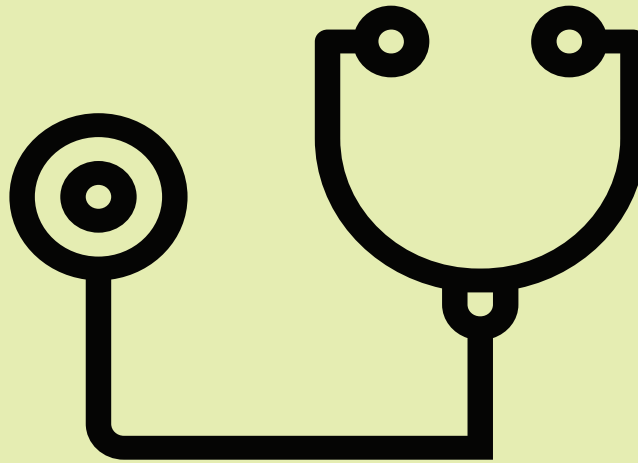




*Modules for Training Hospital Stakeholders on Hospital Safety*  
**SESSION PLAN AND GUIDELINES**  
**FOR TRAINERS/INSTRUCTORS OF HDM INTERMEDIATE**



**DOCTORS - JUNIOR AND SENIOR**

**March 2023**



Indian Institute of Management  
Ahmedabad



National Disaster Management Authority  
Government of India



*Modules for Training Hospital  
Stakeholders on  
Hospital Safety:*

**Session Plan and Guidelines  
for Trainers/Instructors of  
HDM Intermediate  
(Doctors-Junior and Senior)**





# NATIONAL DISASTER MANAGEMENT AUTHORITY



## Preface

Since its inception in 2005, the National Disaster Management Authority (NDMA) has undertaken numerous initiatives for Disaster Risk Reduction and capacity building for disaster management in conformity with its mandate under the Disaster Management Act, 2005. This Hospital Disaster Management (HDM) Manual is an initiative in that direction. The manual focuses on important and critical areas of Hospital Safety during disasters. It contains training modules on Hospital Safety that have been developed in line with the 2016 NDMA guidelines.

The contents of this manual have been prepared keeping in mind all the stakeholders in a hospital setting across multiple levels, including the Leaders, Assessors, Doctors and Front line Staff (nurses, paramedics, ward boys, security staff and ambulance staff). It seeks to empower these stakeholders to address Hospital Safety through a multi-hazard and interdisciplinary approach. While the structural safety of hospitals has been emphasized in recent building guidelines, these modules aim to strengthen the capacity of stakeholders in every hospital in the country to develop a fully functional and regularly tested Hospital Disaster Management Plan (HDMP). The manual has been reviewed by several experts and will serve as a handy document for all training programmes on Hospital Safety.

We take this opportunity to express our heartfelt appreciation to the team of experts from IIM Ahmedabad and various stakeholders who extended their willing support, cooperation and commitment by devoting their expertise to make valuable contributions to the development of this document. We are optimistic that this effort will go a long way in enhancing the preparedness of hospitals in handling any disaster if and when it strikes.

**Sh. Kamal Kishore**  
Member Secretary  
Incharge

**Sh. Krishna S. Vatsa**  
Member

**Sh. Rajendra Singh**  
Member

**Lt. Gen. Syed Ata Hasnain (Retd.)**  
Member

## Message

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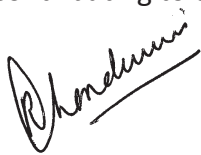
The role that health facilities, especially hospitals, can play in response to emergencies and disasters can hardly be undermined. Thus, the loss to health infrastructure as well as economic losses can be humongous when hospitals are destroyed or damaged due to poor construction or improper planning for disasters.

An effective design and implementation of disaster management plan entails seamless coordination between three different types of stakeholders. The first are technical experts and scientists who study the phenomenon of disaster in detail and develop in depth understanding of the mechanisms thus proposing measures for prevention, early detection and proper response. The second are implementers, for example the leaders, managers and employees in the hospital who are involved in the day-to-day activities. The third set of stakeholders are management experts who are concerned with the design of structure, systems, and processes for enabling designing, owning and implementation of the disaster management plans in the hospitals.

Implementation can be strengthened by creating a culture of safety since that culture will ensure regular capacity strengthening programmes, sound hospital safety assessment and planning, and strengthen compliance. For this to happen, a management approach has to be adopted.

For developing and implementing these Hospital Safety Modules, a multi-stakeholder approach has been adopted keeping in perspective that every stakeholder has a different role and responsibility to play. Thus, every stakeholder must be made a participant. Ensuring capacity, commitment and communication at all levels is the only way to make a hospital a highly resilient and high reliability organization and once this is achieved, a culture of safety is bound to continue.

Development of the Modules for Hospital Safety is a crucial step in this direction and we hope that by using these, Hospitals of India will become Safe hospitals, thereby contributing to the country's strategy for disaster risk reduction.



**Rajesh Chandwani**

Faculty, Human Resource Management Area

Dr Lal PathLabs Chair in Healthcare

Indian Institute of Management Ahmedabad.

# Foreword

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The World Health Organization (WHO) recognizes a Safe Hospital program as an essential component of a country's strategy for Disaster Risk Reduction (DRR) and, in particular, Emergency and Mass Casualty Management. The number of healthcare facilities in India, including both big and small hospitals, is growing by the day. Various government and accreditation agencies have mandated that every hospital ensure strict adherence with various structural, functional and safety norms and guidelines to ensure Hospital Safety and preparedness for disasters in accordance with the National Disaster Management Act, 2005, and the National Disaster Management Authority (NDMA) Guidelines on Medical Preparedness and Mass Disasters (2007) and NDMA Guidelines on Hospital Safety (2016). However, it is not unusual to hear of instances where hospitals and their patients have suffered due to some internal or external disasters.

Strict adherence to Hospital Safety norms and guidelines is possible only when every stakeholder is aware of these guidelines and of the consequences of non-adherence and has the knowledge, commitment, and capacity to execute their specific roles in ensuring Hospital Safety. Effective preparedness and responsiveness to disasters entail adequate and timely training of the medical community on how to respond to different types of disasters, both natural (earthquake, tsunami, cyclone etc.) and man-made (technological, terror attack etc). Such responses can mitigate the severity of the consequences of a disaster. These aspects depend on the design and implementation of a robust Hospital Disaster Management Plan (HDMP).

Disasters in hospitals not only have grave economic implications in terms of the investments required to reconstruct hospitals and restore damaged equipment, but they also affect healthcare delivery and create social challenges. Consequently, the NDMA has issued detailed guidelines on Hospital Safety. However, the effectiveness of these guidelines not only entails ensuring compliance with them but also creating a culture of safety, conducting regular capacity strengthening programs and undertaking detailed Hospital Safety assessments. Such a broad-based initiative requires a multi-stakeholder approach in which capacity, commitment and communication at all levels are essential.

The NDMA has entrusted the Indian Institute of Management Ahmedabad with the task of developing this training manual on Hospital Safety, which adopts a multi-stakeholder approach to capacity strengthening and resilience building. The training modules aim to support training on Hospital Safety for four levels of stakeholders in hospitals – (1) Nurses and Frontline Staff, (2) Doctors and Managers, (3) Leadership Teams and (4) Assessors. The training modules will enable the hospital teams to adopt an “all-hazards approach” to assess Hospital Safety and develop a HDMP that can be used in response to all kinds of hazards that can lead to disasters. This document also explains the roles and responsibilities of all stakeholders in the face of disasters.

We hope that the clear and detailed training modules will enable hospitals to prepare for and respond to any disaster – internal or external – that comes their way.



**Errol D'Souza**

Former Director,

(Jan. 2018-Feb. 2023)

Indian Institute of Management Ahmedabad

## The Way Forward

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Hospitals are the first point of care and treatment during disasters and thus, it is most crucial for hospitals to be safeguarded from, and to be resilient to disasters. This requires the hospitals to be well prepared for facing the disaster, manifest appropriate and swift response to the disaster and also to engage in post disaster relief measures. This entails involvement of hospital personnel across levels.

The need for ongoing capacity strengthening programs for all the stakeholders of hospitals cannot be undermined. I am sure these training modules will help in increasing the awareness of various stakeholders including the frontline staff, doctors, nurses, the managers, leadership, and the auditors on various aspects of disaster management. It will also facilitate strengthening stakeholders' capacities for handling internal and external disasters and enable them to undertake more effective monitoring and evaluation of disaster preparedness for their own set-ups.

The pragmatic approach taken to design these manuals and the comprehensiveness of the training material enable the adaptability of the modules by the hospitals. I am hopeful that going ahead, these training modules will prove to be assets in the hands of the hospital owners, managers, and the medical fraternity to efficiently deal with natural and manmade disasters in order to make hospitals safe and resilient.

My best wishes to NDMA for its future endeavours.



**Prof. Bharat Bhasker**  
Director,  
Indian Institute of Management Ahmedabad



# Intended Participants of the Training Manuals

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The manual is intended to train four basic stakeholder groups working in/with hospitals, who are listed as follows:

<b>Course Name</b>	<b>Level of Training</b>	<b>Intended Participants</b>
HDM Basic	Level 1 – Basic Awareness	Nurses and Frontline Staff
HDM Intermediate	Level 2 – Mid-level Awareness	Doctors (Junior and Senior)
HDM Advanced	Level 3 – Advanced Level Awareness	Leadership Team
HDM Assessor	Level 4 – Hospital Disaster Management Assessor	Internal Auditors

This particular Training Module pertains to the HDM Intermediate Group i.e., Doctors, both-junior and senior.

# Disclaimer

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This document is intended for educational and practical use by hospitals and their stakeholders to promote Hospital Safety by strengthening their resilience against disasters. The references used in preparing the document are listed at the end. The authors and/or the reviewing teams do not intend to derive any commercial benefits from this manual and, hence, all re-productions and references have been used in good faith.

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# Acknowledgements

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The preparation of training modules for Hospital Safety for multiple stakeholders of Hospitals was aided by the National Disaster Management Authority, Government of India. In particular, we would like to acknowledge the support provided by Shri Kamal Kishore Member, NDMA, Shri Krishna Swaroop Vatsa, Member NDMA, Mrs. Sreyasi Chaudhury, Joint Secretary (Mitigation), NDMA, Mr. Sandeep Poundrik, Ex-Joint Secretary, NDMA, Mr. Uma Maheswara Rao Joint Advisor (Mitigation Projects) to NDMA, Col (Dr.) Sanjay Kaushal, Consultant (Medical Preparedness & Biological Disasters) NDMA, Mrs. Maitreyee Mukherjee, Consultant (Psychosocial Care) and Mr. Abhishek Sharma, Senior Research Officer at NDMA, New Delhi. We sincerely appreciate all the help we received from them; they provided valuable inputs to the module content, agreed to our requests and were liberal with the deadlines.

We would like to express our heartfelt gratitude to all the 17 Expert Committee members who, despite their own work schedules, were always willing to guide every aspect of the project and proactively also helped with material development for the training programme.

The Experts Committee Members are:

- Dr. D K Shami, Fire Adviser, Civil Defence & Home Guards, Ministry of Home Affairs, Government of India
- Dr. Atul Mohan Kochhar, CEO, National Accreditation Board for Hospitals & Healthcare Providers (NABH)
- Dr. Chetan Patel, Chairperson, IMA Disaster Management Cell
- Dr. Harshad Thakur, Director, National Institute of Health and Family Welfare, MoHFW
- Dr. Manish Chaturvedi, Director, National Institute of Health and Family Welfare, MoHFW
- Dr. S. Aravind, Chief Medical Officer and Director – Projects, Aravind Eye Hospital, Chennai
- Dr. Chandan Ghosh, Professor and Head - Resilient Infrastructure Division, National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India
- Dr. Yash Paul Bhatia, Member- FICCI Health Services Committee and Managing Director, Astron Hospital & Healthcare Consultants Pvt Ltd
- Dr. Bharat Gadhavi, CEO and Medical Director, HCG Group of Hospitals
- Dr. Narendranath Jena, Director and Head of Department, Institute of Emergency Medicine, Meenakshi Mission Hospital and Research Centre, Madurai
- Dr. Suhail Nazki, HOD, Emergency, Narayana Hospital, Jammu/IMA
- Mr. Neelay Srivastava, Director, Institution for Disasters, Emergency and Accidents (IDEA)
- Mrs Pooja Saxena, Lead DRR, Institution for Disasters, Emergency and Accidents (IDEA)
- Dr. Tran Minh Nhu Nguyen, Team Leader, Health Security and Emergency Response, World Health Organization

- Dr. Saurabh Dalal, Emergency, Risk & Crisis Management Officer, World Health Organization
- Dr. Anisur Rahman, Health Systems Strengthening Consultant, World Health Organization
- Dr. Priyanka Singh, Hospital Safety Expert, Indian Medical Association

In particular, we would like to express our gratefulness to Dr. D K Shami, Dr. Narendranath Jena, Dr. Suhail Nazki, Dr. Anisur Rahman, Mr. Neelay Srivastava, Mrs Pooja Saxena, Dr. Priyanka Singh and Dr. Saurabh Dalal for developing Standard Operating Procedures on different types of disasters as well as on the role of different stakeholders for ensuring Hospital Safety. We express our gratitude to Dr. Roderico H. Ofrin, WHO Country Representative to India, for his interest in the Hospital Safety initiative of NDMA and IIMA and his guidance on the project.

We would also like to express our immense gratitude to Dr. T.S Ravi Kumar, Trauma Centre Coordinator at CMC Vellore for developing proformas and SOPs on Fire Safety in coordination with Dr. D K Shami.

We would like to express our sincere gratitude to Ms Vinita Sindhwani Satija who has been the ‘Sutradhar’ for the project from the inception stage onwards. She has played a key role in conceptualization, formation of the expert committee, organizing the data collection and conducting the analysis, finalization of the modules including writing the reports and preparing presentations along with coordinating with all the stakeholders both internal as well as external.

We would like to thank Ms. Sujitha Nair, Assistant Registrar (Students, Alumni & Industry Interface) from the National Institute of Design (NID), Gandhinagar for facilitating the partnership between NID and the Indian Institute of Management Ahmedabad for the project. We would also like to thank Mr. Rishiraj Agarwal, Mr. Anshuman and Mr. Souvik Roy Choudhary, interns from NID Gandhinagar for preparing all the audio-visual content and other IEC material for the training programmes.

IIM Ahmedabad would like to thank Dr. Lt. Col. Gautam Kumar Singh for sharing his case study on the Leh Cloudburst of 2010 for the purpose of case discussion for the training program.

We are extremely thankful to Dr. Tushar Palve, Superintendent of The Cama & Albles Hospital, Mumbai for permitting us to develop a case study on the terror strike of 26/11/2008 as training material for one of the modules. His kind support enabled us to conduct interviews of 11 of the hospital nurses who witnessed the terror strike and were actively involved in the incident response. Our heartfelt thanks to the nurses- Mrs. Meenakshi, Mrs. J Meena, Mrs. Patil Sayali, Mrs. Choudhari Asmita, Mrs. Shahabaje Swati, Mrs. Sunanda, Mrs. Rahate Madhuri, Mrs. Shetty Laxmi, Mrs. K Jayashree, Mrs. B Yogita and Mrs. K Anjali for agreeing to share their experiences through an interview.

We extend our gratitude to all members of Ahmedabad Hospitals and Nursing Homes Association (AHNA) for sharing their ideas and experiences about how hospitals can strengthen their disaster response strategy by collaborating with each other. In particular, we would like to thank Dr. Bharat Gadhavi of HCG Hospital Ahmedabad for organizing all the interviews with

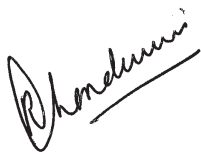
the AHNA team comprising of Dr. Viren Shah from the General & Oncosurgery Department, Super Surgical Hospital, Dr. Ketu Parekh from General Surgery Department, Parekh's Hospital, Dr. Kaushik Gajjar from the General Surgery Department, Parth Hospital, Dr. Kaushik Shah from the General Surgery Department, Panchsheel Hospital, Dr. Jigar Shah from Orthopedic Surgery Department, Shaurya Hospital, Dr. Divyang Bharahmbhatt from Ophthalmology Department, Sahjan and Eye Care Hospital Pvt. Ltd, Dr. Abhay Khandekar from Urology Department, Siddhivinayak Hospital and Dr. Anish Chandarana from Cardiology Department, CIMS Hospital. The team further facilitated meetings with members of AHNA, namely, Dr. Kaushik Shah, Medical Director, Panchsheel Hospital; Dr. Harshad Prajapati, Director, Ahmedabad Eye Laser Hospital; Dr. Ishwar Khemchandani, General Surgeon, TRM Hospital; Dr. Narendra Sanghvi, General Surgeon, Anand Surgical Hospital; Ms. Prachi Sanghavi, Anand Surgical Hospital; Dr. Yash Sanghavi, Anand Surgical Hospital; Dr. Atul Parikh, Surgeon Urologist, Parimal Hospital and Dr. Bipin Shah, Orthopedic Surgeon, Ratan Hospital. We thank all of them for agreeing to participate in our interviews.

We also wish to offer our sincere thanks to Prof. Errol D'Souza, Director, Indian Institute of Management, Ahmedabad, for supporting this project. We place on record our gratitude to Prof. Biju Varkkey, faculty of HRM at IIMA, for extending his assistance to the project by providing his guidance at every step.

We would like to extend our thanks to the Centre for Management of Health Services team at IIMA, specifically Ms. Mini Nair and Mr. Harshad Jhala for coordinating the administrative processes during the inception of the project.

Our thanks also go to officials of the administration, accounts and the computer department of the Institute for rendering their support during the entire project. In particular, we express our heartfelt thanks to Mr. Hiren Shah for co-ordinating the administrative tasks of the project.

We thank Ms. Chitrlekha Manohar of The Clean Copy, Bangalore, for editing and formatting the report. We also thank the publication Department of IIMA for coordinating the design and printing of this report.



**Rajesh Chandwani**

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## Abbreviations And Acronyms

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ALS	Advanced Life Support
BLS	Basic Life Support
CBO	Community Based Organization
DMC	Disaster Management Cycle
DDMA	District Disaster Management Authority
EOP	Emergency Operations Plan
HazMat	Hazardous Materials
HRO	High Reliability Organization
HDMP	Hospital Disaster Management Plan
HIRS	Hospital Incident Response System
HMS	Hospital Management System
HRVCA	Hazard, Risk, Vulnerability and Capacity Assessment
HVA	Hazard Vulnerability Analysis
HIS	Hospital Information Systems
IT	Information Technology
IRS	Integrated Response System
IEC	Information, Education and Communication
ICD	International Classification of Diseases
IoT	Internet of Things
KPI	Key Performance Indicators
NABH	National Accreditation Board for Hospitals & Healthcare Providers
NHSRC	National Health Systems Resource Center
NDRF	National Disaster Response Force
NDMA	National Disaster Management Authority
NCC	National Cadet Corps
NIDM	National Institute of Disaster Management
NSS	National Service Scheme
NYKS	Nehru Yuva Kendra Sangathan
PTSD	Post-Traumatic Stress Disorder
PIO	Public Information Officer
SDMA	State Disaster Management Authority
SDRF	State Disaster Response Force
UNIDSR	United Nations International Strategy for Disaster Reduction



# 1 Overview

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Hospital Safety program design and implementation entail addressing safety at all levels of a hospital's functioning – from the physical facility and its technical specifications to creating a 'Culture of Safety' wherein all stakeholders are aware and confident about their roles and responsibilities in times of emergency or disaster. Hospital Safety necessitates managing all these aspects seamlessly through the development of a well-documented Hospital Disaster Management Plan (HDMP) and the creation of an enabling environment in which it can be implemented adeptly.

This training module is designed to orient the Leadership Team to Hospital Safety norms. Hospital Safety is a crucial component of a country's strategy for Disaster Risk Reduction (DRR) and, in particular, emergency and disaster risk management for better health outcomes (WHO, 2015). There are 3 separate modules designed similarly for Nurses and Frontline Staff, Leaders (Management) and Internal Auditors respectively. Safe hospitals are health facilities that remain accessible and functional at the maximum capacity and that can provide services within the same infrastructure during and immediately following disasters, emergencies or crises (ISDR and WHO, 2009). While it may appear that the formulation of a robust and comprehensive Hospital Disaster Management Plan (HDMP) may suffice to keep a hospital safe, there is ample evidence to indicate that merely having an HDMP is not enough; there must be an effective system primed to facilitate its implementation. The commitment of the top leadership to Hospital Safety preparedness is crucial. The hospital leadership needs to generate awareness among all levels of staff about Standard Operating Procedures (SOPs) and plans related to Hospital Safety. This awareness could be generated through training and by fostering a 'Culture of Safety'. They should also ensure that all the systems and processes that facilitate Hospital Safety, including Compliance, Monitoring and Evaluation systems, are in place. The recent hospital fires that took place in August 2020 at Shrey Hospital, Ahmedabad, and Ramesh Hospital, Vishakhapatnam, are classic examples of violations of the Disaster Management Act (2005) and the NDMA Guidelines for Hospital Safety (2016); in short, they illustrate cases of implementation going wrong.

Hospitals are vulnerable to internal and external disasters since they are exposed to compound inherent risks. For example, the vast amount of electrical equipment present combined with the lack of adequate fire safety equipment can jeopardize an already vulnerable facility. They are also prone to hazards and accidents related to various chemical, radioactive and physical materials or equipment stored on the premises. The increased prevalence of natural disasters further adds to their vulnerability; climate change, overexploitation of natural resources and unplanned urbanization are resulting in an increase in the frequency and intensity of natural disasters. In this context, it may be noted that different parts of India are highly vulnerable to earthquakes, droughts, floods, cyclones, landslides and avalanches, exposing the hospitals located in these regions to the risk of these disasters as well. The ongoing Covid-19 pandemic has overtly exposed the vulnerability of Hospitals and Health Care facilities towards biological disasters, be it natural or manmade.

Disasters in hospitals not only have grave economic implications in terms of the investment required to reconstruct buildings and restore damaged equipment, but they also affect healthcare delivery and create social challenges. The health impact may result from lacunae in the public health response and lapses in the medical care provided to victims. The social impact is a loss of confidence and morale in the affected community and the resulting gap between the formal system and communities.

The Bhuj earthquake, which took place on 26 January 2001 in the Kutch district of Gujarat, is an example of how much damage a hazard can cause. Measuring 6.9 on the Richter Scale as per the Indian Meteorological Department and 7.7 as per the US Geological Survey, this earthquake was one of the worst in 180 years. It brought down a significant share of the buildings and structures of the Kutch district and caused the death of over 19,000 people in Gujarat, with 17,000 casualties in Kutch alone (Paul, 2013). In terms of health infrastructure, the earthquake brought down all health facilities, including Hospitals, Primary Health Centres and Dispensaries in Kutch, killing many patients, their families and hospital staff. For instance, the 44-year-old Civil Hospital in Bhuj, which had 250 beds, collapsed, killing around 150 patients. Smaller hospitals faced similar fate (Sharma, 2001).

While an increasing number of hospitals in the country are becoming sensitized to the need to have an HDMP, many are not equipped to develop them in-house. Further, even if a hospital does have a plan, most of its frontline workers and stakeholders who are supposed to implement it are not even aware that the plan exists. Mock drills are virtually absent in rural and small urban hospitals.

This Hospital Safety Initiative adopts a “multi-stakeholder” and “management” approach to Hospital Safety by designing four different training modules for four different categories of Hospital Stakeholders thereby addressing the training needs of all stakeholders from the top to the bottom of the pyramid. The modules have been customized for the four groups based on their specific roles and responsibilities. The modules pay equal attention to technical content related to Hospital Safety and Disaster Management as well as practical implementation and management aspects. Thus, for instance, the modules cover technical information related to the HDMP, but they also focus on who should design it, how it should be drafted, implementation challenges and strategies to ensure implementation.

The four modules have been designed to train hospital stakeholders from all types of hospitals irrespective of their size (small, medium or big), undertaking (public, private or joint), the scope of work (multi-specialty or single specialty) or geographical location (rural or urban).

## 1.1 Structure of the Module

The overview section provides general information about who should use this manual, how to use it, the learning objectives (session-wise) for participants, guidelines for trainers/facilitators, a brief overview of what the modules cover and the training approach to be used.

### 1.1.1 Session Plan and Instructions

This section provides a detailed day-wise session plan/agenda for the stakeholder group; a description of the teaching plan, learning objectives, materials required for each session and the suggested pedagogy; specific instructions on how to commence and conduct each session and its expected outcomes. It also provides starting points for discussions and details on how group exercises and activities can/should be conducted. However, this section does not contain the Trainers' Notes, i.e., the technical teaching material. Since the teaching content/material is common for all stakeholder groups, they are provided separately in a booklet titled ***“Modules for Training Hospital Stakeholders on Hospital Safety: Trainers (Technical) Notes.”***

Though the modules are organized in a particular order, trainers/facilitators can exercise their discretion in how they use it according to the varying needs of each set of participants and their specific context. Each session's module and sub-modules can also be used either in the order presented, on their own, or in combination with another session in case of time constraints or other factors that require adaptation.

Similarly, while the estimated timings and duration for sessions are offered, trainers can modify the length of each session to fit the total time available and based on the group's level of experience and expertise.

### 1.1.2 Trainers' Notes for Modules

As discussed above, the topics to be covered for all the stakeholder groups are largely the same and hence are provided as common Trainers' Notes in a separate booklet, which can be used across the four groups. Only the discussion sessions for each group will vary based on their specific roles and responsibilities. The training module for each stakeholder group thus elaborates on the discussions and activities to be conducted with each group separately. This module lays down the entire training plan for the Hospital Disaster Management (HDM) Assessor Group i.e., the Internal Auditors of the Hospital.

## 1.2 Supporting Material

All the supporting material to be used for training is provided in the annexures or as a separate link (in case of audio–visual material). The supporting material shared in the annexures includes mainly mini case studies, Information, Education and Communication (IEC) material, links to reference material and group exercises.

## 1.3 How to Use This Manual

The training module covers the content for a three-day long workshop (eight hours per day, excluding breaks) with about 5–7 main sessions per day for the 'HDM Assessor' group.

The duration of the workshops may be altered based on participants' requirements and time availability. For instance, if the program is being organized in-house and the specific group does not have a full day available, the day's sessions may be covered over two days. Some extra supporting material is also provided in case the training personnel

prefer to use one type of material over another, e.g., case studies/scenarios over the Trainers' Notes.

