सत्यमेव जयते

EOC/PHEOC

Emergency Operations Centre / Public Health Emergency Operations Centre

Development Package



Centre of Excellence on Public Health Emergency and Disaster Management,
National Institute of Disaster Management (NIDM)
Ministry of Home Affairs, Government of India

in collaboration with

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

and

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

nidm
Resilient India - Disaster Free India

CDC
U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

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EOC/PHEOC Development Package

Emergency Operations Centre / Public Health Emergency Operations Centre Development Package

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- Integrated Disease Surveillance Programme (IDSP), National Centre for Disease Control (NCDC), Ministry of Health and Family Welfare (MoHFW), Government of India, Delhi

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जगत प्रकाश नड्डा
JAGAT PRAKASH NADDA

सत्यमेव जयते

मंत्री
स्वास्थ्य एवं परिवार कल्याण
व रसायन एवं उर्वरक
भारत सरकार
Minister
Health & Family Welfare
and Chemicals & Fertilizers
Government of India



MESSAGE

It gives me immense pleasure to announce the release of the Emergency Operations Center (EOC)/ Public Health Emergency Operations Center (PHEOC) Development Package. This comprehensive resource is designed to provide evidence-based practices and high-level guidance for establishing/strengthening EOCs and PHEOCs nationwide.

Under the Government of India's PM Ayushman Bharat Health Infrastructure Mission (PM-ABHIM), there is a firm commitment to fortifying our public health infrastructure to effectively manage and respond to future outbreaks, pandemics, and disasters. This Development Package is a key tool to help us achieve that goal, setting up Health Emergency Operations Centers (HEOCs) and enhancing operational readiness, preparedness, and response coordination throughout the country.

By utilizing the knowledge, tools, and strategies presented in this package, stakeholders at every level will be empowered to strengthen coordination, optimize resources, and promote collaboration across sectors. These efforts will ultimately bolster our capacity to respond to emergencies more efficiently and effectively.

I commend the efforts of the National Centre for Disease Control (NCDC), National Institute of Disaster Management (NIDM), and U.S. Centers for Disease Control and Prevention (CDC), Country Office-India for the development of this essential resource. The dedication reflects our commitment to building a safer and more resilient nation.

Together, let us ensure that our EOCs/PHEOCs remain agile, responsive, and resilient in the face of future challenges.

(Jagat Prakash Nadda)

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EOC/PHEOC Development Package

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Dr. Vinod K. Paul
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सत्यमेव जयते

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August 27, 2024



Message

I am pleased to extend my warm greetings for undertaking the significant endeavour of preparing the Emergency Operations Centre (EOC)/Public Health Emergency Operations Center (PHEOC) Development Package.

The EOC/PHEOC Development Package is a collaborative initiative to enhance the collective preparedness and response to public health emergencies and disasters. In light of recent global challenges, the establishment and effective operation of PHEOCs, aligned with disaster management EOCs at district, state and national levels, have become pivotal in ensuring swift and coordinated responses.

The EOC/PHEOC Development Package is designed to promote innovation in emergency response systems. By harnessing cutting-edge technologies, best practices, and lessons learned, one can develop adaptable tools that cater to diverse contexts.

Collaboration among stakeholders has been at the heart of this initiative. Governments, healthcare institutions, international organizations, academia, and civil society must come together to create a resilient and responsive healthcare ecosystem.

Empowering communities with knowledge and resources to be proactive in emergencies and disasters would surely pave the way for community preparedness. A critical component of this package is community engagement, ensuring that local voices are heard and incorporated into preparedness, response and resilience strategies.

The goal is to build safe and secure resilient health systems that can withstand shocks, emergencies, crises and disasters. This involves strengthening the capacity of PHEOCs to anticipate, prepare for, and respond to a wide range of public health emergencies and disasters. It facilitates the exchange of knowledge and expertise among nations.

I would like to compliment Prof. Surya Parkash, Dr Himanshu Chauhan, Dr Rajeev Sharma and the entire team for bringing out the EOC/PHEOC Development Package. Its core principles and guidance have the potential to enhance readiness and effectiveness in managing public health emergencies and disasters.

(Vinod Paul)

स्वच्छ भारत
एक कदम स्वच्छता की ओर

पुण्य सलिला श्रीवास्तव, भा.प्र.से.
सचिव
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Secretary

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
Government of India
Department of Health and Family Welfare
Ministry of Health and Family Welfare



Message

The constantly evolving threats of epidemics and disasters have highlighted the need of building a well-coordinated and resilient health emergency infrastructure at the national level and also in all the States and Union Territories.

I am pleased to introduce the Emergency Operations Center (EOC) / Public Health Emergency Operations Center (PHEOC) Development Package. This indispensable tool is designed to enhance India's preparedness and response capabilities for public health emergencies. The package offers essential guidelines and comprehensive strategies for establishing and strengthening EOCs and PHEOCs, ensuring that we are better equipped to meet any public health challenges head-on.

A fully operational PHEOC is crucial for India to become compliant with the International Health Regulations (IHR) 2005, a global framework for strengthening public health security. This Development Package will improve operational preparedness, streamline coordination, and optimize national, state, and district resource utilisation. Moreover, it will contribute significantly to building resilient, inclusive, and sustainable health systems capable of addressing current and future public health challenges.

I appreciate the collaborative efforts of the National Centre for Disease Control (NCDC), the National Institute of Disaster Management (NIDM), and the U.S. Centers for Disease Control and Prevention (CDC), Country Office-India in bringing this critical resource to fruition.

I urge all the stakeholders to use this package and strengthen the disaster and public health emergency response capacities at all levels.

Date : 26.11.2024
Place : New Delhi

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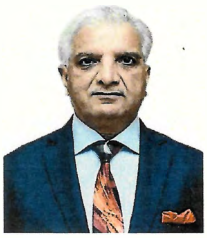
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3rd September 2024



Message

India, with its vast and diverse population, faces a multitude of challenges when it comes to disaster management. Our nation has been confronted with numerous disasters, from natural calamities like earthquakes and floods to public health emergencies such as the COVID-19 pandemic. These events have underscored the need for a coordinated and well-equipped mechanism to respond swiftly and efficiently to public health emergencies and disasters.

The COVID-19 pandemic has been a stark reminder of the magnitude of public health emergencies that countries across the globe may face. The pandemic tested healthcare infrastructure and exposed the gaps in health emergency response and disaster management systems globally and in India. Challenges such as resource allocation, data management, and real-time information dissemination highlighted the urgency of establishing a dedicated Public Health Emergency Operation Centre (PHEOC) in alignment with disaster management EOCs at district, state and national levels.

EOC/PHEOC would coordinate the response efforts of various stakeholders, including government agencies, healthcare providers, and non-governmental organizations. The PHEOC Development Package is not just a theoretical concept but a practical roadmap towards establishing a state-of-the-art facility that will serve as the cornerstone of India's Public Health Emergency and Disaster Management efforts. This package has been meticulously crafted, drawing from global best practices, expert insights, and takes into consideration India's unique socio-cultural and geographical diversity.

The commitment to developing a PHEOC in India signifies its yearning to learn from the past experiences and invest in a safer and resilient future. The challenges may be daunting, but not insurmountable. With clear vision, and relentless pursuit of excellence, we will build an EOC/PHEOC that the country can be proud of.

