

ToT Report on Hospital Safety Planning



Empowered lives.
Resilient nations.



Dates | 26 – 28th November 2019

Organized by | Kerala State Disaster Management Authority

In Association with UNDP

Technical Support by



Contents

- A. Background:..... 3
- B. Aims and Objectives of the ToT 3
- C. Key contents 4
- D. List of hospitals 4
- E. Session Briefs..... 5
 - Session 1: Registration, Setting the scene & Remarks, Welcome Remarks 5
 - Session 2: Basic Understanding of disaster management with reference to hospitals 6
 - Session 3: Aspects of safe and functional hospital: 6
 - Session 4: Non-structural risk in hospitals with special reference to fire: 7
 - Session 5: Components of the Hospital Disaster Management Plan 7
 - Session 6: Discussions on HDMP template..... 8
 - Session 7: The basic principles of tabletop exercise. 8
- Questions, Feedback and Session Closure: 9

A. Background:

Disasters and its impact on health has become a matter of serious discussions globally. Health sector (especially hospitals) is one of the sectors affected by various disasters. India is not exception to this and has witnessed various climate emergencies ranging from heat wave, cold wave, tsunami, cyclone, rains and floods etc. in the past. The disastrous events have dramatic impact on the health of people, especially living in coastal areas. Kerala, which is one of the coastal states of India is prone to multiple hazards due to its unique location in between the Western Ghats and the Arabian Sea. In the 2018 unprecedented floods, thirteen out of the fourteen of the districts were affected leading to the worst flood disaster in the State since 1924. The life losses would have been much more had it not been for the swift responses by the National and State Governments, uniformed forces, NDRF, dynamic bureaucrats and an aware community willing to help and be helped. Besides floods, Kerala is also prone to Landslides, Cyclones, Tsunamis (coastal districts) and is located in Moderate earthquake Zone II and III as per the Seismic Zoning Map of the country.

The incessant rains from August 14th to 17th, 2018 caused significant amount of damage in the state of Kerala. In the hills, an unprecedented number of landslides took place. Between the floods and the landslides, 450 people lost their lives. The health sector also suffered badly causing substantial impact as close to 332 health facilities were fully or partially destroyed. Furthermore, 61 Ayurveda institutions and 59 homeopathic institutions were damaged as a result of the floods. The total damage to the health sector is estimated at INR 273 crore for health, which is mostly of health facilities. The total loss of the sector is estimated at INR 26 crore. The total recovery cost of health would come to INR 447 crore (PDNA, 2018).

Considering the urgent need to build capacity of hospitals in these affected areas to deal with disaster risks, KSDMA and UNDP jointly came forward to carry out a state level training of trainers (ToTs) followed by hospital safety training in 14 districts of Kerala State, in which GeoHazards Society provided technical inputs in training and preparation of module. The three days training of trainers involving 3 participants from each of the 14 hospitals was conducted from 26th Nov – 28th Nov, 2019 in Trivandrum at Kerala State Institute of Health And Family Welfare. The ToT brought 42 participants involving representatives (mostly administrators, decision makers, senior medical staff members etc.) from 14 selected hospitals. In the ToT, participants were sensitized on basic disaster awareness, hazards that can affect hospitals and on disaster preparedness planning to keep their hospitals functional.

B. Objectives of the ToT

The main objective of the ToT was to enable all selected model hospitals from each district of Kerala to build their capacity towards hospital safety and help develop the hospital disaster management plan (HDMP).

The key objectives of the ToT include: -

- To ensure preparedness of the hospital to respond various disaster emergencies.
- To ensure continuity of essential activities, medical equipment and critical utilities including safety of its hospital staff, patients, visitors, and the community.

