

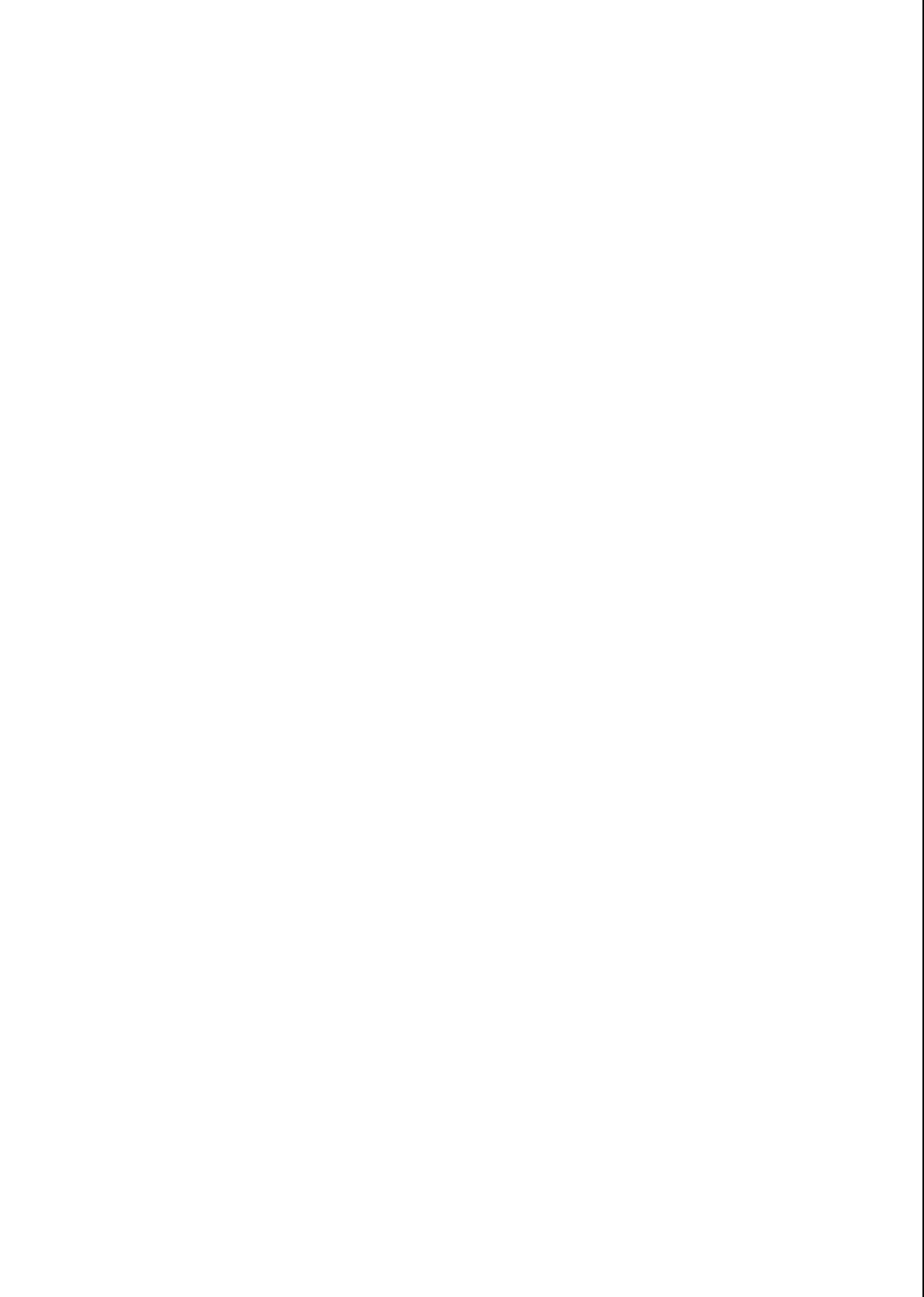


Strengthening Competencies for Public Health Emergencies and Disaster Management in Jharkhand

**Public Health Emergency and Disaster Management
Professional Development Programme (PHEDM-PDP)
Tier-III Training**

2025







सत्यमेव जयते

Strengthening Competencies for Public Health Emergencies and Disaster Management in Jharkhand

**Public Health Emergency and Disaster Management
Professional Development Programme (PHEDM-PDP)
Tier-III Training**

2025

Prepared By:

National Institute of Disaster Management
Ministry of Home Affairs, Government of India

Integrated Disease Surveillance Programme, National Centre for Disease Control
Ministry of Health and Family Welfare, Government of India

and

U.S. Centers for Disease Control and Prevention
Division of Global Health Protection, Country Office-India

Strengthening Competencies for Public Health Emergencies and Disaster Management in Jharkhand

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Disclaimer:

This report is based on Public Health Emergency and Disaster Management Professional Development Programme (PHEDM-PDP) Tier-III Training conducted in Jharkhand in three batches. The knowledge and learning presented in this report encompass information acquired through training sessions, experience sharing and dialogues held during the training programs. This document may be freely reviewed, reproduced or translated, in part or whole, purely on a non-profit basis for humanitarian, social and environmental well-being with permission from the Institute and due credit to the authors. The document can be downloaded from <https://nidm.gov.in>



मधुप व्यास, भा. प्र. से.
कार्यकारी निदेशक

Madhup Vyas, IAS
Executive Director



Message

The increasing frequency and complexity of public health emergencies and disasters underscore the urgent need for resilient systems and a trained workforce capable of coordinated action at all levels. Strengthening core competencies in Public Health Emergency and Disaster Management (PHDEM) has become a national imperative to safeguard communities, minimize losses, and enable swift recovery.

Under the mandate of the Disaster Management Act, 2005, the National Institute of Disaster Management (NIDM) continues to function as the apex institution for training, capacity building, research, policy advocacy, and knowledge management in disaster risk reduction and management. The recent amendments in the Disaster Management Act, 2025 further reinforce the critical importance of systematic capacity building and structured training interventions. In this context, the PHEDM Tier-III Programme serves as a timely and strategic initiative, especially in view of emerging public health threats and climate-induced risks.

The Tier-III training programme successfully conducted in Jharkhand across three batches represents a significant milestone in building institutional and operational capacity at the state and district levels. The training focused on equipping key stakeholders with the requisite knowledge, inter-sectoral coordination strategies, and practical tools needed for effective public health emergency response and disaster preparedness.

This consolidated report titled "Strengthening Competencies for Public Health Emergencies and Disaster Management in Jharkhand" captures the key learnings, innovative practices, participant experiences, and action-oriented insights that emerged during the training. It is envisaged to serve as a valuable resource for health and disaster management professionals, policymakers, and partner institutions engaged in advancing emergency preparedness and response capabilities nationwide.

I commend the entire team at NIDM, NCDC, and CDC-India, along with the Government of Jharkhand, for their collaborative spirit and unwavering commitment to designing and delivering this comprehensive training programme. Their concerted efforts have successfully laid the foundation for a more prepared and resilient Jharkhand.

(Madhup Vyas)

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शुभमेव जगते

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Message

Public health emergencies and disasters pose complex and evolving challenges with significant implications for health systems, economies, and communities. At the same time, they offer an opportunity to build stronger, more resilient Public Health Emergency and Disaster Management (PHEDM) systems. Addressing these challenges requires sustained efforts to build platforms for collaborative learning and action—bringing together health professionals, disaster management authorities, policymakers, and community stakeholders to reduce risks and strengthen response systems jointly.

The Government of India remains committed to safeguarding the health and well-being of all citizens through a comprehensive and inclusive approach to healthcare. This vision is reflected in its strong emphasis on preventive and promotive health, integrated into national development policies and supported by equitable access to quality services. The National Centre of Disease Control (NCDC), under the Ministry of Health and Family Welfare (MoHFW), continues to lead these efforts through strategic programs and targeted initiatives.

The state of Jharkhand, with its diverse topography, tribal population, and resource-constrained health infrastructure, faces unique public health challenges, especially during emergencies such as disease outbreaks, seasonal vector-borne illnesses, and climate-induced disasters. Strengthening public health emergency preparedness in the state requires a coordinated, multisectoral approach to build district-level capacity and foster rapid response systems. The Tier-III PHEDM training in Jharkhand aimed to address these contextual needs by equipping local officials with the knowledge and tools to lead emergency preparedness and response efforts more effectively.

The PHEDM Tier-III training programme conducted in Jharkhand, jointly led by NCDC, NIDM, and CDC-India, reflects a multisectoral commitment to enhancing institutional preparedness. This report, titled “Strengthening Competencies for Public Health Emergencies and Disaster Management in Jharkhand,” encapsulates the insights, best practices, and frameworks that emerged from the training. It serves as both a documentation of progress and a resource for further strengthening public health emergency preparedness across the country.

I extend my appreciation to the teams from NCDC, NIDM, CDC-India, and the Government of Jharkhand, along with all participating institutions, for their dedication and collective effort in advancing this crucial initiative.

Place: Delhi

Dated: 19-12-2025

(Ranjan Das)



Antibiotic resistance Containment Stewardship Our Role, Our Responsibility
Judicious Use of Antibiotic Key to Contain Antibiotic Resistance



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Message

Jharkhand continues to face recurring public health challenges—vector-borne and zoonotic diseases, seasonal outbreaks, and climate-related disasters—revealing opportunities to strengthen preparedness, surveillance, and coordinated response, especially at district and community levels. Enhancing these capacities is essential to protect vulnerable populations and build a resilient health system.

The PHEDM Tier-III training was developed to address these needs by increasing institutional readiness across the state. It offers practical tools, frameworks, and scenario-based exercises to clarify roles within a coordinated emergency response system. By fostering multisector collaboration across health, veterinary, and disaster management departments, the programme creates a platform for integrated action—critical for reducing the impact of outbreaks and disasters in Jharkhand.

CDC remains committed to supporting the Government of India in meeting urgent public health challenges. From smallpox eradication to ongoing pandemic preparedness, CDC's partnerships with Indian institutions continue to strengthen surveillance, laboratory networks, diagnostics, public health workforce capacity, and emergency response systems.

I also extend my appreciation to the leadership at NCDC and NIDM for their guidance in developing and implementing the PHEDM Tier-III training. Its success in Jharkhand and other priority states reflects India's commitment to building a prepared and resilient public health system. I am confident this document will support preparedness and response efforts in Jharkhand and nationwide.

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Preface

The Public Health Emergency and Disaster Management (PHEDM) Tier-III training programme conducted in Jharkhand across three batches marked a significant step toward strengthening the state's capacity to prepare for and respond to public health emergencies and disasters. These trainings were organized from 10–13 September 2024, 22–25 October 2024, and 15–18 January 2025 in Ranchi, covering all districts of the state. A total of 106 participants—including 24 mentors and 82 mentees—were trained, representing critical sectors such as human health surveillance, animal husbandry/veterinary services, and disaster management. The programme adopted a multi-sectoral approach to ensure district-level preparedness and inter-agency coordination during emergencies.

The consolidated training report titled “Strengthening Competencies for Public Health Emergencies and Disaster Management in Jharkhand” captures the programme's key achievements, insights, and practical tools shared during the sessions. It is intended to serve as a reference document for health and disaster management professionals, policymakers, and institutional partners, offering a roadmap for advancing capacity-building initiatives and improving preparedness at the subnational level. The training emphasized real-world applications through case studies, scenario planning, and simulation-based learning to help participants understand and execute their roles during public health emergencies.

Jharkhand's proactive participation in this initiative reflects a growing recognition of the need to integrate public health and disaster preparedness across sectors and administrative levels. The constructive feedback and suggestions provided by the participants will guide future improvements in training design and delivery, ensuring that the state remains adaptive and forward-looking in its emergency management strategies.

We extend our sincere appreciation to the partnering institutions—NCDC, CDC India, and the Government of Jharkhand—as well as the esteemed subject matter experts whose collaborative efforts made this training a success. With five states having successfully implemented PHEDM-PDP Tier-III trainings so far, Jharkhand's comprehensive district-level coverage sets a strong example of inter-sectoral capacity building in action.

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

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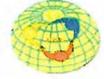
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Preface

Jharkhand has faced recurring public health challenges, including outbreaks of vector-borne diseases such as dengue and malaria, zoonotic infections like scrub typhus and anthrax, and seasonal surges in diarrheal and respiratory illnesses. These recurring events highlight the critical need for a robust public health surveillance system, timely early warning mechanisms, and coordinated multi-sectoral responses. Strengthening the collaboration between human health, animal health, and disaster management sectors is essential to detect threats early, prevent escalation, and ensure swift, integrated responses to safeguard communities across the state.

The Integrated Disease Surveillance Programme (IDSP) under the National Centre for Disease Control (NCDC) plays a pivotal role in strengthening disease surveillance and response. Through its training initiatives, IDSP builds the capacities of national and subnational officials in emergency preparedness, thereby reinforcing India's public health response systems.

The consolidated training report titled "Strengthening Competencies for Public Health Emergencies and Disaster Management in Jharkhand" presents the outcomes of the PHEDM-PDP Tier-III training conducted in three batches in Ranchi, covering all districts of the state. Organised by the IDSP, NCDC, in collaboration with the NIDM and CDC-India, this multi-sectoral initiative equipped state and district-level officials with practical knowledge, tools, and competencies for effective emergency risk management and rapid response.

The report documents key insights, training methodologies, best practices, and feedback received during the sessions. It serves as a strategic resource to guide future capacity building programs, improve institutional preparedness, and strengthen Jharkhand's public health emergency management systems. As one of the key states where Tier-III PHEDM training has been successfully implemented, Jharkhand's inclusive and district-wide participation stands as a model for other states seeking to institutionalize public health emergency preparedness.

Dr Himanshu Chauhan, Addl. Director
NCDC & HoD IDSP



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Acknowledgement

We express our deep gratitude to the leadership at NIDM, NCDC, and CDC-India for their continued guidance, vision, and unwavering support in implementing the PHEDM Tier-III trainings across Government of India-prioritized States and Union Territories. Their strategic direction has been instrumental in advancing national capacities for public health emergency preparedness and disaster management.

We also extend our sincere thanks to the Government of Jharkhand for its invaluable support in the successful implementation of the PHEDM Tier-III Training across the state. The proactive engagement of state departments and district-level stakeholders made this initiative truly impactful and inclusive.

The committed leadership and proactive engagement of the Government of Jharkhand played a pivotal role in fostering an enabling environment for multi-sectoral collaboration and capacity building. The active participation of officials from the Departments of Health, Disaster Management, and Animal Husbandry, along with dedicated representation from all districts, significantly enriched the quality and impact of the training programme. Their engagement underscored a shared commitment to strengthening public health emergency preparedness at the grassroots level.

We sincerely acknowledge the dedicated efforts of team members from NCDC, NIDM, and CDC-India, whose consistent support, coordination, and subject matter contributions have played a crucial role in the successful execution of the training programme in Jharkhand. Their collaborative spirit and commitment to capacity building have significantly enriched the learning outcomes and overall impact of this initiative.

This collaborative initiative has laid a strong foundation for enhancing surveillance, improving response mechanisms, and building resilience in the face of public health emergencies and disasters. The Government of Jharkhand's steadfast dedication to advancing integrated preparedness and response systems serves as a model for other states, reflecting its deep commitment to protecting the health and well-being of its communities.



(Himanshu Chauhan)



(Surya Parkash Gupta)

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Batch-1108

Batch-2110

Batch-3113

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Abbreviations

AIIMS	All India Institute of Medical Sciences
ANM	Auxiliary Nurse Midwife
CBRN	Chemical, Biological, Radiological and Nuclear
CDC	Centers for Disease Control and Prevention
CHC	Community Health Centre
CPR	Cardiopulmonary Resuscitation
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
DEOC	District Emergency Operation Center
DGHP	Division of Global Health Protection
DRR	Disaster Risk Reduction
Dte.GHS	Directorate General of Health Services
EM	Emergency Management
EMR	Emergency Medical Relief
EOC	Emergency Operations Centre
EOP	Emergency Operations Plan
GHSA	Global Health Security Agenda
GMR	Geo-meteorological Risks Management
Gol	Government of India
IC	Incident Commander
ICS	Incident Command System
IDSP	Integrated Disease Surveillance Programme
IH	International Health
IHIP	Integrated Health Information Platform
IHR	International Health Regulations

IMS	Incident Management System
IRS	Incident Response System
JSDMA	Jharkhand State Disaster Management Authority
MC	Municipal Corporation
MD NHM	Mission Director, National Health Mission
MHA	Ministry of Home Affairs
MoHFW	Ministry of Health and Family Welfare
MPHW	Multi Purpose Health Worker
NCDC	National Centre for Disease Control
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
NGO	Non-Governmental Organization
NIDM	National Institute of Disaster Management
NIHFW	National Institute of Health and Family Welfare
NVBDCP	National Center for Vector Borne Disease Control Programme
PEP	Post-Exposure Prophylaxis
PH	Public Health
PHE	Public Health Emergency
PHEDM	Public Health Emergency and Disaster Management
PHEDM-PDP	Public Health Emergency and Disaster Management- Professional Development Programme
PHEIC	Public Health Emergency of International Concern
PHEM	Public Health Emergency Management
PHEOC	Public Health Emergency Operations Centre
PHS	Public Health Specialist
PM ABHM	Pradhan Mantri Ayushman Bharat Health Infrastructure Mission
PoE	Points of Entry

PPE	Personal Protective Equipment
Prep Op	Preparatory Operations Meeting
PS	Principal Secretary
RCCE	Risk Communication and Community Engagement
RRT	Rapid Response Team
SARI	Severe Acute Respiratory Infections
SDMP	State Disaster Management Plan
SDRF	State Disaster Response Force
SMEs	Subject Matter experts
SNO	State Nodal Officer
SOP	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities and Threats
THIRA	Threat and Hazard Identification and Risk Assessment
U.S.	United States
UNESCO	United Nations Educational, Scientific and Cultural Organization
USDMA	Uttarakhand State Disaster Management Authority
VDMP	Village Disaster Management Plan
VMMC	Vardhman Mahavir Medical College
WHO	World Health Organization
WHO-SEARO	World Health Organization South-East Asia Region



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1. Executive Summary

Jharkhand's vulnerability to disasters stems from its diverse geographical features and climatic conditions. Frequent occurrences of floods, droughts, heatwaves, mining-related events, thunderstorms, lightning hazards and disease outbreaks have made the state increasingly disaster-prone, posing significant challenges to its development and safety. This requires preparedness and a coordinated multi-sectoral approach through competent core capacities. The "Public Health Emergency and Disaster Management-Professional Development Programme (PHEDM-PDP) Tier-III Training" jointly structured, designed and implemented by the National Institute of Disaster Management (NIDM), Ministry of Home Affairs (MHA), National Centre for Disease Control (NCDC), Directorate General of Health Services (Dte.GHS), Ministry of Health and Family Welfare (MoHFW), and the U.S. Centers for Disease Control and Prevention (CDC), Country Office India, is a key initiative to enhance coordination and collaboration among stakeholders in emergency response. This training programme is a component of a comprehensive five-tier capacity-building model (Figure 1) designed to engage a diverse range of public officials, spanning from grassroots workers to policymakers. PHEDM Tier-III specifically focuses on equipping operational-level functionaries with the necessary knowledge and skills to serve as vital links between communities and higher levels of authority during emergencies.

The training underscored the importance of collaboration with other key stakeholders, providing a platform for participants to interact with experts from both national and state levels. This inclusive approach allowed them to share their experiences, exchange best practices, and discuss challenges, fostering a sense of mutual learning and growth.

The training package implemented during Jharkhand Batch-1 and Batch-2 training contained seven modules. Subsequent to completion Batch-1 and 2 training in Jharkhand, an effort were made to improve the PHEDM-PDP training package. The revised training package implemented in Batch-3 of Jharkhand contained six modules. Based on valuable feedback received from resource persons, faculty, participants, and stakeholders during implementation, two modules [Incident Management System (IMS) and Incident Command System (ICS)] were merged into one module titled "Organizational Model for Managing Response". Module 5 was deleted and some relevant portions from it were incorporated in Module 1. Furthermore, two new modules on Risk Communication and Community Engagement (RCCE) and Psychosocial Aspects of PHEDM were also added in the training package.

These modules establish a foundational understanding of public health emergency and disaster management. Covered topics focused on public health aspects of disasters, public health emergencies, and their management, along with the One Health Approach. The course delved into international and national frameworks about PHEDM, encompassing the International Health Regulations (IHR) 2005, World Health Organization (WHO) obligations, Sendai Framework, Sustainable Development Goals, and the Disaster Management Act 2005, among others. Essential concepts such as Public Health Emergency of International

Concern (PHEIC), Emergency Operations Plan (EOP), Public Health Emergency Operations Centre (PHEOC), Incident Management System (IMS), Incident Response System (IRS), and Public Health Emergency Preparedness and Response at Points of Entry (PoE) were comprehensively addressed. One more day is dedicated to the Mentor's workshop. This mentor-mentee concept is an essential element in sustaining the programme. This programme significantly strengthened the capacity of key stakeholders' capacity to respond to public health emergencies and manage disaster scenarios. Participants expressed that the training was highly relevant and valuable to their roles.

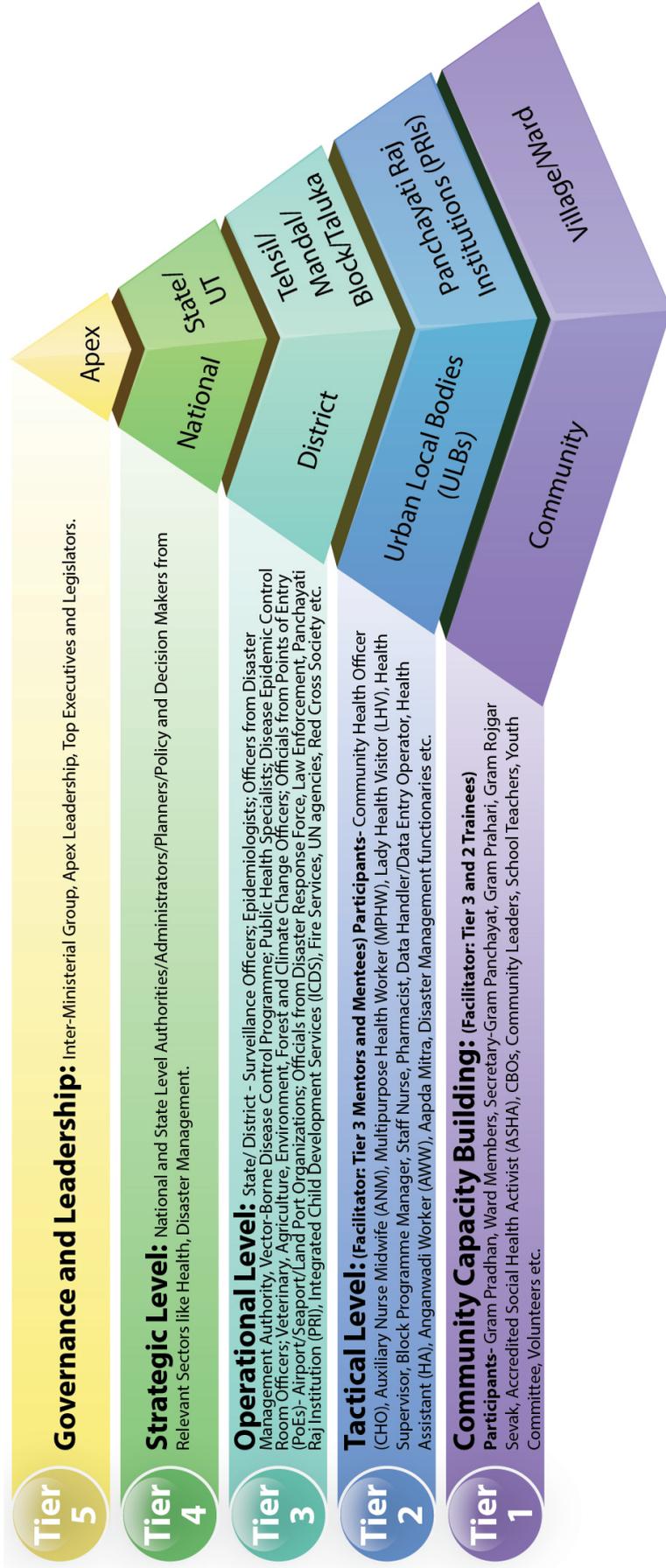


Figure 1: PHEDM Tiered Approach

PHEDM-PDP Tier 3 trainings have been conducted in 5 states so far. Trainings in Jharkhand state covering all the districts was organized in 3 batches from 10 – 13 September, 2024; 22 – 25 October 2024 and 15 – 18 January 2025. All together 106 participants including 24 mentors and 82 mentees (district level officers from health, animal / veterinary department and disaster management sectors) were provided competency building trainings at Ranchi by NCDC, NIDM, CDC, India and other renowned subject matter experts.