I commend the dedicated professionals, experts, and stakeholders who have contributed towards the preparation of this document. It is a testament to our collective determination to strengthen the nation's resilience in emergency preparedness.

Rajendra Singh

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Preface

The Asia-Pacific region has witnessed various disasters, including technological incidents and biological events. At the same time, climate change has continued to warm the world, exacerbating the impacts of extreme weather events and thereby reshaping and expanding the Asia-Pacific riskscape. The risk of new public health emergencies and disasters continues to increase, driven by the escalating climate crisis, environmental degradation, and increasing geo-political instability, disproportionately impacting the poor and the most vulnerable.

Under the Disaster Management Act of 2005, the National Institute of Disaster Management (NIDM) has been entrusted with significant duties related to human resource development, capacity enhancement, training, research, documentation, and policy advocacy of disaster management. Committed to its mandate, NIDM has played a significant role in formulating diverse guidelines, policies, and plans, along with designing training modules and documentation to bolster capacity in disaster risk reduction and resilience.

This package, with its array of meticulously crafted chapters, will serve as a definitive guide for those involved in designing, developing, managing and operating Emergency Operations Centres (EOCs) or Public Health Emergency Operations Centres (PHEOCs). Each chapter has been thoughtfully structured to provide insights into essential aspects of EOCs/PHEOCs, empowering readers with the knowledge and understanding to build a resilient and goal-oriented response to public health emergencies and disasters.

I extend my appreciation to Prof. Surya Parkash, Head CBRN, Industrial and Cyber DRR&R Division, NIDM; Dr Himanshu Chauhan, Joint Director and HOD IDSP, NCDC, Dte.GHS, MoHFW; Dr Rajeev Sharma, PHS & Lead-EM, U.S. CDC, Country Office, India, and the entire team, for their dedicated efforts and significant contributions. I also express my gratitude for the sincere and professional inputs from the external reviewers who assisted NIDM in keeping the quality of this development package.

Rajendra Ratnoo

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सत्यमेव जयते

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स्वास्थ्य सेवा महानिदेशालय
Government of India
Ministry of Health & Family Welfare
Directorate General of Health Services



Preface

India has been experiencing and managing public health emergencies and disasters for ages. The response system to these public health emergencies and disasters by the Government, Non-Government Organizations (NGOs) and Civil Societies has improved greatly in India over time and has been appreciated internationally. India's efforts to manage the pandemic can be best described as a people-centric, Whole-of-Government, Whole-of-Society approach built on past experiences of managing public health emergencies and disasters.

Public health emergencies, ranging from disease outbreaks to disasters, require a coordinated and efficient response to protect lives and ensure the resilience of our health systems. A functioning Public Health Emergency Operations Centre (PHEOC) serves as the nodal platform for coordination of response to public health emergencies, including international threats from emerging and re-emerging epidemics/ pandemics, as mandated by the International Health Regulations (IHR) 2005. The role of EOCs/PHEOCs in the fight against the COVID-19 pandemic has created the imperative to guide its operations using a standardized approach grounded in evidence.

This EOCs/PHEOCs Development package provides the guidance, and tools needed to establish and operate a PHEOC that can meet these challenges head-on. I would like to extend my gratitude to the dedicated experts and professionals who have contributed to the development of this package. The collective wisdom and experience have been instrumental in shaping this invaluable resource.

Equity, inclusivity, and coherence are goals as well as principles. Only applying them consistently and rigorously in the design and operations of the Public Health Emergency and Disaster Management (PHEDM) systems at all levels and monitoring their application will help to achieve the expected outcomes.

I extend my commendations to Professor Surya Parkash, Dr Himanshu Chauhan, Dr Sanket Kulkarni, Dr Rajeev Sharma, and the entire team for their outstanding efforts in presenting the EOC/PHEOC Development Package. Its fundamental principles and guidance promise to elevate preparedness and efficiency in managing public health emergencies and disasters.

New Delhi
14 August 2024

(Atul Goel)

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August 23, 2024



Preface

The Public Health Emergency Operations Centre (PHEOC) Development Package is a comprehensive and strategic approach to enhancing public health readiness. In an ever-evolving landscape of public health challenges, a proficient PHEOC is critical for a prompt, well-coordinated, and efficient response to emergencies. This package revitalizes our preparedness efforts, addressing both global trends and unique circumstances within India.

Recent global events have highlighted the pivotal role that PHEOCs play in safeguarding public health. The rapid spread of infectious diseases, the devastating impact of natural disasters, and the emergence of unforeseen threats underscore the importance of a robust and adaptable emergency response system. The PHEOC Development Package takes a global perspective, offering principles and guidelines that foster international collaboration, innovation, and community empowerment.

India, with its remarkable diversity and complexity, faces distinct challenges in public health preparedness and emergency response. The PHEOC Development Package acknowledges these specific needs and is designed to be flexible enough to adapt to the Indian context. Its versatility ensures that it can address unique challenges faced by different regions and communities. This resource plays a pivotal role in building resilient health systems, coordinating efforts across agencies, and learning from experiences to improve emergency response.

In an era of rapid change, being prepared for public health emergencies is paramount. The PHEOC Development Package emphasizes collaboration, innovation, community engagement, capacity building, and knowledge sharing as essential components for enhancing our collective ability to respond effectively and protect the health and well-being of communities. It serves as a vital resource in strengthening emergency response capabilities while fostering a culture of continuous improvement.

Together with professionals across sectors, we can leverage this package to transform our approach towards emergency response. By embracing its principles and utilizing its resources wisely, we can forge stronger partnerships between government agencies, healthcare providers, community organizations, academia, and other stakeholders involved in safeguarding public health.

I extend gratitude to all those who contributed their expertise towards developing this invaluable tool. I am confident that utilizing this package will improve emergency response capabilities nationwide.

I would like to congratulate Shri Rajendra Ratnoo (IAS), Executive Director, NIDM and Prof. (Dr.) Atul Goel, DGHS and extend gratitude to Prof. Surya Parkash, Head GMRD, EOC; Dr Himanshu Chauhan, Joint Director and HOD, IDSP and CDC's Dr Rajeev Sharma and Mr Chuck Menchion for developing this package. Your insights, contributions, and unwavering commitment play an essential role in shaping this dynamic resource, empowering us to confront the unknown with confidence and resolve. Together, we can fortify our preparedness and response in the realm of public health emergencies and disasters.

Dr. Meghna Desai,
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Acknowledgements

We convey our heartfelt gratitude to all the individuals and entities who have contributed to the completion of the Emergency Operations Centre (EOC)/Public Health Emergency Operations Centre (PHEOC) Development Package.

First and foremost, we sincerely thank Shri Jagat Prakash Nadda, Hon'ble Minister of Health & Family Welfare, Government of India (GoI), for his invaluable support and visionary leadership in driving the development of this package.

We are immensely grateful to Prof. (Dr) V. K. Paul, Member NITI Aayog, and Ms. Punya Salila Srivastava, IAS, Secretary (H&FW), MoHFW, GoI, for their constant guidance and strategic direction in shaping the vision and execution of this Development Package.