- To coordinate and organize response to various incidents including ensuring safety and functionality of services and immediate restoration of hospital treatment capacity

The health care facilities play a pivotal role in the management of disasters. Hospitals are critical infrastructure, which have an extremely important role in the post-disaster scenario. Many times it has been found that hospitals have been rendered non-functional in a post disaster scenario leaving the large population to be on their own. For a hospital to remain functional in a post disaster scenario, it is not only important to have a disaster resilient building but also trained and prepared staff members with defined roles and responsibilities.

C. Key contents

The ToT was planned to train the hospital key decision makers on the following topics. The agenda of the ToT has been attached as annexure with this report.

- Terms and Concepts in hospital safety.
- Understanding Disaster Management with reference to hospital safety
- Hospital safety and functionality aspects.
- Introduction to various common hazards that can affect hospitals.
- Non-structural safety with specific focus to fire hazard.
- Process of hospital disaster management planning.
- Components of hospital disaster management plan.
- Steps towards developing hospital disaster management plan (HDMP)
- Hands-on training on how to develop HDMP using the template
- Basic principles of conducting tabletop exercise

D. List of hospitals

The ToT was designed for 3 days program. For the ToT, the 3 representatives from the following 14 pre-selected hospitals were invited. These 3 representatives were mainly key decision makers, administrators, senior medical staff members, maintenance staff members, disaster focal persons etc. who were trained and helped develop HDMP of their hospitals. The list of 14 hospitals from where representative attended the ToT are given below in the table:

Sr No	District	Hospital	Bed strength
1	Ernakulam	General Hospital	783
2	Thrissur	General Hospital	240
3	Malappuram	District Hospital, Perinthalmanna	177
4	Palakkad	District Hospital	544
5	Thiruvananthapuram	General Hospital	747
6	Kollam	District Hospital	537
7	Kozhikkode &	General Hospital, Kozhikkode (Beach)	550
8	Pathanamthitta	General Hospital, Pathanamthitta	414
9	Idukki	District Hospital, Painavu	130
10	Wayanad	District Hospital, Mananthawadi	500
11	Kannur	District Hospital, Kannur	616
12	Kottayam	General Hospital, Kottayam	374
13	Kasaragode	District Hospital, Kasaragode	400
14	Alappuzha	General Hospital, Alappuzha	400

E. Session Briefs

Session 1: Registration, Setting the scene & Remarks, Welcome Remarks

The training program was organized at the Kerala State Institute of Health And Family Welfare in Trivandrum, Kerala. The session started at 10.00 AM, and representatives from UNDP and KSDMA welcomed the participants. The representatives highlighted the goal and objectives of the training of trainer (ToT). The inaugural function was presided by Member Secretary, KSDMA and inaugurated by Principal, Medical College Thiruvananthapuram.

After brief introduction of the program, the organizers facilitated mutual introduction of participants as an ice breaking session. The participants were encouraged to share their experience about the hospital safety. Many of the participants shared their experience of the 2018 floods and how their hospital responded to havoc



Figure 1: Welcome remarks by UNDP and KSDMA

flooding in the area. After the participants finished their experiences, the introductory session about the program was concluded. The resource persons from GeoHazards Society kick-started the sessions.

Session 2: Basic Understanding of disaster management with reference to hospitals

A session on raising disaster awareness to understand basics of disaster management with respect to hospital was facilitated by Dr Sarun Savith, resource person from GHS. This session focused on why hospital safety is important to be carried out with key staff members from various hospital from Kerala. The session also focused on some of the very important points of hospital safety and the responsibilities of the hospital staff members to manage the hospital after any disastrous event.

This session also focused on potential hazards that can affect the safety as well functionality of a hospital. The common hazards such as flood, cyclone, tsunami, landslide and earthquake etc. were highlighted and how these events have affected hospitals in the past. Many examples based on previous learnings were narrated to highlight how if a major community hospital is out of service during and after an emergency, it will leave the dependent community without health care adding to the number of lives and limbs lost in the emergency. The loss of essential services during emergencies and disasters severely lessens the possibility of saving lives and reducing other health consequences.

