

No.GHS/011/010

GeoHazard Society,  
71, Basement, Vinobapuri  
Lajpat Nagar-II,  
New Delhi- 110024

11-November 2021

Sub: Cover letter upon completing 3-day online training program on Building Resilience of Health Facilities with NIDM

Dear Sir/Madam,

We, GeoHazard Society (GHS) are pleased to confirm that the 3-day online training program on Building Resilience of Health Facilities has been successfully completed in close partnership with National Institute of Disaster Management and Dept of Disaster Management, Relief, Rehabilitation and Reconstruction, Govt of J&K from Oct 27 to 29th 2021 from 2.00 p.m. to 4.00 p.m.

We have completed the training program in all respects and have submitted all the deliverables of the project in due time.

We look forward to the opportunity to work with NIDM, GoI.

Yours sincerely



**Hari Kumar**  
**President**  
**GeoHazards Society**



**3-Day Online Training Report**  
**Prime Minister's 10 Point Agenda on DRR: 6 & 8**  
 on  
**Building Resilience of Health Facilities**  
**27<sup>th</sup> to 29<sup>th</sup> October, 2021**



Department of Disaster Management, Relief, Rehabilitation and Reconstruction, Govt. of J&K, and National Institute of Disaster Management (NIDM), MHA, Govt. of India, -AND- GeoHazards Society (GHS)

**jointly organizing a 3 day online training Programme on**  
*Building Resilience of Health Facilities*  
 27th to 29th October, 2021 | Time: 02:00 PM to 04:00 PM

Patrons			Eminent Speakers				
Mr. Gov. H.H. Bhatia Executive Director NDRM, MoHA, Govt.	Dr. Anand A.S. Nodal Officer J&K, SEDC	Dr. Hari Kumar Regional Coordinator GeoHazards International	Shri V. Varsh National Chairman, India Smoke Building Society	Dr. S.S. Sharma Former Director Solid Pw Service	Dr. Jyoti Arora Quality Manager & Asst. J&K, SMC, Jammu Secretary General, J&K	Ms. Anjana Khande (J&K) Expert	Dr. Poojita Prabhakar Public Health Practitioner, India
Guidance		Convener	Coordinators				
Dr. Chandan Ghosh Professor & Head Resilience Infrastructure Division NDRM, MoHA, Govt.	Dr. Gaurav Aggarwal Senior Consultant Resilience Infrastructure Division NDRM, MoHA, Govt.	Dr. Anand A.S. Nodal Officer J&K, SEDC	Dr. Anil K. Rana Assistant Professor NDRM, MoHA, Govt.	Mr. Prakash Mehta DRM Expert GeoHazards Society	Ms. Bhagwati Aar DRM, Expert GeoHazards Society	Dr. Shival Kaur VP, Resilience Infrastructure Division, NDRM, MoHA, Govt.	Ms. Sakshi Coordinator GeoHazards Society

**NIDM Training Portal**  
 Register yourself, then enroll for the upcoming Programme.  
 Get **Certificates** after successful completion of Programme.

**Registration Link:** <https://training.nidm.gov.in/>

**YouTube Links:**  
 Day 1 - <https://www.youtube.com/watch?v=377e1jmmof>  
 Day 2 - <https://www.youtube.com/watch?v=6Lk>  
 Day 3 - <https://www.youtube.com/watch?v=725M>

Jointly organized by  
**National Institute of Disaster Management**  
 (Ministry of Home Affairs, Govt. of India)  
 Dept. of Disaster Management, Relief, Rehabilitation and Reconstruction, J&K  
 &  
**GeoHazards Society (GHS)**



## Contents

1.	CONCEPT NOTE .....	2
2.	FLYER FOR THE TRAINING PROGRAMME .....	3
3.	ABOUT THE PARTNERING ORGANISATIONS .....	3
3.1.	NIDM .....	3
4.	EXECUTIVE SUMMARY .....	5
5.	BACKGROUND .....	7
5.1	TRAINING OBJECTIVES.....	9
5.2	TARGET AUDIENCE .....	9
6.	INAUGURAL SESSION .....	9
6.1.	WELCOME ADDRESS.....	9
6.2.	KEY NOTE ADDRESS .....	10
7.	PROGRAMME SCHEDULE .....	10
8.	PROCEEDINGS DAYWISE .....	10
8.1.	DAY 1 .....	10
8.1.1	INTRODUCTORY REMARKS .....	10
8.1.2	TECHNICAL SESSIONS .....	11
8.2.	DAY 2 .....	13
8.2.1	KEY NOTE ADDRESS .....	13
8.2.2	TECHNICAL SESSIONS .....	13
8.3.	DAY 3 .....	15
8.3.1	KEY NOTE ADDRESS .....	15
8.3.2	TECHNICAL SESSIONS .....	15
9	VALEDICTORY SESSION.....	16
10	ANNEXURES.....	18
10.1	ANNEXURE I – PROGRAMME SCHEDULE .....	18
10.2.	ANNEXURE II – PARTICIPANT LIST .....	20
10.3	ANNEXURE III - PHOTOGRAPHS.....	27
10.4	ANNEXURE IV - YOU TUBE LINKS.....	30
10.5	ANNEXURE V - SAMPLE OF THE CERTIFICATE .....	32
10.6	ANNEXURE VI – MEDIA COVERAGE.....	33

## 1. CONCEPT NOTE

A safe hospital is a facility whose services remain accessible and functioning at maximum capacity and within the same infrastructure immediately following a natural disaster. The term 'safe hospital' encompasses all health facilities, regardless of their level of complexity. A hospital is 'safe' when it enjoys the highest level of protection possible, when access routes to the health facility are open and when the water supply and electric power and telecommunications can continue supplying the health facility, thus guaranteeing continuity of operations and the ability to absorb the additional demand for medical care (WHO).

Making a health facility safer is as much about having vision and commitment as it is about actual resources. However, ensuring that the *hospital is disaster-resilient goes beyond the physical structure and to ensure that all these hospitals are functional and continue to provide emergency health care after a disastrous event, it is also critical that all equipment, contents and services of the hospitals remain functional after an earthquake event.* Moreover, the staff inside the hospital needs extensive training on how they should react during and after a disastrous event. Due to not knowing what to do when and how in such situation may create a problem.

The National Disaster Management Authority, Government of India has formulated the National Hospital Safety Policy Guidelines 2016 and Mass Casualty Preparedness and Management for a vision of India where all the health facilities should remain safe and functional post-disaster situation to serve the affected communities in 'golden hours'. The guidelines focus upon the urgent need to strengthen risk resilience of hospitals of the country. GHS has contributed in formulating these guidelines.

This training programme is a collaborative effort of Jammu & Kashmir State Disaster Management Authority (JKSDMA), NIDM and GHS. Jammu & Kashmir State has witnessed a long history of natural disasters, ranging from catastrophic earthquakes to destructive floods, snow blizzards to avalanches, landslides to wind storms; allowing to its peculiar topography, rugged terrain, extreme weather conditions, and unique geographical and geo-climatic settings. Kashmir has a history of earthquake in 2005 that killed thousands of people. Any earthquakes happen in Himalayan region may affect J&K. Considering the importance of health facilities in Jammu & Kashmir, this training supports the mission of Jammu & Kashmir State Disaster Management Authority (JK SDMA) to "*Help people, to help themselves*".

The 3-day Online Training Program (OTP) comprises of learning sessions on various aspects of hospital safety and functionality including structural safety, non-structural risk mitigation, and disaster management planning and energy efficient practices in health facilities. GHS has been

facilitating similar training program across India with various state nodal agencies. The sessions focus on building the capacities of government officials, engineers, hospital staff and healthcare workers for better preparedness and mass casualty management during emergencies.

## 2. FLYER FOR THE TRAINING PROGRAMME

The flyer is for a 3-day online training programme titled "Building Resilience of Health Facilities" held from October 27th to 29th, 2021, from 02:00 PM to 04:00 PM. It is jointly organized by the Department of Disaster Management, Relief, Rehabilitation and Reconstruction, Govt. of J&K, and the National Institute of Disaster Management (NIDM), MHA, Govt. of India, along with GeoHazards Society (GHS). The flyer lists the following individuals:

- Patrons:**
  - Mr. Govind Bhatia, Executive Director, NIDM, MHA, Govt.
  - Dr. Anshu Ash, Hotel Officer, J&K, SEOC
  - Dr. Hari Kumar, Regional Secretary, GeoHazards International
- Eminent Speakers:**
  - Dr. V. Suresh, National Chairman, India Swachh Mission, Swachh
  - Dr. R. S. Sharma, Project Director, Solid Pw Service
  - Dr. Lata Arora, Quality Manager & Team-GE, GRC Systems, Secretary General, IIRAO
  - Ms. Anurag Kanda, IIR Expert
  - Dr. Poojita Prabhakar, Public Health Practitioner, India
- Guidance:**
  - Dr. Chandra Ghosh, Professor & Head, Resilience Infrastructure Division, NIDM, MHA, Govt.
- Convenor:**
  - Dr. Geetika Aggarwal, Senior Consultant, Resilience Infrastructure Division, NIDM, MHA, Govt.
- Coordinators:**
  - Dr. Anil K. Khan, Assistant Professor, NIDM, MHA, Govt.
  - Mr. Shubham Mehta, DPM Expert, GeoHazards Society
  - Ms. Shagorika Iyer, DPM Expert, GeoHazards Society
  - Ms. Shweta Wadhwa, VR, Resilience Infrastructure Division, NIDM, MHA, Govt.
  - Ms. Sakshi, Consultant, GeoHazards Society

Additional information on the flyer includes the NIDM Training Portal, a QR code, and YouTube links for each day of the program.