Our heartfelt thanks go to Shri Rajendra Singh, PTM, TM, Member & Head of the Department, NDMA; Shri Rajendra Ratnoo, IAS, Executive Director, NIDM; Prof. (Dr) Atul Goel, DGHS and Director, NCDC; and Dr Meghna Desai, Director, U.S. CDC-India for their unwavering encouragement and steadfast support.

We are also grateful to Shri Ajit Seth, IAS (Retd.) Former Cabinet Secretary to GoI for his meticulous scrutiny of this work.

We thank our esteemed reviewers, Prof. (Dr) Muzaffar Ahmad, Former Member, NDMA and Mr B. B. Gadnayak, Expert, USDMA, Uttarakhand, who have played a crucial role in shaping this Development Package through their comprehensive review and insightful suggestions.

We acknowledge Mr Sanjeev Karn for his instructional expertise in designing the package layout. Furthermore, we express our gratitude to Mr W. Chuck Menchion from CDC HQ for providing valuable global insights vital to developing this package.

While it is impossible to mention each individual by name, we collectively recognize the exceptional contributions of all those involved in the step-by-step development of this package. Your dedication has been indispensable.

Lastly, this Development Package is a tribute to the Late Dr Shiv Lal, Former Special DGHS (PH) and Former Director NCDC, for his visionary leadership that laid the foundation for this work.

(Rajeev Sharma) (Himanshu Chauhan) (Surya Parkash)

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Executive Summary



An Emergency Operations Centre (EOC) is a physical hub that serves as the nerve centre where an organization receives information about emergencies and disasters to coordinate response and recovery efforts, as well as allocate resources. These centres may also be termed command centres, control rooms, situation rooms, crisis management centres, or similar terms. Irrespective of the varied terminology, essentially, these centres are the focal point for information and resource coordination. EOCs operate 24/7 during emergencies and disasters to ensure swift and effective response. A Public Health Emergency Operations Centre (PHEOC) is a specialized EOC focused on managing emergencies with health implications and public health threats. Throughout this package, the terms EOC and PHEOC have been used interchangeably.

EOC/PHEOC is an epicentre for public health emergency and disaster response. It provides a structured framework for coordinating, planning, and executing responses to various public health actions, from disease outbreaks to disasters. Effective preparedness forms the core of a functioning EOC/PHEOC. By grasping the elements and procedures in this package, public health and disaster management officials and the emergency management team can boost their ability to react promptly and efficiently to crisis. Establishing the EOC/PHEOC outlined here focuses on meeting needs while utilizing resources effectively and relying on updated evidence for readiness and response. Although there is no template or standardized format for EOC/PHEOC, it is adaptable, scalable, and modular to fit needs and available resources. The PHEOC facilitates collaboration among stakeholders at different administrative levels, encouraging smooth and cooperative interactions. A mix of assets, human resources and information technology tools supports this teamwork. An operating PHEOC system is built on principles like accountability, unified command structure, unity of command, and a clear chain of command. Within this package, the terms “incident,” “event,” and “emergency” are used interchangeably.

In essence, the EOC/PHEOC functions as the command and control hub at the National, State, and District levels. It acts as a centre for planning, resource allocation, and decision-making across the entire spectrum of emergency management. Following protocols, guidelines, and policies is essential when setting up or improving an EOC/PHEOC.

Meeting the requirements of the International Health Regulations (IHR) 2005 demands a functional PHEOC equipped with dedicated resources, robust plans, effective information systems, and well-trained staff. Whether permanent or temporary, the PHEOC plays a pivotal role in integrating public health services into emergency management frameworks. Key components of a comprehensive preparedness programme include hazard prevention, resource stockpiling, capacity building, surveillance, environmental health, community engagement, and staff training. Furthermore, modern principles of Public Health Emergency and Disaster Management (PHEDM) underscore the

importance of an all-hazards approach, scalable management structures, unified decision-making, clear accountability, standardized communication, interoperability, stakeholder integration, and effective public communication.

The development package strongly encourages the utilization of locally available resources and indigenous technology, taking into consideration critical needs and requirements. In order to maintain this alignment, the package consciously avoids any form of branding or commercialization. By doing so, it emphasizes a neutral and unbiased approach that prioritizes effectiveness over commercial interests.

By promoting the use of local resources and indigenous technology, the development package recognizes the value of community-based solutions that are tailored to specific needs. This not only fosters a sense of ownership within the community but also promotes sustainability in emergency management efforts.

This package consists of 14 Chapters serving as a roadmap for optimizing resources, enhancing readiness, and ensuring swift and effective responses to a diverse array of public health emergencies and disasters. It stresses the importance of a comprehensive approach, global and national collaboration, and adherence to standards. This package delves into the fundamental concepts, types and characteristics of PHEOC, as well as essential features for effective management. It guides the planning process, addresses risk assessment and prioritization, and introduces the Incident Management System/ Incident Response System (IMS/IRS). It highlights the significance of Operational Plans, Hazard-Specific Strategies, Functional Plans and Standard Operating Procedures (SOPs). It also covers the implementation of EOC/PHEOC, Infrastructure, Information Technology, Joint Information Centre (JIC), Artificial Intelligence (AI), Machine Learning, Coordination, Communication, Training, Exercises, Monitoring and Evaluation. It explores Costing, Funding, Sustainability, Research in PHEDM and Emergency Support Functions (ESFs), providing a holistic understanding of the comprehensive framework guiding EOC/PHEOC. The package also includes 14 annexures, which provide additional resources to support the EOC/PHEOC Development Package.

Abbreviations

AAI	Airports Authority of India
AAR	After-Action Review
ACD	Automatic Call Distributor
AGD	Agriculture Department
AHD	Animal Husbandry Department
AI	Artificial Intelligence
AIDR	Artificial Intelligence for Disaster Response
ANM	Auxiliary Nurse Midwife
ARHD	Archaeology Department
ASHA	Accredited Social Health Activist
AWS	Amazon Web Services
BMTPC	Building Materials and Technology Promotion Council
BRO	Border Roads Organisation
BSF	Border Security Force
CAPF	Central Armed Police Forces
CBRI	Central Building Research Institute, Roorkee
CBRN	Chemical, Biological, Radiological and Nuclear
CCM	Climate Change Mitigation
CCTV	Closed-Circuit Television
CDC	Centers for Disease Control and Prevention
CDEF	Civil Defence
CDRC	Central Drought Relief Commissioner
CEMT	Community Emergency Management Team
CERT	Community Emergency Response Team
CFR	Case Fatality Ratio

CHO	Community Health Officer
CISF	Central Industrial Security Force
CMO	Chief Medical Officer
CONOPs	Concept of Operations
COR	Commissioner of Relief
CRPF	Central Reserve Police Force
CSU	Central Surveillance Unit
CTI	Computer Telephony Integration
CUD	Culture Department
CWC	Central Water Commission
CWWG	Crop Weather Watch Group
DAE	Department of Atomic Energy
DDMA	District Disaster Management Authority
DDRF	District Disaster Response Force
DEOC	District Emergency Operations Centre
DGHS	Director General of Health Services
DM	Disaster Management
DOT	Department of Telecommunications
DPH&PM	Directorate of Public Health and Preventive Medicine
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DSL	Digital Subscriber Line
Dte.GHS	Directorate General of Health Services
EDA	Epidemic Diseases Act
EMT	Emergency Medical Team
EOC	Emergency Operations Centre
EOC-NET	Emergency Operations Centre Network

