and to increase  
efforts hospitals'  
functional  
capacities

**2009  
Global  
Platform**

for Disaster Risk  
Reduction  
confirmed the  
importance of  
protecting  
hospital  
infrastructure

**Sendai  
Framework  
2015-2030**

Framework for Disaster  
Risk Reduction reduce  
disaster damage to  
critical infrastructure  
and disruption of basic  
services including  
through developing  
their resilience by 2030



**11 September 2001**

**A milestone in Paradigm changing  
in US for DRM standards**

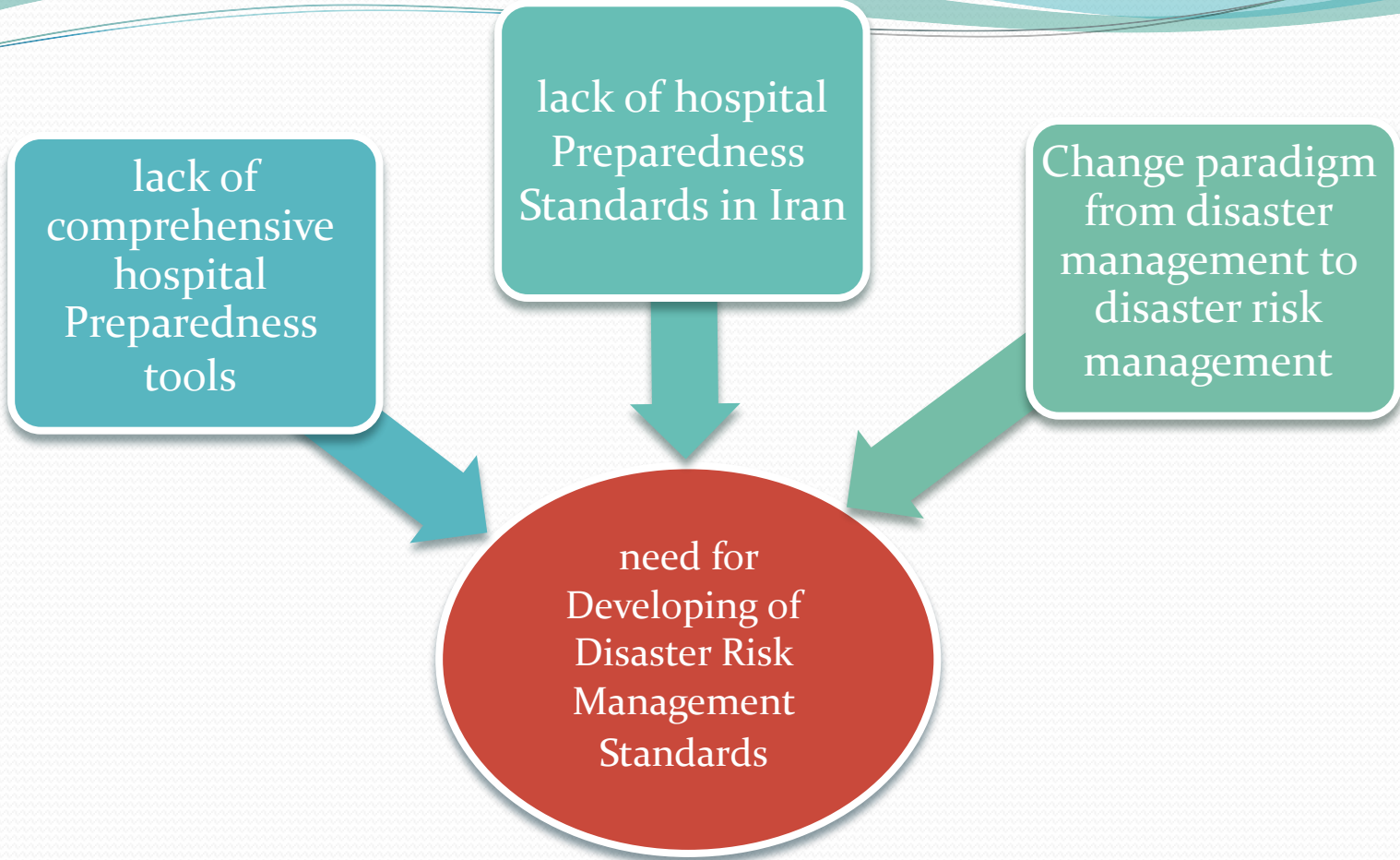
Disaster preparedness in US healthcare facilities has historically been a low priority for hospitals' leaders.