Session 3: Aspects of safe and functional hospital:

A detailed session discussing various aspects of safe and functional hospital was taken by Mr Hari Kumar, a resource person from GHS. The facilitator focused on highlighting how important it is that hospitals continue to function during and after disastrous events since the community rushes to the nearest hospital for medical assistance when emergencies occur, expecting it to remain functional. The hospital's ability to cope with the mass casualty incident will not just be based on its preparedness and planning, but also on the functionality of the critical departments in the facility.

It was highlighted that for a hospital to remain functional in a post disaster scenario especially to respond to a mass casualty situation, several aspects have to remain functional. The buildings have to remain safe and unaffected. The staff should be safe and prepared to take care of the in patients and to receive mass casualty situations. Critical medical equipment should not be affected by earthquake shaking and should be functional. This will also depend on the functionality of the critical utilities- Electric supply, water supply



Figure 2: Presentation on basic terms and concepts of hospital disaster safety



Figure 3: A session on various aspects of safe and functional hospital

and Medical gases supply. In an earthquake, it is usually seen that the external supply (electrical, water, etc.) lines fail and the hospital will have to depend on back-up systems and internal storages. These systems are also interdependent- water supply and oxygen production depend on electric power. Electric power will depend on the fuel available on site for the generators. The two other components that affect the hospital's functionality are the availability of medical supplies and the back-up communications to help in managing the response to a disaster.

Session 4: Non-structural risk in hospitals with special reference to fire:

This session was taken by Mr Hari Kumar and Pranav Sethi separately. Mr Hari discussed how hospitals are critical infrastructure which have an extremely important role in the post-disaster scenario. The session focused on how various hazards can affect the non-structural components / elements of hospitals and why hospitals need to remain operational. It was highlighted how keeping hospital functional depends on wide range of factors including medical equipment, critical utilities such as water, electricity, medical gases etc. they all have to remain secure and continue to operate.

A brief on Non-structural risk mitigation was included wherein the hospital staff were sensitized about the various falling hazards, risk associated with these, and how these objects behave during earthquake shaking. This session has helped them to learn about the types of losses that may be caused by falling hazards. As Kerala falls under the Seismic Zone II and III, it has a moderate risk of being affected by earthquakes. The damage caused by falling hazards may be high in hospital buildings given that medical equipment could be costlier than the building itself. The loss of these in earthquake may also disrupt functionality.

The session was further undertaken by Mr Pranav Sethi who discussed about fire risk in hospital with the participants. The common wrong practices that can cause fire in the hospital were highlighted along with how fire can quickly spread. A brief demonstration on how to use fire extinguisher was also shown to participants. Many fire mitigations measures were shared with the participants.



Figure 4: A session on fire safety with reference to hospitals

Session 5: Components of the Hospital Disaster Management Plan

Mr Hari Kumar talked about the importance of having disaster management plan. It was highlighted as to how hospital disaster management provides the opportunity to plan, prepare and when needed enable a rational response in case of disasters/ mass casualty incidents (MCI). Disasters and mass casualties can cause great confusion and inefficiency in the hospitals. They can overwhelm the hospitals resources, staffs, space and or supplies. Lack of any tangible plan to fall back upon in times of disaster leads to a situation where there are many sources of command, many leaders, and no concerted effort to solve the problem. Everyone does his/ her own work without effectively contributing to solving the larger problem of the hospital. Therefore, it is essential that all Hospital Emergency Plans have the primary feature of

defining the command structure in their hospital, and to extrapolate it to disaster scenario with clear cut job definitions once the disaster button is pushed. Chaos cannot be prevented during the first minutes of a major accident or disaster. In this session, the focus will be on process for developing the hospital disaster management plan.

The session helped hospitals form their hospital safety committee and develop their hospital disaster management plan. This session will also help medical personnel understand the basic contents of disaster preparedness at hospital level.