EOP	Emergency Operations Plan
EPT	Exercise Planning Tool
ERP	Emergency Response Plan
ESF	Emergency Support Functions
FEMA	Federal Emergency Management Authority
FGD	Focused Group Discussion
F-PHEOC	Field Public Health Emergency Operations Centre
GHSA	Global Health Security Agenda
GIS	Geospatial Information System
GoI	Government of India
GSI	Geological Survey of India
HEOC	Health Emergency Operations Centre
HPC	High Power Committee
HR	Human Resource
HVAC	Heating Ventilation and Air Conditioning System
IAP	Incident Action Plan
IAR	Intra-Action Review
IAT	Incident Assessment Team
IC	Incident Commander
ICS	Incident Command System
ICT	Information and Communication Technology
IDSP	Integrated Disease Surveillance Programme
IEC	Information, Education and Communication
IHIP	Integrated Health Information Platform
IHR	International Health Regulations
IHRMEF	International Health Regulations Monitoring and Evaluation Framework

IMD	India Meteorological Department
IMS	Incident Management System
INCOIS	India National Centre for Oceanic Information Services
iOS	iPhone Operating System
IPC	Infection Prevention and Control
IRS	Incident Response System
IRTs	Incident Response Teams
ISBN	International Standard Book Number
JEE	Joint External Evaluation
JIC	Joint Information Centre
KII	Key Informant Interview
KSA	knowledge, skills, and abilities
LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode
MACS	Multi-Agency Coordination System
MAFW	Ministry of Agriculture and Farmers Welfare
MCAFPD	Ministry of Consumer Affairs, Food and Public Distribution
MCOM	Ministry of Communications
MDWS	Ministry of Drinking Water and Sanitation
MEA	Ministry of External Affairs
MFPI	Ministry of Food Processing Industries
MHA	Ministry of Home Affairs
MHUA	Ministry of Housing and Urban Affairs
MLBE	Ministry of Labour and Employment
MNRE	Ministry of New and Renewable Energy
MoCA	Ministry of Civil Aviation

MoD	Ministry of Defence
MoEFCC	Ministry of Environment, Forest and Climate Change
MoES	Ministry of Earth Science
MoHFW	Ministry of Health and Family Welfare
MoIB	Ministry of Information and Broadcasting
MoJS	Ministry of Jal Shakti
MoLJ	Ministry of Law and Justice
MoM	Ministry of Mines
MoR	Ministry of Railways
MoRD	Ministry of Rural Development
MoU	Memorandum of Understanding
MPFI	Ministry of Food Processing Industries
MPNG	Ministry of Petroleum and Natural Gas
MPWR	Ministry of Power
MRTH	Ministry of Road Transport and Highways
MSVC	Media Scanning and Verification Cell
MTOU	Ministry of Tourism
NAPs	National Action Plans
NCDC	National Centre for Disease Control
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
NEC	National Executive Committee
NGOs	Non-Government Organizations
NIDM	National Institute of Disaster Management
NIMS	National Incident Management System
NLP	Natural Language Processing
PBEX	Private Branch Exchange

PCs	Personal Computers
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 Emergencies of International Concern
PHEM	Public Health Emergency Management
PHEOC	Public Health Emergency Operations Centre
PIP	Program Implementation Plan
PM	Prime Minister
PM-ABHIM	Pradhan Mantri- Ayushman Bharat Health Infrastructure Mission
PMASBY	Prime Minister – Atmanirbhar Swasth Bharat Yojna
PoE	Points of Entry
PPE	Personal Protective Equipment
PWD	Public Works Department
QRT	Quick Response Team
RNA	Rapid Needs Assessment
RRA	Rapid Risk Assessment
RRT	Rapid Response Team
RSMC	Regional Specialized Meteorological Centre
SASE	Snow and Avalanche Study Establishment
SDGs	Sustainable Development Goals
SDMA	State Disaster Management Authority
SDRF	State Disaster Response Force
SDSL	Symmetric Digital Subscriber Line
SEC	State Executive Committee

SEOC	State Emergency Operations Centre
SHOC	Strategic Health Operations Centre
SITREPS	Situation Reports
SMS	Short Message Service
SOG	Standard Operating Guideline
SOP	Standard Operating Procedure
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TCWC	Tropical Cyclone Warning Centres
TNA	Training Needs Assessment
ToRs	Terms of Reference
UC	Unified Command
UHC	Universal Health Coverage
UN	United Nations
UPS	Uninterruptible Power Supply
USA	United States of America
USB	Universal Serial Bus
USDMA	Uttarakhand State Disaster Management Authority
UT	Union Territory
VBDs	Vector Borne Diseases
VC	Video Conference
VOIP	Voice Over Internet Protocol
VPN	Virtual Private Network
VSAT	Very Small Aperture Terminal
WebEOC	Web Emergency Operations Centre
WHO	World Health Organization

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Utilization of the Document



The intended users of the EOC/PHEOC Development Package typically encompass individuals and organizations engaged in planning and implementind the public health emergency and disaster preparedness and response activities. This package is designed to provide instructions on establishing and operating an EOC/PHEOC, detailing the resources needed for its operations, management and functionality in sectors not limited to health and disaster.The target audience comprises a range of users, including but not limited to:

- **Government Authorities:** This includes officials at various levels of government, such as local, regional, and national authorities responsible for public health and emergency management. They play a crucial role in establishing and overseeing EOCs/PHEOCs.

- **Public Health Professionals:** Programme managers of national programmes, public health experts, epidemiologists, and healthcare professionals involved in disease surveillance, outbreak investigation, and response planning.

- **Disaster Management Professionals:** Disaster Management Officials at all levels, fire fighters, police officers, civil defence, NDRF, and SDRF who involved in disaster management.

- **Emergency Response Personnel:** First responders, emergency management professionals, and healthcare workers involved in responding to public health emergencies.

- **Non-Governmental Organizations (NGOs):** NGOs and humanitarian organizations engaged in public health emergency response and recovery efforts.

- **Healthcare Providers:** Hospitals, clinics, healthcare facilities, and healthcare providers who need to align their efforts with PHEOC strategies during emergencies.

- **Community Leaders and Organizations:** Local community leaders, grassroots organizations, and community health workers involved in community-level preparedness and response such as Gram Panchayats, and Gram Pradhan.

- **Public Health Emergency and Disaster Management (PHEDM) Agencies:** Agencies responsible for overall PHEDM, including the integration of public health considerations such as National Disaster Management Authority (NDMA), Disaster Management Cell & Emergency Medical Relief (EMR) divisions of MoHFW, National Centre for Disease Control (NCDC), National Disaster Response Force (NDRF), National Institute of Disaster Management (NIDM), Integrated

Disease Surveillance Programme (IDSP) – Central, State & District Units, State Disaster Management Authority (SDMA), State Disaster Response Force (SDRF), State Institue of Disaster Management (SIDM) and District Disaster Management Authority (DDMA).

- **Educational and Training Institutions:** Institutions that provide training and education related to public health, emergency management, medical education, and disaster response.