The modules and training material have been designed keeping in mind the context, local culture and language most popularly used in India. The material may be translated into the local state language if the NDMA, the concerned State Disaster Management Authority (SDMA) or local hospitals deem fit. However, it must be ensured that the translation does not change the meaning of the content. Most of the material, especially the cases and other IEC material, has been designed to provide fair representation to the different states of the country or at least different geographical locations.

## 1.4 Intended Users of This Manual

This manual, including its modules and the supporting material, is simple and easy to use. It can be used by trainers working in the area of crisis/emergency/Disaster Management (DM) in the following settings:

1. Internal trainers in hospitals.
2. External trainers at hospitals who work either privately or with central and state government authorities in the field of disaster relief.
3. Academic institutions, such as the Indian Institute of Management, which provide training and management development programs.
4. Officials or Faculty from central-, state- and district-level institutions who are working with hospitals or in other healthcare settings pertaining to disaster relief.

Other than trainers, these modules may also be useful as learning resources for individuals who are interested and want to advance in the field of DM, especially those who are focusing on implementation aspects in hospital/healthcare settings.

## 1.5 Learning Objectives for the Participants

The broad objective of designing these modules was to create uniform and standard training material that can be used to strengthen Hospital Safety practices across India by strengthening the capacities of multiple stakeholders. These modules will make them aware about (a) the disasters and different disaster scenarios a hospital can face; (b) the organization's (hospital's) prevention and response strategy; and (c) the roles of different stakeholders in the prevention and response strategy.

### 1.5.1 Specific Objectives

After attending a training program on Hospital Safety, the stakeholders will be able to:

- Understand the different types of disasters and various concepts related to DM including the Disaster Management Cycle (DMC) and related processes.
- Have insights into Policies, Acts and Guidelines related to Hospital Safety and determine and ensure their application at their place of work.
- Be aware of the components of a Hospital Safety Assessment and their role in it.

- Appreciate the relevance of a ‘Culture of Safety’ in implementing Hospital Safety and examining the same.
- Examine the robustness of and practicality of the HDMP
- Design processes for ensuring the proper implementation of the HDMP and dealing with pragmatic implementation issues as well as ensuring compliance and monitoring requirements.
- Understand the relevance of IT, Communication and Networking as facilitators of Hospital Safety.

The modules cover topics based on the matrix outlined in the NDMA guidelines for capacity building of diverse stakeholders.

## 1.6 Training Approach and Teaching Aids

The modules and training delivery plan were developed based on the principles of adult learning theory. Thus, the sessions are designed to be highly participative, as suggested by Knowles, the founder of this theory (Knowles, 1973). The program will be relevant and useful to participants only if they feel that the information can help them realistically find solutions to problems that expose their hospital to risks, if it adds to what they already know and if they are proactively involved in the process of learning (National Research Council, 2000).

Accordingly, the module topics, content and teaching methods have been tailored to suit the training needs and requirements of the four different stakeholder groups. While the supporting material may be the same for the different groups, the discussions and presentations have been designed to focus on each group’s specific roles and responsibilities in the hospital and the contribution they can make to Hospital Safety.

The teaching aids used include:

1. Hand-outs to be used as part of the IEC material
2. Audio–visual aids in the form of short movies or video clippings
3. Case studies with teaching notes
4. Group exercises
5. Links to reference material such as Guidelines, Acts, Policies, etc.

The trainers can prepare PowerPoint presentations using the Trainers’ Notes provided to aid their teaching.

## 1.7 Tips for Trainers/Facilitators

For the training sessions to be interesting, insightful and relevant for the participants, a few suggestions are provided for the trainers:

### 1.7.1 Preparing for the Workshop

1. This training is best conducted by two trainers per stakeholder group if possible. The trainers can take turns conducting the sessions as this will prevent monotony and fatigue in the trainers as well as the participants. Each trainer can choose to be an enabler in the session if they are not leading the session as the main trainer.
2. Each workshop should not have more than 20–25 participants. A larger group will prevent one-to-one interactions and limit the involvement of every participant.
3. It would be ideal for the trainers to be well-versed with the modules, supporting material and other reference material provided or mentioned in the modules.
4. The trainers should ensure that all the printed materials/resource materials/hand-outs, such as the session plan, pre and post-test survey tools, IEC material and cases which have to be shared with the participants, are sequentially arranged in a separate folder/file for each participant. A checklist of the same can be prepared to ensure that no printed material is missing from any of the participant's files/folders.

### 1.7.2 Conducting the Workshop

1. Having prior information about the participants, their hospital/department and the nature of their work will help trainers form a rapport with the participants.
2. Each training session should be made as interactive as possible. An attempt should be made to involve all participants in the discussions.
3. While participants should be encouraged to express their point of view, long discussions on any one topic should be avoided. The questions and answers segment should be scheduled for the end of the session. The doubts of individual participants that need detailed discussion can be clarified during the lunch or tea break.
4. The information should be presented in a crisp and clear manner in a medium of instruction that all participants can understand.
5. The flow of dialogue should seamlessly and systematically move from one sub-topic to the other by clearly linking them so that no sub-topic is abruptly introduced.

# **Session Plans and Instructions for HDM Intermediate**





## 2. Session Plan and Instructions for HDM Intermediate

A four-day training workshop is proposed for Doctors'. The proposed session plan has been shared in this section. While there is a time duration proposed for each topic based on an assessment of the minimum time required, the trainers are free to modify the timelines a bit according to the workshop timings and time available.

The learning objectives and expected outcomes of the workshop for the stakeholder group are shared by sub-topic. A possible structure for each session is suggested, along with ideas on how the trainer can commence each session, the specific group activities involved and the teaching material that is to be used. The trainer can use the Trainers' Notes, shared as a separate booklet with this module, to shed further light on the topic. In every session, the discussions and brainstorming activities will emphasize the roles and responsibilities of Doctors in terms of Hospital Safety. This will help them gain insights into their specific context and roles and, thus, their contributions to Hospital Safety. The trainer must teach only those sub-topics that match the learning objectives for this group.

### 2.1 Session Plan for Day 1: Basic Concepts Related to Disasters and Disaster Management; Need for Standard Operating Procedures

Table 1 details out the timelines, main topics and sub-topics based on the learning objectives for Doctors.

**Table 1: Timelines, Main Topics and Sub-topics for Day 1 for Doctors**

Session	Time and Duration	Topic	Sub-topics/Agenda
1.	1 hour (9.00 AM – 10.00 AM)	Introduction and Understanding Decision-making During Disasters: Ice-breaking	<ol style="list-style-type: none"> <li>1. Introduction of trainers</li> <li>2. Introduction of participants</li> <li>3. Introduction to the purpose of the workshop (relevance of topics, ground rules for the workshop, expectations of participants, etc.)</li> <li>4. Baseline survey</li> <li>5. Group exercises – ice-breaking activities</li> </ol>
2.	1 hour 30 mins (10.00 AM – 11.30 AM)	Description of Disasters, Epidemiology and Disaster Management	<ol style="list-style-type: none"> <li>1. Key concepts explained – disasters, hazards (Single and Multi), risk, vulnerability, capacity, etc.</li> <li>2. Types and classification of disasters</li> <li>3. Role of climate change, human errors and other factors in disasters</li> <li>4. Understanding and documenting local disaster vulnerability</li> </ol>

Session	Time and Duration	Topic	Sub-topics/Agenda
<b>BREAK (11.30 AM – 11.45 AM)</b>			
3.	1 hour (11.45 AM – 12.45 PM)	Disaster Management Cycle (DMC)	<ol style="list-style-type: none"> <li>1. Understanding the DMC</li> <li>2. Applying the DMC vis-à-vis emergency response in the hospital setting and the role of the hospital at different stages of the DMC.</li> <li>3. Recognition of vulnerable people including people with disabilities (social inclusion)</li> <li>4. Types of disasters and their public health implications</li> </ol>
4.	1 hour (12.45 PM – 1.45 PM)	Role of a Hospital in Disaster Risk Reduction (DRR)	<ol style="list-style-type: none"> <li>1. Understanding the role of hospitals in DRR and Mass Casualty and Emergency Management and the resources required.</li> <li>2. Reflecting on the challenges faced by hospitals during a disaster and identifying strategies to overcome them.</li> </ol>
<b>LUNCH BREAK (1.45 PM – 2.45 PM)</b>			
5.	2 hours (2.45 PM – 4.45 PM)	Relevance of SOPs	Group Exercise
<b>BREAK (4.45 PM – 5.00 PM)</b>			
6.	1 hour (5.00 PM – 6.00 PM)	Hospital Disaster Planning: The Role of Standard Operating Procedures (SOP) for DM in Hospitals	<ol style="list-style-type: none"> <li>1. Concept and importance of SOPs</li> <li>2. Understanding the expected disaster scenarios for hospitals</li> <li>3. Understanding the need to translate the DM concepts into SOPs and incorporate DM into existing hospital SOPs</li> <li>4. Ensuring a comprehensive SOP for DM/DRR</li> <li>5. Understanding the implications of non-compliance</li> <li>6. Strengthening institutional mechanisms for DM through collaborations and partnerships with organizations that are a part of the institutional framework for DM and with other hospitals</li> </ol>

## 2.2 Session-wise Guidelines for Day 1

### 2.2.1 Session 1: Introduction and Ice-breaking

This session will be the same for the four stakeholder groups and thus is shared as a separate section (Section 1 of Trainers' Notes). The tool for the baseline survey that will be administered to the participants in this session is shared in Annex 1, Part A.

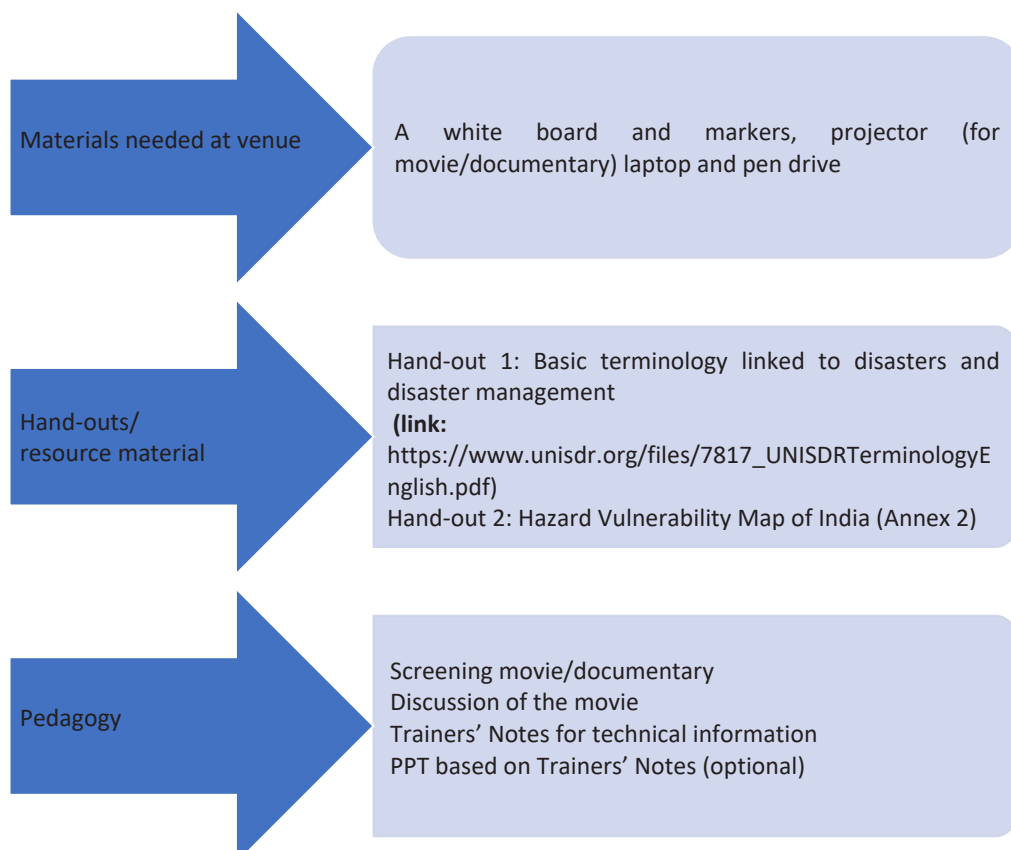
### 2.2.2 Session 2: Description of Disasters, Epidemiology and Disaster Management

#### *Learning Objectives of the Session*

1. To familiarize participants with key concepts related to DM such as disasters, hazards (single and multi), risk, vulnerability, capacity, etc.
2. To inform them about the types of disasters and their classification.
3. To discuss the role of climate change, human error and other factors in disasters.
4. To enable participants to contextualize the meanings of disaster-related concepts and terminologies.
5. To enable participants to understand local disaster vulnerability and its implications at the policy level for the hospital.



#### *Preparation, IEC and Pedagogy*



## **Guidelines for Conducting the Session**

### **Starting the Session (10 minutes)**

The trainer can start the session by asking questions such as, “*What is your understanding of a disaster?*” and/or “*Have any of you encountered a disaster/crisis/emergency in your life or in your place of work?*”

The answers received can form the basis for introducing the participants to the purpose of and intended takeaways of the session. Some of the participants may be well-versed with the topic, and they can be asked to contribute their knowledge to the session.

### **Main Session (60 minutes)**

- Start the main session by showing a 15-minute documentary movie on disasters that is provided along with the manual. The movie will cover information related to types of disasters and discuss the concepts of hazard (single and multi), risk, vulnerability, and capacity.
- The movie will be followed by a discussion with the participants to further explain all the concepts and terminologies and contextualize their meanings. The Trainers’ Notes can be used to systematically discuss all relevant concepts.
- Showcase the Multi-hazard Map of India (refer Annex 2) to make the participants aware of the vulnerability of different states to various types of natural hazards. This will also enable them to understand and document local disaster vulnerability. Participants should be encouraged to share their viewpoints about its implications for hospital disaster planning.
- This can be followed with a brainstorming session that will enable participants to proactively explore what goes into handling a disaster.

### **Question and Answer Round (20 minutes)**

The session will be concluded with a question-and-answer round. All participant questions can be reserved to be answered in this round.

## **Expected Outcome**

By the end of the session, participants will have a clear idea about the different types of disasters and the key concepts of DM, including hazard, risk, vulnerability, and capacity. They will be able to explain how hazards turn into disasters. They will also be aware of which kind of disasters their state is vulnerable to.

## **2.2.3 Session 3: Disaster Management Cycle**

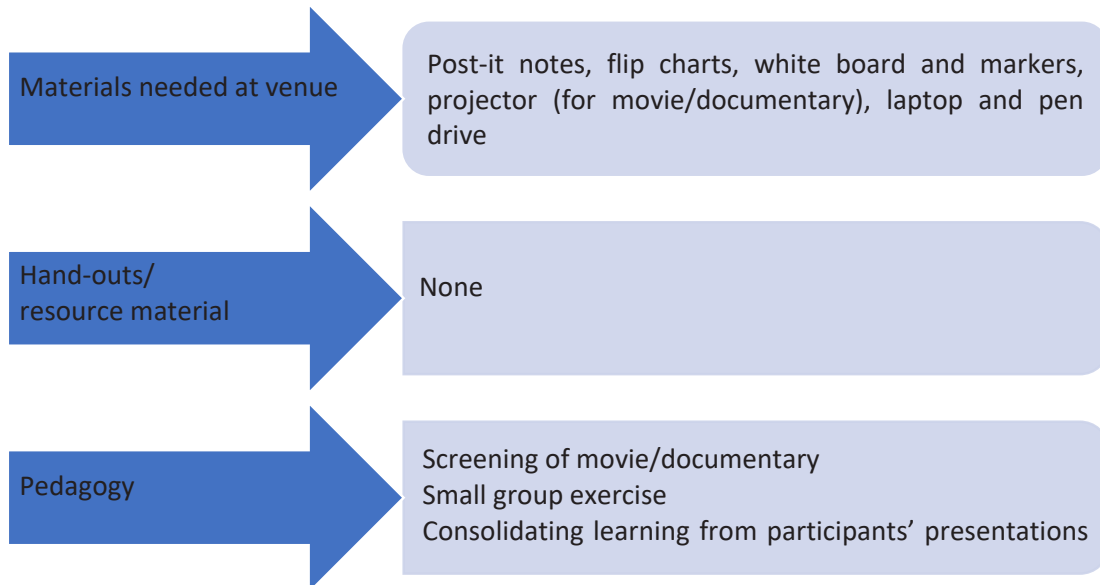
### **Learning Objectives of the Session**

1. To enable participants to understand the DMC.
2. To sensitize them to the relevance of the DMC for emergency response in the hospital setting.

3. To help them recognize which people are most vulnerable to disasters.
4. To enable participants to understand health implications in the response and recovery phases of DMC.
5. To highlight the relationship between development and disaster (dwelling on topics such as climate change and its impact on changing disaster scenarios.)



### Preparation, IEC and Pedagogy



### Guidelines for Conducting the Session

#### Starting the Session (5 minutes)

The trainer can start the session by asking a question such as, “*Is anyone aware of why disaster management involves a cyclic process?*” or “*Is anyone aware of the different phases in the DMC?*” and “*How is development related to disasters (probing on aspects such as climate change and its role in bringing about heatwaves and forest fires etc)*”

The trainer can note the answers received (but not discuss them in detail at that point) and then show a small video clip on the DMC that has been shared as resource material along with the manual.

#### Main Session (50 minutes)

- a. **Discussion on the DMC (15 minutes):** The trainer can use the video and the answers given by the participants to explain the DMC and elaborate on its four phases – (1) Prevention, (2) Preparedness, (3) Response, and (4) Recovery. The relevance of planning, rehabilitation and provision of psychosocial care will also be touched upon.

- b. Exercise on the role of a hospital in the DMC (15 minutes):** Next, the participants can be divided into three groups. Each group will be asked to prepare a crisp five-minute presentation on:
- The health implications for the general population at every stage of the DMC.
  - Whom they think the most vulnerable populations are (e.g., the elderly, children, differently-abled) and what kind of special care they need in times of disaster.
  - The role that hospitals and Doctors in particular can play at various stages of the DMC as part of healthcare provision and DRR.
- c. Presentation by participants and discussion (20 minutes):** Three presentations of five minutes each will be made by the participant groups. It must be noted that this topic is theoretical as well as experiential. Since the participants are healthcare professionals, they will already have an idea about their role in the DMC and many of them may have experience in handling emergencies and mass casualty events. Therefore, an attempt should be made to make this session highly interactive and filled with experience-sharing.

The trainer will then recapitulate all the information received from the three presentations and any missing relevant points (from the Trainers' Notes) will be brought up during this time.

In the main session, a PPT may also be used as supporting material.

#### **Question and Answer Round (5 minutes)**

All participant questions can be reserved for this round, which concludes the session. Since the session involves a small group activity and is highly interactive, there may not be many questions for the end.

#### **Expected Outcomes**

By the end of the session, participants will have a clear understanding about the DMC and the crucial role that hospitals, particularly Doctors, can play in the phases of disaster prevention, preparation, mitigation, response and recovery (including rehabilitation).

### **2.2.4 Session 4: Role of Hospitals in Disaster Risk Reduction**

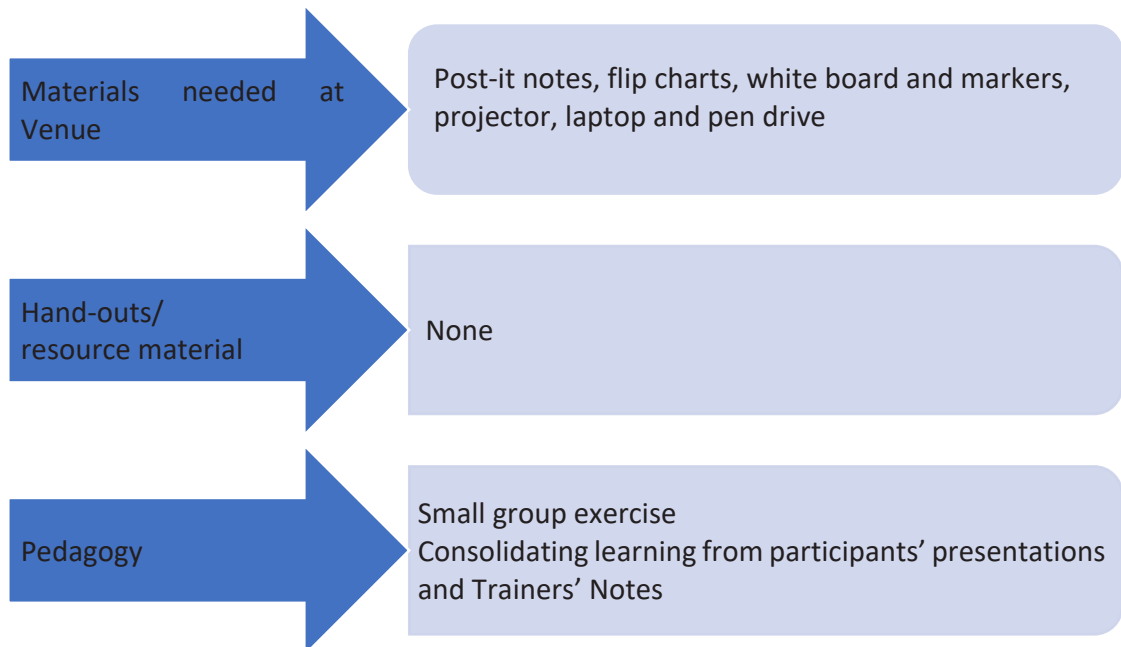
#### ***Learning Objectives of the Session***

1. To enable participants to appreciate the role of hospitals in DRR and identify the resources required for it.
2. To describe the role of hospitals in providing Emergency Health Services (primary, secondary and tertiary) and in Mass Casualty Management.
3. To enable participants to identify the challenges faced by hospitals during a disaster and strategies to overcome them.



- To sensitize participants to the need to draft and implement hospital guidelines/policies for reduced exposure to hazards, decreased vulnerability of people and property, wise management of land and environment, and improved preparedness for adverse events.

### **Preparation, IEC and Pedagogy**



### **Guidelines for Conducting the Session**

#### **Starting the Session (10 minutes)**

The session can start with an activity on DRR. Four sub-groups of 5–7 participants can be formed, and each group will be given the following topic (based on the learning objectives) to brainstorm and prepare a presentation:

- Sub-group 1: Role of hospitals (and Doctors) in DRR, especially in Mass Casualty and Emergency Management Services.<sup>1</sup>
- Sub-group 2: Resources required by hospitals to improve disaster/emergency preparedness.
- Sub-group 3: Challenges faced by hospitals (and Doctors) during Emergency Management and possible solutions to the challenges.
- Sub-group 3: What should the SOPs and guidelines for DRR cover?

#### **Conducting a Group Activity (30 minutes)**

This is the time every sub-group gets to discuss the topic and prepare a presentation.

<sup>1</sup> An SOP on the same has been provided in soft copy with the manual as resource material. It can be referred to for this exercise.

## **Conclusion of the Session (20 minutes)**

Each sub-group will get about four minutes to make their presentation. After all the presentations, the trainer will conclude by summarizing the key learnings and add any points that may have been missed out by the participants.

### ***Expected Outcomes***

By the end of the session, participants will have a clear understanding about:

1. The crucial role of hospitals and Doctors in DRR, especially during the response and recovery phases, with respect to Mass Casualty and Emergency Management Services.
2. Resources required by hospitals during DM operations and the challenges faced and solutions.
3. The relevance of developing SOPs and guidelines for DRR.

## **2.2.5 Session 5 and Session 6: Hospital Disaster Planning: The Role of SOPs for DM in Hospitals**

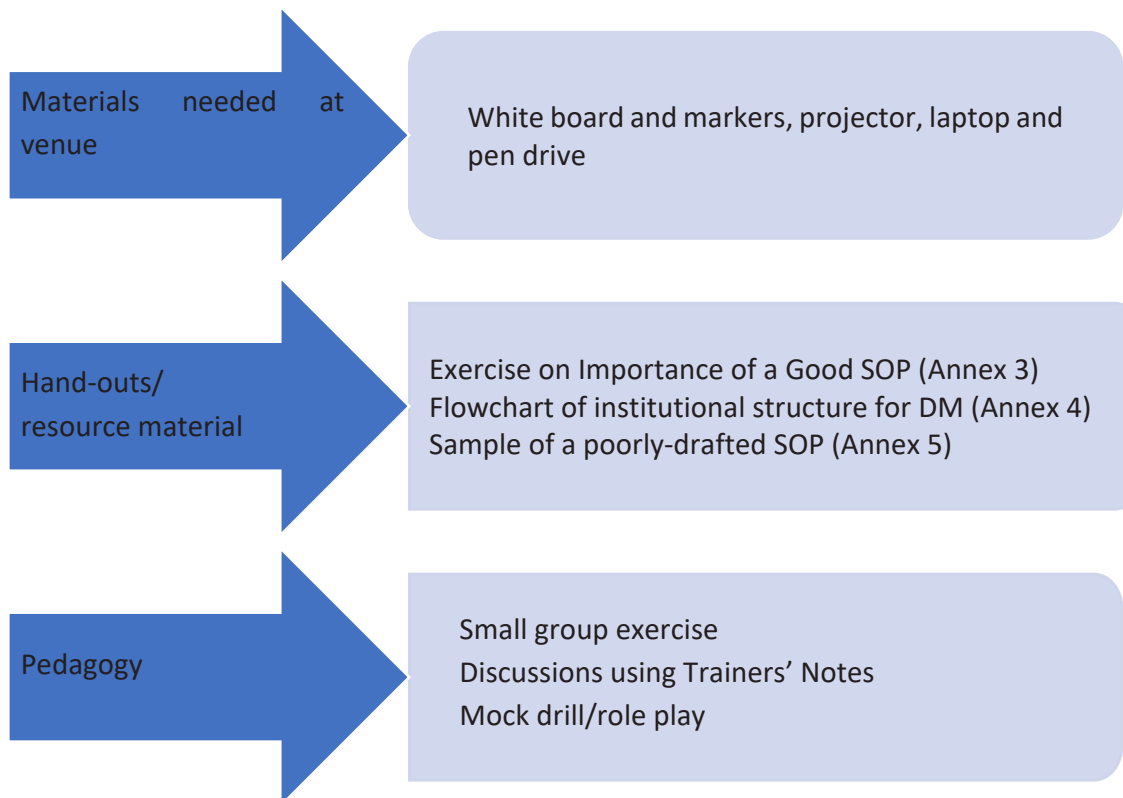
### ***Learning Objectives of the Session***

1. To help participants understand the concept and importance of SOPs, especially in the context of DM.
2. To familiarize participants with hospital SOPs and the need to display SOPs at strategic places.
3. To enable participants to understand what goes into making an SOP for DM/DRR.
4. To sensitize participants to the implications of non-compliance.
5. To familiarize participants with the institutional framework for DM from the central to state level so that they can be integrated into the SOP for DM.