Session 6: Discussions on HDMP template

A brief session on HDMP template was made by Mr Mudassir, a resource person from GHS. The participants were briefed on the HDMP template to enable them to fill up required data to make their respective HDMPs. A template for developing the HDMP was shared with the KSDMA beforehand. Many key components of the HDMP such as formation of the hospital disaster management committee, working out Incident Command System (ICS), disaster management system, evacuation procedures, standard operating procedures etc. were discussed with the participants. After the presentation on the HDMP template, participants were made to sit group with their hospital's representatives. They were provided laptops and HDMP template to develop their HDMP. The facilitators and organizers helped participants make their HDMP. The draft HDMP was ready for all the 14 hospitals.



Figure 5: Participants developing their HDMPs

Session 7: The basic principles of tabletop exercise.

This session was taken by Mr Hari Kumar. It was discussed that a Tabletop exercise simulates an emergency situation in an informal, stress-free environment. The participants were told how they should gather around a room to discuss general problems and procedures in the context of an emergency scenario like a fire or an earthquake. The focus on training and familiarization with roles, procedures, or responsibilities were also highlighted. It was discussed that in the table top exercise, one of the important principles is no pointing fingers, but learning. In this session, a theoretical tabletop exercise based on a fire scenario in NICU ward of a hospital was presented where participants were made to respond based on evolving scenario.



Figure 6: A session on the basic principles of tabletop exercise

The scenario was developed as close to the reality as possible and participants were provided with challenges in between which they have to resolve with the existing resources. GHS resource persons

participated as moderators and the Medical Superintendents of the hospitals were observers for the entire simulation exercise. A few recommendations came out in the table top exercise, which can be used to enhance the response capacity of the hospital. Many of the recommendations that were came out suggested that hospitals should disaster management activities regularly so as to enable to understand the roles and responsibilities of the hospital staff.

Questions, Feedback and Session Closure:

After all the sessions, representatives from UNDP and KSDMA were asked to share their feedback on the overall program. The feedback of the participants were also recorded. Every participant has shared feedback forms in advance to share their experience, suggestions and comments on the program. A few of the participants were also invited on the dais to give their comments on the effectiveness of the program. The participants were very pleased with the training programme and requested that refresher courses and table top exercises be carried out regularly. Also, the participants appreciated the training programme and the engaging training sessions. Some of them expressed the need to take this forward to cover other hospitals in the districts as well as a single 'prepared' hospital in the district is not enough. Several other trainees gave individual positive feedback on the training as well. The representatives from UNDP and KSDMA expected that these trained hospitals will inspire other hospitals on to the path of preparedness. These are the role model hospitals, which are very important and would engage with other hospitals help them make their HDMPs. At 3.30 PM, the program got finished and certificates were distributed to the participants during the valedictory function. In this session, Principal, KSIH&FW was the chief guest for the valedictory programme.

Annexure – Agenda of the ToT

Training of Trainers on Hospital safety and hands-on orientation to facilitate hospital disaster management plan

Kerala State Institute of Health and Family Welfare

Trivandrum, Kerala

26th – 28th November 2019

DAY 1

Session	Time	Activities	Responsibility
Inaugural Session	1130 – 1200	Registration Setting the scene & Remarks: Welcome Remarks Overview & Objectives of the ToT	UNDP and KSDMA
Session I: Introduction to DM and hospitals	1200 – 0115	Basic Understanding of disaster management with reference to hospitals and learning from other hospitals.	GeoHazards Society (GHS)
	0115 – 1400	Lunch Break	
Session II: Hazards and non-structural risk	1400 – 1530	Hazards that can affect hospitals and aspects of safe and functional hospitals & Non-structural risks in hospital with reference to fire	GeoHazards Society (GHS)
	1530 – 1545	Tea Break	
Session III: Hospital Disaster Management Plan	1545 – 1645	Non-structural risk mitigation measures	GeoHazards Society (GHS)
	1645 – 1700	Discussion & Feedback on Day 1	GeoHazards Society (GHS)