### **TJC Standards Increase Hospital Preparedness**

The Joint Commission on Accreditation made changes to the accreditation standards for hospitals after the September 11 attacks.

The American accreditation standards for hospitals as one of the key factors in the preparation of hospitals in the past 10 years. (Sauer et al., 2009, Wise, 2006).







# Methods

## **Mixed Method was used in this study.**



**Phase I:** A comprehensive review of the latest accreditation DRM standards in 10 Countries including: TJC & JCI Standards in USA ,CCHSA Canada, ACHS Australia, Malaysia, Egypt, Lebanon, Turkey, Saudi Arabia and Denmark. Evaluating and comparing standards by type of issues in the disaster cycle: (Prevention and mitigation , Preparedness, Response, Recovery)

**Phase II :** Semi-structured interview was conducted with 18 experts on the criteria for disaster preparedness hospitals and content analysis for the formulation of standards.

**Phase III :** Adopt the views of the interviewees to international standards and finalize the national accreditation standards.



# Results

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- There was a huge difference in the quality and quantity of disaster management standards in different countries.
  - The national accreditation standards of the United States with the highest number of standards and coverage of all aspects of the disaster management cycle have achieved the highest rank.
  - Australian and Canadian standards ranked second and third, respectively.

## Table1- Disaster Risk Management Standards in Selected Countries

Country	Thailand	India	Denmark	Turkey	Saudi Arabia	Egypt	Malaysia	Canada	Australia (National)	United States (Inter-National)	United States (National)
Model of Evaluation	Functional	Functional	Functional	Functional	Functional& Departmental	Functional& Departmental	Functional & Departmental	Functional	Functional	Functional	Functional
Year	2006	2015	2012	2015	2015	2014	2013	2016	2015	2014	2012
Title	Emergency Readiness & Management	Plan for Epidemic, Emergencies & Disaster	Preparedness	Emergency Management	Internal & External Emergency	Emergency /Disaster Management	Disaster Plan	Prepare Organization for Disaster & Emergency	Disaster Management	Disaster Preparedness	Emergency Management
No. of Standard	1	2	2	1	2	2	2	1	1	1	12
No. of criteria	3	5	15	3	7	4	11	11	9	5	113

Table2-Disaster Risk Management Standards based on Disaster Life Cycle in Selected Countries													
Country		Thailand	India	Denmark	Turkey	Saudi Arabia	Egypt	Malaysia	Canada	Australia (National)	United States (Inter-National)	United States (National)	
Element of disaster life cycle													
Mitigation	Emergency Management Plan	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	
	Hazard & Vulnerability Assessment	✓	✓	-	✓	✓	-	-	✓	✓	✓	✓	
Preparedness & Response	Emergency Operation Plan	-	-	-	✓	✓	✓	✓	✓	✓	-	✓	
	Activation & non- Activation Plan	-	-	-	-	-	-	✓	✓	✓	-	✓	
	Staff Calling	-	-	✓	-	✓	✓	✓	✓	✓	-	-	
	Surge Capacity	-	✓	-	-	✓	✓	✓	✓	✓	✓	✓	
	incident Command System	-	-	✓	-	✓	-	✓	✓	-	-	✓	
	Early Warning System	-	✓	-	✓	-	-	✓	-	✓	-	✓	
	Emergency Operation Center	-	✓	-	-	✓	-	-	-	-	-	-	
	Evacuation	✓	-	✓	-	✓	-	✓	-	✓	-	✓	
	Inter organization communication	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	
	Resource Management	-	-	-	-	-	-	-	-	✓	✓	✓	
	Safety & security	-	-	-	-	✓	-	✓	-	✓	✓	✓	
	Staff Management	-	-	-	-	✓	-	✓	-	✓	✓	✓	
	Patient Management	-	-	✓	-	-	-	✓	✓	✓	✓	✓	
	Volunteer Management	-	-	-	-	-	-	-	-	✓	-	✓	
	Facility Management	-	-	✓	-	-	✓	-	✓	✓	-	✓	
	Information Management	-	-	-	-	-	-	✓	✓	-	-	✓	
	Exercise & training	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	program Effectiveness	-	-	✓	-	-	✓	✓	✓	✓	✓	✓	
	Recovery	Business continuity	-	-	-	-	-	-	-	✓	✓	-	✓