## 3. ABOUT THE PARTNERING ORGANISATIONS

### 3.1. NIDM

*The National Institute of Disaster Management (NIDM)* was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region. The efforts in this direction that began with the formation of the National Centre

for Disaster Management (NCDM) in 1995 gained impetus with its re designation as the National Institute of Disaster Management (NIDM) for training and capacity development. Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management.

NIDM has performed a crucial role in bringing disaster risk reduction to the forefront of the national agenda. The Institute believes that disaster risk reduction is possible only through promotion of a "Culture of Prevention" involving all stakeholders. The Institute works through strategic partnerships with various ministries and departments of the central, state and local governments, academic, research and technical organizations in India and abroad and other bi-lateral and multi-lateral international agencies. NIDM provides Capacity Building support to various National and State level agencies in the field of Disaster Management & Disaster Risk Reduction. The Institute's vision is to create a Disaster Resilient India by building the capacity at all levels for disaster prevention and preparedness.

### **3.2 JKSDMA**

J&K has a structured institutional mechanism to deal with disasters. The Disaster Management Authority is headed by the Hon'ble Lt Governor. Jammu and Kashmir has the unique distinction of having a shifting Capital, between Srinagar and Jammu, every six months and therefore J&K has two unique Divisional Disaster Management Authorities for Kashmir and Jammu Divisions, which are headed by the respective Divisional Commissioners. This is in addition to the JKDMA and District Disaster Management Authorities, to manage the whole gamut of disasters. J&K Emergency Operation Center is established in prefab structures for ensuring effective management of disasters. Till the time the permanent EOCs are constructed, interim EOCs have been established. J&K Disaster Management Plan, J&K Disaster Management Policy and District Disaster Management Plans have been prepared and are regularly being updated and upgraded. J&K has established two dedicated Battalions of the Disaster Response Force. Besides this, the Fire & Emergency Services is also being strengthened and upgraded. Community is amongst the first responders in any disaster situations and therefore, the State has taken innovative initiatives for creating awareness amongst general masses and for building up their capacity, so that they are better equipped to handle any exigencies. Training of students and teachers on School Safety Measures has been accorded top priority. Revenue Officers, including District Collectors, Tehsildars, Patwaris, Senior Administrators and Municipal Ward Corporators will be imparted training and involved in preparation of Community Level Disaster Management Plans.

### 3.3 GEOHAZARDS SOCIETY

**GeoHazards Society (GHS)** is a not-for-profit organization working towards disaster risk reduction and climate change adaptation by making the country's most vulnerable communities safer from various hazards, through preparedness and mitigation.

GHS seeks to provide cohesive and clear assistance to build disaster resilience in hazard-prone communities on the line of global efforts and commitments such as Climate Change (COP 21), Sustainable Development Goals (SDGs) and Sendai Framework for Disaster Risk Reduction (SFDRR). The organization has worked extensively to help improve disaster resilience of the vulnerable communities in various states in the country such as Himachal Pradesh, Delhi, Assam, Maharashtra, Kerala, etc. Along with its international partner organisation, GeoHazards International (GHI) the organisation has been involved in numerous training and capacity building programs for communities, health professionals, engineers, corporate offices, and school administrators in India, Nepal, Myanmar, and Bhutan.

GHS strives to encourage preparedness and mitigation at all levels of society including Government departments, schools, hospitals, corporate sectors, and communities at large. The mission of GHS is to work towards making the country's most vulnerable communities safer from geological, climate-related and other hazards, through preparedness and mitigation and envisions to build a safer, disaster-resilient India with self-reliant prepared communities whose development will not be affected by disastrous events.

## 4. EXECUTIVE SUMMARY

A three-day online programme for imparting training on “Building Resilience of Health Facilities” was organized by Department of Disaster Management, Relief, Rehabilitation and Reconstruction, Government of J&K; National Institute of Disaster Management (NIDM) and GeoHazards Society (GHS) from 27<sup>th</sup> October, 2021 till 29<sup>th</sup> October, 2021.

The training was conducted under the Patronage of Maj Gen M.K Bindal Executive Director, NIDM; Er. Amir Ali Nodal officer J&K SEOC and Dr. Hari Kumar Regional coordinator GeoHazards International; and under the guidance of Dr. Chandan Ghosh Professor & Head Resilient Infrastructure Division, NIDM, MHA, GOI.

In his key note address, **Dr. Chandan Ghosh**, highlighted, the role of spirituality and traditional knowledge which can help in preventing health risks and make our societies resilient. Following this, **Er. Amir Ali** emphasized on the need for adopting a multi-pronged and interdisciplinary approach, suitable structural as well as non-structural measures in the healthcare infrastructure, and to enhance the capacity of our emergency medical response and mass casualty management through training medical teams and paramedics.



**Dr. Hari Kumar** of GeoHazards Society led the learning sessions with a presentation on keeping hospitals functional during and after disastrous events. This set the context of the sessions which followed of many eminent experts in fire and structural safety and practitioners in the field of disaster risk reduction. On the first day, **Sri R.C Sharma**, Former Director, Delhi Fire Services spoke on the peculiarities of fire safety in hospitals especially electric fire and underscored that fire safety can be attained by reducing combustible materials. **Sri. V. Suresh**, Ex-CMD, HUDCO and Chairman of the Indian Green Building Council elaborated on the importance of code compliant buildings, parts of the building codes which enable resilient hospitals and the green building norms that can be adopted in healthcare institutions.

The day two sessions began with the key note address of **Ms. Aparna Kanda**, a human rights practitioner and a DRM enthusiast who urged to bring people, community and particularly the vulnerable groups in the center-stage in all DRR activities. The session by **Dr. Poornima Prabhakar**, Head of Centre of Excellence for Green and Climate Resilient Healthcare facilities at Public Health Foundation India, illustrated on the impact of climate change on communities and healthcare. Dr. Prabhakar detailed about the building blocks of health systems and their linkages with the key elements of climate smart healthcare, focusing upon the green and climate resilient infrastructure. Further, Dr. Hari Kumar, Head of GeoHazards Society, conducted a session on "Understanding Hazards that can affect Health Facilities" Dr. Kumar described about the Risk, Hazard, Vulnerability Capacity component and highlighted the built-in vulnerabilities through images. Dr. Kumar expressed his concern on the need to prioritize critical services to reduce risks.

Dr. Amir Ali, Assistant Professor at NIDM, during his key note address on the final day stressed upon the participation of all stakeholders, need to develop capacities, develop SOPs and DM

plans and testing the plans regularly. The learning session that followed was delivered by Dr Lallu Joseph Quality Manager and Associate General Superintendent, Christian Medical College Vellore and Secretary General, Consortium of Accredited Healthcare Organizations (CAHO). With her experience of being a hospital safety assessor, she spoke about the preparation of fire evacuation plan especially in the COVID scenario, and the importance of testing the plans through pre-announced and surprise mock drills. This was followed by a session by Sri. Mohd. Mudassir, DRR Expert from GeoHazards Society who illustrated about the non-structural risk assessment and mitigation measures and constitution of the Incident Response System within hospitals involving all stakeholders, with special reference to earthquake risks which was very pertinent to a state like J&K situated in high-risk zone.

The sessions on all the three days were attended by a versatile group of participants including J&K officials, engineers and doctors from J&K, other Indian states and also from abroad and also live streamed in NIDM's YouTube platform. Er Amir Ali of SEOC J&K mentioned that the Hospitals in J&K have Disaster Management Plans, and manuals which are in practice and expressed his willingness to share it with others and NIDM for cross learning experiences.

## 5. BACKGROUND

Asia is among one of the most disaster-prone regions in the world. Local government, stakeholders, and decision makers frequently deal with numerous small and medium disasters, because of various hazards and vulnerabilities. According to WHO, hospitals represent enormous investments for any country and destruction of such facilities results in significant economic burdens. WHO has defined a safe hospital as one that will not collapse in disasters, killing patients and staff; can continue to function and provide its services as a critical community facility when it is most needed; is organized, with contingency plans in place and health workforce trained to keep the network operational (WHO, 2015). Failure of hospitals and emergency services during a disaster can greatly affect public morale and a community's social and health capital. Health systems are at the forefront of responding to any crisis. Clearly, it becomes imperative to build and strengthen resilience of the healthcare systems. Health systems, especially hospitals, are critical infrastructure that occupies a vital role in serving the communities both routinely and in response to emergencies, disasters and crisis. Health systems depend on a range of public, private and non-governmental health facilities such as hospitals, primary health care centres, laboratories, pharmacies and blood banks with non-health sectors, including energy and water supplies, transport, emergency services etc. which must remain functional to ensure the continuity of health services. Hence, mainstreaming of risk reduction is non-negotiable in the hospital set up.