2. Background

Instances of Public Health Emergencies (PHEs) and disasters present considerable risks to public health, community infrastructure, and society. Nonetheless, these unexpected events present valuable learning opportunities, prompting us to assess our workforce (staff), infrastructure (stuff), and policies, plans, and procedures (systems). This training package was initially piloted in Tamil Nadu, validated in Uttarakhand, launched in Rajasthan, and then implemented in Maharashtra, Gujarat, and Jharkhand. The Ministry of Health and Family Welfare, Government of India, under the visionary Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM-ABHIM), is driving an initiative to establish Health Emergency Operation Centres (HEOCs) nationwide.

Recognising that public health emergencies and disasters are two sides of the same coin, often one leading to the other. There was a felt need to train the two systems as a single entity. PHEDM Five-Tiered Capacity-Building Approach is an innovative initiative designed, developed, and implemented through a collaborative partnership involving the National Institute of Disaster Management (NIDM), Ministry of Home Affairs (MHA), Government of India (GoI); National Centre for Disease Control (NCDC), Directorate General of Health Services (Dte.GHS), Ministry of Health and Family Welfare (MoHFW), GoI and U.S. Centers for Disease Control and Prevention (CDC), Country office India. It aims to strengthen capabilities at all levels, from local communities for the tactical level (Tier-I and II) to the District and State for the operational components (Tier-III) to the strategic level for policy and decision-makers (Tier-IV and V). To enhance the capacity at the operational level, the Public Health Emergency and Disaster Management - Professional Development Programme (PHEDM-PDP) Tier-III training package was developed.

3. Objectives

The objectives of this PHEDM-PDP Tier-III training were to equip district-level participants with the following:

- Strengthen multi-sectoral, multi-disciplinary, and multi-layered coordination to manage public health emergencies and disasters.
- Enhance the state's capacity (primarily at district level) for risk mapping, prevention, preparedness, mitigation, response to, and recovery from public health emergencies and disasters using IMS/IRS applications, strengthening the 3S, i.e., Staff (human resource), Systems (plans, policies, and procedures), and Stuff (infrastructure) in their local context (Figure 2).
- Establishment of mentor – mentee framework.
- Acquaint with the Threat and Hazard Identification and Risk Assessment (THIRA)/ Risk communication concept and details.
- Provide a further understanding of key Public Health Emergency Operations Centre (PHEOC) infrastructure and information technology concepts.
- Provide the basic concepts of preparedness and response at Points of Entry (PoE) concerning PHEDM.
- Develop a mechanism between the mentor and mentee that appraises the mentors about Public Health Emergency and Disaster Management and discusses the roles and responsibilities of a mentor and strategies for effective mentoring.

Essential elements of PHEDM

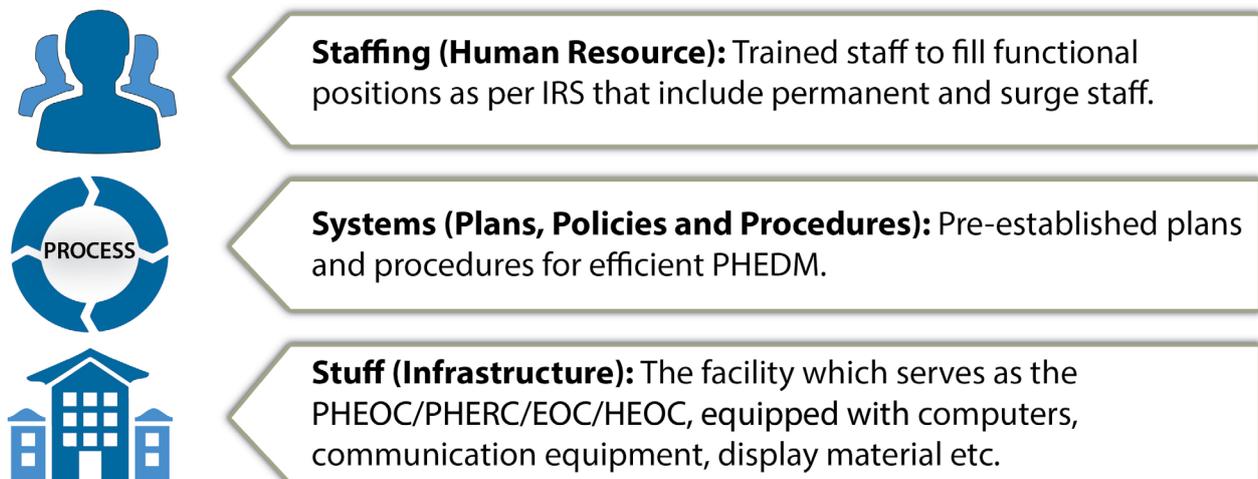


Figure 2: Three elements of PHEDM



4. A Step Toward Enhanced Emergency Preparedness and Response in Jharkhand

Jharkhand, a significant state in eastern India, is known for its rich mineral resources and diverse tribal culture. Strategically located, it shares its borders with Bihar to the north, Uttar Pradesh to the northwest, Chhattisgarh to the west, Odisha to the south, and West Bengal to the east. The state covers approximately 2.7% of the country's total area and accounts for around 2.6% of its total population. Jharkhand has vast mineral reserves, with 40% of India's total mineral resources, including coal, iron ore, and bauxite, being found here. Most of the state lies on the Chota Nagpur Plateau, the source of the Koel, Damodar, Brahmani, Kharkai, and Subarnarekha rivers, whose upper watersheds lie within Jharkhand.

Due to its diverse topography, Jharkhand faces a range of disasters. All 24 Districts of Jharkhand are affected by some form of disaster. Jharkhand state-specific disasters are Drought, Mining Accidents, Industrial and Chemical Accidents, Lightning, Earthquakes, Environment Change and Biodiversity Loss, Naxalism and Landmine Blasts, Epidemic Spread through Birds and Animals, Elephant Attacks, and Forest Fires.

Analysing the Integrated Disease Surveillance Programme (IDSP) data from 01 January 2024, to 30 October 2024, underscores Jharkhand's complex public health landscape. The categorisation of diseases reveals various challenges, ranging from vector-borne illnesses like Malaria and Dengue to water-borne threats like Typhoid. Respiratory infections like Influenza, zoonotic concerns like Scrub Typhus, and the persistence of vaccine-preventable diseases like Measles contribute to the intricate tapestry of health issues. Recently States have reported the Avian Influenza Outbreaks also (IHIP, 2025). Other than this, Chickenpox, Acute Diarrheal Disease, Measles, and Malaria are the significant outbreaks reported in 2024. This comprehensive overview is a foundation for targeted interventions and strategic planning, emphasising the need for a multidimensional and adaptive approach to public health management in Jharkhand.

Additionally, the public health system in Jharkhand struggles with issues such as high infant and maternal mortality rates, malnutrition, and outbreaks of communicable diseases like malaria, dengue, Japanese encephalitis, Acute Diarrheal Disease, kala-azar. The state's dense forest cover also makes it susceptible to vector-borne diseases and complicates access to healthcare in remote areas. The public health system in Jharkhand encompasses a wide range of services aimed at promoting and protecting the health of its population. The predominance of tribal populations with limited access to healthcare and education. This includes preventive measures, health promotion campaigns, disease surveillance, outbreak response, and appropriate healthcare delivery.

The state is prone to floods during the monsoon, especially in low-lying areas, while droughts frequently impact the central and western regions, leading to crop failures and water scarcity. Landslides in hilly districts like Ranchi and West Singhbhum and extreme

heatwaves in areas such as Palamu further complicate the state's disaster landscape. Though not in a high seismic zone, Jharkhand is vulnerable to moderate earthquakes, particularly in urban areas. Lightning strikes are common and deadly, especially in rural regions. Mining-related disasters in districts like Dhanbad and forest fires during the dry season add to the state's risks. There are 120 coal mines spread across the Jharkhand state, with the maximum in the Dhanbad district. There are 17 underground mines out of the total 51 mines in Dhanbad, and these pose a constant threat to the workers working there, making them vulnerable to chemical disasters, collapse, etc of mining sites.

The PHEDM Tier-III training aims to enhance the state's preparedness and response capabilities for public health emergencies, aligning with the broader national objective of strengthening the health infrastructure. As part of this expansion, Tier-III training was conducted in three batches to cover all 24 Districts in Jharkhand. All three batches of training were conducted in Ranchi, and the location was identified based on the suggestions of state officials, availability of transportation, and easy access from each district.



5. Strengthening Emergency Preparedness Across Jharkhand

The PHEDM Tier-III training programme in Jharkhand is designed to build a robust emergency response system by equipping key officials with the necessary knowledge, skills, and coordination mechanisms to manage public health and disaster situations effectively. This initiative fosters interdepartmental collaboration and strengthens the state's overall preparedness framework.

- **Enhance emergency preparedness** by integrating the Health Department, Disaster Management, and Animal Husbandry under a unified training framework.
- **Address region-specific challenges** by tailoring the training to the unique needs and circumstances of each district in Jharkhand.
- **Create a pool of trained officials** who understand the concept of Emergency Operations Centers (EOCs) and can serve as valuable resources during emergencies.
- **Through focused training sessions, enhance the skills and knowledge of district-level officers in managing public health and disaster situations.**
- **Provide a platform for cross-learning** among multi-sector district-level officers, allowing them to share experiences, best practices, and knowledge to improve response coordination.
- **Develop a pool of master trainers** who will cascade PHEDM training across the state through Tier-I and Tier-II initiatives under the guidance of the state government.



6. Participants (Target Group)

The primary target group for this programme consists of key officials responsible for emergency preparedness and response at the district level. These include officers from the Integrated Disease Surveillance Programme (IDSP), Disaster Management Department, and Animal Husbandry Department, who are critical in detecting, managing, and mitigating public health emergencies and disasters. Local NGO participants also work and support the state in response to public health threats.

To ensure a multi-sectoral and well-rounded approach, each selected district must nominate three officials—one from each of the three departments—to participate in the training. This ensures representation from public health, disaster management, and animal health sectors, fostering cross-sector coordination and collaboration during emergencies.

In addition to district-level officers, mentors from relevant institutions will also be engaged to guide and support participants. These mentors may include:

- Faculty from Medical Colleges who bring expertise in epidemiology, clinical management, and public health response.
- Officials from the State Disaster Management Authority (SDMA) contribute insights into disaster preparedness, response strategies, and risk mitigation.
- Experts from State Animal Husbandry Institutions who provide critical knowledge on zoonotic diseases, livestock management, and veterinary public health.
- Subject Matter Experts (SMEs) specialising in emergency management, biological threats, and other relevant areas.



7. Training Tools

7.1 Training Agenda

The training agenda includes a dedicated preliminary day for mentors and resource faculty to align on the objectives, roles, and responsibilities for the subsequent three days. The agenda is continuously refined to ensure maximum effectiveness and relevance for participants.

The mentor's workshop is a critical part of the training, where the stress is placed on establishing a mentor-mentee relationship to sustain the skills gained through this training programme. The objectives of this one-day session are to apprise the mentors to be able to:

- Comprehend the concept and principles underlying PHEDM.
- Demonstrate the knowledge and skills essential for fostering effective mentoring relationships.
- Elucidate the significance of mentorship within the context of PHEDM.
- Encourage self-reflection among mentors to facilitate their personal development as leaders.
- Understand the expectations placed upon mentors about PHEDM.

The comprehensive three-day training program initially implemented in Jharkhand Batch-1 and Batch-2 encompassed seven well-structured modules, designed to provide participants with a foundational understanding of key principles and concepts in Public Health Emergency and Disaster Management (PHEDM). Based on feedback and subsequent improvements, the revised training package implemented in Batch-3 was streamlined into six modules. The emphasis is on strengthening the human capacity to respond effectively to and mitigate the impacts of public health emergencies and disasters.

7.2 Training Materials

Three comprehensive guides have been developed to support the PHEDM Tier-III training programme. These guides ensure structured learning, effective facilitation, and practical application of emergency preparedness concepts. They include a Mentor's Guide, a Facilitator's Guide (Parkash et al., 2022a), and a Participant Guide (Parkash et al., 2022b) (Figure 3 – 5).

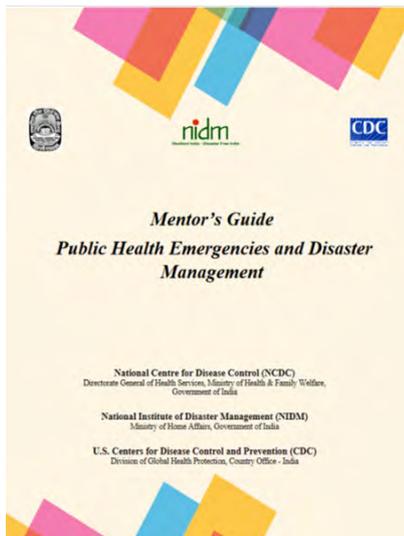


Figure 3: Mentor Guide

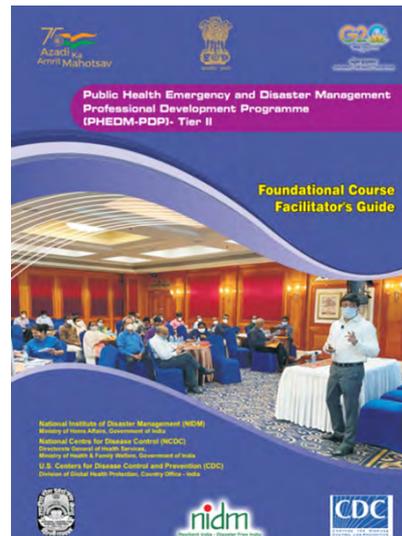


Figure 4: Facilitator's Guide

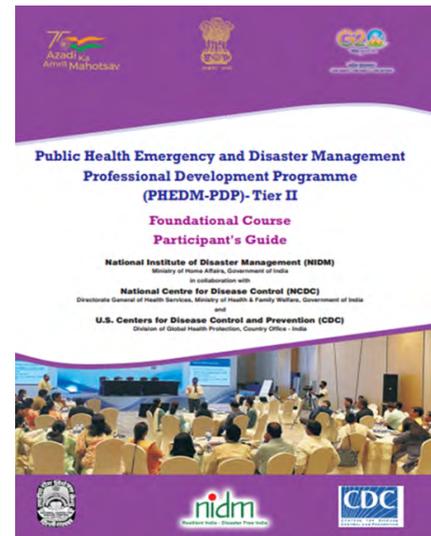


Figure 5: Participant's Guide

The PHEDM-PDP training guide has undergone continuous review and refinement, incorporating learnings, feedback, and suggestions from each Tier-III training conducted across different states. This iterative process ensures that the training materials remain relevant, practical, and aligned with the evolving emergency preparedness and response needs.

The Participant Guide and Facilitator Guide for the Public Health Emergency and Disaster Management - Professional Development Programme (PHEDM-PDP) Tier-III training were jointly developed and published by the National Institute of Disaster Management (NIDM), the National Centre for Disease Control (NCDC), and the U.S. Centers for Disease Control and Prevention (CDC-India). These guides serve as comprehensive learning resources and are freely accessible to the public through the NIDM website at the following link:

- Public Health Emergency and Disaster Management- Professional Development Programme (PHEDM-PDP) Participants Guide
Link: https://nidm.gov.in/PDF/Modules/Book_Participating.pdf
- Public Health Emergency and Disaster Management- Professional Development Programme (PHEDM-PDP) Facilitator Guide
Link: https://nidm.gov.in/PDF/Modules/Book_Facilitator%20Guide.pdf

To further enhance the training experience, the PHEDM Tier-III guides have been revised and updated to incorporate new insights, emerging best practices, and evolving public health and disaster management strategies. The revised training modules will be published soon, ensuring they continue providing high-quality, evidence-based guidance for capacity-building efforts across states.

7.3 Sessions/Modules Covered

The PHEDM Tier-III training programme is designed to enhance the capacity of district-level officials in public health emergency preparedness and disaster management through a structured combination of theoretical learning, interactive sessions, and hands-on exercises. The training covers a range of critical modules, including emergency response frameworks, incident response systems, risk communication, psychosocial aspects, and international health regulations. In addition to these core components, specialised sessions on national and state-level initiatives provide participants with insights into ongoing public health and disaster response programs. The training incorporates tabletop exercises, case studies, NDRF demonstrations, and team-building activities to ensure practical skill development, allowing participants to apply learned concepts in real-world scenarios. Integrating multi-sectoral collaboration and experiential learning, the programme aims to build a robust network of trained professionals equipped to respond effectively to public health emergencies and disasters at the district and state levels.

7.3.1 Core Training Modules

During the PHEDM Tier-III training, structured modules are covered to provide participants with a comprehensive understanding of public health emergency preparedness and disaster management. These modules focus on equipping district-level officials with the necessary knowledge, skills, and frameworks to respond to emergencies effectively.

- **Module I:** Overview of Public Health Emergency Preparedness and Response
- **Module II:** Principles of PHEDM and Its Applications
- **Module III:** Public Health Emergency Operations Centre (PHEOC)
- **Module IV:** Organizational Model for Managing Response
- **Module V:** International Health Regulations (IHR) and Roles at Points of Entry (PoE)
- **Module VI:** Risk Communication and Community Engagement (RCCE)
- **Module VII:** Psychosocial Aspects of PHEDM

7.3.2 Special Sessions on National and State-Level Initiatives

In addition to the core modules, several focused sessions were conducted to sensitise participants on key national and state-level emergency response initiatives:

- Emergency Relief Division (EMR) and Mass Gathering Management.
- One Health Approach in Public Health Emergencies & Disaster Management.
- Regional Public Health Emergency Management (PHEM) Program by WHO SEARO.

- Role of the National Disaster Response Force (NDRF) in Disaster Management.
- Case Scenarios on Effective Public Health Emergency and Disaster Management, such as the Management of the Silkyara Tunnel Collapse.
- State-Level PHEDM Status Updates—Presented by officials from the Health Department, Disaster Management Authority, and Animal Husbandry Department. These updates highlight the current preparedness and response landscape in their respective states.

7.3.3 Interactive and Practical Learning Activities

The training focused on interactive group exercises and hands-on learning sessions to enhance practical understanding and skill development. These included:

- **Tabletop Exercises** - Simulated public health emergency and preparedness scenarios requiring participants to develop response strategies collaboratively.
- **Case Studies Related to Participating Districts** - Context-specific analyses to help participants apply PHEDM concepts in real-life situations.
- **Incident Response System (IRS) Tabletop Exercise** - Practical application of IRS principles in managing disaster response.
- **Team Building Group Exercises** - Activities designed to foster participant collaboration and coordination.
- **CPR and Basic Life-Saving Techniques** - Hands-on demonstrations by professionals to equip participants with essential emergency medical skills.
- **National Disaster Response Force (NDRF) Demonstration** - Demonstrations on basic life-saving skills and disaster response and rescue operations.
- **Role Plays** - Simulated scenarios where participants act out roles to practice decision-making and coordination under pressure.
- **Group Discussions and Presentations on Given Topics** - Collaborative discussions followed by presentations to explore and share solutions on relevant topics.

7.3.4 Digital and Technological Tools

a. Online Self-Learning from World Health Organization (WHO)

Before attending the PHEDM-PDP Tier-III Training, participants were expected to complete specific online courses offered by the World Health Organization (WHO) on the OpenWHO platform. These self-paced courses are designed to equip participants with foundational

knowledge for understanding the core concepts of emergency preparedness and response. By completing these courses, participants gain crucial knowledge about emergency operations, incident management, and coordinating resources and responses. This ensures they are well-prepared to engage actively in the PHEDM-PDP Tier-III training and to apply the concepts learned during the sessions effectively in real-world scenarios. The online courses served as an essential precursor to the in-depth training, setting the stage for more interactive and applied learning experiences during the programme.

The courses were as follows:

- The Public Health Emergency Operations Centre (PHEOC) (Link: <https://openwho.org/courses/PHEOC-EN>)
- Incident Management System (Tier-1) (Link: <https://openwho.org/courses/incident-management-system>)

b. Kahoot Quizzes

Kahoot quizzes are conducted at the end of each module to enhance participant engagement and reinforce learning. These quizzes assess participants' understanding of key concepts and ensure the material is retained. Kahoot quizzes encourage active participation and create a competitive yet fun atmosphere by incorporating interactive and gamified elements.

After each module, the three highest-scoring participants are awarded small rewards to motivate attentiveness and foster a sense of competition. This encourages participants to stay focused throughout the training. After the training, the cumulative scores of all participants are calculated, combining their performance across all quizzes. The top three participants with the highest total scores are honoured with trophies, recognising their dedication and achievement throughout the training. This gamified approach boosts engagement and fosters a sense of accomplishment and camaraderie among participants. Some of the advantages of using Kahoot quiz were as follows:

Enhancing Engagement & Attention: Kahoot quizzes were incorporated into the training to make learning interactive and enjoyable. The gamified approach maintained participants' attentiveness, reinforced key concepts, and encouraged active participation.

- **Real-Time Feedback & Knowledge Reinforcement:** The quizzes provided instant feedback on participants' understanding, allowing facilitators to identify areas needing further clarification and adjust discussions accordingly.
- **Encouraging Participation & Motivation:** To boost enthusiasm, small prizes were awarded to the top three scorers after each Kahoot quiz. At the end of the training, cumulative scores were used to determine the top performers who received trophies in recognition of their achievements (Figure 6).

- **Promoting Healthy Competition & Peer Learning:** Kahoot's competitive nature fostered a fun learning environment, motivating participants to perform better while also encouraging peer discussions, knowledge-sharing, and collaborative learning.