Content analysis conducted on interviews with 18 Professors, university Disaster Risk managers, disaster committee secretaries and hospital managers showed that the major challenges in responding to disasters are:

- Inappropriate Hospital physical structure
- Absence of sufficient equipment
- Lack of human resources training
- The lack of guidelines from the university and the ministry of Health for coordinate with other organizations



# DRM Standards should be focus on :

- ❑ Commitment of leaders' hospital \*\*\*\*\*
- ❑ Hospital disaster planning must be according **community Planning**
- ❑ Using the four phases of comprehensive emergency management as the basis of planning (i.e., mitigation, preparation, response, recovery).
- ❑ hazard vulnerability analysis(HVA)
- ❑ Surge capacity
- ❑ Information Management
- ❑ Early warning system
- ❑ Volunteer Management
- ❑ Recovery & sustainable development

Disaster risk management standards were developed with 7 standards and 38 measures.

### **Prevention & Mitigation Standards:**

A.5.1) Risk Assessment of Hazard

A.5.2) Prevention and control of Fire

A.5.3) Assessment, maintenance and security of facilities, buildings, medical gases

A.5.4) Assessment, maintenance and security of electrical systems

A.5.5) Reporting and tracking disaster and hazardous situations

### **Preparedness, Response and Recovery Standards:**

A.5.6) Planning for Hospital Preparedness to respond to disasters and recovery

A.5.7) Activate disaster management systems

## Changes in DRM standards over the years 2011-2016 in Iran

Revised accreditation Standard	Number of Standard & Measurable Element	Number of ME	Kind of Standard	Proportion of DRM Standards/ whole of standard
Accreditation Standard 2011	8216	28	Preparedness	<b>0.3 %</b>
Accreditation Standard 2013	2160	16	Mitigation & Preparedness	<b>0.7 %</b>
Accreditation Standard 2016	903	38	Mitigation, Preparedness, Response & Recovery	<b>4/2 %</b>



## الف - مدیریت و رهبری

### الف - ۵) مدیریت "خطر حوادث و بلایا"

بیمارستان‌ها با توجه به ماهیت و شرایط خاصی که دارند از جمله وابستگی بیماران بستری به تجهیزات پزشکی، وجود دستگاه‌های حساس، وجود مواد خطرناک و خطرناک، در معرض انواع حوادث داخلی از جمله زلزله، آتش‌سوزی، انفجار، سیل، زمین‌لرزه، و غیره قرار دارند. همچنین در صورت وقوع حوادث خارج از بیمارستان مانند تصادفات، زلزله، آتش‌سوزی، انفجار، سیل، زمین‌لرزه، و غیره از دحام مصدومین و مراجعین، بیمارستان‌ها را با چالش مواجه می‌نماید. لذا بیمارستان همچون شهری پرخطر، در هر لحظه مستعد حوادث است. بیمارستان‌های با قدمت بیشتر و با ازدحام مراجعین از حساسیت بیشتری برخوردار است. ایجاد محیطی ایمن برای بیماران، همراهان و کارکنان مستلزم برنامه ریزی است. برنامه ریزی در راستای پیشگیری از بروز حوادث در داخل بیمارستان و کنترل و مدیریت مواجهه با حوادث و بلایای خارجی، از طریق ایجاد آمادگی و افزایش ظرفیت بیمارستان صورت می‌پذیرد. توجه مدیران ارشد به برنامه ریزی‌های پیشگیرانه و ایجاد آمادگی در مواجهه پیش از وقوع، سرمایه گذاری ارزشمندی است که لازم است در دستور کار مدیریت و رهبری بیمارستان قرار گیرد.

#### الف ۵ ۱ بیمارستان ارزیابی و اولویت بندی خطر حوادث و بلایا را انجام داده و اقدامات پیشگیرانه را برنامه ریزی می‌نماید.

##### دستاورد استاندارد

- شناسایی خطرات بالقوه موجود در بیمارستان و آمادگی و برنامه ریزی جهت کاهش خطرات
- کاهش بروز آسیب به بیماران، مراجعین و کارکنان و کاهش خسارت مالی ناشی از بروز حوادث و بلایا

# National Hospital Disaster Risk Management Program Base on Accreditation Standards

راهنمای ملی مدیریت خطر بیمارستانی بر اساس  
شاخص های اعتباربخشی

دکتر حمیدرضا خانکه، دکتر غلامرضا معصومی و همکاران



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**We Hope to have a  
safe and developed world  
Without any disaster**



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