

Summary Report of Weekly Webinar Series on “Public Health Emergency and Disaster Management during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India”

30 March – 14 September 2022

Organized by

National Institute of Disaster Management (NIDM)
Ministry of Home Affairs (MHA), Government of India

in collaboration with

National Centre for Disease Control (NCDC)
Directorate General of Health Services (Dte.GHS),
Ministry of Health and Family Welfare (MoHFW),
Government of India

and

U.S. Centers for Disease Control and Prevention (CDC)
Country Office India





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अजय कुमार मिश्रा
AJAY KUMAR MISHRA



सत्यमेव जयते

75
आज़ादी का
अमृत महोत्सव

गृह राज्य मंत्री
भारत सरकार
**MINISTER OF STATE FOR
HOME AFFAIRS
GOVERNMENT OF INDIA**



संदेश

आपदा जोखिम न्यूनीकरण (डीआरआर) पर अपने दस सूत्री एजेंडा में, हमारे माननीय प्रधानमंत्री जी ने यह सुनिश्चित करने के लिए कहा कि आपदा से सीखने का अवसर न जाने दें। विगत आपात स्थिति और आपदाओं से प्राप्त व्यवस्थित ज्ञान हमें उन नीतियों और प्रथाओं के लिए मार्गदर्शन कर सकता है, जो सार्वजनिक स्वास्थ्य आपातकालीन और आपदा प्रबंधन के सभी आयामों की बेहतर समझ विकसित करने में मदद करेंगे, और इस प्रकार जीवन, संपत्ति और प्राकृतिक संसाधनों के नुकसान के जोखिम को कम करेंगे।

मुझे यह जानकारी हार्दिक प्रसन्नता हो रही है कि राष्ट्रीय आपदा प्रबंधन संस्थान (एनआईडीएम) ने माननीय प्रधानमंत्री जी के दृष्टिकोण को अपनाते हुए राष्ट्रीय रोग नियंत्रण केंद्र (एनसीडीसी) तथा यू.एस. रोग नियंत्रण और रोकथाम केंद्र (सीडीसी), कंट्री ऑफिस इंडिया के सहयोग से "सार्वजनिक स्वास्थ्य आपातकालीन और आपदा प्रबंधन (पीएचईडीएम)" पर एक वेबिनार श्रृंखला आयोजित की। यह सार्वजनिक स्वास्थ्य आपातकाल और आपदा प्रबंधन को एक मंच पर लाने के लिए एक प्रभावी हस्तक्षेप है। सीखना एक सतत प्रक्रिया है, और यह सुनिश्चित करने के लिए कि यह बनी रहे, इस तरह की सूचनात्मक श्रृंखला से अर्जित ज्ञान का प्रलेखन भी महत्वपूर्ण है।

मैं, एनआईडीएम-एनसीडीसी-सीडीसी को वेबिनार श्रृंखला में सार्वजनिक स्वास्थ्य आपातकालीन और आपदा प्रबंधन पर अर्जित महत्वपूर्ण ज्ञान और सबक के प्रलेखन के लिए बधाई देता हूँ। निःसंदेह, यह सारांश रिपोर्ट, अर्जित जानकारी/ज्ञान को और अधिक प्रसारित करेगी तथा सार्वजनिक स्वास्थ्य आपातकालीन और आपदा प्रबंधन संबंधित हितधारकों की क्षमताओं को सशक्त करने में सहायक होगी।

(अजय कुमार मिश्रा)

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नई दिल्ली।

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Resilient India - Disaster Free India

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कार्यकारी निदेशक

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Executive Director



सत्यमेव जयते



आज़ादी का
अमृत महोत्सव

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National Institute of Disaster Management

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FOREWORD

Emergencies and disasters offer opportunities for thorough systemic reviews and continuous assessments, followed by improvements to foster resilience considering the lessons learnt. In his Ten Point Agenda on Disaster Risk Reduction (DRR), our Hon'ble Prime Minister enunciated to ensure that the opportunity to learn from a disaster is not wasted. After every disaster, research studies need to be undertaken to understand the best practices and learn lessons to improve upon policy and disaster governance. To ensure that we are better prepared for any impending public health emergency or disaster, we need to document the lessons learnt and implement those lessons to strengthen our strategies to enhance the nation's resilience against any threat.

To effectuate the mandate given under the Disaster Management Act, 2005 for human resource development, capacity building, training, research, documentation, and policy advocacy in the field of disaster management and to foster the principles of the Hon'ble Prime Minister's Ten Point Agenda on DRR, NIDM with its collaborative partners namely National Centre for Disease Control (NCDC) and the U.S. Centers for Disease Prevention and Control (CDC), Country Office India organized a Weekly Webinar Series (WWS) to debate and collate the learning of the Covid-19 pandemic for the use of public health emergencies/ disaster risk reduction practitioners.

I acknowledge the efforts of the course chairs of the WWS Prof. Surya Parkash, Head CBRN, Industrial and Cyber DRR&R Division, NIDM; Dr. Himanshu Chauhan, Joint Director NCDC, MoHFW and Dr. Rajeev Sharma, Lead & PHS-EM, U.S. CDC, Country Office, India for documenting the learning of the series. It will further help disseminate further the knowledge and information besides enhancing the capacity of the relevant stakeholders.

(Taj Hassan)

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PREFACE



The COVID pandemic caused severe damage to people's life, physiological and mental health, and social well-being. The pandemic also brought to light the necessity of improving capacities and capabilities to sustainably foresee, prevent, respond to, and recover from any emergency or disaster. Furthermore, the pandemic taught that there is a need to strengthen not only the resources but also the mechanisms and regulations that will facilitate the saving of more and more lives.

This webinar series was envisaged to enhance human capacities to achieve the goals of our National Policy on Disaster Management viz zero casualties, disaster-free and resilient nation. This initiative of bringing the Subject Matter Experts (SMEs) into one platform has been a great success because of the effectiveness of the contents by different resource persons covering different dimensions and perspectives of public health emergencies and disaster management.

The Weekly Webinar Series provided an opportunity to collaborate with different relevant organizations and experts in public health emergency and disaster management. The webinar series ensured the dissemination and exchange of knowledge, experiences, information, innovation and ideas to enhance the capacity of the concerned stakeholders. The online learning community enthusiastically made the learning bilateral by sharing their queries and feedback.

Sincere heartfelt thanks are due to the competent authorities of NIDM, NCDC and CDC for their motivation, encouragement and guidance in organising the Weekly Webinar Series (24 episodes) as well as documenting its learning. This summary would not have been possible without the adequate untiring support of the organising team members. It is expected that the learning portrayed in this document will help the relevant stakeholders to enhance their capacities for eliminating or reducing the risks of public health emergencies and disasters.

A blue ink signature, appearing to be 'SP', with a horizontal line extending to the right.

(Surya Parkash)
Prof. & Head, GMRD, NIDM

PREFACE

Public health emergencies and disasters adversely affect socioeconomic systems and the entire society. The COVID-19 pandemic underscored the crucial role of 3S (Staff, System and Stuff) in sustaining economic and social activity and facilitating responses to unforeseen risks and issues. It also highlighted the need for maintaining, nurturing, and building a robust public health workforce and essential human resources for handling public health emergencies and other disasters.



Every disaster involves large public health requirements that may exceed local response capacity, leading to excess death and morbidity. The importance of disaster risk reduction methods in national and international policy agendas has grown. However, health's role in disaster risk reduction plans has frequently been limited to emergency response. It is evident that Disaster Risk Reduction (DRR) programmes need to build capabilities that serve as national standards for public health preparedness planning alongside the disaster cycle (preparedness, response, recovery, and mitigation) to help minimize the effects of disasters on communities.

Investments in preparedness and mitigation strategies for enhancing crucial public health functions and services will pay off in the long run by directly preventing suffering, saving lives, and safeguarding the economy. Comprehending the need of the hour, our Hon'ble Prime Minister launched PM - Ayushman Bharat Health Infrastructure Mission (PM-ABHIM). This intervention aims to develop capacities of health systems and institutions across the continuum of care at all levels, viz. primary, secondary and tertiary and to prepare health systems in responding effectively to the current and future pandemics/disasters.

This Weekly Webinar Series was a step to foster national and international frameworks and guidelines besides enhancing capabilities in handling public health emergencies and disasters. We express gratitude to patrons and the organising team for their efforts in cataloguing the learnings of the series in this document. This summary report will spread awareness of the knowledge gained to attain last-mile connectivity and improve public health emergency and disaster management capabilities.

Dr Rajeev Sharma

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Acknowledgement

At the outset, we would like to express our sincere thanks to Shri Taj Hassan, IPS, Executive Director, NIDM; Dr Sujeet Kumar Singh, Former Director, NCDC and Dr Meghna Desai, Director, U.S. CDC for their kind encouragement, guidance, suggestions, and support in the completion of this summary report.

We would like to place on record the significant contributions made by different specialists, subject matter experts and stakeholders for sharing their knowledge, experience, and expertise apropos of the Weekly Webinar Series on “Public Health Emergency and Disaster Management during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India”.

We would also like to thank our reviewers, Dr Shiv Lal, Former Special DGHS (PH), MoHFW, Gol and Prof (Dr) Muzaffar Ahmad, Former Member, NDMA, Gol for their extensive comments and suggestions, which helped in giving the final shape to the document module.

A special thanks to the participants from different public health emergency and disaster management sectors who joined us in the weekly webinar series and made it a bi-directional interactive event with their extensive queries, comments, suggestions and recommendations.

It gives us immense pleasure to acknowledge the cooperation of our team members Mr S. K. Tiwari, NIDM; Mr Ajit Batham, NIDM; Mr G.G.K. Teja, NIDM; Dr Priyanka Singh, FHI 360; Dr Rajat Garg, CDC; Mr Sanjeev Karn, VHS-CDC; Ms Isha Gupta, NCDC and supporting staff at NIDM, NCDC and CDC, without which it would not have been possible in the preparation of this report.

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Last but not least, we are grateful to the almighty without whose grace and kindness we would not have been capable of carrying this task successfully.

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Special thanks to all the subject matter experts for sharing their knowledge, experience, and expertise in the Weekly Webinar Series on “Public Health Emergency and Disaster Management during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India”.

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Abbreviation

AAR	After Action Review
AMR	Antimicrobial Resistance
BMC	Brihanmumbai Municipal Corporation
CAB	COVID-19 Appropriate Behaviour
CDC	Centers for Disease Control and Prevention
DDMA	District Disaster Management Authorities
DMA	Disaster Management Authority
DRR	Disaster Risk Reduction
Dte.GHS	Directorate General of Health Services
EOC	Emergency Operation Centre
EWS	Early Warning Signal
FEMA	Federal Emergency Management Agency
HCF	Healthcare Facilities
HEOCs	Health Emergency Management Operation Centers
IAPSM	Indian Association of Preventive and Social Medicine
IAR	Intra Action Review
ICAR-NIVEDI	Indian Council of Agricultural Research-National Institute of Veterinary Epidemiology and Disease Informatics
ICMR	Indian Council of Medical Research
IDKN	India Disaster Knowledge Network
IDRN	India Disaster Resources Network
IDSP	Integrated Disease Surveillance Programme
IEC	Information, Education & communication
iGOT	Integrated Government Online Training
IHIP	Integrated Health Information Portal
IHR	International Health Regulation
IMS	Incident Management System
IPC	Infection, Prevention and Control
IRS	Incident Response System
IT	Information Technology
IUINDRR	India Universities and Institutions Network for Disaster Risk Reduction
MHA	Ministry of Home Affairs
MoHFW	Ministry of Health and Family Welfare

NCDC	National Centre for Disease Control
NCS	National Centre for Seismology
NDMA	National Disaster Management Authority
NIDM	National Institute of Disaster Management
NIPHTR	National Institute of Public Health Training and Research
NPSP	National Public Health Surveillance Project
NSTI	National Skill Training Institute
PHEDM	Public Health Emergency and Disaster Management
PHEIC	Public Health Emergencies of International Concern
PHEM	Public Health Emergency Management
PHEOC	Public Health Emergency Management Operation Center
PM-ABHIM	PM Ayushman Bharat Health Infrastructure Mission
PoE	Point of Entry
PPE	Personal Protective Equipment
PRI	Rural Development and Panchayati Raj Institution
RCCE	Risk Communication and Community Engagement
RRTs	Rapid Response Teams
SDGs	Sustainable Development Goals
SDMA	State District Disaster Management Authorities
SEARO	South-East Asia Region Office
SHOC	Strategic Health Operations Centre
SME	Subject Matter Expert
SOP	Standard Operating Procedure
TWG	Technical Working Group
ULB	Urban Development and Urban Local Bodies
VHAI	Voluntary Health Association of India
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WWS	Weekly Webinar Series

Executive Summary

The management of Public Health Emergencies and Disasters with an integrated approach is an emerging public health priority. In recent times, the COVID-19 pandemic has highlighted the need for disseminating knowledge on the concepts of Public Health Emergency and Disaster Management, Incident Response System (IRS) / Incident Management System (IMS), operationalisation of the Public Health Emergency Operations Centres (PHEOCs), Surveillance and Response, Risk Communication and Community Engagement (RCCE), logistic supply management, capacity enhancement of the local community.

In this regard, the National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India, collaborated with the National Centre for Disease Control (NCDC), Ministry of Health and Family Welfare, Government of India and U.S. Centers for Disease Control and Prevention (CDC), India to organize a weekly webinar series on “**Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India**” from March 30, 2022, to September 14, 2022.

The overarching objective of the webinar series was sensitisation, institutionalisation, and promotion of the exchange of information, knowledge, and innovation among participants to enhance the public health emergency and disaster preparedness and response capabilities. In addition to the skill development, the webinar series also helped strengthening of an online community of practice, thus promoting the use of the PHEOCs and the application of IMS/IRS for a coordinated response.

The series encompassed several themes apropos of PHEDM that included resilient workforce, emergency management-related infrastructure, community engagement, climate change, trans-disciplinary and multi-sectoral coordination, lessons learnt and best practices for pandemic management.

The webinar series was joined by >7000 participants from all over the world. The participants included officials from the Integrated Disease Surveillance Programme, doctors, paramedics, frontline healthcare workers, members from State and District Disaster Management Authorities, Research Institutes, Fire Departments, Civil Defense and more. With distinguished subject matter experts in public health emergency and disaster management from national and international organisations, the series received high appreciation from the participants for its richness in knowledge and its bilateral interaction that enabled the participants to share their queries and feedback. Based on the encouraging feedback, the initial 12-week webinar series was extended to 24 weeks.

The 24 episodes of the webinar series reinforced the notion of a self-reliant India, i.e., **Atmanirbhar Bharat**. The other key takeaways of the series were an understanding of the 3 essential elements of PHEDM- Staff, Systems and

Infrastructure, acknowledgement of the need to utilise traditional and indigenous knowledge of communities, registering the need for a multi-layered, multi-sectoral and multi-agency coordination for PHEDM, the necessity to shift from planning for communities to planning with communities and the knowledge that no one is safe until everyone is safe, the importance of **Vasudhaiva Kutumbakam**.

This report documents the intricate processes followed to launch the Weekly Webinar Series, the details of the webinars and the feedback from the participants and Standard Operating Procedures for conducting the webinars.

Background

Public Health Emergencies and Disaster Management is an emerging public health priority, particularly given the COVID-19 pandemic. Public health emergency and disaster management is an ever-evolving need of society as the incidents of public health emergency and disaster keep on occurring of varying nature and a degree from sporadic to pandemic over a period of time. There are several overarching platforms like Integrated Health Information Portal (IHIP), Integrated Disease Surveillance Programme (IDSP), National Health Portal (NHP), Integrated Government Online Training (iGOT), National Institute of Disaster Management (NIDM) Training Portal, National Skill Training Institute (NSTI), OpenWHO.org, Federal Emergency Management Agency (FEMA), National Institute of Public Health Training and Research (NIPHTR), Mumbai that are available to participants and partners to improve information sharing during public health emergencies. Containment, mitigation strategies and treatment guidelines for COVID-19 were being revised from time to time, and webinars would be a mechanism to share updated guidance with State and District Officials. The implementation of the announcements made in the Union Budget 2021-22 for strengthening of National Centre for Disease Control (NCDC), its 5 Regional Branches, 20 Metropolitan Health Surveillance Units and 15 Health Emergency Management Operation Centers (HEOCs) for disease epidemic/pandemic preparedness and response under "PM Ayushman Bharat Health Infrastructure Mission (PM-ABHIM)" also need capacity building of health system.

Rapidly spreading outbreaks of infectious diseases and hazards illustrated the interconnectedness of the world and the need to integrate public health emergency and disaster management to respond effectively. Under the Directorate General of Health Services (Dte.GHS), at the apex level, NCDC is mandated to develop the capacity of the nation to combat public health threats. Similarly, under the Disaster Management Act 2005, the National Institute of Disaster Management (NIDM) under the Ministry of Home Affairs has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation, and policy advocacy in disaster management. one of the pervasive weaknesses evidenced by the recent global COVID-19 response is to execute multisectoral, multi-layered, multi-agency coordination, information sharing and partnership besides the consistent need of trained workforce to match the surge capacity. There is a need to bring institutions such as NCDC, NIDM and CDC under one umbrella to ensure the integration of public health emergency and disaster management. There is also a need to disseminate the Public Health Emergency and Disaster Management (PHEDM) concept and common terminology, citing examples and experiences from India and Global Best Practices.

Given the above, a webinar series would be a valuable, cost-effective tool to disseminate the above information to all stakeholders covering a large geographical area.

Objectives

The overarching objective of the weekly webinar series is to build capacity in PHEOC management for COVID-19 by creating an online community of practice for PHEOCs during the COVID-19 pandemic, to serve as a springboard for a sustained post-COVID-19 experiential learning platform. The webinar series was directed towards sensitizing, institutionalizing, and promoting the exchange of information, knowledge, and innovation on understanding the Public Health Emergency Preparedness and Response Capabilities with the following objectives:

- Build on existing tools, systems, and platforms to incorporate best practices to share experiential and learning from COVID-19 emergency management,
- To understand the mechanism and structure of Incident Management System (IMS)/ Incident Response System (IRS) from the perspective of health PHEM,
- To understand the importance of the Management of Public Health Rapid Response Teams (RRTs),
- Collate resources and inform future PHEOC learning,
- Skill development and advocacy for the use of the PHEOC and IMS/IRS for response in settings where there are no PHEOCs,
- Knowledge transfer, networking, learning, and experience sharing through facilitated sessions and continuous mentoring,
- Sharing new tools and technology for effective and efficient use of information and resources in emergency management and accelerating COVID-19 response,
- To understand the International Health Regulation (IHR)-2005,
- To discuss the Logistics and Supply Chain Management in Emergencies,
- To highlight the importance of Risk Communication and Community Engagement (RCCE) and community engagement in public health emergency and disaster management,
- To understand psychosocial impacts of public health emergencies in the context of covid-19,
- To highlight the health emergency related to climate change and extreme weather events,
- To discuss WASH advocacy for health sustenance,
- To understand Integrated Information Management, Multi-Sectoral Coordination, and Resource Management in surge capacity,
- To underline the need for resilient health infrastructure for public health emergency and disaster management,
- To understand One Health Concept in the context of the PHEIC, such as the COVID-19 Pandemic.

Process Followed for Planning and Successful Organization of Weekly Webinar Series

I. Six Months before the webinar commencement

• *Need for the webinar series*

The second wave of the COVID-19 pandemic came as a giant threat with a sudden rise of cases affecting all age groups except infants, as per Indian Council of Medical Research (ICMR) data. Peak was on May 06, 2021, with 414,188. It took two months to reach the peak, contrary to the first wave, six months taken to reach the peak. Second wave was beyond the point of containment and epidemiological evidence showing high transmission in across all States and UTs in India. Infection was lurking in many areas like in the Southern States of India. Hence, it needed to be alert and responsive to the evolving situation. These put severe strain on familiar coordination mechanisms and typical incident response systems, emergency operations centers (EOC) or control rooms have used in managing disaster in recent past. As surge in case counts and geographic spread was expected, this situation continued to severely test the coordination of resources and information by EOCs across sectors and layers of response. There was continued to be a large increase in signals, events and resource requests, deliveries and deployments, which pose great challenges to maintain oversight and keep track of public health actions within an over-stretched and limited workforce context. In addition, One of the most significant challenges evidenced from the global COVID-19 response was multi-sectoral, multi-layered, multi-agency coordination, information sharing and partnership. To this end, the establishment of a virtual learning platform at the national level was the need of the hour.

Anticipating COVID-19 surge before the second wave in India, NIDM and CDC initiated a discussion in March 2021 a monumental effort to work in collaboration and organize training programs towards sensitizing, institutionalizing, and promoting the exchange of information, knowledge and innovation on understanding the Public Health Emergency Preparedness and Response Capabilities in India. In addition, taking lessons from the CDC support to the Africa's global Weekly Webinar Series and Online Community of Practice on "Public Health Emergency Operations Centres (PHEOCs) and COVID-19 Management". Consequently, it was proposed to organize an online weekly webinar series that will provide an opportunity to build capacity in PHEOC/EOC/ Control Room/War Room management for COVID-19 through creating an online community of practice in emergency response during the COVID-19 pandemic, to serve as a springboard for a sustained post COVID-19 experiential learning

platform. This online program was also expected to provide a platform for the national and sub-national COVID-19 lead responders to share the best practices, lessons learnt and applications of IRS and Incident Management System (IMS) and PHEOC/EOC or similar mechanisms for the COVID-19 response.

- ***Initial meeting***

In continuation, an online meeting was conducted to discuss and finalize the weekly Public Health Emergency Management webinar on July 15, 2021, at 11:00 am, which officials from NIDM and CDC attended. Some of the key actionable ways ahead were:

- Concept notes, tentative objective, scope of work of collaboration to be prepared by CDC-India and NIDM
- Further meetings were scheduled (once a week or bimonthly, based on members' availability) to discuss further Plan of Action to conduct the webinar series.
- Formulation of a Technical Working Group (TWG) to finalize the activities related to the webinar series like format, frequency, resource persons, topics and work plan etc was proposed.

It was also discussed during the meeting that this learning platform would adopt a hub-and-spoke knowledge-sharing approach led by expert interdisciplinary teams and use video conferencing and break-out sessions, and discussion rooms to develop online community with national and sub-national level PHEOCs. Applying a flexible, scalable, and interoperable model of online collaborative learning, Public Health Emergency and Disaster Management (PHEDM) and interdisciplinary expert teams will be linked with frontline EOC/PHEOC teams at national and sub-national levels. These teams will become part of a learning community where they will receive mentoring and feedback from expert teams. Together, learning and sharing of knowledge will be enhanced with the priority goal of optimizing the use of PHEOCs in containing the COVID-19 pandemic in India and in the region.

- ***Organizations as partners in the Webinar Series***

Collaboration improves the way a team works together and solves problems. This leads to more innovation, efficient processes, increased success, and improved communication. Through listening to and learning from collaborating organizations, we can help each other reach our goals.

After a series of the core working group meeting, it was decided that the proposed webinar series would be jointly planned and executed with the following organizations having domain knowledge on the subject:

Host Institution:

- National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India - Host Institution as they have the required infrastructure, resources, and experience of organizing such webinars.

Partner Institution:

- National Centre for Disease Control (NCDC), Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India.
- U.S. Centres for Disease Control and Prevention (CDC), Country Office India.