The ability of health services to remain safe and functional without interruption in these situations is vital for life and death. It is one of the targets of the Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030, that is, “*to substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030*”. The SFDRR also makes specific references in para 33 (c) to *promote the resilience of new and existing critical infrastructure, including hospitals and other health facilities, to ensure that they remain safe, effective and operational during and after disaster in order to provide live saving and essential services*. Yet hospitals and health care workers are often among the victims of emergencies, with the result that health services cannot be provided to affected communities when they are most needed.

The continued functionality of the hospital in a post disaster scenario depends on a range of factors, including the safety of its buildings, critical systems and equipment, the availability of supplies, and the emergency management capacities of the hospital.

Health facilities in India can be affected by multi hazards including natural and human-induced. However, most hospital buildings are vulnerable to the effects of several hazards and need to be retrofitted to raise their level of performance so that these remain *fully functional* after a catastrophic event. It is not enough that the hospital building is strong enough to withstand the effects of an earthquake, but all the critical equipment and services in the building have to remain secure and running to operate *at over 300% of its design capacity* to serve the dependent community after any disaster like earthquakes, floods, major fires, and terror attacks. There is a need of higher level of preparedness to manage the incoming patients and provide them with the best facility. It is important that the decision makers and other staff in health facilities understand the importance of the factors affecting functional continuity and take steps to mitigate these.

For a safe health facility to remain intact, accessible and functioning at maximum capacity before, during and immediately following an emergency or disaster, it relies on key factors, as follows:

- Health facilities should be able to resist exposures and effects to all types of hazards
- Medicine and medical equipment that are critically essential should be protected from damage from various types of hazards
- Community infrastructure and critical services (such as water, electricity, medical and oxygen supplies etc.) should be available to support the delivery of health services; and

- Health personnel who can provide medical assistance in safe and secure settings where and when they are most needed

## 5.1 TRAINING OBJECTIVES

- Promote knowledge and experience sharing through case studies.
- Brainstorm on the present policies, capacity issues and scope of research.
- Understand the approaches and tools for assessments and planning.
- Discuss Fire Safety Management strategies in Hospital with especially during covid-19.
- Describe Structural Safety and Green Safety Norms for Health Facilities.
- Delineate a roadmap for building Climate Resilience of Health Facilities.
- Understand the hazards that can affect health facilities.
- Non-structural risk assessment and mitigation
- Preparedness and Planning for Health facilities.
- Mock drills and testing of DM Plans
- Develop criteria for prioritizing future actions.

## 5.2 TARGET AUDIENCE

The programme is developed looking into the performance gaps and training needs of the following target participants:

- Executives/ professionals from government agencies, boards, schemes.
- Members/representatives from non-governmental and community organisations engaged in activities related to planning, implementation, monitoring of any aspect of healthcare system management.
- Its scope extends to all the stakeholders but not limited to them, awareness is needed on the part of entire community.

## 6. INAUGURAL SESSION

### 6.1. WELCOME ADDRESS

The inaugural session commenced with a warm welcome to the dignitaries and participants by the conference convener **Dr. Garima Aggarwal**, Senior consultant, *NIDM*. She shared the session's agenda which is being held in partnership with *GHS* a not-for-profit organisation and the State Emergency operation centre, Dept. of Disaster Management, Relief, Rehabilitation and

Reconstruction, J&K and NIDM, who are promoting disaster resilience through state disaster management authorities and gave references to the PM's 10-point agenda and SFDRR. She described that India is vulnerable to various disasters which have stories of destruction to hospitals and health care facilities which are the lifeline during most emergencies. She illustrated with the examples of Bhuj earthquake and Jammu & Kashmir floods (2014) where health systems collapsed when it was needed the most. She reminded about the guidelines prepared by the National Disaster Management Authority (NDMA) on Hospital safety and Mass casualty management and expressed her concern for resilience building.

## 6.2. KEY NOTE ADDRESS

**Dr. Chandan Ghosh**, Professor and Head, Resilient Infrastructure Division, National Institute of Disaster Management (NIDM) delivered the key note address. Dr. Ghosh informed about the programmes conducted by NIDM for resilience building. He appreciated India's traditional knowledge system, where we tend to cure ourselves from the root, to resist Covid-19 pandemic. He expressed the role spirituality in resilience building.

**Er. Amir Ali**, Nodal Officer J&K SEOC, expressed his concern that hospitals need to be operational without interruption and the need to adopt multi-pronged system. He touched upon the need to build capacity and in these lines informed about the Digital Risk Database and Integrated Operational Forecasting System. He set the stage for the learning sessions to begin

## 7. PROGRAMME SCHEDULE

The day wise program schedule with the details of the learning sessions and the resource persons is enclosed as Annexure - 1

## 8. PROCEEDINGS DAYWISE

### 8.1. DAY 1

#### 8.1.1 INTRODUCTORY REMARKS

**Dr. Hari Kumar**, Head of GeoHazards Society, highlighted that the need is not of safe hospitals but functional hospitals. He touched upon the ingredients of the safe hospital which includes safe buildings, availability of supplies, functional communication, functional utility systems, functional medical equipment's, prepared and safe staff. He also touched upon the scenarios that can take place.

### 8.1.2 TECHNICAL SESSIONS

**Dr. R.C Sharma**, Former Director, Delhi Fire Service conducted a session on “Fire Safety Management in Hospital with special reference to COVID-19 pandemic”. He elaborated on the fire safety scenario through video and expressed his concern that despite of all plans a simple malfunctioning of an electrical equipment would need the people present to be aware and the electrical safety of the built-in facilities needs to be there. He described on the dangers associated with a fire incident. He gave examples of fire incidents in covid-19 related facilities in Delhi, Mumbai including the incident at Surendra Nagar, Gujarat, Covid-19 care centre, where 8 patients were killed on Sep 29, 2020; GG Hospital Jamnagar, Delhi had a fire in ECG machine and 9 patients had to be evacuated. He also informed that smoke can spread horizontally or vertically so early detection of fire is important, the PVC material used in equipment gives heavy smoke. He suggested some of the measures that are very important such as



He described on the dangers associated with a fire incident. He gave examples of fire incidents in covid-19 related facilities in Delhi, Mumbai including the incident at Surendra Nagar, Gujarat, Covid-19 care centre, where 8 patients were killed on Sep 29, 2020; GG Hospital Jamnagar, Delhi had a fire in ECG machine and 9 patients had to be evacuated. He also informed that smoke can spread horizontally or vertically so early detection of fire is important, the PVC material used in equipment gives heavy smoke. He suggested some of the measures that are very important such as

- Electrical equipment must be BIS marked
- The location of Electric main switch must be known to everyone.
- There should be proper provision of smoke venting, automatic fire dampers.
- It is essential use minimum combustible materials.

#### Key takeaways

1. For fire safety, the dependency has to be on the built-in facilities rather than fire brigade and staff members around should be aware about how to manage a fire situation.
2. Smoke has been the biggest factor for mortality and is the most crucial point of concern.
3. There is a need for automatic facilities for fire suppression.
4. Early detection and response to the fire is important to save lives.
5. There is a need for safe evacuation routes.
6. Need of awareness and drills, else the best of plans can fail.
7. There is a need of alarm and suppression facilities.

**Mr. V. Suresh**, Chairperson, Indian Green Building Council, conducted a session on “Structural Safety and Green Safety Norms for Health Facilities”. He gave certain facts on the increasing population and thus an increase in demands of all other needs and facilities. He urged the need for all the construction to be environment friendly, ecologically appropriate, energy saving and resilient in lines of the goals of Net zero carbon by 2050 and SDG’s 2015-30. He described the four pillars of safety i.e. structural safety, fire safety, Health safety, Public safety. He elaborated on the Techno Legal provisions on hospital safety through the book of National Building code of India. He took the examples of various hazards to depict structural safety measures such as:



#### **Cyclone -**

- Wind direction and speed is an important component to be considered for building hospital building especially in cyclone-prone areas.
- The height of hospital buildings, are always restricted with critical areas on lower floor because it is people who are vulnerable.

#### **Earthquake –**

- Important buildings collapsed in the Bhuj earthquake s soon as the earthquake arrived.
- Areas with more intensity needs more safety measures.
- Need to look at the absolute level of vibration that can arrive in a hospital building.
- Need of floor loading need to be done.
- Design acceleration spectrum is needed depending on the soil type.
- Specific building features such as: lateral strength, elastic lateral stiffness, adequate ductility, minimum lateral force, response reduction facto, damping ratio, separation between adjacent units, robust structural configuration.