- **International Organizations:** International organizations, partner countries, and entities that collaborate with national and local authorities during cross-border or global public health emergencies.

- **Researchers and Academics:** Professionals and institutions involved in research on public health emergencies and disasters response.

The specific users of the package may vary based on the context and location, as well as the focus of the EOC/PHEOC. It aims to support coordination, communication, and preparedness efforts to enhance the efficiency and effectiveness of response to public health emergencies and disasters at various levels of government and across sectors.

1. Introduction



Global

According to the World Health Organization (WHO, 2015), a public health emergency is an occurrence, or imminent threat, of an illness or health condition that poses a substantial risk of significant human fatalities, injuries or permanent or long-term disability. Public health emergencies can result from various hazards and complex emergencies. It involves increased incidence of illness, injury and/or death and requires special measures to address increased morbidity, mortality and interruption of essential health services. A multi-agency, multi-jurisdictional response is often required for emergencies, working with the national/state/district disaster management organization. Public Health Emergency Operations Centres (PHEOCs) play a critical role in preparedness and response to public health emergencies (WHO 2015).

An Emergency Operations Centre (EOC) plays a dynamic role in coordinating information and resources for efficient and effective responses as part of an emergency management system. An EOC is a physical location or virtual space where designated emergency management functions are performed, supported by appropriate legislation and regulations, and designed and resourced with sustainability in mind. EOCs may be temporary facilities or may be established in permanent locations. EOCs may also be known as "situation rooms", "operations centres", or "command centres" as other, similar terms (WHO 2015).

A PHEOC is an EOC specifically organized to address health emergencies. In some situations, an EOC may oversee both the health and healthcare delivery aspects of an incident. It could still be called a PHEOC or Health Emergency Operations Centre (HEOC).

There must be an efficient exchange of information and resources for proper responses, and EOCs/PHEOCs are part of this process. The operational capability of the system—which includes the people, equipment, and infrastructure required to carry out a response—is the main emphasis of preparedness.

Real-time resource availability assessment, agency-to-agency coordination and collaboration, and staff training and equipment upkeep are important elements.

The Public Health Emergency Operations Centre Network (EOC-NET) was established by WHO in 2012 with the goals of identifying and promoting best practices and standards for EOCs and supporting the development of EOC capacities and capabilities for successful response operations. In 2015, WHO released the "Framework for a PHEOC in collaboration with the EOC-NET partners" (WHO 2015) to support countries in fulfilling their responsibilities of meeting the basic core capacity requirements under the International Health Regulations (IHR), 2005.

The Framework hasn't been updated or changed since it was first published. In order to ensure that the Framework remains relevant in light of nations' shifting priorities and evolving needs for fortifying their PHEOCs for emergency preparedness and response, as well as to capitalize on experience and lessons gained from recent public health emergencies like the COVID-19 pandemic and monkeypox, WHO is spearheading the revision of the Framework to publish its second edition. The updated Framework will also comply with the most recent health emergency guidelines (WHO 2020a), including the Sendai Framework for Disaster Risk Reduction (SFDRR).

WHO developed the Handbook for Developing a PHEOC after a series of reviews and expert consultations to provide more detailed guidance for implementing the PHEOC Framework. It consists of three separate documents:

Part A: Policy, Plans and Procedures (link: https://iris.who.int/bitstream/handle/10665/277191/9789241515122-eng.pdf?sequence=1)

Part B: Physical Structures, Technology, and Information Systems (is in the development process)

Part C: Training and Exercises (Link: https://iris.who.int/bitstream/handle/10665/311545/9789241515139-eng.pdf?sequence=1)

The IHR 2005 prioritises developing, enhancing, and sustaining the capacity to react swiftly and effectively to Public Health Emergencies of International Concern (PHEIC). Several nations releasing the importance of effective response are creating or strengthening their EOCs/PHEOCss to increase communications and coordination for efficient public health emergency responses to fulfil the objectives of IHR (2005) and address crises that have health implications (which may be triggered by any or all threats/hazards). Monitoring and responding by PHEOC is a cornerstone of the IHR. The IHR provides policy guidance to member countries to strengthen the core capacity of public health preparedness and response to prevent, detect, and respond to public health threats. A fully functional PHEOC at the national level will be able to respond to a single national public health event or emergency in accordance with the requirements established within the IHR. It includes having a public health preparedness and response plan tested through drills, identification of public health resources, trained personnel for all response roles and the ability to activate the PHEOC within 120 minutes. The Seventy-seventh World Health Assembly, on 01 June 2024, made amendments to the IHR. The amendments include introducing a definition of a pandemic emergency, commitment to solidarity and equity in strengthening access to medical products and financing, the establishment of the States Parties Committee to facilitate the effective implementation of the amended regulations and the creation of National IHR Authorities to improve coordination of implementation of the regulations within and among countries. For details, refer to https://apps.who.int/gb/ebwha/pdf_files/WHA77/A77_ACONF14-en.pdf

A PHEOC is an integral element of national preparedness and is one of the core

requirements under the IHR 2005. The role of the PHEOC is not only critical for a successful and organized response, but it is also of paramount importance as the response transitions to recovery.

Public health preparedness involves proactive planning, training and resource allocation needed to address public health emergencies. It encompasses establishing and executing public health policies, building infrastructure and conducting exercises to evaluate the system's readiness for emergencies. Preparedness focuses on creating plans, protocols, and procedures to ensure a response during a public health emergency. Its key elements include surveillance systems, laboratory capabilities, communication networks and staff training programmes in collaboration with other organizations and stakeholders.

The EOC/PHEOC establishment should follow the National benchmarks and global common minimum standards of emergency management, ensuring practical applications of public health principles. The global approach for EOC/PHEOC development is generic and should include evidence-based elements of all- hazards approach based emergency management. The capacity building from the community to the policy group can reduce the impacts of emergencies and disasters through risk assessment, prevention, mitigation, coordinated response and recovery efforts. This is envisaged by developing and implementing a five-tier Public Health Emergency and Disaster Management- Professional Development Programme (PHEDM-PDP).

The COVID-19 pandemic highlighted the critical need to develop EOCs/PHEOCs at multiple levels, including national, sub-national and/or local levels. It is essential that each level of response is able to coordinate with levels above and below it. It is also important to coordinate with adjacent EOCs/PHEOCs at horizontal and vertical jurisdictions, whether at the national or subnational level.

India

At the National level, the Ministry of Health and Family Welfare (MoHFW), Government of India, continuously provides assistance to the States during public health emergencies, including managing health consequences of disasters. The global best practices in managing public health emergencies show that establishing a command-and-control hub for coordination, information management, and reliable communication facilitates effective response during public health emergencies.

The Union Budget (2021-22) announced the Prime Minister– Atmanirbhar Swasth Bharat Yojna (PMASBY) scheme, which has now been renamed as PM- Ayushman Bharat Health Infrastructure Mission (PM-ABHIM), on 01 February 2021. The scheme aims to strengthen National Centre for Disease Control (NCDC), establish 5 New Regional NCDC Branches, 20 Metropolitan Health Surveillance Units and set up 15 Health Emergency Management Operations Centres (HEOCs) for epidemic/pandemic preparedness and response (PIB, GoI 2021). (Details: https://main.mohfw.gov. in/?q=Major-Programmes/basicpage-22).