DAY 2

Session	Time	Activities	Responsibility
Session IV: Elements of HDMP	1000-1030	Recap of Day 2	GHS
	1030-1130	Process of forming the HDMP	Participants
	1130 – 1200	Tea Break	
	1200 – 1315	Components of the Hospital Disaster Management Plan <ul style="list-style-type: none"> • Hospital safety committee • Hospital Incident Response System • Surge Capacity 	GHS

Session	Time	Activities	Responsibility
		<ul style="list-style-type: none"> • Standard Operating Procedure • Evacuation Procedures 	
	1315 – 1400	Lunch Break	
Session IV: Hands-on training on HDMP	1400 – 1500	Personal preparedness	GHS & Participants
	1500 – 1600	Discussion on the HDMP template with the participants	GHS & Participants
	1600 – 1615	Tea Break	
	1615 – 1700	Facilitating participants use the template to develop their hospital disaster management plan and evacuation plan	GHS & Participants

DAY 3

Session	Time	Activities	Responsibility
Session IV: Hands-on training on HDMP	1000 – 1030	Recap of Day 2	GHS
	1030 – 1130	Facilitating participants use the template to develop their hospital disaster management plan and evacuation plan	GHS & Participants
	1130 – 1200	Tea Break	
	1200 – 1300	Group wise presentation on the HDMP (max 5 min each group)	GHS & Participants
	1300 – 1400	Lunch Break	
Session IV: Hands-on training on HDMP	1400 – 1530	Basic principles of tabletop exercise: A hypothetical scenario based on a case of fire in a hospital	GHS & Participants
	1530 – 1700	Valedictory - Certificate distribution etc.	UNDP

Annexure : Participants

Participants of Hospital Safety ToT					
SL #	District	Name	Designation	Email	Mobile #
1	Thiruvananthapuram	Dr.Arul Radhakrishnan	Assistant RMO, General Hospital	drasakk@gmail.com	9447023666
2		Mr. Mohammed Shemeen	Lay Secretary, General Hospital	mshemeen@gmail.com	9497701628
3		Mrs.Elsy Sebastian	Nursing Superintendent, General Hospital	generalhospitaltrivandrum@gmail.com	9526641897
4		Mrs.Sumadevi SR	Staff Nurse, General Hospital	sumadevi670@gmail.com	9995359045
5	Kollam	Dr.Ajitha V	Deputy Superintendent, District Hospital	drajithaanil@gmail.com	9495216930
6		Dr.Sumesh T Nair	CMO, District Hospital	sumeshmbbs@gmail.com	8129034511
7		Mrs.Sridevi P	Head Nurse, District Hospital	sreedevimotha@gmail.com	9846873969
8	Pathanamthitta	Dr.Arundhathi R	Consultant Pediatrician, General Hospital	drarundhathir@gmail.com	9447032767
9		Dr.Jiby Varghese	Assistant Surgeon General Hospital	drjiby@gmail.com	9048877250
10		Mrs.Rathi MN	Nursing Superintendant, General Hospital	rathimannunkal@gmail.com	8606197060
11	Alappuzha	Dr. PJ Sidhardhan	Deputy Superintendent, General Hospital	ghalappuzha@gmail.com	9447575730
12		Dr.Deepu J	Assistant Surgeon, General Hospital	drdeepu.snair@gmail.com	9946715724
13		Mrs.Mercy Thomas	Nursing Superintendent, General Hospital	ghalappuzha@gmail.com	9744261512
14	Kottayam	Dr. Bhagyasree A R	RMO, General Hospital	rmokottayam@gmail.com	9495377189
15		Mr. Baiju KS	Lay Secretary, General Hospital	baijuks238@gmail.com	9446477765
16		Mrs.Indira VN	Nursing Superintendent, General Hospital	indira.ambuja@gmail.com	9447212025