## Preparation, IEC and Pedagogy



### Guidelines for Conducting the Session

SOPs will be covered over two sessions – Sessions 5 and 6. The combined time duration for these sessions is three hours. Session 5 will be for two hours post-lunch and is activity-based. Session 6 is theoretical.

#### Session 5: Group Exercise (2 hours)

A mock situation will be given to participants for them to enact. The exercise is shared below. This mock exercise will be followed by a debriefing session.

- **Exercise (1 hour 15 minutes)** (Note: 15 minutes is allocated for forming groups and giving instructions. One hour is allocated for the main exercise)

Like in the case for the first group of stakeholders, participants will be divided into three groups. Two groups will be given a mock situation of a fire in their hospital and the third group will be the observer. The first two groups will be given half an hour each to complete the exercise. They have to simulate a disaster response situation using the SOP provided to them. One group (Group A) will be given a poorly designed SOP and the other group (Group B) will be given a clearly drafted SOP. The detailed objectives of this exercise and method and activity plan are shared in Annex 3 along with the SOP samples.

- **Debriefing (45 minutes)**

The group exercises and their outcomes will be discussed. Over the course of the discussions, participants will be encouraged to reflect on the relevance of

SOPs for DM. The observer group will be asked to provide feedback on what the other two groups could have done better. Thereafter, the trainer will refer to the documentary on disasters shown in Session 2 to inform the participants about the different types of hazards and disaster situations a hospital should be prepared for. The hospital needs to be prepared to face every disaster situation, and SOPs can facilitate timely, quick and well-planned interventions.

### Session 6 (1 hour)

- **Starting the Session (20 minutes)**

The trainer can start the session by asking the participants if they are aware of any SOPs that are being used by the hospital and, if so, what their purpose is. Their responses, along with the outcomes of the activity conducted in Session 5, can pave the way for a discussion on the concept of SOPs and their purpose and relevance for hospitals. In particular, the relevance of SOPs for DM and the implications of non-compliance can be discussed using the Trainers' Notes. Details about the institutional framework for DM from the central to state level will be shared with participants (Annex 4) so that they are aware of whom they can approach for help should the need arise. The same should be covered in the SOPs for DM as well.

- **Main Session: Group Activity (30 minutes)**

A small activity of about 20 minutes will be conducted to enable the participants to understand how to distinguish between a well-designed and poorly designed hospital SOP.

Participants will be given a hospital SOP for DM that is poorly designed (Annex 5). Based on their learning from Session 4, they will be asked to share their feedback on the SOP and identify any lacunae. This session will be more of a brainstorming one. The participants will be encouraged to reflect on the design and content of the SOP and share what points they would add to strengthen it.

- **Question and Answer Round (10 minutes)**

All questions from the participants can be reserved for this round, which concludes the session.

#### *Expected Outcome*

By the end of the session, participants will have a clear idea about what goes into making an effective and comprehensive SOP and the importance of SOPs for DM. The implications of non-compliance with SOPs will also be understood.

## **2.3 Session Plan for Day 2: Hospital Safety: Assessment and Hospital Disaster Management Plan (HDMP)**

Table 2 details the timelines, main topics and sub-topics for Day 2, based on the learning objectives for this stakeholder group.

**Table 2: Timelines, Main Topics and Sub-topics for Day 2 for Doctors**

Session	Time and Duration	Topic	Sub-topics/Agenda
1.	30 minutes (9.00 AM –9.30 AM)	Recap of Day 1	Revision of Day 1 topics
2.	1 hour 15 minutes (9.30 AM –10.45 AM)	Hospital Safety	<ol style="list-style-type: none"> <li>1. Understanding Hospital Safety</li> <li>2. The context, relevance, aim and components of Hospital Safety</li> <li>3. Priority areas for Hospital Safety</li> </ol>
3.	1 hour 15 minutes  (10.45 AM –12.00 PM)	Hospital Safety Assessment	<ol style="list-style-type: none"> <li>1. Assessing Hospital Safety</li> <li>2. Maintenance and inspection requirements</li> <li>3. Licensing and accreditation requirements for Hospital Safety</li> </ol>
BREAK (11.30 AM – 11.45 AM)			
4.	1 hour  (12.15 PM –1.15 PM)	Introduction to Hospital Disaster Management Plan (HDMP)	<ol style="list-style-type: none"> <li>1. Introduction to HDMP</li> <li>2. Legal and policy context</li> <li>3. Aim and basic principles of HDMP</li> <li>4. Need for staff awareness of and familiarization with the HDMP and Hospital Incident Response System (HIRS)</li> </ol>
LUNCH BREAK (1.45 PM – 2.45 PM)			
5.	2 hours (2.00 PM –4.00 PM)	Relevance of Mock Drills	Simulation exercise
BREAK (4.45 PM – 5.00 PM)			
6.	1 hour (4.00 PM –5.00 PM)	Preparing a HDMP and HIRS	<ol style="list-style-type: none"> <li>1. Ingredients of a HDMP</li> <li>2. Introduction to the HIRS</li> <li>3. Steps involved in making an HIRS</li> </ol>
BREAK (5.00 PM – 5.15 PM)			
7.	1 hour (5.15 PM –6.15 PM)	Hospital Vulnerability Analysis – A Prerequisite for HDMP	Group exercise on Hazard, Risk and Vulnerability and Capacity Analysis (HRVCA) for an “All-Hazards Plan” <sup>2</sup>

<sup>2</sup> While an all-hazards plan will be the focus of discussion, participants will be given hand-outs of IEC material related to handling some key disasters – floods, cyclone, fire, chemical accidents, drought, earthquakes and landslides, and terror attacks.

## 2.4 Session-wise Guidelines for Day 2

### 2.4.1 Session 1: Recap of Day 1

This is a brief 30-minute session that will be conducted to revise the topics of Day 1. The discussions in this session will help the participants link these concepts to workplace realities.

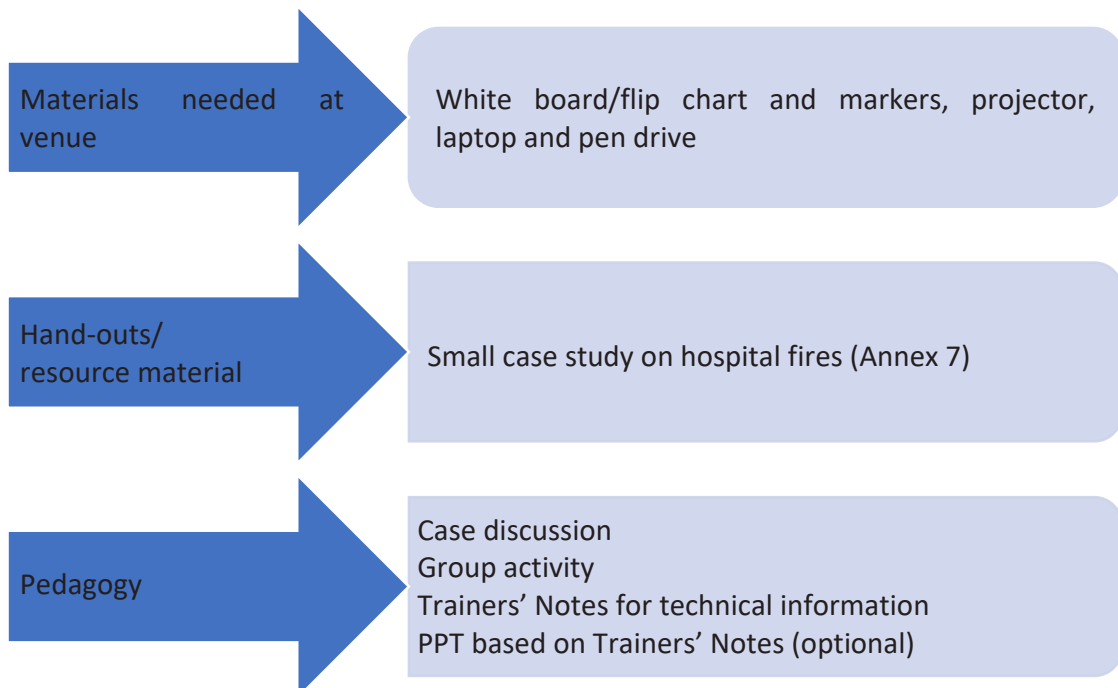
### 2.4.2 Session 2: Hospital Safety

#### *Learning Objectives of the Session*

1. To make participants understand the concept of Hospital Safety and the need for it.
2. To sensitize participants to the policy context and aim of Hospital Safety.
3. To familiarize participants with the structural, non-structural and functional components of Hospital Safety and factors that cause hospital vulnerability.
4. To introduce participants to the priority areas for Hospital Safety.



#### *Preparation, IEC and Pedagogy*



#### *Guidelines for Conducting the Session*

##### **Starting the Session (10 minutes)**

The session could start with the trainer posing two questions on Hospital Safety to the participants and asking them to write their replies on a sheet of paper and submit it

within five minutes. The questions could be “*What is a safe hospital?*” and “*How can Hospital Safety be ensured?*”

One of the participants can be requested to help the trainer categorize the responses, and the trainer can then note down the number of responses in each category on the white board/flip chart. This will help in understanding how well-versed participants are with the topic of discussion.

### **Group Discussions (20 minutes)**

The trainer can then use a PPT or the technical notes to discuss the concept of Hospital Safety, the need for it, its historical background and policy context (Hyogo Framework, etc.), as well as its aim and components. Participant responses will also be discussed so that they get feedback about how well they are acquainted with the concept being discussed.

### **Case Discussion (35 minutes)**

The participants will be given a small case study of a hospital fire for discussion (Annex 7). About 10 minutes will be provided for reading and understanding the small case study. This will be followed by a case discussion for 25 minutes. The discussion will focus on questions such as (1) Which type of disaster took place? (2) Were Hospital Safety norms flouted, and, if so, which aspects? (3) What could the authorities have done to avert the disaster?

### **Question and Answer round (10 minutes)**

In the last 10 minutes of the session, any queries that the participant may have will be resolved.

### ***Expected Outcomes***

By the end of the session, participants will clearly understand the concept of Hospital Safety, its components and its importance. They will also be aware of the priority areas for Hospital Safety. They will have a clear idea about how they can contribute to the safety of their own hospital.

## **2.4.3 Session 3: Hospital Safety Assessment**

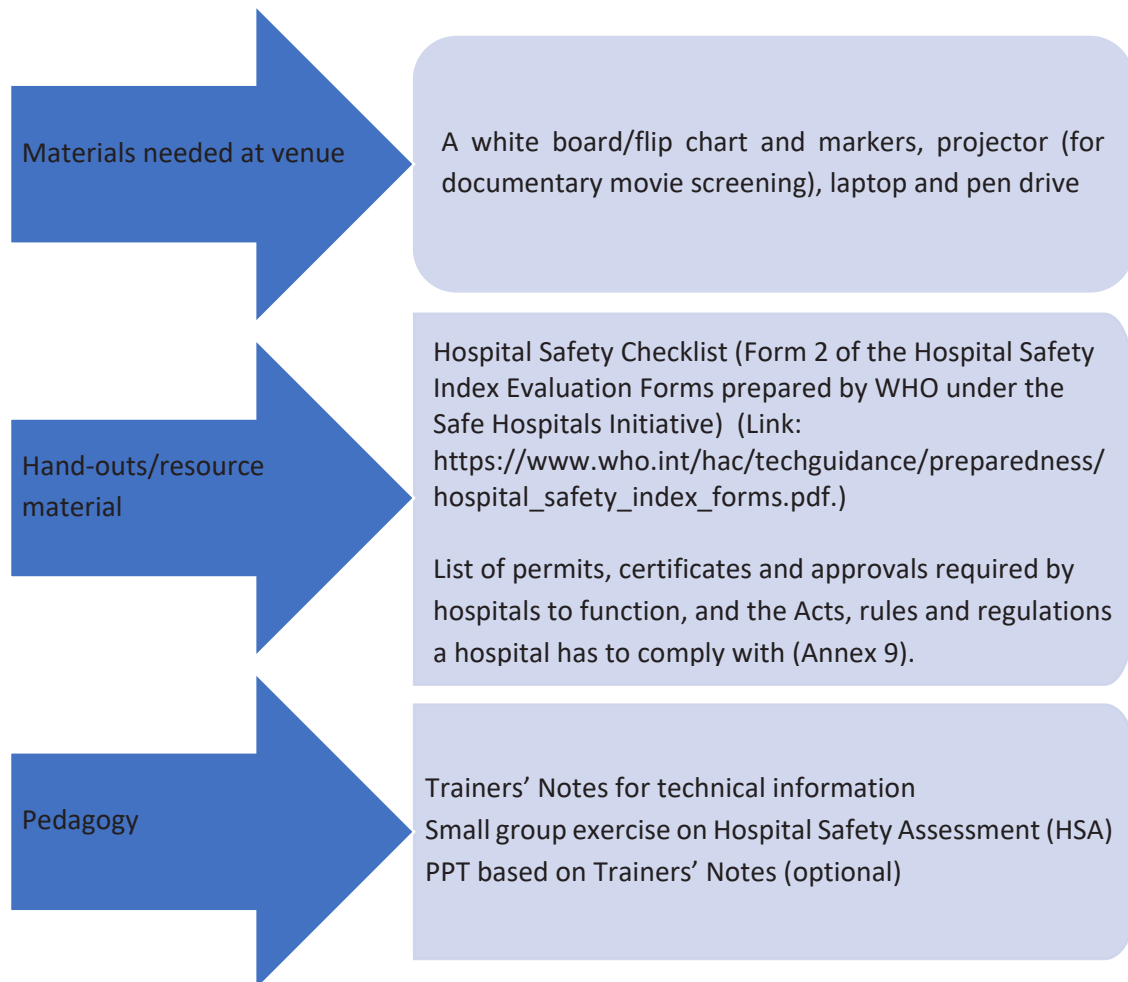
### ***Learning Objectives of the Session***

1. To familiarize participants with the “All-Hazards Approach” to Hospital Safety Assessment, with a special focus on internal accidents (fire and electrical short circuits).
2. To enable participants to understand what aspects should be considered while conducting a Hospital Safety Assessment.
3. To equip participants with the knowledge and tools to conduct a Hospital Safety Assessment for their hospital.



4. To sensitize participants to maintenance and inspection requirements for Hospital Safety.
5. To familiarize participants with licensing and accreditation requirements for a safe hospital.

### *Preparation, IEC and Pedagogy*



### *Guidelines for Conducting the Session*

#### **Starting the Session (15 minutes)**

The session could start with the trainer sharing information and hand-outs (Annex 9) with the participants about maintenance and inspection as well as licensing and accreditation requirements for a safe hospital. This can be done using the Trainers' Notes. Thereafter, they can be given a copy of the Hospital Safety Index (HSI) prepared by WHO with an explanation of why an all-hazards approach is necessary.

#### **Group Activity on Hospital Safety Assessment (60 minutes)**

The participants should be divided into small groups of 7–10 participants each. Each group will be given 30 minutes to (1) Prepare a Hospital Safety Assessment Checklist, (2) Go through the HSI provided and compare the two checklists. After a group discussion, for which about 15 minutes will be allocated, each group can share five points from

the HIS that they find most important for their hospital’s safety. These presentations can be done in the last 15 minutes. If time permits, participants can also share aspects of Hospital Safety that they have observed or would like to address to enhance their hospitals’ safety.

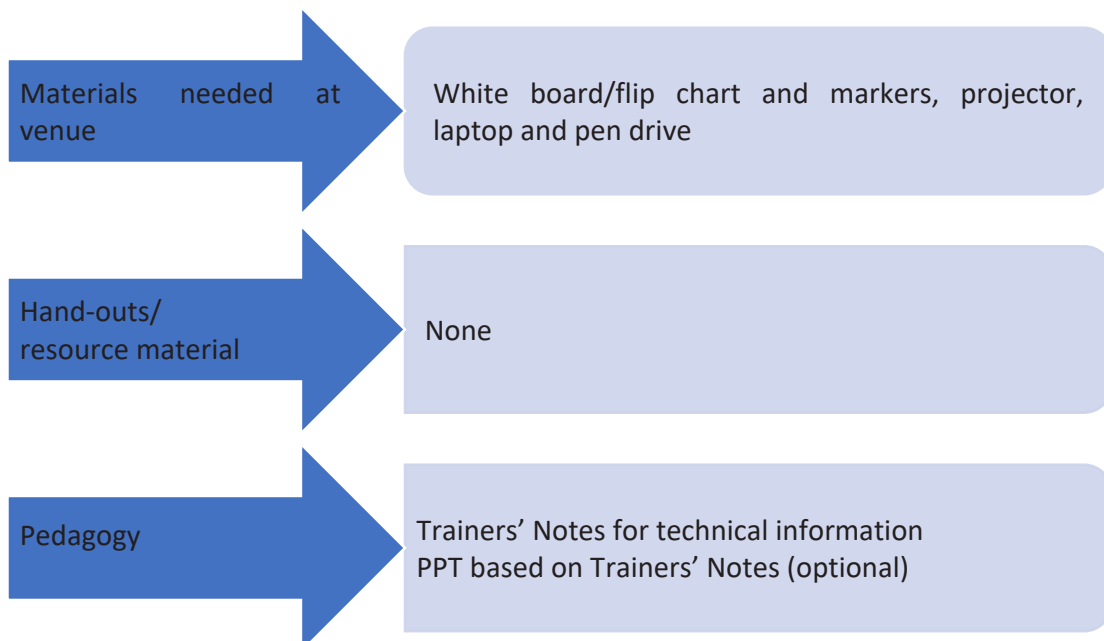
This small group activity will enable the participants to understand the perspectives and priorities of others in the group and also help link the concepts to workplace practices.

#### 2.4.4 Session 4: Introduction to Hospital Disaster Management Plans (HDMPs)



1. To familiarize participants with the concept of HDMPs.
2. To sensitize participants to the legal and policy context of HDMPs.
3. To enable participants to understand the aim and basic principles of HDMPs.
4. To make participants understand the relevance of knowledge about and familiarization with the HDMP and HIRS and their contribution/role when the plan has to be activated.

#### Preparation, IEC and Pedagogy



#### Guidelines for Conducting the Session

##### Starting the Session (15 minutes)

The session could start with the trainer asking the participants if they are aware of an HDMP that has been drafted and put to use in their hospital. Their answers can be used to extend the discussion further. If some of the participants are aware of the HDMP of their hospital or have experience handling disasters, they can be encouraged to share their knowledge.

### **Main Session (35 minutes)**

This session will be theoretical in nature. The trainer can make use of the Trainers' Notes as well as a PPT to teach the participants about HDMPs and the principles to keep in mind while preparing it.

### **Question and Answer Round (10 minutes)**

Like in all the other sessions, the last 10 minutes of the session will be dedicated to addressing participant's questions.

### ***Expected Outcomes***

By the end of the session, participants will be aware of what an HDMP is and of all the interlinked concepts, including HIRS. They will know the basic principles to keep in mind while preparing an HDMP. They will also be able to appreciate the importance of ensuring familiarization with their hospital's HDMP.

### **2.4.5 Session 5: Simulation Exercise**

#### ***Learning Objective of the Session***

1. To make participants understand the relevance of simulation exercises, like mock drills and tabletop exercises, as means to prepare for real-life disaster situations.

#### ***Group Activity***

Practice exercises can be discussion-based or operations-based. Operations-based exercises such as mock drills are highly beneficial to prepare for disasters. However, in this training session, a simple simulation exercise will be conducted, which is the next best option, since it is not possible to do a full mock drill in a workshop venue.

**Exercise** (1 hour 15 minutes) (Note: 15 minutes is allocated for forming groups and giving instructions. One hour is allocated to the main exercise, with each group being given half an hour each.)

The participants will be divided into two teams of six. Remaining participants can act as adjudicators to observe the two teams and evaluate how they deal with the emergency situation presented to them (refer to Annex 10 for details of the situation, SOP provided and learning objectives of the exercise). The two teams, namely Team A and Team B, shall be handed out the same SOP. Both teams will be given five minutes to familiarize themselves with SOP.

Team B will be excused from the room while Team A executes the task. On completion of the task, Team B should be called for their turn. Lastly Team A will execute the same task again while Team B watches. The idea behind this is that through practice and observation, team A should be able to perform better the second time and execute the evacuation more efficiently. During de-briefing session, the class can discuss the difference of performance of both teams.



- **Debriefing (45 minutes)**

The tabletop exercises and their outcomes will be discussed. Discussions will focus on pinpointing problem areas and potential roadblocks to Hospital Safety in the given situation.

Participants will be encouraged to reflect on the relevance of practical/mock drills in a hospital setting. Many a time, a hospital may have SOPs and HDMPs in place, but without regular practice sessions, the staff may not be ready to respond to a disaster when it does strike. The observer group will be asked to provide feedback on how the other groups could have done better.

### **Expected Outcome**

By the end of the session, all participants will be able to appreciate the need for regular mock drills and tabletop exercises to strengthen their HDMP.

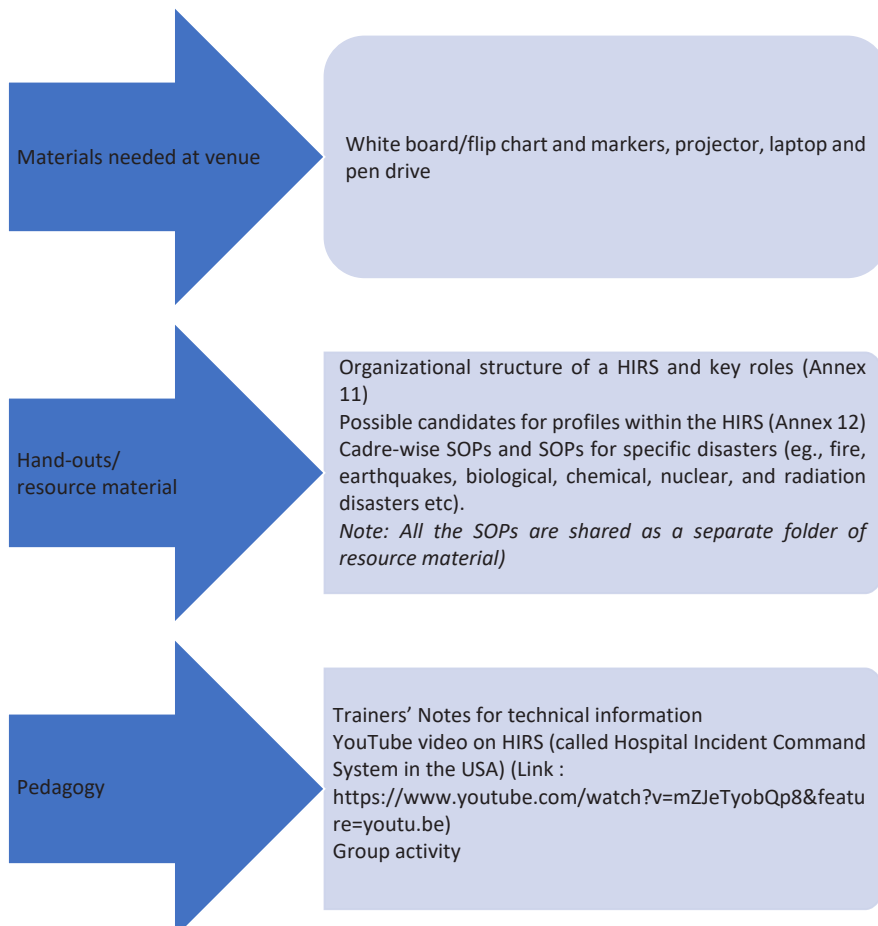
## **2.4.6 Session 6: Preparing an HDMP**

### **Learning Objectives of the Session**

1. To make participants aware of what goes into the making of a comprehensive HDMP.
2. To orient participants to the steps involved in making a HDMP.
3. To make participants aware of the concept and relevance of a HIRS.



### **Preparation, IEC and Pedagogy**



## ***Guidelines for Conducting the Session***

### **Starting the Session (10 minutes)**

The trainer can commence the session by referring to the outcomes of the simulation exercise, and through it, highlight the importance of checking the robustness of an HDMP through a simulation exercise.

### **Main Session (30 minutes)**

The trainer can make use of the Trainers' Notes to inform the participants about the components of a good HDMP. The Trainer should enumerate the steps involved in developing a good HDMP and display that in the PPT. Thereafter, participants can be introduced to the concept of HIRS, the organizational structure required for a good HIRS (Annex 11), probable candidates for HIRS (Annex 12) and how a hospital can tailor a HIRS to suit their needs and requirements. The session can end with a ten-minute video (link provided under pedagogy) which summarises the HIRS and roles of people therein.

### **Question and Answer Round (10 minutes)**

About 10 minutes of the session can be reserved to address queries from the participants on the topic.

### **Assigning a Group Activity for Day 3 (10 minutes)**

At the end of the session, participants will be divided into small groups of 5–7 participants each. Each group will have to develop an HDMP for their hospital as a post-workshop exercise. They can spend time on it after the workshop ends for the day. They will have to present their plans in the first session of Day 3.

While they will follow an all-hazards approach, as part of the Incident Plan, each group can take any one disaster to which their respective hospital is vulnerable – earthquake, fire, cyclone, flood, drought, terror strike or chemical disaster. The trainer should ensure that no two groups are assigned the same disaster.

The trainer can advise each group to make a checklist of key steps in an HDMP. Further, the plan should address:

- **Pre-disaster planning:** Formation of an HDM Committee, response system, job cards, plan activation, how to cater to the bed requirement for disasters (especially in cases of a surge or mass casualty situation), logistics and manpower planning, etc.
- **Building Safety Standards and functional aspects:** Structural components and non-structural components including critical systems like emergency exit system, fire system, electric system, communication system, water supply system and other functional components.
- **Phasing of HDMP:** This will entail planning requirements for each DMC phase, including (a) Pre-disaster Phase (planning, disaster manual, staff training) and (b)

Disaster Phase (phase of activation of a chain of command, operational phase, phase of deactivation).