1.1 About the EOC/PHEOC Framework and Associated Handbooks

The first edition of the "Framework for a Public Health Emergency Operations Centre (PHEOC)" was published in 2015 by the WHO. It provided technical specifications for setting up a PHEOC (**Annexure I**) and was informed by expert consultations and a series of systematic reviews led by WHO, conducted through the EOC-NET between 2012 and 2015[1].

The Framework delineates the purpose and functions of the PHEOC, emphasizing its role in coordinating public health responses during emergencies:

- **Activation and Structure:** Establish clear criteria and a flexible organizational structure for PHEOC activation, ensuring a timely and efficient response to public health emergencies.
- **Information Management:** Emphasize the importance of robust information management systems to collect, analyze, and disseminate data for decision-making.
- **Interagency Collaboration:** Promote coordination and collaboration with relevant partners and agencies, fostering a unified response to health emergencies.
- **Capacity Building:** Invest in ongoing training and exercises to enhance PHEOC staff's skills and preparedness for managing various public health emergencies.

The WHO's 2015 framework for PHEOC development underscores the need for a clear purpose, adaptable structure, effective information management, interagency collaboration, and continuous capacity building to enhance the response to public health emergencies.

Recognizing that the framework provides high-level, management-oriented guidance and requires in-depth technical support , the EOC-NET convened two working group meetings in October 2016 and March 2017 to develop two additional technical handbooks. These were released in 2018.

Handbook for Developing a Public Health Emergency Operations Centre (Part A): Policies, Plans and Procedures provides practical guidance on the policies, planning processes, outcomes and operational procedures necessary for PHEOC operations (WHO 2018a).

[1] https://www.who.int/groups/eoc-net

Handbook for Developing a Public Health Emergency Operations Centre (Part C): Training and Exercises provides practical guidance for training and exercising PHEOC staff. The handbook (Part B) is in development and will address physical structures, technology, and information systems (WHO 2018b). The handbooks and the framework provide the essential elements needed to establish and maintain a PHEOC.

In addition to the framework and its handbooks, several parallel efforts within WHO and partner organizations have addressed other needful areas within Public Health Emergency Management (PHEM).

A second edition of the WHO Emergency Response Framework was released in 2017 (WHO 2017). This manual delineates WHO responsibilities in supporting member states in a public health emergency. The latest edition (Edition 2.1) was released in February 2024.

WHO's Health Emergency and Disaster Risk Management Framework published in 2019 refers to the importance of the EOCs/PHEOC's role in risk management and its links to emergency preparedness (WHO 2019a).

The WHO Regional Office for Africa also published two related manuals. The first is the Public Health Emergency Operations Centre (PHEOC) Legal Framework Guide, which provides a legal guide for PHEOC operations (WHO RO Africa 2021a). The second, Handbook for Public Health Emergency Operations Centre Operations and Management, provides step-by-step guidance to operations and management of a PHEOC, serving as a more detailed supplement to the framework (WHO RO Africa 2021b).

1.2 Purpose of the EOC/PHEOC Development Package

The EOC/PHEOC Development Package aims to offer guidance for designing, enhancing, and developing an EOC/PHEOC in any sector. It also offers a framework for creating and operating an EOC/PHEOC to provide a goal-oriented response to public health emergencies and disasters and coordination among responding agencies.

The objectives, key concepts, policy planning and processes, response coordination system, criteria and authority for activation, information management and communication, as well as human, financial, and material resources, are all described in this package.

1.3 Concept of EOC/PHEOC

A PHEOC is a command-and-control facility where designated emergency management functions are performed. It serves as a hub for better coordinating the preparation, response, and recovery of public health emergencies (WHO RO Africa, 2021a). A PHEOC is responsible for strategic direction and operational decisions of coordination,

communication, planning, acquiring and managing resources, decision-making, etc. The PHEOC network will support emergency or disaster management activities related to risk assessment, preparedness, prevention, mitigation, response, recovery, and rehabilitation. The Framework for a Public Health Emergency Operations Centre provides high-level guidance for establishing or strengthening a PHEOC. To establish and/or strengthen a PHEOC, aligning with standardized policies, guidelines, and tools is vital. To function optimally, a PHEOC must have dedicated resources, appropriate plans and procedures in place, reliable and effective information systems, and well-trained staff; and it must be regularly utilized - both in peace and emergency times.

The PHEOC is a physical location for the coordination of information and resources to support incident management activities, and it can be created at a permanent site or as a temporary structure (WHO 2015). A PHEOC underscores that public health threats and consequences necessitate coordinated responses and incorporates traditional public health services and other functions into an emergency management paradigm. PHEOCs can also be called 'HEOC', 'SHOC', 'situation rooms,''operations centres,''command centres,' 'coordination centres,' and other similar terms.

The PHEOC, as a public health-oriented EOC, must be **part of a comprehensive programme of public health emergency preparedness, planning and capacity building** (WHO 2015). Such a programme includes, but is not limited to:

I. Prevention and mitigation of hazards.

II. Enhancing readiness by planning for and stockpiling response resources.

III. Establishing related institutional and technical capacities and capabilities (e.g. laboratories, community clinics, and rapid response teams).

IV. Implementing public health surveillance programmes.

V. Enhancing environmental health programmes.

VI. Engaging communities.

VII. Training staff and validating plans.

In developing plans and procedures for a EOC/PHEOC, it is very important that the users are familiar with the principles of modern Public Health Emergency and Disaster Management (PHEDM),

- An all-hazards approach that includes applying generic incident management processes and structures to all responses, built around clear decision-making processes and supported by hazard-specific response plans developed according to comprehensive risk assessments.

- Modular, scalable, or adaptable management structures that can be expanded or contracted (scaled) to deal with changes in the scope and context of an emergency.

- Support for joint involvement of multiple jurisdictions, sectors, and organizations in making and implementing joint management decisions (unified management).

- Clear lines of accountability, with all personnel in work units of no more than seven persons reporting to one supervisor, even if working within a matrix of teams in the EOC/PHEOC.

- Clearly defined roles and responsibilities for staff, consistent with their established competencies and supported by specific training in EOC functions and operations.

- Clearly identified decision-making authorities, threat thresholds for decisions, and procedures for activation, escalation, and deactivation of emergency operations.

- Clearly articulated policies and procedures for communication between international, national, subnational, and local EOCs/PHEOCs or event management entities.

- Common terminology, functions, and technology at all levels of the response structure to support interoperability.

- Capacity for involvement or integration with partner and stakeholder agencies, including international partners, through joint (unified) management or active liaison.

- Sufficient capacity to manage public communications in culturally suitable ways through all available traditional and social media, to support effective risk communication, social mobilization, and community engagement.

The PHEOC utilizes state-of-the-art technology to establish real-time connections among different organizational levels, field-based Rapid Response Teams (RRTs), and key partners, thereby improving coordination, communication, and collaboration. The advanced infrastructure enables experts to receive timely technical information during field operations.

PUBLIC HEALTH EMERGENCY OPERATIONS CENTER (PHEOC)

A PHEOC is a centralized physical location or virtual space where public health emergency management personnel gather to manage public health crises effectively.

