

A Study on Staff Preparedness for Emergency and Disaster in Hospital Sector

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Abstract: Background- Hospitals play a crucial role in providing communities with essential medical care during disasters and emergency. Hospital is confronted by a situation where it must provide care to many patients in limited time, which is beyond its normal capacity, that constitute a disaster or emergency. Objective-The aim of the study is to identify hospitals staff preparedness for disaster and emergency in the various categories of the hospital. Method-A descriptive study utilized a convenience sample of clinical and administrative staff from various hospital. A google form survey was conducted of staff that was structured in 2 parts: (1) general data and demographics, (2) the current disaster plan and its status. Result-A total of 233 employees were surveyed where 86 employees were administrative staff and 136 were clinical staff. Were the hypothesis for all the variable has significant difference. Conclusion-Results demonstrate lack of preparedness of basic hospital disaster planning. The findings in the study should alert authorities to enhance staff disaster preparedness education, training and regular follow-up to ensure that the plans are well known to who have responsibility for disaster risk reduction and management capacity.

Keywords: Disaster, Emergency, Staff Preparedness, Management.

1. Introduction

Health and Hospital systems are the most crucial units of the emergency support services. Recommendation for formulating Hospital Emergency Management Plan intends to hold up the hospitals to draw up their own all hazard emergency plans following up with their manpower and infrastructural resources that will cope up with the demands of health care with more efficiency at times of disasters/emergencies.

To make hospitals and health facilities safe from disaster is an economic requirement. Medical facilities for patient care require 24x7 emergency care service. Disaster response requires adequate human resource, and this includes personnel who are trained in emergency and disaster management with required and necessary skills. Therefore, disaster for a hospital can be "a temporary lack of resources caused by sudden influx of unexpected patient load".

Hospital disaster management facilitates us with opportunity to plan prepare and enable us a logical response to events of disaster / mass casualty incidents (MCI). Disasters creates inefficiency in the hospitals for the hospital's resources, staffs,

space and or supplies. Hence it is important that all hospital emergency plan should have the primary feature of identifying the command structure in the hospital, and to prepare it to disaster scenario with defined job definitions.

2. Literature review

There have been many researches with objects similar so this study. Some such studies were reviewed from the year 2000 to year 2019. Shweta talati, Prathak Bhatia and col. D. Ojha (2005) had done a study on strategic planning and designing of a hospital disaster manual in a tertiary care, teaching, research and referral institute in India. This study aimed to prepare a disaster manual of a 1900 bed tertiary care hospital, in consultation and involvement of all concerned stakeholders. Nelson C, Lurie N, Wasserman J. (2007) had done a study on Assessing public health emergency preparedness: concepts, tools, and challenges. The study identifies the key challenges associated with measuring public health preparedness and reviews approaches currently in use and also identify some emerging measurement techniques that might help address some of the challenges. Djalali A, Castren M, Khankeh H, Gryth D, Radestad M, Ohlen G (2013) done a comparative study on Hospital Disaster Preparedness as Measured by Functional Capacity: A Comparison between Iran and Sweden. Prehospital and disaster medicine. This study compares hospital preparedness, as measured by functional capacity, between Iran and Sweden based on vulnerability to disasters has been shown to be related to the socioeconomic level of a country. Chen TF, Chou KR, Liao YM, Ho CH, Chung MH (2015) has done a study on Construct validity and reliability of the Chinese version of the Disaster Preparedness Evaluation Tool in Taiwan. Journal of clinical nursing. The study aims to develop an exhaustive and effective educational programme on disaster preparation for nurses, a multidimensional instrument is required for assessing the disaster preparation level of nurses. Madhav Madhusudan Singh(2019)has done a study on healthcare administrative challenges and solution in disaster management in India. It aims to promote the efficient & effective healthcare response for reducing disaster-related mortality and morbidity and to identify the progress or current status of disaster management by the healthcare system in India.

3. Objective of the study

1. To explore the factors for disaster preparedness in various categories of hospitals.
2. To identify the major factors of emergency management of various hospitals.

4. Hospital and Staff Responding Analysis

The demographic details of the data collected from respondents is given below:

Table 1

Gender	Male	123	Female	110
Speciality of the hospital	General		Single speciality	
	multi-speciality		Super speciality	
No. of beds	I medical college hospital and research centre	1100	SA institute of medical sciences	1250
	T C hospital and research Centre	350	SF H & Research Centre	100
	S. hospital, Indore.	200	S hospital	225
	M. eye care	50	G hospital	60
	G Hospital	150	A hospital	1100
	B hospital	440	M hospital	1200

A. Interpretation

There was a statistically significant difference among different hospital speciality- for hospital command centre as determined by ONE-WAY ANOVA ($F(11,221) = 5.177, p = .000$), here is a statistically significant difference between the hospital based on the speciality. As the hospital command centre is usually not designated in the planning process for emergency response activities in Indian hospitals.

There was a statistically significant difference among different hospital speciality –staff briefed on roles and responsibilities on incident action plan- as determined by ONE-WAY ANOVA ($F(11,221) = 3.920, p = .000$), here is a statistically significant difference between the hospital based on the speciality. As the area conducted for research is not prone to natural disaster and emergency hence hospital staff is not briefed regularly with updated action plans.

There was a statistically significant difference among different hospital speciality -availability of updated communication system and contact list- as determined by ONE-WAY ANOVA ($F(11,221) = 2.055, p = .025$), here is a statistically significant difference between the hospital based on the speciality.