He also covered aspects related to soils and foundation, timber, masonry, concrete, prefabricated concrete, structural use of glass, fire and loading, Energy and light, sound insulation, escalators, lifts, moving walks, plumbing services, solid waste drainage and sanitization. He also explained about the green building norms and codes.

#### **Key takeaways:**

1. Structural engineers are needed to build structures that can resist multiple hazards.
2. Expert review panel is needed.
3. Assess load, force, and effect.
4. Good coordination between the structural engineer, architect, and hospital authority.
5. Base below needs to be stronger.

## 8.2. DAY 2

### 8.2.1 KEY NOTE ADDRESS

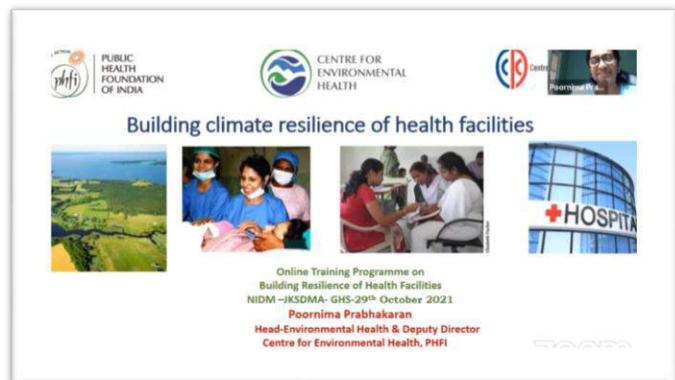
**Ms. Aparna Kanda**, a human rights practitioner and a DRM enthusiast, urged to bring people, community and particularly the vulnerable groups in the centre-stage of all DRR activities. She appealed to look at the disaster scenario from the human rights perspective. She elaborated them about making hospitals functional during Disasters and mainstreaming Disaster Risk Reduction (DRR). Ms. Kanda stressed on the need for decision support system in DRR which was mentioned by Er. Amir Ali, on day one, and to safeguard the rights of the people. She set the stage for the learning session of the day to begin.

### 8.2.2 TECHNICAL SESSIONS

**Dr. Poornima Prabhakaran**, Head of Centre of excellence for green and climate resilient healthcare facilities at Public Health Foundation India, conducted a session on “Building Climate Resilience of Health Facilities” where she discussed about the impact of climate change on communities and healthcare. She elaborated on the global impact of Climate change which is leading to

an increase in disease burden, forced migration, civil conflict, malnutrition, diarrheal deaths, asthma among others. She underscored the importance of health sector that is critically important in climate change adaptation. Dr. Prabhakaran discussed on the building blocks of health systems including Leadership and governance, health workforce, health information systems, essential medical products, service delivery, health financing and key elements of climate smart healthcare, holistically focusing upon the green and climate resilient infrastructure.

She also highlighted that healthcare sector produces 4.4% carbon footprint of global emissions, which is a staggering figure and needs attention. She described about the work of PHFI in implementing the national programme.

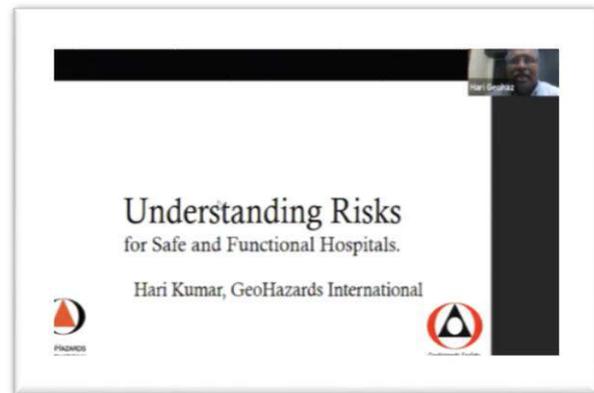


## Key Takeaways

1. Climate change is the biggest problem of the 21<sup>st</sup> century and it needs adequate attention.
2. Climate change strikes at the very core of health systems which exacerbates the existing inequities.
3. Implications of Climate Change for a developing country like India cannot be understated as it was weaker health infrastructure which makes it more vulnerable.
4. National Health Mission (NHM) is a step in the direction.
5. Each state should do a vulnerability risk mapping for climate to develop a response mechanism.
6. Innovative methods of health care like telemedicine, decision support systems can be very helpful.

**Dr. Hari Kumar**, Head of GeoHazards Society, conducted a session on “Understanding Hazards that can affect Health Facilities”. He mentioned the paradigm shift from reactive approach to proactive measures. Dr. Kumar described about the Risk, Hazard, Vulnerability, Capacity component. He took the situation of two cities, one from each Japan and India and compared the two by highlighting the services, built in vulnerabilities through images. Dr.

Kumar expressed his concern on the need to prioritize critical services to reduce risks.



## Key Takeaways

1. Japan learns not only their own lessons but also from others, similarly we need to learn from others.
2. Reducing risk requires to reduction of vulnerabilities, and increase in capacities.
3. There is an immense need to promote safety and resilience of health facilities
4. Building resilience of health facilities involve addressing the whole basket of risks and making every components in the hospitals prepared and resilient.
5. There should be redundancy critical utilities within hospitals with adequate storage facilities
6. Preparedness and better planning help save lives.

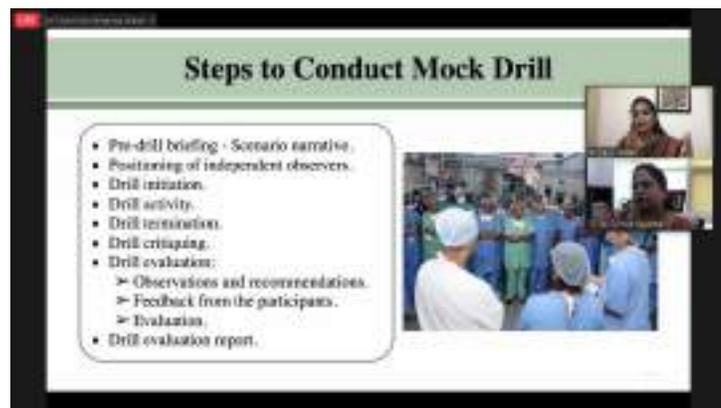
## 8.3. DAY 3

### 8.3.1 KEY NOTE ADDRESS

**Dr. Amir Ali**, Asst. Professor, NIDM underscored that the hospitals are very vital for the community and that coordination mechanism on part of all the stakeholders is need to have and effectively reduce the risk of disasters. He also elaborated upon the need to understand risks and effectively reduce the vulnerability. He set the stage for the day 3 to begin.

### 8.3.2 TECHNICAL SESSIONS

**Dr Lallu Joseph**, Quality Manager and Associate General Superintendent, Christian Medical College, Vellore, Secretary General, Consortium of Accredited Healthcare Organizations (CAHO) conducted a session on “Preparedness and Planning for Health facilities”. She discussed all the major steps for disaster management with focus on planning and preparedness. She elaborated upon internal and external disasters, case studies, phases of emergency management, conducting risk assessment, preparing disaster management plans, and conducting mock drills. She detailed the steps for conducting mock drills both pre-announced and unannounced.



#### Key Takeaways:

1. Tabletop exercise is an excellent tool for understanding the awareness of staff.
2. There is a need of pro-activeness for effective emergency management.
3. Planning will not work unless the plan is tested and tried.
4. Hospitals need to prepare annual drill calendars and test the same in all departments within the facility.
5. Drill evaluation is also crucial for improvement.

**Mr. Mohd. Mudassir**, DRR expert, GHS conducted a session on “Non-structural risk assessment and mitigation”. He said that Disaster Management is not the responsibility of only particular people but of the entire community. In this context he explained the steps towards safety which includes, Understanding Hazards, Basic Disaster awareness, preparedness and planning, training of all staff members, non- structural risk mitigation, testing the plan, structural risk mitigation. He took the help of video and images to illustrate how non-structural can affect the safety of the place especially hospitals which has vulnerable people and modern equipment.



He touched upon the four types of losses during an earthquake which includes; life loss, function loss, property loss, community confidence loss and gave some solutions such as Relocate, anchor brace or restrain against shaking, accommodate movement, plan for clean-up.

He explained about how to make a robust plan which includes hospital safety committee, assess risk, develop an emergency plan, prepare people and provisions, test plan, and mitigate risk. He showed the different set of Standard operating procedures that should be there for potential hazards.

#### **Key Takeaways:**

1. Hospitals are the lifelines.
2. Essential utilities should not be compromised and its supply plan should not be compromised.
3. Even small shaking of earth can have large impact when non-structural items move.
4. Need of safe evacuation routes.
5. Functional Hospitals should be the last standing buildings.
6. Critical departments’ functionality should not be compromised.
7. It is crucial to have an Incident command system.