● **Formation of Technical Working Group**

Based on the suggestion of the initial meeting, a technical working group was constituted with representatives from all the collaborating organizations. The technical working group worked under the supervision of the course chairs of all the host Institutions. The overarching role of the course chairs were to provide leadership and were responsible for making sure that each meeting was planned effectively, and matters were dealt with in an orderly, efficient manner. The technical working group were expected to meet as and when needed. However, the patrons of all the collaborating organisations were updated on the progress of the weekly webinar series. In this meeting, tentative course chairs for the programme were also identified, one person from each collaborating organisation.

● **Formation of Core Working Group**

From the pool of technical working group, a working group was constituted. A core working group (WG) was constituted for successfully conducting the webinar series. They were expected to meet bi-weekly to plan the webinar series, finalize the speakers, assure the quality of the webinars, brainstorm on the issue, etc. The core working group (WG) was working under the constant supervision of the course chairs. The core working group will coordinate all activities in the weekly webinar series with the support of the other team members. The gist of the discussion in the meeting was recorded for follow-up activities. As per the need, new members can be roped into the core group.

The first Core Working Group meeting was organized on August 19, 2021, where the tentative date, the topic of webinars, and the tentative resource person for each webinar were finalized. In the follow-up core working group meeting on September 10, 2021, it was also decided that NCDC needs to be brought in as a partner of the weekly webinar series for ensuring the engagement of the health sector professionals in the webinar series.

● **Selection of Host Institutes**

NIDM has a multi-disciplinary core team of professionals working in various

aspects of disaster management. In its endeavour to facilitate training and capacity development, the Institute has state-of-the-art facilities like multiple online meeting platforms, video-conferencing facilities, classrooms etc. The Institute provides training in on-line, self-learning and face-to-face mode as well as satellite-based training. NIDM also have experience conducting online programmes such as webinars, training program, online meetings, etc., daily. NIDM has a fully automated online training portal. This portal manages the participants once they register in the portals. All the upcoming webinars / training programmes of NIDM are listed in the portal and participants can choose their preferred programmes from the list of programmes. NIDM also has an automated certificate distribution system linked with the training portals which issues certificates to all the eligible participants after completing the programme. With these backdrops, NIDM was chosen as host institute for the weekly webinar series.

- ***Baseline survey regarding similar Webinar Series***

To ensure the successful conduction of the weekly webinar series, best practices from similar webinar series conducted in the past were considered. It helped to provide the foundation of knowledge on the webinar topic. It was also ensured to identify areas of prior activities to prevent duplication and give credits to other programmes if any. Baseline survey conducted also helped in Identify inconstancies: gaps in outreach programmes, conflicts in previous programmes, open questions left from other capacity development activities.

African CDC organised a similar webinar series on “Public Health Emergency Operations Centres (PHEOCs) and COVID-19 Management” Weekly Webinar Series and Online Community of Practice. This webinar series focused on the importance of and strategies for reviewing the response to public health emergencies for continuous improvement.

- ***Flyer for the Webinar Series***

Posters and flyers can be a remarkably effective way of getting your message out to the public. The technical working group prepared flyers for the weekly webinar series with the aim to make a powerful first impression, connect with new prospects, break the ice, and have interested participants know about the weekly webinar series. After series of discussions, consultations and revisions, a flyer containing all the relevant information of the weekly webinar series was prepared and is represented in the figure below.

Public health emergencies and their management is an emerging public health priority particularly in view of COVID-19 pandemic and any health emergency in future. There is a need for scaling up the practice of the concept of Public Health Emergency and Disaster Management (PHEDM), Incident Response System (IRS)/Incident Management System (IMS), operationalization of the Public Health Emergency Operations Centres (PHEOCs), Surveillance and Response, Risk Communication and Community Engagement (RCCE).

Weekly Webinar Series
Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

Objectives of Webinar Series
 The sessions would be directed towards sensitization, institutionalization, promotion of exchange of information, knowledge, and innovation among participants to enhance the Public Health Emergency Preparedness and Response capabilities. In addition to skill development, the webinar will also help in promoting the use of the PHEOCs and application of IRS/IMS for coordinated response.

At the end of each webinar, the participants with attendance of $\geq 80\%$ will receive the Certificate of Achievement

For any further queries, kindly contact at drrajuthapa@vhsprojects.org

National Institute of Disaster Management (NIDM), Ministry of Home Affairs (MHA), Government of India
 National Centre for Disease Control (NCDC), Ministry of Health and Family Welfare (MoHFW), Government of India
 U.S. Centers for Disease Control and Prevention (CDC), Country Office, India.

Stay Protected from Corona
 Wear your Face Mask Properly
 Follow Proper Hand Hygiene
 Maintain Social Distancing
 Get Vaccinated

Figure: Flyer of weekly webinar series

● **Format of Weekly Webinar Series**

Program format determined the structure of a program that can be consistently used to make weekly webinar series easier and helped follow the proper methodology.

Frequency: Considering the availability of experts, participants, and other important stakeholders, a tentative day and time was selected. It's easy to get lost in the day-to-day activities. So, keeping the day and time the same for all the episodes of the weekly webinar series, ensured everyone had a long-term vision, strategically planned to achieve the target goals and propel in the right direction and set the right pace.

After a series of core working group meetings, the webinar series was planned to be organized weekly on Wednesday from 2:00 PM to 3:30 PM considering the availability of experts from the U.S. CDC, Atlanta and India.

Duration of session: One and a half-hour.

Time and Duration

2:00 PM to 2:40 PM (40 minutes)

2:40 PM to 3:20 PM (40 minutes)

3:20 PM to 3:30 PM (10 minutes)

Topic

Topic-specific presentation SME Presentation

Case Study and Experience Sharing (Country/State/District)

Discussion facilitated by the session co-ordinator

Selecting topics for Webinars

When choosing webinar topics for the weekly webinar series, it was emphasised that we are seeking to provide value to the target audience in exchange for their investment of time in participating in the webinar. As with any other kind of content, the webinar was expected to answer questions, meet a need, or clarify an area of confusion. The result is a better educated and more involved workforce, participants base, and partner.

The webinar series was expected to provide practical knowledge on the concept, principles, and structure of Public Health Emergency and Disaster Management (PHEDM), Incident Response System (IRS)/Incident Management System (IMS), Public Health Emergency Operation Centre (PHEOC), while building an online Community of Practice to augment COVID-19 and any other public health responses. Initially, a total of 12 webinars with one webinar per week spreading over 3 months was proposed. Later, keeping in view the feedback from participants, subject matter experts and series of internal meetings, it was extended to 24 episodes spread out over 6 months. The detail list of webinars were as follows:

- i. COVID-19 Pandemic Response and Management in India
- ii. Multi-layered, multi-sectoral and multi-agency coordination in COVID-19 context
- iii. Legislation and Policy Framework to deal with Disasters and Health Emergencies
- iv. Public Health Emergency Management and Public Health Emergency Operations Centre
- v. Overview of WHO's PHEOC Framework and global common minimum standards

- vi. Developing and Strengthening a PHEOC- Infrastructure and Information Technology
- vii. Linking PHEOCs with Integrated Health Information Portal
- viii. Incident Response System & Incident Management System in Indian Context
- ix. Logistics and Supply Chain Management in Public Health Emergencies and Disaster Management
- x. IHR and Global Health Security with focus on COVID-19 Pandemic Management
- xi. Rapid Response Team (RRT) for Pandemic Preparedness
- xii. Risk Communication and Community Engagement (RCCE) in Context of COVID-19
- xiii. Safe, Sustainable and Resilient Health Infrastructures, Systems and Services
- xiv. Community Engagement in Public Health Emergency and Disaster Management
- xv. Building the Public Health Emergency and Disaster Management Workforce
- xvi. WASH Advocacy for Health Sustenance
- xvii. Health Emergency of Climate Change and Extreme Weather Events
- xviii. Psychosocial Impacts of Public Health Emergencies in Context of COVID-19
- xix. Integrating Public Health Interventions and Strategies in DRR
- xx. Human Resources Capacity Development for Public Health Emergency and Disaster Management
- xxi. Resilient Health Infrastructure for Public Health Emergency and Disaster Management
- xxii. Lessons Learned and Best Practices from COVID-19 Pandemic Management
- xxiii. Understanding One Health Concept in Context of the COVID-19 Pandemic
- xxiv. Array of Webinar Series on Public Health Emergency and Disaster Management and Edging Forward

- **Identifying pool of Panelist/ Subject Matter Experts (SMEs)**

The working group identified the tentative organization with tentative Subject Matter Experts (SMEs) for different topic to be covered. The list of tentative organisations were as follows:

- National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India
- National Centre for Disease Control (NCDC), Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India
- NITI Aayog, Govt. of India
- Emergency Medical Relief (EMR), Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India
- National Disaster Response Force, Ministry of Home Affairs, Government of India
- National President OMAG & IAPSM
- Central International Health (IH) Division, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India
- Disaster Management Department, Municipal Corporation of Greater Mumbai, Maharashtra
- National Disaster Management Authority (NDMA), Ministry of Home Affairs, Government of India
- World Health Organization – South-East Asia Regional Office (WHO-SEARO)
- World Health Organization, India
- United Nations International Children's Emergency Fund
- Vardhman Mahavir Medical College (VMMC), New Delhi
- Directorate of Public Health, Bhubaneswar, Odisha
- Integrated Disease Surveillance Programme (IDSP), Directorate of Medical Health & Family Welfare, Govt. of Uttarakhand
- Uttarakhand State Disaster Management Authority, Govt. of Uttarakhand
- Community Medicine, Dr. Rajendra Prasad Government Medical College
- Health Department, Government of Tamil Nadu
- All India Disaster Mitigation Institute
- ICMR-National Institute of Malaria Research (NIMR), Delhi
- National Institute of Mental Health and Neuro Sciences, Bengaluru

- Indian Association of Preventive and Social Medicine (IAPSM)
- U. S. Centers for Disease Control and Prevention (CDC), Atlanta
- Centers for Disease Control and Prevention (CDC), Country Office, India

● **Course Patrons**

The patrons of the weekly webinar series were the head of the institution from all the collaborating organisations. The list of the patrons of the weekly webinar series were as follows:

- Shri Taj Hasan, IPS, Executive Director, NIDM, MHA, Govt. of India
- Dr Sujeet K Singh, Director, National Centre for Disease Control, Govt. of India
- Dr Meghna Desai, Country Director, CDC-India, Country Office

Under the leadership and guidance of the patrons, the inception of the weekly webinar series took place and the entire planning of the programs from start to completion involving deadlines, milestones and processes were conducted.

● **Course Chairs**

Each collaborating organization selected a nodal person as the course chair. The overarching role of the Course chairs is to provide leadership and were responsible

with in an orderly, efficient manner. The course chairs for this weekly webinar series were:

- Dr Surya Parkash, Prof. & Head, Geo-Meteorological Risks Management Division, NIDM, MHA, Govt. of India
- Dr Himanshu Chauhan, Joint Director & Head, IDSP, NCDC, Govt. of India
- Dr Rajeev Sharma, PHS and Lead, EM, CDC-India, Country Office

● **Course Coordinators**

Under the directions of course chairs, programme coordinators were selected from each organisation with the responsibility for overseeing the planning and implementing necessary actions with strong time management skills and team synergy. The coordinators were expected to support planning and coordination of weekly webinar series and its activities, manage communications with all dignitaries, schedule and organize meetings/events and maintain agenda, ensure technology is used correctly for all operations (video conferencing, presentations etc.), prepare paperwork and order material, keep updated records and create reports or proposals, support growth and program development.

- **Moderator of the sessions**

To mediate the virtual session during each weekly webinar series, webinar moderators were selected from coordinators namely:

- Mr Anil Kathait, Technical Officer-EM, VHS- CDC, India
- Dr Raju Thapa, Technical Officer-EM, VHS- CDC, India

Their main task was to ease the role of the speakers and webinar host by being reactive in the chat and questions tabs. They were also expected to use straight language without being confrontational, crystal clear without bias, and make sure the speakers and audience members understand each other and get along. The moderators were also responsible for facilitating, reviewing, and guiding a discussion or debate, if any, and its related interactions.

- **Pool of tentative participants**

For seeking nomination in the training programme, a tentative list of participants was prepared generally involving personal related to public health emergency and disaster management. The broad sectors targeted for seeking nominations were:

- Senior and middle level officers/ functionaries from the Central/ State/ Local Health Departments
- Officer from (Central Surveillance Unit, State Surveillance Unit and District Surveillance Unit) under Integrated Disease Surveillance Programme (IDSP)
- Officers from Disaster Management Authority (DMA) at various level
- Officers from State Administration, Planning and Finance Department,
- Officers from Department of Animal Husbandry-Indian Council of Agricultural Research-National Institute of Veterinary Epidemiology and Disease Informatics (ICAR-NIVEDI), DARE.
- Officers from National Centre for Seismology (NCS),
- Officers from Urban Development and Urban Local Bodies (ULB)
- Officers from Rural Development and Panchayati Raj Institution (PRIs)
- Officers from All India Radio, Door Darshan,
- Officers from Social Welfare,
- Officers from Public Works Department,
- Officers for Revenue Department
- Officers from Academic and Research Institutes and

- Stakeholders from Civil Defence, Home Guard, Fire Services
- Officials from National Public Health Surveillance Project (NPSP), WHO India
- Non-Governmental Organizations, Community Based Organizations and Voluntary Health Association of India (VHAI)
- Universities, Colleges and research institutes etc.

- **Seeking nominations for participation**

Once the tentative participants were finalized, various communication channels were used to disseminate the information about the weekly webinar series, some of which are mentioned below:

- **NIDM Training Portal:** The details of the webinar series were hosted in the NIDM training portal. The training portal of NIDM contains details of all upcoming training programmes conducted by NIDM. It aims to raise the level of awareness and preparedness and enhance analytical skills and professional competencies of key stakeholders in different areas of Disaster Risk Management and Mitigation. The NIDM training portal was also used to register participants for the weekly webinar series.
- **NIDM Cisco Webex messenger:** Detail list of about 15,000 participants (name and email id) who have attended online programmes of NIDM earlier was prepared. All the participants were undated regarding the weekly webinar series via Cisco Webex messenger bulk email facility.
- **Integrated Disease Surveillance Programme (IDSP):** The details of weekly webinar series were also disseminated to all the IDSP officials by the nodal officers (also course chair for WWS) via communication through emails, whatapp groups etc. IDSP units are located at state level and district level.
- **Disaster Management Divisions in Revenue Department:** The details of WWS were shared with the nodal persons of revenue departments from each state by NIDM officials. The revenue department were requested to depute few representatives to attend the online weekly webinar series.
- **Directorate General of Health Services (Dte.GHS):** The information regarding weekly webinar series was also shared with Directorate General of Health Services for further circulation among interested personnel. Various divisions in directorates such as Central IH Division, EMR Division, DM Cells were reached out for participation and also for their subject matter experts.
- **WHO SEARO:** The webinar details were shared with SERO regional offices for their participation.
- **Academia Institutes:** The information of weekly webinar series was also shared with the academic community all over India. Various institutes such as AIIMS, VMMC, medical colleges were reached out. The Weekly webinar details was also shared via India Universities and Institutions Network for Disaster Risk Reduction (IUINDRR-NIDM).

NIDM establishes the IUINDRR-NIDM to address India's commitment and keep the importance of Universities and Institutions. In this network, besides NIDM, several esteemed Universities and institutions come together to share knowledge and resources related to disaster risk management amongst themselves and the larger group of stakeholders working on DRR.

- **Social Media platforms:** Social networking sites were used effectively to disseminate information about the weekly webinar series. The Social networking site served as an invaluable tool in this effort to communicate the information across a wide audience. WhatsApp's groups, telegram groups, tweeters etc. were used to disseminate the information about webinar series. In addition, email were also send to almost 15,000 tentative participants by coordinators regarding updates of weekly webinar series. Official social media handles of NIDM, NCDC and CDC were also disseminating the updates of weekly webinar series from time to time. The information was also dissiminated by all the coordinators at their individual network via various social media platforms.

- **Presentation template**

The core working group prepared a draft presentation template that was shared with all the subject matter experts who were requested to prepare a presentation regarding their allotted topic using the template provided. The PowerPoint Template ensured that presentations from all subject matter experts/panelists making presentations during the webinar sessions were consistent in terms of font, style, layout, and colours. It also saved time for subject matter experts/panelists as the slide's templates were pre-designed and every possible piece of content was laid out neatly. As the presentation template includes the logo of all the organisation, it approval from all the organisations was essential.



- **Certification**

To encourage the participants and to verify that a person has successfully attended the webinar sessions, certificates were released to all the eligible participants after each webinar. A certificate is mere proof that you can open the cabinet of opportunities, but knowledge is the real key to unlocking it. It was decided to release certificates to all the eligible candidates as certificates help an individual to showcase his competency, and commitment to the profession and build expertise in his professional subject area.

➤ **Criteria for certificate distribution:** The eligibility criteria for seeking a certificate of participation in the webinar were as follows:

- **Registration:** to be eligible for the participation certificate, participants needed to enroll themselves for each webinar session by registering in the NIDM training portal. As soon as the participants enrolled themselves for the webinar, a joining link of the training link was shared via portal and email to the registered email id.
- **Attendance:** Minimum 80% attendance during the webinar session was mandatory to be eligible for the certificate. The participant's attendance was calculated automatically by the Cisco Webex platform. For participants with multiple logins with same id, the time was added to get the total time attended by the participant during the webinar.
- **Attentiveness:** Attentiveness of participants was also included in the eligibility criteria for the certificate. Cisco Webex platforms automatically calculate participant's attentiveness and differentiate attentive participants from others. Participants were expected to ensure their attentiveness during the webinar.
- **Feedback:** All participants needed to give their feedback. All eligible participants are provided with a feedback link in NIDM training portal. Once they successfully fill the feedback form, a link to download the certificate in pdf format is available.

➤ **Mode of e-certificate release:** The certificates were released to all participants fulfilling the above-mentioned criteria. The certificate to all the participants were released via NIDM training portal. All the eligible registered participants get a link to download the e-certificate of their participation in the webinar. The certificate can be downloaded anytime, anywhere in pdf format once they login with their unique credentials.

- **Activities 28 days before each webinar**

- **Follow up with panelist/speakers of the Session**

Course chairs, the expert in subject matter, finalised the list of tentative speakers. Once identified, the subject matter experts were provided with the

details of webinars and the invitation to grace the session. After an initial formal invitation to panelists/speakers of each webinar series regarding the request to engage as subject matter experts, a follow-up email was sent to check their availability for the programme. Following up with your panelists/speakers helps improve the overall coordination and management of the programme. You might even solve problems before they become an issue. For instance, if some panelists/speakers are unavailable due to unavoidable circumstances, you can arrange for substitute speakers from your pool of subject matter experts.

- ***Poster preparation***

For each webinar, a separate poster was prepared which included both textual and graphic elements. The graphical elements in the posters included photos of patrons, course chairs, subject matter experts, coordinators and logos of collaborating organizations whereas the textual elements in the poster comprised of title of the webinars, scheduled time and date of the webinar, name, designations and affiliation of patrons, course chairs, subject matter experts, coordinators etc. The posters of all the 24 webinars are attached in Annexure-II. The poster of each webinar turned out to be an effective way to catch and hold the attention of the target audience, as well as helps to maintain their interest in the particular subject by help them to absorb the information much faster.

- ***Meeting of coordinators***

The coordinators of the weekly webinar series held periodical meetings both online and offline to efficiently share information about upcoming webinars and provide scope for discussion around what is being shared and with whom it is shared. Coordinator's meeting helped the teams align on the topics of discussion, air any concerns or obstacles, and have clarity on priority actions.

- ***Briefing meeting with course chairs***

The updates of each upcoming webinar were provided to all the course chairs of the weekly webinar series. An effective briefing meeting with course chairs is essential to issue resolution and brainstorming. During these meetings, the coordinators who had more visibility and knowledge of existing challenges and issues regarding the programme gets that information faster to the course chairs with an objective to come up with a sound decision that's beneficial for everyone involved at the earliest.

- ***Seeking nomination for participation in the webinar***

The details of the upcoming weekly webinar series were disseminated to all potential participants via various means such as email, NIDM Cisco Webex, WhatsApp, telegrams, and websites. The details of the webinars were also hosted in NIDM official websites, NIDM training portal etc. The information regarding

upcoming. The details of weekly webinar series were also disseminated to all the IDSP officials via official emails, whatsapp groups etc. The webinar details were also shared with SERO regional offices and other relevant academia institutes. In addition, the Civil Defence groups were also informed regarding the same.

- ***Cross-checking of presentation of SMEs***

All SMEs were requested to submit their draft presentation to the coordinator atleast a week before the session. The coordinators with guidance from the course chairs reviewed the presentation template to ensure consistency in terms of font, style, layout, and colours. The course chairs took the crucial role of reviewing the presentation being the SMEs to ensure that sensitive issues are represented appropriately with proper references and the presenter ensure the content can be completed within time allotted. SMEs were not discouraged to point out weakness in systems but were expected to present sensitive information in creative ways, striking the balance between sensitivity and making an impact as the participants of the weekly webinar series represents diverse group of people belong to various sectors. The SMEs were informed of potential revision, if any, and if no changes were required in their presentation, the same was communicated to the SMEs by coordinators. A copy of presentation was also made available to host of the webinar in case the speakers cannot upload the ppt from his end during the actual webinar.

- ***Sharing joining link with all relevant dignitaries***

The weekly webinar series was designed for virtual events where panelists/ subject matter experts will present to a large audience. Based on the earlier experience of conducting webinars and online training programmes, the webinar was preferred for a "listen-only" audience to reduce the risk of disruption.

Panelists were the presenters for the Webinar. Panelists were typically the speaker sharing their video, audio and presentations for the attendees to see, and they were invited with a unique panelist link by the host. The joining link was shared with the panelist at least 1 week before the webinar. A reminder mail with a link was shared with the panelist 1 day before and also 1 hour before the webinar.

Attendees were the audience for your Webinar. Attendees were not allowed to share video, and they can share microphone audio if requested by the Host. The joining link was shared with the participants several times i.e., 1 week, 4 days, 1 day and 1 hour before the webinar.

- ***Demo Session for subject matter experts***

The COVID-19 pandemic and the resulting stay-at-home orders have led to significant changes in the way people work. One of these changes involves the increased use of video conferencing to communicate or hold work meetings.

Several platforms such as zoom, google meet, Cisco Webex, and Microsoft teams were used extensively.

Different applications have different options and layout designs for their platform. Demo Session in the webinar's settings was highly recommended for all panelists/subject matter experts. This allowed panelists to join the webinar, setup, test and get acquainted with the options before the actual webinar day. A demo session was arranged for all panelists/subject matter experts who were unaware of the virtual webinar platform.

- ***Speaker introduction***

A speaker introduction involves establishing the person's credibility, motivating audience interest, to giving the audience a human context, and saying what the speaker could not say. No speakers will jump to the stage and share their accomplishments, as this would appear arrogant. While preparing speaker introduction, it was also ensured to inform the audience about the presentation topic, why it is important, and how you plan to proceed with the discussion. A power point slide containing the photograph of the speaker along with his brief resume was prepared which was broadcasted during the webinar when the moderator welcomed the speakers for their session.

- ***Livestreaming webinar on YouTube***

We livestreamed our Cisco Webex on YouTube platform via NIDM official YouTube channel. This allowed participants to join our webinars through YouTube and comment on it through YouTube. During the live event, there was an approximate 15-second delay between the actual Cisco Webex meetings and the livestream. The livestreamed YouTube session also serves an important file for future reference. Several interested candidates who cannot join the programme's live session due to their other commitments can access the recorded YouTube video.