At the end of the session, SOPs/guidelines relating to the specific roles of Doctors and as well as their role in specific types of disasters will be shared as resource material to give participants an idea about the kind of SOPs/guidelines their hospitals should work to develop.

### **Expected Outcome**

By the end of the session, participants will be aware of what goes into making a HDMP. They will also understand the concept of HIRS and why a good HIRS can go a long way in ensuring Hospital Safety.

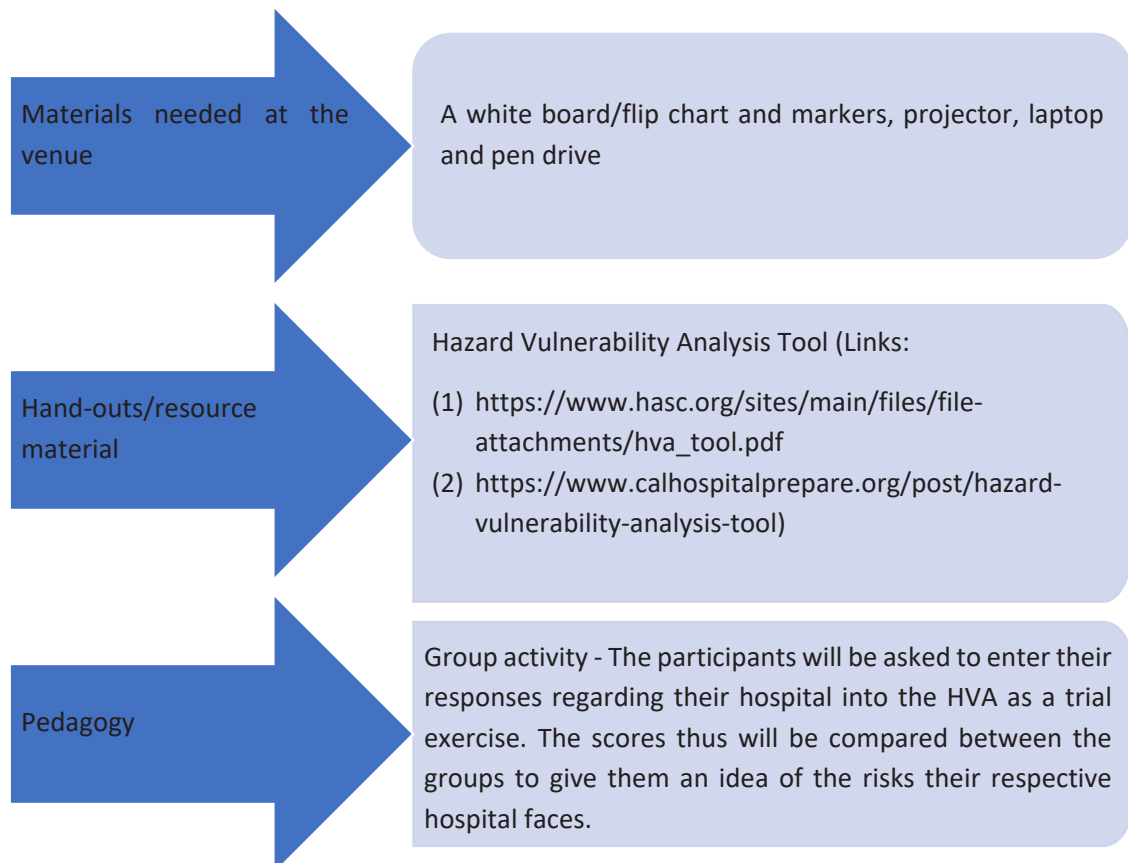
## **2.4.7 Session 7: Hazard Vulnerability Analysis – Prerequisite to Preparing an HDMP**

### **Learning Objectives of the Session**

1. To help participants understand how to conduct a Hazard Vulnerability Analysis (HVA) for their hospital so as to draft a HDMP accordingly.



### **Preparation, IEC and Pedagogy**



## Guidelines for Conducting the Session

### Starting the Session (10 minutes)

The trainer can commence the session by introducing participants to the HVA tool developed by 'Kaiser Permanente', an American healthcare company. This comprehensive and simple tool is freely available for download from: <https://www.calhospitalprepare.org/hazard-vulnerability-analysis>. Based on the responses fed into a computer, the tool can automatically estimate the probability and severity of different risks for a hospital. The trainer can demonstrate how the tool works and also how it generates scores after information is fed into it. This will provide insights for participants about how such tools can be developed or even adapted for their own use.

### Group Activity (50 minutes)

The participants should be divided into small groups of 7–10 participants each. Each group will be given time to enter their responses regarding their hospital into the HVA as a trial exercise. The scores thus obtained will be exchanged by between group members and discussed. This will give them an idea of the risks their respective hospital faces.

## 2.5 Session Plan for Day 3: Hospital Safety and 'Culture of Safety'

Table 3 details the timelines, main topics and sub-topics for Day 3, based on the learning objectives for this stakeholder group.

**Table3: Timelines, Main Topics and Sub-topics for Day 3 for Doctors**

Session	Time and Duration	Topic	Sub-topics/Agenda
1.	1 hour (9.00 AM –10.00 AM)	Presentations on HDMP	Group activity – presentations by groups on drafting an HDMP for the participants' hospitals
2.	1 hour 15 minutes (10.00 AM –11.15 AM)	Activating the HDMP	Steps involved in activating the HIRS in times of disaster
<b>BREAK (11.15 AM – 11.30 AM)</b>			

Session	Time and Duration	Topic	Sub-topics/Agenda
3.	1 hour 30 minutes (11.30 AM –1.00 PM)	Building a 'Culture of Safety' and Psychological Safety	<ol style="list-style-type: none"> <li>1. Understanding what is 'Culture of Safety' in a hospital and it's contributing factors</li> <li>2. Assessing the 'Culture of Safety'</li> <li>3. Understanding Psychological Safety</li> <li>4. Benefits of Psychological Safety for building a 'Culture of Safety'</li> <li>5. Understanding factors that promote Psychological Safety</li> <li>6. Role of Doctors and Leaders in Promoting Hospital Safety</li> </ol>
<b>LUNCH BREAK (1.00 PM – 1.45 PM)</b>			
4.	1 hour 30 minutes (1.45 PM –3.15 PM)	'Culture of Safety' and High Reliability Organizations (HRO)	<ol style="list-style-type: none"> <li>1. Understanding High Reliability Organizations and their key characteristics</li> <li>2. Developing HROs</li> <li>3. Hospitals as HROs</li> <li>4. Leadership and cultural maturity</li> </ol>
5.	1 hour (3.15 PM –4.15 PM)	Resilience	<ol style="list-style-type: none"> <li>1. Understanding resilience</li> <li>2. Staff and hospital resilience</li> <li>3. Developing resilience</li> <li>4. Hospitals' resilience to disasters</li> </ol>
<b>BREAK (4.15 PM – 4.30 PM)</b>			
6.	45 minutes (4.30 PM –5.15 PM)	Role of Hospitals in Provision of Mental Health Care during Disasters	<ol style="list-style-type: none"> <li>1. Mental health consequences of a disaster</li> <li>2. Principles of disaster mental health services</li> <li>3. Role of a hospital in mitigating mental health consequences</li> <li>4. The relevance of psychological triage in identifying persons needing psychological first aid vs. clinical help</li> </ol>
7.	1 hour 15 minutes (5.15 PM –6.30 PM)	Decision-making for Hospital Safety	Six Thinking Hats exercise

## 2.6 Session-wise Guidelines for Day 3

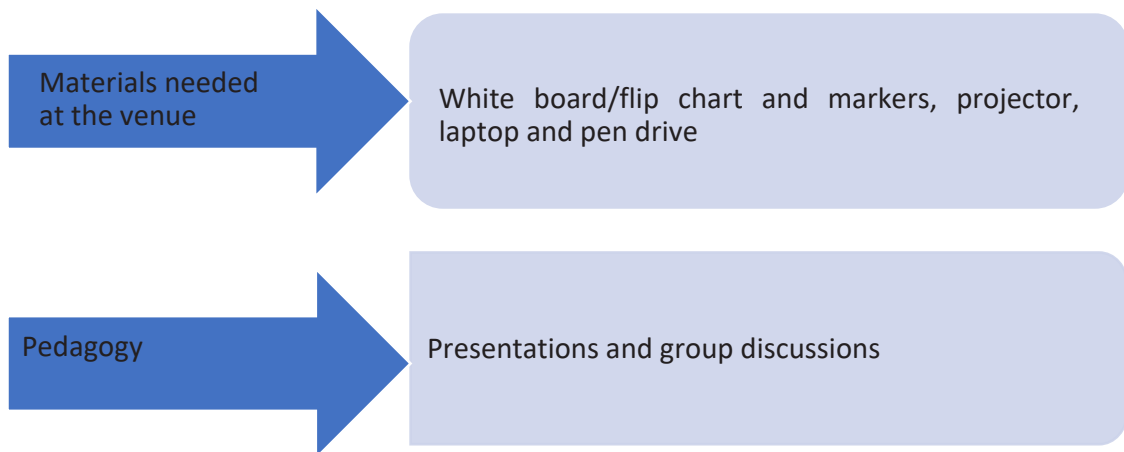
### 2.6.1 Session 1: Presentations on HDMP

#### *Learning Objectives of the Session*

1. Developing the skills to prepare an HDMP through an interactive session.
2. Learning to take feedback from peers to strengthen the HDMP.



#### *Preparation, IEC and Pedagogy*



#### *Guidelines for Conducting the Session*

##### **Presentations by Individual Groups (40 minutes)**

Assuming a maximum of four groups, each one will be given 10 minutes to make a presentation on the HDMP they have prepared.

##### **Feedback and Discussion on the Presentations (20 minutes)**

After all the presentations have been made, group members will be encouraged to share their views on how the other groups could further strengthen their HDMPs. The facilitator will also provide tips based on information in the Trainers' Notes.

#### *Expected Outcome*

By the end of the session, the Doctors will have a clear idea about how to prepare an HDMP, the steps involved and the amount of teamwork that goes into making it. They can use this knowledge and experience to help their hospital develop its own HDMP.

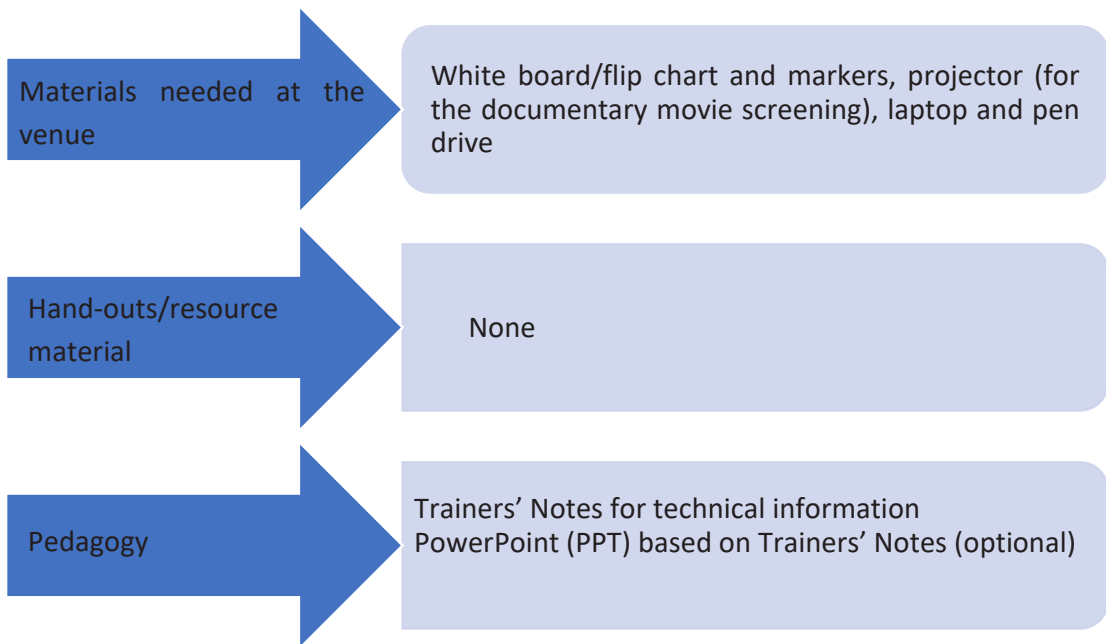
### 2.6.2 Session 2: Activating the HDMP

#### *Learning Objectives of the Session*

1. To make participants aware of the steps involved in activating the HDMP and HIRS (Hospital Incident Response System) in times of disaster.



### **Preparation, IEC and Pedagogy**



### **Guidelines for Conducting the Session**

#### **Starting the Session (20 minutes)**

The session can start with participants sharing experiences. The trainer can encourage participants to share their experiences related to handling disasters at work by asking them how their hospital, and they, as Doctors, handled the situation.

#### **Main Session (45 minutes)**

Once the experience sharing part is complete, the facilitator can use the Trainers' Notes to impart information to the participants about how to systematically activate the HDMP. Similarities and differences between the technical notes and participants' experiences can be highlighted. This session will be more theoretical.

#### **Question and Answer Round (10 minutes)**

The last 10 minutes of the session will be dedicated to addressing the queries of participants.

### **Expected Outcome**

By the end of the session, the participants will have a clear understanding of not only how the HDMP has to be prepared, but also how it has to be activated systematically, when the need arises.

### **2.6.3 Session 3: Building a 'Culture of Safety' and Psychological Safety**

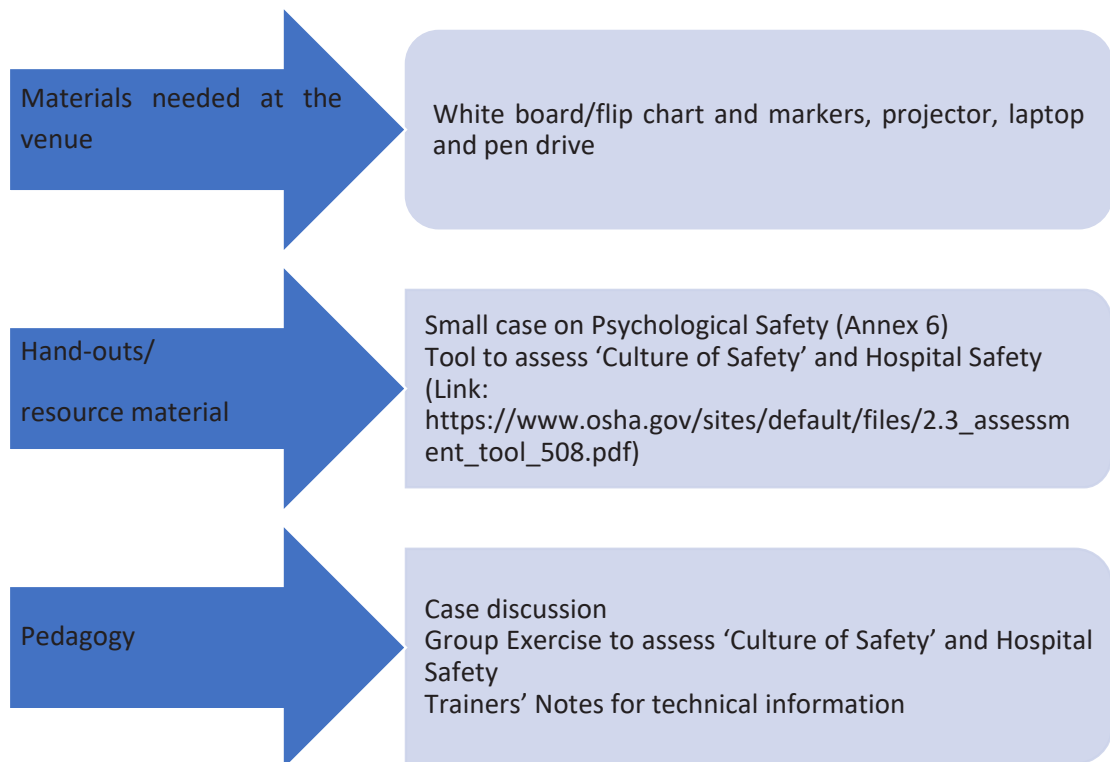
#### **Learning Objectives of the Session**

1. To enable participants to understand what is 'Culture of Safety' in a hospital and factors contributing to it.

2. To empower participants to assess the 'Culture of Safety' in their hospitals.
3. To educate participants on what Psychological Safety is and its benefits.
4. To allow participants to comprehend the factors that promote Psychological Safety.
5. To increase awareness among participants, who are the leaders of tomorrow, about the role that Leaders can play in promoting a 'Culture of Safety'.



### **Preparation, IEC and Pedagogy**



### **Guidelines for Conducting the Session**

#### **Starting the Session (5 minutes)**

The session can start with the trainer distributing a small case study on psychological safety to the participants.

#### **Case Scenario Discussion (40 minutes)**

Next, participants will be asked to read the one-page case scenario (Annex 6). Thereafter, they will be presented with five questions. Participants will share their views and inputs on each question. These can be noted on the white board or flip chart. Each question will be allocated approximately five minutes for discussion.



### **Sharing Technical Concepts (15 minutes)**

Using the case discussion, the trainer will explain the concepts and benefits of a 'Culture of Safety' and Psychological Safety. The discussion will help highlight the factors that influence a safety culture and the role that Doctors and Leaders can play in enhancing Psychological Safety. Any points that participants have missed out can be shared from the Trainers' Notes to complete the discussion.

### **Group Exercise (30 minutes)**

At the end, the participants can be shown on the projector the tool to assess the 'Culture of Safety' so that they understand its components and visualize how the safety culture can be assessed. Discussions can revolve around the tool.

### ***Expected Outcome***

By the end of the session, the Doctors will be able to appreciate why a 'Culture of Safety' and Psychological Safety are necessary conditions for Hospital Safety. They will also be equipped to assess the 'Culture of Safety' in their respective hospitals and understand how it can be enhanced.

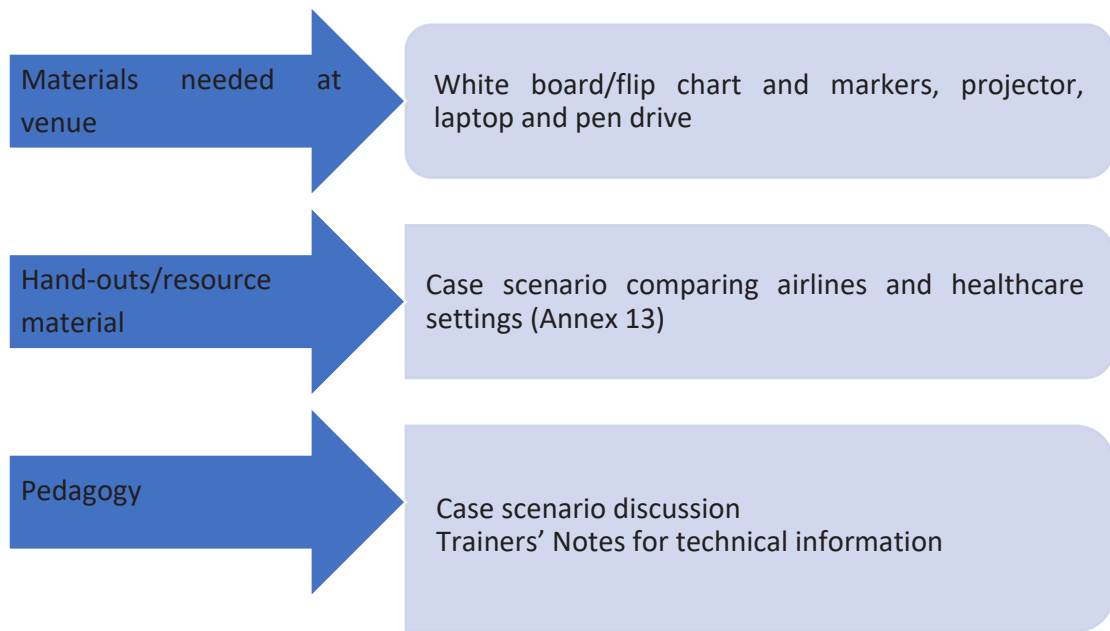
## **2.6.4 Session 4: 'Culture of Safety' and High Reliability Organizations (HRO)**

### ***Learning Objectives of the Session***

1. To enable participants to understand the concept and characteristics of an HRO.
2. To make participants realize what goes into making HROs that are high in cultural maturity.
3. To make participants aware of why hospitals need to work like HROs at all times.
4. To make participants, who are the Leaders of tomorrow, understand the role that Leaders play in creating a culturally mature HRO.



### **Preparation, IEC and Pedagogy**



### **Guidelines for Conducting the Session**

#### **Starting the Session (30 minutes)**

The trainer can start by introducing HROs and asking participants whether they are familiar with the concept. Thereafter, the Trainers' Notes can be used to explain the concept, characteristics and development of an HRO, along with other technical information.

#### **Comparing Airlines and Hospitals: A Case Discussion (50 minutes)**

Participants will be given a case sheet (Annex 13) that talks about airlines being HROs. Participants will be divided into two groups. Both groups will be asked to put on their thinking caps and list the similarities and differences between airlines and hospitals in the context of 'Culture of Safety' and reliability. One group will talk about similarities and the other differences. In doing so, they will be asked to reflect on three aspects – people, processes and systems. The idea is to make participants understand that a hospital is an HRO and, thus, should work like one at all times.

#### **Question and Answer Round (10 minutes)**

The discussion will be followed by a question-and-answer round, during which all the questions that participants have about the topic will be answered.

### **Expected Outcome**

By the end of the session, the participants will be able to understand that a hospital is an HRO and, thus, safety should be ingrained in its culture. If a hospital is suitably prepared, it will be able to withstand a disaster better.

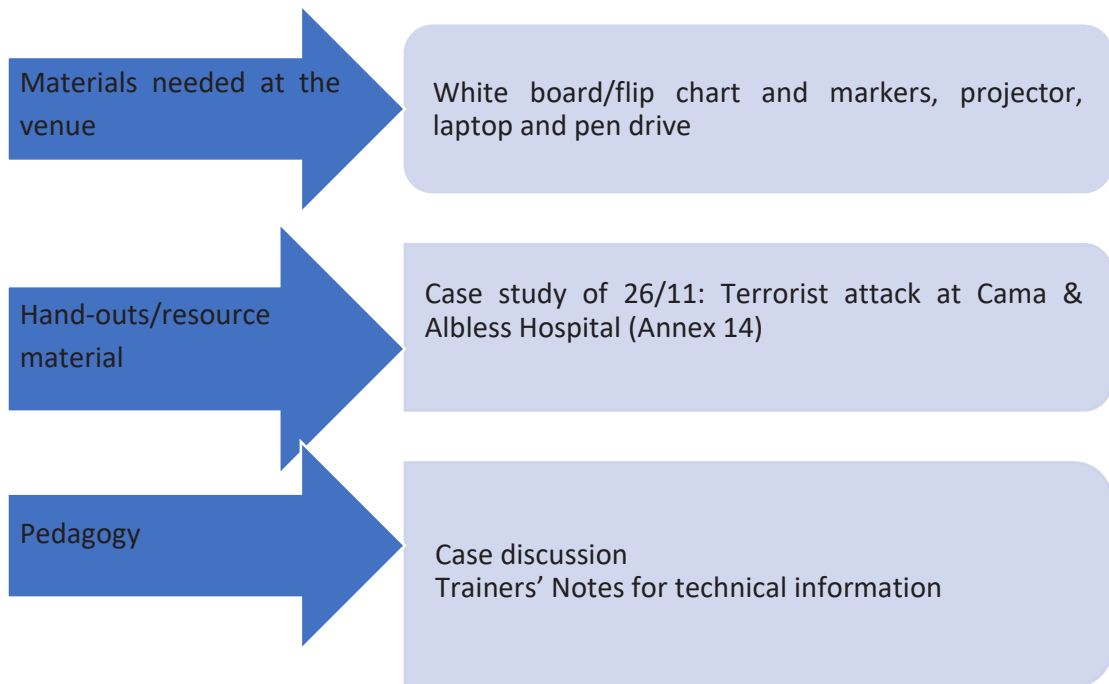
## 2.6.5 Session 5: Resilience

### Learning Objectives of the Session

1. To acquaint participants with the idea and importance of Hospital Resilience.
2. To encourage participants to reflect on how to develop staff and Hospital Resilience.
3. To teach participants how a hospital can be made resilient to disasters.



### Preparation, IEC and Pedagogy



### Guidelines for Conducting the Session

#### Starting the Session (10 minutes)

The trainer can start by asking two questions and noting the participants' responses on the white board or flipchart. The first question can be "What is your understanding of resilience?" Second question can be "How, in your opinion, can a hospital be made resilient to disasters?" It would be interesting to learn about the participants' perspectives. The answers can be discussed in consultation with the Trainers' Notes to see whether participants understood the concept.

#### Case Discussion (45 minutes)

Participants will be provided with a hand-out of a case study on the 26/11 terror strike on Cama & Alibless Hospital, Mumbai (Annex 14). Concepts related to resilience, of the staff and hospital, will be explained using the case study and Trainers' Notes.

## Question and Answer Round (5 minutes)

A short question and answer round at the end will help clarify participants' questions, if any.

### *Expected Outcome*

By the end of the session, the Doctors will be able to understand the concept of resilience and how the resilience of hospitals and staff can be developed, especially for dealing with disasters.

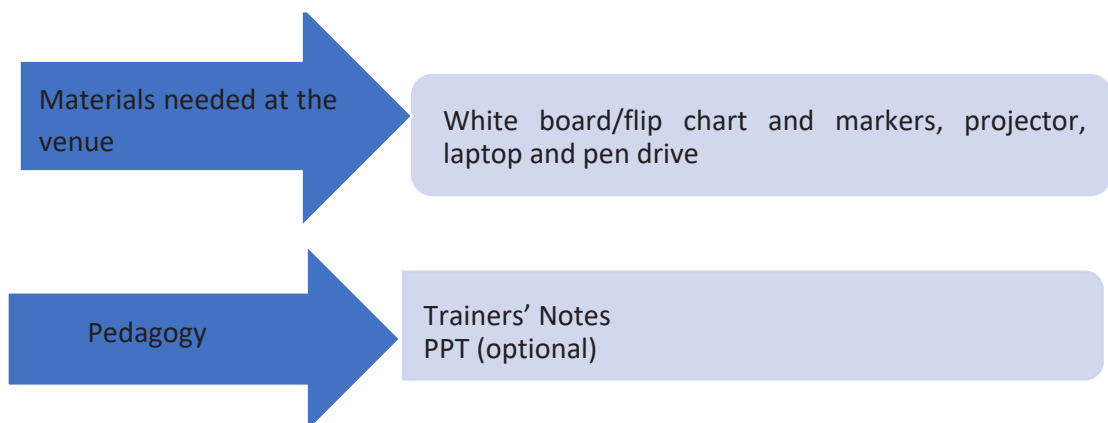
## 2.6.6 Session 6: The Role of Hospitals in the Provision of Mental Healthcare during Disasters

### *Learning Objectives of the Session*

1. To help participants understand the mental health consequences of a disaster.
2. To sensitize participants about the relevance of psychological and mental health aid for doctors and other hospital staffs.
3. To make participants aware of the principles of disaster mental health services.
4. To sensitize participants to the role of a hospital in mitigating mental health consequences.
5. To make participants appreciate the relevance of 'Psychological Triage' in identifying persons who need psychological first-aid versus those who require clinical help.