## **9 VALEDICTORY SESSION**

Dr. Garima Aggarwal, Senior Consultant NIDM in the event’s closing remarks summarized the proceedings of the three days and appreciated the speakers and their presentations on crucial topics of healthcare sector.

She described that Health facilities can get affected when these are needed the most. So any new development of a health infrastructure should be resilient to the natural and human-made hazards. She underscored that the SFDRR, NDMA guidelines and NDMP highlights the needs to build resilient health care facilities to keep the hospitals functional especially in the “golden hours” after the disastrous events. She said, that the supply chain comes under stress during the disasters, so there is a need for mass casualty management plan for resource management. There is also a need for building capacity of climate resilient health systems to ensuring robust leadership, governance, safety of workforce, services, health financing and creating health information systems for example telemedicine. She expressed that, to strengthen the response mechanism mock drills are very important and responsibilities should be delineated to all.

Dr. Aggarwal concluded that the session had been a good learning experience and briefly touched upon the presentation of each speaker and thanked all the panelists, moderators, entire team of GeoHazards Society, Dept. of Disaster Management, Relief, Rehabilitation and Reconstruction, Govt. of J&K and the participants for their intense attention and interest throughout the sessions.

## 10 ANNEXURES

### 10.1 ANNEXURE I – PROGRAMME SCHEDULE

#### DISTINGUISHED PANELISTS OF THE WEBINAR

Time	Topics	Panelists
<b>Day 1, Date: 27.10.2021</b>		
2.00 p.m-2.05 p.m.	Welcome Address and Context Setting	Dr. Garima Aggarwal, Senior Consultant, Resilient Infrastructure Division, NIDM
2.05 p.m. – 2.15p.m.	Key Note Address/Chair	Maj. Gen. Manoj Kumar Bindal, Executive Director (NIDM), Govt. of India (GOI) Prof. Chandan Ghosh, Resilient Infrastructure Division, NIDM
2.15 p.m. - 2.25 p.m.	Address: Introduction to hospital safety	Dr Hari Kumar, Head of GeoHazards Society
2.25 p.m. – 2.30p.m.	Address	Er. Aamir Ali, Nodal Officer, J&K SEOC
2.30 p.m.- 3.15 p.m.	Learning Session- 1: Fire Safety Management in Hospital with special reference to COVID-19 pandemic	Mr. R.C Sharma, Former Director, Delhi Fire Service
3.45 pm – 4.00 pm	Learning Session- 2: Structural Safety and Green Safety Norms for Health Facilities	Mr V. Suresh, Chairperson, Indian Green Building Council
<b>Day 2, Date: 28.10.2021</b>		
2.00 p.m. - 2.10 p.m.	Welcome and Recapitulation of Day 1	Ms Bhagavathy Iyer, DRR Expert, GHS
2.10 p.m. - 2.20 p.m.	Keynote Address	Ms. Aparna Kanda, Ex-DRM Associate

3:00-p.m -3:40p.m.	Learning Session- 3: Building Climate Resilience of Health Facilities	Poornima Prabhakaran, Head Environmental Health and Deputy Director, Centre for Environmental Health, PHFI.
3:40p.m - 4:00 p.m.	Learning Session- 4: Understanding hazards that can affect health facilities	Dr Hari Kumar, Head of GeoHazards Society
<b>Day 3, Date: 29.10.2021</b>		
2:00p.m - 2:05 p.m.	Welcome and Recapitulation of Day 2	Ms. Sakshi, Consultant, GHS
2.05 pm. - 2.15 p.m.	Keynote Address	Dr. Amir Ali, Asst. Professor, NIDM
2.15 p.m. – 3.00 p.m.	Learning Session- 5: Preparedness and Planning for Health facilities	Dr. Lallu Joseph Quality Manager and Associate General Superintendent, Christian Medical College Vellore   Secretary General, Consortium of Accredited Healthcare Organizations (CAHO)
3.00 p.m. – 3.50 p.m.	Learning Session- 6: Non-structural risk assessment and mitigation	Mr. Mudassir, DRR expert, GeoHazards Society

## 10.2. ANNEXURE II – PARTICIPANT LIST

### List of Participants who attended the webinar (as per ZOOM platform report)

#### DAY 1 – 27-Oct-2021

Sno	First Name	Email
1	Manjunath R	vu3cjm@gmail.com
2	Harinarayan Choudhary	harinarayan8355@gmail.com
3	Shakeel Ahmad	rainbowfilms.kash@gmail.com
4	Doha Abdelzaher	do7amohammed@gmail.com
5	Sagnik Chakraborty	sagnikchakraborty978@gmail.com
6	Sakshi	sakshi.geohaz@gmail.com
7	Jordan Asedillo	dhanasedillo@gmail.com
8	Dr Ajaz thannamandi	draijaz851@gmail.com
9	Dr.Sumit bakshi	sumitb.ndf@gmail.com
10	Dr. Garima Aggarwal	agg.garima@gmail.com
11	RaviRanjan Raj	rajraviranjan123456@gmail.com
12	Oinam Meitei	oinam.meitei89@gmail.com
13	Kumar Ganesan	kumarg@hku.hk
14	Thenuneinuod	thenuneinuod@gmail.com
15	Koppula Prawan	koppulaprawan@gmail.com
16	5396 sakeena nisar	sakeenaranu8899@gmail.com
17	Lal Singh Anthal	anthal875@gmail.com
18	Ehtisham Ahmad Khan	eakhan1@gmail.com
19	Manoj Kumar Jha	manoj61367@gmail.com
20	Rashid Bhat	rbhat4469@gmail.com
21	Mansoor Mohsin	manzoormohsin21@gmail.com
22	Thansiam Lawtlai	tslodlai@gmail.com
23	Altaf Hussain	ahussainbhat4396@gmail.com
24	Usha Rani	arora.angely@yahoo.in
25	ADIL Naqash	adilnaqash123@gmail.com
26	Nitesh .	niteshmarval97@gmail.com
27	Suheel Bazil	bazilasuheel30@gmail.com
28	Bilquees dar	bilqueesdar07@gmail.com
29	Dr Anil Kumar	anilkumar-cgwb@gov.in
30	Dr Md Faiz Shah	mdfaizshah@yahoo.com
31	Adarsh kranti	dr.adarshkranti0@gmail.com
32	Prof.Dr.I.Manavalan Ilakkuvan	imanavalan56@gmail.com
33	Dr Farooq Tantray	farooqahmedtantray@gmail.com

Sno	First Name	Email
34	Dr. Sharmila Rajesh Kubde	sharmila.kubde@gmail.com
35	Naved Khaliq	khaliq.naved@gmail.com
36	Hema	yaddanapudihemarao@yahoo.co.in
37	Waseem Shafi Dar	sc.jksdma@gmail.com
38	Shahid ahmad dar	darshahid3358@gmail.com
39	Mudassir GeoHazards	geohazsociety@gmail.com
40	Shaad Warsi	warsishaad72@gmail.com
41	Abhinav Kumar Singh	theimperfect50@gmail.com
42	V. L. Rinawmi	vlrinawmi9@gmail.com
43	Sarath Babu Arava	asarath.3015@gmail.com
44	Prasad Upasani	pvupasani@gmail.com
45	8253 _Sarmad(A)	sarmadmalik85@gmail.com
46	Azan Bhat SSM College	azanbhat209@gmail.com
47	Neha Gautam	neha.gtm19@gmail.com
48	5316 Sakib	skibahbhat@gmail.com
49	Gurudas Baroi	gurudas22051999@gmail.com
50	Athar Javeed	malikathar309@gmail.com
51	Dr Sourav Maiti	smaiti76@gmail.com
52	Madeeha Malik	madihamalik144@gmail.com
53	Rajan Kumar	rajan.sharmanov1991@gmail.com
54	Sanjeev Gupta	fdpsanjeevpreeti@gmail.com
55	AA Sarma	apsarma1@gmail.com
56	Dr. Girish Kumar	gsrivastavaignou@gmail.com
57	DR Kishora Kumar Bedanta	kishorakumarbedant@gmail.com
58	Faizan Bashir	faizanbashir1234@gmail.com
59	Kamal Joshi	kamaljoshi75@gmail.com
60	Aparna Kanda	aparnakanda@gmail.com
61	Sakshi Tomar	sakshi.tomar@chitkarauniversity.edu.in
62	Sundus Imtiyaz	imtiyazsundus246@gmail.com
63	Bhagavathy	kerala.geohaz@gmail.com
64	Ritu Singh	dakshbuggleplay12345@gmail.com
65	Achaiah MS	pratham.achaiah@gmail.com
66	Hariom Choudhary	choudharyhariom675@gmail.com
67	Tanish Bhutani	hitanish14@gmail.com
68	War Arshad	wararshad84@gmail.com
69	Dr. J L Gautam	jl.gautam@imd.gov.in
70	Sumreena	samreenkhanday@gmail.com
71	Satyajit Mahatab	satyajitmahatabces@gmail.com
72	Harbakhsh Singh	hs.civildfence@gmail.com