There was a statistically significant difference among different hospital speciality -hospital team prepared for safe evacuation- as determined by ONE-WAY ANOVA ($F(11,221) = 3.783, p = .000$), here is a statistically significant difference between the hospital based on the speciality. Adequate drills and simulation and trainings are not conducted for incident response operation for disaster.

There was a statistically significant difference among different hospital speciality – identification of authorized hospital staff, patients and visitors - as determined by ONE-

WAY ANOVA ($F(11,221) = 4.762, p = .000$), here is a statistically significant difference between the hospital based on the speciality. Hospitals do not have specified policy framework for identification of authorized personnel during emergency and disaster.

There was a statistically significant difference among different hospital speciality- rules for crowd control as determined by ONE-WAY ANOVA ($F(11,221) = 5.680, p = .000$), here is a statistically significant difference between the hospital based on the speciality. Do not have specific mass-casualty control protocol.

There was a statistically significant difference among different hospital speciality –protection of waiting areas from potential hazards- as determined by ONE-WAY ANOVA ($F(11,221) = 3.024, p = .001$), here is a statistically significant difference between the hospital based on the speciality. These are usually due for review and not paid concerned attention.

There was a statistically significant difference among different hospital speciality –availability of care area for patient overflow- as determined by ONE-WAY ANOVA ($F(11,221) = 3.028, p = .001$), here is a statistically significant difference between the hospital based on the speciality. Do not have sound infrastructural facilities to hold overflow of patients in emergency.

There was a statistically significant difference among different hospital speciality –availability of vehicle and resources for patient transfer as determined by ONE-WAY ANOVA ($F(11,221) = 2.017, p = .028$), here is a statistically significant difference between the hospital based on the speciality. Most of the hospitals do not have adequate surge capacity during emergency.

There was a statistically significant difference among different hospital speciality –adaptability of admission and discharge procedures as determined by ONE-WAY ANOVA ($F(11,221) = 2.837, p = .002$), here is a statistically significant difference between the hospital based on the speciality. Hospitals are not defined and addressed for admission and discharge early in planning process for emergency.

There was a statistically significant difference among different hospital speciality -acceptability of essential hospital services as determined by ONE-WAY ANOVA ($F(11,221) = 4.387, p = .000$), here is a statistically significant difference between the hospital based on the speciality. Due to lack of resources hospitals are not efficient to continue the essential services in parallel to hospital emergency plan.

There was a statistically significant difference among different hospital speciality –availability of backup arrangements as determined by ONE-WAY ANOVA ($F(11,221) = 4.015, p = .000$), here is a statistically significant difference between the hospital based on the speciality. Failures for preservation of adequate supplies of resources.

There was a statistically significant difference among different hospital speciality –mechanism of collection and disposal of human hazardous waste as determined by ONE-

WAY ANOVA ($F(11,221) = 4.820$, $p = .000$), here is a statistically significant difference between the hospital based on the speciality. Do not have SOPs and protocols for collection and segregation of hazardous waste.

There was a statistically significant difference among different hospital speciality -coordination with health authorities during emergency as determined by ONE-WAY ANOVA ($F(11,221) = 5.769$, $p = .000$), here is a statistically significant difference between the hospital based on the speciality. Lack of health system and resources and other institutionalized support for emergency.

There was a statistically significant difference among different hospital speciality - Prioritize staffing requirement and distribute personnel accordingly as determined by ONE-WAY ANOVA ($F(11,221) = 7.971$, $p = .000$), here is a statistically significant difference between the hospital based on the speciality. Lack of timely staff appraisal and skills due which allocation while emergency becomes difficult.

There was a statistically significant difference among different hospital speciality - Cross-train health providers in high-demand services as determined by ONE-WAY ANOVA ($F(11,221) = 3.937$, $p = .000$), here is a statistically significant difference between the hospital based on the speciality. Health personnel are not cross trained to deliver services in high demand areas.

There was a statistically significant difference among different hospital speciality -ensuring staff vaccinated as per the guidelines as adequate attention is not given on the health status of the staff determined by ONE-WAY ANOVA ($F(11,221) = 3.730$, $p = .000$), here is a statistically significant difference between the hospital based on the speciality. Apart from the booster dosage, enough attention is not given on the health status of the staff.

There was a statistically significant difference among different hospital speciality –maintenance of essentials and pharmaceutical supplies as determined by ONE-WAY ANOVA ($F(11,221) = 6.991$, $p = .000$), here is a statistically significant difference between the hospital based on the speciality. Continuity of hospital supply and delivery chain is often and underestimated challenge during disaster.

There was a statistically significant difference among different hospital speciality –incident demobilisation and system recovery as determined by ONE-WAY ANOVA ($F(11,221) = 4.460$, $p = .000$), here is a statistically significant difference between the hospital based on the speciality. Post disaster planning is not given adequate consideration which leads to long term impact on hospitals operation.

The Cronbach's Alpha or the coefficient of reliability for the staff preparedness for the disaster and emergency management is 0.911. The hypothesis for all the variable has significant difference and thus rejected as their calculated values is less

than tabular value (0.05).

5. Conclusion

Hospital institution are one of the most important institution in disaster response and need to be prepared. The various hospitals selected for the purpose of this research are in the in-progress status for emergency and disaster and hence is still in the infancy. Though the hospitals still have a draft disaster plan they also need to include policies, vulnerability assessment, disaster plan, training and education and continuous monitoring and evaluation.

The key objectives of the guidelines as per- (National Disaster Guidelines, Government of India).

- To ensure that all professionals involved in the day to day operation of hospitals are prepared to respond to disasters, and.
- To ensure that every hospital in the country has a fully functional and regularly tested Hospital Disaster Management Plan.

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