### *Preparation, IEC and Pedagogy*



### *Guidelines for Conducting the Session*

#### **Introducing the Exercise (10 minutes)**

The session can start with the trainer asking participants to suggest, based on their experiences, the role that hospital staff can play in helping patients overcome the common and severe mental health consequences of a disaster. They can also be encouraged to share about their own mental health requirements while dealing with

traumatic incidents. All responses can be recorded on the white board. The points suggested can prompt further discussion in the main session.

### **Main Session (25 minutes)**

The trainer can make use of the Trainers' Notes to explain to participants the consequences of disasters, the principles of disaster mental health services, the relevance of 'Psychological Triage' and the roles that Doctors and Nurses can play in mitigating the mental health consequences of a disaster. The points that participants mentioned during the first part of the session can also be discussed during this part of the session.

### **Question and Answer Round (10 minutes)**

The last 10 minutes can be spent addressing queries. Participants are free to share their related experiences, too.

### ***Expected Outcome***

By the end of the session, participants will be able to empathize with the mental health suffering of the victims of a disaster as well as recognize their own mental healthcare needs as care givers, while dealing with disasters. Participants will better understand what they, as Doctors, can do to alleviate the troubles of patients and how to help with their rehabilitation, while treating them. They can also learn about coping mechanisms for themselves through the discussions.

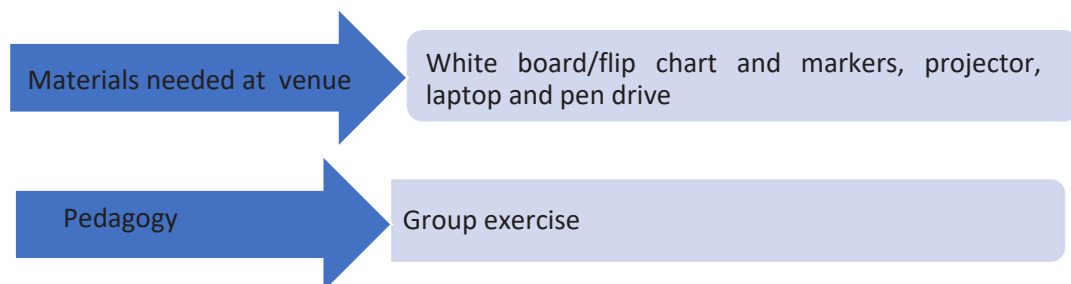
## **2.6.7 Session 7: Decision-making for Hospital Safety**

### ***Learning Objectives of the Session***

1. To help participants realize the importance of creative and divergent thinking during problem solving or while handling complex situations like disasters, considering the bigger picture and thinking from multiple perspectives is crucial.
2. To teach participants team-based problem-solving and brainstorming techniques that avoid conflict and coordination problems despite the presence of different viewpoints.



### ***Preparation, IEC and Pedagogy***



## **Guidelines for Conducting the Session**

### **Introducing the Exercise (10 minutes)**

The trainer will divide participants into small groups of six. Thereafter, the trainer will explain to participants the exercise given in the Trainers' Notes. Each group will be assigned a colored hat that represents the perspective they have to adopt. Next, a problem that requires decision making will be shared with all the groups.

The problem situation is shared in the box below:

*“With the advent of the internet and social media, localized incidents have found a way to go viral and thereby highlight larger issues with the systems. One such issue that has found prominence in the recent years is the violence that doctors and hospital staff are subjected to by the aggrieved relatives of patients. While most doctors are worried, a very small number is actually trained to deal with such situations. According to the Indian Medical Association, up to 75% of doctors have faced some kind of violence ranging from telephonic threats to physical assault and even murder.*

*In light of this, hospital management across the board are looking to increase security in order to provide a safe working environment for their staff.*

### **Group Discussion and Activity Time (20 minutes)**

Utilizing the Six Thinking Hats, the groups are required to discuss various mechanisms through which the security of hospitals and its staff can be improved without impeding the workflow of the hospital. The groups will be given 20 minutes to work out a solution, and to come up with ideas to solve the problem.

### **Presentation of the Solution (1 hour)**

Each group will be given approximately 10 minutes to explain their solution and to detail the role or input of every group member in the decision-making process. At the end, the trainer can summarize the session and consolidate the day's learning.

### **Expected Outcome**

By the end of the session, participants will be able to appreciate why it is important to think creatively to arrive at solutions to a problem after gathering the facts, taking into account their intuition, considering the larger picture and weighing the positive and negative outcomes. They will also be able to comprehend why this kind of decision-making is important in times of disaster.

## **2.7 Session Plan for Day 4: Systems for Facilitating Hospital Safety**

Table 4 details the timelines, main topics and sub-topics for the final day of the workshop, i.e., Day 4, based on the learning objectives for this stakeholder group.

**Table 4: Timelines, Main Topics and Sub-topics for Day 4 for Doctors**

Session	Time and Duration	Topic	Sub-topics/Agenda
1.	30 minutes (9.00 AM – 9.30 AM)	Recap of Day 3	Revision of the topics of Day 3 and introduction to the topics of Day 4
2.	1 hour, 30 minutes (09.30 AM – 11.00 AM)	Coordination with Multiple Agencies: the Hospital as an Embedded Entity	<ol style="list-style-type: none"> <li>1. Relevance of networking and partnerships for Disaster Management (DM)</li> <li>2. Response partners for DM</li> </ol>
<b>BREAK (11.00 AM – 11.15 AM)</b>			
3.	2 hours  (11.15 AM – 1.15 PM)	Communication Systems and Managing Public Relations	<ol style="list-style-type: none"> <li>1. Role of communication as a facilitator of DM</li> <li>2. Relevance of internal and external communication during disasters</li> <li>3. Importance and process of sharing information with internal and external stakeholders</li> </ol>
<b>LUNCH BREAK (1.15 PM – 2.00 PM)</b>			
4.	1 hour, 30 minutes  (2.00 PM – 3.30 PM)	Man-made Technical Disasters: Hospital Information Systems (HIS) and Cyber Security Disasters	<ol style="list-style-type: none"> <li>1. Distinguishing between information systems and information technology</li> <li>2. Benefits and types of HIS</li> <li>3. HIS as a source of cyber security disasters</li> <li>4. Preventing and responding to cyber security disasters</li> </ol>
5.	1 hour  (3.30 PM – 5.00 PM)	Compliance, Monitoring and Evaluation	<ol style="list-style-type: none"> <li>1. Importance of compliance with guidelines for Hospital Safety and the 'Clinical Establishments Act'.</li> <li>2. The role of monitoring and evaluating people, processes, systems and structures to strengthen compliance with Hospital Safety norms</li> <li>3. The role of Doctors in strengthening mechanisms to minimize human and systemic errors and to maximize Hospital Safety</li> </ol>
<b>BREAK (5.00 PM – 5.15 PM)</b>			
6.	1 hour (5.15 PM – 6.15 PM)	Summary and conclusions (Including post training feedback)	

## 2.8 Session-wise Guidelines for Day 4

### 2.8.1 Session 1: Recap of Day 3

This brief 30-minute session will be used to revise the topics of Day 3 and introduce the topics of Day 4. Discussions in this session will help participants link the concepts they have learned to workplace realities.

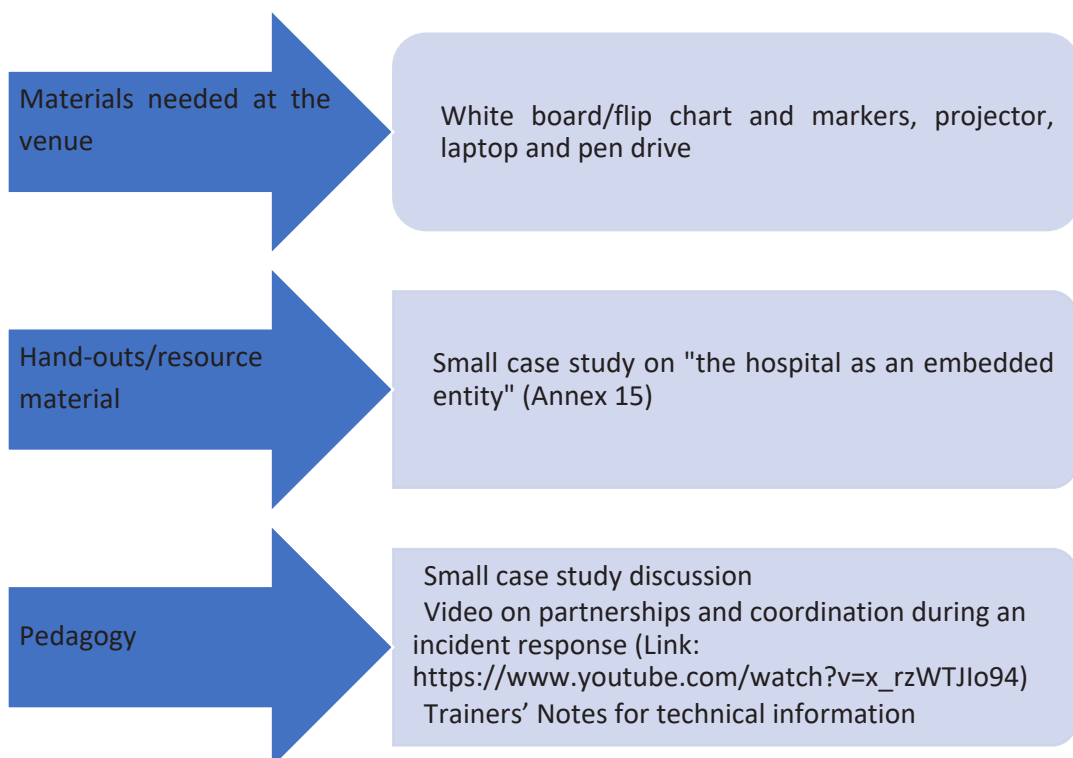
### 2.8.2 Session 2: Coordination with Multiple Agencies – The Hospital as an Embedded Entity

#### *Learning Objectives of the Session*

1. To sensitize participants to the fact that the hospital is part of a larger system and community, hence, networking and partnerships with other agencies and hospitals involved in DM are critical to the success of a hospital's incident response process.
2. To acquaint participants with all the potential response agencies with whom partnerships are essential for DM and to encourage them to build institutional links for the betterment of their hospitals.



#### *Preparation, IEC and Pedagogy*





## ***Guidelines for Conducting the Session***

### **Starting the Session (15 minutes)**

The session can start with the trainer showing a small video of an air crash related disaster that took place in Kozhikode, Kerala, in August 2020.<sup>3</sup> This video which is about 5 minutes long shows how the local community and response agencies worked seamlessly to save victims of the disaster.

### **Case Discussion (1 hour)**

Another one-page small case study that brings out the relevance of partnerships between hospitals will be shared with the participants (Annex 15). The written and video case studies will serve as topics for discussion. Through these, and with the help of the Trainers' Notes, the facilitator can highlight the fact that a hospital needs to work in close coordination with several response agencies, including other hospitals, in case of an external disaster. Also, in times of internal disaster, the hospital cannot work in isolation; it must have response partners whose assistance may be required during such incidents.

During a brainstorming session, the trainer can ask participants to suggest how their hospitals can build or strengthen institutional linkages with all the entities discussed.

### **Question and Answer Round (15 minutes)**

The main session will be followed by a question-and-answer round in which all the relevant queries of participants will be addressed.

## ***Expected Outcome***

By the end of the session, participants will be able to appreciate the need for networking and working in close coordination with various response partners in complex situations like disasters. They will also gain insight into who the various response partners should be and how they can strengthen their linkages/partnerships with them.

### **2.8.3 Session 3: Communication Systems and Managing Public Relations**

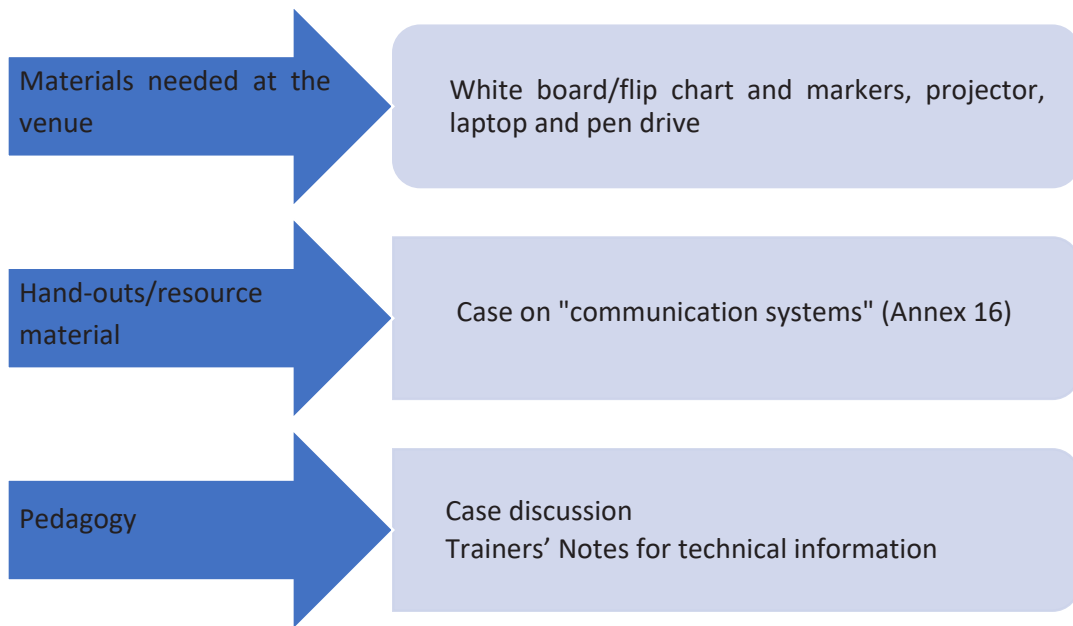
#### ***Learning Objectives of the Session***

1. To sensitize participants to the crucial role of communication as a facilitator of DM.
2. To acquaint participants with the significance of internal and external communications during DM and their role in facilitating the process.
3. To enable participants to understand their role in controlling how sensitive information about disasters or crisis is shared with multiple external stakeholders like the media (including social media), government agencies, very important persons, etc.



<sup>3</sup> Link for the YouTube video: [https://www.youtube.com/watch?v=x\\_rzWTJlo94](https://www.youtube.com/watch?v=x_rzWTJlo94).

### **Preparation, IEC and Pedagogy**



### **Guidelines for Conducting the Session**

#### **Starting the Session (20 minutes)**

Participants will be given 20 minutes to read and understand the case study provided as a hand-out.

#### **Case Discussion (1 hour)**

The case study will serve as the topic for discussion (Annex 16). With the help of the Trainers' Notes, the trainer can explain the process of communication, discuss the relevance of communication systems and mention the fact that a hospital needs to have good communication systems in place along with backup plans to safeguard against communication failures during an incident response. Doctors need to ensure that hospital officials in-charge of communication know how much sensitive information has to be communicated; to which audience, and in what manner.

The trainer can, through a brainstorming session, facilitate a discussion on the role that Doctors play in ensuring that the right messages reach the intended audience. Over the course of the discussion, they can also be sensitized to the measures they can take to ensure good communication and backup systems within their organizations. The Trainers' Notes will be used to impart this information.

#### **Question and Answer and Experience Sharing Round (10 minutes)**

About 10 minutes will be reserved at the end of the session to address the questions of participants.

### **Expected Outcome**

By the end of the session, participants will have a clear understanding of the process of communication, how it can be improved, the various communication systems that are essential to their hospital, how to create backup systems and how these systems can be used during disasters to facilitate response and recovery processes. They will also be able to understand the traits that their Public Information Officer (PIO)/Liaisons Officer should possess and how to train them to impart sensitive information to various external partners. This is especially important since some participants may take on the role of the PIO or be on the committee in charge of hiring the PIO.

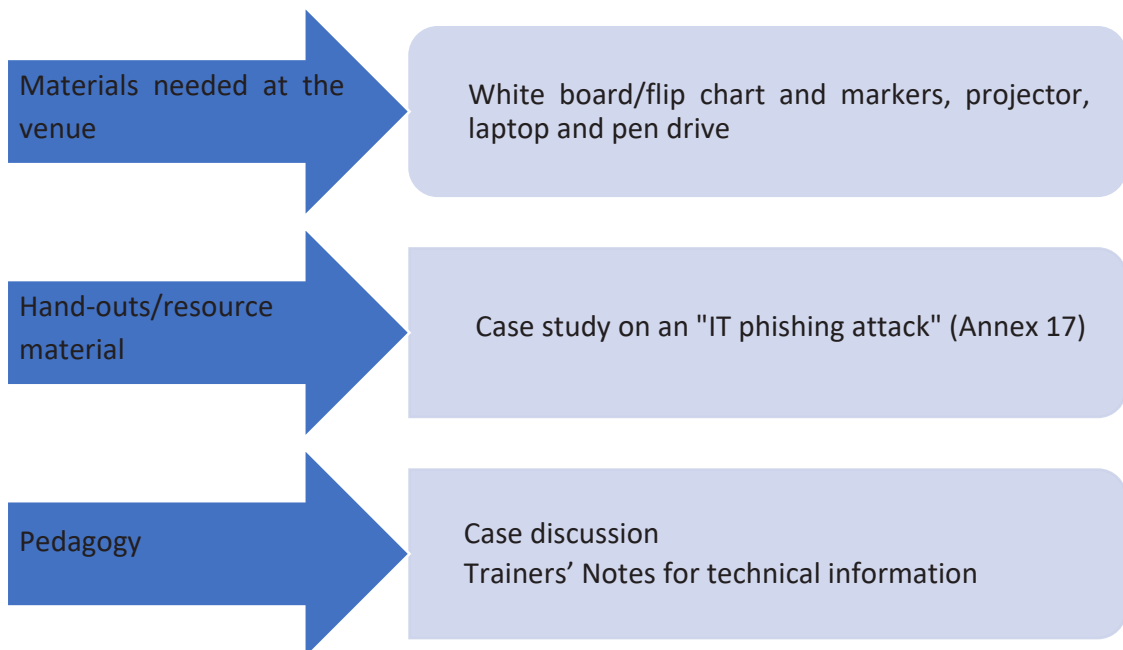
### **2.8.4 Session 4: Man-made Technical Disasters – Hospital Information Systems and Cyber Security Disasters**

#### **Learning Objectives of the Session**

1. To enable participants to clearly distinguish between information systems and information technology.
2. To acquaint participants with the benefits and different types of HIS that they can use in their hospitals.
3. To sensitize participants to how the HIS can be a source of Cyber Security Disaster.
4. To strengthen the capacity of participants to prevent or deal with cyber security disasters.



#### **Preparation, IEC and Pedagogy**



## ***Guidelines for Conducting the Session***

### **Starting the Session (20 minutes)**

The trainer will spend the initial 20 minutes of the session clarifying basic terminology – information technology, information systems, hospital information systems and their benefits as well the risk they entail in the form of cyberattacks.

### **Question and Answer Round (10 minutes)**

After the theoretical information is imparted, participants' questions will be addressed.

### **Case Discussion (1 hour)**

After all the queries are resolved, participants will be given 20 minutes to read and understand the case hand-out (Annex 17). About 40 minutes will be dedicated to case discussion. The discussion will shed light on the kinds of cyberattacks hospitals face and what measures Doctors can take to resolve such situations.

### ***Expected Outcome***

By the end of the session, participants will have a clear understanding of how a HIS can be a boon and a bane. Discussions will enable participants to understand the relevance of drafting policies related to cyber security and of either having a strong in-house IT team or outsourcing the work to ensure that cybercrimes do not occur in their hospital.

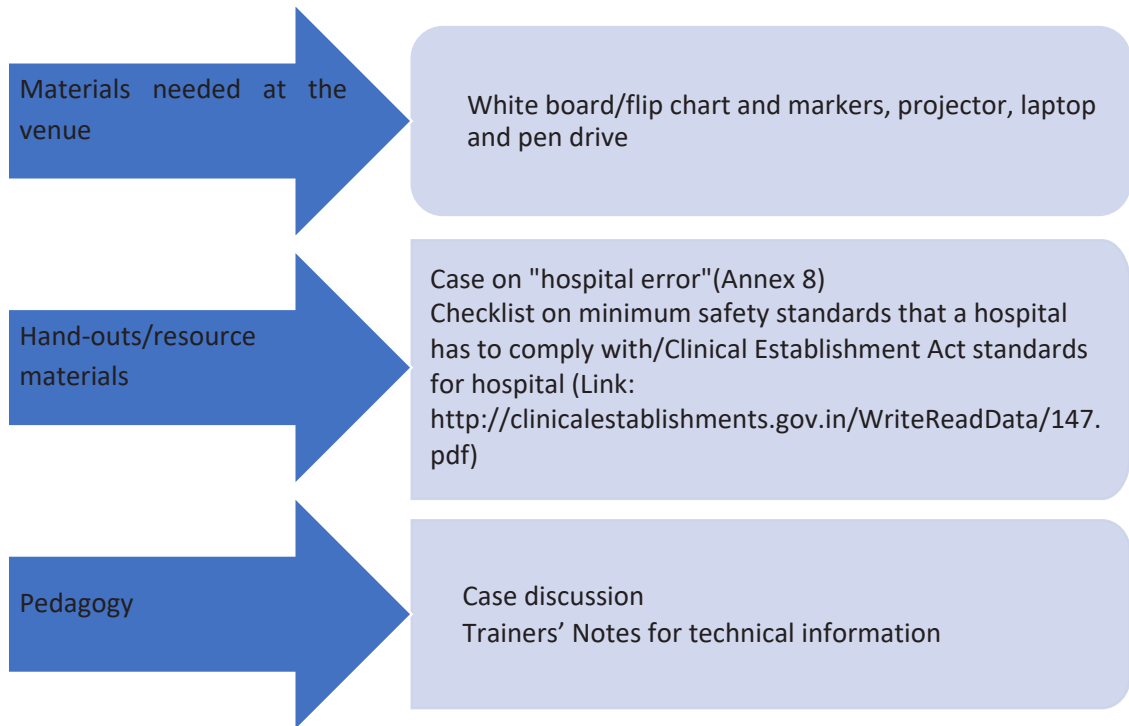
## **2.8.5 Session 5: Compliance, Monitoring and Evaluation**

### ***Learning Objectives of the Session***

1. To ingrain in participants the aspects of Hospital Safety that cannot be compromised and why compliance with the NDMA's Hospital Safety Guidelines and the Clinical Establishments Act is essential for a hospital's safety and reputation.
2. To sensitize participants to the need to regularly monitor and evaluate people, processes, systems and structures to strengthen compliance with Hospital Safety norms.
3. To make participants aware of the role they can play in their hospital in strengthening mechanisms to minimize human and systemic errors and maximize Hospital Safety.



### *Preparation, IEC and Pedagogy*



### *Guidelines for Conducting the Session*

#### **Starting the Session (20 minutes)**

The trainer will spend the first 20 minutes of the session going over the basic terminology related to Compliance, Monitoring and Evaluation. The guidelines for Hospital Safety and the Clinical Establishments (Registration and Regulation) Act, 2010, will also be discussed in conjunction with the Trainers' Notes.

#### **Question and Answer Round (10 minutes)**

Participants' questions will be addressed in this round.

#### **Case Discussion (1 hour)**

Participants will have 20 minutes to read and understand the case provided in the hand-out (Annex 8). About 40 minutes will be spent on case discussion. The discussion will shed light on the kinds of human errors that can take place in hospitals and how even a small error can lead to a potentially disastrous situation. Brainstorming will shed light on how such situations can be prevented and the role that Doctors can play in ensuring that such errors do not occur.

### *Expected Outcome*

By the end of the session, participants will be aware of the consequences of non-compliance with Hospital Safety norms. They will also understand what monitoring and evaluation systems/measures they can put in place to ensure the compliance of all staff, systems and processes to facilitate Hospital Safety.

### **2.8.6 Session 6: Summary and Conclusions**

This one-hour session can be divided into two parts discussed as follows:

#### ***Summarizing the Sessions***

The purpose of this session is to have a quick recap of all the sessions covered in the four-day workshop. The best way to check what participants have learned is to let individuals volunteer summaries of each session and share the key learnings they are taking away from the workshop and how they plan to apply it in their place of work. About 40 minutes can be spent on this activity.

#### ***Post-training Survey and Feedback***

In this concluding session, participants will be required to share post-training feedback. Participants can be given 20 minutes at the end of the session to fill up the Post-Training Survey and Feedback Form (Annex 1, Part B). Feedback from participants will help improve the content and pedagogy of subsequent workshops on Hospital Safety.