Within a PHEOC, Emergency Management Experts:

Coordinate operational information and resources: Ensure that accurate and timely information flows seamlessly between various departments and stakeholders. They manage resources such as medical supplies, personnel, and technology to support public health operations.

Strategically manage public health events and emergencies: Develop and implement strategies to respond to health emergencies. This includes outbreak investigation, implementing control measures, and communicating risk to the public and other agencies.

Essential Elements of a PHEOC:

A facility/location, physical or virtual: A designated space equipped with the necessary technology and resources. This can be a physical location like a dedicated office or a virtual environment accessible online to facilitate remote coordination.



A body of data and information: Comprehensive databases and information systems that contain vital data on disease outbreaks, public health resources, and other critical information. This data supports decision-making and response planning.

A set of policies, plans, and procedures: Detailed guidelines and protocols that outline the response actions for various types of public health emergencies. These documents ensure that all personnel know their roles and responsibilities and that there is a consistent approach to managing emergencies.

A roster of skilled, trained personnel: A team of professionals with expertise in public health emergency management, epidemiology, logistics, communications, and other relevant fields. Regular training and exercises ensure that personnel are prepared to respond effectively to emergencies.

Figure 1: PHEOC (Source: www.cdc.gov/globalhealth/ healthprotection/errb)

2. Components, Types and Standards of EOC/ PHEOC

2.1 Components of EOC/PHEOC

The functionality of an EOC/PHEOC depends on essential components such as well-defined plans and procedures, adequate physical infrastructure, advanced Information and Communications Technology (ICT) infrastructure, effective information systems and standards , and competent human resources (Figure 2). To make sure that every part meets the criteria, the EOC/PHEOC can function following the guidelines specified in the IHR, 2005.



Figure 2: Core Components of PHEOC (WHO 2021b)

2.1.1 Plans and Procedures

A functioning EOC/PHEOC relies on a set of strategies, such as Continuity of Operations planning, an EOC/PHEOC facility plan and an emergency response plan that outlines how management systems such as the Incident Management System (IMS) or Incident Response System (IRS) or Incident Command System (ICS) will operate. Collaboration among stakeholders and detailed planning are essential for the functioning of an EOC/PHEOC. This involves creating and coordinating functional and incident action plans as well as establishing SOPs and other necessary protocols. These elements together form the foundation of the EOCs/PHEOCs structure, ensuring a unified response to public health emergencies. While the EOC/PHEOC serves as the management hub, its goals are accomplished by implementing event management systems and various associated plans and procedures. The planning aspect of processes and procedures addresses crucial questions about the roles, timing, locations, and methods of execution. Maintaining a standardized format for all emergency plans within a jurisdiction facilitates easy access to specific information.

2.1.2 Physical Infrastructure

A physical EOC/PHEOC can be situated in a dedicated, purpose-built facility or a multipurpose space. However, it must meet specific criteria: it should be physically and environmentally secure and designed to remain accessible and functional despite threats or disasters. The EOC/PHEOC should be equipped to withstand the most likely hazards, as determined through a customized risk assessment.

In case of potential technological or other failures, contingency options for the EOC/PHEOC should be in place, and there should be a backup physical location ready for use if the primary EOC/PHEOC becomes unusable. If a robust technological infrastructure is in place, a virtual EOC/PHEOC can serve as an additional backup mechanism. Additionally, a business continuity plan or continuity of operations plan should be developed and regularly practiced.

The EOC/PHEOC must be easily reachable for users, with ample parking for vehicles, adequate security measures, and reasonable proximity to designated lead and partner agencies.

2.1.3 Information and Communication Technology (ICT) Infrastructure

The day-to-day operations of an EOC/PHEOC heavily depend on a diverse range of IT and communication infrastructure. There are no universally defined standards for outfitting an EOC/PHEOC or for the systems that should be integrated. These requirements are contingent primarily on the nature of the EOC/PHEOC (physical or virtual), alongside several variables such as the expected incident types, geographic location, and the

number of users who will be utilizing the system. The technological prerequisites for an EOC/PHEOC encompass hardware and software systems, internal and external telecommunications, and all aspects of information management. These include the following:

- A telecommunications system or network equipped with a high-speed and redundant internet connection. It is essential to conduct a connectivity assessment to avert connectivity issues. In remote areas, radio, satellite telephony, or satellite data transmission may be the sole viable options.

- Irrespective of EOC/PHEOC type or level, the capability to conduct teleconferences is pivotal. Ideally, this entails video and web conferencing.

- A physical EOC/PHEOC essentially functions as an office with standard office requisites such as computers, multifunction printers, office supplies, and forms designed to provide paper-based backups in the event of technology failures. Large-screen video displays that facilitate visual representation of ongoing events can significantly enhance decision-making.

- The capacity for media monitoring (television, radio, social media, etc.) is also imperative for media scanning and verification. Supplementing this with recording and playback functionality can be beneficial.

Technologies that support telecommunications, data analysis, event information management, and operational information visualization are rapidly evolving and susceptible to malfunctions. Consequently, routine backup of the information contained in these systems is essential to mitigate the potential fallout of technological failures resulting in data loss. Virtual EOCs/PHEOCs minimize the risks of data loss due to equipment failure through the built-in security measures of cloud services, although they do not eliminate the risk of data loss caused by human error. It is advisable to ensure that all equipment and services are covered by warranties or maintenance contracts.

To the extent possible, the technologies employed in an EOC/PHEOC should be compatible with those routinely used in the host facility (if applicable) and within host and partner agencies. Given the evolving needs of the PHEOC over time, as it progresses from a basic to a mid-range to an optimal state of capability, and considering the rapid pace of technological advancements, it is advantageous to regularly consult with experts regarding hardware acquisitions and to provide on-site ICT support within the EOC/PHEOC.

2.1.4 Information Systems and Standards

Increasing the availability, accessibility, quality, timeliness, and use of emergency operations information for public health action is the goal of an efficient EOC/PHEOC information system.

All EOC/PHEOC functions should be supported by information systems, which should also be able to provide data security, privacy, and confidentiality as well as uninterrupted system operation. EOC/PHEOC information systems should adopt data and information technology standards to ensure interoperability with other pertinent national health information systems. An EOC/PHEOC information system includes six components namely **resources, indicators, data sources, data management, collaborative platform for information sharing and Information products**.

2.1.5 Human Resources

A qualified and trained personnel is necessary to run an EOC/PHEOC efficiently. The PHEOC personnel should ideally be familiar with the framework and operations of both national and global public health response systems. Both **routine and surge** workers are required to maintain and run an EOC/PHEOC.

Each position inside the EOC/PHEOC should have a roster that is kept up to date. There should be enough people on the roster to keep EOC/PHEOC activities running continuously. Employees should not be assigned roles and responsibilities with which they are not familiar. They need to receive orientation at the EOC/PHEOC along with training for the specific tasks, duties and procedures they will be performing. Their roles within the EOC/PHEOC should align as closely as possible with their skill sets.