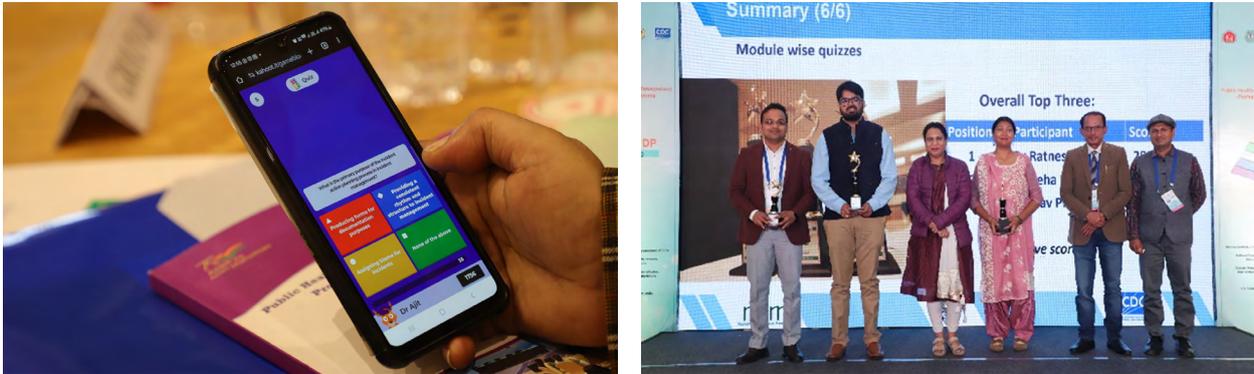


Figure 6: Conducting Kahoot Quiz during training

c. Video Demonstrations related to PHEDM

Relevant videos of NCDC and NIDM are showcased during the training to enhance the learning experience. These videos are strategically played during spare time, before the training begins, during tea breaks, and at other suitable intervals throughout the day. Participants can benefit from visual and practical examples that complement the training content by incorporating videos into these moments. The videos cover various topics related to public health emergencies, disaster management practices, and real-world case studies, providing participants with additional insights and reinforcing key messages.

7.3.5 Assessment Tools

a. Pre-training Assessment and Post-training Assessment

A pre-test is conducted before the start of the training. This assessment measures participants' knowledge and understanding of public health emergency and disaster management concepts. However, individual results are not disclosed or evaluated separately. Instead, the aggregate data from the pre-test is analysed and used to identify areas where participants may need further focus or clarification. This information helps resource persons tailor the training content, ensuring that the sessions address knowledge gaps and improve learning outcomes.

Following the completion of the training, a post-assessment test is conducted to evaluate participants' progress and measure the effectiveness of the training. The post-test helps to gauge how much knowledge has been gained and whether the training objectives have been met. At the end of the programme, the results are compiled into a batch-wise summary, which is shared during the Summary and Way Forward session. This aggregate assessment provides valuable insights into the overall progress of the participants and highlights areas for continued improvement or future training initiatives.

b. Feedback from Participants

After the training, feedback is gathered from participants to assess various aspects of the programme. Participants are asked to provide input on the technical aspects of the training, such as the relevance and clarity of the modules, the effectiveness of the teaching methodologies, and the usefulness of the training materials.

In addition, feedback is collected on the logistic arrangements, such as the venue, accommodation, transportation, and overall comfort and convenience. This input is crucial for identifying areas that can be improved for future training sessions.

8. Methodologies

The methodologies used throughout the training programme are designed to provide a well-rounded learning experience, combining theoretical knowledge with practical applications. The approach is divided into three phases: pre-training, during the training, and post-training. Each phase serves a unique purpose of ensuring that participants benefit the most from the programme.

8.1 Pre-Training

The pre-training phase played a crucial role in ensuring the smooth execution of the PHEDM-PDP Tier-III training. This phase involved extensive planning, stakeholder engagement, and technical groundwork to enhance the relevance and effectiveness of the training.

8.1.1 Preparatory Meetings of Organizing Team

- A series of preparatory meetings were conducted with key stakeholders, including Jharkhand state, NCDC, NIDM, CDC India, and implementing partners. These meetings focused on addressing the technical aspects of the training, such as preparing an in-depth overview of disease and disaster scenarios specific to the selected states.
- This collaborative process facilitated the creation of relevant and tailored case studies, offering participants hands-on experience and enabling them to relate training content to real-world situations.
- In addition, administrative and logistical details were thoroughly discussed to ensure the smooth and seamless execution of the training, covering aspects like venue arrangements, resource management, and participant coordination.

8.1.2 Preparatory Visit to Selected State

A pre-training visit was conducted to the identified state with the following key objectives:

- To meet with state and district authorities, provide an overview of the training programme, and discuss the importance of their active participation. During these meetings, feedback was shared, and insights were gathered to ensure alignment with local priorities.
- To request the nomination of mentors and mentees (participants) from relevant districts, ensuring that key individuals with appropriate expertise and roles are selected to benefit from the training.
- To finalise administrative arrangements, including accommodations, IT requirements at the training venue, and other logistical details, ensuring a smooth and well-coordinated training experience.

8.1.3 Pre-Training Technical Activities

Before the training, several technical activities were undertaken to ensure a comprehensive and context-specific approach. These activities included:

- **Situational Analysis & DDMP Review:** A detailed assessment of the current status of District Disaster Management Plans (DDMPs) and existing frameworks for managing public health emergencies was conducted. This helped identify strengths, gaps, and areas for improvement.
- **Public Health Emergency & Disaster Overview:** Data from the IDSP-IHIP portal prepared a district-specific overview of prevalent disease outbreaks and disaster risks for each training batch. This analysis facilitated informed discussions among resource faculty, mentors, and participants, ensuring that training content was aligned with real-world challenges.
- **Expert Observations & Feedback:** Resource persons, mentors, and participants were encouraged to provide observations and feedback on the relevance of DDMPs in addressing disease outbreaks and disasters in their respective districts.
- **Public Health Integration in DDMPs:** Inputs were collected on the public health components of existing DDMPs to assess their effectiveness, identify gaps, and explore ways to enhance their alignment with public health emergency management.
- **Plan Strengthening & Alignment:** Recommendations were made to improve DDMPs by ensuring their alignment with other national and state-level initiatives focused on health disaster management, enhancing their effectiveness in emergency preparedness and response.

8.2 During the Training

Preparatory meetings, mentor workshops, core training modules, and special sessions on NDRF, One health approach, group discussions were conducted as part of the training. The core training modules, special and interactive sessions are discussed in detail in section 7.3.1 to 7.3.3.

8.2.1 Preparatory Meetings for Fine-Tuning Administrative and Technical Areas of the Training

- As part of the PHEDM Tier-III training, resource faculty, mentors, and state representatives held a half-day preparatory meeting to finalise logistics and technical sessions according to the agenda and ensure uniformity.
- Resource persons were oriented on state- and district-specific emergencies and the core competencies that should be emphasised in their training modules.
- State officials assigned mentors to their districts for better guidance and coordination.
- The session focused on defining roles, effective time management, competency-building strategies for skill enhancement, and providing final updates before the training.
- Discussions were conducted with hotel/venue management regarding the training programme's accommodation, catering, and logistical arrangements.

8.2.2 Strengthen Mentor-Mentee Relationships

- Mentors were paired with district-level mentees to provide technical guidance and foster a proactive mentor-mentee relationship during emergencies and disasters.
- Mentors were assigned as session coordinators and designated to participant groups to enhance engagement and build strong connections with their mentees.
- Participants were divided into groups to encourage interaction, and a rotating seating arrangement throughout the training allowed everyone to engage with different peers.
- Mentors and mentees participated in group exercises based on carefully designed case scenarios reflecting state-specific issues. Each group was tasked with developing a detailed management plan and presenting their strategy as part of the exercise.

8.2.3 Innovations and Inclusions to Make Sessions More Interactive

a) Experience sharing

Participants, particularly the identified mentors from states where training had been

completed, were invited to share their experiences and the improvements they had made in their emergency response strategies. For example, Resource Faculty highlighted enhanced multi-stakeholder coordination and collaboration during “**Operation Zindagi.**” They also shared insights on cascading training to grassroots levels by implementing Tier-I and Tier-II sessions with active mentor involvement.

Additionally, state officials shared their experiences and lessons learned from outbreak investigations conducted at the state level. A detailed discussion was held on the Anthrax outbreak, where officials elaborated on their response strategies, challenges faced, and key takeaways to strengthen future outbreak management.

b) Inject Group Discussions and Tabletop Exercises

Participants engaged in guided discussions to share ideas and enhance their understanding of public health challenges during disasters. Through peer-to-peer learning, they exchanged experiences and strategies for effectively addressing these challenges. Additionally, participants worked on simulated emergency scenarios, allowing them to practice problem-solving and decision-making in real-time situations. These practical exercises strengthened their ability to respond quickly and effectively during emergencies, fostering greater confidence and preparedness.

c) Lectures, Relevant Case Scenarios and Role-Playing Activities

Experts delivered easy-to-follow lectures on key topics, providing participants with a solid public health emergency management foundation. To enhance understanding, case scenarios drawn from actual events and examples of past public health emergencies and disasters were introduced. These scenarios focused on managing public health during and after such events, highlighting successful strategies and improvement areas.

In addition, resource faculty incorporated on-the-spot role-playing exercises, where participants assumed roles such as health officers, disaster managers, or emergency responders. This interactive approach gave them firsthand insight into managing emergencies’ responsibilities, challenges, and decision-making processes. Below are examples of mock exercises conducted during the training.

Summary of the In-House Mock Exercise on Incident Response System

The exercise simulated a real-life disaster scenario focusing on the Incident Response System (IRS) framework during a Tunnel Collapse Incident in Jharkhand on 15 January 2025. It aimed to enhance participants’ emergency response skills through planning, coordination, and execution in a multi-agency setup. This exercise was a valuable learning experience to strengthen preparedness, coordination, and response strategies in complex disaster scenarios.

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Scenario Overview:

Incident: A catastrophic tunnel collapse occurred at a construction site in Jharkhand, trapping approximately 75 labourers and supervisors working the night shift.

- **Extent of Damage:** A 70-meter debris blockage obstructed the escape route just 50 meters before the tunnel opening, making immediate rescue difficult.
- **Lifelines Available:** Water and electricity remained functional, providing a temporary support system for those trapped.
- **Communication Breakdown:** Initial walkie-talkie contact lasted 24 hours before being disrupted, leaving the workers' status unknown.
- **Delayed Reporting:** The tunnel authority delayed informing local administration by 8-10 hours, attempting an uncoordinated rescue effort that failed. Eventually, higher authorities were alerted to mobilise additional resources.

Key Discussion Points:

1. Immediate Concerns:

- Ensuring the safety of the trapped workers.
- Addressing structural risks and hazards.
- Assessing available resources and communication methods.

2. Response Strategy:

- Maximizing resource utilisation for an effective response.
- Planning safe and efficient routes for moving personnel, equipment, and rescue teams.
- Establishing a sequence of action for the rescue operation, prioritising urgent needs.

3. Stakeholder Coordination:

- Multi-agency collaboration involving State & District Administration, Police, Fire Services, SDRF/NDRF, Armed Forces, Health and Municipal Departments, NGOs, and Technical Experts.
- Effective communication strategies among all response agencies and field personnel.

4. Team Responsibilities:

- Clear delineation of roles within the IRS framework:
- Incident Commander (IC), Liaison Officer, Safety Officer, Operations, Planning, and Logistics Sections.
- Coordination of rescue teams to prioritise critical areas and manage resources efficiently.

Key Takeaways from Hotwash:

- Evaluating the effectiveness of the emergency response plan and identifying areas for improvement.
- Assessing IRS framework efficiency and inter-agency coordination effectiveness.
- Reviewing the functionality of the communication plan and refining strategies for future incidents.
- Strengthening real-world application of IRS concepts in disaster response and management.

d) Relevant Videos

Videos from NCDC and NIDM were featured during free moments of the training to enrich the learning experience (refer section 7.3.4(c) for more details]

e) Demonstration by NDRF

A collaboration was established with the NDRF team to demonstrate essential evacuation and first aid skills. This exercise played a vital role in helping participants familiarize themselves with key stakeholders and first responders, which are critical considerations in emergency planning.

The NDRF team provided a brief overview of the organization's mandate, structure, roles, and responsibilities, along with examples of disaster responses they have managed.

Participants received hands-on training in cardiopulmonary resuscitation (CPR) and the proper use of fire extinguishers (Figure 7). Additionally, the team shared basic life-saving techniques that can be applied during emergencies, enhancing participants' practical readiness for real-world situations.



Figure 7: Training on CPR by NDRF

f) Pre-Course and Post-Course Assessment

- The pre-test results of participants are not used for individual assessment nor displayed during the training. Instead, they help facilitators identify areas that require extra focus and tailor discussions accordingly.
- The pre-test analysis enables trainers to gauge participants' baseline knowledge, ensuring that training sessions are adapted effectively to address knowledge gaps.
- The post-test results provide insights into overall knowledge improvement and help assess the effectiveness of training methodologies.
- Aggregate findings from pre- and post-tests are shared with programme coordinators and stakeholders to inform continuous improvements in training design.
- The assessments also help identify specific thematic areas where additional capacity-building efforts may be required in future sessions.

h. Briefing and Debriefing

The organising team held daily briefings and debriefing meetings to ensure effective coordination and smooth execution of the training programme. Morning briefings focused

on planning the day's activities, assigning responsibilities, and addressing logistical requirements, while evening debriefings reviewed progress, identified challenges, and collected feedback for improvement. These sessions facilitated real-time adjustments and enhanced the overall efficiency of the training.

i. Participant Feedback

Participant feedback was collected at the end of the training to evaluate its effectiveness and relevance (Figure 9). Feedback was gathered in person and through a Likert scale using Google Forms to capture participants' insights comprehensively.

Input on the sessions and resource persons was crucial for identifying areas of improvement and ensuring the training remains relevant and tailored to participants' needs. This feedback will also be instrumental in refining future training programs for a more significant impact.



Figure 9: Participants giving feedback during training

j. Certificates of Course Completion

Certificates were awarded to all participants who attended over 90% of the training, recognising their commitment and active participation in enhancing their emergency management skills.

k. Green Certificate

During the training programme, distinguished guests and resource persons were honoured with E-Tree Certificates, symbolising a commitment to environmental sustainability and a healthier, safer future. Each E-Tree Certificate represents a thicket of five trees planted in the recipient's name at Trees for Ecotourism, Mussoorie, Uttarakhand, India. These trees are geotagged, allowing recipients to track their contribution and visualise their planted trees remotely through Google Maps. This initiative offsets carbon footprints and reinforces the importance of sustainable practices and environmental conservation.

8.3 Post Training

a. Hotwash

A hotwash meeting was conducted with NCD, NIDM, the state authorities, CDC-India, and implementing partners to review the training. This session focused on discussing what worked well, identifying areas for improvement, and addressing challenges encountered during the training, along with strategies for their mitigation.

Based on the feedback gathered, the training modules will be revised in consultation with NCD, NIDM, and CDC-India to enhance future sessions.

This training approach is designed to make learning practical and effective. By integrating review sessions, discussions, real-world examples, and hands-on activities, participants gain essential skills to improve disaster preparedness and protect public health.

b. Comprehensive Report of PHEDM Tier-III training in Jharkhand

After all three batches of PHEDM Tier-III training in Jharkhand are successfully completed, a comprehensive report is developed to document the outcomes, key insights, and lessons learned from the training sessions. This report provides a detailed overview of the training activities, participant feedback, and the modules' effectiveness. It also highlights best practices, challenges encountered, and recommendations for improving future training programs.

9. Venues and Schedule of PHEDM Tier-III Trainings in Jharkhand

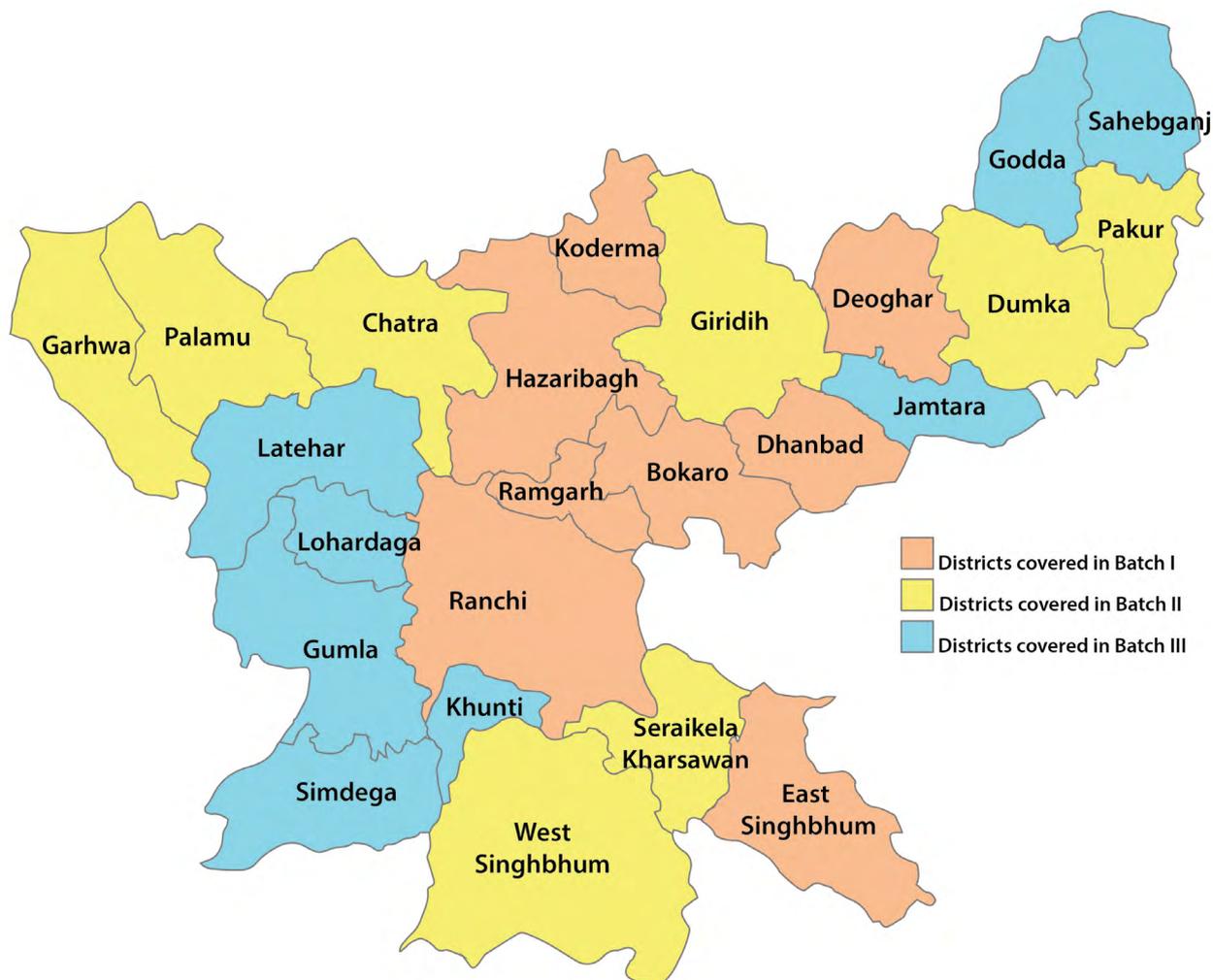


Figure 10: Map of Jharkhand State with the districts covered batch-wise

The PHEDM-PDP Tier-III Training has been conducted in Ranchi, Jharkhand, in three batches (Figure 10), and the details are as follows:

Batch No.	Dates of the Training	Location of the Training	Names of the District
1.	11 -13 September 2024	Ranchi, Jharkhand	Bokaro, Deoghar, Dhanbad, Hazaribagh, Jamshedpur, Koderma, Ramgarh, and Ranchi.

Batch No.	Dates of the Training	Location of the Training	Names of the District
2.	22-25 October 2024	Ranchi, Jharkhand	Chatra, Dumka, Garhwa, Giridih, West Singhbhum, Saraikela kharsawan, Palamu, and Pakur.
3.	15 -18 January 2025		Godda, Gumla, Jamtara, Khunti, Lohardaga, Latehar, Palamu, Simdega, and Sahebganj.

10. Batch 1: Ranchi (10–13 September 2024)

The first batch was conducted in Ranchi, covering eight districts in Jharkhand: Bokaro, Deoghar, Dhanbad, Hazaribagh, Jamshedpur, Koderma, Ramgarh, and Ranchi.

A total of 34 participants participated, including seven mentors from the departments of health and medical colleges, disaster management, and animal husbandry (Annexures I and II) (Figure 11).

Key resource persons and Dignitaries were present for key discussions, sessions, and motivational sessions for the participants from national and subnational levels (Annexures III and IV are attached, respectively). The training was conducted as per the agenda attached at Annexure VIIa.



Figure 11: Group Photo of Batch-1

On 10 September 2024, a Preparatory Operations Meeting (Prep Op) was held in the forenoon at Radisson Blu Hotel, Ranchi, Jharkhand, bringing together PHEDM faculty, resource persons, and state organisers. The primary objective of this meeting was to facilitate introductions, foster collaboration among key stakeholders, and ensure alignment on the training's goals and methodologies. Discussions focused on the PHEDM initiatives, learning objectives, and expected outcomes, emphasising avoiding overlap in course content and optimising time management throughout the training sessions. Key elements of the training agenda were reviewed in detail, including case studies, inject-based scenarios, and tabletop exercises designed to provide participants with practical, hands-on experience. The meeting also served to clarify the roles and responsibilities of resource persons and state facilitators, ensuring smooth coordination and effective delivery of the training modules.

In the afternoon, a Mentors Workshop was conducted to enhance the mentoring capabilities of seven selected mentors from various medical colleges across Jharkhand. The workshop focused on key areas such as the Art of Mentoring, essential Attributes of Effective Mentors, and the role of mentors in successfully implementing PHEDM Tier-III training.

In addition to these foundational topics, the workshop shared experiences from implementing PHEDM Tier-III training in other states, such as Rajasthan, providing valuable insights and best practices. This session was designed to equip mentors with the necessary skills and knowledge to effectively guide participants, foster learning, and contribute to the overall success of the training programme in Jharkhand.