II. During the webinar

- ***Start the webinar at least 30 minutes before the schedule***

The webinar should be started at least 30 minutes before the scheduled time by the webinar's host. The coordinators of the webinar acted as hosts of the webinar. The webinar host starts the webinar as he/she is the user under whom the webinar is scheduled. There can only be one webinar host and have full permission to manage the webinar, panelists, and attendees. The host can stop and start the webinar, mute panelists, stop panelist's video, remove attendees from the webinar, and more. Other coordinators also joined the webinar and remained alert as Co-host in case of emergency. Co-hosts share many of the controls that hosts have, allowing the co-host to manage the administrative side of the webinar, such as managing attendees or starting/stopping the recording.

- ***Ensure technical stability***

The host of the webinar, after starting the webinar ensures that audio, video, and internet connection are stable. When preparing for a webinar, it is essential to think ahead of time. The host test the internet speed to ensure the video conference will run smoothly. The host also ensured that the systems were connected with stable internet connections.

- ***Practice Session***

In the practice session host coordinated with the panelists and it was a useful tool for ensuring a well-produced webinar. All panelists were requested to join the webinar using the link provided 20 minutes before the start time to test their cameras, microphone, and content to be presented to the other panelists so that technical glitches can be avoided. The host and co-host of the programme have a copy of all speakers' presentations as backup so that in case of any technical glitches, the same may be presented from the host's end on behalf of speakers.

- ***Ensuring webinar livestreaming on YouTube***

Host of the webinar session needs to ensure that the webinar is livestreaming on YouTube. Livestreaming of the webinar consists of a series of steps which includes providing a serial key and link when required by the cisco Webex.

- ***Ensuring recording of the session***

Most online meeting platforms have the option of recording the meeting. The webinar host also ensures that the session is recorded which can be used as a backup of YouTube livestreaming for people who can't attend or for those who want to refer to what was discussed.

- ***Moderation of webinar***

A webinar moderator was a team member that helps to mediate the webinar session. Moderator provided basic a background of the webinar setting the context of the webinar. He introduced the speakers to the attendees and set the ground rule for the conduction of the webinar session. He also makes sure the speakers stick to the allotted time.

- ***Time management***

The Moderator of the session ensured that the webinars start on time showing that they value the time of their speakers, dignitaries and attendees. When sessions of the weekly webinar series continuously start and end on time, organizing team builds a reputation of respect, professionalism, and competence. Just as important as starting on time is ending on time. A definitive end time helped ensure that we accomplish the webinar's agenda and get people back to their work promptly.

- ***Encouraging attendee participations***

Although intended to be “listen-only” for Webinars, attendees were encouraged interact with panelists in the following way:

- In-meeting Chat
- Answering Poll questions
- Submitting questions to Q&A
- Raising Hands

The webinar host has the option to unmute any participants if needed.

- ***Group photo***

A group photo of each webinar was captured with all the patrons, course chairs, panelists, subject matter experts, coordinators who have joined the programme. The group photo is kept as record in repository.

IV. After the webinar

After the completion of each session

- ***Post-assessment***

Of all the steps to plan, prepare and hold a business meeting, the most strategic work may occur after the webinar session ends. Releasing every webinar of the weekly webinar series is a process, and evaluation makes the process complete, course chairs and coordinators of the weekly webinar series evaluated the results achieved, steps to follow-up on pending action items, and to plan better meetings in the future.

- ***Feedback from participants***

Effective feedback, both positive and negative, is very helpful. Feedback is valuable information that can be used to make important decisions and improve decisions. Participants’ feedback was collected to remain aligned to goals, create strategies, develop plans and webinar improvements and much more.

- ***Acknowledgement for panelist/ participation***

After completion of each webinar, an acknowledgement email was sent to all the subject matter experts for sparing their precious time from coordinators. Acknowledgement mail was also sent to all the attendees to make them feel more motivated and positive, making it more likely that they’ll repeat the same behaviour.

● **Attendance keeping**

The list of attendees of the webinar was downloaded from the cisco Webex platform. The attendance report lists details such as name and duration of the meeting or webinar, attendee name and email address, how the attendee joined, what times the attendee joined and left your meeting or webinar, and the source ID.

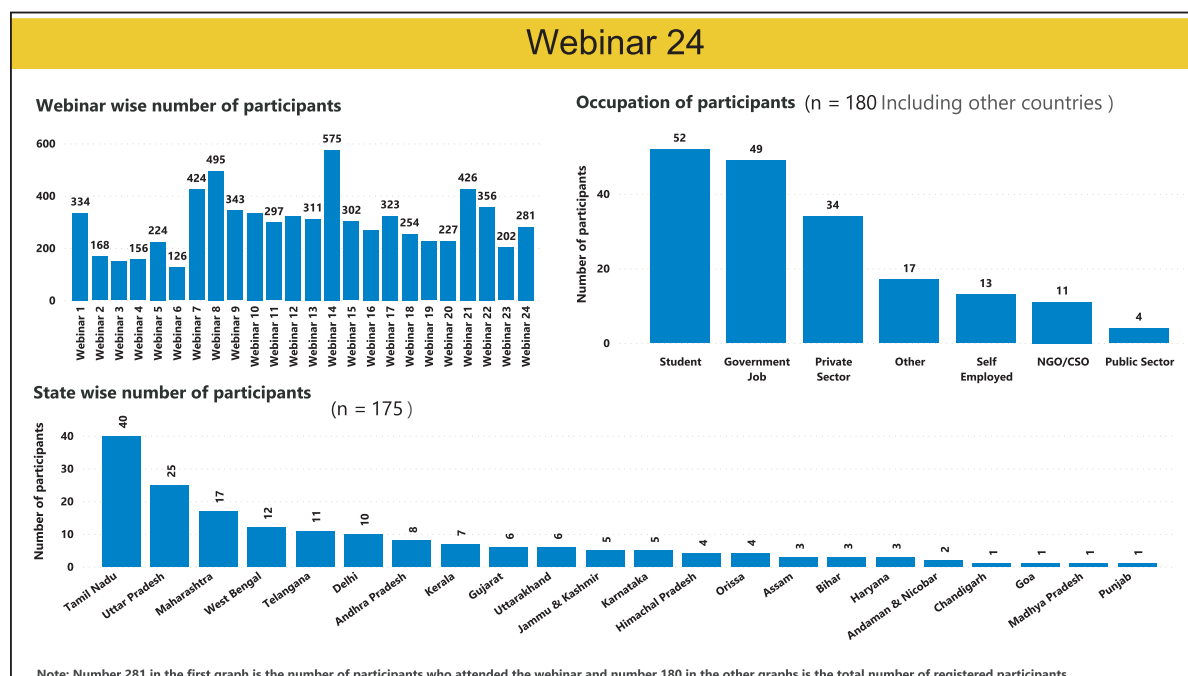
● **E-Certificate distribution**

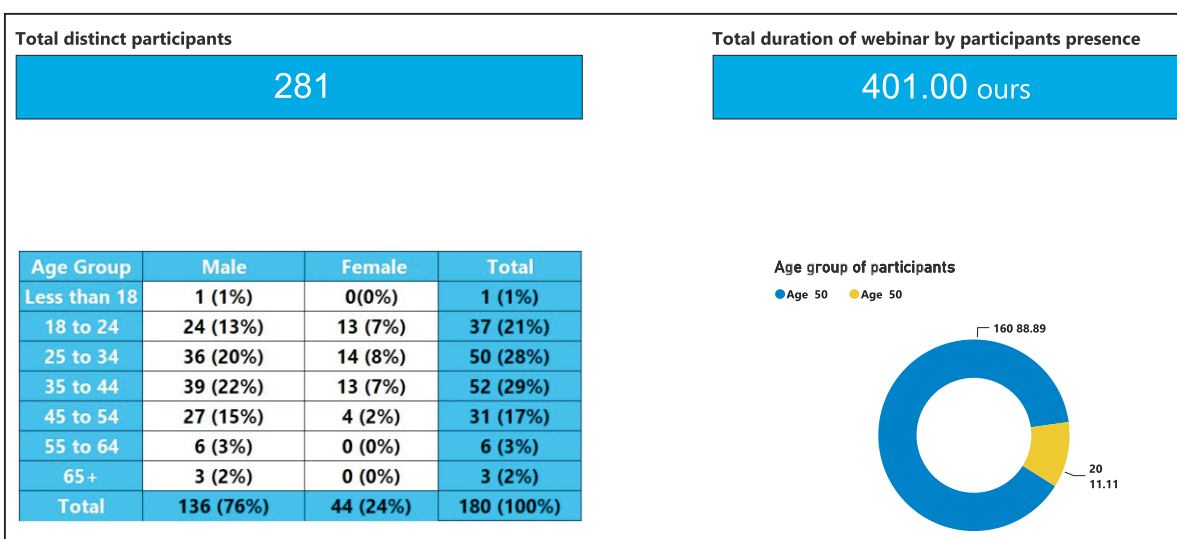
The attendance list generated was also used to identify eligible attendees for the certificate. Certificates were distributed to all the eligible participants via NIDM training portal.

● **Infographic analysis:**

An infographic is a visual representation of information. It sends images and texts to send a message to the reader concisely and strategically. For each webinar, details such as the number of participants, occupations of participants, state-wise participants, total districts, age groups, etc were represented in the infographics.

A draft template of standard operating procedures that may be followed for conducting planning and executing weekly webinar series is attached in **Annexure -I**.





V. After completion of the weekly webinar series

- **Meeting of all the organizers**

Effective team meetings are productive, inclusive, and collaborative. This meeting was held to understand what took place, why it happened the way it did, and how to improve on it to analyse the overall weekly webinar series and identify strengths to be maintained and built upon, as well as identify potential areas of improvement.

- **Documentation of all the session**

A separate report was prepared for each webinar including the topics that were covered, who presented what, key recommendations and action items.

- **Slide decks**

A repository was prepared of all the presentations made by the speakers during the weekly webinar series. This repository serves as reference material for future references. In addition, a repository of all the panelist and subject matter experts was also prepared.

- **Compiled Report**

A compiled report containing details of all 24 webinars was prepared.

The main theme of the WWS was to brainstorm on Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System and Infrastructure in India. Further, this theme was divided into subthemes mentioned below:

1. Public Health Emergency and Disaster Management - System

- COVID-19 Pandemic Response and Management in India
- IHR and Global Health Security with focus on COVID-19 Pandemic Management
- Overview of WHO's PHEOC Framework and global common minimum standards
- Legislation and Policy Framework to deal with Disasters and Health Emergencies
- Linking PHEOCs with Integrated Health Information Portal
- Incident Response System & Incident Management System in Indian Context

2. Public Health Emergency and Disaster Management - Resilient Workforce

- Building the Public Health Emergency and Disaster Management
- Workforce Training and Capacity Building Plan for Emergencies
- Rapid Response Team (RRT) for Pandemic Preparedness

3. Public Health Emergency and Disaster Management - Infrastructure

- Public Health Emergency Management and Public Health Emergency Operations Centre (PHEOC)
- Developing and Strengthening a PHEOC- Infrastructure and Information Technology
- Safe, Sustainable and Resilient Health Infrastructures, Systems and Services
- Resilient Health Infrastructure for Public Health Emergency and Disaster Management

4. Community Engagement and Partnership

- Risk Communication and Community Engagement (RCCE) in Context of COVID-19
- Community Engagement in Public Health Emergency and Disaster Management

5. Climate change, DRR and Public Health Emergency

- Understanding One Health Concept in Context of the COVID-19
- Pandemic Integrating Public Health Interventions and Strategies in DRR
- Health Emergency of Climate Change and Extreme Weather Events
- WASH Advocacy for Health Sustenance

6. Interdisciplinary Coordination, Collaboration and Partnership

- Multi-layered, multi-sectoral and multi-agency coordination in COVID-19 context
- Logistics and Supply Chain Management in Public Health Emergencies and Disaster Management
- Psychosocial Impacts of Public Health Emergencies in Context of COVID-19

7. Lessons Learned and Best Practices from COVID-19 Pandemic Management**8. Outcomes/Recommendation/Way ahead**

COVID-19 Pandemic Response and Management in India

The inaugural webinar of the Weekly Webinar Series on “Public Health Emergency and Disaster Management during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India” was graced with patrons’ presence, course chairs, and experts from NIDM, NCDC, and CDC-India.

India has witnessed a large number of disasters as well as biological threats in history. The nation has also seen Public Health Emergencies of International Concern (PHEIC), starting from H1N1 influenza to Ebola, Zika, and now the COVID-19 pandemic. We have also seen several public health threats inside the country where the events were unexpected and severely impacted morbidity and mortality. Year by year, we are having outbreaks in various parts of the country, and we have faced this challenge with the multi-pronged approach. However, a lot still needs to be done to ensure that our country’s population is protected or has a reasonably good surveillance system where we can detect early warning signs at an appropriate time. Our approach must be proactive. Preparedness must be strengthened at all levels.

This webinar series was highlighted as an important initiative wherein the primary focus will be on pandemic preparedness in view of the ongoing pandemic of COVID-19. This will also aid in developing a futuristic approach regarding the public health emergency response and its measures. It was urged to ensure the safety and protection of human lives as well as the economy and environment, and there is a need to adopt the multi-hazard, cross-sectoral and trans-disciplinary approach. We need to consider all events, be it a pandemic or any other public health emergency related to climate change or disasters. The webinar series is a common platform for subject matter experts in public health emergency and disaster management to share integrated views and dimensions of both areas. The entwining of public health emergency and disaster management will provide a holistic idea about the existing situations and potential solutions for the future.

This webinar series is timely action to enhance the capacity of stakeholders engaged in public health emergency management and disaster management, especially as we cope with managing the COVID-19 pandemic in India. The Series was envisaged to impart knowledge and experience with an overview of the COVID-19 scenario, initiatives and activities undertaken right from the beginning and how the scenario has changed with the implementation those public health activities.

Preparedness is crucial for managing COVID-19 pandemics like public health emergencies and disasters. There will continue to be a significant increase in events, resource requests, deliveries and deployments, which will pose great challenges to maintaining and keeping track of public health actions within an overstressed and limited workforce. We need professional development programs based on modern

emergency management principles such as Incident Response System (IRS)/Incident Management System (IMS). We must shift from response-driven operations to a sustainable, resilient, and proactive approach.

The Integrated Disease Surveillance Program (IDSP) and Integrated Health Information Platform (IHIP) came in handy in responding to the COVID-19 pandemic. IDSP project was launched in 2004 to quickly detect and respond to disease outbreaks. IDSP created a nationwide surveillance and response network with dedicated resources at the national, state and district levels. Its units indicate a system in place right up to the district level with reliable resources and a trained workforce whose capacity has been built to detect and respond to outbreaks in their incipient state.

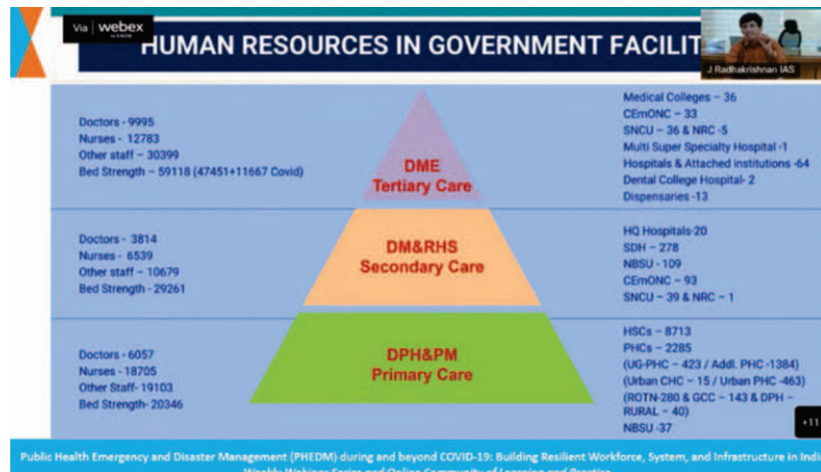
The whole-of-government approach was adopted to deal with the COVID-19 pandemic. All the government ministries, departments and institutions come along to confront and manage the pandemic. There is a need to enhance the capacities and capabilities of healthcare infrastructure in peri-urban, rural and tribal areas, including pediatric cases. We also need to focus on vaccine hesitancy, vaccine eagerness, and misconceptions about vaccines. The community ownership for adherence to COVID-19 Appropriate Behavior (CAB) remains the mainstay.

Public Health Emergency and Disaster Management - Resilient Workforce

Enhancing the capacity of the Workforce

The COVID-19 pandemic highlighted the need for maintaining, nurturing, and building a robust public health workforce and essential human resources for handling public health/clinical emergencies and other disasters. The need of the hour is a competent workforce that can help save lives, alleviate disease and suffering, and

mitigate socioeconomic damage to afflicted communities and countries. Empowering, retaining and enhancing human resources to combat public health emergencies and disaster management is the need of the hour. Further, the health sector needs effective capacity building to prepare and handle all emergencies, whether natural or manmade.



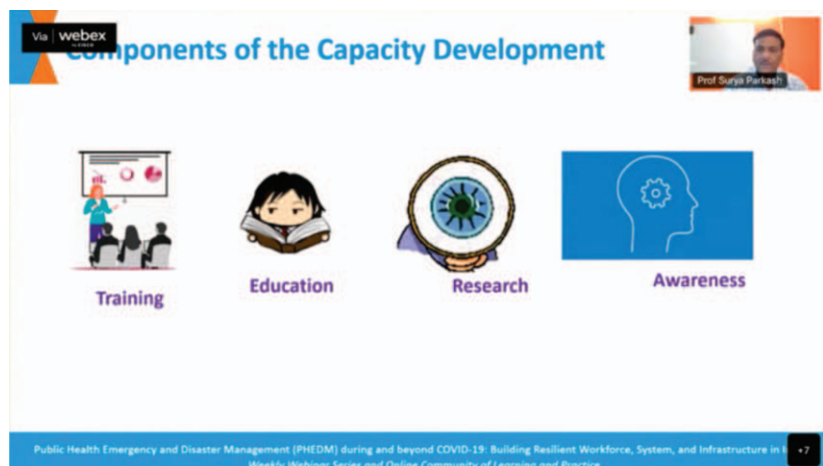
CAPACITY BUILDING FRAMEWORK



Public Health Emergency and Disaster Management (PHEDM) is an ever-evolving need of society as these events jeopardize the countries' universal health coverage and other development agendas. A critical issue that has hampered PHEDM is the lack of appropriate capacities at all levels. Building capacity is

continuous and includes developing and strengthening the skills, instincts, abilities, processes, and resources that organizations and communities need to survive, adapt and thrive in a fast-changing world. There is a need to incorporate human resource development components into the capacity-building process, such as individual training, organizational development (such as enhancing group and organizational performance), and institutional development.

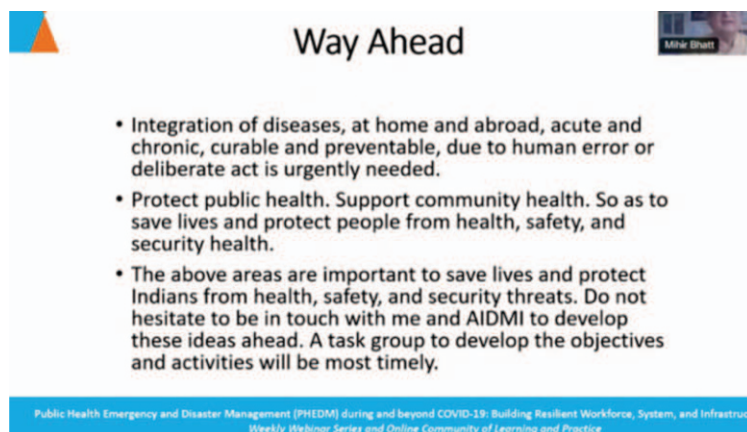
The Disaster Management Act 2005 mandated states and districts to take necessary measures to enhance the capacities and capabilities of their officials. The Fifteenth Finance Commission also has various provisions of the fund for preparedness and capacity development at all levels. Developing capacity is not limited to training but includes education, research, and awareness at all levels. The capacity development process needs to be locally driven, and developing capacities is a society-wide endeavour that requires multi-stakeholder engagement and participation. Technical capacity building must be linked with other forms of capacity-building activities, such as developing leadership and other managerial skills and performance-improving strategies.



Capacity building at the community level is indispensable as communities are not only the first to be impacted by an emergency or disaster but also the first to respond. Their engagement will ensure local ownership, satisfies local needs, and encourages mutual aid and volunteerism to

minimize harm and prevent it. The trained communities will be better able to combat the risks of any public health emergency or disaster.

Equitable protection and health promotion before, during and after a disaster is our priority. Some of the frontier areas where we need to focus include participatory visual research methods, forecasting outbreaks; pastoralist communities; intersectionality of gender, public health, and disaster risk reduction; tools and technology (data, digital, or robotics) to deliver better impact and food security to scale up essential nutrition services in affected communities.

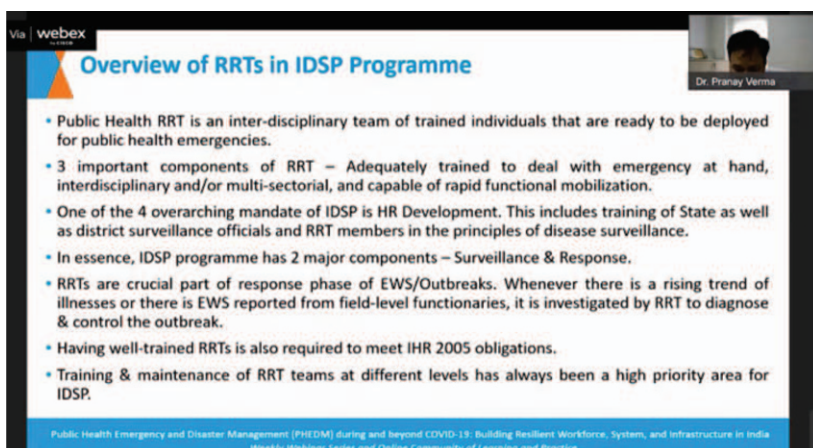


Way Ahead

- Integration of diseases, at home and abroad, acute and chronic, curable and preventable, due to human error or deliberate act is urgently needed.
- Protect public health. Support community health. So as to save lives and protect people from health, safety, and security health.
- The above areas are important to save lives and protect Indians from health, safety, and security threats. Do not hesitate to be in touch with me and AIDMI to develop these ideas ahead. A task group to develop the objectives and activities will be most timely.