Sno	First Name	Email
73	Gautam Makwana	gautam_makwana@hotmail.com
74	Sadiya	sadiya4anim@gmail.com
75	Md Fauwadul Islam	md2008490@st.jmi.ac.in
76	Arghadeep	arghadeepgeo@gmail.com
77	Lalit Kishore	lkgaur76@gmail.com
78	Rabinath Boro	bororabinath@gmail.com
79	Shilpa Soni	sonishilpa1982@gmail.com
80	M Gurusamy	mgurusamy.civil@gmail.com
81	Ahmad Mujahideen bin Haji Yusoff	amy_mujahid@yahoo.co.in
82	Unnati sharma	meensharma2@gmail.com
83	Ubaid Shafi	ubaidregoo500@gmail.com
84	Md. Ali	ali.md1016@gmail.com
85	Mohammad Yousuf Ahanger	ahangeryousuf22@gmail.com
86	Rajesh Sharma	rcsharmadfs@gmail.com
87	matee ur rasool	mateeurrasool@gmail.com
88	Soni Kumari	india.soni0206@gmail.com
89	Mohammad Kawsar	mdkawsar@gmail.com
90	Prof Chandan Ghosh	cghosh24@gmail.com
91	Nasir Ahamed	nasid974@gmail.com
92	Adfar majid Janwari	adumajid@gmail.com
93	Rahul Kumar Kautilya	Intmgcubjrfprorksh@gmail.com
94	Laxmikant Doddamani	laxmikantdoddamani1@gmail.com
95	Jaseera Amin	jaseeraaminn456@gmail.com
96	Vanlalremruata Lushai	chenkual13vla@gmail.com
97	Shyam B	18eucs111@skcet.ac.in
98	Priyanshu Singh	priyanshusingh37350@gmail.com
99	Vikash Kumar	anushivangi2@gmail.com
100	Sheikh Mohd Faisal (5394)	inscrutablefaisal192@gmail.com
101	8215_Toiba Shafat Koul	toibakoul@gmail.com
102	Syed Kausar Shamim	kausar55@gmail.com
103	Muneeza Farooq 5323	muneezafarooq7@gmail.com
104	Hari Kumar	<a href="mailto:hari@geohaz.org">hari@geohaz.org</a>
105	Yeshey	<a href="mailto:yesheyotay@gmail.com">yesheyotay@gmail.com</a>
106	Rahul Bhatt	bhattr831@gmail.com
107	Omer A	mohammadomer2729@gmail.com
108	Shruti Sharma	sshrutisharma072@gmail.com
109	Thiyagarajan Radhakrishnan	rashmithiyagu@gmail.com
110	Dr.Thangasamy Milton	tmilton1971@gmail.com
111	arava sarath babu	asarath3015@gmail.com

Sno	First Name	Email
112	Nadeem Ul Ahad 7528	nadeemulahad786@gmail.com
113	minhaj nishat	fatimanishat2001@gmail.com
114	Patil Dattatraya Bhanudas	dattatrayap47@gmail.com
115	Nazakat	maliknazakat434@gmail.com
116	Abhik Chik Baraik	chikbaraik93@gmail.com
117	Sangam Adhikari	sangamadhikari1157@gmail.com
118	A. K. M. Thohidul Alam	thohidul.ce@gmail.com
119	J Lawrence	lawrence.lawru@gmail.com
120	Malik Irtiza	malikirtiza6325@gmail.com
121	Ibtisam Fayaz	ibtifayaz9@gmail.com
122	ANJALI VERMA	anjusktv@gmail.com
123	Qaiser Ashraf (A)	qaiserashraf958@gmail.com
124	Firdous Wani	firdous.wani@gmail.com

#### DAY 2 – 28-Oct-2021

Sno	First Name	Email
1	Tuhina Parvin	nasid743293@gmail.com
2	Javid Iqbal	choudharyjavid121@gmail.com
3	Ajay Gupta	ajaygupta.mnc@gmail.com
4	Akshayjit Podder	chem.akshayjit.aus@gmail.com
5	Nagendra Singh	nagen62@yahoo.com
6	Hari Sankar Rout	swatpab@gmail.com
7	Muneeb Showkat	muneebshowkat517@gmail.com
8	Budha Kamei	budhakamei@gmail.com
9	Javed Ahmad Tak	jsocialactivist@gmail.com
10	K.Shikha	kumarishikhaindia99@gmail.com
11	Khursheed Ahmad Parray	kaparray2006@gmail.com
12	Ashaq Bhat	ahbhat.amu@gmail.com
13	Ishfaq Dar	ishfaq.dar456@gmail.com
14	Vandana Chauhan	chauhanvandana1977@gmail.com
15	Mohmad Suhail Wani	suhailwani1911@gmail.com
16	Sonam Dorje	sonamdore52@gmail.com
17	Manjusha Kumari	kmanjusha552@gmail.com
18	Sakshi Tomar	tomar.sakshi036@gmail.com
19	Wasia Afzal	wasiaafzal04@gmail.com
20	Md Maruf Raza	mdmarufraza0301@gmail.com
21	Ayaz Ebin Fayaz	ayazibnifayaz@gmail.com
22	Tehsildar Lar Ganderbal	tehsilofficelar@gmail.com

Sno	First Name	Email
23	vinod kumar	vinodkumar04031993@gmail.com
24	swarna jyothi	swarnajyothi@svecw.edu.in
25	Shikha Singh	8804513221shikhasingh@gmail.com
26	Sanjeev Arora	sanjeev.urbanplanner@gmail.com
27	Virendrakumar Thakkar	virendrakumarthakkar@gmail.com
28	Sardar Rameez Sudhan	rameezsuden@gmail.com
29	Sakshi	Sakshi.geohaz@gmail.com
30	Mir Shabu	mirshabu66@gmail.com
31	Ayesha Sabeen M	ayeshachemistry14@gmail.com
32	Sonu Kumar	sonu.luv65@gmail.com
33	Anita Arude	arudeanita9744@gmail.com
34	Dr Nasir Ahmad	adcbadgam@gmail.com
35	Poornima	poornima.prabhakaran@phfi.org
36	Aamir Ali	aamiralimir@gmail.com
37	Sanjeev Arora	ruda.jk@gmail.com
38	Dr Mohammed Osama	osama4447@gmail.com
39	Mohamed Ibrahim	ibm2k12@gmail.com
40	Ashwani Puri	appuri007@gmail.com
41	Mudassir GeoHazards	mudassirkhanafz75@gmail.com
42	Bhagavathy Iyer	iyerbhag@gmail.com
43	Dillip Mohanty	dkmohanty221@gmail.com
44	Rajeev Ranjan	rajran555@gmail.com
45	Surender 4206168	surendernawalrai11@gmail.com
46	Mohamad Zaid Sultanpuri	sultanpurizaid@gmail.com
47	Jaronggam Taifa	jaronggam.taifa728@gmail.com
48	Ibrahim Muhammad	ibrahimmuhammadabdul8@gmail.com
49	Lalit Kumar Yadav	lalit585@gmail.com
50	Ruhail Maqbool	sheikhruhail@gmail.com
51	Ravindra Reddy	ravindraoudepts@gmail.com
52	Mudassir GeoHazards	mudassirkha@gmail.com

### DAY 3 – 29-Oct-2021

Sno	First Name	Email
1	AA Sarma	apsarma1@gmail.com
2	Harinarayan Choudhary	harinarayan8355@gmail.com
3	Jintu Das	jintu247@gmail.com
4	Sagnik Chakraborty	sagnikchakraborty978@gmail.com
5	Surender 4206168	surendernawalrai11@gmail.com
6	Aparna Kanda	aparnakanda@gmail.com