From September 11, 2024, the training program covered seven modules and other sessions as follows:

- Module-1: Overview of Overview of Public Health Emergency and Disaster Management (PHEDM) – Dr Rajeev Sharma, PHS, CDC-India
- Module-2: Principles of PHEDM and Its Applications – Dr Sujeet K Singh, Subject Matter Expert & Former Director, NCDC, MoHFW, GoI
- Module-3: Public Health Emergency Operations Centre (PHEOC)- Dr Muzaffar Ahmad, Former Member, National Disaster Management Authority, GoI & Dr Rajeev Sharma
- Module-4: Organizational Model for Managing Response - Dr Muzaffar Ahmad and Dr Rajeev Sharma
- Module-5: International Health Regulations and Roles at Points of Entry - Dr Sujata Arya, ADG, IH, MoHFW, GoI
- Module-6: Risk Communication and Community Engagement (RCCE) – Dr Pranay Verma, JD, IDSP, NCDC, MoHFW, GoI
- Module-7: Psychosocial Aspects of PHEDM – Ms. Alisha Arora, Asst. Professor, CIP, Ranchi, Jharkhand
- Overview of PHEDM in Jharkhand – Dr Praveen Karn, State Epidemiologist, IDSP Bihar
- Tabletop exercise on Mpox - Dr Runa Hatti Gokhale, Associate Director for Science and Programs, CDC-India
- Coordinating Medical Response during Emergencies - Dr Navin Verma, PHS, DD (EMR), MoHFW, GoI
- Group exercise on IRS - Dr Bimlesh Joshi, Assistant Director, Health Directorate, Govt of Uttarakhand

10.1 Key Highlights

On 11 September 2024, an inaugural session was held, which was graced by the auspicious presence of esteemed dignitaries, including Shri Ajoy Kumar Singh, IAS (PS Health); Shri Abu Imran, IAS (MD NHM), Government of Jharkhand; Shri Ajit Seth, Former Cabinet Secretary; Dr Muzaffar Ahmad, Former Member, NDMA; Dr Pranay Verma, Joint Director, IDSP, NCDC, Ministry of Health and Family Welfare, Government of India; Dr R.N Sharma, Deputy Director, Health Services, Govt of Jharkhand; Dr Runa Hatti Gokhale, Associate Director for Science and Programs, CDC-India; and Dr Rajeev Sharma, Public Health Specialist and Lead, Emergency Management, DGHP, CDC India (Figure 12 and 13). During the inaugural session, dignitaries addressed the participants, emphasising the mentor-mentee framework, which is designed to empower trained participants to mentor block-level officials on emergency preparedness. Drawing from the critical lessons learned during the COVID-19 pandemic, they highlighted the importance of strengthened coordination among stakeholders and agencies during public health emergencies and other crises. The dignitaries also commended the efforts of the organising team (NCDC, NIDM, State Official and CDC-India) for their dedication to successfully conducting the training. They assured their continued support to expand the training to the remaining districts, reinforcing the state's overall emergency preparedness and response capabilities.



Figure 12: Inaugural Address by Shri Ajoy Kumar Singh, IAS (PS Health)



Figure 13: Glimpses of the Inaugural Session

Insights from Operation Kaveri

Operation Kaveri, conducted during the Sudan crisis, underscored the vital importance of meticulous planning and coordinated teamwork in managing international health emergencies at Points of Entry (PoE). The mission highlighted how effective inter-agency collaboration, rapid situational assessment, and efficient resource mobilisation are crucial for ensuring the safe evacuation of individuals while maintaining public health safeguards.

Key lessons from the operation emphasised the need for pre-established guidelines and contingency plans to address unforeseen challenges. Leveraging real-time information, maintaining clear communication, and fostering partnerships with international stakeholders proved essential in managing the crisis effectively.

Additionally, the operation reinforced the importance of regular emergency drills and capacity-building exercises at PoE. Strengthening preparedness in health screenings, quarantine measures, and logistical support for evacuees ensures that response teams can handle diverse emergencies while upholding critical public health protocols.

Stretching sessions were also incorporated into the training programme to promote physical and mental well-being among participants (Figure 14). This holistic approach aimed to enhance their effectiveness in fulfilling their roles and responsibilities.



Figure 14: Stretching Session

Special sessions were conducted during the training programme to supplement the knowledge disseminated during the training programme. These special sessions were:

- Coordinating Medical Response During Emergencies by Dr Navin Verma, Deputy Director, EMR Cell, Dte.GHS, MoHFW, GOI, New Delhi. He discussed India's proactive approach, where the Pradhan Mantri–Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) proposes a fundamental shift from reactive, response-driven operations to the development of sustainable and resilient public health infrastructure through the establishment of Health Emergency Operations Centres (HEOCs).

- A dedicated session on Mpox was conducted during the group activity, focusing on its management within the framework of the four phases of the emergency management cycle: preparedness, response, recovery, and mitigation. Participants discussed key preparedness measures, including surveillance, early detection, and risk communication strategies (Figure 15). The response phase covered immediate containment actions, case management, and coordination between health authorities and other stakeholders. Recovery efforts emphasised restoring healthcare services, addressing long-term health impacts, and strengthening community resilience. Finally, mitigation strategies explored measures to prevent future outbreaks, such as vaccination programs, public awareness campaigns, and policy enhancements. This interactive exercise helped participants apply theoretical concepts to real-world public health emergencies, fostering a deeper understanding of comprehensive emergency management.



Figure 15: Table top exercise on Mpox

Silkyara Tunnel Operation “Operation Zindagi (LIFE)”

A PHEDM-trained mentor effectively applied the Incident Response System (IRS) model to support the establishment of a field camp during the incident. Utilising skills gained through the PHEDM training programme, the mentor facilitated a systematic approach to organising the camp, ensuring operational efficiency and coordination (Figure 16).



Figure 16: Insights from the Silkyara Tunnel Operation

Key contributions included:

- Assessing on-ground needs and prioritising resources.
- Supporting the allocation of roles and responsibilities to streamline operations.
- Coordinating with multiple stakeholders to ensure smooth functioning.
- Upholding public health and safety measures throughout the response.
- This effort underscores the practical utility of PHEDM training in enhancing field readiness and strengthening emergency response capabilities, contributing to effective disaster management practices.

10.2 Overall: Pre- and Post-Course Assessment of Batch-1

The figure below illustrates participants' overall pre-test and post-test scores, demonstrating a significant improvement in knowledge acquisition. The average score increased from 54% in the pre-test to 61% in the post-test, reflecting overall learning gains. Notably, the lowest score rose from 11% to 29%, indicating progress among participants with initially lower scores. Additionally, the highest score improved from 80% to 87%, highlighting an enhanced understanding and performance following the training (Figure 17).

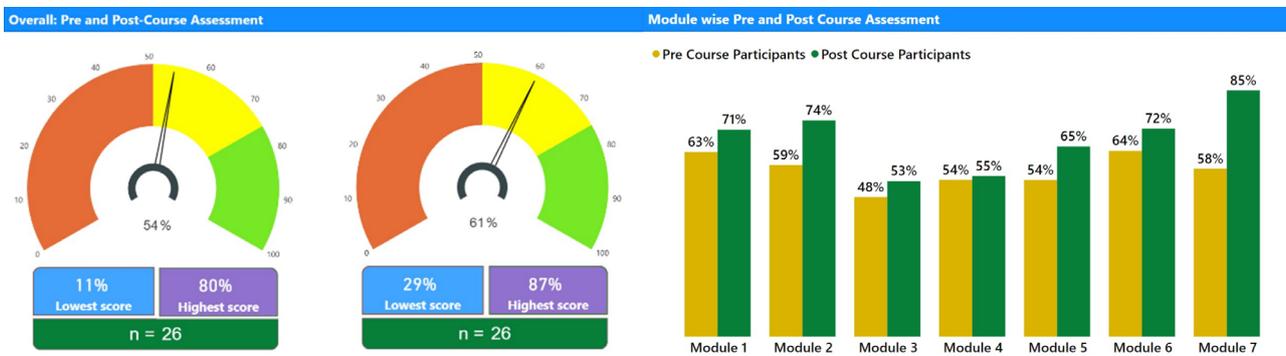


Figure 17: Pre- and Post-Course Assessment of Batch-1

11. Batch 2: Ranchi (22-25 October 2024)

The second batch of the PHEDM-PDP Tier-III Training was held in Ranchi, Jharkhand, from 22-25 October 2024. A collaborative effort among NIDM, MHA; NCDC, MoHFW, and CDC-India, this session included nine districts—Chatra, Dumka, Garhwa, Giridih, West Singhbhum, Saraikela kharsawan, Palamu, and Pakur. 36 participants, including 9 mentors, participated in the training (Figure 18) (Annexures I and II, respectively). The training was conducted as per the agenda attached in Annexure VIIIb.



Figure 18: Group Photo of Batch -2

11.1 Key Highlights

On 22 October 2024 (in forenoon), a preparatory workshop was conducted for PHEDM faculties, resource persons, and state organisers. The primary objectives of this workshop were to build familiarity and foster collaboration among the participants, discuss ongoing initiatives in PHEDM, and align on learning objectives and expected outcomes for the upcoming training. The workshop aimed to ensure that all parties involved were well-acquainted with each other's roles and contributions and to facilitate the effective sharing of insights and strategies. Additionally, it focused on avoiding content overlap and optimising the use of time by clearly defining the scope of the training and coordinating efforts to achieve a cohesive and streamlined training experience.

On 22nd October 2024 (in afternoon), a comprehensive Mentor's Workshop was held one day before the PHEDM-PDP Tier-III training programme commenced. This workshop gathered professionals dedicated to advancing disaster preparedness and public health emergency response. It provided an essential platform for mentors to share their expertise, reinforcing the implementation of PHEDM practices. The workshop was a collaborative initiative involving the NIDM, the NCDC, the Integrated Disease Surveillance Programme (IDSP) Jharkhand, and CDC-India. The primary aim of the Mentor's Workshop was to develop a strong framework for mentor-mentee relationships, discuss the District Disaster Management Plan (DDMPs) and deepen mentors' understanding of PHEDM.

The session was facilitated by Dr Muzaffar Ahmad, Former Member, NDMA, Gol; Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director, NCDC, MoHFW, Gol; Dr Jugal Kishore, Director Professor, Department of Community Medicine, VMMC and Safdarjung Hospital; Dr Bimlesh Joshi, Assistant Director, Health Directorate, Govt of Uttarakhand; and Dr Alka Sharma, Former JD (DM), Govt. of Rajasthan. Throughout the training from 23 – 25 October 2024, seven modules were covered.

- Module-1: Overview of Overview of Public Health Emergency and Disaster Management (PHEDM) – Dr Rajeev Sharma, Public Health Specialist and Lead-Emergency Management, DGHP, CDC-India
- Module-2: Principles of PHEDM and Its Applications – Dr Sujeet K Singh, PH Expert, FHI360
- Module-3: Public Health Emergency Operations Centre (PHEOC)- Dr Muzaffar Ahmad, Former Member, National Disaster Management Authority, Govt. of India
- Module-4: Organizational Model for Managing Response - Dr Alka Sharma, Former JD, DM, Govt. of Rajasthan
- Module-5: International Health Regulations and Roles at Points of Entry - Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, Gol
- Module-6: Risk Communication and Community Engagement (RCCE) – Dr Sanjay Gupta, PH Expert & Former Professor, NIHFW, Gol
- Module-7: Psychosocial Aspects of PHEDM – Ms. Alisha Arora, Asst. Professor, CIP, Ranchi, Jharkhand
- One Health in Concept of Public Health Emergencies & Disaster Management - Dr Simmi Tiwari, JD & Head, Centre for One Health, NCDC, MoHFW, Gol
- PHEDM in Jharkhand - Dr Praveen Kumar Karn, State Epidemiologist, Govt. of Jharkhand
- Case Study on Silkyara Tunnel collapse - Dr Bimlesh Joshi, Assistant Director, Dept. of Health, Govt. of Uttarakhand
- Coordinating Medical Response during Emergencies - Dr Navin Verma, Deputy Director (EMR), Dte.GHS, MoHFW, Gol
- Demonstration by 9th NDRF Battalion
- PHEM Capacity Building - Dr K. Rajan, WHO SEARO

A session was also conducted to sensitise the participants on the PHEM capacity building at the regional level and Emergency Medical Response at MoHFW. The 9th Battalion of the National Disaster Response Force (NDRF) conducted a mock drill to further equip them with essential skills. This drill covered first aid, Cardiopulmonary Resuscitation (CPR), and evacuation techniques during emergencies and disasters.

Inaugural Session:

The PHEDM-PDP Tier-III Training was honoured by the presence and guidance of distinguished dignitaries and speakers (Figure 18). These included Sh. Abu Imran, IAS, MD, NHM, Govt. of Jharkhand; Dr C.K. Shahi, Director in Chief, Health Services, Govt. of Jharkhand; Sri Arvind Kumar, Under Secretary, State Disaster Management Authority, Govt. of Jharkhand; Dr Bipin Khalkho, Joint Director, Department of Animal Husbandry, Govt. of Jharkhand; Dr Kamlesh Kumar, STO cum SNO, DM Cell, Health Directorate, Govt. of Jharkhand; Dr Muzaffar Ahmad, Former member NDMA; Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, GoI; Dr Jugal Kishore, Director Professor, Department-Community Medicine, VMMC & Safdarjung Hospital; Dr Bimlesh Joshi, Assistant Director, Health Directorate, Govt of Uttarakhand; Dr Alka Sharma, Former JD (DM), Govt. of Rajasthan and Dr Rajeev Sharma, PHS and Lead-EM, DGHP, CDC-India (Figure 19).

Way forward from Leadership:

- Shri. Abu Imran, MD, NHM, Govt. of Jharkhand emphasized the need for immediate response during emergencies to prevent increased mortality, citing experiences from Mines, industries (uranium), and mass gatherings. He highlighted the importance of training and involvement of front-line workers and community Volunteers with proactive leadership to ensure timely action.
- Strengthening One Health approach for CBRN events through networking for effective emergency management and resource mobilisation.



Figure 19: Glimpse of Inaugural session

11.2 Overall: Pre and Post-Course Assessment of Batch-2

The figure below presents participants' overall pre-test and post-test scores, showcasing a substantial improvement in knowledge of participants. The average score increased from 57% in the pre-test to 84% in the post-test, indicating significant learning gains. Notably, the lowest score rose from 27% to 57%, reflecting progress among participants initially with lower scores. Furthermore, the highest score improved from 90% to 97%, demonstrating enhanced understanding and performance following the training (Figure 20).

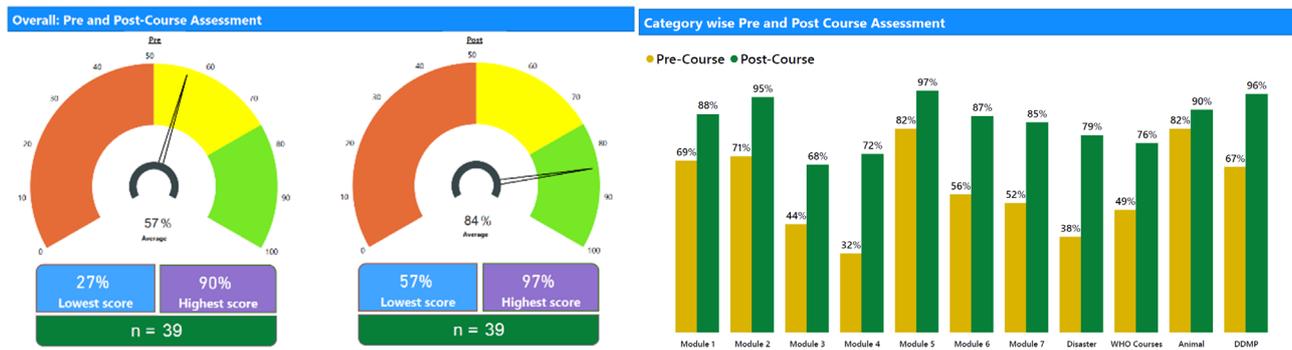


Figure 20: Pre and Post-Course Assessment of Batch-2

12. Batch 3: Ranchi (15–18 January 2025)

The third batch of the PHEDM-PDP Tier-III Training was conducted in Ranchi, Jharkhand, from 15 to 18 January 2025. Participants from nine districts namely Godda, Gumla, Jamtara, Khunti, Lohardaga, Latehar, Palamu, Simdega, and Sahebganj participated in the training programme. A total of 36 participants attended, including 8 mentors representing the departments of Health, Animal Husbandry, and Disaster Management (Figure 21; Annexures I and II). The training was conducted in accordance with the agenda outlined in Annexure VIIc.



Figure 21: Group Photo of Batch -3

12.1 Key Highlights

On 15 January 2025, a preparatory meeting (Prep Op) took place in the forenoon at Chanakya BNR Hotel, bringing together PHEDM faculty and resource persons. The meeting also aimed to foster acquaintance and collaboration, discuss PHEDM initiatives, share learning objectives and expected outcomes from the training, prevent overlap in course content, and manage time effectively. During the preparatory meeting, detailed discussions were held on the training agenda, course overview, situational analysis of participating districts, and the development of relevant case studies to support the learning objectives. This was followed by a Mentors (identified from medical colleges in Jharkhand) workshop in the afternoon aimed to discuss the role and responsibilities of mentors and expectations from the mentors related to this training programme by enhancing the mentoring of the selected mentees from 08 districts from different departments (health, disaster, and animal husbandry).

From 16 to 18 January 2025, PHEDM-PDP Tier-III training was conducted for both mentors and mentees. The training focused on equipping operational-level functionaries from health, disaster management, animal husbandry, medical colleges, and other line departments with the knowledge and skills needed to serve as an effective link between frontline workers, communities, and higher authorities, empowering them to enhance communication, coordination, and response efforts while strengthening district-level plans, policies, protocols, and guidelines for PHEDM.

- One Health in Concept of Public Health Emergencies & Disaster Management - Dr Simmi Tiwari, JD & Head, Centre for One Health, NCDC, MoHFW, GoI
- PHEDM in Jharkhand and Best Practices on the Anthrax Outbreak- Dr Praveen Kumar Karn, State Epidemiologist, Govt. of Jharkhand
- Case Study on Silkyara Tunnel collapse - Dr Bimlesh Joshi, Assistant Director, Dept. of Health, Govt. of Uttarakhand

Additionally, tabletop exercises were conducted where participants were divided into four groups, and each group was provided with separate scenarios of public health emergencies and disaster situations that prevail in the state. An inject-based case scenario on Anthrax was also discussed during the group activity in the context of the four phases of the emergency management cycle: preparedness, response, recovery, and mitigation. Additionally, a tabletop exercise focusing on applying an Incident Response System (IRS) was implemented to prepare participants for potential emergencies. Kahoot app quiz was conducted after each PHEDM-PDP Tier-III training module, reinforcing learning and ensuring retention. Pre- and post-tests were also performed during the training programme.



Figure 23: Resource faculties with their respective session

Role Play

The “Risk Communication and Community Engagement” session featured an interactive and insightful role-play exercise (Figure 24). This exercise simulated real-life crisis scenarios and enabled participants to explore the challenges of effective communication in such contexts. The exercise provided a valuable opportunity to practice essential skills like clear messaging, empathy, and active listening, enhancing participants’ understanding of the complexities involved in risk communication. This hands-on activity bridged theoretical frameworks with practical application, leaving a lasting impact on participants and significantly enriching the session’s overall learning outcomes.

The role-play exercise conducted during the “Risk Communication and Community Engagement” session helped participants develop a range of key competencies critical for effective crisis response. Through simulated real-life scenarios, participants gained practical experience in crafting and delivering clear, accurate messages under pressure. The exercise strengthened their ability to convey empathy and maintain composure while addressing community concerns, which are essential for building public trust during emergencies. It also enhanced their active listening and interpersonal communication skills, enabling more responsive and inclusive engagement with affected populations. Overall, the role play translated theoretical knowledge into practical competencies, empowering participants to navigate the nuances of risk communication more effectively in real-world situations.



Figure 24: Role plays during Session

Case studies

- An inject-based case scenario on Anthrax was discussed during the group activity in the context of the four phases of the emergency management cycle: preparedness, response, recovery, and mitigation.

Title: “Managing Dual Crises: Disease of Unknown Etiology and Earthquake Response – Epidemiological Investigation and Response”

Introduction

The Animal Mela, a large-scale livestock fair attended by thousands of animals and visitors, was the backdrop for an unusual public health emergency. The event brought together livestock farmers, traders, and businesses from multiple districts, increasing the risk of zoonotic disease transmission.

Demographics of Affected Districts

District A (Rural): Population 150,000, primarily engaged in livestock farming.

District B (Semi-Urban): Population 500,000, with a focus on small businesses and trade in animal products.

Weather Conditions: The Mela occurred under dry and windy conditions with high dust levels, potentially contributing to disease transmission.

Public Health Concerns:

Following the event, four individuals—two from each district—developed severe but differing symptoms, raising concerns about a zoonotic outbreak.

The objective of the Case Scenario:

Participants were tasked with investigating Disease X, an unknown zoonotic illness, and developing a multi-sectoral public health emergency response. The exercise involved several injects that required critical thinking, allowing participants to gain valuable insights into outbreak management.

This case scenario was a key component of Jharkhand's Public Health Emergency and Disaster Management (PHEDM) Tier-III training programme, designed to train professionals in zoonotic outbreak investigation and multi-sectoral response coordination.

Background:

The outbreak emerged after the Animal Mela, where thousands of livestock and visitors gathered.

District A (rural) and District B (semi-urban) were both affected, with patients from each district exhibiting differing symptoms.

Key Details of the Cases

First Case (District A):

- A livestock farmer and his family developed skin lesions and fever after attending the Mela.
- Possible direct zoonotic transmission from handling infected animals.

Second Case (District B):

- A couple developed severe respiratory symptoms after purchasing wool from the Mela.
- Suspected inhalation exposure from contaminated animal products.

Challenges Identified

- Misinformation spread rapidly via media and social platforms.
- Limited coordination between districts and conflicting investigation priorities.
- Lack of specialised healthcare and resources for managing rare zoonotic diseases.

Investigation Highlights

- Laboratory tests ruled out bacterial contamination in livestock products and farms.
- Environmental factors, including windy conditions, pointed toward airborne transmission as a potential cause.
- Breakthrough Finding: The disease was traced to asymptomatic cattle handled by a single vendor. Transmission occurred through direct contact and inhalation of spores.

Multi-Sectoral Coordination

- A joint task force was established, bringing together public health officials, veterinarians, and disaster management experts.
- Coordination challenges arose due to differing sectoral priorities and community resistance to containment measures.

Lessons Learned

- Multi-Sectoral Collaboration: Effective communication and coordination between human health, animal health, and disaster management sectors are essential for outbreak response.
- Surveillance Systems: Strengthening animal health monitoring and early warning systems is critical for detecting zoonotic outbreaks.
- Community Engagement: Raising awareness and fostering public trust help counter misinformation and improve compliance with containment measures.
- Environmental Considerations: Weather conditions and airborne transmission risks should be factored into zoonotic disease investigations.

Summary

Participants applied these lessons to real-world outbreak scenarios, integrating them into District Disaster Management Plans (DDMPs). The focus was cross-sector collaboration,

containment strategies, and public health response to future zoonotic threats.

This exercise reinforced the importance of a holistic approach to managing public health emergencies, emphasising preparedness, rapid response, and multi-agency coordination.

Additionally, Case studies and tabletop exercises focusing on the application of an Incident Response System (IRS)/Incident Management System (IMS) were carried out to prepare participants for potential emergencies.

During Batch-3, participants were divided into four groups, with each group assigned a specific scenario. They were expected to develop a detailed management plan within the allotted time. A summary of the presentations made by each group is provided below:

Exercise

Case study I- Scrub Typhus Outbreak



Figure 25: Presentation of Group-I on case study

Group – I participants engaged in a group exercise focused on **Scrub Typhus Outbreak**, where they were tasked with responding to a health crisis in Dhanbad, Jharkhand, involving an unusual rise in fever cases (Figure 25).