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure
Weekly Webinar Series and Online Community of Learning and Practice

Rapid Response Team (RRT)



Overview of RRTs in IDSP Programme

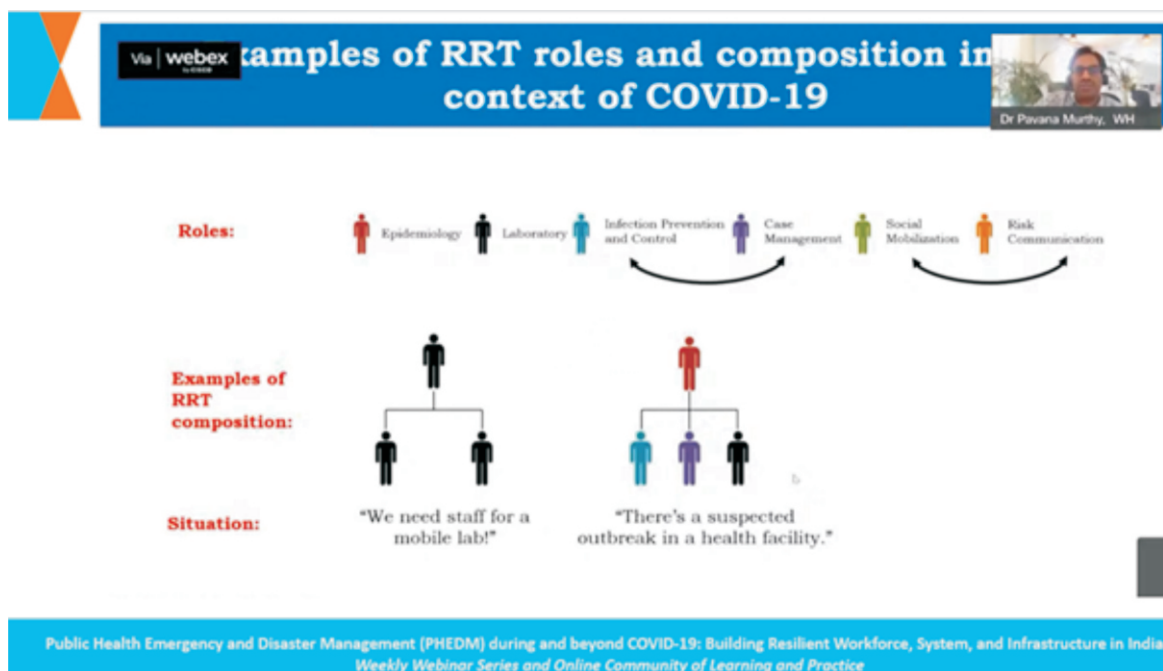
- Public Health RRT is an inter-disciplinary team of trained individuals that are ready to be deployed for public health emergencies.
- 3 important components of RRT – Adequately trained to deal with emergency at hand, interdisciplinary and/or multi-sectorial, and capable of rapid functional mobilization.
- One of the 4 overarching mandate of IDSP is HR Development. This includes training of State as well as district surveillance officials and RRT members in the principles of disease surveillance.
- In essence, IDSP programme has 2 major components – Surveillance & Response.
- RRTs are crucial part of response phase of EWS/Outbreaks. Whenever there is a rising trend of illnesses or there is EWS reported from field-level functionaries, it is investigated by RRT to diagnose & control the outbreak.
- Having well-trained RRTs is also required to meet IHR 2005 obligations.
- Training & maintenance of RRT teams at different levels has always been a high priority area for IDSP.

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The reduction in the time from disease detection to response limits transmission and potential population mortality and morbidity. The rapid response and Rapid Response Team (RRT) each of these words have a precise meaning and set the script for quick response, which means the teams

are always in standby mode and can be deployed anytime at concise notice. RRT is a larger emergency response strategy mechanism that can be utilized in an outbreak to ensure a fast and effective response. They have a plan of action ready with a good understanding of the diverse situations. The plan of action depicts the clear-cut responsibilities, and the team has been trained explicitly for those aspects.

RRT is an interdisciplinary team of trained individuals ready to be deployed for public health emergencies. The three essential components of the RRT comprise adequately prepared to deal with the crisis at hand, interdisciplinary and multi-sectorial, and capable of rapid functional mobilization. A rising trend of illnesses or an Early Warning Signal (EWS) reported by field-level functionaries is investigated by RRT to diagnose and control the outbreak. International Health Regulation (IHR) 2005 obligations have also mandated to have well-trained RRTs. To strengthen the RRTs, we need to have a database of different RRTs and greater coordination among them. Cross-cutting training and proper documentation of each RRT investigation will enhance the capacity of RRTs in preparedness and response to an outbreak.



Key points

- Empowering, retaining and enhancing human resources to combat Public Health Emergencies and Disaster Management is the need of the hour.
- The health sector needs effective capacity building to prepare to handle all emergencies, whether, Natural or Man-made, Biological or other causes.
- Heeding to expertise in respective fields is also the key and retaining the surge capacity of people gaining expertise helps in quicker response.
- Strengthen the blended training and self-learning capacity at all levels to increase public health and disaster risk management knowledge and preparedness.
- The process of Human Resources Capacity Development needs to be locally driven.
- Creating an enabling environment is necessary to convert capacity into performance.
- A trained community will better combat the risks of any public health emergency or disaster.
- Community-based engagement is critical to achieving the target of Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction.
- Ensuring effective capacity building of the private sector and the NGOs who are active and willing to contribute to this sector equally important.
- Three important components of the RRT include being adequately trained to deal with the emergency at hand, interdisciplinary and multi-sectorial, and

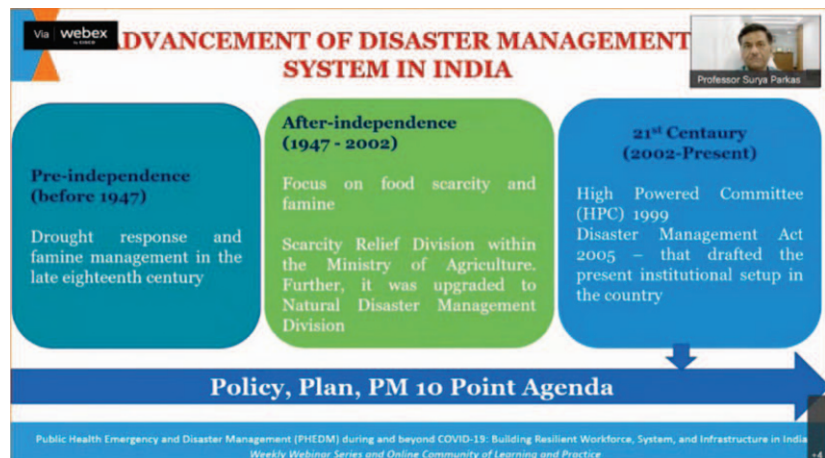
capable of rapid functional mobilization.

- To strengthen the RRTs, we need to have a database of different RRTs and greater coordination among them.
- Cross-cutting training and proper documentation of each RRT investigation will enhance the capacity of RRTs in preparedness and response to an outbreak.

Public Health Emergency and Disaster Management - System

Globally, we've seen an increase in the incidence of biological disasters due to multifactorial emerging infections. Actions for preparedness and response to public health emergencies and disasters are requisite from each corner of the world. The robust and holistic legislation and policy framework are indispensable for a sustainable and safe environment and to combat the challenges of public health emergencies and disasters.

The country's capabilities depend upon the system through plans, procedures and policies, which help countries activate the system or plan during any event. We have a robust and dedicated legal and policy framework for disaster management in India. The Disaster Management Act (2005), National Policy on Disaster Management (2009) and National Disaster Management Plan (2016 and 2019) established a dedicated and effective institutional mechanism in the country for managing the risks of disasters.

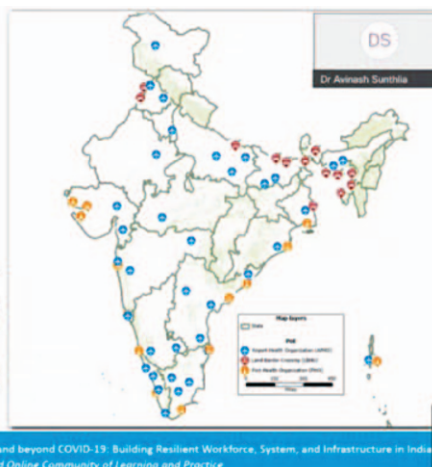


Point of Entry (PoE) is the first line of defense for the country to protect the nation from any Public Health Emergency of International Concern (PHEIC). India's response to the COVID-19 pandemic has been pre-emptive, proactive and graded. India scripted history in its fight against the global pandemic of COVID-19. The swift

Points of Entry (PoE)

- PoE Health Units
 - Airport Health Organisation
 - Port Health Organisation
 - Land Border Health Organisation
- India has in place a comprehensive response system at its borders.
- Screening of incoming passengers followed by suspension of visas and ban on international flights was done much ahead of any other country.
- A robust coordination, collaboration mechanism for effective implementation of public health measures.

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India
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government action and the use of Information Technology (IT) and Artificial Intelligence (AI) were useful in making the health screening measures at airports leakproof. They also helped faceplate the implementation of stringent health screening. The data generated from the point of entry were transformed

into useful information with the help of a combination of tools. They helped end users make quick, informative and better decisions during the pandemic.

Public health emergencies are very multifactorial. It could be due to closer interaction between human and animal populations, the emergence of new pathogens, increased travel and trade, domestic and international, climate change, lifestyle and so on. International Health Regulations (IHR) 2005 becomes very relevant for all practising public health for preparedness and response to public health emergencies. Implementing IHR and the Global Health Security Agenda is crucial for making the country and its health system resilient and generating early warning signals so that anything threatening human health is managed efficiently and appropriately. IHR is not a separate vertical program or a public health program. It is an adapted response and legally binding to all the WHO member states.

International Health Regulations (IHR)

Global health security legal instrument to:

- Prevent
- Protect against
- Provide a public health response

...for ALL public health threats

What are they not?

- New vertical program
- A public health program
- A new science

5 reasons why the IHR matter

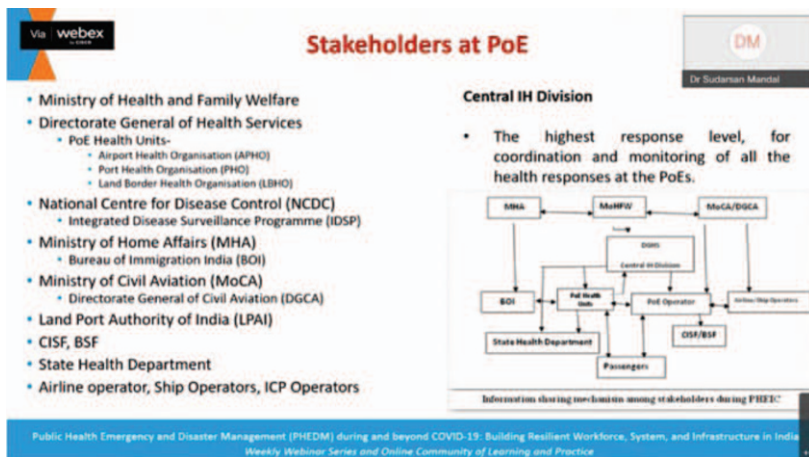
- HEALTH THREATS HAVE NO BORDERS
- TRAVEL AND TRADE ARE NEARLY UNIVERSAL
- GLOBAL HEALTH SECURITY IS ESSENTIAL
- RISK IS THREATS AND ADAPT - SHARED RESPONSIBILITY
- ALL SECTORS ARE INVOLVED

Until all sectors are on board with the IHR, no country is ready

A legally-binding global health security framework agreed to by 196 States Parties, including all World Health Organization (WHO) Member States.

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India
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The response to the pandemic was from all levels, from the national to the grassroots level. Each and everyone have performed their role with full accountability. The



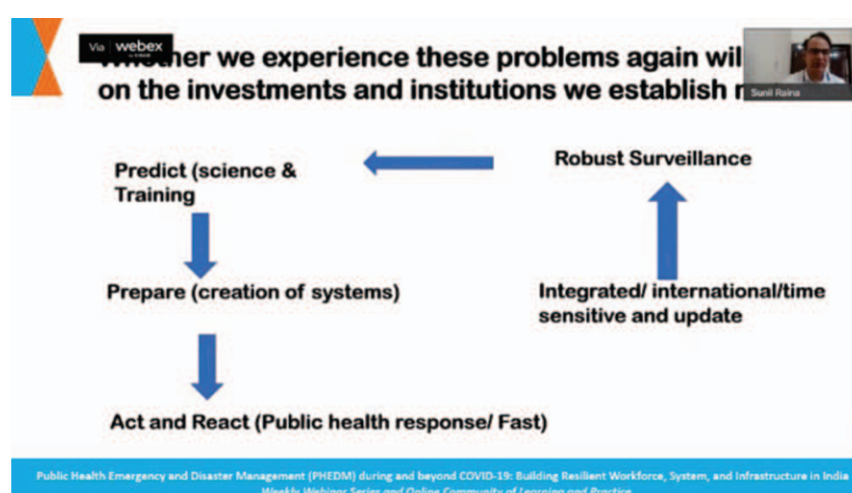
collaboration and coordination of key stakeholders at PoE bolster the first line of defense to protect the nation from any Public Health Emergency of International Concern. Digital display of government's guidelines, messages to enforce Covid Appropriate Behaviour, Do's and

Don'ts at passenger crowding points, Awareness materials, etc. were displayed at all the PoEs. Several innovations were implemented at PoEs to contain the pandemic, such as a mass fever screening system and a centralized web portal.

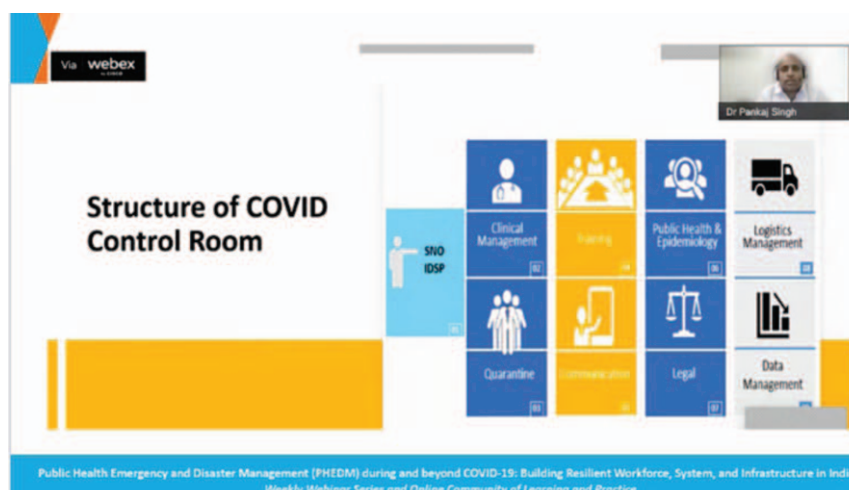
The collective lack of preparedness and the inability of the systems to defeat the outcomes that were probably our most significant failures. Despite claiming to have

enough analytical capabilities and artificial intelligence tools to make better predictions, we fail. Probably the failure was because we are very quickly able to predict harm. Still, our chances of predicting the ruin and harm of a global scenario or situation are poor. In our approach, we must

be more collected than individuals when discussing health security. We must have some idea of these events, which have not happened in the past but may happen and could create extinction in the entire society, not just individuals.



Public Health Emergency Operation Centres (PHEOCs) 's main functions are information



and resource management. The basic purpose would be to manage information and resources in all emergency operation centres, whether in the public health sector, disaster management area, armed forces operations, or wherever there is an EOC. When we talk about the management

of information, we look at data. The Integrated Disease Surveillance Program (IDSP) is mandated with collecting information on outbreak-prone communicable diseases so that early warning signals for outbreaks can be identified and timely action can be taken by trained people who are the rapid response team members. The PHEOCs can also be linked with the India Disaster Knowledge Network (IDKN), India Disaster Resources Network (IDRN), and other knowledge portals as they are likely to help enhance the capacities of different stakeholders, including the stakeholders from the health systems and departments.

The surveillance data from the portal can be linked to PHEOCs to receive, visualize, interpret and analyze the data. Epidemiologists in each PHEOC can monitor and interpret the surveillance data (IHIP Portal) for monitoring and enabling more timely

detection of emerging or small outbreaks. Mapping public health resources and Human Resources in the IHIP Portal (State, District, Facility level) to ensure the availability of trained HR, emergency drugs, Testing Kits etc., thereby providing rapid mitigation actions and guidance for allocating Health Resources more efficiently.

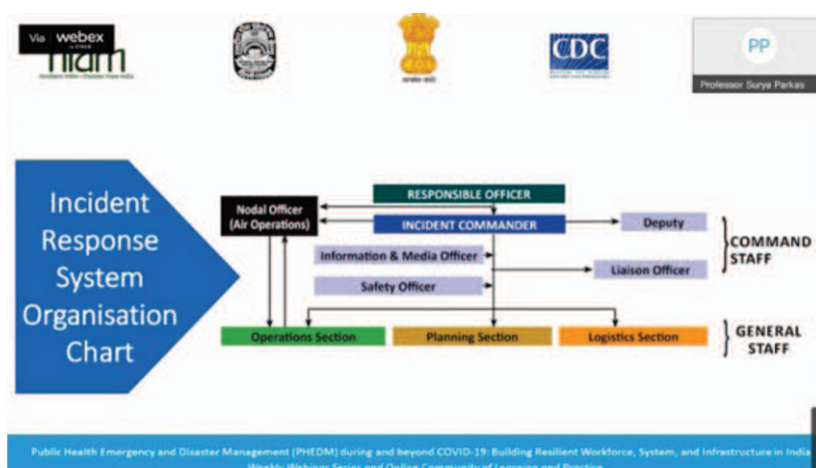
Integrating PHEOC with Integrated Health Information Portal -Way forward

Dr. Nyan Klean

- **SMS Alerts to be sent for every EWS to the PHEOCs, State and District Teams**, as obstacles to efficient containment of outbreaks include reporting lags from the field, delays in information sharing of outbreak data through the public health system/IHIP Portal, inefficient coordination of outbreaks, and slow response from the District/State level.
- SMS Alerts to be sent for every presumptive or syndromic cases that **exceeds a threat threshold**
- Surveillance data received from the portal can be linked to **PHEOCs to receive, visualize, interpret and analyze the datas**
- Epidemiologists in each PHEOC can **monitor and interpret the surveillance data** (IHIP Portal) for monitoring and enabling more **timely detection of emerging or outbreaks**.

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India
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Two effective management tools, Incident Response System (IRS) and Incident Management System (IMS), were also discussed during the Weekly Webinar Series. IRS



is an effective mechanism for reducing ad-hoc measures in response and is adopted from Incident Command System. On the other hand, IMS is a standard organizational model of the World Health Organisation (WHO) that can be applied to all hazards and emergencies.

IRS has been very well utilized in response to various disaster situations, including the natural and anthropogenic hazards we have faced in the past. The National Disaster Management Authority (NDMA), Government of India, has proposed it be adopted for response to various disasters and emergencies. IRS effectively manages all kinds of incidents in terms of hazards and risks. IRS has provided a mechanism to equip the responsible officers with adequate resources, skills and training.

IMS is an emergency management structure and standardized approach to guide government agencies, the private sector, non-governmental organizations, and other actors to work cohesively primarily to respond to and mitigate the effect of all types of disasters. IMS can be applied to all levels of emergency management, from the national government to the frontline emergency responders. It provides a common terminology and structure for all partners to make it understandable globally. IMS encourages a multi-directional flow of information, taking care of staff, systems, and stuff. In addition, it facilitates rapid mobilization, deployment, and tracking of resources. The IMS system

also aids in managing information, resources, and expertise to prevent infodemics, misinformation, confusion, and management of drugs, diagnostics, and logistics.

IRS and IMS are very similar, except that in disaster situations, we are also keeping a responsible officer who will observe, monitor and guide the whole operations through the incident commander, who will also have a deputy incident commander to deal with the situations.

The screenshot shows a webinar slide titled "Why IMS?". It lists four bullet points:

- Provides a common terminology and structure for all partners.
- Encourages a multi-directional flow of information.
- Facilitates rapid mobilization, deployment, and tracking of resources.
- To manage information, resources, and expertise.

 To the right of the text is a diagram of a network with various colored nodes (red, green, blue, orange) connected by lines, representing a multi-directional flow of information. In the top right corner, there is a small video feed of a speaker, Dr. Akshay Chandra. At the bottom, there is a blue banner with white text: "Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India. Weekly Webinar Series and Online Community of Learning and Practice."

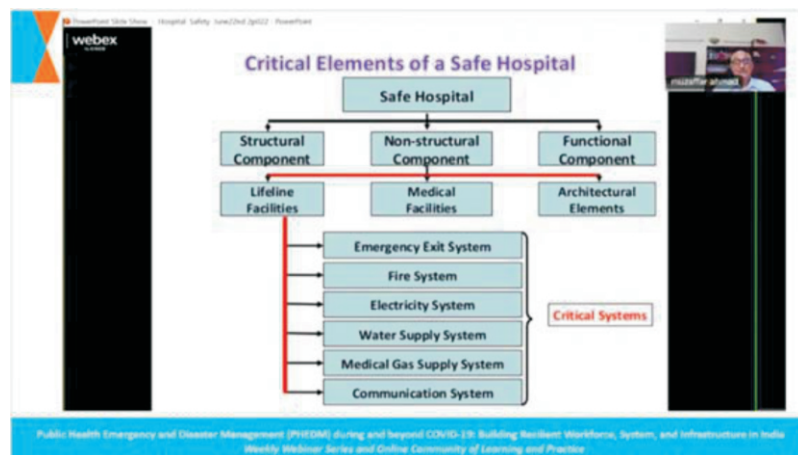
Key points

- Develop a document on lessons learnt during COVID-19 with compounding disasters. A close reading of the negative and positive parts of a disaster experience could increase our understanding of what it takes to design and conduct successful DRR and DRM policies and programs.
- Robust coordination and collaboration mechanisms are required to implement public health measures effectively.
- The need for permanent arrangements to handle a calamity was evident in both cases.
- International Health Regulations have become very relevant for all of us practising public health for preparedness and response to public health emergencies.
- The community's active participation is crucial to the success of any response to health emergencies.
- Implementing IHR and the Global Health Security Agenda will make the country and its health system resilient and generate early warning signals so that anything threatening human health is managed efficiently and appropriately.
- IRS and IMS are based on the Incident Command System; a recognized best practice for emergency and disaster response.
- There's a need for international standards for using common operating standards or common minimum standards so that all countries should use them.

Public Health Emergency and Disaster Management - Infrastructure

The COVID-19 pandemic and other emergencies or disasters exposed vulnerabilities and caused disruptions to health services even in countries with the most robust health infrastructure and systems. Functional health infrastructure and the system are of utmost importance during any emergency or disaster. To ensure the continuity of healthcare services and prevent excess mortality and morbidity, particularly among vulnerable populations, healthcare facilities must operate fully during severe emergencies and disasters and soon afterwards. For this, we need to strengthen the resilience of our health infrastructure.

The safety, sustenance and resilience of health infrastructure, services and systems are the main elements in combating any public health emergency or disaster. The COVID-19 pandemic made us realize to strengthen the health sector concerning the resources it requires and the mechanisms and regulations that will keep it functional and active to save more and more lives. The pandemic also taught the importance of the public health component and the need to strengthen the health infrastructure and system. Disasters do not discriminate, and all are equally vulnerable to their adverse impacts. Therefore, we all should work to make our health sector resilient to roll out the healthcare delivery system during disasters to save lives. There is a need to examine the resilience of the existing healthcare delivery system and infrastructure.



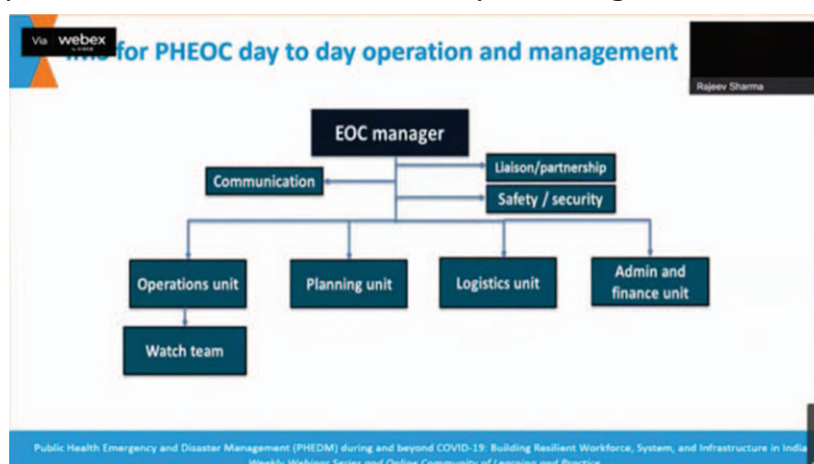
The role of a hospital in an emergency is not only to receive victims but also to send responders to save lives. Hospital shares the goal of promoting health emergency preparedness among the general public and strengthening the health sector's capability to respond to emergencies, disasters, or calamities. The chronically weak health systems, under-investment, poor facility location, design and construction, and not having any emergency plan are some factors that jeopardize a hospital's safety.