Sno	First Name	Email
7	Dr Ajaz thannamandi	draijaz851@gmail.com
8	Dr.Sumit bakshi	sumitb.ndf@gmail.com
9	Mohamad Zaid Sultanpuri	sultanpurizaid@gmail.com
10	Dr. Garima Aggarwal	agg.garima@gmail.com
11	md Shamshad	shamshad.md134@gmail.com
12	Virendrakumar Thakkar	virendrakumarthakkar@gmail.com
13	Javid Iqbal	choudharyjavid121@gmail.com
14	Kumar	kumarg@hku.hk
15	Patil Dattatraya Bhanudas	dattatrayap47@gmail.com
16	Santosh Kumar	tetsantosh@gmail.com
17	Jaronggam Taifa	jaronggam.taifa728@gmail.com
18	Akshayjit Podder	chem.akshayjit.aus@gmail.com
19	Thenuneinuo	thenuneinuod@gmail.com
20	Koppula Prawan	koppulaprawan@gmail.com
21	Yeshey Lotay	yesheylotay@gmail.com
22	Buddhadeb Ghorai	buddhadebghorai1985@gmail.com
23	Sakshi	Sakshi.geohaz@gmail.com
24	Gautam Makwana	gautam_makwana@hotmail.com
25	Lal Singh Anthal	anthal875@gmail.com
26	Ehtisham Ahmad Khan	eakhan1@gmail.com
27	shruti sharma	sshrutisharma072@gmail.com
28	Vinodhini	vinodhini.c@kpriet.ac.in
29	Thansiana Lawtlai	tsloldlai@gmail.com
30	Sangam Adhikari	sangamadhikari1157@gmail.com
31	Arvind Chauhan	arvindchauhan.chauhan081@gmail.com
32	Usha Rani	arora.angely@yahoo.in
33	Rabinath Boro	bororabinath@gmail.com
34	Shilpa Soni	sonishilpa1982@gmail.com
35	Muneeb Showkat	muneebshowkat517@gmail.com
36	Budha Kamei	budhakamei@gmail.com
37	Nitesh	niteshmarval97@gmail.com
38	Thiyagarajan R	rashmithiyagu@gmail.com
39	Physics	ibrahimmuhammadabdul8@gmail.com
40	Dr.Thangasamy Milton	tmilton1971@gmail.com
41	A. K. M. Thohidul Alam Khan	thohidul.ce@gmail.com
42	MD. Ali	ali.md1016@gmail.com
43	Khursheed Ahmad Parray	kaparray2006@gmail.com
44	Dr. Amir Ali Khan	amir.nidm@nic.in
45	Dr Anil Kumar	anilkumar-cgwb@gov.in

Sno	First Name	Email
46	Dr Farooq Tantray	farooqahmedtantray@gmail.com
47	Soni Kumari	india.soni0206@gmail.com
48	Aamir Ali	aamiralimir@gmail.com
49	Naved Khaliq	khalique.naved@gmail.com
50	Prof Chandan Ghosh	cghosh24@gmail.com
51	Aabid Rizvi	hussain.aabid1@gmail.com
52	Abhinav Kumar Singh	theimperfect50@gmail.com
53	Nasir Ahamed	nasid974@gmail.com
54	LALIT KUMAR YADAV	lalit585@gmail.com
55	Ashwani Puri	appuri007@gmail.com
56	Ruhail Maqbool	sheikhruhail@gmail.com
57	Mohmad Suhail Wani	suhailwani1911@gmail.com
58	RAVINDRA REDDY	ravindraoudepts@gmail.com
59	Prasad Upasani	pvupasani@gmail.com
60	Sakshi Tomar	tomar.sakshi036@gmail.com
61	Dr.Sayana, India	sayanabhaskaran123@gmail.com
62	SANJAY KUMAR MAHTO	sanju567smart@gmail.com
63	Shyam B	18eucs111@skcet.ac.in
64	Dr. Lallu Joseph	lallujoseph@hotmail.com
65	Abhishek Kumar kashyap	abhishekkumarkashyap148@gmail.com
66	AYAZ EBIN FAYAZ	ayazibnifayaz@gmail.com
67	Tehsildar Lar Ganderbal	tehsilofficelar@gmail.com
68	Vikash Kumar	anushivangi2@gmail.com
69	Mudassir GeoHazards	mudassirkha@gmail.com
70	Neha Gautam	neha.gtm19@gmail.com
71	Bhagavathy Iyer	iyerbhag@gmail.com
72	Dr Sourav Maiti	smaiti76@gmail.com
73	Rekha Abraham	rekha.abe@gmail.com

### 10.3 ANNEXURE III - PHOTOGRAPHS



**Conclusion**

- Rescue of people or life support systems or bed ridden patients in a Hospital is a rather impossible task in the event of an outbreak of a fire. Possibility of lateral or the same floor can make it easier.
- Prevention of all possible Fires by using minimum combustible materials, safe electrical equipment & connected safety facilities, becomes essential.
- The need of a Fire Alarm, built in Fire suppressor and smoke free means of Egress is a must for Hospitals, as we will not have time to wait for Fire Service to save life. Facade and Centrally Air Conditioned buildings must have proper smoke Venting/ built in to the system.
- The Training and awareness and Fire Drills are a must, for the Doctors, Nursing & other people working in the hospital.
- Availability of Trained Fire Officer to Hospitals can be a timely assistance for rescue Fighting activities, till the arrival of Fire Service.





**Steps to Conduct Mock Drill**

- Pre-drill briefing - Scenario narrative.
- Positioning of independent observers.
- Drill initiation.
- Drill activity.
- Drill termination.
- Drill critiquing.
- Drill evaluation:
  - Observations and recommendations.
  - Feedback from the participants.
  - Evaluation.
- Drill evaluation report.

 A photograph of a group of healthcare professionals in blue scrubs and surgical masks standing in a circle in an operating room, participating in a mock drill. Two video call windows are overlaid on the right side of the photograph, showing participants in a virtual meeting.

**Treatment Areas**

- **Red Area:** Priority 1 or 'urgent case'
  - Should be near the emergency; suggested department is **Emergency Dept**
- **Yellow Area:** Priority 2 or less urgent
  - Should be located near emergency; suggested department is **Orthopedics**
- **Green Area:** Priority 3 or "walking wounded"
  - Suggested department is **Gynecology**
- **Black Area:** For dead patients
  - Suggested department is **Mortuary**

Zoom



#### 10.4 ANNEXURE IV - YOU TUBE LINKS

The sessions on all the three days were attended by a versatile group of participants including J&K officials, engineers and doctors from J&K, other Indian states and also from abroad and also live streamed in NIDM's YouTube platform, links of which are shared below,

**Day 1:** <https://www.youtube.com/watch?v=9Y7oi1nmr4>

Day 2: <https://www.youtube.com/watch?v=Jvzr2ep4aLk>

Day 3: <https://www.youtube.com/watch?v=8imBpRz7t6I>

## 10.5 ANNEXURE V - SAMPLE OF THE CERTIFICATE

Certificates were issued to all participants by NIDM, format of which is given below.



## 10.6 ANNEXURE VI – MEDIA COVERAGE

### 10.6.1 Links to online news

<https://ziraattimes.com/2021/10/ddm-jk-holds-3-day-training-on-health-facilities-resilience-building/>

<http://valepost.com/three-day-online-training-on-building-resilience-of-health-facilities.html>

### 10.6.2 News clips

## Three day online training on Building Resilience of Health Facilities

Farooq Rather

Srinagar,(CNS)27th October: Three days' online training on Building Resilience of Health Facilities was organised by the Department of Disaster Management, Govt of J&K in collaboration with National Institute of Disaster Management and GeoHazards Society.

Speaking on the occasion Aamir Ali, Nodal Officer SEOC said that J&K has experienced its share of natural disasters in terms of Earthquake of 2005, Floods of 2014 and numerous other incidents and that its essential that our Health facilities continue to remain functional during and after a disaster, without interruption, so that they are able to respond immediately to the medical requirements. He said that in order to achieve reliance in health care facilities we need to adopt a multi-prong and interdisciplinary approach, take structural as well as non structural measures in the healthcare infrastructure, mainstream disaster prevention, mitigation, preparedness and response planning. He said it is important to enhance the capacity of our emergency medical response and mass casualty management, by developing and training medical teams and paramedics. He said that Lal Ded Hospital and the Bones & Joints Hospital Barzulla additional blocks are being constructed with World Bank Funding and both these hospital buildings have been conceived as Earthquake and Flood Resistant Structures, which will continue to remain functional even during and after an earthquake or a flood.





# Morning Kashmir

17<sup>th</sup> Year of publication

Make Up To Your World Today...

Srinagar • Saturday, 30 October 2021 • Issue No: 270

Volume: 17 | Pages: 12 | Rs: 5/- (Air Surchage for Delhi, Jaipur & Lucknow) - Paid | RNI, JKRIL: 2007-2/007

## Training on 'building resilience of health facilities' concludes

SRINAGAR, OCT 29: A three-days online training on "Building Resilience of Health Facilities" organized by Department of Disaster Management, Relief, Rehabilitation and Reconstruction, (DMRRR) Govt. of J&K; National Institute of Disaster Management (NIDM) and GeoHazards Society (GHS) from 27th to 29th October, 2021, concluded on Friday. The training was conducted under the patronage of Major General M.K Bindal Executive Director, NIDM; Er. Aamir Ali Nodal Officer J&K SEOC and Dr. Hari Kumar Regional Coordinator, GeoHazards International; and under the guidance of Dr. Chandan Gosh, Professor & Head Resilient Infrastructure Division, NIDM. Er. Aamir Ali emphasized on the need for adopting a multi-pronged and interdisciplinary approach to enhance the capacity of the emergency medical response and mass casualty management in hospitals. The learning sessions were handled by eminent experts in fire, structural safety and practitioners in the field of disaster risk reduction. R.C Sharma, Former Director, Delhi Fire Services spoke on the peculiarities of fire safety in hospitals especially electric fires. V. Suresh, Ex-CMD, HUDCO and Chairman of the Indian Green Building Council elaborated on the importance of code compliant buildings and the green building norms to enable

resilient hospitals. Aparna Kanda, a human rights practitioner and a DRM enthusiast in her address urged to bring people, community and particularly the vulnerable groups to the centre-stage in all DRR activities. The session by Dr. Poornima Prabhakar, Head of Centre of Excellence at Public Health Foundation India, illustrated the impact of climate change on communities and healthcare with key focus on the green and climate smart infrastructure. The session of Dr. Hari Kumar of GeoHazards Society, emphasized on understanding the hazards that can affect health facilities and the importance of keeping hospitals functional during and after disasters. Dr. Amir Ali, Assistant Professor NIDM, during his keynote address on the final day stressed upon the participation of all stakeholders, the need to develop capacities, develop SOPs and DM plans and test the plans regularly. The sessions on all the three days were attended by a versatile group of participants. The training was live-streamed on NIDM's YouTube platform. Dr. Garima Aggarwal of NIDM expressed her gratitude that all sessions were excellent learning experiences and thanked the Panelists, organizers, GeoHazards Society and the participants for making the event productive and interactive.