## Annex 1: Pre and Post Evaluation Training Tool

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### Part A

Pre-Training Evaluation

Your Name:

Your Hospital Name:

Your designation:

For the questions below, please tick on the option that you feel is correct:

1. A disaster occurs when:
  - a. A sudden and unexpected incident/hazard occurs
  - b. In case of Hazard + Vulnerability
  - c. In case of Hazard + Vulnerability/Capability
  - d. It can occur anytime
  
2. The hospital decontamination team performs monthly donning and doffing drills. These drills benefit the hospital decontamination team so they are able to reduce mistakes and readily respond in the case of an emergency. As part of Emergency Management, this is a part of which of the below phases?
  - a. Response
  - b. Preparedness
  - c. Mitigation
  - d. Recovery
  
3. What are the three phases of Disaster Management Planning?
  - a. Preparation, Response and recovery
  - b. Evacuation, Reconstruction and Re-branding
  - c. Preparation, Planning and Visualizing
  - d. Planning, Evacuation and Recovery
  
4. The likelihood of an undesirable event occurring within a particular period or under specified circumstances is known as:
  - a. Vulnerability
  - b. Risk
  - c. Hazard

5. Which of the following systems which facilitate hospital safety may also be a source of disaster?
  - a. Communication Systems
  - b. Information Systems
  - c. Monitoring systems
  - d. None of the above
  
6. Which of the following is not a component of Structural Safety in a Hospital building?
  - a. Foundation
  - b. Pillars
  - c. Ceiling
  - d. Walls
  
7. The Hospital Incident Command System is:
  - a. A Hospitals management structure
  - b. A Standardized approach to incident management
  - c. Viable solution to manage both planned events and unplanned incidents
  - d. A and C
  - e. B and C
  
8. A Hospitals Incident Response System should be active 24\*7.
  - a. True
  - b. False
  
9. Who should be in charge of organizing catering services during a hospital incident?
  - a. Planning Section Chief
  - b. Operations Section Chief
  - c. Logistics Section Chief
  - d. Finance and Administration Section Chief
  
10. Who is in charge of deciding what actions have to be taken and about the strategic resources required while handling disasters?
  - a. Planning Section Chief
  - b. Operations Section Chief
  - c. Logistics Section Chief
  - d. Finance and Administration Section Chief



11. A hospital staff feels psychologically safe while working when:
  - a. He/She is mentally relaxed with minimal stress
  - b. She/he does not suffer from work related fatigue and pressure
  - c. When she/he is able to share concerns about the hospital and its functioning with superiors
  - d. When she/he is able to discuss with peers about all the good and bad things of the hospital.
  
12. For a hospital to be safe from disasters, it should be so well prepared and equipped that it does not need to take the help of any other hospital to handle its patients
  - a. True
  - b. False
  
13. The National Disaster Management Authority (NDMA) is headed by:
  - a. President of India
  - b. Minister of Home Affairs
  - c. Prime Minister of India
  - d. Governor of Delhi

**OR**

13. The Disaster Management Act was made in
  - a. 2002
  - b. 2003
  - c. 2005
  - d. 2008
  
14. Every Hospital in India has got standardised guidelines on Hospital Safety that it has to strictly adhere to, failing which, its license can be revoked.
  - a. True
  - b. False
  
15. Resilience of Hospital Staff contributes to Hospital Safety
  - a. False
  - b. True

**Answer Key:**

1. C, 2. B, 3. A, 4. B, 5. B, 6. C, 7. E, 8. B, 9. C, 10. B,  
11. C 12. B, 13. C, 14. B, 15. B

## Part B

### Post-Training Evaluation and Feedback

Your Name:

Your Hospital Name:

Your designation:

For the questions below, please tick on the option that you feel is correct:

1. A disaster occurs when:
  - a. A sudden and unexpected incident/hazard occurs
  - e. In case of Hazard + Vulnerability
  - f. In case of Hazard + Vulnerability/Capability
  - g. It can occur anytime
  
2. The hospital decontamination team performs monthly donning and doffing drills. These drills benefit the hospital decontamination team so they are able to reduce mistakes and readily respond in the case of an emergency. As part of Emergency Management, this is a part of which of the below phases?
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  - b. Preparedness
  - c. Mitigation
  - d. Recovery
  
3. What are the three phases of Disaster Management Planning?
  - a. Preparation, Response and recovery
  - h. Evacuation, Reconstruction and Re-branding
  - i. Preparation, Planning and Visualizing
  - j. Planning, Evacuation and Recovery
  
4. The likelihood of an undesirable event occurring within a particular period or under specified circumstances is known as:
  - a. Vulnerability
  - k. Risk
  - l. Hazard

5. Which of the following systems which facilitate hospital safety may also be a source of disaster?
  - a. Communication Systems
  - m. Information Systems
  - n. Monitoring systems
  - o. None of the above
  
6. Which of the following is not a component of Structural Safety in a Hospital building?
  - a. Foundation
  - b. Pillars
  - c. Ceiling
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7. The Hospital Incident Command System is:
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11. A hospital staff feels psychologically safe while working when:
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  - d. When she/he is able to discuss with peers about all the good and bad things of the hospital.
  
12. For a hospital to be safe from disasters, it should be so well prepared and equipped that it does not need to take the help of any other hospital to handle its patients
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  - c. Prime Minister of India
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  - a. True
  - b. False
  
15. Resilience of Hospital Staff contributes to Hospital Safety
  - a. False
  - b. True

**Answer Key:**

1. C, 2. B, 3. A, 4. B, 5. B, 6. C, 7. E, 8. B, 9.C, 10. B, 11. C  
12. B, 13. C, 14. B, 15. B

## Post Workshop Feedback

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I. How would you rate the workshop on a scale of 1 to 5 where:

1 = Poor

2 = Below Average

3 = Satisfactory

4 = Very Good

5 = Excellent

		Poor	Below Average	Satisfactory	Very Good	Excellent
1	Content of Workshop	1	2	3	4	5
2	Facilitators	1	2	3	4	5
3	Knowledge of Facilitators	1	2	3	4	5
4	Pedagogy used/ communication	1	2	3	4	5
5	Duration of workshop	1	2	3	4	5

Thoughts and Comments

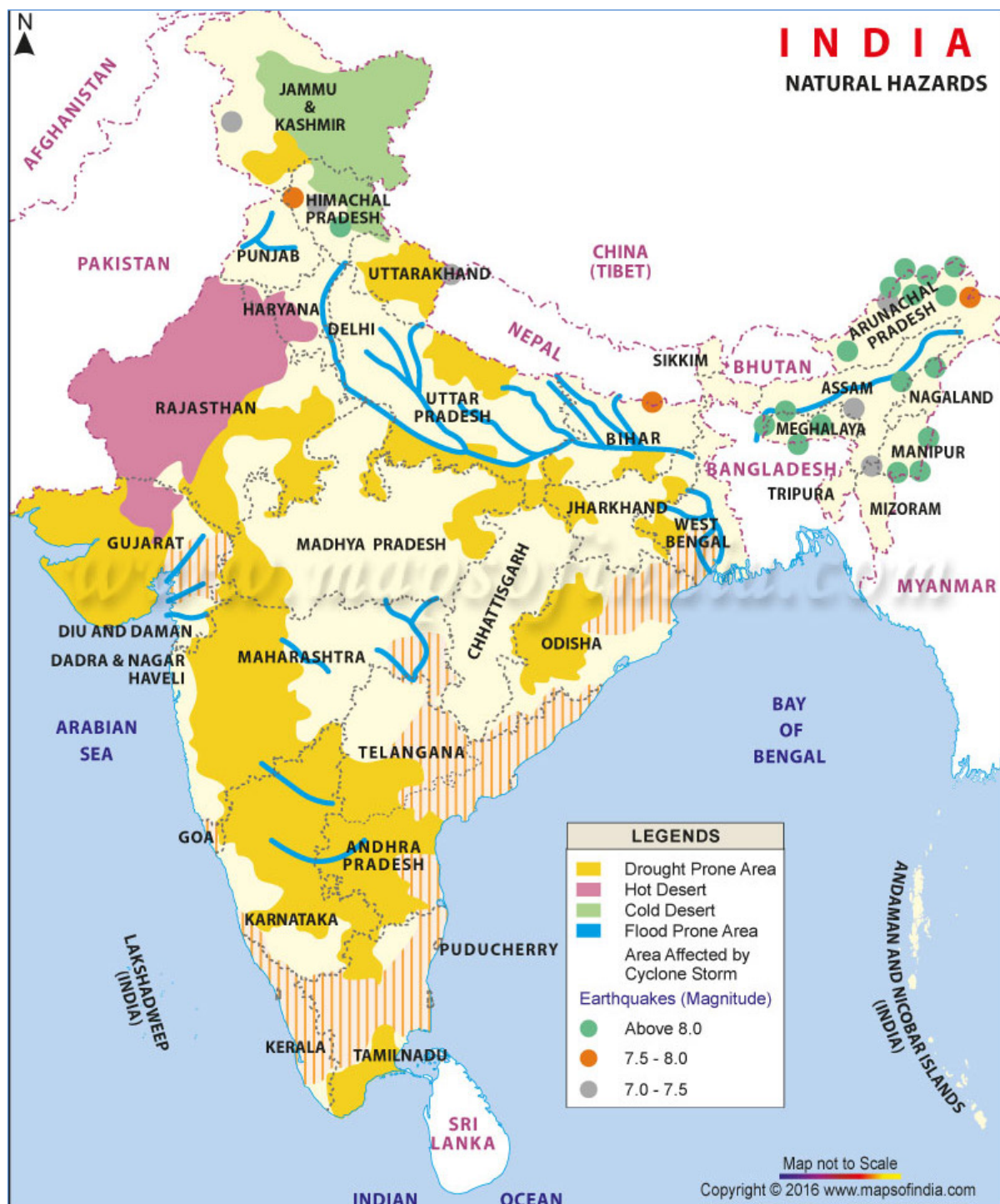
Positive experiences about the workshop:

Suggestions to improve the workshop:

Key Learning/Take Away:

*Thank you for your Feedback.*

## Annex 2: Natural Hazards Map of India



For a more detailed map on Natural Hazards and Disaster Risk Profiling, the Instructor may refer to the following link: [https://nidm.gov.in/easindia2014/err/pdf/country\\_profile/India.pdf](https://nidm.gov.in/easindia2014/err/pdf/country_profile/India.pdf)

## Annex 3: Exercise on Importance of a Good SOP

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### Learning Objectives

1. To ensure participants are aware of the necessity of a thorough SOP for Hospital Safety and disaster management.
2. To enlighten participants about the pitfalls or gaps that an SOP can have.
3. To encourage teamwork through proper delegation of tasks.
4. To underline the need for developing SOPs for Hospital Safety that are specific to their hospital and the disasters they are vulnerable to.

### Method

The participants can be divided in two teams of six. Remaining participants can act as adjudicators, observing the two teams and evaluating how they deal with the situation presented to them. The two teams, namely Team A and Team B, shall be handed out SOP A and SOP B respectively. Both teams should be given five minutes to familiarize themselves with SOP.

Team B should be excused from the room while Team A executes the task. On completion of the task, Team B should be called for their turn while Team A waits. At the end of the same, the adjudicators should present their evaluation which should broadly encompass what all went right and wrong with either team.

### Task

In the early hours of 23<sup>rd</sup> February, 2021, a fire broke out in the adjacent commercial complex of SN Hospital. The fire suddenly rages on and spreads to the canteen of the hospital which shares a boundary with the complex. At 5 AM, a staff who has just arrived for duty notices the fire and rushes to inform the doctor. Since the canteen was built later as an add-on building, the fire does not trigger the fire alarm and sprinkler system in the building.

### Trainer's Guide

- Some participants should be made patients who need evacuation. Their treatment status should be different i.e., ambulatory, mobile with wheelchair, tethered to ventilator, dialysis machine, etc.
- If there are two exits in the room, block exit 1 without informing the participants. SOP B will mention this.
- Two wheeled chairs can be used as wheelchairs. However, they should be placed at a location that has been mentioned only in Team B's SOP.
- Place a fire extinguisher outside the classroom. Only team B's SOP states the location.

- One student can act as the Fire Department and two as a hospital where patients can be shifted. Only team B's SOP states the need to have a Public Information Officer to coordinate with the agency.
- Light switches can be used to signify heavy machinery that needs to be turned off in case of emergencies.

#### **Fire Emergency SOP for Team A**

1. Ensure proper division of various responsibilities.
2. Make contact with the Fire Department and update them with the situation.
3. Identify exit points from the hospital.
4. Exit using the nearest fire exit door.
5. Use fire extinguishers.
6. Early discharge or transfer of patients to long-term care facilities, assisted living facilities or other hospitals may be considered by the doctors as conditions warrant.
7. Begin evacuation of the patients in an orderly fashion. Use wheelchairs where necessary.
8. Ensure ambulances are ready to take patients to other hospitals.
9. Switch off all important equipment that might cause further damage.

#### **Fire Emergency SOP for Team B**

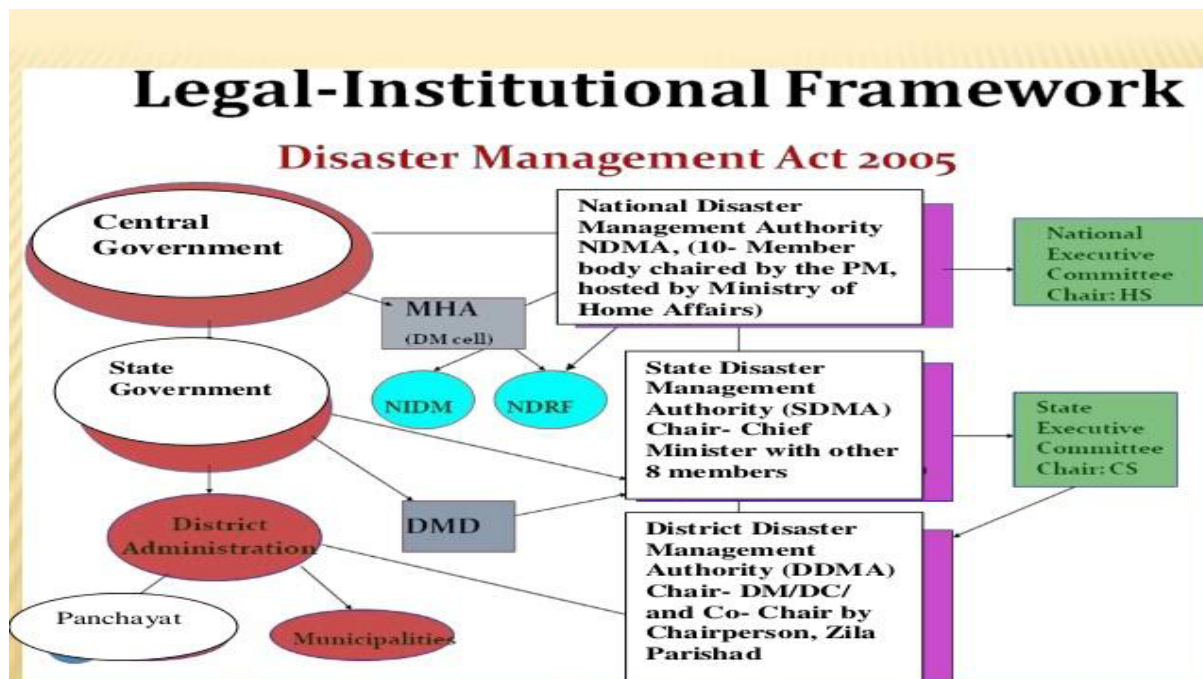
1. Assign the following roles
  - a. Incident Commander (IC) - To ensure proper commitment to the SOP
  - b. Public Information Officer (PIO) - To liaison with external agencies and parties
  - c. Safety Officer (SO) - To locate and employ safety tools and measures
  - d. Operations & Logistics Officer (OLO) - To identify personnel and patients and deploy a plan for evacuation.
2. PIO to make contact with the Fire Department (Input number of volunteer student) and provide an update on the situation.
3. SO to bring the Fire Extinguisher to the scene of the incident from (Input location).
4. SO to identify Exit 2 and inform the group that it is the designated Fire Exit.
5. OLO to identify patients and visitors and evacuate them in the following order -
  - a. **GREEN:** Those able to walk: Accompanied out in groups by nursing assistants, ward clerks, or other non-professional personnel. Infants will be carried by their parent.
  - b. **YELLOW:** Wheelchair-dependent patients: Accompanied out by nursing assistants, or ancillary services personnel (x-ray, lab, RT, PT, OR, etc) Use wheelchairs located at (Input location).



- c. **RED:** Bed bound patients: Accompanied out by nursing assistants or ancillary service personnel. Use beds, gurneys, or backboards. Any patient requiring close monitoring (ICU, Labor, Postoperative, ER) will be accompanied by licensed personnel.
6. PIO to make contact with other hospitals, (Input number of volunteer students) and make enquiries about availability of beds in order to shift patients. Forward the information to the IC.
  7. IC to identify a location outside the hospital as a temporary shelter area. Share location with the rest of the team. OLO to ensure all evacuees arrive at the location.
  8. IC to make a list of all patients and identify the patients that need to be shifted to other hospitals in coordination with the OLO.
  9. SO to ensure all electronic equipment in the hospital building have been switched off at (Input switch location).

## Annex 4: Institutional Framework for Disaster Management in India

(Mandated by the Disaster Management Act, 2005)



**Source:** Ahmad, Muzzafar. (2013). Disaster Management Initiatives: Policy Perspective and Effective Response Mechanism in India. Presentation made by member of NDMA at the 28<sup>th</sup> ALNAP meeting, Washington D.C, 4<sup>th</sup> March. Accessed on 03 October 2020 from <https://www.slideshare.net/ALNAP/disaster-management-initiatives-in-india>

## Annex 5: Poorly Drafted Standard Operating Procedures on Disaster Management

XYZ Hospital

**State ABC, INDIA**

(Established by an act of \_\_\_\_\_, Estd: 1925)

### POLICIES & STANDARD OPERATING PROCEDURES ON DISASTER MANAGEMENT

#### **AIM**

1. To provide the Disaster Management Plan for XYZ hospital.
2. To develop a holistic strategy in coordination with other regional & National agencies with focus on prevention, preparedness & risk mitigation, in order to reduce the impact of disasters both within the hospital and in the region.

#### **POLICY:**

##### **A. Committee**

A XYZ Hospital Disaster Management Committee (SDMC) will be constituted under the Chairmanship of Director- XYZ Hospital with a broad membership of all stakeholders. This Committee composition may be modified from time to time.

##### **XYZ Hospital Disaster Management Committee**

S.No	Name & Designation	Department	Contact No.

##### **B. Objectives of the Committee:**

1. To take adequate measures and adopt necessary best practices to ensure that the hospital is prepared to manage any natural as well as manmade disaster.
2. To update the Disaster Management Policy periodically

##### **C. Broad Policy Outline.**

This document will outline protocols to be followed for further development of department/ area specific SOP's training programmes. Mock drills are to be implemented after the initial round of education & training. This activity should be done once in every quarter.

### III. DISASTER DESCRIPTION

- Definition of Disaster and Types of Disasters:
- Disaster Classification
- Disaster Management Cycle.

#### **Disaster Risk Reduction within the hospital**

**Biological:** Hospital will be safeguarded against any outbreaks of communicable diseases

#### **Ownership –**

**Accidents:** Buildings and surroundings should be inspected monthly with documentation of soundness regarding civil, Mechanical & Electrical components to prevent fire, collapse, water logging, drainage disruption etc.

Ownership-

**Technological:** Areas prone for hazards relating to radiation, chemical spills and sewage shall be monitored and proper educational processes or radiation hazard and chemical spill instituted.

#### **Ownership –**

#### **Disaster Risk Information Improvement and creating safety culture:**

Improvement in structural & non-structural elements will be undertaken to increase safety. Physical infrastructure (drainage channels etc) will be reviewed and rectified as required. Increased efforts will be made towards knowledge development /dissemination, awareness campaigns, and curriculum development.

#### **Ownership –**

#### **Integrated Planning with regional and national disaster management agencies:**

Meetings, at least once in 6 months, should be held with state / national agencies, so as to ensure smooth operation in case of disaster.

Ownership –

#### **FUNDAMENTAL PRINCIPLES OF DISASTER MANAGEMENT:**

Do the greatest good to the largest possible number of affected people within the optimal time frame using the maximal resources deployable. For this, all the staff of the hospital should be aware of the hospital disaster management plan.

#### **Disaster Rapid Response Teams:**

When Emergency operations are required, the central command will activate Disaster (Disaster Action). The Disaster Rapid Response Teams shall comprise the following area-specific sub-teams.

**A. Main hospital**

S.No	Name	Department	Contact No.

**B. Casualty/EMS**

S.No	Name	Department	Contact No.

**C. RICU**

S.No	Name	Department	Contact No.

**D. Medical ward adjacent to Casualty**

S.No	Name	Designation	Mobile No.

**E. Communications Team-Administration Building and Lobby:**

S.No	Name	Designation	Mobile No.

**F. Security Team-Administration Building and Lobby:**

S.No	Name	Designation	Mobile No.

**G. Transport/Vehicles Team-Transport Room:**

S.No	Name	Designation	Mobile No.

**H. Fire Safety Team:**

S.No	Name	Designation	Mobile No.

**Disaster Management Steps:** When any Disaster Action is enforced, an emergency control room should be activated. All Disaster Rapid Response teams should position themselves in the designated areas. The workforce designated to the respective areas should be called in by the Rapid Response teams.

#### **Responsibility of Control Room Medical officer**

1. He is the Head of the Disaster Management team and should act effectively during crisis. He will be assisted by a General Administration Officer, Medical Administration Officer and other voluntary members.

#### **Responsibility of General Administration Officer**

1. He will work under the instruction of Control Room Medical officer.
2. He should have drawn advance cash from Account office.
3. He should decentralize the vehicles at the required place
4. He should control the sanitation and security related work

#### **Responsibility of the Medical Officer**

1. He will work under the instruction of the Hospital Command Centre /Control Room Medical Officer and take care of the entire hospital.
2. He should organize additional medical staff for emergencies.

#### **Responsibility of General Section**

The vehicles under the control of the General Manager should be made available with drivers

#### **Responsibility of Estate Manager**

The Estate Manager with his team should be present at the Hospital Command Centre/ Control Room, to assist the General Manager.

#### **Voluntary members from Staff & Students**

This is very important manpower in crisis management.

## Annex 6: Case Scenario on Psychological Safety

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**Learning Objectives:** At the end of this activity, you will be able to:

- Understand how poor leadership and low psychological safety can lead to low staff morale in hospital/healthcare setting.
- Realize how low psychological safety can lead to hospital and patient harm.
- Illustrate why it can be difficult to speak up when someone in a position of power displays unsafe behavior.

**Description:** The behavior of a senior doctors starts to put your hospital safety at risk. How will you react?

I was a nurse in a 50-bedded hospital in the state of West Bengal. I had been working there for the last 5 years. Our previous nurse-in-charge (nursing supervisor) was very approachable, and all the nurses and other frontline workers had a good bond with the team. The new nurse-in-charge, who joined 6 months ago, was a contrast. She was very strict and unfriendly with her juniors. She was good at pointing out faults of juniors and the system and made us feel small and worthless and did nothing to share or understand our problems, both-personal and work related. However, she maintained good relations with the doctors and Department head. One day, when I was on duty in the Operation Theatre, I went to open a cupboard to take out a medical equipment and suddenly I noticed a strong odor of formalin. How did it get there? I quickly closed the door and opened it once more to recheck. The same smell again! I also felt a burning sensation in my eye and felt difficulty in breathing. I gathered some courage to go to the nurse-in-charge and inform her about the incident and ask her to take the required action for the spill containment and cleaning-up by a specially trained team. As usual, she looked at me angrily and asked if I wanted to teach her about her responsibilities? Then she just walked off from there asking me to prepare for the operation that was due to take place in 15 minutes. I was left thinking about what to do.

**Discussion Questions:**

1. If you were in the nurse's place, what would you do? Is there anyone you would go to, to report about your superior for providing unsafe care? Who would that be?
2. How does your senior's behavior impact your ability to feel safe when reporting an unsafe act?
3. As a nurse, would you report about a doctor's unsafe behavior or practices? Vice versa?
4. Can you think of any situation when you stayed quiet or would stay quiet, when you saw a superior providing unsafe care?
5. Have you had any personal experiences with bad leadership that you'd like to share?

## Annex 7: Case Studies on Hospital Fires

### **LACK OF FIRE SAFETY MEASURES IS A TREND THAT CONTINUES UNABATED IN HOSPITALS**

The month of August 2020 has witnessed 2 fires in Covid-19 designated hospitals of India. The recent incidents took place in Vijayawada and Ahmedabad and point to the lack of fire safety measures. While rules for fire safety are very well laid down by the Bureau of Indian Standards, are hospital stakeholders even aware of the rules? How are these rules flouted, and how will this trend be curtailed? These are some questions that need reflection as well as action. A brief about the 2 cases is discussed below:

#### **THE CASE OF SHREY HOSPITAL AHMEDABAD**

India woke up to the death of 8 patients of Covid-19 who were admitted in the ICU ward of Shrey Hospital, Ahmedabad early on Thursday, 6<sup>th</sup> of August 2020. The cause of death was suffocation caused by fire in the ICU ward which was on the 4<sup>th</sup> floor of the building. There were 49 patients in the 50-bed Shrey Hospital at the time, eight of them in the ICU. Shrey Hospital is a 22-year-old hospital. It was designated a coronavirus facility on May 16, 2020.<sup>1</sup>

The hospital had no fire clearance, Ahmedabad Fire and Emergency Services Chief Fire Officer M F Dastur said. This is despite the fact that hospitals are required to renew their fire no objection certificates (NOC) every year<sup>2</sup>. Interestingly, Shrey Hospital was largely permitted for residential use before it started operations as a health facility in 1999 and illegal constructions were also made which were regulated only in 2016.<sup>3</sup> The fire, reported around 3.30 am on Thursday, is suspected to have started due to a short-circuit in the ICU, spreading from there to the third floor. The eight patients thus died of suffocation before the firemen could make it to the fourth floor, that was the topmost.