The Public Health Emergency Management (PHEM) Program includes anticipating, preventing, preparing for, detecting, responding to, controlling, and recovering from consequences of public health threats to mitigate adverse health and economic impact. The infrastructure component under PHEM urges the facility to have proper power backup and communicate shared information for analytics, data processing, and

visualization. Adequate, properly trained staffing and systems to bring all together are other crucial components of PHEM. The robust health infrastructure, such as PHEOCs, provides the platform. It enables coordination and communication for preparing, responding to, and recovering public health emergencies, enabling effective coordination of information and resources.



The health impacts of recent global infectious disease outbreaks and other disasters have demonstrated the importance of strengthening public health systems to better protect communities from naturally occurring and human-caused threats. Public health



emergency management (PHEM) is an emergent field of practice that draws on specific knowledge, techniques, and organizing principles necessary to manage complex health events effectively. A fundamental component of PHEM is the Incident Management System (IMS). An effective IMS

hinges on the integration and coordination of staff, systems, and infrastructure under a standardized organizational structure, typically managed by a Public Health Emergency Operations Center (PHEOC). The objectives of a PHEOC are coordination of activities, synthesis of data and information, operational decision-making, deployment of response resources, and providing administrative services along with monitoring financial commitments.

We must learn the lessons from the COVID-19 pandemic to strengthen our surveillance systems. The failures to detect it early led the chains of transmission to be firmly established before countries began to respond. We could move from public health surveillance to always-on surveys by continuously monitoring for outbreaks through a broad set of tools such as wastewater surveillance and sample testing. There is a need to prioritize more passive surveillance approaches and support epidemiological-

response capacity with Emergency Operations Centers (EOCs). It will ensure that we are more rapidly informed for evidence-based decision-making by having that information available to us and the leaders to make appropriate decisions. The seamless coordination and a clear definition of roles and responsibilities among centralized state and district actors could prove crucial for mounting an effective outbreak response.

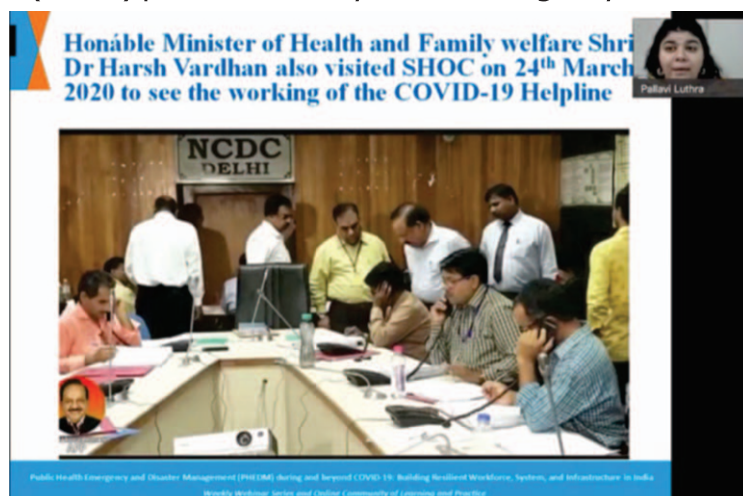
Further, he noted potentially six areas to strengthen the surveillance mechanisms.



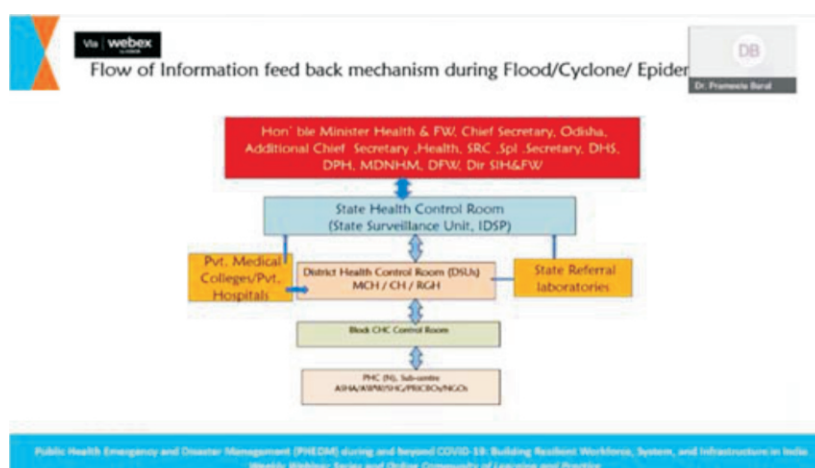
State the Art Emergency Operation Center (EOC) was significant in responding to and curbing the graph of the COVID-19 pandemic in Dharavi of Mumbai. The commitment of top leadership, shared vision, collaborative partnerships and the right mix of policy, ground-level efforts and execution was vital to Brihanmumbai Municipal Corporation's (BMC) success in combating the COVID-19 pandemic in Mumbai.



Strategic Health Operations Centre (SHOC) provide a facility for an emergency team to manage information & resources for disease surveillance and outbreak response and for key decision-makers to operate in the event of an emergency, disease outbreak or crisis of any nature. It acts as a command centre to manage disease outbreaks, public health emergencies, or any disaster. There is a need to strengthen disease surveillance & response using the latest information & communication technology.



Apart from the mayhem of the COVID-19 pandemic, the country also faced challenges from other disasters, such as floods and cyclones. The dual strike on the community's requisite adopting a holistic and multi-disaster approach. State & District preparedness activities were conducted such as vulnerability mapping, micro-planning for Medical relief operations, manpower deployment, supply chain management prepositioning of drugs, logistics, consumables & disinfectants, additional funds for drugs, logistics mobility support, preventive disinfection of drinking water sources and water quality monitoring.



The pandemic has challenged and tested local, national, regional, and global capacities to prepare and respond. Resilience is a core concept in disaster risk reduction, but its application to the health system is relatively new. Ensuring a resilient health system is a critical challenge that requires sound data analysis, evidence-based investment/decisions, and careful redesign of the health systems.

Key Points

- The healthcare sector must be strengthened concerning the resources it requires and the mechanisms and regulations that will keep it functional and active to save more and more lives.
- The collaboration and coordination of other sectors in enhancing the sustenance and resilience of health infrastructure, services, and systems are prerequisites.
- The COVID-19 pandemic has taught us the importance of the public health component and the need to strengthen the health infrastructure and system.
- Disasters do not discriminate, and all are equally vulnerable to their adverse impacts. Therefore, we all are supposed to work to make our health sector resilient.
- There is a need to examine the resilience of the existing healthcare delivery system and infrastructure.
- If we are not prepared, we will not be able to appropriately mitigate or respond to any disaster or emergency.
- PHEM programs provide the personnel resources, systems, and infrastructure

to anticipate, prepare for, respond to, and recover from public health emergencies.

- PHEOCs provide the platform and enable coordination and communication for preparing, responding to, and recovering public health emergencies, enabling effective coordination of information and resources.
- The seamless coordination and a clear definition of roles and responsibilities among centralized state and district actors could prove crucial for mounting an effective outbreak response.
- The partnership can help rapidly develop the capabilities and strengthen surveillance systems to enhance the ability to detect diseases.

Community Engagement and Partnership

Communities are the first victim, as well as they are the first responders. A well-aware community can better understand the risks and effectively adopt preventive practices or measures. The role of the community during the COVID pandemic was crucial, and without their involvement, it would not have been possible to contain and control the spread of the disease.

The communities' awareness and preparedness levels will make a lot of difference regarding the impacts of any public health emergencies or disasters. The traditional and local indigenous knowledge of communities that they possess by living in particular areas and experiencing different kinds of conditions they come across during their stay is of utmost importance and can aid in reducing the threats.

Community engagement aims to make communities aware, informed and prepared for coping with disasters besides protecting and promoting safety, health and quality of life on a sustainable, equitable and rights-based approach. The shortcomings in community engagement in public health emergency and disaster management include the same plan regardless of the local characteristics imposed everywhere, negligence about local cultural instincts and heritage and so on. Community engagements



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and community-based disaster risk management planning will help bring feelings of coordination and self-belongingness to society, and it will be able to consider the geo-climatic and socio-cultural characteristics of local initiatives. The community-based disaster risk management includes risk analysis (including information on locality, community, and environment), spatial-temporal multi-hazard assessment and vulnerability and capacity evaluation, hazard ranking and prioritization, preparation, testing and review of the multi-risk management plan and approval, implementation, monitoring, and evaluation of community-based disaster risk management.

We need to shift from a reactive to a proactive attitude and planning for communities to planning with communities. Community engagement is a blend of science and art. We must work as a whole against public health emergencies and disasters. We must plan with communities as they are the best one who knows their risks, threats, and vulnerabilities better. In the first hours after an emergency, before external help arrives, many lives can be saved, and the community has a significant role to perform. A well-prepared, active and well-organized community can reduce risks and mitigate the impact of emergencies. Building relationships with community members within

the existing local structures can lead to a successful health emergency response. Community-based actions are the frontline protection against disasters and other public health emergencies.

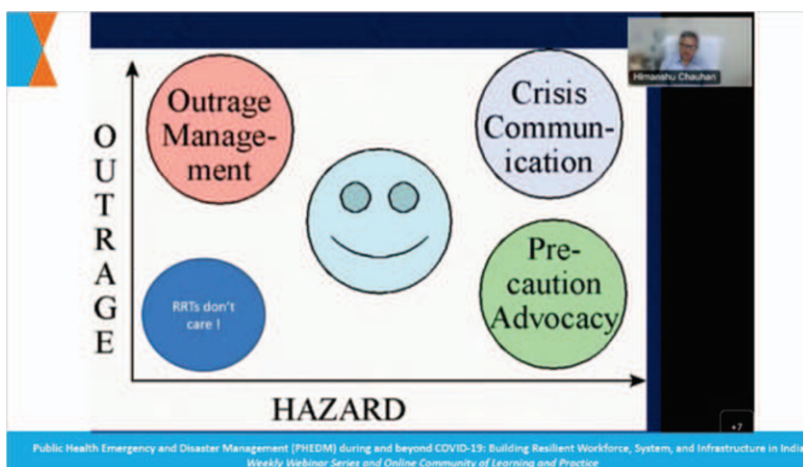
Each community is heterogenous, having unique cultures and beliefs, and there is a need to understand and engage with them appropriately. When we talk about community engagement, it means ensuring community ownership, facilitating accountability to communities, providing information to people to take decisions on their health, and facilitating the identification of barriers and enablers at the community level. For a community engagement plan in an emergency, it is crucial to have comprehensive knowledge and understanding of the community (culture and practices).

Via Webex **How to Work with Communities?** Rajeev Sha...

- Disaster and Health emergencies
- Community members most important stakeholders
- Building relationships with community members
- Community is first responders

Action taken by individuals, families, and affected communities are key to controlling the public health threats/emergencies.

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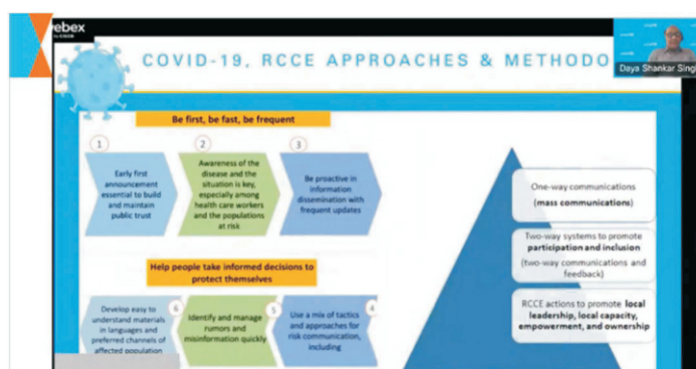


The overriding public health goal is to bring the situation under control as quickly as possible, with as little social disruption as possible. Effective risk communication is one tool to achieve that goal. It is the interactive exchange of information and opinions concerning risk and risk-related factors among risk assessors, risk managers,

and other interested parties. The risk communication and engagement of the communities promote awareness about the specific issue. It improve understanding of the risks and decisions made. Effective communication implies involving people throughout the whole risk analysis process. This foster trust and confidence among partners through the transparency, credibility and consistency of information exchanged and decisions made.

Risk Communication and Community Engagement (RCCE) is a part of the public health emergency system. Risk communication refers to the variety of communication activities necessary during the preparedness, response, and recovery phases of a public health emergency, such as the COVID-19 pandemic, in order to promote informed decision-making, healthy behaviour modification, and the preservation of trust. It

helps to prevent infodemic and bridge the gap in knowledge and experience. The aim of the RCCE is to be first, fast, and frequent and help people to take informed decisions to protect themselves.



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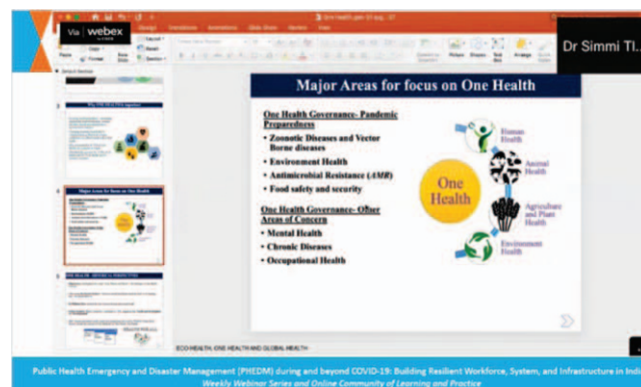
Key Points

- Communities' awareness and preparedness levels will make a lot of difference in the impacts of disasters.
- We need to utilize the traditional and local indigenous knowledge of communities.
- Community engagements and community-based disaster risk management planning will help bring feelings of coordination and self-belongingness to society.
- Community involvements and capacities are very much important for reducing the number of casualties and the losses and damages from any disaster situation.
- We must shift from a reactive to a proactive attitude and planning for communities to planning with communities.
- Community engagement is a blend of science and art.
- We must work as a whole against public health emergencies and disasters.
- A well-prepared, active and well-organized community can reduce risks and mitigate the impact of emergencies.
- Community-based actions are the frontline protection against disasters and other public health emergencies.
- For a community engagement plan in an emergency, it is crucial to have comprehensive knowledge and understanding of the community (culture and practices).
- Effective risk communication is one tool to achieve to bring the situation under control as quickly as possible, with as little social disruption as possible.
- Effective communication foster trust and confidence among partners through the transparency, credibility and consistency of information exchanged and decisions made.

Climate change, DRR and Public Health Emergency

A sustainable balance and optimization of the health of people, animals, and ecosystems are the goals of the comprehensive and unifying approach known as "One Health." It acknowledges how interconnected and dependent the health of people, domestic and wild animals, plants, and the larger environment (including ecosystems) is. The approach brings together a variety of sectors, disciplines, and communities at various levels of society to promote well-being and combat threats to health and ecosystems. It also addresses the need for everyone to have access to clean water, energy, and air, as well as safe and nourishing food, besides action on climate change and promotes sustainable development.

Adopting the One Health approach is the need of the hour, as human and animal health are interdependent and bound to the health of the ecosystems in which they exist. Therefore, he added that we could not manage one without due consideration and attention to the other. There is a global momentum to adopt one health approach due to the growing population and increasing interconnectedness between human animals and the environment, besides emerging diseases of zoonotic origin. The critical domains for which one health is relevant to include zoonotic and vector-borne diseases, environmental health, growing Anti-microbial Resistance (AMR) and food safety and security. The rapid population growth, globalization, industrialization, frequent international travel, biodiversity changes and increasing consumption of antibiotics necessitate having One Health attention in India. The challenges in implanting One health include limited coordination and data sharing between sectors, limited logistics, biodiversity challenges, limited legislative aspects and low awareness among the community.



When we talk about animal health, we need to see it holistically because it is part of human health and the environment. The animal sector is so diverse, and it has a lot of species that we need to cater and take comprehensive measures to protect in an emergency or disaster. There is a need to adhere and take preparedness/prevention measures to address the

issues related to animal health emergencies as it can certainly affect the economy and livelihoods of the people dependent on them.

Some of the areas taken into consideration for integrating animal health in emergencies and disaster management encompass institutional mechanisms for communication and coordination; awareness and preparedness measures related to animal disease outbreaks; annual assessment of animal health emergency preparedness; specialized training/courses on managing animal health emergencies and research studies on disease prevention, control, and management.

There is a need to build awareness among professionals dealing with zoonotic diseases or human diseases and local administrations involved in disaster management and other line departments. We must ensure adequate preparedness and bridging the knowledge gap to implement One health effectively.

The costs of disasters, both human and economic, are enormous. The COVID-19 epidemic showed the devastating effect that shocked the entire world. Every disaster involves large public health requirements that may exceed local response capacity, leading to excess death and morbidity. The importance of disaster risk reduction methods in national and international policy agendas has grown. However, health's role in disaster risk reduction plans has frequently been limited to emergency response. Most national DRR programmes do not fully incorporate health emergencies into their preparedness efforts.

Disasters have devastating consequences, including deaths, injuries, illness, disabilities, health system/service disruption, and economic and environmental losses. Disaster risk reduction is about avoiding risks (prevention) or limiting them (preparedness/mitigation) by focusing on the population's

vulnerability and capacities. We must know our risks; we must reduce our risks and be prepared by improving our capabilities. During disasters, problems often occur because hospital and health management systems that work well on a day-to-day basis cannot effectively meet the additional needs of the disaster. The essential public health functions are to monitor the community's health status and design and investigate health problems and health hazards, educate people about the health issues, and develop policies and plans that support individuals and communities. We also need to empower laws and regulations that protect health and ensure safety



Reasons for Disasters

- unplanned urbanization
- changing socio-economic and demographic profile
- development in and around high-risk areas
- climate change and environmental degradation
- health service challenges (accessibility, affordability, quality and safety) In natural disasters **80% of the victims are women.**
- Men normally form the majority of victims in armed conflicts.

Disaster risk reduction / disaster risk management

is about avoiding these risks (**prevention**) or limiting them (**preparedness / mitigation**), by focusing on a population's vulnerabilities and capacities

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and evaluate the effectiveness, accessibility, and quality of personal and population-based health services in addition to research for new insight into innovative solutions to public health problems. The concerted efforts of many people from many different agencies are necessary for effective public health in emergency preparedness and response.

The most important part of a disaster is always a public health issue, and if we do not give any importance to public health, then we will not be able to manage the disaster properly. Disaster is a health issue, so we must give more priority and always integrate public health interventions in disaster mitigation or response. Resilient health

Public health consequences of disasters are complex

Common public health issues:

- injuries,
- death,
- social & mental reactions and problems,
- communicable diseases & other acute illnesses, chronic illnesses,
- Population displacements,
- food and nutrition problems,
- water supply and sanitation problems and
- damage to health infrastructure.

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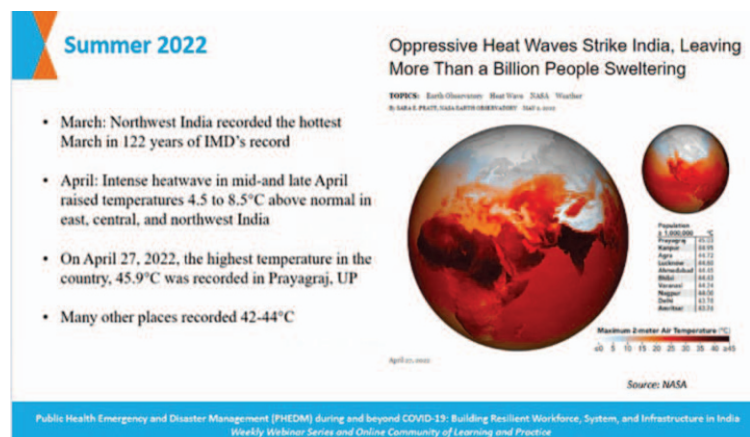
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infrastructure and health services are needed to reduce the risks of disasters. The need assessment for health in a disaster includes infrastructure, human resources, specialized services, financial resources, and a support network. Integrating public health interventions and strategies in DRR can be done through large-scale community health education, capacity development activities for various professionals and so on. Disaster can have a tremendous public health impact, from injuries in the immediate aftermath of the disasters to long-term mental health effects. Therefore, public health strategies and interventions are critical for any disaster or emergency.

Climate change is the most debatable topic and a severe existential threat of the present time. Disasters brought on by climate change attributes have cost lives and stressed healthcare systems. Extreme weather events like heat waves and floods are becoming more often. Human health is impacted by various factors, including injuries and deaths caused by extreme weather events, disease, and death due to air pollution or disease brought on by migration when a region becomes uninhabitable due to flooding or desertification.

Climate Change is a global issue affecting most sectors, including agricultural output and food security, critical infrastructure, water and sanitation, education, energy, transportation, health care facilities, etc. The Sustainable Development Goals also encourage urgent action to combat climate change and its impacts. Similarly, Sendai Framework acknowledges the need to lower climate change risk and adopt necessary measures for sustainable development. The Paris Agreement is a universal, legally binding global climate change agreement urged to build the capacity to deal with the impacts of climate change.

The impact of the heat waves in India is testing the ability of human tolerance and survival. It is not only the population that is affected by the floods, but the entire health care system faces the mayhem of it. The fall of healthcare facilities due to disasters will have consequences even in the coming times, and we won't be able to provide essential healthcare services to the population for a while. The impact of climate change is one of the biggest health threats faced by the world at present. This impact also poses a significant challenge to achieving Sustainable Development Goals (SDGs). The health-centric climate response provides an impetus for implementing urgent, equitable and drastic adaption and mitigation measures. Responding to the public health crisis has warranted a significant shift in planning and implementation.



The past events have highlighted the nexus between climate change, disasters, and vector-borne diseases. There are case studies wherein outbreaks of malaria and dengue occurred because of the floods and other disasters like landslides, flash floods and so on. The lessons learnt from the past incidences include the duration of stagnant water

bodies determining the presence/proliferation of a particular type of mosquito species; knowledge of the prevalent temperature of the affected area should be linked with disease transmission; advancement in the technology should be utilized for accessing the ecological changes/damages.

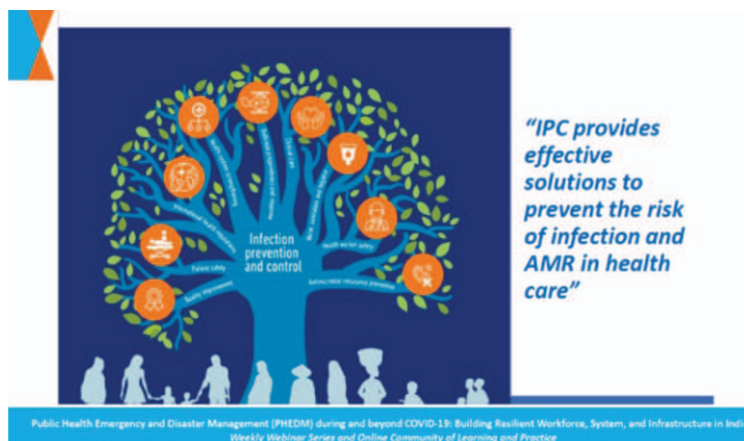
More people are affected by emergencies than ever, and they are getting more complicated. An unprecedented number of individuals have been evicted from their houses due to climate change, natural disasters, rising inequality, and urbanization, among other factors. WASH is crucial for preparation and reaction and averting and lessening the effects of upcoming health emergencies.