Group – I provided a comprehensive response plan, which included the following steps taken by the District Surveillance Officer (DSO):

1. The District Collector and local administration were immediately informed about the case.

- II. The Rapid Response Team (RRT) was activated to review the situation.
- III. Frontline workers such as Auxiliary Nurse Midwife (ANM) and Multi-Purpose Health Worker (MPHW) were instructed to compile a line list of infected persons and monitor them closely daily.
- IV. A team of medical officers, lab technicians, paediatricians, and veterinary officials were deployed to the affected village.
- V. New cases were identified, and efforts were made to trace the root cause, including investigating the travel history of the villagers.
- VI. Samples from affected patients were sent for PCR testing to confirm scrub typhus, following a differential diagnosis.
- VII. Isolation of affected persons was carried out, and symptomatic treatment was initiated.
- VIII. Upon confirmation of scrub typhus, specific drugs were administered: Doxycycline 100mg BD for 7 days, and for pregnant patients, Azithromycin 500mg for 5 days.
- IX. Preventive measures, including full-body coverage, mosquito nets, mite repellents, and the application of benzyl benzoate lotion, were recommended.
- X. Use of rodenticides and insecticides among animals was emphasized for controlling the rodent population and mites.
- XI. Awareness campaigns were conducted in collaboration with local governance bodies to educate the villagers on prevention and symptoms. Group I's response was detailed and showed a strong understanding of the necessary steps to manage a vector-borne disease outbreak, including prompt action, effective coordination, and targeted health interventions.

Group I's response was detailed and showed a strong understanding of the necessary steps to manage a vector-borne disease outbreak, including prompt action, effective coordination, and targeted health interventions.

Case Study - II Flood and Land Subsidence

In **Case Scenario 2**, participants were engaged in a group exercise focusing on the **devastating impact of heavy monsoon rains** in Jharkhand on 12 June 2024, particularly in the coal mining regions of Dhanbad and Jharia (Figure 26). The exercise outlined a comprehensive action plan to address the **flooding, land subsidence, and toxic gas** release resulting from the collapse of abandoned coal mines. Group participants provided a detailed action plan across five key phases:

Planning: The team emphasized the need for verifying information, activating the District Emergency Operation Center (DEOC), assessing the affected population, estimating required resources, and arranging necessary resources from neighboring districts. They also identified safe zones for shelters.



Figure 26: Presentation of Group-II on case study

Preparedness: Participants discussed the execution of the District Disaster Management Plan (DDMP), coordination with various departments like health, police, animal husbandry, and mining, and setting up communication lines and makeshift road/boat arrangements. They also planned for shelter establishment in the identified safe zones.

Response: The focus was on mobilizing affected individuals and livestock from the disaster zone to safe zones, with the support of agencies and resources. The group also stressed the importance of involving specialized CBRN units from the SDRF for rescue operations in areas affected by toxic gas leaks.

Recovery: The plan included providing medical treatment at safe zones, ensuring access to safe drinking water, food, shelter, and medicines, as well as administering vaccinations for communicable diseases. Attention was also given to addressing livestock health to prevent zoonotic diseases, handling of deceased bodies, and offering psychological counselling for affected individuals.

Risk Assessment and Rehabilitation: Participants highlighted the need to review the rescue efforts, assess the remaining risks, and focus on the rehabilitation of victims, considering social, financial, and psychological aspects.

The group's response demonstrated a thorough understanding of the multi-phase

approach needed to address the complex challenges posed by the disaster, focusing on preparedness, immediate relief, recovery, and long-term rehabilitation.

Case Study 3: Outbreak of Influenza-like Illness (ILI) and Severe Acute Respiratory Infections (SARI)

The summary of the presentation made by group 3 is summarised below (Figure 27).



Figure 27: Presentation of Group-III on case study

A. Response to Event Alerts:

Activation of Plan: The IDSP's alert will activate our response protocols, including coordination with the District Health Department, medical teams, and local surveillance networks. A dedicated task force will be formed immediately to evaluate the situation.

Coordination with Authorities: Pre-established communication channels with local health authorities, hospitals, and the District Disaster Management Authority (DDMA) will be used to disseminate information and facilitate a timely response.

B. Activation and Assessment: Immediate Steps: An emergency team will conduct a rapid assessment of the affected areas in Dhanbad. Initial surveys will be conducted to map out the extent of the outbreak, including identifying hot spots and vulnerable populations (e.g., children, elderly, healthcare workers).

Contingency Plan: If a significant increase in cases is observed, a contingency plan involving additional health workers, rapid diagnostic tests, and a wider surveillance network will be activated.

Pre-established Coordination Protocols: We will activate established protocols for local

authorities by establishing an Incident Response System (IRS). This ensures that all agencies are aligned in their efforts to respond to the outbreak, including coordination with local hospitals, schools, and other community organizations.

C. Immediate Actions:

Safety and Well-being of Affected Residents: Immediate actions will include ensuring that healthcare facilities are equipped to handle a surge in patients. We will ensure the availability of Personal Protective Equipment (PPE) for healthcare workers, identify quarantine zones, and ensure that patients with severe symptoms are isolated in specialized treatment centers.

Investigation and Sample Collection: A team will be deployed to conduct sample collection from affected individuals for lab analysis to confirm the pathogen responsible. Mobile testing units may be deployed to facilitate quick diagnostics in affected neighbourhoods.

Health System Emergency Plans: We will activate hospital preparedness plans, which include designated isolation wards for suspected cases, stockpiling antiviral medications, and emergency medical personnel deployment. Post-exposure prophylaxis (PEP) and preventive measures will be distributed where necessary.

Emergency Operations Center (EOC): An EOC will be set up to monitor the situation in real-time and coordinate response actions across all levels of government and healthcare systems.

D. Coordination with Local Authorities:

Effective Communication Channels: We will ensure real-time communication through multiple channels, including telemedicine platforms, district emergency numbers, and local health department networks. Regular meetings will be held to exchange updates and assign specific tasks to different teams.

Roles and Responsibilities: organization will support local authorities by providing expert guidance on containment strategies, conducting risk assessments, and assisting with logistics (e.g., delivery of supplies, personnel, and medical services).

E. Prevention of Future Incidents:

Surveillance System: We will enhance the surveillance system by integrating real-time data collection and analysis tools. A robust early warning system will be developed to track fever and respiratory illness cases across the region, which will help detect outbreaks early.

Lessons Learned: Lessons from previous outbreaks, such as the COVID-19 pandemic, will be incorporated into future planning. This includes improving community engagement, increasing vaccine coverage, ensuring the availability of personal protective equipment, and promoting hygiene and sanitation measures.

F. Challenges and Strategies to Overcome:

Logistical Challenges: Delivering medical supplies and establishing testing centers in remote areas may present logistical difficulties. We will work with local transport and supply chains to ensure rapid deployment of resources.

Technical Challenges: Limited diagnostic capacity or lack of specific tests for certain pathogens may delay case identification. To overcome this, we will work with regional laboratories to establish temporary mobile testing units.

Community-related Challenges: Community reluctance or misinformation could hinder response efforts. We will deploy local health workers for awareness campaigns, use media platforms, and collaborate with community leaders to ensure public trust and compliance with preventive measures.

By implementing these coordinated strategies, leveraging lessons from previous outbreaks like COVID-19, and enhancing surveillance systems, we aim to minimize the impact of this outbreak and prevent similar incidents in the future.

Case study 4: Thunderstorm and Lightning Disaster in Latehar, Jharkhand



Figure 28: Presentation of Group 4 on their case scenarios

The presentation by Group 4 focused on the case study of Thunderstorm and Lightning in Kaimur District, Bihar (Figure 28). The group effectively highlighted key components across the Emergency Management Cycle, covering risk assessment, preparedness, response, recovery, and mitigation strategies. A concise summary of their presentation is provided below, and the detailed report has been attached in the Annexure (Annexure VIII) for further reference. A concise summary of Group 4's presentation on the case study

of Thunderstorm and Lightning in Kaimur District, Bihar, structured under the Emergency Management Cycle:

A. Risk Assessment

- **Hazards Identified:** High winds, flash floods, lightning strikes, hailstorms, and landslides.
- **Vulnerabilities:** Informal settlements, outdoor workers, children, elderly, critical infrastructure (power lines, schools, hospitals).
- **Key Risk Areas:** Low-lying flood-prone zones and steep slopes with landslide history

B. Preparedness

- **Early Warning Systems:** Multi-channel alerts (SMS, radio, sirens, apps) with thresholds defined.
- **Public Awareness:** Monthly campaigns on lightning safety; school and community-based education.
- **Mock Drills & Training:** Quarterly drills and responder training.
- **Pre-positioning:** Emergency kits, medical supplies, and shelter facilities regularly inventoried and maintained.
- **Legal Framework:** Guided by the NDMA Act 2005; strict enforcement of building codes and evacuation protocols.

C. Response

- **Incident Management System Activated:** ICP setup, rapid deployment of SAR, medical, and relief teams.
- **Medical Support:** Emergency medical camps, trauma care, mental health support within 24 hours.
- **Shelters & Relief:** Functional within 2-4 hours with food, water, sanitation, and safety provisions.
- **Infrastructure Repair:** Priority-based restoration of power, roads, and communication.
- **Public Communication:** Frequent situation updates, community helplines, and rumor control.

D. Recovery

- **Infrastructure Rebuilding:** “Build Back Better” principles used for roads, power, and water systems.
- **Livelihood Support:** Skill training, microloans, and job support within 60-180 days.
- **Psychosocial Care:** Long-term counselling and community health worker training.
- **Plan Revision:** Lessons learned used to review and improve disaster plans within 90 days.

E. Mitigation

- **Structural Measures:** Installation of lightning rods, underground cabling in risk areas.
- **Non-Structural Measures:** Risk mapping, insurance promotion, storm shelters in high-risk zones.
- **Community-Based Resilience:** SHG involvement, awareness drives, inclusion of disaster education in schools.
- **Coordination with IMD:** Real-time alerts and forecasting to improve readiness.

12.2 Overall: Pre and Post-Course Assessment of Batch-3

The figure below presents participants’ overall pre-test and post-test scores, highlighting a notable improvement in knowledge acquisition. The average score increased from 59% in the pre-test to 72% in the post-test, indicating significant learning gains. However, the lowest score showed a slight decline from 37% to 33%, suggesting additional support was needed for participants with lower baseline knowledge. Meanwhile, the highest score remained at 93%, reflecting consistently strong performance among top scorers (Figure 29).

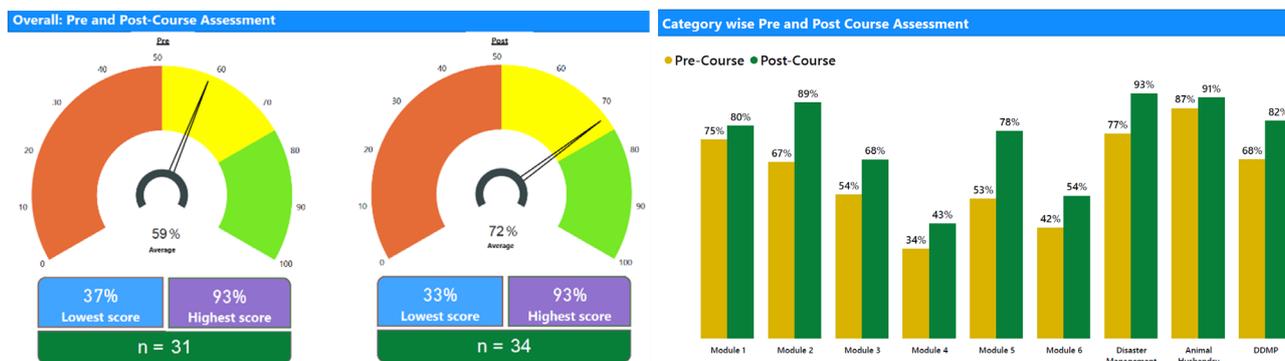


Figure 29: Overall: Pre and Post-Course Assessment of Batch-3

13. Consolidated Assessment of the Training

A total of 106 participants attended the three training batches conducted in Jharkhand, including 24 mentors and 82 mentees. The attendees came from diverse sectors, with 50 from the Health Department, 45 from Animal Husbandry, 08 from Disaster Management, and 03 from other departments (Figure 30). This multidisciplinary participation fostered a well-rounded and collaborative learning environment.

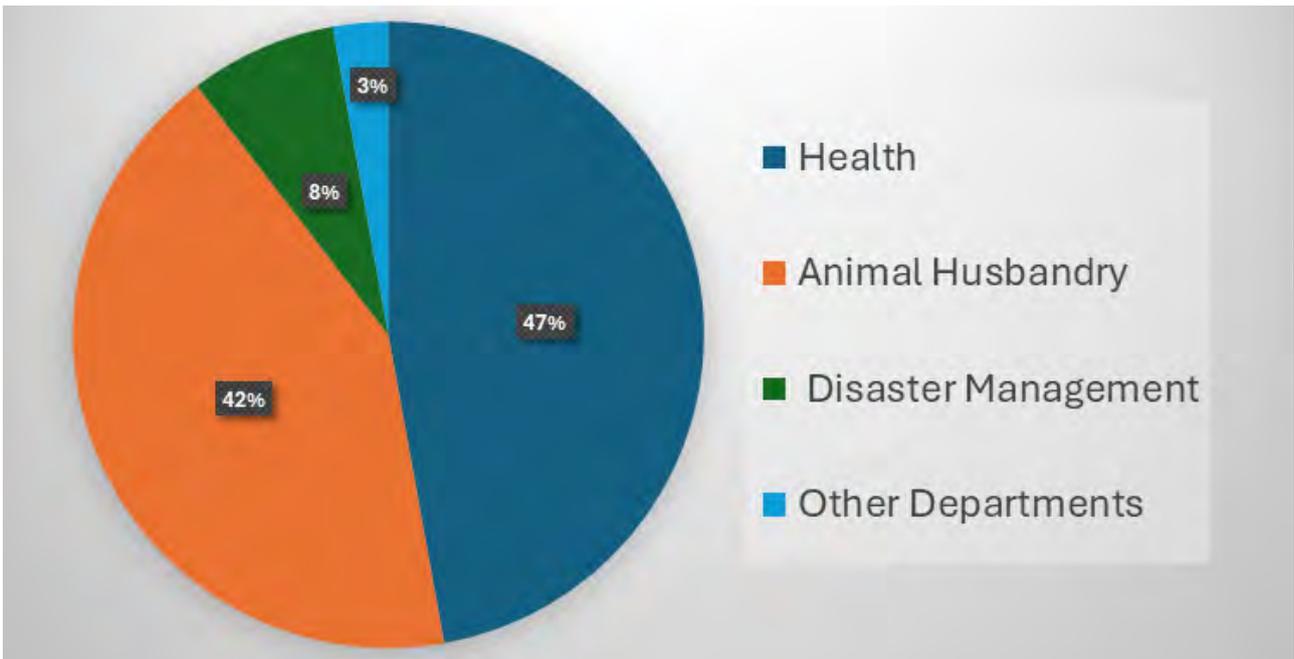


Figure 30: Sector-wise Participants (Mentors + Mentees) in Jharkhand State

Overall: Pre and Post-Course Assessment

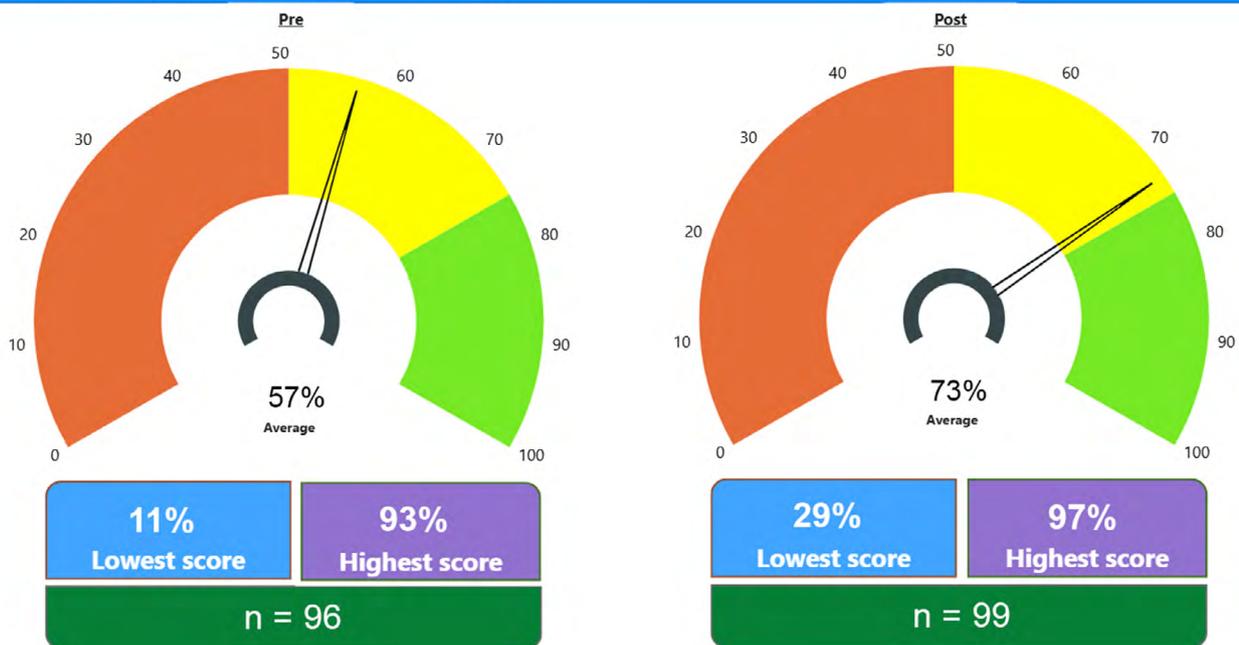


Figure 31: Consolidated pre- and post-assessment scores for all three batches

The combined pre- and post-assessment results from all three training batches in Jharkhand indicate a notable improvement in overall performance. The average score increased from 57% in the pre-training assessment to 73% in the post-training assessment, reflecting a 16% gain. The lowest score also saw a significant rise, improving from 11% in the pre-test to 29% in the post-test, highlighting progress among participants with lower initial scores. Likewise, the highest score increased from 93% in the pre-test to 97% in the post-test, demonstrating enhanced learning outcomes at the top level (Figure 31).

Based on the feedback received from the states, participants, and resource faculty, the following things were observed:

- **Capacity Building:** Strengthened participants' knowledge and skills in disaster and public health emergency management, focusing on Incident Management Systems (IMS) and Incident Response Systems (IRS) for effective crisis response.
- **Multi-Sectoral Coordination:** Enhanced collaboration among health, disaster management, animal husbandry, and other key sectors through hands-on exercises and mentorship, fostering a more integrated response approach.
- **Context-Specific Training:** Customized training addressed Jharkhand's unique hazards, including cyclones, floods, and chemical disasters, equipping participants to manage region-specific challenges effectively.
- **Practical Skill Development:** Role-playing, case studies, and tabletop exercises provided immersive learning experiences, reinforcing the real-world application of emergency response strategies.
- **Sustainable Knowledge Transfer:** Establishing mentor-mentee mechanisms ensures ongoing skill development and fosters continuity in capacity building and knowledge sharing.



14. Best Practices

- **Good Practice: Development and Use of a State-Specific Inject-Based Scenario for Jharkhand Training**

As part of the Tier-III training for the state of Jharkhand, a tailored, inject-based scenario was developed to enhance the relevance and impact of the training. This case study, titled “Managing Dual Crises: Disease of Unknown Aetiology and Earthquake Response – Epidemiological Investigation and Response,” was meticulously designed through multiple rounds of consultation involving officials from the National Centre for Disease Control (NCDC), the National Institute of Disaster Management (NIDM), and CDC-India. Additional expert inputs were also sought from representatives of WHO-SEARO and state-level stakeholders to ensure contextual accuracy and sectoral relevance.

Keeping in view the known prevalence of Anthrax cases in Jharkhand, the decision to develop a case study around a disease of unknown etiology was intentional. It allowed participants to engage with a realistic and context-specific scenario that closely mirrors actual public health challenges faced by the state. By not disclosing the nature of the disease at the outset, the case study pushed participants to apply investigative and epidemiological reasoning in a simulated real-world situation, reflecting the complexities of Anthrax detection and response.

The primary objective was to design a scenario that would actively engage all three key sectors—Health, Animal Husbandry, and Disaster Management—in a collaborative simulation. The case study was structured in such a way that each sector had a significant and defined role, thereby fostering intersectoral coordination and practical understanding of integrated response mechanisms during complex emergencies.

A key feature that made the case study particularly impactful was its problem-solving approach. The scenario presented the participants with a dual emergency—an outbreak of a disease of unknown aetiology alongside a natural disaster (earthquake). The cause of the health emergency was not revealed upfront. Instead, participants were provided with timely “injects” (updates or clues) during the exercises, requiring them to apply their knowledge, analytical skills, and sector-specific expertise to investigate, interpret, and respond to the unfolding situation in real-time.

This innovative approach not only tested the technical PHE and disaster management competencies targeted in PHEDM Tier-III trainees and also encouraged teamwork, communication, and joint decision-making among sectors. The scenario was widely appreciated by participants and state representatives alike for its realism, complexity, and engagement value. It successfully demonstrated the importance of preparedness, coordination, and adaptive problem-solving in managing concurrent public health and disaster events.

- **Orientation on PHEDM Tier-I and Tier-II:**

The training began with a comprehensive orientation on PHEDM Tier-I and Tier-II to provide participants with continuity and clarity on the progression of the programme. This helped align their understanding of the foundational concepts and ensure consistency in knowledge across all three tiers of training. The refresher served as a bridge, reinforcing prior learnings and setting the stage for advanced discussions in Tier-III.

- **Role play included during modules with the support of participants:**

Interactive role plays were strategically integrated into various modules to simulate real-life emergency management scenarios. Participants were actively engaged in portraying roles of key stakeholders, enabling experiential learning, improving their decision-making skills, and fostering better teamwork and communication under simulated public health emergency situations.

- **Inject-based case studies focused on PHEIC:**

The training incorporated inject-based case studies centered on Public Health Emergencies of International Concern (PHEIC), allowing participants to navigate dynamic, time-sensitive situations. These case studies offered a hands-on learning experience, encouraging critical thinking, collaborative problem-solving, and the practical application of concepts under pressure, closely mirroring real-world complexities.

- **DDMP discussion focusing on strengthening public health aspects:**

District Disaster Management Plan (DDMP) sessions emphasized the integration and strengthening of public health components within existing disaster preparedness frameworks. Through structured discussions, participants reviewed actual DDMPs, identified gaps, and proposed strategies to embed robust public health emergency responses, ensuring a more holistic and inclusive district-level planning process.

- **Engagement of mentors as session coordinators and assigning them to minute their respective session:**

Mentors played a pivotal role by serving as session coordinators, managing the flow of discussions and ensuring productive engagement during sessions. Additionally, assigning them the responsibility of documenting session minutes helped in capturing key insights, decisions, and action points, thereby contributing to the training's overall documentation and knowledge management.