An FIR against the owner and some unknown persons was registered on the 10<sup>th</sup> of August for causing negligence which caused the fatalities. The owner/trustee and the administrator were then arrested on 12<sup>th</sup> of August, almost a week after the mishap.<sup>4</sup> The DCP zone 1- shared “We have found that the hospital was being run without fire NOC, no proper arrangements were done to deal with the fire and their staff was not trained to deal with the fire tragedy.”<sup>5</sup>

#### **THE CASE OF RAMESH HOSPITAL, VIJAYAWADA.**

At least 10 Covid patients were asphyxiated when a makeshift Covid- 19 hospital in Vijayawada caught fire on Sunday, 9<sup>th</sup> of August; merely 3 days after the Ahmedabad Covid-19 hospital fire tragedy. More than 20 other patients and 6 medical personnel

1 [indianexpress.com/article/cities/ahmedabad/gujarat-ahmedabad-shrey-hospital-fire-vijay-rupani-6541676/](https://indianexpress.com/article/cities/ahmedabad/gujarat-ahmedabad-shrey-hospital-fire-vijay-rupani-6541676/)

2 [indianexpress.com/article/cities/ahmedabad/gujarat-ahmedabad-shrey-hospital-fire-vijay-rupani-6541676/](https://indianexpress.com/article/cities/ahmedabad/gujarat-ahmedabad-shrey-hospital-fire-vijay-rupani-6541676/)

3 <https://indianexpress.com/article/cities/ahmedabad/shrey-hospitals-illegal-constructions-were-regulated-in-2016-6546405/>

4 <https://indianexpress.com/article/india/week-after-8-covid-patients-died-in-gujarat-hospital-fire-administrator-held-6552314/>

5 <https://timesofindia.indiatimes.com/city/ahmedabad/shrey-hospital-fire-tragedy-fir-against-bharat-mahant/articleshow/77479836.cms>



were present in the hotel-turned Covid-care facility and around 18 have sustained injuries.<sup>6</sup> A short circuit in the building's air-conditioning unit flared into a blaze and caused this mishap. Ramesh Hospital, which had rented the Swarna Palace hotel as a make shift facility, has been blamed for failing to check if the temporary facility adhered to fire safety norms. Apparently, safety concerns were given a miss apparently in the scramble for standby arrangements, after Andhra Pradesh's COVID caseload began to increase.<sup>7</sup> While investigating the accident, the incident commander and Tahsildar of Vijayawada Central unearthed some major lapses from the hospital management's end. He quoted, 'It appears that Hotel Swarna Palace and Ramesh Hospitals had knowledge of that there were electrical defects in the lodge, and as rectification of defects involved huge amounts, avoided the repairs.'<sup>8</sup>

Three officials of Ramesh Hospital including the COO have been arrested in connection with Vijayawada fire accident.<sup>9</sup> The owner of both, the hospital and hotel, are missing since the news of the fire at Swarna Palace broke.<sup>10</sup>

The Indian Medical Association Andhra Pradesh chapter has written to Director General of Police (DGP) requesting him not to incriminate and initiate action against the service providers (Ramesh Hospitals) and its employees at a time when doctors are offering their services amid a crisis. The IMA pointed out that the Health Department had given permission to run the Covid Care Centre!<sup>11</sup>

### **Where lies the problem and who is accountable?**

India accounts for nearly a fifth of the serious fire accidents in the world according to the Global Disease Burden Study 2017.<sup>12</sup>

The National Building Code of India published by the Bureau of Indian Standards (BIS) is the recommended document for all buildings across the country. The chapter on 'Fire and Life Safety' is instrumental in the way the exits and staircases are laid out and electrical circuits and water tanks are mapped in order to minimise fire related accidents. Further, every building has to get a fire safety audit done every year, where a fire officer comes to check on all the parameters and codes. Despite all these guidelines, the implementation mechanisms are weak.

While the responsibility for maintenance and upkeep of the building rests with the management, the contractors should also be held accountable for maintenance.

6 <https://www.newindianexpress.com/states/andhra-pradesh/2020/aug/12/eight-special-teams-hunt-for-md-of-ramesh-hospitals-in-connection-with-fire-that-killed-10-covid-19-patients-2182346.html>

7 <https://indianexpress.com/article/opinion/editorials/vijayawada-fire-covid-care-center-and-pandemic-ramesh-hospital-6549274/>

8 <https://www.timesnownews.com/india/article/andhra-pradesh-three-arrested-in-connection-with-vijayawada-fire-accident-which-claimed-10-lives/634961>

9 <https://indianexpress.com/article/opinion/editorials/vijayawada-fire-covid-care-center-and-pandemic-ramesh-hospital-6549274/>

10 <https://www.newindianexpress.com/states/andhra-pradesh/2020/aug/12/eight-special-teams-hunt-for-md-of-ramesh-hospitals-in-connection-with-fire-that-killed-10-covid-19-patients-2182346.html>

11 [newindianexpress.com/states/andhra-pradesh/2020/aug/12/eight-special-teams-hunt-for-md-of-ramesh-hospitals-in-connection-with-fire-that-killed-10-covid-19-patients-2182346.html](https://www.newindianexpress.com/states/andhra-pradesh/2020/aug/12/eight-special-teams-hunt-for-md-of-ramesh-hospitals-in-connection-with-fire-that-killed-10-covid-19-patients-2182346.html)

12 <https://indianexpress.com/article/opinion/editorials/vijayawada-fire-covid-care-center-and-pandemic-ramesh-hospital-6549274/>

Municipal bodies that give the final clearance should be held accountable for giving the NOC for any building. The architect/builder must also be questioned on the safety and validity of the building plan.<sup>13</sup>

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13 <https://indianexpress.com/article/explained/vijayawada-ahmedabad-covid-19-hospital-fires-rules-6550865/>

## Annex 8: Case Study on Hospital Error

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### **Learning Objectives:**

At the end of this activity, you will be able to:

1. Understand the concept of compliance, monitoring and evaluation along with their operational context.
2. Identify which activity should be planned at what stage.
3. Realize the importance of these processes in ensuring a smooth work-flow process during and after the disaster.

### **Disaster Preparedness of Ambulatory Facilities at KNP Hospital, Madurai**

The KMC Hospital is intertwined with the history of Madurai having existed since 1875. It started off as the offshoot of the KNP Medical college and steadily grew to an independently-governed 1500 beds hospital. The Hospital and the Medical College coexist in a symbiotic relationship pushing each other to grow and flourish.

The CEO of KMC Hospital, R. Srinivas is a thorough man who understands the importance of Disaster Management and its consequences. The Disaster Management Committee, established on his insistence, actively organises mock drills, which are thoroughly observed and analysed. This leads to identifying faults in the SOPs and points of weaknesses that can cause the loss of life during disasters.

In one such drill some gaps became apparent. The drill was emulating a fire scenario in a building five kilometers from the hospital. As per the plan chalked out by the DM Committee, everyone got to work. The ambulances rushed to the site of the disaster. At the site, they were supposed to work in tandem with the fire department and tend to all the rescued people. Observe and report the level of severity of the injury and either administer first aid or rush them to the hospital in a serious case.

The drill started revealing gaps from the get-go. The staffers of the ambulances, realize that the wheelchairs in the ambulances were missing. The wheelchairs used for ferrying earlier patients were never returned and therefore lay scattered across the hospital campus. They scrambled to secure them but that took time. Time that could have saved lives.

The delay caused by wheelchairs was only made worse by another gap. On arrival, several patients who would have been subjected to thick carbon monoxide fumes would need to be administered oxygen to breathe. However, the oxygen cylinders in the ambulances were empty. The hospital had not allocated the responsibility of replenishing oxygen cylinders or even keeping a check on them to any employee. In a real disaster this could be detrimental to saving lives.

The final nail in the coffin came in the form of expired Adrenaline. Adrenaline can be a very useful drug as a last resort to save lives. It helps breathing, stimulates the heart

and can even raise a plummeting blood pressure. The ambulances had Adrenaline shots that were past their expiry date rendering them useless. The staffers had been ensuring that the ambulances are stocked but hadn't been keeping the expiry dates of the drugs in check.

This drill highlighted multiple facets of errors that could be the question of life and death in such rescue operations. The management of the hospital was now in a place to take informed decisions on how to fill the gaps in their operations.

**Discussion Questions:**

Assume that you have been appointed as a member of the disaster management committee by the head of your hospital. Now, try to figure out the responses to the questions elucidated below.

1. What do you think was the reason behind the fiasco during the mock drill?
2. Could this fiasco be avoided, given that the team had to rush to an unknown location which is on fire and the team is not well acquainted with the place?
3. Which among the three processes of compliance, monitoring and evaluation would have been helpful and in which part?
4. For each of the three processes mention whether it should have been carried out by the internal staff of the hospital or external or a mix of both?
5. What are the challenges that you would face while carrying out each of these processes and how you will overcome it?

## Annex 9: Handout of List of Mandatory Permits, Certificates, Approvals and Acts for Hospitals

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Hospitals are required to acquire the following necessary permits, certificates and approvals (NDMA, 2016):

1. Building Permit (From the Municipality)
2. No Objection Certificate from the Chief Fire officer
3. No Objection Certificate under Pollution Control Act
4. Radiation Protection Certificate in respect of all X-ray, Cath lab, CT Scanners, Nuclear Medicine from BARC
5. Atomic Energy Regulatory Body approvals
6. Excise Permit to store spirits.
7. PAN number and other Tax documents
8. Permit to operate lifts under the Lifts and Escalators Act
9. Licenses under the Narcotics and Psychotropic Substances Act and License
10. Sales Tax Registration Certificate
11. Vehicle Registration Certificates for Ambulances
12. Retail and Bulk Drug License (Pharmacy)
13. Wireless Operation Certificate from Indian Post and Telegraphs (if applicable)

Hospitals are also required to comply with the provisions laid down under the following Acts, Rules and regulations:

1. Air (Prevention and Control of Pollution) Act, 1981
2. Arms Act, 1950 (if guards have weapons)
3. Bio- Medical Management and Handling Rules, 1998
4. Cable Television Networks Act 1995
5. Central Sales Tax Act, 1956
6. Constitution of Atomic Energy Regulatory Board, 1983
7. Consumer Protection Act, 1986
8. Contract Act, 1982
9. Copyright Act, 1982
10. Customs Act, 1962
11. Dentist Regulations, 1976
12. Drugs and Cosmetics Act, 1940

13. Electricity Act, 1998
14. Electricity Rules, 1956
15. Employees Provident Fund Act, 1952
16. ESI Act, 1948
17. Employment Exchange Act, 1969
18. Environment Protection Act, 1986
19. Equal Remuneration Act, 1976
20. Explosives Act 1884
21. Fatal Accidents Act 1855
22. Gift Tax Act, 1958
23. Hire Purchase Act, 1972
24. Income Tax Act, 1961
25. Indian Lunacy Act, 1912
26. Indian Medical Council Act and Code of Medical Ethics, 1956
27. Indian Nursing council Act, 1947
28. Indian Penal Code, 1860
29. Indian Trade Unions Act, 1926
30. Industrial Disputes Act, 1947
31. Insecticides Act, 1968
32. Lepers Act
33. Lifts and Escalators Act
34. Maternity Benefit Act, 1961
35. MTP Act, 1971
36. Mental Health Act, 1987
37. Minimum Wages Act, 1948
38. Narcotics and Psychotropic Substances Act
39. National Building Code
40. National Holidays Under Shops Act
41. Negotiable Instruments Act, 1881
42. Payment of Bonus Act, 1965
43. Payment of Gratuity Act, 1972
44. Payment of Wages Act, 1936

45. Persons with Disability Act, 1995
46. Pharmacy Act, 1948
47. PNDT Act, 1996
48. Prevention of Food Adulteration Act, 1954
49. Protection of Human Rights Act, 1993
50. PPF Act, 1968
51. Radiation Protection Rules, 1971
52. Radiation Surveillance Procedures for Medical Applications of Radiation, 1989
53. Registration of Births and Deaths Act, 1969
54. Sale of Goods Act, 1930
55. The Transplantation of Human Organs Act and Rules
56. Tax deducted at Source Act.
57. Safe Disposal of Radioactive Waste Rules, 1987
58. Sales Tax Act.
59. The Water (Prevention and Control of Pollution) Act, 1974

## Annex 10: Exercise on Importance of Mock Drills

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### Learning Objectives

1. To ensure participants are aware of the necessity of mock drills for Hospital Safety and Disaster Management.
2. To enlighten participants about how unforeseen challenges can be on-ground while practicing.
3. To underline the need for doing regular mock drills to make sure all the staff and employees are aware and habitual of their roles and responsibilities in case of any circumstances they might be vulnerable to.

### Method

The participants can be divided in two teams of six. Remaining participants can act as adjudicators, observing the two teams and evaluating how they deal with the situation presented to them. The two teams, namely Team A and Team B, shall be handed out the same SOP. Both teams should be given five minutes to familiarize themselves with SOP.

Team B will be excused from the room while Team A executes the task. On completion of the task, Team B should be called for their turn. Lastly Team A will execute the same task again while Team B watches, The idea behind this is that through practice and observation, team A should be able to perform better the second time and execute the evacuation more efficiently. During de-briefing session, the class can discuss the difference of performance of both teams.

### Task

In the late evening of 6<sup>th</sup> March, 2021, a toxic gas, chlorine, leaked in the maintenance room on the terrace of JP Hospital. A super specialty cardiac hospital, it is a 5 storey building that housed over fifty patients on that day. Exposure to these toxic fumes causes respiratory ailments and immediate treatment is required. The staff on duty realized the smell is something out of the ordinary as patients begin to complain of breathing issues. The gas quickly pervades through the area and makes its way across the building through the central air conditioning unit. A Senior Medical Officer is alerted.

### Trainer's Guide

- Some participants should be made patients who need evacuation. Their treatment status should be different i.e., ambulatory, mobile with wheelchair, tethered to ventilator, dialysis machine, etc.
- If there are two exits in the room, block Exit 1 without informing the participants. Inform them when they try to use it during the exercise.
- Two wheeled chairs can be used as wheelchairs. One of them is not operable. Inform them when they try to use it during the exercise.



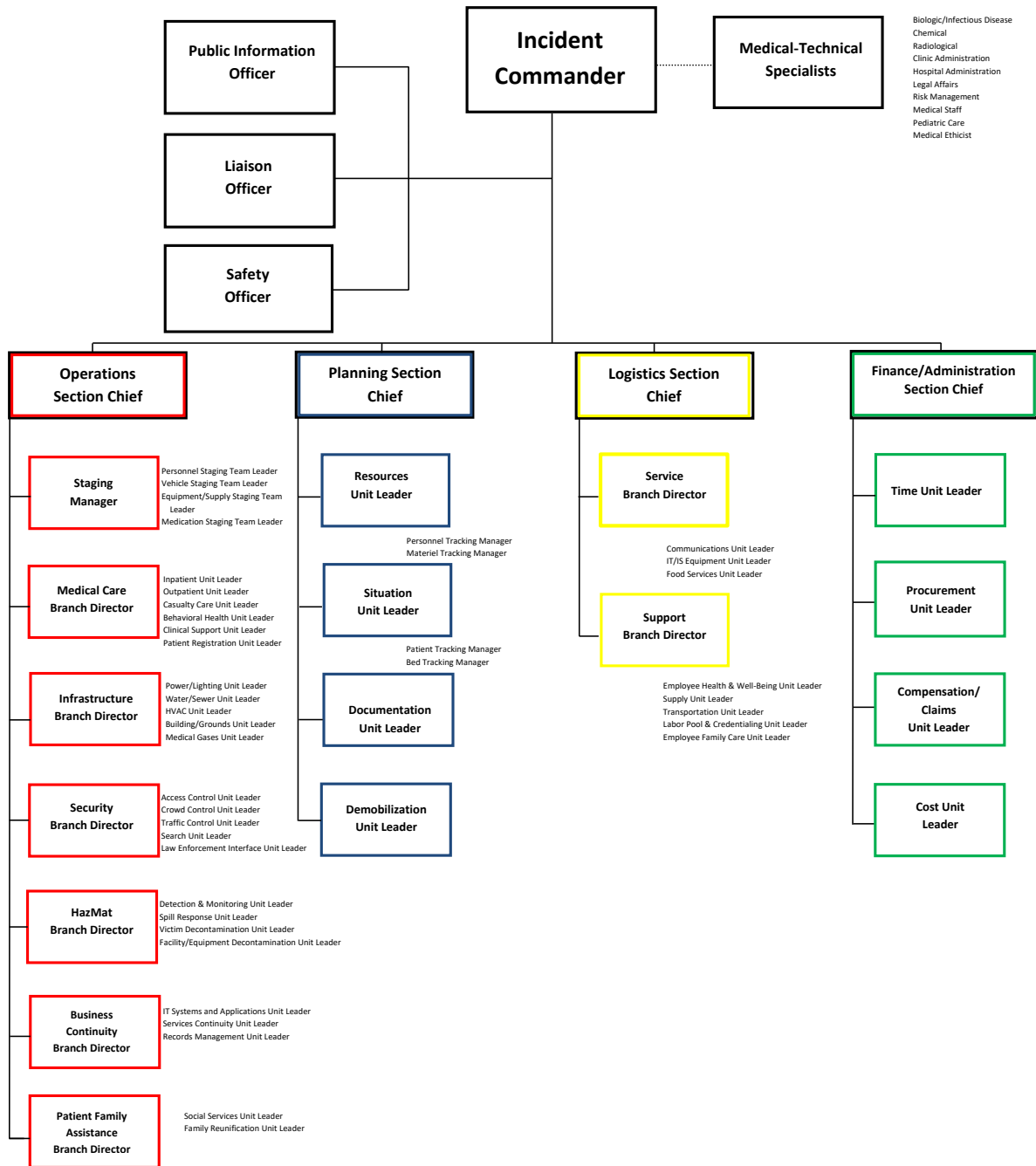
- Light switches can be used to signify heavy machinery that need to be turned off in case of emergencies.
- Oxygen tanks are empty. Inform participants if they wish to access them.

### Chemical leak Emergency SOP for Teams

1. Assign the following roles
  - a. Incident Commander (IC) - To ensure proper commitment to the SOP
  - b. Public Information Officer (PIO) - To liaison with external agencies and parties
  - c. Safety Officer (SO) - To locate and employ safety tools and measures
  - d. Operations & Logistics Officer (OLO) - To identify personnel and patients and deploy a plan for evacuation.
2. PIO to make contact with the Fire Department (Input number of volunteer student) and provide an update on the situation.
3. IC to identify a location outside the hospital as a temporary shelter area. Share location with the rest of the team. OLO to ensure all evacuees arrive at the location.
4. IC to make a list of all patients and identify the patients that need to be shifted to other hospitals in coordination with the OLO.
5. SO to bring Oxygen Tanks to aid patients struggling.
6. SO to identify Exits.
7. OLO to identify patients and visitors and evacuate them in the following order -
  - a. **GREEN:** Those able to walk: Accompanied out in groups by nursing assistants, ward clerks, or other non-professional personnel. Infants will be carried by their parents.
  - b. **YELLOW:** Wheelchair-dependent patients: Accompanied out by nursing assistants, or ancillary services personnel (x-ray, lab, RT, PT, OR, etc). Use wheelchairs located at (Input location).
  - c. **RED:** Bed bound patients: Accompanied out by nursing assistants or ancillary service personnel. Use beds, gurneys, or backboards. Any patient requiring close monitoring (ICU, Labor, Postoperative, ER) will be accompanied by licensed personnel.
8. PIO to make contact with other hospitals, (Input number of volunteer students) and make enquiries about availability of beds in order to shift patients. Forward the information to the IC.
9. SO to ensure all electronic equipment in the hospital building have been switched off at (Input switch location).

# Annex 11: Hospital Incident Management Team

## Part A:



(Source: HICS, 2014)

## **Part B:**

### **Brief Note on The Hospital Incident Commander, Key Officers and Chiefs of General Section and Their Responsibilities**

#### **HIRS COMMAND STAFF**

##### **Incident Commander**

- This person is like the captain of a ship.
- The first person responding to the incident fills the role of the Incident Commander until another person with more experience or training arrives
- Should ideally be the most senior person on duty at the time of the incident
- Should have the authority to make decisions for the organization and provide overall direction for the HIMT.
- Should have the level of training, experience, and expertise to serve in this capacity
- Qualifications for this role is not based on rank, grade, or technical expertise

##### **Liaison Officer**

- Serves as a bridge between the internal HIMT and external emergency response partners.
- Is the face of the hospital in any conferences or discussions with the other response partners or government departments.

##### **Safety Officer**

- Is responsible for the overall safety of the hospital and people within.
- Organizes and enforces facility protection, traffic security, and safe practices for the incident response personnel.

##### **Public Information Officer**

- Coordinates information sharing internally within the organization
- Is responsible for sharing information with the media, VIP, patients families etc and for answering any queries from them.
- Has to be a good communicator who is able to provide accurate and crisp information.

##### **Medical/ Technical Specialists**

These are persons with specialized expertise (e.g., infectious diseases, legal affairs, medical ethics) who have to be available for expert advice or guidance as an when required during incident response.

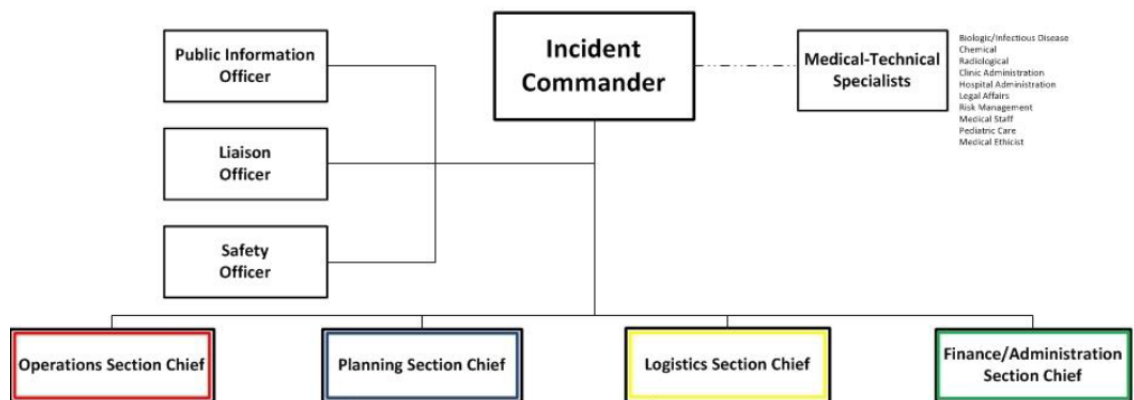
#### **HICS GENERAL STAFF**

HICS General Staff are divided into four sections and each section is led by the section

chief. The Chief has a team to provide assistance in the Section related work. It must be borne in mind that while in larger hospitals where the staff strength is big, every role within a particular section may be taken on by a separate person, but in cases where hospitals are small and staff strength is small, one person may take on more than 1 role. Thus, for instance, 2 or 3 subfunctions may be taken on by one person.

The four sections Chiefs are (Refer Figure 1):

1. Operations Section Chief
2. Planning Section Chief
3. Logistics Section Chief
4. Finance and Administration Section Chief



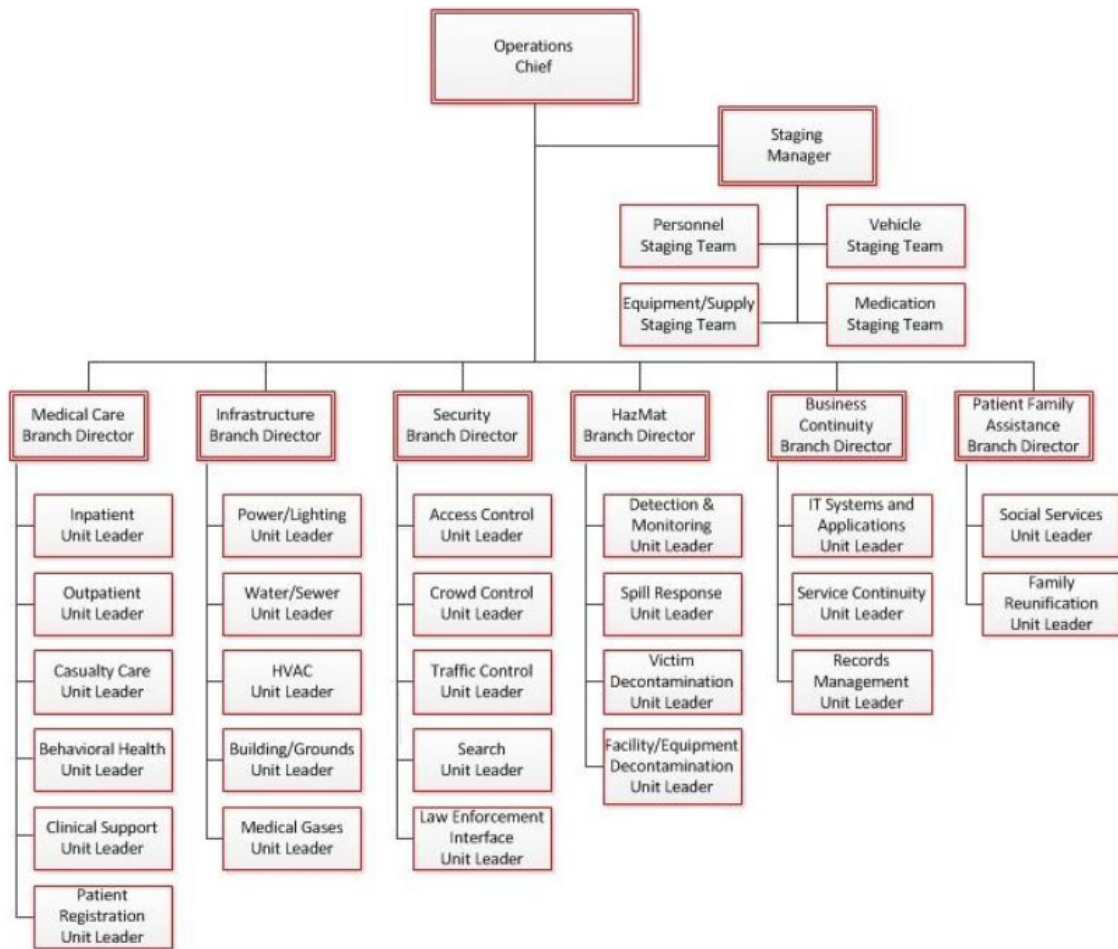
**Figure 1: Reporting Structure of The Section Chiefs**

### Operations Section Chief

The Operations Section Chief is responsible for:

- Implementing strategies based on incident objectives
- Organizing, allocating, and directing the strategic resources
- Managing the Staging Area (if applicable)
- Identifying the need to assign resources to support the objectives of the mission at hand.
- Overseeing the work of the entire operations team and guiding them as required.

This Section is one of the biggest and most crucial for handling the incident response. The organisational structure of this section along with the other roles involved is shared in Figure 2.