Health, sanitation, and water availability are all interconnected. Millions of the world's poorest people die each year from preventable diseases because of poor sanitation,

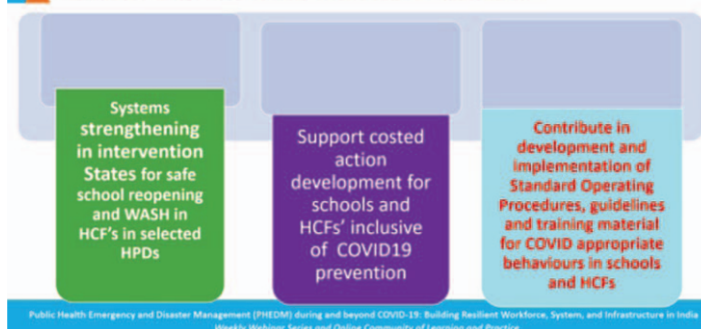
lack of sanitation facilities, and inadequate amounts and quality of drinking water. To reduce the consequences of a disease outbreak, safely managed Water, Sanitation and Hygiene (WASH) services are critical. WASH services give high-quality medical care, safeguard patients, staff, and medical professionals, and stop the spread of infection in healthcare facilities. To facilitate handwashing, cleanliness, and disinfection, communities and healthcare facilities must access quick, affordable water service and sanitation.

Every person has a fundamental right to access and availability of water, sanitation, and hygiene services. If we want to achieve sustainable development, we urgently need to solve the problems of water, sanitation, and disasters. In both routine and emergencies, WASH services are vital to communities and save lives. The disasters can impair WASH infrastructure and service delivery, and this disruption of WASH services might affect more people than just those in the immediate vicinity.

Infection, Prevention and Control (IPC) provides effective solutions to prevent the risk of infection and Antimicrobial Resistance (AMR) in health care. Pandemic-related challenges hindered many infection prevention and control practices like hand hygiene, cleaning equipment, separating patients, and using personal protective equipment (PPE), undoing progress in combating AMR. IPC is highly cost-effective and a “best buy” for public health to reduce infections and AMR in health care, improve health, and protect healthcare workers. We need to be responsible stewards of antimicrobial drugs, no matter where they are used, to prolong and preserve their efficacy to protect patients of today and tomorrow. When done regularly and appropriately, infection prevention is one of our most effective tools for battling antimicrobial resistance and saving lives.



Key pillars of our support for WASH in Schools and Healthcare facilities program during the COVID19 pandemic



WASH in schools and Healthcare Facilities (HCFs) during the COVID-19 pandemic was critical. The key areas targeted for WASH include systems strengthening for safe school reopening, action development for schools and HCFs, including development and implementation of COVID-19 prevention Standard Operating

Procedures, guidelines, and training materials.

The key elements to strengthen the advocacy for the WASH include demonstrative pilot programmes, self and local institutional capacity building, IEC materials and behaviour change. The absence of WASH poses a massive health risk and dramatically reduces the effectiveness of healthcare for health professionals, patients, and communities. The successful advocacy for systemic changes will ensure that WASH facilities are planned, piloted, and evaluated with stakeholders. Scientific awareness of the epidemic is crucial to building required habits.

Risk Communication and School Community Engagement



Investing in essential public health infrastructures, such as water and sanitation, is one of the most cost-effective ways to increase pandemic preparedness. When used regularly, good WASH and waste management procedures are barriers to preventing the disease virus from spreading from one person to another in households, communities, healthcare facilities, schools, and other public settings.

Key Points

- One Health approach is the need of the hour, as human and animal health are interdependent and bound to the health of the ecosystems in which they exist.
- There is a need to adhere to and take preparedness/prevention measures to address the issues related to animal health emergencies, as they can affect the economy and livelihoods of the people dependent on them.
- Policies and plans, capacity-building institutions, disease surveillance and academic curriculum are vital for integrating animal health into emergencies and disaster management.
- The essential public health functions are to monitor the community's health status and design and investigate health problems and health hazards, educate people about the health issues, develop policies, and support individuals and communities.
- Public health in emergencies is a large multidiscipline field requiring collaboration with other sectors.
- Resilient health infrastructure and health services are needed to reduce the

risks of disasters.

- Risk communication and community involvement in managing public health emergencies are crucial.
- The impact of climate change is one of the biggest health threats faced by the world at present.
- The fall of healthcare facilities due to disasters is going to be consequences even in the coming times, and we won't be able to provide essential healthcare services to the population for a while. Therefore, the resilience of healthcare facilities is of utmost importance.
- Health-centric climate response provides an impetus for implementing urgent, equitable and drastic adaption and mitigation measures.
- IPC is highly cost-effective, and a "best buy" for public health to reduce infections and AMR in health care, improve health, and protect healthcare workers.
- Behaviour changes and local institutional capacity building is crucial for WASH advocacy.
- WASH are vital ingredients to primary healthcare. Absence poses a massive health risk and greatly reduces the effectiveness of healthcare for health professionals, patients, and communities.
- Successful advocacy for systemic changes will ensure that WASH facilities are planned, piloted, and evaluated with stakeholders.

Interdisciplinary Coordination, Collaboration and Partnership

Public health challenges are complex, and only one sector cannot address them effectively. Public health security threats require a multi-layered, multi-sectoral, and multi-agency approach. The post-disaster situations analysis depicts that the success of the response was adversely affected due to a lack of coordination. Therefore, multi-stakeholder participation is very much meaningful not only in terms of a response but even in risk assessment. Coordination and communication are vital to any collaboration among different stakeholders. We must develop best practices for effective coordination and communication in disaster situations.

During the COVID-19 pandemic, the Government of India adopted a graded, informed technology and research-driven scientific approach towards Disaster Risk Governance which was multi-departmental and multi-sectoral. Further, the response during a dual disaster: in situations where disaster managers are dealing with crises on multiple fronts, such as Cyclone Taukte and Cyclone Yaas, in the backdrop of the Covid-19 pandemic, responding to one disaster may exacerbate the impact of another.



Covid-19 has again brought into focus our limited preparedness to deal with the pandemic. Coping with such public health emergency requires a multi-layered, multi-



coordinated and multi-sectoral plan because no one organization can deal with a pandemic of this kind. The strategic pillars to combat any public health emergency include governance and coordination, community engagement, infrastructure preparedness and expansion, human resource availability and capacity building, strengthening supply and logistic chain, and

enhancing the quality of care and research and knowledge sharing.

Strategic Health Operations Centre (SHOC) is a command centre to manage disease

outbreaks, public health emergencies or any disaster situation. It is fitted with state-of-the-art information technology gadgets with a video/audio conference facility, capable of transferring data, audio and video at high-speed, real-time information exchange, operations planning and virtual networking.

The main goal of SHOC is to provide single point contact facility for emergency management and to provide a facility for an emergency team, to manage information & resources for disease surveillance and outbreak response and critical decision makers to operate in the event of an emergency, disease outbreak or crisis of any nature.

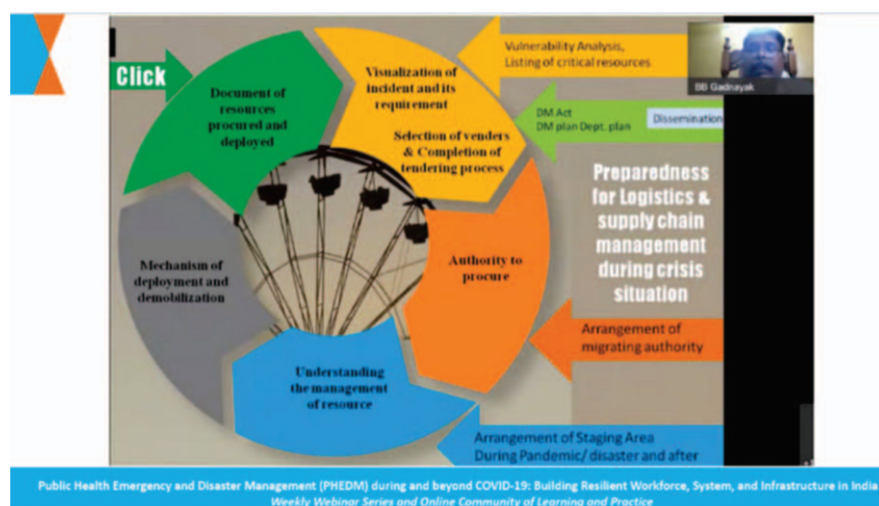


The emergencies and disasters test the capabilities of the logistics and supply chain. The COVID-19 pandemic also disclosed the importance of this chain. The lack of resilience to logistics and supply chain management during the pandemic resulted in the imbalanced availability of vital resources. If we fail in our logistics or supply chain management, we will not be able to govern the disaster situations well; on the other hand, any failure can also cause crisis or disaster situations. Therefore, we must look at the logistics and supply chain management sides and how they can be more effective in contributing to risk reduction and resilience during disaster situations. We deal with many vital resources during disaster situations, which are also crucial for saving lives and ensuring the necessary safety measures for our rescuers and responders.

We may have to have tailor-made supply chain management for disaster situations because we need to reduce the supply time and the supply's performance quality and standards. Any failure in logistics or improper or untimely supplies can result in losses of lives. Therefore, we must work on the digital logistics supply management systems and networks that can do better coordination and better performance and bring out better efficiencies in our systems. The robust logistics and supply chain management will help to avoid/mitigate any potential disasters or public health emergencies.

The logistics and supply chain management prerequisites to set up some criteria, viz. vulnerability analysis and need of the local procurement. We must maintain and develop a mechanism besides fixing accountability. In logistics and supply chain management, unless and until we develop a mechanism, we may not receive the entire thing systematically. We need a system with a systematic approach; then, we will probably

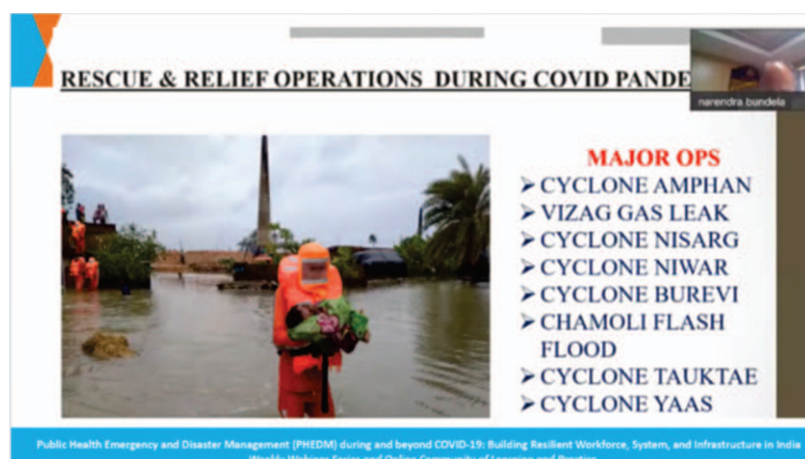
be able to address different issues and needs. If we plan to convert the existing infrastructure to establish health facilities or other facilities, and if that is known to the local people probably, we will be able to reduce the chaos and confusion among the affected people and the administrators.



The country struggled with dual risks during the COVID-19 pandemic. One from the pandemic and the other from the disasters like cyclones and floods. Our responders were facing difficulties in managing these disasters. Though there was not much public movement yet besides managing the disasters, they also ensured that all the pandemic precautions were followed to save personnel from the infection. To strengthen

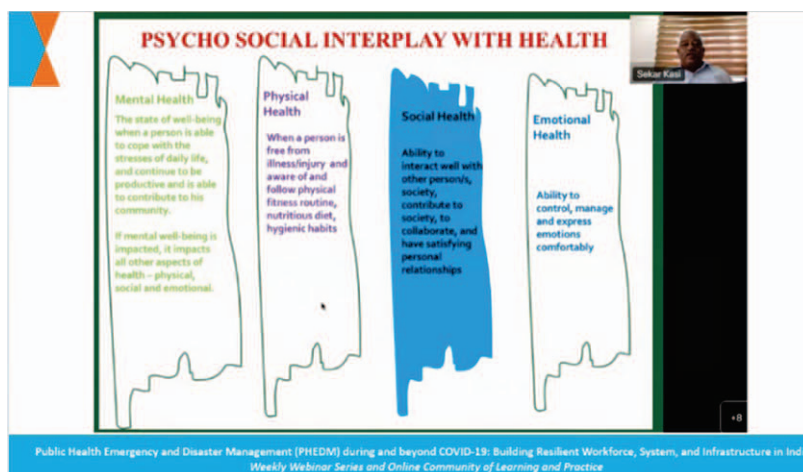
the logistics and supply chain management, we need to evaluate supply chain strategies, designs, and dependencies.

Public health emergencies and disasters engulf precious human life and expose the survivors to the window of emotional suffering, trauma, and stress. Following a disaster or other traumatic experience, emotional turbulence, stress reactivity, anxiety, trauma, and other psychological symptoms are frequent. These psychological consequences have a significant impact on the affected person as well as on communities. The COVID-19 pandemic has had a global psychosocial influence, resulting in widespread anxiety, financial losses, and economic burden. Unfortunately, the pandemic's psychosocial aspects largely remain undocumented and unaddressed. Preventing and responding strategies to psychosocial crises must be established promptly to address these psychological problems affecting different socioeconomic layers.



During the pandemic, we have felt fear, anxiety, mental stress disorders, and even post-trauma stress due to the casualties. It is essential to provide adequate and timely psychosocial support in terms of the beliefs among the masses and their perceptions regarding the pandemic.

The psychosocial issues affect our public and health specialists, including doctors, nurses, and paramedics. Therefore, we need to deal with the subject matter intensively to reduce the psychosocial impacts and related damages and losses. Compared to the physical, psychosocial consequences are quite invisible and difficult to evaluate. Therefore, it would require a specialist who can judge the mental conditions of mental health, stability, and strength.



Opportunities and Recommendations

- Inclusion of psychiatrists in the task force to combat the pandemic and outbreak in the country.
- Facilitating mental health research.
- Availability of psychotropic medications in hospital settings in adequate amount and ensuring uninterrupted supply.
- Addressing the mental health issues of the deprived sector of the society (migrated population, homeless people, slum people, refugees)
- Telepsychiatry, E-education
- People with better mental health also tend to have positive social relationships, support, and connections, which can facilitate healthier adaptation to life's challenges

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India
Weekly Webinar Series and Online Community of Learning and Practice

There is a need to integrate mental health issues into broader health policies, programmes and partnerships, strengthen human rights protections and build the capacity to participate in public affairs besides providing integrated mental and physical treatment and care through primary care.

The different impacts of emergencies or disasters are interconnected and COVID-19's social impact does not exist in isolation from the other domains. There are various dimensions of health, such as physical, cultural, social, mental, emotional, philosophical, economic, and so on. Mental health issues among healthcare professionals have also been seen during the pandemic. Therefore, proper training in the healthcare management of COVID-19 must include cognitive health management of the staff. There should be psychiatrists in the task force to combat the country's pandemic and outbreak and facilitate mental health research. People with better mental health also tend to have positive social relationships, support, and connections, which can facilitate healthier adaptation to life's challenges.

Key Points

- The robust logistics and supply chain management will help to avoid/mitigate any type of potential disasters or public health emergencies.
- No one is safe until everyone is safe and sustaining the supply chain management has become a critical pillar for preparedness and response.
- In logistics and supply chain management, unless and until we develop a mechanism, probably we may not receive the entire things in a very systematic way.
- The response and the resources need to be modified according to the crisis situation.
- The different impacts of emergencies or disasters are interconnected and COVID-19's social impact does not exist in isolation from the other domains.
- To provide integrated mental and physical treatment and care through primary care
- Integrate mental health issues into broader health policies, programmes and partnerships
- Strengthen human rights protections and build the capacity to participate in public affairs.
- People with better mental health also tend to have positive social relationships, support, and connections, which can facilitate healthier adaptation to life's challenges
- The evidence-based public health crisis and risk communication principles are vital in responding rapidly and effectively to public threats.
- Scientific evidence must be communicated to the public to empower them to make the best decision.
- Revise our SoPs for Disaster Preparedness based on lessons learnt from the Management of the current pandemic.
- Consistent, timely and empathetic communication is a must.
- Need for the hours is to bring people's health center stage with measurable impacts at the national level.

Lessons Learned and Best Practices from COVID-19 Pandemic Management

India's success in the pandemic response has three best practices or ingredients. Three things stand out: India mounted a whole-of-government response, full of government to full of nation response and full of-society response. These three mantras shined in our approach to combat the pandemic. It defines the overarching strategy taken by the Government of India and the nation under the leadership of the honourable Prime Minister. The response was not confined to a set of a few ministries or the health ministry alone but was spread across all the government ministries, departments, and institutions.

The one manifestation or special paradigm created to make it happen was the creation of empowered groups. The central government created eleven empowered groups from different arms of the government under the Disaster Management Act 2005. These groups provided the overarching frame to handle mega-



disasters such as the COVID-19 pandemic. The response ensured that everybody came together for a defined work area, action, and responsibility. Every day the role was being played by various ministries, departments and the arms of the government system. The union government, the state government, and the district administrations worked as one team. This was a unique feature of the highest level of coordination in a federal system. The janmanas, the citizens of India, were all on one page to mount an effective fight against the virus. The leadership of the nation reached out to the people, gave specific ideas to follow and made specific requests about our behaviour and responsibility as a nation.

One lesson learnt is reinforcing the notion of self-reliance, Atmanirbhar Bharat. We have to depend on our capabilities, and it is the capability of today that will come in handy to us tomorrow when the disaster strikes, strengthening comprehensive 360-degree capabilities in meeting such challenges. We should be ready with those capabilities. We can only respond if the platforms are available on which we can make more capacity and make a more significant response, whether it is vaccines, medicines, or technology. We learned how to create a positive and truthful narrative when communicating with people. We learned that there are strands of information, good and truthful information but also convoluted, wrong and misinformation

information wrong information misinformation. We learned that when we speak the truth, people accept it. We need to explain to the people through the scientific lens what and why we are doing, be it lockdowns, advocacy for appropriate behaviour, or vaccination. The three significant best practices or ingredients of success or the leadership principles that worked for India were full of government approach, full of nation approach, and role of society response.

Whatever the lesson learnt, it all boils down to ensuring good coordination at the highest levels. We need to work with people and at the level of the community. Knowing local risks ensures that the community's actual needs are addressed and that local actions prevent risk. A well-prepared, active, and well-organized community can reduce risks, mitigate the impact of emergencies, and save many lives.



The COVID Appropriate Behaviour (CAB), led by the leadership, proved the long-lasting measures from the beginning till date, which have worked against all variants. Further, the empowered group's able guidance and the policy level decisions guided the public health measures. The challenges faced due to the logistics in the initial phase were overcome effectively by coordination and partnership at all levels.

We learned that there is a need to convey better how to implement the incident management principles more discretely and directly. It was incumbent upon us to develop a coalition of experts to help and facilitate the above-said matter. During the lockdown across the globe, one of the challenges was how to employ the use of remote technologies. There was a compelling need to develop quick, succinct packages of information that could be conveyed and would apply thematically to multiple countries and their situations.

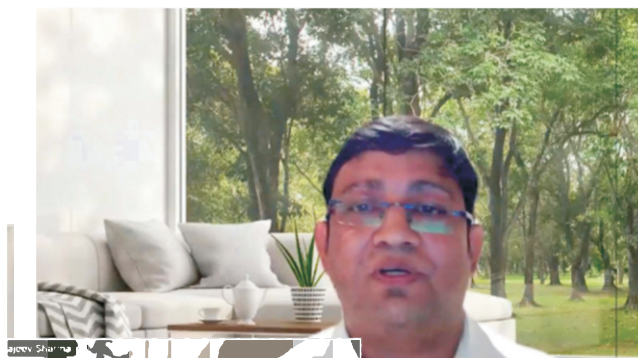


The government of India was very proactive in taking adequate, timely steps to prevent the spread of the disease. We were the ones who came out with the vaccination also. The country took up various initiatives to take care of the health and enhance our health infrastructure and make it resilient and workable, along with the capacity development of human resources. India's actions and leadership at all levels were very much appreciated around the world.



The journey of response to the COVID-19 pandemic showed if there is a will, we can manage any emergency. The political will and technical action plan are also crucial in promptly responding to such a pandemic.

India's effort to manage the pandemic could be described as a people-centric, whole-of-government and whole-of-society approach. India's leadership undertook many proactive and decisive steps very early in response to the pandemic, and critical interventions taken by the policymakers at the right time are significant for any such events or pandemic. The community-level intervention in India played an important role in reducing person-to-person transmission and disease impact. Therefore, community participation is essential in collective response to the public health emergency.



Key Points

- Reinforcing the notion of self-reliance, Atmanirbhar Bharat.
- Creating a robust and sustained capacity with institutional memory at the district level is the key, and this can be orchestrated using the National Disaster Management Act, activities, and capabilities.

- Disaster management activities should be linked to disease surveillance capacities and beyond just the health department per se but also in animal husbandry, agriculture and so on. The key is that intersectoral coming together at the district level where the battle is fought.
- The empowered group's able guidance and the policy level decisions guided the public health measures.
- There was a compelling need to develop quick, succinct packages of information that could be conveyed and would apply thematically to multiple countries and their situations.
- There are strands of information, good and truthful information but also convoluted, wrong and misinformation information wrong information misinformation. We learned that when we speak the truth, people accept it.
- Whatever the lesson learnt, it all boils down to ensuring good coordination at the highest levels.
- A well-prepared, active, and well-organized community can reduce risks, mitigate the impact of emergencies, and save many lives.

Outcomes/Recommendations/Way ahead

The goal motto of the Weekly Webinar Series was to enhance all-around 360-degree capabilities in the area of public health emergency and disaster management. The Series provides a common platform to bring distinguished subject matter experts in public health emergency and disaster management. The webinar series ensured the dissemination and exchange of knowledge, innovation, and ideas to enhance the capacity of the relevant stakeholders in public health emergency and disaster management. The online learning community enthusiastically made the learning bilateral by sharing their queries and feedback.

One of the key recommendations of the Series was to document the learning and to have a physical interaction with the relevant key stakeholders on the outcomes of this Series. It was noted that we should focus on the public health emergency issues that arise due to other disasters and develop a skilled workforce besides educating and preparing the community to handle emergencies or disasters. we



need to consult ground-level workers whenever we are planning to organize any programmes related to a public health emergency and disaster management so that they are aware of such events and get benefitted from them.



The webinar series aid to bring and building a very strong foundation for more initiatives to strengthen public health emergency and disaster management. One of the most significant challenges faced during this pandemic was to have multi-sectoral, multi-layered, and multi-agency coordination and partnership. This weekly webinar series successfully brought multi-sectoral stakeholders and experts

under one umbrella to share the significance of a resilient workforce, system and infrastructure for effective and efficient Public Health Emergency and Disaster Management. This Series allowed us to receive in-depth knowledge on various subjects and we must continue this learning to institutionalize capacity building in Public Health Emergency and Disaster Management.