- **Assessment of pre-course and post-course assessments to see progress of participants:**

The training utilized structured pre-course and post-course assessments to evaluate the knowledge gain and learning progress of participants. This comparative approach enabled trainers to measure the effectiveness of the training content, identify individual learning curves, and provide data-driven insights into areas that may need reinforcement.

- **Inclusion of Kahoot quiz after each module and awarding three best performers:**

To enhance participant engagement and reinforce learning, Kahoot quizzes were conducted after each module. This gamified approach not only made the sessions interactive and fun but also encouraged active recall and participation. Top performers were acknowledged, fostering a healthy competitive spirit among the group.

- **Daily review meetings of the organizing team: before, during, and at the conclusion of each day for review and planning upcoming sessions:**

Daily review meetings were held by the organizing team at three critical junctures—before the start, during, and at the end of each training day. These meetings facilitated real-time feedback, allowed course correction, and supported the smooth execution of the day’s agenda while planning effectively for upcoming sessions.

- **Recording of inputs for case studies and group work:**

All case studies and group work sessions were meticulously documented, capturing participant discussions, key findings, and actionable insights. This practice ensured that valuable inputs were preserved for future reference, follow-up actions, and for informing the design of subsequent trainings or knowledge-sharing materials.



15. Challenges

- **Logistical Issues:** This occurred mostly because we received the participant list just a few days before the training. Delays in administrative and resource allocation impacted the logistic arrangements.
- **Time Limitations:** There is very limited time for technical sessions as the five-day programme is squeezed into three days (excluding half day mentors sessions).
- **Coordination Across Stakeholders:** Aligning diverse sectors and agencies during training was complex.
- **Technological Familiarity:** Some participants were unfamiliar with advanced tools, such as digital platforms, used in pre-and post-training assessments.



16. Limitation

- **Time Constraints:** The condensed 4-day format limited in-depth discussions on critical topics.
- **Last-minute cancellations:** The deployment of nominated participants for urgent responsibilities led to incomplete participation of district teams. For example, the 'Code of Conduct' for election implemented in different districts in Jharkhand coincided with the second training batch, impacting participation especially from Disaster Management department.
- **Pre-training online courses:** Limited time available for participants to complete pre-training online courses due to last minute nomination.



17. Scope for Improvement

- **Enhanced Planning**

- Encourage state/district authorities to share the list of the participants two weeks before the training.

- **Technical Content**

- Update modules to include relevant recent global/ national case studies.
- Add more interactive sessions focusing on local perspectives.

- **Logistics and Administrative**

- Streamline pre-training preparations.
- Increase the use of digital resources in the flow of nomination details for better planning the accommodation and logistics, daily attendance and coordinating feedback from session coordinators.

- **Sustainability**

- Ensuring the sustainability of training programs in PHEDM is essential for building long-term capacities, fostering resilience, and maintaining readiness for public health emergencies and disaster. A sustainable training model addresses immediate skill gaps and ensures that knowledge and competencies are retained, enhanced, and institutionalised over time.

- **Coordination and collaboration**

- Introduce post-training follow-ups to track participant progress.



18. Conclusion

- Advocacy directed toward national and state-level leadership presents a pivotal opportunity to strengthen public health emergency preparedness and disaster management systems. Engaging with policymakers and key decision-makers can drive awareness, garner support, and secure resources for initiatives that enhance community resilience and public health outcomes.
- Enhance core capacity competencies for preparedness and response at the district level in Jharkhand State.
- The Tier-III PHEDM-PDP has successfully laid a strong foundation for multi-stakeholder processes to enhance coordination for proactive response with one health approach to emergencies and disasters.
- Fostered a multi-stakeholder approach to managing public health emergencies and disasters by engaging key national and state-level agencies, including NIDM, NCDC, and international partners like the U.S. CDC.
- The training emphasised multisectoral, multidisciplinary, and multilayered coordination to manage emergencies effectively. It focused on enhancing state capacity for risk mapping, prevention, preparedness, mitigation, response, and recovery, leveraging IMS/IRS applications, and strengthening the 3S approach—Staff (human resources), Systems (plans, policies, procedures), and Stuff (infrastructure)—in local contexts. Participants were introduced to critical concepts, including THIRA, risk communication, PHEOC infrastructure, and preparedness at Points of Entry (PoE).
- Interactive modules, group exercises, and mentoring mechanisms fostered engagement and skill-building, while the mentorship programme clarified roles, responsibilities, and strategies for effective collaboration. Practical exercises, including DDMP development and IHR-related tabletop exercises, reinforced the application of theoretical knowledge.



19. Way Forward

States should establish a follow-up mechanism to ensure the continuity and effectiveness of PHEDM Tier-III Training. This will help track progress, assess implementation, and reinforce key learnings to strengthen public health emergency and disaster management at the district and community levels.

Mentors and mentees play a crucial role in this process. They should focus on documenting group work and case scenarios, capturing key insights and lessons learned for future reference. Additionally, they must develop district-level plans addressing significant threats and hazards, ensuring preparedness for potential emergencies.

At the community level, mentors and mentees with support and guidance from State should facilitate PHEDM assessments and support developing or enhancing Village Public Health Emergency and Disaster Management Plans. Strengthening these plans will improve local capacities for responding to public health emergencies and disasters.

Furthermore, mentors and mentees will serve as master trainers and facilitators for PHEDM-PDP Tier-I and II training, expanding the programme's reach and ensuring sustained capacity building. To enhance long-term impact, states should explore opportunities to integrate PHEDM-PDP within their systems, institutionalising the programme for sustainable emergency preparedness and response.

20. Annexures

Annexure I: Participant List

List of Participants for Training Programme on Public Health Emergency and Disaster Management (PHEDM), Jharkhand

Sl. No.	District	Name	Designation	Name & Address of Organization/ Institution
Batch-1				
1.	Jamshedpur	Dr Asad	District Epidemiologist, IDSP	DSU, IDSP
2.		Dr Pappu Kumar	Asstt Key Village Officer, Jamshedpur	DAHO, East Singhbhum
3.	Bokaro	Mr Pawan Srivastava	District Epidemiologist, IDSP	DSU, IDSP, BOKARO
4.		Mr Shakti Kumar	DDMO, JSDMA	DC Office, Bokaro
5.		Dr Manoj Kr Mani	DAHO, Bokaro	DAHO, Bokaro
6.		Dr Kumar Anant Sagar	T.V.O. Petarwar	Animal Husbandry
7.		Dr Lalita Kumari	T.V.O. Bahadurpur	Animal Husbandry
8.	Dhanbad	Dr Ritu Raj Agrawal	District Epidemiologist, IDSP	Health, DSU, IDSP
9.		Mr Sanjay Kumar Jha	DDMO	Disaster Management, DC Office, Dhanbad
10.		Dr Alok Kr Sinha	DAHO, Dhanbad	Govt. of Jharkhand
11.	Ramgarh	Dr Satya Prakash	District Epidemiologist, IDSP	DSU, IDSP
12.		Mr Surendra Prasad	Business Analyst	DDMO, Ramgarh
13.		Dr Vinay Kumar	DHO Ramgarh	DAHO, Ramgarh

Sl. No.	District	Name	Designation	Name & Address of Organization/ Institution
14.	Hazaribagh	Dr Zaved	District Epidemiologist, IDSP	DSU, IDSP
15.		Mr Ajay Kumar	DDMO	District Collector, Hazaribag
16.		Dr Newton Tirkey	DAHO	District Animal Husbandry Officer, Hazaribagh
17.	Koderma	Dr Vikash Choudhary	District Epidemiologist, IDSP	DSU, IDSP
18.		Om Prakash Baraia	Exe. Magistrate	DC Office, Koderma
19.		Dr Ram Sarikh Prasad	DAHO	Animal Husbandry Department, Koderma
20.	Deoghar	Dr Manish Shekhar	District Epidemiologist, Deoghar	DSU, IDSP
21.		Mr Rajeev Rajan	DDMO, Deoghar	DDMO, Deoghar
22.	Ranchi	Dr Rajiv Bhushan	District Epidemiologist, IDSP	DSU IDSP
23.		Dr Neeraj Kumar Gupta	JR Research Officer	IAHP, Kanke, Ranchi
24.		Dr Rajesh Kumar	JR Research Officer	IAHP, Kanke, Ranchi
25.		Dr Nupur Koyal	Research Officer	IAHP, Kanke, Ranchi
26.		Dr Kavindra Nath Singh	DAHO, Ranchi	Animal Husbandry
27.				ASO, Ranchi

Sl. No.	District	Name	Designation	Name & Address of Organization/ Institution
Batch-2				
1.	Chatra	Dr Ashutosh Kumar	District Epidemiologist, IDSP	District Surveillance Unit (DSU), IDSP
2.		Dr Alona Sangam	Touring Veterinary Officer	First Class Veterinary Hospital
3.		Dr Anju Kujur	Touring Veterinary Officer	First Class Veterinary Hospital
4.	Dumka	Dr Samiran Mandal	District Epidemiologist, IDSP	District Surveillance Unit (DSU), IDSP
5.		Dr Devesh Kumar Singh	BAHO	Animal Husbandry Department
6.	Garhwa	Dr Santosh Kumar Mishra	District Epidemiologist, IDSP	District Surveillance Unit (DSU), IDSP
7.		Dr Amit Kumar Amit	TVO	Animal Husbandry Department
8.		Dr Bidya Sagar Singh	Animal Husbandry Representative	Animal Husbandry, Jharkhand
9.	Giridih	Dr Ashish Kumar	District Epidemiologist	District Surveillance Unit (DSU), IDSP
10.		Dr Rakesh Kumar	TVO	Animal Husbandry Department
11.		Dr Dilip kr Rajak	Veterinary Surgeon	Animal Husbandry Department
12.		Dr Sanjay Kumar	Medical Officer	CHC, Bagodar, Giridih
13.		Dr Sachin Kumar	Medical Officer I/c	Sadar Block, Giridih
14.		Dr Shashikant Prasad	Medical Officer	Addl. PHC, Harladih Pirtand, Giridih
15.		Dr Niraj Kumar Verma	District Animal Husbandry Officer (DAHO)	Animal Husbandry Department

Sl. No.	District	Name	Designation	Name & Address of Organization/ Institution
16.	West Singhbhum	Mohammad Azmat	District Epidemiologist, IDSP	District Surveillance Unit (DSU), IDSP
17.		Dr Sudhakar S. Munda	District Animal Husbandry Officer	Animal Husbandry Department
18.		Dr Anil Kumar Lugun	TVO	Animal Husbandry Department
19.		Dr Saurav Kumar Singh	TVO	Animal Husbandry Department
20.	Saraikela Kharsawan	Dr Bhupesh Kumar Mahto	District Epidemiologist, IDSP	District Surveillance Unit (DSU), IDSP
21.		Dr Manoj Kr Manjhi	SAHO	Sub-Divisional, AH Official
22.		Dr Sanjeev Kumar	BAHO	Block Animal Husbandry Office, Saraikela
23.		Dr Raj Kumar Ramchandra Gongle	DAHO	District Animal Husbandry Office, Saraikela
24.	Palamu	Dr Anup Kumar Singh	District Epidemiologist, IDSP	District Surveillance Unit (DSU), IDSP
25.		Dr Din Bandhu Gupta	Veterinary Surgeon	Animal Husbandry Department
26.	Pakur	Dr Sanjay Kumar	District Epidemiologist, IDSP	District Surveillance Unit (DSU), IDSP
27.		Dr Smarajit Mondal	Veterinary Surgeon	Animal Husbandry Department

Sl. No.	District	Name	Designation	Name & Address of Organization/ Institution
Batch-3				
1.	Lohardaga	Dr Vinay Kumar	Touring Veterinary Officer (M)	Department of Agri. Animal Husbandry & Co-operative (Animal Husbandry)
2.		Dr Ramesh Orao	DAHO, Lohardaga	Department of Agri. Animal Husbandry Lohardaga
3.		Dr Prashant Chauhan	Distt. Epidemiologist	IDSP, Lohardaga
4.		Dr Dina Nath Singh	DTO	Sadar Hospital Lohardaga
5.	Latehar	Dr Anjali Priya	Distt. Epidemiologist	Sadar Hospital Latehar
6.		Dr Shobhamani Moravdi	Touring Veterinary Officer (M)	First Class Veterinary Hospital Netarhal Latehar
7.		Dr Akhileshwar Prasad	DS	DS, Distt Sadar Hospital, Latehar
8.	Simdega	Dr Adhyayan Sharam	Distt. Epidemiologist	District Surveillance IDSP Simdega
9.		Dr Jhonson Bhengoa	BAHO Jaldaga	Animal Husbandry, Simdega
10.		Dr Arun Kumar Ram	DAHO, Simdega	Animal Husbandry, Simdega
11.	Godda	Dr Manoj Kumar Singh	DAHO, Godda	Distt Animal Husbandry Office, Godda
12.		Dr Mandavi Vallabh Jha	Touring Veterinary Officer (Mobile)	Distt Animal Husbandry Office, Godda
13.		Dr Santosh Kumar	Distt. Epidemiologist	C. S. Office, Godda

Sl. No.	District	Name	Designation	Name & Address of Organization/ Institution
14.	Gumla	Dr Lovelin Shweta xoxo	TVO Bishnupura	First Class Veterinary Dispensary Bishunpura, Gumla
15.		Dr Arun Pratap Singh	DAHO Gumla	Distt Animal Husbandry Office, Gumla
16.		Dr Nagbhushan Prasad	Distt. Epidemiologist	IDSP Cell C. S. Office, Gumla
17.	Jamtara	Dr Ajit Kumar Dubey	Distt. Epidemiologist	C. S. Office, Jamtara
18.		Dr Dilip Kumar Rajak	DAHO Jamtara	DAHO, Jamtara
19.		Dr Mukesh Kumar	TVO Nala	Animal Husbandry, TVO, Nala
20.	Sahebganj	Dr Tausif Ahmad	DDM	Civil Surgeon Office, Sahebganj
21.		Dr Mohan Murmu	Medical Officer	C.S. Office, Sadar Hospital Sahibganj
22.		Dr Umesh Kumar	TVO	TVO, Banjhi, Sahebganj
23.		Dr Jitendera Kr. Singh	S.A.H.O. Sahebganj	D.A.H.O. Office, Sahebganj
24.	Khunti	Dr Bishwmohan Prasad	DDM, IDSP	IDSP, Khunti
25.		Dr Vijay Kishore Rajak	DRCMO	DRCH, Khunti
26.		Dr Abhimanyu Prasad	DAHO, Khunti	Animal Husbandry, Khunti
27.		Dr Lalit Kr. Gagrai	Touring Veterinary Officer, Birbanki, Khunti	First Class Veterinary Hospital, Birbamki, Khunti
28.	Palamu	Sh. Jairam Singh Yadav	DDMO	D.C. Office, Palamu

Annexure II: Mentor List

List of Mentors for Training Programme on Public Health Emergency and Disaster Management (PHEDM), Jharkhand

Sl. No.	Name	Designation	Name & Address of Organization/ Institution
Batch-1			
1.	Dr Shubhashish Sircar	Prof. & Head	S. B. Medical college and Hospital, Hazaribagh
2.	Dr Nikhil Nishant	Asstt Professor, MRMC, Palamu	MRMC, Palamu
3.	Dr Rishabh Kumar Rana	Asstt Professor	SNMCH Dhanbad
4.	Dr Dewesh Kumar	Asstt Professor	RIMS Ranchi
5.	Dr Praveen Karn	State Epidemiologist	SSU, IDSP, RCH, Namkum, Ranchi
6.	Dr Abhijit Vinodrao Boratne	Additional Professor	AIIMS Deoghar
7.	Dr Mrinal Srivastav	Assistant Professor & HOD	Medical College, Dumka
Batch-2			
1.	Dr Nupur Koyal	Research Officer	IAHP Kanke Ranchi
2.	Dr Rajesh Kumar	Junior Research Officer	IAHP Kanke Ranchi
3.	Dr Niraj Kumar Gupta	Junior Research Officer	IAHP Kanke Ranchi
4.	Dr Ansar Ahmad	Assistant Professor	Ranchi Veterinary College, BAU Ranchi
5.	Dr S S Kullu	Assistant Professor cum Junior Scientist	Ranchi Veterinary College, BAU Ranchi
6.	Dr Anit Kujur	Asstt Professor	Dept of PSM, RIMS, Ranchi
7.	Dr Neha Priya	Asstt Professor	Dept of PSM, RIMS, Ranchi

Sl. No.	Name	Designation	Name & Address of Organization/ Institution
8.	Dr Praveen Karn	State Epidemiologist, IDSP	IDSP Jharkhand
9.	Dr Luguram Tuddu	Asstt Professor	Dept of PSM, MGM MC Jamshedpur
Batch-3			
1.	Dr Ratnesh Sinha	Associate Professor	Manipal Tata Medical College, Jamshedpur
2.	Dr Abhinav Parkash Arya	Assistant Professor	AIIMS Deoghar Jharkhand
3.	Dr Neha Priya	Assistant Professor	RIMS Ranchi
4.	Dr Rishabh Kumar Rana	Associate Professor	SNMCH Dhanbad
5.	Dr Praveen Karn	State Epidemiologist	State NHM office, SSU, RCH Namkum Ranchi
6.	Dr Shailendera Kumar Rajak	Assistant Professor cum Junior Scientist	College of Veterinary Science & AH Kanke Ranchi, BAU
7.	Dr Dinesh Kumar	Assistant Professor cum Junior Scientist	College of Veterinary Science & AH Kanke Ranchi, BAU
8.	Dr Nikhil Nishant	Asstt. Prof. MMCH, Palamu	MMCH, Palamu

Annexure III: State Representatives List

Sl. No.	Name	Designation	Name & Address of Organization/ Institution
Batch-1			
1.	Dr Shivanand Kashi	Veterinary Officer	Veterinary Association, GS
2.	Dr P K Singh	SNO, IDSP	SSU, IDSP, Ranchi, Jharkhand
3.	Dr Amarendra Kumar	SRTL-WHO	WHO, Jharkhand
4.	Mr Subir Kumar	State Convenor	IAG, Jharkhand
5.	Mr Subhendra Jha	SPM	IAG, Jharkhand
6.	Dr Archana Kumari	Officer In-charge, SYC	Ayush Directorate, Jharkhand
7.	Arpana Kumari	Yoga Trainer	Ayush Directorate, Jharkhand
8.	Samson Toppo	A.I.O.	Directorate Animal Husbandry, Ranchi
Batch-2			
1.	Dr Vanesh Mathur	Health Officer	UNICEF
2.	Dr Shailendra Kumar Singh	Junior Research Officer (JRO)	Institute of Animal Health and Production (IAHP), Kanke, Ranchi
3.	Dr Prabhat Kr. Pandey	Veterinary Officer	Jh. Co. Sewa Agency
4.	Dr Rajesh Kumar Tiwari	Junior Research Officer	Institute of Animal Health and Production (IAHP), Kanke, Ranchi
5.	Dr Rahul Kapse	Health Specialist	UNICEF
6.	Dr Shivanand Kashi	TVO	Animal Husbandry Department
7.	Mr Arvind Kumar	Under Secretary	Jharkhand State Disaster Management Authority (JSDMA)
8.	Praveen Kr. Singh	DPM	NHM-Health
9.	Jiren	Hospital Manager	NHM

Sl. No.	Name	Designation	Name & Address of Organization/ Institution
Batch-3			
1.	Dr Kumar Sudhanand	SMO, WHO	WHO
2.	Dr Amit Kumar Tirkey	JRO	Deptt. Of Animal Husbandry
3.	Dr Nirmal David	JRO	Deptt. Of Animal Husbandry
4.	Dr Shivanand Kashi	Veterinary Officer	Veterinary Association, GS
5.	Dr Shalini Sundaram	HOD, PSM	RIMS, Ranchi
6.	Dr Mithlesh Kumar	Addl. Prof, PSM	RIMS, Ranchi
7.	Dr Vanesh Mathur	Health officer UNICEF	UNICEF (International)

Annexure IV: Resource Person List

List of Resource Persons for Training Programme on Public Health Emergency and Disaster Management (PHEDM), Jharkhand

Sl. No.	Name of the Resource Person	Designation	Organisation/ Institution	Batch 1	Batch 2	Batch 3
1.	Dr Muzaffar Ahmad	Former Member, NDMA, MHA, Gol	Subject Matter Expert			
2.	Dr Sujeet K Singh	Distinguished Public Health Expert and Former Director of NCDC, MoHFW, Gol	Subject Matter Expert			
3.	Prof Surya Parkash Gupta	Head GMRD, CBRN, Industrial and Cyber DRR Division	NIDM, MHA, Gol			
4.	Dr Pranay Verma	Joint Director	IDSP, NCDC, MoHFW, Gol			
5.	Dr Simmi Tiwari	Joint Director	Centre for One Health, NCDC, MoHFW, Gol			
6.	Dr Shubhangi Kulsange	Joint Director	IDSP, NCDC, MoHFW, Gol			
7.	Dr Navin Verma	Public Health Specialist (EMR)	Dte.GHS, MoHFW, Gol			
8.	Dr Jugal Kishore	Professor and Former Head	VMMC&SJH, New Delhi			
9.	Dr Runa Hatti Gokhale	Associate Director for Science and Programs	CDC-India			
10.	Dr Rajeev Sharma	Public Health Specialist and Lead-EM, DGHP	CDC-India			

Sl. No.	Name of the Resource Person	Designation	Organisation/ Institution	Batch 1	Batch 2	Batch 3
11.	Dr Rajat Garg	Public Health Specialist- EM	CDC-India			
12.	Dr Sujata Arya	Astt. APHO	Airport Health Office, New Delhi			
13.	Dr Tarun Kumar	Sr. CMO (SAG) Nodal Officer	MOHFW, Central Institute of Psychiatry and NCDC, Ranchi			
14.	Dr Sanjay Gupta	Public Health Expert	Subject Matter Expert			
15.	Dr Alka Sharma	Former Joint Director (DM)	DMHS, Govt. of Rajasthan			
16.	Dr Mohd. Zuber	Consultant	CSU-IDSP, NCDC			
17.	Dr Bimlesh Joshi	Assistant Director	Health Directorate, Govt of Uttarakhand			
18.	Dr Alisha Arora	Assistant Professor of Clinical Psychology	Central Institute of Psychiatry, Ranchi			
19.	Dr Kumar Rajan	International Consultant	WHO-SEARO, New Delhi			

Annexure V: Dignitary List

Sl. No.	Name of the Resource Person	Designation	Organisation/ Institution	Batch 1	Batch 2	Batch 3
1.	Shri Ajit Seth, IAS	Former Cabinet Secretary	Government of India			
2.	Shri Abu Imran, IAS	MD	NHM, Jharkhand			
3.	Shri Ajoy Kumar Singh, IAS	Principal Secretary (PS)	DHME&FW, Govt. of Jharkhand			
4.	Dr C K Sahi,	Director In Chief	Health Services, Health Directorate, Jharkhand			
5.	Dr R N Sharma	Deputy Director	Health Directorate, Jharkhand			
6.	Sh Rakesh Kumar	Deputy Secretary	SDMA, Ranchi			
7.	Prof Surya Parkash Gupta	Head GMRD, CBRN, Industrial and Cyber DRR Division	NIDM, MHA, Gol			
8.	Dr Abhishek Anand	Director	IMD, Meteorological Center, Ranchi			
9.	Dr Kamlesh Kumar	STO cum SNO-Disaster Management	Health Services, RCH, Namkum, Ranchi			
10.	Dr Bipin Khalkho	Joint Director	Dept of Animal Husbandry, Jharkhand			
11.	Dr Ravi Shankar Singh	Regional Director	ROHFW, Patna			
12.	Sh. Subodh RR	SDM	RCH, Namkum			