## Training on "Building Resilience of Health Facilities" concludes

**SRINAGAR:** Three days' on-line training on "Building Resilience of Health Facilities" organized by Department of Disaster Management, Relief, Rehabilitation and Reconstruction, (DMRRR) Govt. of J&K; National Institute of Disaster Management (NIDM) and GeoHazards Society (GHS) from 27th to 29th October, 2021, concluded today. The training was conducted under the patronage of Major General M.K Bindal Executive Director, NIDM; Er. Aamir Ali Nodal Officer J&K SEOC and Dr. Hari Kumar Regional Coordinator, GeoHazards International; and under the guidance of Dr. Chandan Gosh, Professor & Head Resilient Infrastructure Division, NIDM.

Er. Aamir Ali, emphasized on the need for adopting a multi-pronged and interdisciplinary approach to enhance the capacity of the emergency medical response and mass casualty management in hospitals. The learning sessions were handled by eminent experts in fire, structural safety



and practitioners in the field of disaster risk reduction. R.C Sharma, Former Director, Delhi Fire Services spoke on the peculiarities of fire safety in hospitals especially electric fires. V. Suresh, Ex-CMD, HUDCO and Chairman of the Indian Green Building Council elaborated on the importance of code compliant buildings and the green building norms to enable resilient hospitals. Ms. Aparna Kanda, a human rights practitioner and a DRM enthusiast in her address urged to bring people, community and particularly the vulnerable groups to the centre-stage in all DRR activities. The session by Dr. Poornima Prabhakar, Head of Centre of Excellence

at Public Health Foundation India, illustrated the impact of climate change on communities and healthcare with key focus on the green and climate smart infrastructure. The session of Dr. Hari Kumar of GeoHazards Society, emphasized on understanding the hazards that can affect health facilities and the importance of keeping hospitals functional during and after disasters. Dr. Amir Ali, Assistant Professor NIDM, during his keynote address on the final day stressed upon the participation of all stakeholders, the need to develop capacities, develop SOPs and DM plans and test the plans regularly. The learning session that followed was delivered by Dr Lallu Joseph, Associate General Superintendent, Christian Medical College Vellore. She spoke about the preparation of fire evacuation plans especially in the COVID-19 scenario, and the importance of testing the plans through pre-announced and surprise mock drills. Mohd Mudassir, DRR Expert

from GeoHazards Society illustrated about the non-structural risk assessment and mitigation measures within hospitals, with special reference to earthquake risks, which are pertinent to a State like J&K, situated in a high-risk zone.

The sessions on all the three days were attended by a versatile group of participants, including senior District level Officers and Engineers from Government of J&K, Doctors from Health Department and Government Medical Colleges, students and staff from SSM College of Engineering Parihaspora, Pattan, and participants from other States, as well as abroad. The training was live-streamed on NIDM's YouTube platform. Dr. Garima Aggarwal of NIDM expressed her gratitude that all sessions were excellent learning experiences and thanked the Panelists, organizers, Geo-Hazards Society and the participants for making the event productive and interactive.

# Building Resilience of Health Facilities” concluded today

**RAJPORE**

**BHINAGAR:** Three days’ online training on “Building Resilience of Health Facilities”, organised by Department of Disaster Management, Relief, Rehabilitation and Reconstruction, (DMRR), Govt. of J&K, National Institute of Disaster Management (NIDM) and Geo-Hazards Society (GHS) from 07th to 09th October, 2021, concluded today. The training was conducted under the patronage of Major General M.K. Boudh Executive Director, NIDM, Lt. Anur Agnihotri All India Officer J&K SDIC and Dr. Harshvardh Baghel, Geohazards International and under the guidance of Dr. Chandan Gish, Professor & Head, Resilient Infrastructure Division, IITM.

Dr. Anur Agnihotri, emphasized on the need for adopting a multi-pronged and interdisciplinary approach to enhance the capacity of the emergency medical response and disaster management in hospitals.

The training sessions were handled by eminent experts in fire, electrical safety and practitioners in the field of disaster risk reduction. R.C. Sharma, Former Director, Delhi Fire Services spoke on the procedures of fire safety in hospitals especially electric fire. V. Suresh, Ex-CMIL (J&K) and Chairman of the Indian Green Building Council elaborated on the importance of code compliant buildings and the green building norms to enable resilient hospitals. Ms. Aparna Kamra, a human rights practitioner and a DRM enthusiast in her address urged to bring people, community and particularly the vulnerable groups to the recovery stage in all DRM activities. The session by Dr. Prashant Prabhakar, Head of Centre of Excellence at Public Health Foundation India, illustrated the impact of climate change on communities and facilities with key focus on the green and climate smart infrastructure. The session of Dr. Sanku Kumar of Geohazards Society, emphasized on understanding the hazards that can affect health facilities and the importance of keeping hospitals functional during and after disasters. Dr. Anur Agnihotri, Assistant Professor NIDM, during his keynote address on the final day stressed upon the participation of all stakeholders, the need to develop capacities, develop SOPs and IIR plans and test the plans regularly. The training session that followed was delivered by Dr. Lalit Singh, Associate General, Superintendent, Christian Medical College Varanasi who spoke about the preparation of fire evacuation plans especially in the COVID-19 scenario, and the importance of testing the plans through pre-mock drills and surprise mock drills. Mohd Mubarek, IIR Expert from Geohazards Society illustrated about the structural risk assessment and mitigation measures

within hospitals, with special reference to earthquake risks, which are pertinent to a State like J&K, situated in a high risk zone.

College of Engineering Partapur, Pattan, and participants from other States, as well as abroad. The training was live-streamed on



The sessions on all the three days were attended by a versatile group of participants, including senior District level Officers and Engineers from Government of J&K, Doctors from Health Department and Government Medical Colleges, students and staff from IITM

NIDM’s YouTube platform. Dr. Garima Aggarwal of NIDM expressed her gratitude that all sessions were excellent learning experiences and thanked the facilitators, organizers, Geohazards Society and the participants for making the sessions productive and interactive.

## OFFICE OF THE BLOCK M OFFICER RAJPORE Tender Notice

On the behalf of Government of Jammu and K. affixed with Rs.05 revenue stamp for hiring the Parking) at CHC Rajpora on contract basis for a period

The Tender shall accompany with CDR of Thousand (only) pledged to Block Medical Officer any J & K bank branch. The detailed terms and conditions of the T&C in any working day from 10:00 a.m. to 4:00 p.m. by cash against the proper (Non-refundable) at our registration section. The tender office within 10 days from the date of publication of the newspaper. The tender will be opened on the date of submission of the tender at 03:00 P.m. undersigned. In case of holiday Tender will be opened day in presence of interested bidders who wish undersigned reserves the right to reject all or any tenders without assigning any reason therefor.

D/P/K-11475/21

### OFFICE OF THE EXECUTIVE ENGINE ELECTRIC DIVISION, J&K Khanyar, SRINAGAR Email: gmr.edr@gmail.com Tel No. 9194-247908 Fax

#### BIDDER APPROVAL NOTICE

Sl.No. 0005, Dt. 20/10/2021

For and on behalf of the J&K Government (Under Secretary of Jammu and K Electric Division) Jammu division office which has registered a Class I Notice for Improvement of LT network at Takiya Sangrohi sub Division Zakana of EDV Khanyar as under:

S.No	Particulars
1	Improvement of LT network at Takiya Sangrohi within 1 jurisdiction sub Division Zakana of EDV Khanyar

The complete tender document is available at website <http://tenders.gov.in> may view, download the e-Bid document, seek clarifications and submit the bid time mentioned in the table below. Bidding Documents contain Q Specifications, Bill of Materials, Terms and Conditions of Contract and other

Date and Time of downloading: 11/10/2021 10:00 AM