Such webinar series have got their advantage and value addition because it can

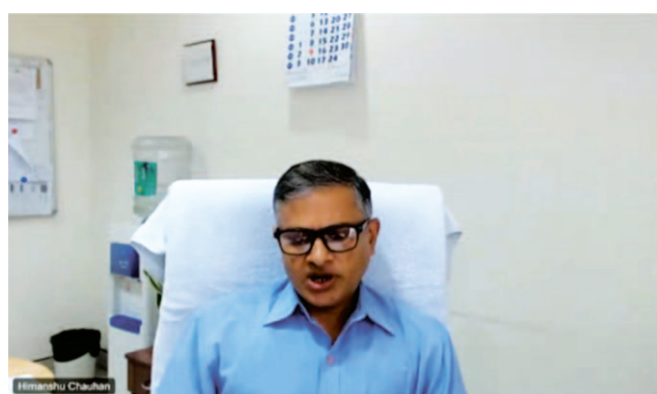
cater to a large number of audiences in a shorter time. The framework of the weekly webinar series was planned to focus on various aspects of pandemic preparedness and response. The pandemic taught us to be proactive and prepared. Preparedness is the key to building competence in surveillance, testing and having appropriate logistics. As the pandemics or the public health threats get over, people tend to forget the learning and such weekly webinar series and regular capacity-building training would help to carry forward the learning of the past public health threats.



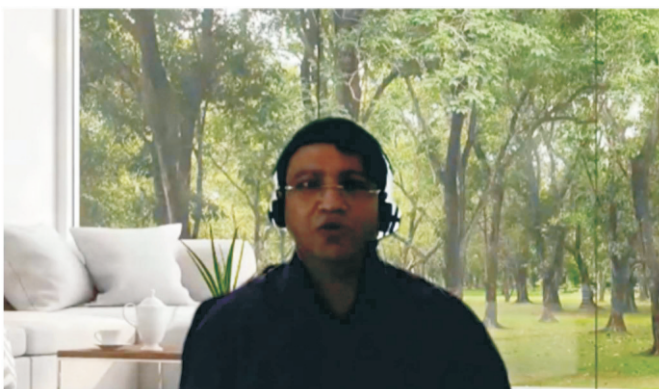
The community is the first responder to any emergency or disaster, therefore enhancing their capacity to combat such situation is of utmost importance. The physical training programmes have their own importance besides online platforms to sensitize the relevant stakeholders and the communities about various disasters and the appropriate measures to reduce their adverse

risks. Our journey towards risk reduction and resilience will continue and will sustain it till the goals of the National Policy on zero casualties, disaster-free and resilient nation is achieved.

This Series was a unique effort in the sense that usually Public Health Emergencies and Disasters are dealt with by separate verticals and there's limited interaction between the two. This Series was successful in bringing subject matter experts as well as diverse stakeholders from both fields. The webinar series covered a wide range of topics that are linked to disasters and public health emergencies. It was urged to continue the collaborative efforts to strengthen the overall system during peacetime so that when these systems are put to test, they result in outcomes that are beneficial to the community and the country.



The online learning platform is a cost-effective tool to disseminate information/knowledge to all stakeholders covering a large geographical area. The overarching objective of the weekly webinar series was to enhance and strengthen the capacity for Public Health Emergency and Disaster Management and to serve as a springboard for a sustained post-COVID-19 experiential learning platform. It was directed towards sensitizing, institutionalizing, and promoting the exchange of information, knowledge, and innovation on understanding the Public Health Emergency and Disaster Preparedness and Response Capabilities.



Key Outcomes

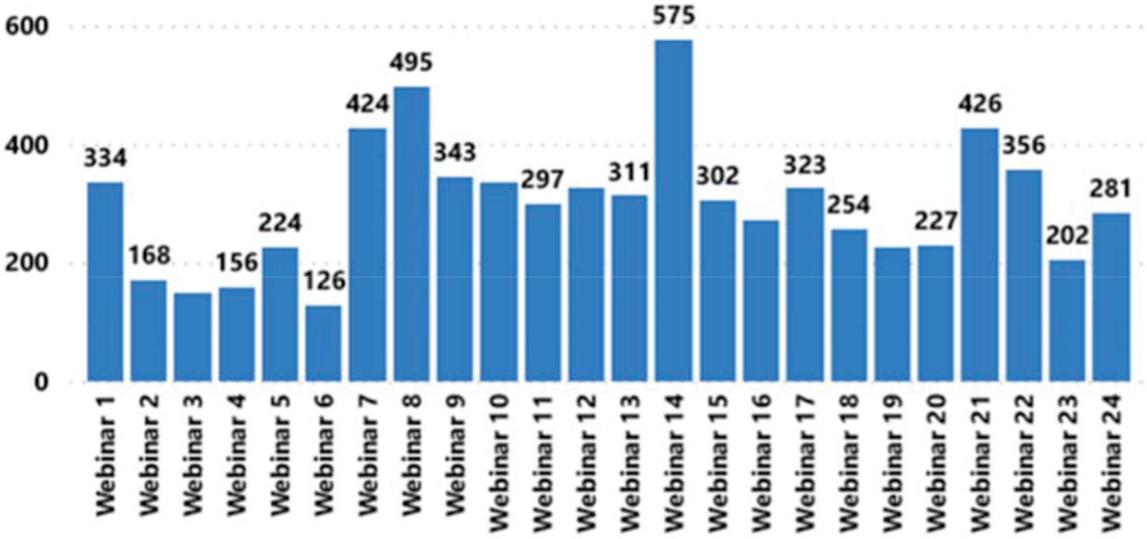
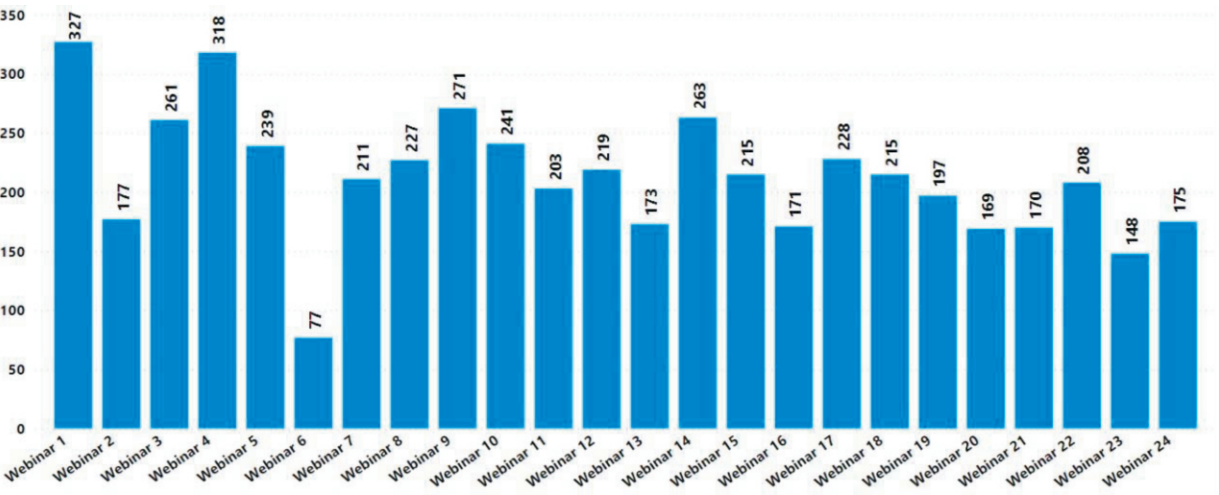
- Reinforcing the notion of self-reliance, Atmanirbhar Bharat.
- Creating a robust and sustained capacity with institutional memory at the district level is the key.
- Empowering, retaining and enhancing human resources to combat Public Health Emergencies and Disaster Management.
- Strengthen the blended training and self-learning capacity at all levels.
- We need to have a database of different RRTs and greater coordination among them.
- Cross-cutting training and proper documentation of each RRT investigation will enhance the capacity of RRTs in preparedness and response to an outbreak.
- Develop a document on lessons learnt during COVID-19 with compounding disasters.
- Robust coordination and collaboration mechanisms are required to implement public health measures effectively.
- There's a need for international standards for using common operating standards or common minimum standards so that all countries should use them.
- There is a need to examine the resilience of the existing healthcare delivery system and infrastructure.
- The healthcare sector must be strengthened concerning the resources it requires and the mechanisms and regulations that will keep it functional and active to save more and more lives.

- The collaboration and coordination of other sectors enhance health infrastructure's sustenance and resilience.
- We need to utilize the traditional and local indigenous knowledge of communities.
- We must shift from a reactive to a proactive attitude and planning for communities to planning with communities.
- Effective risk communication is one tool to bring the situation under control as quickly as possible, with as little social disruption as possible.
- One Health approach is the need of the hour, as human and animal health are interdependent and bound to the health of the ecosystems in which they exist.
- There is a need to adhere to and take preparedness/prevention measures to address the issues related to animal health emergencies, as they can affect the economy and livelihoods of the people dependent on them.
- Health-centric climate response provides an impetus for implementing urgent, equitable and drastic adaption and mitigation measures.
- No one is safe until everyone is safe and sustaining the supply chain management has become a critical pillar for preparedness and response.
- The different impacts of emergencies or disasters are interconnected and COVID-19's social impact does not exist in isolation from the other domains.
- Integrate mental health issues into broader health policies, programmes and partnerships
- There is a need to develop quick, succinct packages of information that could be conveyed and would apply thematically to multiple countries and their situations.
- A well-prepared, active, and well-organized community can reduce risks, mitigate the impact of emergencies, and save many lives.
- Media has a crucial role in preventing the spread of rumours during an emergency. We should conduct training sessions for the media personnel to sensitize them about their role and responsibilities during any public health emergency or disaster.

Participants Profile

The Weekly Webinar Series (WWS) on “Public Health Emergency and Disaster Management during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India” successfully reached out to more than 7,000 participants across India and the world. The details of the webinar series circulated through emails and social media platforms such as WhatsApp, Facebook, Instagram, and Twitter to connect to the maximum number of participants.

The webinar series participants were surveillance officers from Integrated Disease Surveillance Programme, doctors, paramedics, frontline health care workers, State and District Disaster Management Authorities (SDMA and DDMA), Research institutes, academicians, Fire Service officials, Civil Defence officials and so on.



Participants Feedback

Some of the feedback received from the participants:

- It was a truly informative and inspiring knowledge-sharing event.
- Very helpful to expand the horizon of the understanding in the field of risk mapping, reduction, prevention, preparedness, mitigation, recovery and rehabilitation.
- In reaching the ut to needy and providing them with necessary help and assistance in an emergency.
- I gain practical tips and insights from the experts in the field. It will be helpful in the management of future pandemics and disasters.
- We are learners, and your teachings always help us in our work field.
- The webinar series was very excellent and valuable. Please thank all the speakers, presenters, and the whole technical support team for the great event.

Some Suggestions from Participants

- Do plan internships for undergraduate public health students in health and disaster management.
- Kind request to arrange more training in state-specific topics; longing to hear more about the community process.
- I also want to connect with these types of webinars in the future.
- A newsletter based on glimpses of the webinar should be circulated to all persons who do registration for the webinar on their email ids.
- Involve a large audience for the participants, including new case studies, data analysis, data mitigation, and forward integration tech issues and technologies.
- Kindly conduct one-weeklong training programmes on public health emergency and disaster management.

Conclusion

The Weekly Webinar Series (WWS) on “Public Health Emergency and Disaster Management during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India” was initially envisaged for 12 webinars only. In view of the feedback received from the online learning communities (participants), the competent authorities of NIDM, NCDC and CDC-India decided to extend the webinar series to 24 webinars.

Renowned experts from the field of public health emergency and disaster management join the cause to enhance the all-around 360-degree capabilities of the nation in managing the threats of public health emergencies and disasters. The Series provides a platform to disseminate and exchange knowledge, innovation, and ideas to enhance the capacity of the relevant stakeholders in public health emergency and disaster management. The themes apropos of public health emergency and disaster management system, resilient workforce and infrastructure were covered during the Series beside community engagement, climate change, trans-disciplinary and multi-sectoral coordination, lessons learnt and best practices for pandemic management.

The webinar series received an overwhelming response from the participants and it was able to mesmerize 7120 participants across the globe. The overwhelming feedback was received from the participants, and they requested to arrange more such programmes in online mode as well as in person.

Documenting the learning of the webinar series was unanimously reiterated to further sensitize and disseminate the acquired information/knowledge and achieve last-mile connectivity in terms of enhancing the capabilities for Public Health Emergency and Disaster Management.

Lessons learned from this WWS

The preplanning was the greatest challenge and then ensuring we had dedicated support from all partners institutions. The commitment of the partners is crucial to the success of such an educational webinar series. The deadline-driven approach is the magnet that attracts the pathway to achieve the envisaged objectives of any activity. During the webinar series, it was ensured that each activity accomplishes as per its deadline.

The glue that holds participants of the online learning community to such long episodes of the webinar series is to publicize it properly through every available means. It was really challenging to bring on board participants from each corner of the country. The dedication of the organizing team fetches a consistent number of participants for the webinar series from across the country as well as in other nations. Learning is a continuous process, and to ensure it persists, the documentation of learning from such an informative series and disseminating it further is also a crucial agenda.

Annexure-I

Guiding Document for Planning a Webinar or Webinar Series

I. Six Months before the webinar commencement

● ***Need for the webinar series***

Planning and execution of any program require a lot of time, staff, stuff, and systems. It is very crucial to have clear aims and objectives if your weekly webinar series. A clear understanding of existing gaps, challenges, and how your proposed programme aims to deal with them turns out to be an important parameter to determine the success of your programme. You need to prepare the following documents related to your programme:

- Background work
- Scope of work
- Concept note
- Program proposals
- Brochure

When you are preparing the above-mentioned documents and planning for weekly webinar series, we need to ensure that the details in the documents are clearly mentioned so that it will motivate and energize the target audience to attend the webinar and implement the same in their professional/personal work.

● ***Initial meeting***

Group meetings are essential for ensuring webinar series meet the goals and receive attention and progress according to tentative management's plans. For an effective group meeting, we need to ensure that there is a good communicative session where group members can support and supplement the decision-making, brainstorming, critical thinking, teaching, and news-sharing. These meetings need to build a connection between team members and direct their efforts toward accomplishing the establishment's goals. Organizing effective group meetings allows teams to look forward to the next gathering.

- ***Organizations as partners in the webinar series***

Collaboration improves the way a team works together and solves problem. This leads to more innovation, efficient processes, increased success, and improved communication. Through listening to and learning from collaborating organizations, we can help each other reach our goals.

- ***Formation of Technical working group***

By forming a technical working group (TWG), all partner's organizations working together on the proposed webinar series need to coordinate activities and align resources to better work toward common objectives. These Groups are an opportunity for technical experts to engage in the substantive preparations for the webinar series by advancing substantive discussions on the Themes. In this meeting, tentative course chairs for the programme can be identified, preferably one from each collaborating organization. The overarching role of the Course chairs is to provide leadership and are responsible for making sure that each meeting is planned effectively, and matters are dealt with in an orderly, efficient manner. The technical working group needs to work under the supervision of the course chairs of all the host Institutions. The technical working group is expected to meet as and when needed. However, the patrons of all the collaborating organizations were updated on the progress of the weekly webinar series.

- ***Formation of Core Working Group***

From the pool of technical working group, a working group needs to be constituted. They will be expected to meet weekly to plan the webinar series, finalize the speakers, assure the quality of the webinars, brainstorm on the issue, etc. The core working group (WG) will work under the constant supervision of the course chairs. The core working group will coordinate all activities in the weekly webinar series with the support of the other team members. The gist of the discussion in the meeting was recorded for follow-up activities. As per the need, new members can be roped into the core group.

- ***Selection of Host Institutes***

Host institutes need to have experience in carrying out training and capacity development using facilities like multiple online meeting platforms, video-conferencing facilities etc. Host institute experience in conducting online programmes such as webinars, training programmes, online meetings etc can be a great benefit for the organizers. The host institute will also need to ensure the dissemination of information regarding the webinar series, management of interested participants, webinar conduction, attendance records, certificate distributions etc.

- **Baseline survey regarding similar Webinar Series**

To ensure the successful conduction of the weekly webinar series, best practices from similar weekly webinar series conducted in the past can also be considered. It will help provide the foundation of knowledge on the webinar topic. It will also ensure the identification of areas of prior activities to prevent duplication and give credit to other programmes if any. It will also Identify inconsistencies: gaps in outreach programmes, conflicts in previous programmes, open questions left from other capacity development activities.

- **Flyer for the Webinar Series**

Posters and flyers can be a remarkably effective way of getting your message out to the public. The technical working group prepared flyers for the weekly webinar series with the aim to make a powerful first impression, connect with new prospects, break the ice, and have interested participants know about the weekly webinar series. A flyer containing all the relevant information about the proposed weekly webinar series can be prepared.

- **Format of Weekly Webinar Series**

Program format determines the structure of a programme that can be consistently used to make your webinar series easier, as well as help you follow the proper methodology.

Frequency: Considering the availability of experts, participants, and other important stakeholders, a tentative day and time can be selected. It's easy to get lost in the day-to-day activities of your business. So, keeping the day and time the same for all the episodes of the weekly webinar series, ensures everyone has a long-term vision, strategically planned to achieve the target goals and propel in the right direction and set the right pace.

A sample of frequency temple for the webinar series is represented in the table below

Day: Every Wednesday

Duration of session: 02:00 pm to 03:30 pm (One and a half-hour)

Time and Duration

2:00 PM to 2:40 PM (40 minutes)

2:40 PM to 3:20 PM (40 minutes)

3:20 PM to 3:30 PM (10 minutes)

Topic

Topic-specific presentation SME Presentation

Case Study and Experience Sharing

Discussion facilitated by the session co-ordinator

- **Selecting topics for Webinars**

When choosing webinar topics for the weekly webinar series, we need to remember that we are seeking to provide value to the target audience in exchange for their investment of time in taking part in the webinar. As with any other kind of content, your webinar should answer a question, meet a need, or clarify an area where there is confusion. Follow these guidelines for choosing webinar topics and you should be able to attract and engage with your target audiences. The result is a better educated and more involved workforce, participants base, and partners.

The core working groups under the supervision of course chairs can prepare a tentative list of topics. Later, with the consultation of technical working groups, relevant subject matter experts, and the need of the hour, the final list of webinars can be finalised.

- **Identifying pool of Panelist/ Subject Matter Experts (SMEs)**

In a world of information overload, subject matter experts (SMEs) are more important than ever. SMEs can help give important insights and context for your webinar topic content and help keep attendees engaged with the subject. Their specific knowledge and expertise can be of value to your attendees.

With the help of course chairs, takes some basic research on which organizations/ individuals) are out there to share relevant information on the subjects you want to cover.

- **Organizing Team**

After designing the technical working group and core working group, a dedicated organizing team needs to be finalized to maximize efficiency and effectiveness. After selecting members of the organizing team, these members must be organized into functional or cross-functional roles. It is the role of the course chairs to organize team members in a manner that has the highest level of productivity. Often, organizing team member roles requires more than simply assigning individuals to areas in which they have skills or abilities. It requires understanding the nature of the responsibilities for each role and the personalities of those assigned to that role.

Team members are more effective when they understand what is expected of them. Each member of the organizing team must fully understand their responsibilities as well as the expectations for performance or output.

- **Course Patrons**

The patrons of the weekly webinar series will be the head of the institution from all the collaborating organisations.

Under the leadership and guidance of the patrons, the inception of the weekly webinar series took place and the entire planning of the programs from start to completion involving deadlines, milestones and processes will be conducted under the overall supervision of the patrons.

- **Course Chairs**

From each collaborating organization, a nodal person will be selected as the course chair. The overarching role of the Course chairs will be to provide leadership and are responsible for making sure that each meeting is planned effectively, and matters are dealt with in an orderly, efficient manner.

- **Course Coordinators**

Under the directions of course chairs, programme coordinators will be selected from each organization with the responsibility for overseeing the planning and implementing necessary actions with strong time management skills and team synergy. The coordinators will be expected to support the planning and coordination of the weekly webinar series and its activities, manage communications with all dignitaries, schedule and organize meetings/events and maintain agenda, ensure technology is used correctly for all operations (video conferencing, presentations etc.), prepare paperwork and order material, keep updated records, and create reports or proposals, support growth and program development.

- ***Moderator of the sessions***

To mediate the virtual session during each episode of the weekly webinar series, webinar moderators need to be selected. The moderators' main role will be to ease the role of the speakers and webinar host by being reactive in the chat and questions tabs. They will also be expected to use language that is straight without being confrontational, crystal clear without being biased and make sure the speakers and audience members understand each other and get along. The moderators will also be responsible for the facilitation, review, and guidance of a discussion or a debate, if any, and its related interactions.

- ***Pool of tentative participants***

For seeking the nomination in the training programme, a tentative list of participants needs to be prepared generally involving personnel related to the theme of your weekly webinar series.

The broad sectors targeted for seeking nominations could be:

- Senior and middle level officers/ functionaries from the Central/ State/ Local

Departments

- Officers from Social Welfare related to your field of interest
- Officers from Academic and Research Institutes and
- Non-Governmental Organizations, Community Based Organizations and Voluntary Health Association of India (VHAI), if applicable
- Universities, Colleges and research institutes etc.

● **Seeking nominations for participation**

Once the tentative participants are finalized, various communication channels need to be implemented to disseminate the information about the weekly webinar series, some of which are mentioned below:

- Websites of collaborating organizations: The details of the webinar series need to be hosted on the official website of all the collaborating organizations.
- Online meeting platforms: online platform such as Cisco Webex, zoom etc has the facility to send bulk email. Such facilities can be used to send information about webinars to a pre-identified list of tentative participants.
- Academia institutes: the information from the weekly webinar series can also be shared with the relevant academic community.
- Social Media platforms: social networking sites needs to be used effectively to disseminate information about the weekly webinar series. The Social networking site can serve as an invaluable tool in this effort to communicate information across a wide audience. WhatsApp's groups, telegram groups, tweeters etc can be used to disseminate the information about webinar series. In addition, email can also be sent to all tentative participants by coordinators regards updates to weekly webinar series. Official social media handles of collaborating organisations can also disseminate the updates of weekly webinar series from time to time. The information needs to be disseminated by all the organising at their individual network via various social media platforms to maximize outreach.

● **Presentation template**

The PowerPoint Template will ensure that presentations from all subject matter experts/panelists making presentations during the webinar sessions will be consistent in terms of font, style, layout, and colours. It will also ensure saving time for subject matter experts/panelists as the slide's templates were pre-designed and every possible piece of content is laid out neatly.

The core working group needs to prepare a draft presentation template that can be shared with all the subject matter experts who were requested to prepare a presentation regarding their allotted topic. As the presentation template includes the logo of all the organizations, approval from all the organizations will

be essential.

- **Certification**

To encourage the participants to attend the weekly webinar series, certificates need to be released to all eligible participants after each webinar. Certain criteria need to be in place for certificate distribution to all the eligible participants. Some of the criteria that can be considered are mentioned below:

- **Registration:** to be eligible for the participation certificate, participants need to enroll themselves for each webinar session by registering for the programme.
 - **Attendance:** Minimum of 80% attendance during the webinar session will be mandatory to be eligible for the certificate. For the calculation of attendance of participation, a platform such as Cisco Webex platform can be considered.
 - **Attentiveness:** The attentiveness of participants can also be included in the eligibility criteria for the certificate. For example, Cisco Webex platforms automatically calculate the attentiveness of participants and differentiate attentive participants from others. Participants will need to ensure their attentiveness during the webinar.
 - **Feedback:** It was mandatory for all participants to give their feedback. A link to download the certificate will be made available to the eligible participants once they successfully fill out the feedback form.
- **Mode of e-certificate Release:**
- Organizing teams need to figure out a method to release certificates to all eligible participants. Certificates can be made available to participants in hard copy or e-copy as appropriate and approved.