Annexure VI: Organizing Team List

Sl. No.	Name of the Resource Person	Designation	Organisation/ Institution
Batch-1			
1.	Dr Vinita Gupta	Consultant	NCDC, New Delhi
2.	Ms Stanzin Tsela	Young Professional	NIDM, New Delhi
3.	Mr Sharad Malhotra	Director, Admin & Finance	FHI360, New Delhi
4.	Dr Raju Thapa	STO-EM	VHS, New Delhi
5.	Mr Shradhesh Tripathi	TO-LA-EM	VHS, New Delhi
6.	Ms Renu	AA-EM	VHS, New Delhi
Batch-2			
1.	Mr Sharad Malhotra	Director, Admin & Finance	FHI360, New Delhi
2.	Mr Ajay Dogra	STO-EM	VHS, New Delhi
3.	Dr Raju Thapa	STO-EM	VHS, New Delhi
4.	Ms Renu	AA-EM	VHS, New Delhi
Batch-3			
1.	Dr Priyanka Singh	GHSA Liaison Coordinator	FHI360, New Delhi
2.	Ms Stanzin Tsela	Young Professional	NIDM, New Delhi
3.	Dr Raju Thapa	STO-EM	VHS, New Delhi
4.	Dr Harjeet Kaur	TO-EM	VHS, New Delhi
5.	Ms Renu	AE-EM	VHS, New Delhi

Annexure VIIa: Agenda of the Batch-1 Training

Training Programme on

Public Health Emergency and Disaster Management - Professional Development

Programme (PHEDM-PDP) Tier-III

Ranchi, Jharkhand

10th – 13th September 2024

(Batch-1)

Tentative Programme Schedule

Time	Subject	Dignitaries/Resource Person
Day 1: 10th September 2024		
1100-1300 hrs	Preparatory meeting of Resource Person	All faculty and resources person
1300-1400 hrs	Lunch	
1400 - 1410 hrs	Welcome Address	Dr R. N. Sharma, SNO- Disaster Management Cell, Jharkhand
1410 - 1420 hrs	Address	Dr Pranay Verma, JD, IDSP, NCDC, MoHFW, GoI
1420 – 1440 hrs	Overview and Objectives of Session	Dr Rajeev Sharma, PHS, and Lead, Emergency Management, DGHP, CDC-India
1440 – 1530 hrs	Attributes for a Mentor and strategies for effective mentoring	Dr Runa Hatti Gokhale, Associate Director for Science and Programs, CDC-India
1530 - 1545 hrs	Tea Break	

Time	Subject	Dignitaries/Resource Person
1545 – 1630 hrs	Art of Mentoring	Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, GoI
1630 - 1700 hrs	Role of Mentors in PHEDM	Shri. Ajit Seth, IAS (Rt.d), Former Cabinet
1700 – 1755 hrs	Discussion with Mentors, Concluding Remarks and Way Forward	Dr Pranay Verma, JD, IDSP, NCDC, MoHFW, GoI Dr Rajeev Sharma, Public Health Specialist, and Lead- Emergency Preparedness & Response, DGHP, CDC-India
1755 - 1800 hrs	Group Photo	
1800 hrs onwards	End of Mentors session with High Tea	
DAY 2: 11th September 2024, Wednesday		
0900 - 0930 hrs	Registration	IDSP/DM Cell, Jharkhand, NIDM, NCDC, CDC-India, and PHEDM Team
0930 – 1000 hrs	Pre-course Assessment	IDSP/DM Cell, Jharkhand Representative, NIDM, NCDC, CDC, and PHEDM Team
1000 – 1010 hrs	Objectives of the training and Welcome Address	Dr R.N. Sharma, SRCHO/SNODisaster Management Cell, NHM, Jharkhand
1010 – 1020 hrs	Course Overview	NCDC-NIDM-CDC India
1020 – 1030 hrs	Opening Remarks	Dr Pranay Verma, JD, IDSP, NCDC, MoHFW, GoI
1030 – 1040 hrs	Opening Remarks	Dr Runa Hatti Gokhale, Associate Director for Science and Programs, CDC-India

Time	Subject	Dignitaries/Resource Person
1040 - 1050 hrs	Opening Remarks	Prof. Surya Parkash Gupta, Head GMRD CBRN, Industrial and Cyber DRR Division, NIDM, MHA, Gol
1050 - 1100 hrs	Opening Remarks	Shri. Ajit Seth, IAS (Rt.d), Former Cabinet Secretary, Govt of India
1100 – 1115 hrs	Opening Remarks	Dr C.K. Sahi, Director in-Chief, Health Services, Jharkhand, Ranchi
1115 – 1125 hrs	Special Remarks	Sri Abu Imran, IAS, Mission Director, National Health Mission, Jharkhand
1125 – 1140 hrs	Tea Break	
1140 – 1155 hrs	Ground Rules and House-Keeping	Dr Praveen Karn, State Epidemiologist/ PHEDM Team
1155 – 1245 hrs	Overview of current status, challenges, opportunities, and best practices of PHEDM in Jharkhand	Dr Praveen Karn, State Epidemiologist
1245–1330 hrs	Module I: Overview of Public Health Emergency and Disaster Management (PHEDM)	Dr Rajeev Sharma, Public Health Specialist, and Lead- Emergency Preparedness & Response, DGHP, CDC-India
1330 – 1415 hrs	Lunch Break	
1415 - 1500 hrs	Module II: Principles of PHEDM and its Applications	Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, Gol
1500 - 1545 hrs	Module I & II: Activity	IDSP/DM Cell, Jharkhand, NIDM, NCDC, CDC, and PHEDM Team
1545 - 1600 hrs	Tea Break	

Time	Subject	Dignitaries/Resource Person
1600 – 1700 hrs	Module III: Public Health Emergency Operations Centre (PHEOC)	Dr Muzaffar Ahmad, Former Member, National Disaster Management Authority, Govt. of India
1700 – 1715 hrs	Assigning of Group Exercise: (SWOC analysis of PHEM) Allocation of tasks to group	IDSP/DM Cell, Jharkhand, NIDM, NCDC, CDC, and PHEDM Team
1715 – 1730 hrs	Feedback on the Day 2	Group 1
DAY 3: 12th September 2024, Thursday		
0600 - 0700 hrs	Yoga Session	All Participants and Organisers
0900 - 0915 hrs	Recap of the Day 2	Group 3
0915 - 1000 hrs	Presentation of Group Exercise (SWOC analysis of PHEDM)	All Participants
1000 – 1100 hrs	Module IV: Organizational Model for Managing Response	Dr Muzaffar Ahmad, Former Member, National Disaster Management Authority, Govt. of India
1100 - 1115 hrs	Tea Break	
1115– 1300 hrs	Demonstration by NDRF	9 th Battalion NDRF
1300 - 1400 hrs	Lunch Break	
1400 – 1500 hrs	Module III & IV: Activity	IDSP/DM Cell, Jharkhand, NIDM, NCDC, CDC, and PHEDM Team
1500 - 1545 hrs	Module V: International Health Regulations and Roles at Points of Entry	Dr Sujata Arya, ADG, IH, MoHFW, Gol
1545 - 1600 hrs	Tea Break	

Time	Subject	Dignitaries/Resource Person
1600 – 1645 hrs	Module VI: Risk Communication and Community Engagement	Dr Pranay Verma, JD, IDSP, NCDC, MoHFW, Gol
1645 - 1700 hrs	Feedback on the Day 3	Group 2
DAY 4: 13th September 2024, Friday		
0600 - 0700 hrs	Yoga Session	All Participants and Organizers
0900 - 0915 hrs	Recap of the Day 4	Group 3
0915 – 1000 hrs	Module VII: Psychosocial aspects of PHEDM	Dr Alisha Arora, Assistant Professor of Clinical Psychology, Central Institute of Psychiatry, Ranchi
1000 - 1030 hrs	Post-course Assessment	NIDM, NCDC, CDC-India, and PHEDM Team
Working Tea		
1030 - 1100 hrs	Coordinating Medical Response during Emergencies	Dr Navin Verma, PHS, DD (EMR), MoHFW, Gol
1100 - 1230 hrs	Group exercise on IRS	Dr Bimlesh Joshi, Assistant Director, Health Directorate, Govt of Uttarakhand
1230 - 1245 hrs	Participant's Feedback	IDSP/DM Cell, Jharkhand; NIDM; NCDC, CDC-India, and PHEDM Team
1245 – 1300 hrs	Summary and way forward	Dr Rajeev Sharma, Public Health Specialist, and Lead- Emergency Preparedness & Response, DGHP, CDC-India
1300 - 1315 hrs	Certificate Distribution	IDSP Jharkhand, NIDM, NCDC, CDC, and PHEDM Team
1315 hrs onwards	Closure of training followed by Lunch.	

Annexure VIIb: Agenda of the Batch-2 Training

Training Programme on Public Health Emergency and Disaster Management- Professional Development Programme (PHEDM-PDP) Tier-III

(Batch-2)

Date: 22nd – 25th October 2024

Venue: The Chanakya Hotel, Ranchi, Jharkhand

Tentative Programme Schedule

Time	Subject	Dignitaries/Resource Person
DAY 1: 22nd October 2024		
Preparatory meeting of Resource Person		
1000 – 1300 hrs	Preparatory meeting of Resource Person Session details: 1. Self-introduction 2. Brief address: Dr Muzaffar Ahmad, Former Member, NDMA, Gol 3. Presentation of agenda, overview, District Disaster Management Plan (DDMP), allocation of case studies, working groups, and sharing of resource person inputs on DDMP in sessions.	All faculty and resources person

Time	Subject	Dignitaries/Resource Person
1300-1400 hrs	Lunch	
Mentor's workshop		
1400 - 1410 hrs	Registration & Self Introduction	All Mentors and Resource Persons
1410 - 1415 hrs	Welcome Address	Jharkhand Representative
1415 - 1420 hrs	Address	IDSP, NCDC, MoHFW, GoI Representative
1420 – 1430 hrs	Overview and Objectives of Session	Dr Rajeev Sharma, Public Health Specialists and Lead- Emergency Management, DGHP, CDC-India
1430 - 1445 hrs	Disease and Disaster Scenarios in identified districts, including a brief on DDMPs.	IDSP, NCDC, MoHFW, GoI Representative
1445 - 1515 hrs	Art of Mentoring	Dr Jugal Kishore, Director Professor, Department-Community Medicine, VMMC & Safdarjung Hospital
1515 - 1545 hrs	Attributes for a Mentor and strategies for effective mentoring	Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, GoI
1545 - 1600 hrs	Tea Break followed by Group Photo	
1600 - 1645 hrs	Experience sharing from States (where PHEDM Tier-III training has been conducted)	Dr Bimlesh Joshi, Assistant Director, Health Directorate, Govt of Uttarakhand Dr Alka Sharma, Former JD (DM), Govt. of Rajasthan

Time	Subject	Dignitaries/Resource Person
1645 - 1715 hrs	Role of Mentors in PHEDM & Expected Outcome from the Mentorship Programme	Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, GoI
1715 - 1730 hrs	Leadership Guidance	Dr Muzaffar Ahmad, Former Member NDMA; NCDC and NIDM Representatives
1715- 1800 hrs	Concluding Remarks and Way Forward	Dr Rajeev Sharma, Public Health Specialist and Lead- Emergency Management, DGHP, CDC-India
	Identification of Session coordinators and informing Ms. Renu Resource persons for Sessions of DDMP and working groups Back-up support staff for each (share details)	
1800 hrs onwards	End of Mentors session with High Tea	
DAY 2: 23rd October 2024, Wednesday		
0900 - 0930 hrs	Registration	IDSP/DM Cell, Jharkhand, NIDM, NCDC, CDC-India, and PHEDM Team
0930 – 1000 hrs	Pre-course Assessment	IDSP/DM Cell, Jharkhand Representative, NIDM, NCDC, CDC, and PHEDM Team
1000 – 1005 hrs	Ground Rules	Dr Praveen Karn, State Epidemiologist, IDSP Jharkhand
1005 - 1030 hrs	Presentations of development of Plan and Group Work	Dr Rajeev Sharma, Public Health Specialist and Lead- Emergency Management, DGHP, CDC-India

Time	Subject	Dignitaries/Resource Person
1030 – 1110 hrs	Inaugural Address	IDSP/DM Cell, Jharkhand Representative, NIDM, NCDC, CDC
1110 -1120 hrs	Tea Break	
1120 – 1200 hrs	Discussion on available plans in all participating districts (10 minutes each) (<i>In DDMP Template</i>)	All participants and Mentors Resource Faculty
1200–1240 hrs	Group Work and Discussion	
1240 - 1320 hrs	Module I: Overview of Public Health Emergency and Disaster Management (PHEDM)	Dr Rajeev Sharma, Public Health Specialist and Lead- Emergency Management, DGHP, CDC-India
1320 – 1400 hrs	Lunch Break	
1400 - 1440 hrs	Module II: Principles of PHEDM and its Applications	Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, GoI
1440 – 1545 hrs	Case Study: Group Exercise Discussion	By Participants
1545 – 1600 hrs	Tea Break	
1600 – 1630 hrs	Coordinating Medical Response during Emergencies	Dr Navin Verma, Deputy Director (EMR), Dte.GHS, MoHFW, GoI
1630 – 1710 hrs	Module III: Public Health Emergency Operations Centre (PHEOC)	Dr Muzaffar Ahmad, Former Member, National Disaster Management Authority, Govt. of India

Time	Subject	Dignitaries/Resource Person
1710 – 1725 hrs	Assigning of Group Exercise: (Case Studies of PHEM) Allocation of tasks to group	IDSP/DM Cell, Jharkhand, NIDM, NCDC, CDC, and PHEDM Team
1730 – 1745 hrs	Feedback on the Day 2	Group 1 and 3
DAY 3: 24th October 2024, Thursday		
0600 - 0700 hrs	Yoga Session	All Participants and Organizers
0900 - 0915 hrs	Recap of the Day 2	By participants
0915 - 1000 hrs	Group discussion on Case scenarios	All Participants and Resource persons
1000 - 1045 hrs	Module IV: Organizational Model for Managing Response	Dr Alka Sharma, Former JD, DM, Govt. of Rajasthan
1045 - 1100 hrs	Tea Break	
1100 - 1230 hrs	Group exercise on IRS	NIDM, NCDC, CDC-India, and PHEDM Team
1230 - 1315 hrs	Module V: International Health Regulations and Roles at Points of Entry	Dr Sujeet K Singh, Distinguished Public Health Expert and Former Director of NCDC, MoHFW, GoI
1315 - 1400 hrs	Lunch Break	
1400 - 1530 hrs	Demonstration by NDRF	9 th Battalion NDRF
1530 - 1545 hrs	Tea Break	

Time	Subject	Dignitaries/Resource Person
1545 - 1630 hrs	Module VI: Risk Communication and Community Engagement	Dr Sanjay Gupta, Distinguished Public Health Expert and Former HoD Epidemiology, NIHFW
1645 – 1730 hrs	Group presentations on DDMP	All participants
1730 – 1745 hrs	Feedback on the Day 3	All Participants
DAY 4: 25th October 2024, Friday		
0600 - 0700 hrs	Yoga Session	All Participants and Organizers
0900 - 0915 hrs	Recap of the Day 4	Group 2 and 4
0915 – 1015 hrs	Module VII: Psychosocial aspects of PHEDM	Ms. Alisha Arora, Asst. Professor, Clinical Psychology, CIP, Ranchi
1015 – 1045 hrs	Post-course Assessment	NIDM, NCDC, CDC-India, and PHEDM Team
1045 – 1100 hrs	Tea Break	
1100 - 1145 hrs	PHEM Capacity Building	Dr K. Rajan, WHO SEARO
1145 – 1200 hrs	Participant's Feedback	IDSP/DM Cell, Jharkhand; NIDM; NCDC, CDC-India, and PHEDM Team
1200 - 1230 hrs	Summary and Way Forward	NIDM, NCDC, CDC-India, and PHEDM Team
1230 – 1300 hrs	Certificate Distribution	IDSP Jharkhand, NIDM, NCDC, CDC, and PHEDM Team
1300 hrs onwards	Closure of training followed by Lunch.	

Annexure VIIc: Agenda of the Batch-3 Training

Agenda of Training Programme on Public Health Emergency and Disaster Management-Professional Development Programme (PHEDM-PDP) Tier-III in Jharkhand

(Batch-3)

Date: 15th – 18th January 2025

Venue: Ranchi, Jharkhand

Tentative Programme Schedule

Time	Subject	Dignitaries/Resource Person
DAY 1: 22nd October 2024		
1000 – 1300 hrs	Preparatory meeting of Resource Person Session details: 1. Self-introduction 2. Presentation of agenda, overview, District Disaster Management Plan (DDMP), allocation of case studies, working groups, and sharing of resource person inputs on DDMP in sessions.	All faculty and resources person

Time	Subject	Dignitaries/Resource Person
1300-1400 hrs	Lunch	
1400 - 1410 hrs	Welcome Address	Dr Praveen Karn, State Epidemiologist/ PHEDM Team
1410 – 1445 hrs	Overview and Objectives of Session	Dr Rajat Garg, PHS, DGHP, CDC-India
1445 – 1530 hrs	Art of Mentoring	Dr Sujeet K Singh, Public Health Expert, Former Director NCDC, MoHFW, GoI
1530 - 1545 hrs	Tea Break	
1545 – 1630 hrs	Attributes for a Mentor and strategies for effective mentoring	Dr Rajat Garg, PHS, DGHP, CDC-India
1630 - 1730 hrs	Experiencing Sharing from Field: Mentors and Facilitator Perspective	Dr Rajat Garg, PHS, DGHP, CDC-India Dr Sujeet K Singh, Public Health Expert, Former Director NCDC, MoHFW, GoI
1730 – 1750 hrs	Concluding Remarks and Way Forward	IDSP, NCDC, MoHFW, GoI Representative
1750 - 1800 hrs	Group Photo	
1800 hrs onwards	End of Mentor session with Tea	
DAY 2: 16th January 2025		
0900 - 0930 hrs	Registration	IDSP/DM Cell, Jharkhand, NIDM, NCDC, CDC-India, and PHEDM Team

Time	Subject	Dignitaries/Resource Person
0930 – 1000 hrs	Pre-course Assessment	IDSP/DM Cell, Jharkhand Representative, NIDM, NCDC, CDC, and PHEDM Team
1000 – 1110 hrs	Inaugural Session	
	<ul style="list-style-type: none"> • Dr Praveen Kumar Karn, Health Services, Jharkhand • Dr Kamlesh Kumar, State Nodal Officer, Disaster Management, Health Services, Jharkhand • Dr Ravishanker Singh, Regional Director, RoHFW, Patna • Dr Runa Hatti Gokhale, Associate Director for Science and Programmes, DGHP, CDC-India • Dr Shubhangi Kulsange, Joint Director, IDSP, NCDC, MoHFW, Government of India • Prof. Surya Parkash Gupta, Head, CBRN, Industrial and Cyber DRR Division, NIDM, MHA (virtually joined) 	
1110 – 1120 hrs	Tea Break	
1120 – 1130 hrs	Course Overview	Dr Shubhangi Kulsange, JD, IDSP, NCDC, MoHFW, Gol
1130 – 1140 hrs	Ground Rules and House-Keeping	Dr Praveen Karn, State Epidemiologist/ Dr Raju Thapa
1140 - 1225 hrs	Module I: Overview of Public Health Emergency and Disaster Management (PHEDM)	Dr Shubhangi Kulsange, JD, IDSP, MoHFW, Gol Dr Rajat Garg, PHS, DGHP, CDC-India
1225 - 1310 hrs	Module II: Principles of PHEDM and its Applications	Dr Sujeet K Singh, Public Health Expert, Former Director NCDC, MoHFW, Gol

Time	Subject	Dignitaries/Resource Person
1310 – 1400 hrs	Lunch Break	
1400 – 1545 hrs	Group-wise Discussion on District Disaster Management Plan (DDMP)	All participants and Mentors (Facilitated by resource persons)
1545 – 1600 hrs	Tea Break	
DAY 3: 17th January 2025		
0900 - 0915 hrs	Recap of the Day 2	By participants
0915 - 1015 hrs	Module VI: Psychosocial aspects of PHEDM	Dr Alisha Arora, Assistant Professor, Central Institute of Psychiatry, Ranchi
1015 – 1100 hrs	Module III: Public Health Emergency Operations Centre (PHEOC)	Dr Rajat Garg, PHS, DGHP, CDC-India
1100 – 1115 hrs	Tea Break	
1115 – 1215 hrs	Module IV: Organizational Model for Managing Response	Organisational Structure: Prof. Surya Parkash Gupta, Head GMRD, CBRN, Industrial and Cyber DRR NIDM, MHA, Gol
		Operational Aspects: Dr Muzaffar Ahmad, Former Member, NDMA, Govt. of India
1215 – 1315 hrs	Group-wise Discussion on District Disaster Management Plan (DDMP)	All participants and Mentors (Facilitated by resource persons)

Time	Subject	Dignitaries/Resource Person
1315 - 1400 hrs	Lunch Break	
1400 – 1415 hrs	NDRF Presentation	9 th Battalion NDRF
1415 -1515 hrs	NDRF Demonstration	
1515 – 1615 hrs	One Health Approach	Dr Simmi Tiwari, JD & HoD, One Health, NCDC, MoHFW, GoI
1615 – 1625 hrs	Tea Break	
1625 – 1725 hrs	Presentation of Group Exercise (scenario-based case studies)	All Groups (Facilitated by resource persons)
1725 – 1730 hrs	Feedback on the Day 3	By selected participants
DAY 4: 18th January 2025		
0900 - 0905 hrs	Recap of the Day 4	Selected Group of participants
0905 -0945 hrs	Presentation on DDMP group work	All Groups (Facilitated by resource persons)
0945 - 1005 hrs	Community-Based Public Health Emergency and Disaster Management	NCDC-NIDM-CDC India
1005 – 1030 hrs	Post-course Assessment	NIDM, NCDC, CDC-India, and PHEDM Team
1030 – 1040 hrs	Tea Break	

Time	Subject	Dignitaries/Resource Person
1040 – 1120 hrs	Group Exercise Managing Dual Crises: Disease of Unknown Etiology and Earthquake Response – Epidemiological Investigation and Response	Dr Sujeet K Singh, Public Health Expert, Former Director NCDC, MoHFW, GoI
1120 – 1300 hrs	Group exercise on IRS	Dr Bimlesh Joshi, Assistant Director, Govt. of Uttarakhand
1300 – 1310 hrs	Mentors and Participants Feedback	IDSP/DM Cell, Jharkhand; NIDM; NCDC, CDC-India, and PHEDM Team
1310 – 1330 hrs	Summary and way forward	NIDM, NCDC, CDC-India, and PHEDM Team
1330 - 1340 hrs	Certificate Distribution	IDSP Jharkhand, NIDM, NCDC, CDC, and PHEDM Team
1340 hrs onwards	Closure of training followed by Lunch.	