17	Idukki	Dr. Asha K K	Superindeint, District Hospital	drasakk@gmail.com	9846538700
18		Dr.Ajith Raj	Assistant Surgeon, District Hospital	ajithmodern@gmail.com	9995978623
19		Mrs.Sandhya S	Staff Nurse,District Hospital	sandhyaaneesh595@gmail.com	8547792394
20	Ernakulam	Dr.Rajesh K	Orthopedic Consultant, General Hospital	drrajeshkmsortho@gmail.com	9895079904
21		Mrs.Vilasini AK	Nursing Superintendent, General Hospital	vilasinijayan-55@gmail.com	6282211878
22	Thrissur	Dr. Prasanth G	RMO i/c, General Hospital	prayshaaanth@gmail.com	9496331164
23		Dr. Sumesh T Krishnan	General Medicine Consultant, General Hospital	drsumeshtk@gmail.com	9895558784
24		Mrs. Beena TD	Head Nurse, General Hospital	beenatd68@gmail.com	9846299004
25	Palakkad	Dr.K Remadevi	Superintendent, District Hospital	districthospitalpkd@gmail.com	9446728110
26		Dr.Tajan PJ	Orthopedic Consultant, District Hospital	drtajan@gmail.com	9447351881
27		Mr.Manoj V R	Staff Nurse, District Hospital	manojmanojmanu@redif.com	9847856674
28	Malappuram	Dr.Anoop V S	General Medicine, Junior Consultant, District Hospital	dravsavsd@gmail.com	9496846199
29		Mr. Abdul Rasheed K	Head Clerk, District Hospital	rasheedpuvathara@gmail.com	9446872580
30		Mr.C Sreejith	Head Nurse, District Hospital	sreejith.chemmath@gmail.com	9846670677
31	Kozhikode	Dr. Sheelanath R	Consultant, General Hospital	debuaniikumar@gmail.com	9446512934
32		Mr. Aboobacker P	Senior Clerk, General Hospital	gghkozhikode@gmail.com	8129522396
33		Mrs. Shylaja TK	Staff Nurse,General Hospital	shylajathamma@gmail.com	9947603120
34	Wayanad	Dr. Abdu Raheem Kuppoor	RMO, District Hospital	raheemkapoor@gmail.com	9496344562
35		Mrs. Rajitha KK	Lay Secretary, District Hospital	rajithaanaswara@gmail.com	8281734286

36		Mrs. Subhadra PK	Nursing Superintendent, District Hospital	subhadrapk66@gmail.com	9496189327
37	Kannur	Dr. V Leka	Deputy Superintendent, District Hospital	lekavengayil@gmail.com	9447399080
38		Dr. Vinu MK	Assistant Surgeon, District Hospital	mkvinu2010@gmail.com	9496142464
39		Mrs. Devayani Kallen	Nursing Superintendent, District Hospital	devayanikallen@gmail.com	9446346040
40	Kasaragod	Dr. Rijith Krishnan	RMO, District Hospital, Kanhangad	rijithkrishnan47@gmail.com	9497896399
41		Dr. Rajesh Ramachandran	Junior Consultant, District Hospital, Kanhangad	rajesh1879@gmail.com	8281424888
42		Mrs. Sheeja A	Head Nurse, District Hospital, Kanhangad	amalchandran1233@gmail.com	9567366482
43	Directorate	Dr. Sindhu Sreedharan	DM, Directorate of Health Services	drsindhusreedharan@gmail.com	9747853036
44		Mr. C Durairaj	Training Coordinator Directorate of Health Services	durairajssi@gmail.com	9497063580
45	KSDMA/UNDP	Dr. Sreeja MU	Hazard Analyst, DEOC Kollam	dr.sreejaunni@gmail.com	9892582468
46		Dr. Ashok Jacob Mathews	UNDP, Project Officer, DEOC Kottayam	ashokjmathews@gmail.com	9787150871
47		Joe John George	State Project Officer, KSDMA	mailstojoe@gmail.com	9947756700