II. **Activities 28 days before each webinar**

- **Follow up with panelist/speakers of the Session**

The subject matter experts identified by course chairs will be provided with the details of webinars along with the invitation to grace the session. After an initial formal invitation to panelists/speakers of each webinar series regarding the request to engage as subject matter experts, a follow-up email needs to be sent to re-check their availability for the programme. In case the speaker backs out from the programme due to other engagements, backup subject matter experts need to be contacted immediately.

- **Poster preparation**

The poster of webinars turns out to be an effective way to catch and hold the attention of the target audience, as well as help to maintain their interest in the particular subject by helping them to absorb the information much faster.

For each webinar, a separate poster needs to be prepared which included both textual and graphic elements. The graphical elements in the posters will include photos of patrons, course chairs, subject matter experts, coordinators and logos of collaborating organizations whereas the textual elements in the poster comprised of the title of the webinars, scheduled time and date of the webinar, name, designations and affiliation of patrons, course chairs, subject matter experts, coordinators etc.

- ***Meeting of coordinators***

The coordinators of the weekly webinar series need to hold periodical meetings both in online and offline mode to share updates about upcoming webinars efficiently. These coordinators' meetings will provide scope for discussion around what is being shared and with whom it is shared. These meetings will also guide the teams to align on the topics of discussion, air any concerns or obstacles, and have clarity on priority actions.

- ***Briefing meeting with course chairs***

An effective briefing meeting with course chairs is essential to issue resolution and brainstorming.

The updates of each upcoming webinar need to be provided to all the course chairs of the weekly webinar series. During these meetings, the coordinators who had more visibility and knowledge of existing challenges and issues regarding the programme will provide that information to the course chairs with the objective to come up with a sound decision that's beneficial for everyone involved at the earliest.

- ***Seeking nomination for participation in the webinar***

Seeking nominations is one of the most crucial steps in determining the success of the weekly webinar series.

The details of the upcoming weekly webinar series need to be disseminated to all the potential participants via various means such as email, WhatsApp, telegrams, websites etc.

- ***Cross-checking of presentation of SMEs***

All SMEs will be requested to submit their draft presentation to the coordinator at least a week before their session. The course chairs will take the crucial role of reviewing the presentation being the SMEs to ensure that sensitive issues are represented appropriately with proper references and the present ensure the content can be completed within the time allotted. SMEs shouldn't be discouraged to point out weakness in systems but were expected to present sensitive information in creative ways, striking the balance between sensitivity and making an impact

as the participants of the weekly webinar series represents a diverse group of people belonging to various sectors. The coordinators with guidance from the course chairs will review the presentation template to ensure consistency in terms of font, style, layout, and colors. The SMEs may be informed of potential revision if any, and even if no changes are required in their presentation.

- ***Sharing joining link with all relevant dignitaries***

When organizing webinar where a large number of attendees are expected to join virtually, it is preferred for a “listen-only” audience to reduce the risk of disruption.

Panelists will be the speaker sharing their videos, audio and presentations for the attendees to see, and they will be invited with a unique panelist link by the host. The joining link needs to be shared with the panelist at least 1 week before the webinar. A reminder mail with a joining link may be shared with the panelist 1 day before and also 1 hour before the webinar.

Attendees will not be allowed to share video, and they can share microphone audio if requested by the Host. The joining link may be shared with the participants several times i.e., 1 week, 4 days, 1 week and 1 hour before the webinar.

- ***Demo Session for subject matter experts***

Different applications have different options and layout designs for their platform. Demo Session in the webinar’s settings will be highly recommended for all panelists/subject matter experts to allowed panelists to get acquainted with the options before the actual webinar day. A demo session may be arranged for all panelists/subject matter experts.

- ***Speaker introduction***

A speaker introduction involves establishing the person’s credibility, motivating audience interest, to giving the audience a human context, and saying what the speaker could not say.

An introduction for every panelist engaged in each webinar needs to be prepared separately to ensure that the audience is informed about the presentation topic, why it is important, and how you plan to proceed with the discussion. A PowerPoint slide/jpg containing the photograph of the speaker along with his brief resume may be prepared which was broadcasted during the webinar when the moderator welcomed the speakers for his session.

- ***Livestreaming webinar on YouTube***

Sometimes delegates who intend to attend to join the meeting may not be

able to do so due to technical issues in Cisco Webex, devices, settings etc. Live streaming the programme on social media can be a substitute for the same.

The sessions may be live-streamed on YouTube platform, Facebook etc. Several interested candidates who cannot join the programme's live session due to their other commitments can access the recorded YouTube video.

III. During the webinar

- ***Start the webinar at least 30 minutes before the schedule***

The webinar should be started at least 30 minutes before the schedule time by the host of the webinar. The coordinators of the webinar may act as hosts of the webinar. The webinar host will start the webinar as he/she is the user under whom the webinar is scheduled.

The webinar host will have full permission to manage the webinar, panelists, and attendees. Other coordinators may also join the webinar and remained alert as Co-hosts in case of emergency. Co-hosts share many of the controls that hosts have, allowing the co-host to manage the administrative side of the webinar, such as managing attendees or starting/stopping the recording.

- ***Ensure technical stability***

The host of the webinar, after starting the webinar will ensure that audio, video, and internet connection are stable. When preparing for a webinar, it is essential to prepare ahead of time. The host will test the internet speed to ensure the video conference will run smoothly. The host will also ensure that the systems are connected with stable internet connections.

- ***Practice Session***

In the practice session host will coordinate with the panelists and it was a useful tool for ensuring a well-produced webinar. All panelists will be requested to join the webinar using the link provided 20 minutes before the start time to test their cameras, microphone, and content to be presented with the other panelists so that technical glitches can be avoided. The host and co-host of the programme will have a copy of all the presentations of speakers as a backup so that in case of any technical glitches the same may be presented from the host end on behalf of the speakers.

- ***Ensuring webinar livestreaming on YouTube***

The host of the webinar session will ensure that the webinar is live streaming on social media platforms. Livestreaming of the webinar consists of a series of steps which includes providing a serial key and link when required by the system.

- ***Ensuring recording of the session***

The host of the webinar will also ensure that the session is recorded which can be used as a backup of YouTube live streaming for people who can't attend or for those who want to refer to what was discussed. Most online meeting platforms come with the option of recording the meeting.

- ***Moderation of webinar***

A webinar moderator will be a member of the organizing team that will help to mediate the webinar session. Moderator will provide the basic background of the webinar, setting the context of the webinar. He will introduce the speakers to the attendees and set the ground rule for the conduction of the webinar session. He will also makes sure the speakers stuck to the time and asked and moderate questions

- ***Time management***

When sessions of the weekly webinar series continuously start and end on time, the organizing team build a reputation of respect, professionalism, and competence.

The Moderator of the session will be responsible to ensure that the webinars start on time showing that they value the time of their speakers, dignitaries and attendees. A definitive end time helped ensure that we accomplish the agenda of the webinar and get people back to their work promptly.

- ***Encouraging attendee participation***

Although intended to be "listen-only" for Webinars, attendees may be encouraged to interact with panelists in the following way:

- In-meeting Chat
- Answering Poll questions
- Submitting questions to Q&A
- Raising Hands

- ***Group photo***

A group photo of each webinar may be captured with all the patrons, course chairs, panelists, subject matter experts, and coordinators who have joined the programme as record in repository.

IV. After the webinar

After the completion of each session

- ***Post-assessment***

After each episode of the webinar series, course chairs and coordinators will evaluate the results achieved, and steps to plan better meetings in the future as every webinar of the weekly webinar series is a process, and evaluation makes the process complete. Of all the steps to plan, prepare and hold a business meeting, the most strategic work may take place after the webinar session has ended.

- ***Feedback from participants***

Feedback from participants will be collected to remain aligned to goals, create strategies, develop plans and webinar improvements and much more. Effective feedback, both positive and negative, is very helpful. Feedback is valuable information that will be used to make important decisions and improve decisions.

- ***Acknowledgement for panelist/ participation***

After the completion of each webinar episode, an acknowledgement email may be sent from coordinators to all the subject matter experts for sparing their precious time. Acknowledgement mail may also be sent to all the attendees which will make them feel more motivated and positive, making it more likely that they'll repeat the same behaviour.

- ***Attendance keeping***

List of all the participants who have attended the programme may be recorded. Attendance reports may record details such as name and duration of the meeting or webinar, attendee name and email address, how the attendee joined, what times the attendee joined and left your meeting or webinar, and the source ID.

- ***E-Certificate distribution***

The attendance list generated will also be used to identify eligible attendees for the issuing certificate.

- ***Infographic analysis***

An infographic is a visual representation of information. It sends images and texts to send a message to the reader in a concise and strategic manner. After each webinar, details such as a number of participants, occupations of participants, state-wise participation, total districts, age groups etc may be represented in the infographics.

After completion of the weekly webinar series

- ***Meeting of all the organizers***

After completion of the weekly webinar series, a group meeting will be held

with the objective to understand what took place, why it happened the way it did, and how to improve on it to analyze the overall weekly webinar series and identify strengths to be maintained and built upon, as well as identifying potential areas of improvement. Effective team meetings are productive, inclusive, and collaborative.

- ***Documentation of all the session***

A separate report may be prepared for each webinar including the topics that were covered, who presented what, key recommendations and action items.

- ***Slide decks***

A repository may also be prepared of all the speakers' presentations during the weekly webinar series. This repository serves as a reference material for future references. In addition, the repository of all the panelist and subject matter experts was also prepared.

- ***Compiled Report***

A compiled report containing details of all webinars may be prepared for the policymakers containing key recommendations and action items.

Annexure-II

Posters of the Weekly Webinars Series

Webinar Series

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

Wed, 30th March 2022
14:30 to 16:00 hrs (IST)

LIVE (on) YouTube
<https://youtu.be/q3LQq6gsOGM>

Register here: <https://training.nidm.gov.in/>

Jointly organized by:
National Institute of Disaster Management (NIDM)
 Ministry of Home Affairs, Govt. of India (GoI)
 and
National Centre for Disease Control (NCDC), Directorate General of Health Services,
 Ministry of Health & Family Welfare, Govt. of India (GoI)
 and
U.S. Centers for Disease Control and Prevention (CDC), Country Office India

COVID-19 Pandemic Response and Management in India

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	Dr. Raju Thapa Technical Officer-EM, VHS-CDC, India	

Website: <https://nidm.gov.in>

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Weekly Webinar Series: 2/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

Date: 06 April, 2022
Time: 14:30 to 16:00 hours (IST)

LIVE (on) YouTube
<https://youtu.be/BAYd0b5vXR8>

Register here: <https://training.nidm.gov.in>

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National Centre for Disease Control (NCDC), Directorate General of Health Services (Dte.GHS),
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Multi-layered, multi-sectoral and multi-agency coordination in context of COVID-19

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Weekly Webinar Series: 3/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 13 April, 2022
Time: 14:30 to 16:00 hours (IST)



Register here: <https://training.nidm.gov.in>

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Legislation and Policy Framework to deal with Disasters and Health Emergencies

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Weekly Webinar Series: 4/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 20 April, 2022
Time: 14:30 to 16:00 hours (IST)



Register here: <https://training.nidm.gov.in>

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Public Health Emergency Management (PHEM) and Public Health Emergency Operations Centre (PHEOC) in the context of public health emergency preparedness and response

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Weekly Webinar Series: 5/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 27 April, 2022
Time: 14:30 to 16:00 hours (IST)



<https://youtu.be/TOaPkoFJ4OE>

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Overview of WHO's PHEOC Framework and Global Common Minimum Standards

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Weekly Webinar Series: 6/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 04 May, 2022
Time: 14:30 to 16:00 hours (IST)



<https://youtu.be/VXD9SpjGbk>

Register here: <https://training.nidm.gov.in>

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Developing and Strengthening a PHEOC- Infrastructure and Information Technology

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Weekly Webinar Series: 7/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 11 May, 2022
Time: 14:30 to 16:00 hours (IST)



Register here: <https://training.nidm.gov.in>

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Linking PHEOCs with Integrated Health Information Portal

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Weekly Webinar Series: 8/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 18 May, 2022
Time: 14:30 to 16:00 hours (IST)



Register here: <https://training.nidm.gov.in>

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National Centre for Disease Control (NCDC),
Directorate General of Health Services (Dte.GHS),
Ministry of Health & Family Welfare (MoHFW),
Government of India

U.S. Centers for Disease Control and Prevention (CDC),
Country Office India



Application of Incident Response System (IRS) and Incident Management System (IMS) in Managing Disasters and Public Health Emergencies with focus on COVID-19 Pandemic Response

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DISTINGUISHED SPEAKER



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Weekly Webinar Series: 9/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 25 May 2022
Time: 14:30 to 16:00 hours (IST)



Register here: <https://training.nidm.gov.in>

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Government of India

U.S. Centers for Disease Control and Prevention (CDC),
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Logistics and Supply Chain Management in Public Health Emergencies and Disaster Management

PATRONS



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Weekly Webinar Series: 10/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 01 June 2022
Time: 14:30 to 16:00 hours (IST)



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International Health Regulations (IHR) and Global Health Security with focus on COVID-19 Pandemic Management

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NIDM, MHA, Govt. of India



Dr Sujeet K Singh
Director, NCDC, Dte.GHS,
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DDG (PH-IH & NPCDCS)
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Dr Himanshu Chauhan
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Prof Surya Parkash
Head, EOC, CBRN & GMRD,
NIDM, MHA, Govt. of India



Dr Rajeev Sharma
PHS & Lead: Emergency
Management, CDC - India



Dr Anil Kumar
Additional DGHS (PH),
Dte.GHS, MoHFW,
Govt. of India



Dr Meera Dhuria
Joint Director, NCDC,
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JC, GMRD, NIDM,
MHA, Govt. of India



Ms Isha Gupta
Training Manager, IDSP, NCDC,
Dte.GHS, MoHFW, Govt. of India



Dr Raju Thapa
Technical Officer- EM,
VHS-CDC, India



Mr Anil Kathait
Technical Officer- EM,
VHS-CDC, India



Dr Sunil K Raina
Professor & Head
Community Medicine,
Dr. Rajendra Prasad Government
Medical College, Himachal Pradesh



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Weekly Webinar Series: 11/12

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 08 June 2022
Time: 14:30 to 16:00 hours (IST)



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Rapid Response Team (RRT) for Pandemic Preparedness

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Country Director,
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Govt. of India



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Dr Rajeev Sharma
PHS & Lead: Emergency
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Mr Anil Kathait
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Dr Pawana Murthy
NPO, WHO Country Office,
India

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Weekly Webinar Series: 12/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 15 June 2022
Time: 14:30 to 16:00 hours (IST)



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Risk Communication and Community Engagement (RCCE) in Context of COVID-19

PATRONS



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Executive Director,
NIDM, MHA, Govt. of India



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VHS-CDC, India



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Technical Officer- EM,
VHS-CDC, India



Mr Daya Shankar Singh
Social & Behavior Change Officer
UNICEF - India

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Weekly Webinar Series: 13/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 22 June 2022
Time: 14:30 to 16:00 hours (IST)



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Safe, Sustainable and Resilient Health Infrastructures, Systems and Services

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MoHFW, Govt. of India



Dr Meghna Desai
Country Director,
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IDSP, NCDC, Dte.GHS, MoHFW,
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VHS-CDC, India



Mr Anil Kathait
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Dr Muzaffar Ahmad
Former Member,
National Disaster Management
Authority, Govt. of India

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Weekly Webinar Series: 14/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 29 June, 2022
Time: 14:30 to 16:00 hours (IST)



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Community Engagement in Public Health Emergency and Disaster Management

PATRONS



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Prof Surya Parkash
Head, CBRN, Industrial &
Cyber DRR Division, NIDM,
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PHS & Lead: Emergency
Management, CDC - India

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Weekly Webinar Series: 15/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 06 July 2022
Time: 14:30 to 16:00 hours (IST)



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Building the Public Health Emergency and Disaster Management Workforce

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Dr Meghna Desai
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Dr Rajeev Sharma
PHS & Lead: Emergency
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Mr Anil Kathait
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Dr J. Radhakrishnan, IAS
Principal Secretary
to Govt. of Tamil Nadu




Shri Mihir R. Bhatt
Director,
All India Disaster Mitigation Institute,
Gujarat

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Weekly Webinar Series: 16/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 13 July 2022
Time: 14:30 to 16:00 hours (IST)



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WASH Advocacy for Health Sustenance

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Dr Raju Thapa
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VHS-CDC, India



Mr Anil Kathait
Technical Officer- EM,
VHS-CDC, India

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Dr A. S. Valan
Public Health Specialist-Infectious
Diseases, CDC - India



Dr Pratibha Singh
WASH Specialist,
UNICEF India




Mr Vishal Pathak
All India Disaster Mitigation Institute,
Gujarat

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Weekly Webinar Series: 17/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 20 July 2022
Time: 14:30 to 16:00 hours (IST)



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Health Emergency of Climate Change and Extreme Weather Events

PATRONS



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PHS & Lead: Emergency
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Dr Raju Thapa
Technical Officer- EM,
VHS-CDC, India



Mr Anil Kathait
Technical Officer- EM,
VHS-CDC, India





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Dr Aakash Shrivastava
Adl. Director & Head,
Centre for Environmental &
Occupational Health, Climate Change &
Health, NCDC, Dte.GHS, MoHFW



Dr Ramesh C Dhiman
Senior Consultant and Former
Scientist 'G', ICMR-National Institute
of Malaria Research, Delhi

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Weekly Webinar Series: 18/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

 Date: Wednesday, 27 July 2022
Time: 14:30 to 16:00 hours (IST)



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Psychosocial Impacts of Public Health Emergencies in Context of COVID-19

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NIDM, MHA, Govt. of India



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Mr Anil Kathait
Technical Officer- EM,
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Prof Kasi Sekar
Head, Centre for PSS in
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of Mental Health and Neuro Sciences,
Bengaluru



Dr Akshay Dhariwal
Former Director, NCDC & NVBDCP,
Dte.GHS, MoHFW, Govt. of India

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Weekly Webinar Series: 19/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 03 August 2022
Time: 14:30 to 16:00 hours (IST)



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Integrating Public Health Interventions and Strategies in Disaster Risk Reduction (DRR)

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Director, NCDC, Dte.GHS,
MoHFW, Govt. of India



Dr Meghna Desai
Country Director,
CDC - India

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Dr Rajeev Sharma
PHS & Lead: Emergency
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Technical Officer- EM,
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Director, Professor and Head, Community
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College & Safdarjung Hospital,
New Delhi



Dr Muzaffar Ahmad
Former Member, National Disaster
Management Authority, MHA,
Govt. of India



Weekly Webinar Series: 20/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 10 August, 2022
Time: 14:30 to 16:00 hours (IST)



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Human Resources Capacity Development for Public Health Emergency and Disaster Management

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Dr Sujeet K Singh
Director, NCDC, Dte.GHS,
MoHFW, Govt. of India



Dr Meghna Desai
Country Director,
CDC - India

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Joint Director & Officer Incharge,
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Govt. of India



Prof Surya Parkash
Head, CBRN, Industrial &
Cyber DRR Division, NIDM,
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Dr Rajeev Sharma
PHS & Lead: Emergency
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Mr Anil Kathait
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VHS-CDC, India



Weekly Webinar Series: 21/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 17 August 2022
Time: 14:30 to 16:00 hours (IST)



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Resilient Health Infrastructure for Public Health Emergency and Disaster Management

PATRONS



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Dr Sujeet K Singh
Director, NCDC, Dte.GHS,
MoHFW, Govt. of India



Dr Meghna Desai
Country Director,
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Mr W. Chuck Mencion
Centers for Disease Control and
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Mr Anil Kathait
Technical Officer- EM,
VHS-CDC, India



Weekly Webinar Series: 22/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India



Date: Wednesday, 24 August 2022
Time: 14:30 to 16:00 hours (IST)



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Panel Discussion on Lessons Learned and Best Practices from COVID-19 Pandemic Management

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Shri Taj Hassan, IPS
Executive Director,
NIDM, MHA, Govt. of India



Dr Sujeet K Singh
Director, NCDC, Dte.GHS,
MoHFW, Govt. of India (Speaker)



Dr Meghna Desai
Country Director,
CDC - India (Speaker)

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Prof. (Dr) Vinod K. Paul
Member, NITI Aayog,
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Mr Anil Kathait
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VHS-CDC, India



Mr W. Chuck Mencion
Lead-Global PHEM Capacity Building,
U.S. Centers
for Disease Control and Prevention



Weekly Webinar Series: 23/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

Date: Wednesday, 31 August 2022
Time: 14:30 to 16:00 hours (IST)



Register here: <https://training.nidm.gov.in>

Jointly Organized by :
National Institute of Disaster Management (NIDM)
Ministry of Home Affairs (MHA), Government of India

National Centre for Disease Control (NCDC),
Directorate General of Health Services (Dte.GHS),
Ministry of Health & Family Welfare (MoHFW),
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Understanding One Health Concept in Context of the COVID-19 Pandemic

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[Stay Protected from Corona](#) [Wear Mask properly](#) [Follow Proper Hand Hygiene](#) [Maintain Safe Distancing](#) [Get Vaccinated](#)

Weekly Webinar Series: 24/24

Public Health Emergency and Disaster Management (PHEDM) during and beyond COVID-19: Building Resilient Workforce, System, and Infrastructure in India

Date: Wednesday, 14 September 2022
Time: 14:30 to 16:00 hours (IST)



Register here: <https://training.nidm.gov.in>

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Array of Webinar Series on Public Health Emergency and Disaster Management and Edging Forward

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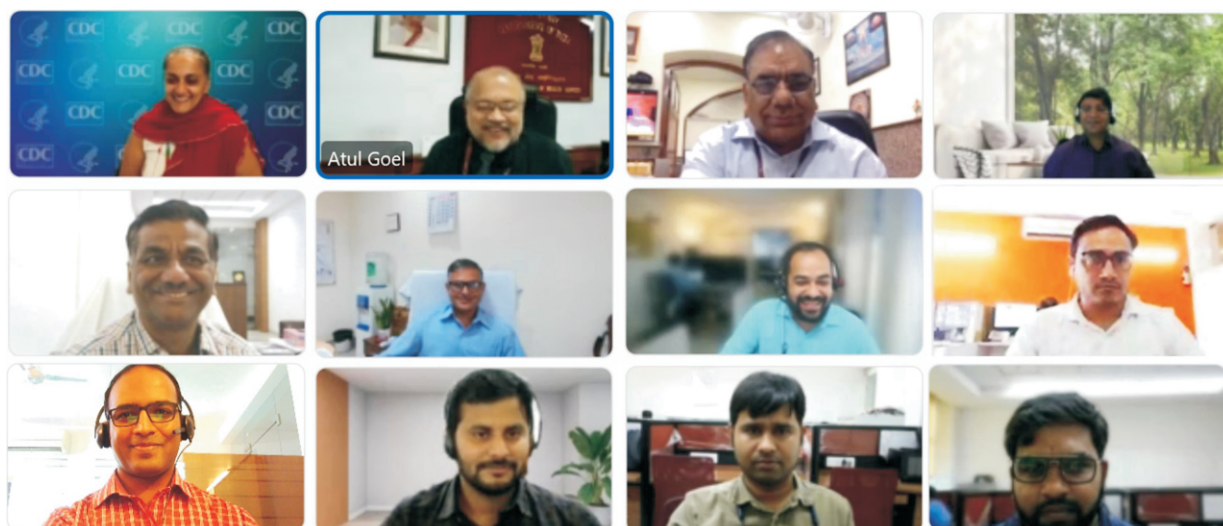


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Maintain Safe Distancing



Get Vaccinated

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