Annexure VIII: Detail report on Case scenario prepared by participants

Participants from Group 4 made a detailed report on the case scenario presented to them on “Thunderstorm and Lightning in Kaimur District, Bihar”. The report is as follows:

A. Case Study: Thunderstorm and Lightning in Kaimur District, Bihar

Date: Friday, 11 April 2025

Location: Kaimur District, Bihar, India

On 11 April 2025, Kaimur district in Bihar experienced a severe thunderstorm accompanied by intense lightning, heavy rainfall, and strong winds. The storm resulted in three fatalities and several injuries, primarily affecting rural areas where many residents were engaged in agricultural activities. The sudden onset of the storm caught many farmers in open fields, increasing their vulnerability to lightning strikes.

The storm caused significant damage to infrastructure, including the uprooting of trees, destruction of homes, and disruption of power lines, leading to prolonged electricity outages in several villages. The district hospital and local health centers reported an influx of patients suffering from burns and trauma related to lightning strikes.

Bihar, particularly its southwestern districts like Kaimur, Rohtas, Aurangabad, and Gaya, has been identified as highly vulnerable to lightning incidents. Studies indicate that this region experiences a higher concentration of lightning strikes due to climatic and geographical factors. In recent years, the state has recorded an average of over 250 lightning-related deaths annually, with a noticeable increase in fatalities during the pre-monsoon season. In response to the incident, the Bihar State Disaster Management Authority (BSDMA) has been coordinating relief efforts, including the provision of medical assistance, assessment of damages, and dissemination of safety information. However, challenges persist due to the remoteness of affected areas and limited resources.

Risk Assessment

- **Specific Hazards:**

- **High Winds:** Sustained winds exceeding 50 km/h, with gusts potentially exceeding 80 km/h, capable of causing damage to structures, trees, and power lines.
- **Flash Floods:** Intense rainfall exceeding 50mm/hour, leading to rapid inundation of low-lying areas, roads, and drainage systems. This is exacerbated in areas with poor drainage or recent deforestation.
- **Landslides:** Heavy rainfall saturating soil on steep slopes, leading to potential

landslides, particularly in areas with unstable geology or previous landslide activity.

- **Direct Lightning Strikes:** Direct strikes to individuals, structures, and electrical infrastructure, causing injuries, fatalities, fires, and power outages.
- **Hail:** Large hailstones (diameter > 2cm) capable of causing damage to crops, vehicles, and property.

- **Vulnerability Analysis:**

- **Vulnerable Populations:**

- Residents in informal settlements and poorly constructed housing.
- People living in low-lying areas prone to flooding.
- Outdoor workers (e.g., farmers, construction workers, utility workers).
- Tourists and visitors unfamiliar with local weather patterns and warning systems.
- Elderly, disabled, and individuals with pre-existing medical conditions.
- Children, especially those attending outdoor schools or activities.

- **Vulnerable Infrastructure:**

- Overhead power lines and distribution networks.
- Communication towers and networks.
- Bridges and roads in low-lying areas or near rivers.
- Schools, hospitals, and designated emergency shelters without lightning protection.
- Water treatment and supply systems susceptible to contamination from flooding.

- **Vulnerable Critical Facilities:**

- Hospitals
- Schools
- Shelters

B. Response Strategy (Based on IMS Principles)

Activity	Timeline (Hours/ Days)	Responsible Authority	Support Entities
Emergency Plan Activation	Immediate (0-1 hour)	District Disaster Management Officer (DDMO)	Local Administration, Emergency Response Teams, Police
Incident Command Post (ICP) Establishment	Within 1 hour	DDMO, Incident Commander (IC)	Fire Services, Police, Local Government, Communication Officer
Search and Rescue Operations	Commence immediately	SAR Teams, SAR Officer	Fire & Rescue, Civil Defense, NGOs, Community Volunteers, Medical Teams
Medical Assistance and Triage	Concurrent with SAR	Chief Medical Officer (CMO), Medical Teams	Local Hospitals, Ambulance Services, Red Cross, Private Clinics
Shelter and Relief	Within 6 hours (Day 1)	Relief Officer	NGOs, Community Groups, Red Cross, Faith-Based Organizations, Local Businesses
Infrastructure Restoration	Within 24 hours (Day 1)	Power & Road Authorities	Public Works, Utility Companies (Electricity, Water, Telecom), Private Contractors
Public Information & Communication	Ongoing	Public Information Officer (PIO)	Local Media (Radio, TV, Newspapers), Social Media Platforms, Government Websites, Community Leaders, SMS Alert System, Sirens
Damage Assessment	Within 48 hours (Day 2)	Assessment Teams, DDMO	Engineering Experts, Insurance Agencies, Local Government Representatives, Drone Operators (if available), Satellite Imagery Analysis Team (if available)
Evacuation	As needed	Local Police and DDMO	Local government, NGOs

Existing Plan for Lightning and Thunderstorm Disasters: Our organization has a Disaster Response Plan (DRP) that includes specific protocols for weather-related disasters, including thunderstorms and lightning strikes. This plan includes coordination with local disaster management authorities, emergency medical teams, and community volunteers.

Activation: The storm in Latehar will activate our response team, which will consist of medical professionals, disaster response specialists, and communication officers. A rapid assessment team will be sent immediately to evaluate the damage and prioritize relief efforts.

C. Specific Measures

• Medical Response:

- Deployment of emergency medical teams (with specialized training in trauma and lightning injuries) to affected areas within 1 hour (Golden Hour principle).
- Establishment of temporary medical camps with triage capabilities, basic life support, and stabilization resources within 2 hours.
- Coordination with hospitals for referral cases, ensuring bed availability and specialized care (burn units, intensive care) within 4 hours.
- Pre-positioning of medical supplies (including burn kits, IV fluids, and oxygen) at strategic locations.
- Mental health support teams deployed within 24 hours.

• Shelter and Relief:

- Activation of *pre-identified* designated shelters (schools, community centers, religious buildings) with adequate capacity and accessibility within 2 hours. Shelters must have lightning protection systems.
- Provision of food (ready-to-eat meals), clean drinking water (minimum 3 liters/person/day), sanitation facilities, blankets, and basic hygiene kits within 4 hours.
- Collaboration with NGOs and community groups for distribution of relief materials, ensuring equitable access and addressing the needs of vulnerable groups within 12 hours.
- Registration and tracking of displaced individuals to facilitate family reunification and prevent trafficking.
- Establishment of child-friendly spaces within shelters.

- **Infrastructure and Utility Restoration:**

- Priority 1: Restoration of power to hospitals, communication centers, and emergency shelters within 6 hours. Backup generators must be available and tested regularly.
- Priority 2: Removal of fallen trees, debris, and repair of damaged roads to facilitate access for emergency services and relief efforts within 12 hours.
- Priority 3: Restoration of power and communication services to the general public within 24-48 hours.
- Coordination with electricity, telecommunication, and water departments for rapid service restoration, utilizing pre-arranged MOUs.
- Assessment and repair of damaged water and sanitation infrastructure to prevent the spread of waterborne diseases.

- **Public Communication & Awareness:**

- Early Warning System: Utilize a multi-channel early warning system, including weatherradar, lightning detection networks, SMS alerts (with opt-in registration), sirens in high-risk areas, radio and TV broadcasts, and mobile app notifications. Provide warnings with a minimum 30-60 minute lead time whenever possible. Define specific thresholds: winds >50km/h, rainfall >50mm/hr, high lightning strike density.
- Regular updates through all available communication channels, providing accurate and timely information on the situation, safety measures, and relief efforts, starting immediately and continuing every 2 hours during the initial response.
- Designated spokespersons (PIO and technical experts) to communicate with the media, ensuring consistent and accurate messaging.
- Community awareness campaigns on thunderstorm and lightning safety (e.g., "When thunder roars, go indoors"), conducted regularly (at least quarterly) and targeting vulnerable populations.
- Public helplines (with multiple lines and trained operators) for emergency assistance, information, and reporting, activated within 1 hour.
- Social media monitoring to identify and counter misinformation and to gather real-time information from affected areas.
- Backup communication systems: satellite phones and amateur radio operators, in case of primary communication network failure.

- **Special Assistance for Vulnerable Groups:**

- Identification and registration of vulnerable individuals (elderly, disabled, pregnant women, children, those with chronic illnesses) before disasters, through community outreach programs and collaboration with local organizations.
- Priority evacuation and sheltering of vulnerable individuals.
- Ensuring shelters have accessibility provisions (ramps, accessible toilets) and specialized supplies (e.g., diapers, medications).
- Provision of psychosocial support and counseling services for affected individuals, particularly children and those who have experienced trauma.
- Targeted assistance for pregnant women and lactating mothers.

- **Evacuation Plan**

- Identify high-risk zones for potential evacuation (flood-prone areas, landslide-prone areas).
- Establish clear evacuation routes and designated assembly points.
- Conduct regular evacuation drills (at least annually) involving the community.
- Provide transportation assistance for those unable to evacuate themselves.

Establish communication protocols for evacuation

D. Preparedness and Mitigation Strategies

Preparedness Activity	Frequency (Days/Months)	Responsible Entity	Support Agencies
Early Warning System Implementation & Maintenance	Continuous	Meteorological Department	Local Government, Media (Radio, TV, Online), Telecom Companies (SMS alerts), Community Leaders, NGOs
Public Awareness Campaigns	Every 30 days	Disaster Management Authorities	Schools, Community Leaders, NGOs, Religious Organizations, Media, Healthcare Providers

Preparedness Activity	Frequency (Days/Months)	Responsible Entity	Support Agencies
Mock Drills and Training	Every 90 days	Fire & Rescue, SAR Teams, DDMO	Schools, Offices, NGOs, Hospitals, Community Volunteers, Police, Medical Teams
Inventory of Emergency Supplies	Every 180 days	DDMO, Relief Agencies	Warehouse & Logistics Teams, NGOs, Local Businesses (suppliers), Transportation Companies
Coordination with Utility Providers	Continuous	Infrastructure Authorities (Power, Water)	Utility Companies, Local Government, DDMO
Training for Responders	Every 90 days	DDMO, Training Institutions	Fire & Rescue, SAR Teams, Medical Teams, NGOs, Community Volunteers
Shelter Inspection and Maintenance	Every 180 days	DDMO, Local Government	Public Works Department, Engineering Experts
Review and Update of Disaster Plan	Every 180 Days	DDMO	All support agencies listed

E. Recovery & Rehabilitation Measures

- **Long-term Infrastructure Reconstruction:** Rebuilding of damaged infrastructure (roads, bridges, power lines, communication networks) within 3-6 months, adhering to “Build Back Better” principles (using stronger materials, improved designs, and resilient technologies).
- **Psychosocial Support:** Provision of long-term psychological counseling services for affected communities, including individual and group therapy, and training for community health workers to provide basic psychosocial support (within 7-30 days and ongoing).
- **Financial Aid and Insurance:** Facilitating access to government financial aid and insurance claims for victims, providing assistance with documentation and application processes (within 30-90 days).
- **Livelihood Support:** Implementing programs to support the recovery of livelihoods, including microloans, skills training, and job placement assistance (within 60-180 days).

- **Environmental Rehabilitation:** Addressing environmental damage caused by the disaster, such as debris removal, soil stabilization, and reforestation (within 90-365 days).
- **Plan Review and Update:** Conduct a thorough review and update of the disaster response plan based on incident reports, after-action reviews, and lessons learned within 90 days of each major event.

F. Funding and Budget

- **Pre-Disaster Budget:** An annual budget of [XXXX INR] is allocated for preparedness activities, including training, equipment maintenance, public awareness campaigns, and early warning system operation.
- **Emergency Fund:** A dedicated emergency fund of [XXXXX INR] is established and maintained to provide immediate financial resources for response and relief operations.
- **Insurance Coverage:** The government will actively promote and encourage residents and businesses to obtain appropriate insurance coverage for property damage and business interruption caused by thunderstorms and lightning.
- **Government Funding Mechanisms:** Procedures are in place to access state and national disaster relief funds, with designated personnel responsible for preparing and submitting applications.

G. Legal and Regulatory Framework

- **Relevant Laws:** This plan operates within the framework of the Disaster Management Act 2005 and relevant local ordinances related to emergency management, building codes, and environmental protection.
- **Emergency Powers:** The DDMO is authorized to exercise emergency powers as defined in the [NDMA 2005], including the authority to declare a state of emergency, issue evacuation orders, requisition resources, and coordinate response efforts.
- **Building Codes:** Strict enforcement of building codes, particularly those related to wind resistance, lightning protection, and drainage, is essential to minimize damage from thunderstorms and lightning. Regular inspections and penalties for non-compliance will be implemented.

This Comprehensive Disaster Management Plan provides a robust framework for managing the risks associated with thunderstorms and lightning. Continuous improvement, regular training, and strong collaboration among all stakeholders are crucial for its effective implementation. The plan will be reviewed and updated regularly to reflect changing conditions, lessons learned, and best practices.

Specific to the question and Latehar situation (as per given case study)

Response to Case Scenario: Thunderstorm and Lightning Disaster in Latehar, Jharkhand

1. **Organizational Response** Our organization will respond based on the pre-established Comprehensive Disaster Management Plan for Thunderstorm and Lightning. The response will include immediate relief, medical assistance, infrastructure restoration, community awareness, and long-term resilience-building initiatives.
2. **Existing Plan for Thunderstorm and Lightning Disasters** Yes, there is an existing plan which follows the Incident Management System (IMS) principles, outlining steps such as emergency activation, medical assistance, public communication, and infrastructure restoration.

Immediate Measures for Medical Assistance

- Deploy emergency medical teams to Latehar district hospital and rural health centers within 6 hours.
- Set up temporary medical camps in affected areas within 12 hours to provide first aid and triage services.
- Coordinate with ambulances and air medical services for severe burn cases requiring advanced care.
- Ensure medical stock availability, including burn ointments, pain relievers, IV fluids, and antibiotics.
- Train local healthcare workers in lightning-related injuries such as electrical burns and cardiac arrest management.

Raising Awareness Among Farmers and Local Population

- Conduct community awareness drives in villages within 7 days on lightning safety measures (e.g., avoiding open fields, seeking proper shelter).
- Use radio, social media, and local newspapers to disseminate lightning safety messages.
- Distribute illustrated leaflets and posters in schools, farmer groups, and public places.
- Train farmers in using mobile alerts from meteorological departments for real-time weather updates.

Resources Available for Affected Communities

Resource	Availability	Responsible Authority
Emergency Shelters	10+ community halls	Local Administration
First Aid Kits	Stocked at health centers	Health Department
Food & Water Supply	Available via local NGOs	Relief Coordination Teams
Power Generators	Limited backup available	Electricity Board
Psychological Support	Available via helplines & counselling	Social Welfare Dept.

Quick Restoration of Power in Rural Areas

- Deploy emergency electrical repair teams within 24 hours to assess damage.
- Prioritize hospitals and communication networks for power restoration within 12 hours.
- Mobilize portable generators for essential service areas while main grids are restored.
- Coordinate with state power companies to fast-track infrastructure repairs.

Role of Community Organizations and NGOs

- Self-help groups can distribute relief materials like food, water, and blankets.
- Local NGOs can support medical assistance by providing volunteers and mobile health clinics.
- Community leaders can coordinate relief distribution to ensure equitable access.
- Women-led self-help groups can provide psychological support to affected families.

Clearing Roads for Emergency Response

- Deploy Public Works Department teams with tree-cutting equipment within 12 hours.
- Use local volunteers and disaster response teams to clear debris.
- Ensure rapid assessment and repair of damaged roads for ambulances and rescue vehicles.
- Engage private contractors if needed for faster clearance.

Protecting Vulnerable Groups

- Elderly and disabled individuals prioritized for evacuation to safe shelters within 6 hours.
- Children accommodated in child-friendly spaces with adequate supervision and care.
- Pregnant women and individuals with medical conditions provided access to immediate healthcare services.
- Psychosocial support offered to help trauma-affected individuals recover.

Long-term Resilience Initiatives

- Install lightning rods in schools, hospitals, and community buildings to reduce risk.
- Develop storm shelters in high-risk villages to provide safe spaces during storms.
- Implement early warning systems with mobile alerts and sirens.
- Strengthen power grid infrastructure by using underground cabling in vulnerable areas.
- Integrate disaster resilience education in school curriculums.

Collaboration with Meteorological Department for Timely Warnings

- Set up real-time weather alert systems in coordination with IMD (Indian Meteorological Department).
- Train local authorities in using advanced forecasting tools.
- Develop a community-level siren alert system for warnings at least 30 minutes before storm arrival.

Lessons Learned and Future Improvements

- Improve emergency response coordination by conducting regular mock drills.
- Enhance inter-agency collaboration between disaster management, health, and power sectors.
- Expand training programs for healthcare workers in handling lightning injuries.
- Introduce insurance schemes for farmers affected by lightning-related losses.

- Establish permanent disaster relief warehouses in remote districts for quick mobilization.

Conclusion This comprehensive approach ensures a timely, effective, and sustainable response to thunderstorm and lightning disasters in Jharkhand, reducing casualties and improving resilience for future incidents.

Annexure IX: Glimpses of Trainings

Batch-1



Preparatory meeting of resource persons



State-level dignitaries in the Inaugural Session



Group Photo of Batch-1



IRS Exercise



Certificate distribution after training



Kahoot Quiz Winners



Stretching in between training session

Batch-2



Glimpse of Mentors sessions



State-level dignitaries in the Inaugural Session



NDRF Demonstration Session



Group Photograph



Group Discussion and Presentation



Winner of Kahoot Quiz



Certificate distribution to participants

Batch-3



Mentor's Workshop



Glimpse of Inaugural Session



Group Photo



Table top exercise on case scenarios



Group exercise on IRS based on case scenario



Certificate Distribution

21. Media Coverage



Source: Dainik Bharat 24 (date: 25 October 2024)

<https://dainikbharat24.com/2024/10/prepare-health-team-till-community-level-for-disaster-management-abu-imran/>



Source: Ranchi Aspass (date: 25 October 2024)

किया। इसमें प्राफेसर आर छात्रा न कश् फताब खराया।

आपदा प्रबंधन के लिए तैयार करें टीम : अबु

रांची। राष्ट्रीय स्वास्थ्य मिशन, झारखंड के अभियान निदेशक अबु इमरान ने कहा है कि कोविड जैसी वैश्विक महामारी में की गई त्वरित कार्रवाई आपदा प्रबंधन का बेहतर उदाहरण है। आपदा प्रबंधन की रणनीतियां इससे सीखने की जरूरत हैं। अभियान निदेशक गुरुवार को रांची के एक होटल में स्वास्थ्य विभाग के साथ अन्य विभागों के लिए आपदा प्रबंधन पर आयोजित चार दिवसीय प्रशिक्षण कार्यक्रम में बतौर मुख्य अतिथि बोल रहे थे।



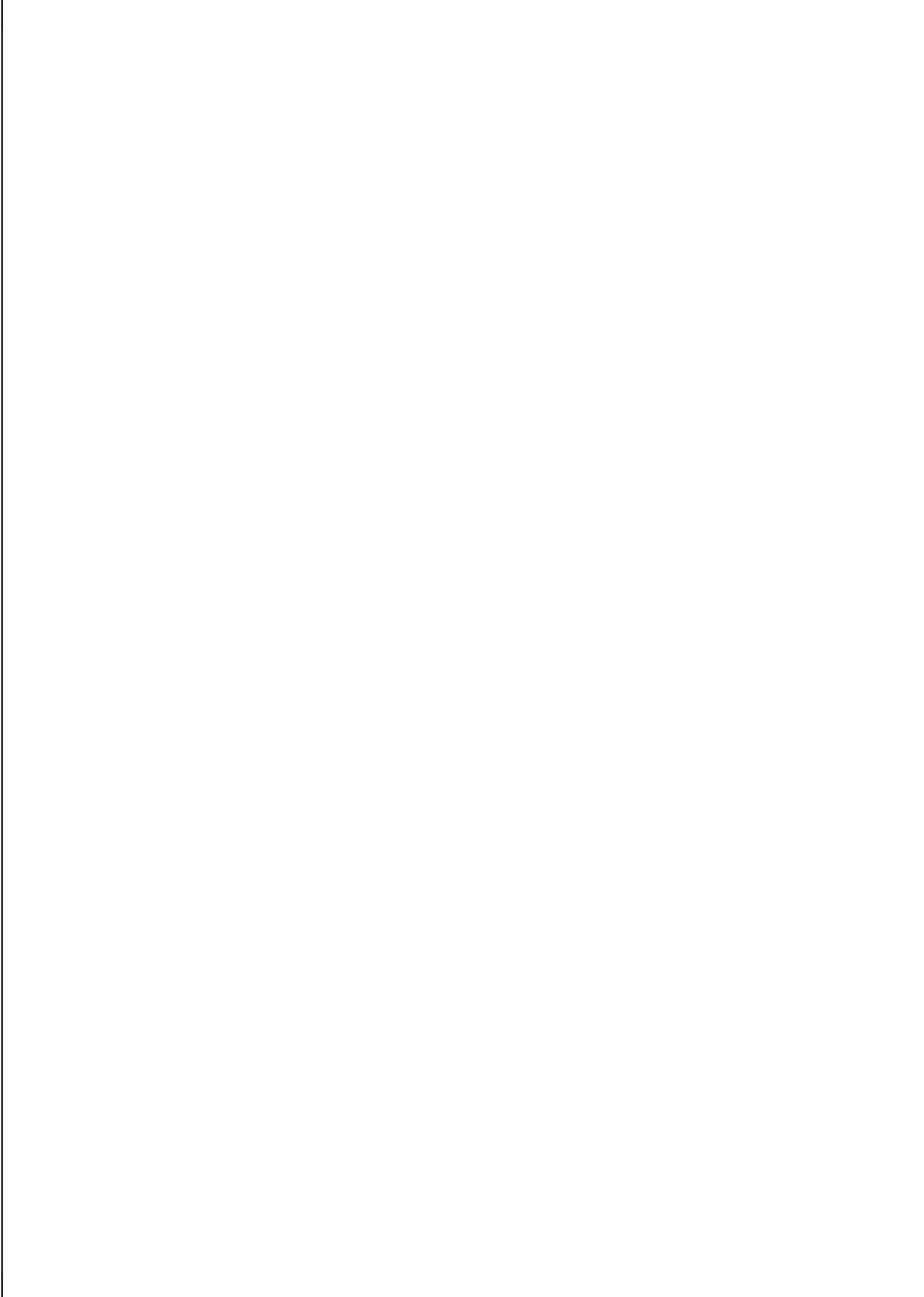


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Parkash S., et al., (2022b). Training Module on Public Health Emergency and Disaster Management- Professional Development Programme (PHEDM-PDP)-Tier II – Participant's Guide. National Institute of Disaster Management, Delhi. https://nidm.gov.in/PDF/Modules/Book_Participating.pdf



Batch 3



Batch 2



Batch 1