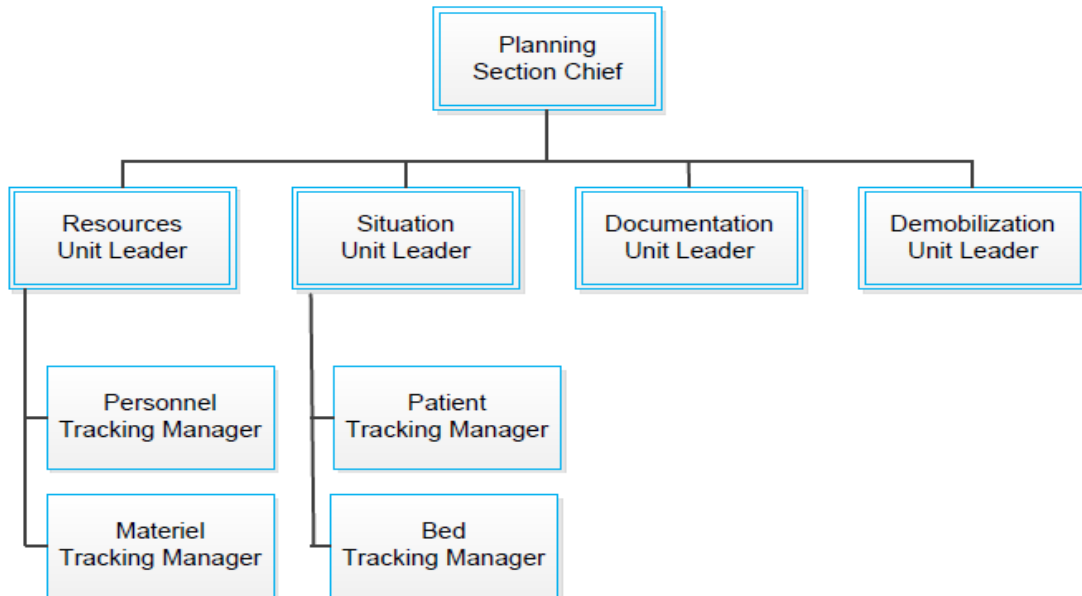
**Figure 2: Structure of the Operations Section**

**Planning Section Chief**

The Planning Section Chief is in charge of:

- Keeping a check on the status of all resources allocated for the incident
- Developing plans for incident documentation
- Collecting, analyzing, and disseminating situational awareness information
- Developing strategies for demobilization
- Preparing the Incident Action Plan (IAP).
- Leading the briefing of the IAP.

The planning Chief has a small team of persons to provide assistance in the work related to planning. The structure of this section is shared in Figure 3.



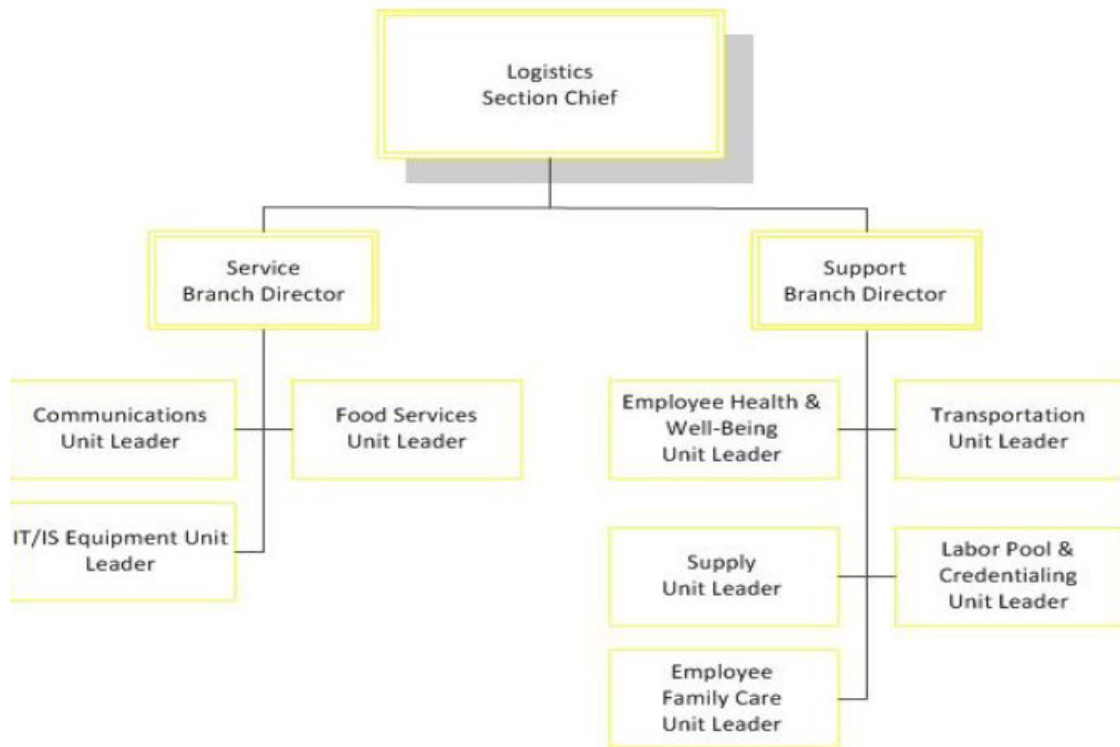
**Figure 3: Structure of the Planning Section**

### Logistics Section Chief

The Logistics Section Chief has the tasks of arranging for all the support and service functions. These include:

- Setting up and maintaining incident facilities including IT services etc
- Organizing food services
- Providing communication for planning and establishing resources
- All support needs of the incident such as tracking and responding to resource requests
- Acquiring resources such as transport and additional staff, from internal and external sources based on requirement
- Ensuring the well-being of employees and their family.

The Logistics Chief also has a small team to provide assistance with all the work. The structure of this section is shown in Figure 4.



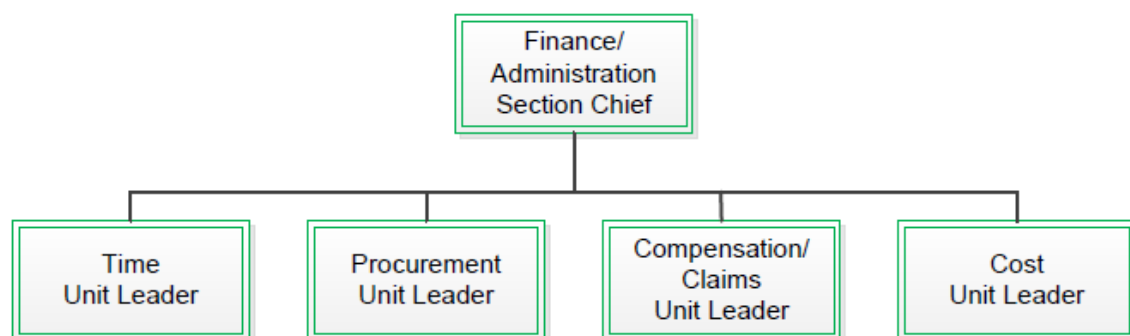
**Figure 4: Structure of Logistics Section**

**Finance and Administration Section Chief**

Last but not the least is the Finance and Administration Section, whose Chief is responsible for:

- Monitoring personnel time
- Negotiating and monitoring any necessary contracts and procurement
- Analysing costs incurred due to the incident and the incident response
- All kind of compensation and claims settlement of the staff and the patients.

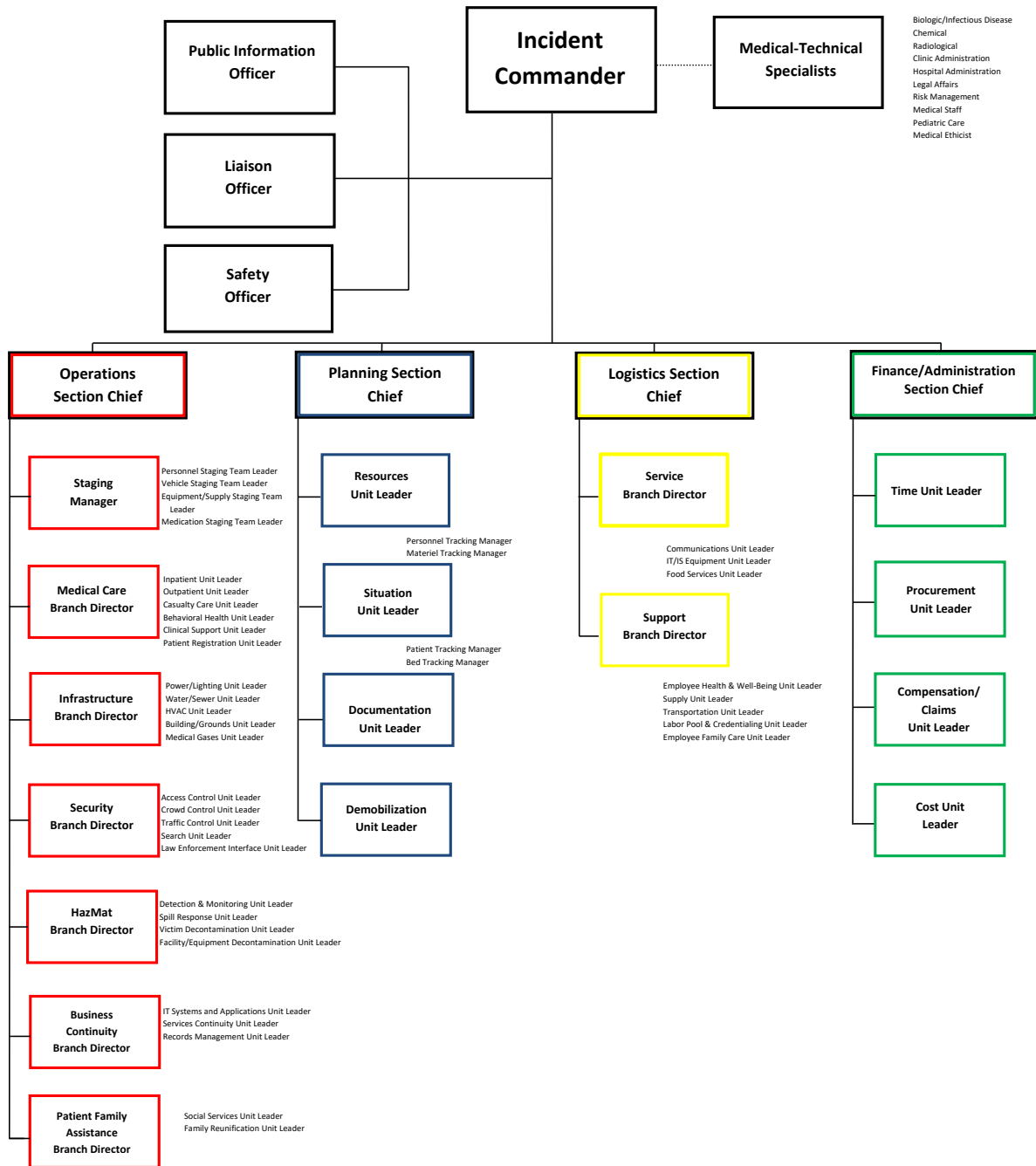
The Chief has a small team to provide assistance and the Structure of this section is shared in Figure 5



**Figure 5: Structure of the Finance/Administration Section**

# Annex 12: Hospital Incident Management Team

## Part A:



(Source: HICS, 2014)



## Annex 13: Discussion Case: Airlines vs. Hospitals

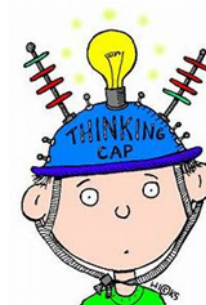


Airlines as an HRO....

Airlines are an HRO and their reputation depends upon the percentage of on-time performance, passenger safety, completion rates, reduced rate of mishandled or lost bags, complaints and good and friendly customer service amongst other measures.

Let's compare this with Hospital Settings. A hospital also gains and maintains its reputation through on-time treatment of patients, patient safety, completion of successful treatments and surgeries, reduced rate of badly handled cases and complaints, and good and approachable nurses and doctors. So, isn't high reliability crucial here too? Let's go back to the airline's scenario. The number of flights per day for any good airline run into hundreds if not more, and yet, there is consistency and reliability in their performance. Any lack of vigilance on part of the pilot can lead to air crashes, costing the life of hundreds of passengers and crew members. Any slackness in the working of the crew can also put passenger safety in danger. That does not happen, because on the flight, the crew and pilots work like a team to ensure full safety and comfort of passengers. In the airport control rooms, the air traffic controllers work in coordination with the pilots to ensure the same. Even the staff responsible for cleaning the aircrafts, refuelling it, inspecting the various parts like engine, fuselage, tyres, tail, wings etc. and putting the luggage into the aircraft work seamlessly and in coordination with each other to ensure near zero errors occur. Why? Because safety is their culture. In turn, the smooth running of the airline enhances customer perception, satisfaction, and loyalty. Fewer operational problems also imply better cost efficiency and overall financials for the airline.

Put on your thinking cap and let's try and draw similarities and differences between the Airlines and Hospital Scenarios in the context of Culture of Safety and Reliability....



## Annex 14: Small Case Study on Terror Strike

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### The Night at Cama & Albless Hospital

#### Learning Objectives:

1. To appreciate the role of team-work and smooth coordination among the hospital staff in minimizing the extent of any disaster
2. To gain insights into the contribution the front-line staff of a hospital can make while dealing with the patients in the time of a crisis.
3. To understand how mutual cooperation among patients and the hospital staff leads to win-win situation for both
4. To understand about the role of Resilience in overcoming any ill- fated situation.

#### The Case:

Cama & Albless Hospital

Location - Fort, Mumbai

Date - November 26, 2008

Just like any other day, the staffers at the Cama & Albless Hospital in Mumbai were going about their duties on the night of 26th November. The hospital for women and children boasts of almost 400 beds. But on that fateful night, the hospital was going to face a challenge that had never occurred in more than 200 years of its existence.

Around 09:30 PM, sounds of firecrackers are heard in the wards of the hospital. Unknown to the people in the hospital, Mumbai was under attack and the terrorists had open fired at the adjacent CST Station.

Soon after, staffers noticed a horde of people coming up the stairs. They are then informed that two gunmen have entered the hospital. Ajmal Kasab and Abu Ismail had entered the premises of the hospital after having jumped over the boundary wall and killing two security guards in cold blood. They notice some people looking on from one of the floors and shoot at them. A staffer gets a wound in her hand and the lights of the ward are shot down.

Quick to act, the nurses and doctors took all the patients and bystanders in the wards. The staff on-duty took charge of their own wards. They blocked the doors with furniture and whatever else they could find. The lights were switched off. And everyone either sat on the floor against walls or hid in the pantries, a room without windows.

In the maternity ward, women in labor were made to give birth in dark corners of the colonial building as the staff tried to ensure complete silence. Newborns were immediately fed milk to prevent them from crying. Nurses stayed by the bed of the patients that were immobile had been restricted to their beds.

Unable to find anyone and facing dark corridors and jammed doors, the terrorists took some hostages and went to the terrace. A small group of policemen were able to enter the building and assisted by a hospital employee, they headed towards the terrace. The police secured the exit of the terrace.

Every soul in the hospital remained still and in fear of death as for 45 minutes, the halls of the hospital resounded with gunshots and hand grenade explosions. After a gruesome showdown with the small police unit, the terrorists were successful in making an escape, but due to the standoff they left behind equipment, ammunition and all hostages unharmed.

Mumbai would still be under attack for the next two days as the terrorists lay siege at the Trident, Taj Hotel and Nariman House. But it was due to the coordinated response by the staff that not a single patient died that night. They were quick to respond and took precautions to contain and prevent any loss of life.

**Discussion Questions:**

Imagine yourself to be a front-line healthcare staff at the hospital and answer the following questions:

1. How will you coordinate with the other staff in the hospital?
2. What would you do to prevent the spread of any sort of rumors among the staff and patients in the hospital at this hour?
3. How would you deal with the patients in this case, given that some may be in a very serious condition and any lapse in their treatment may lead to worsening their health conditions?
4. Would you exercise your own mind or take inputs from the higher-up authorities in dealing with such an exceptional situation?
5. Which government agencies should you coordinate with in this situation?

## Annex 15: Case Study on Communications

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### Learning Objectives:

At the end of this activity, you will be able to:

1. Understand how sustained and successful use of IT applications can help the hospital authorities tide over any eventualities.
2. Realize how GIS technology can be leveraged in emergency situations to locate patients and bring them to the hospital.
3. Reflect on why it is difficult for the hospital authorities to tackle these situations and how properly they can handle it.

### Description:

An extremely severe Cyclone, Fani has hit the coastal state of Odisha leaving a large trail of destruction of both life and property. Many people in the coastal areas are estimated to have died with scores of people injured or in a critical situation despite massive evacuation efforts being carried out by the state government. The healthcare staff has been deployed at all the health centres' and the district hospital in Puri. Hospital authorities are warned beforehand about the destructing trail of the cyclone and the efforts they need to undertake in its aftermath. However, the severity of the cyclone has dismayed the staff in the hospitals. Telephone signals have been disrupted, thousands of trees uprooted and there is power outage. Generators have stopped working since they were placed in the basement which was flooded with water. A pregnant mother has just been brought to the hospital by her relatives. A little later a few more patients turn up- one has died as a result of electrocution, the other is critically injured after a tree fell on his thatched roof. The hospital beds are already filled up with pre-existing patients and it may not be possible to handle the surge of patients. Many departments have reported that some medical equipment are dis-functioning as the generator has failed. The patients from the ground floor need to be immediately evacuated to a safer location. But, the hospital authorities are in a dilemma about whom to contact and how to contact for help. The staff at the hospital is well trained and prepared for attending to any eventuality but currently they lack clarity on the expected number of patients they need to cater to. Besides, no recent information has reached them either from the State Disaster Management authorities nor any other health officials. The intensity of the cyclone is far more than what they were informed about. The hospital authorities are in a dilemma as to what steps they need to take now to handle this situation. Their quandary is further compounded by the fact that the telephone system has failed thus rendering them clueless as to people in which particular areas have suffered maximum damage to life and need immediate medical attention. Whether they need to send some of the doctors to the cyclone-stricken areas or the entire team needs to wait for patients in the hospital itself. Though the hospital is working with adequate manpower and in full capacity, the ambiguity about the location of the patients and their numbers is turning out to be a nightmare for the authorities.

### Discussion Questions:

Imagine yourself to be one of the hospital authorities or the communication/liaison officer and reflect on the questions below:

1. What would your communication strategy entail so as to be an effective one? Which stakeholders would you communicate with (both within and outside the hospital) and how?
2. What other challenges could you have faced in such a situation and how would you overcome it?
3. What type of communication tools would you use given that power and telephone services have been disrupted?
4. How best you could utilize GIS technology in this situation?
5. What type of IT adoption techniques will help you to overcome this situation?
6. How can social media be leveraged to handle disasters more effectively? ( the Trainer can draw upon discussion points for question 6 from the following article link: <https://researchbank.swinburne.edu.au/file/9f73753e-9fbc-432f-931f-a870f71ba268/1/PDF%20%28Published%20version%29.pdf> )

## Annex 16: Case Study on Partnership between Hospitals

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### Role of AHNA in the Coronavirus Pandemic

#### Learning Objectives:

1. To gain insights into a model of Public-Private Partnership in the healthcare industry.
2. To discuss how to find constructive solutions to public health emergencies can be found.
3. To appreciate the value of co-existence-How coordination between competing hospitals can benefit all involved parties.
4. To gain insights into how can hospitals can deal with situations involving mass casualties like Covid-19
5. To understand that hospitals cannot function in isolation. They need to exist within an ecosystem of various stakeholders in collaboration.

#### Case Study:

On December 31<sup>st</sup> 2019, while the whole world was celebrating the New Year's Eve, there was a cluster of cases of pneumonia in Wuhan City, home to 11 million people and the cultural and economic hub of central China. In fifteen days, there were 282 confirmed cases with 6 deaths, 51 severely ill people and 12 in a critical condition.<sup>1</sup> The cause of the severe acute respiratory syndrome was soon known as COVID-19. Soon after a month, India reported its first case in Thrissur, Kerala. On March 11th, 2020 COVID-19 was declared as pandemic by the WHO mainly due to the speed and scale of the transmission of the disease.<sup>2</sup> On 24th March 2020, the Indian Prime Minister announced a nationwide lockdown as a preventive measure to limit the spread of the deadly virus. Indian, along with the rest of the world, came to a halt. Daily thousands of new cases of COVID-19 were being confirmed worldwide.<sup>3</sup> The death rate was over 1000 per day alone in our country and over 8,000 per day globally. It soon became evident that we were not prepared to deal with such a disease and a greater threat was lying ahead for our developing nation of 1.3 billion.

Amidst lockdown, there was a sheer sense of fear and panic amongst people as the number of cases kept increasing. There was not enough medical research available on COVID-19. While wearing masks and social distancing became the new normal, it was not enough to control the spread of the virus. COVID-19 had become a mysterious disaster.... a pandemic never witnessed by anyone. The hospitals were reporting an all-time high of patient occupancy which caused all the hospitals and clinics to reach their surge capacities. Despite various attempts made by the government to convert many institutional buildings like schools, colleges and hotels into COVID-19 facilities, the whole country faced an acute shortage of hospital beds, healthcare resources and staff.

As this was a new kind of phenomenon globally, the insurance companies too were also not ready and hence the clearance of COVID-19 bills were taking more time than usual as there was no clarity. This was directly impacting the functioning of the hospitals as they were not getting timely reimbursements and hence were falling short of funds, while on the other side the inflow of the patients was only increasing. The chaos further led to hospitals having uneven rates which further led to overburdening of patients in the hospitals with low charges.

The city of Ahmedabad found a way to deal with these issues in a novel way. AHNA (Ahmedabad Hospitals and Nursing Homes Association) came out as a solution provider in the time of crisis in the healthcare system of the city. It became an example to the overall model of the healthcare system of a general city, demonstrating the potential of strength in unity.

Established in September 2019, AHNA was just a few months older than the pandemic. It was made with a view to promote solidarity and brotherhood among all the member hospitals and nursing homes of Ahmedabad and surrounding areas within a radius of 50 kilometers. When the pandemic struck, the organization started collecting data of the beds available in each of the clinics and hospitals under their jurisdiction which then helped in equalizing the burden on individual hospitals. It also cleared and negotiated the rates with the insurance companies along with timely management of funds to the corresponding hospitals as the patients discharged. This provided the hospitals with sufficient resources to cater to the large influx of patients. Lastly, AHNA also standardized the rates and caring protocols in collaboration with Ahmedabad Municipal Corporation, which in turn helped equalizing the burden even more.

### Questions

1. What are the possible hurdles in achieving this type of collaboration?
2. Execute a SWOT Analysis of the organization.
3. How can the organization help in other aspects of Disaster Management like prevention and preparedness?
4. How can one ensure the continued functioning of the organization post the pandemic?

### Footnotes

1. COVID-19: a brief history and treatments in development. By Steve Chaplin. 25 May 2020. Available from: <https://doi.org/10.1002/psb.1843>
2. WHO Director-General's opening remarks at the media briefing on COVID-19. 11 March 2020. Available from: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
3. World Health Organization. Coronavirus disease 2019 (COVID-19). Situation Report – 113. 12 May 2020. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>

## Annex 17: Case Study on Cyber Security Breach at a Hospital

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### Cyber Security Breach at KNP Hospitals

#### Learning objectives:

1. To understand the vulnerabilities which make an information system prone to a phishing attack
2. To understand the different ways in which a phishing attack can take place.
3. To think about how a Malware can derail the functioning of your organization and create disrepute among your consumers.
4. To brainstorm about the ways to avoid falling victim to a Ransomware
5. To become equipped in designing effective strategies to provide protection from as well as counter any sort of malware.
6. To examine the perils of adopting any technology without sharing any responsibility.

#### The Case:

KNP Hospitals are a chain of twenty-five hospitals operating across major cities of India. The first hospital was established over a hundred year ago, but it was only after the liberalization of the Indian Economy in 1991, did the group rapidly expand from ten hospitals to twenty-five. The heart of their vision remained unchanged - to serve the masses by providing quality healthcare at an affordable price. The staff was regularly trained in soft-skills to ensure the patients always felt welcome and comfortable. Sometime in the mid nineteen-nineties, the group had developed and deployed a data recording and management system - Hospital Management Information System or HMIS. Each hospital had its own local server that was connected to desktops for doctors, reception, billing and pharmacy via LAN cables. Each patient at the hospital was given a card which had a unique Patient Id. This ID was used to record data including patients' personal information, medical records and billing details. The staff relied on this data to function efficiently.

However, with the modernization of telecom and availability of fast internet, the system was scaled up to accommodate all servers online with backup facilities at the Hospitals' Headquarters. All staffers had access to the data through their unique IDs and passwords online via any device. This left gaping holes in the security of the system because it was designed for local servers and not online usage.

In the July of 2019, a cyber-attack was orchestrated. Staffers of the hospital were inundated with advertisements of medical devices. On accessing the advertisement, the website prompted the user to share their name, hospital's name, work email address and phone number. A request form was then mailed to the user which had to be downloaded. Within the form was also embedded a malware. Over the next few days, the malware collected all data being typed and displayed on the user's screen and sent it to the hackers. The malware, just like a virus, also duplicated and spread to other



systems via data transfers. Once it was on the server, it spread to all devices. The final task of the malware was to encrypt all data on the server at a set date and lock out the hospital staff.

At 08:00 AM on the eighth of July, 2019 the CEO received an email from the hackers. They had successfully encrypted all the data on the hospitals' servers and wanted a ransom in exchange for the data. Without this data, the hospitals were paralyzed. The staffers also received the same mail on their personal IDs. The information was eventually released on social media and the press; and rumors of the data being up for sale on the dark web started doing the rounds.

The CEO, along with the other members of the management, was quick to set a recovery plan in action. Five objectives were identified and groups were made to designate the responsibilities - this was the Emergency Task Force (ETF).

1. *Business Continuity* – to restore hospital operations to normal as soon as possible
2. *Stakeholder Communication* - to communicate with all stakeholders with information
3. *IT Recovery* - to recover the IT systems for users
4. *IT Re-engineering* – to plan and execute changes to avoid such cyber-attacks in the future
5. *Forensics* – to extend all help to forensic authorities in their task of finding the cause and culprits

It took three weeks for the hospitals to resume normal operations and the forensic investigation took much longer. The hospitals' image took a major hit amongst the public and data showed that the drop in the number of patients was 30% from last year. The CEO, now had to come up with a plan to restore the public's trust in the brand while ensuring that such a disaster does not occur again.

#### **Discussion Questions:**

1. What were the loopholes that led to this data breach?
2. Who all in the hospital should be held accountable for the data breach that has occurred?
3. What were the repercussions of the data being leaked on the dark web?
4. Have the employees of the hospital been sensitized before about the threat of data leak and how best to avoid it?
5. What strategies would you formulate to ensure the hospital information system is robust and remains protected from any sort of malware in future?
6. As a CEO of the hospital, what would your Action plan entail to counter this offensive attack?
7. Who are the different stake-holders that are affected by this ransom ware either directly, or indirectly?