2.1.6 Strategic Risk Communication

Strategic Risk Communication plays a role in the development of EOC/PHEOC, contributing significantly to the handling and reducing public health crises. During emergencies, it is essential to provide accurate and reliable information to the public and stakeholders. The EOC/PHEOC package emphasizes the importance of a communication strategy that includes messaging, audience targeting and using multiple channels to share vital health information. By implementing a strategic risk communication framework, EOCs/PHEOCs can establish trust with the public, combat misinformation and promote adherence to health guidelines, thereby improving their ability to respond to emergencies. This approach reduces panic and fear and empowers communities to make informed decisions, leading to a more resilient and well-prepared public health response system. The EOC/PHEOC should be capable of activating within 120 minutes as per the minimum requirements specified by the IHR (2005) for PHEOC functionality.

2.2 Types of EOC/PHEOC



The mission of a PHEOC is a reflection of the public health security approach or the intentions set forth by senior policymakers and leaders. It outlines the necessary commitments of resources and articulates the overall goals and desired outcomes. When selecting the type of PHEOC, a country's decision will be influenced by its risk tolerance, resource availability and whether the mission is at the subnational, national, regional or international level. The paramount consideration is that the **PHEOC should be appropriately scaled to fulfill its intended purpose**, ensuring effective coordination and management control of national and/or subnational resource allocations while preserving the essential capacities for direct response.

In the WHO Framework (2015), three types of PHEOCs were initially described: basic, general and optimum, which were categorized based on their capacities and capabilities. However, in the handbook published by WHO in 2018, **PHEOCs are now classified as types A, B and C** to avoid potential issues where one type is perceived as inherently better or more appropriate than another without considering the specific purpose and required capabilities of each centre.

Excessive development of PHEOC management and coordination capacity can lead to the wastage of public resources that could be better utilized to enhance direct response capabilities. Therefore, the three types of PHEOCs accommodate a range of needs, catering to countries with different risk tolerances and varying levels of resource commitment. They are designed to suit missions ranging from subnational and national to regional and international.

The Ministry of Health and Family Welfare or a designated authority should undertake the definition of a PHEOC's mission. The mission should:

- Reflect the public health security posture or intentions of senior leaders and policymakers.
- Outline necessary resource commitments.
- Articulate the overarching goals and desired outcomes of establishing a PHEOC.

2.2.1 Physical EOC/PHEOC

It is essential that the EOC/PHEOC should be appropriately scaled for its intended purpose to provide effective coordination and management control of national and/or subnational level resource allocation without detracting from the required capacities for direct response.

An EOC/PHEOC of Type A should be able to handle a public health event or emergency at the subnational or national level. However, larger-scale events or multiple simultaneous incidents may necessitate external support or augmentation. On the other hand, an EOC/PHEOC of Type B can manage all except the most intricate national public health emergencies and may also be positioned to assist in regional responses. EOC/PHEOC of Type C, is fully equipped to support multiple, complex, multisectoral incidents at the national or regional level, including international public health emergencies.

2.2.1.1 Type A EOC/PHEOC

The 'Type A' EOC/PHEOC is the basic version of a EOC/PHEOC created to address a national public health crisis or emergency while following all the response criteria specified in the IHR (2005). It is characterized by the following features:

- It has a national public health emergency preparedness and response plan, developed based on a risk assessment, and validated through exercises.
- Mapping of national public health resources, including stockpiles of consumables, is in place.
- The EOC/PHEOC is staffed with personnel trained in the operations of EOC/PHEOC, who can be called upon for all response management functions within the IMS/IRS/ICS.
- It is ready for activation 24/7 and can be activated within 120 minutes.



Figure 3: Field-PHEOC at Kumbh Mela 2021, Haridwar, Uttarakhand (Credit: Dr Pankaj Kohli, In-charge Field PHEOC)

Additionally, a Type A EOC/PHEOC displays the following attributes:

- It can coordinate responses to public health emergencies that require collaboration with other government sectors and can support a multisectoral response led by the National Disaster Management Authority (NDMA) and National Disaster Response Force (NDRF).
- The EOC/PHEOC has a designated manager, and trained surge staff are available. It is also equipped with mechanisms for bolstering staffing and resources from other public health centres to ensure continued operations. Furthermore, there is a contingency plan in effect to manage the potential loss of essential personnel and disruptions in the supply chain.
- The EOC/PHEOC plans have been validated through at least one table-top exercise, and activation and response functions have been validated through small-scale functional exercises.
- The facility, infrastructure and information systems of the EOC/PHEOC can support a full range of EOC/PHEOC operations, including capturing and tracking basic descriptive data about the event, its context and management initiatives. However, it may not have extensive capabilities beyond complex data analysis or geospatially derived data.

2.2.1.2 Type B EOC/PHEOC

The Type B EOC/PHEOC builds on the characteristics of Type A and is designed to handle multiple subnational public health emergencies or a single large-scale complex national public health emergency, with expanded capabilities beyond those of Type A. Key features of Type B EOC/PHEOC include:

- The ability to support regional coordination.
- An annual process for reviewing national risks and resources.
- A comprehensive Concept of Operations (CONOPS) that frames the mission of the EOC/PHEOC.
- A dedicated staff, including a facility manager, operations watch staff, planners, logisticians, and communications and information technology support staff.
- Surge personnel from other work centres trained to support and sustain operations.
- Initial and ongoing advanced training for all personnel, along with participation in at least one functional exercise.

The facility, infrastructure and information systems of the Type B EOC/PHEOC must support its expanded mission. This includes advanced telecommunications systems such as video conferencing and information technology systems capable of capturing and analyzing complex and geospatially derived data. Provisions should be in place for continuity of operations through redundancy of personnel, technology infrastructure and, where necessary, facilities.



Figure 4: Emergency Operations Control Room, Directorate of Public Health and Preventive Medicine (DPH&PM), Chennai, Tamil Nadu (Credit: Dr B. Prem Kumar, SSO and Joint Director, DPH&PM)

2.2.1.3 Type C EOC/PHEOC

The Type C EOC/PHEOC builds on the characteristics of Types A and B and is designed to support multiple national, regional or international responses simultaneously. It can coordinate a whole-of-government response to a public health event and manage the public health component of a whole-of-government response to any incident with public health consequences.

Key features of a Type C EOC/PHEOC:

- Procedures for accessing extra-jurisdictional resources.
- A robust and ongoing training programme to ensure all core staff members function at an expert level.
- Redundancy in personnel for all IRS/IMS positions, allowing for sustained and continuous operations 24/7.

The facility, infrastructure and information systems of the Type C EOC/PHEOC are fully equipped to support its extensive mission. This includes advanced and redundant telecommunication systems, extensive analytic and Geospatial Information System (GIS) capabilities, and back-up power with tested continuity of operational arrangements capable of supporting all PHEOC functions.

It is important to note that the three types of EOC/PHEOC are not rigidly distinct, and each may incorporate some characteristics of another type. For instance, a Type A may have some features of a Type B or C, and a Type C EOC/PHEOC would encompass all the characteristics of Types A and B.

In India, Type C PHEOC (National) is located at the National Centre for Disease Control (NCDC) in Delhi. It is designated as the Public Health Emergency Operations Centre (PHEOC) and functions under the Integrated Disease Surveillance Programme (IDSP). The PHEOC serves as a single-point contact facility for emergency management, providing a dedicated emergency team to manage information and resources for disease surveillance and outbreak response. It plays a vital role in supporting key decision-makers during emergencies, disease outbreaks or health crisies of any nature.

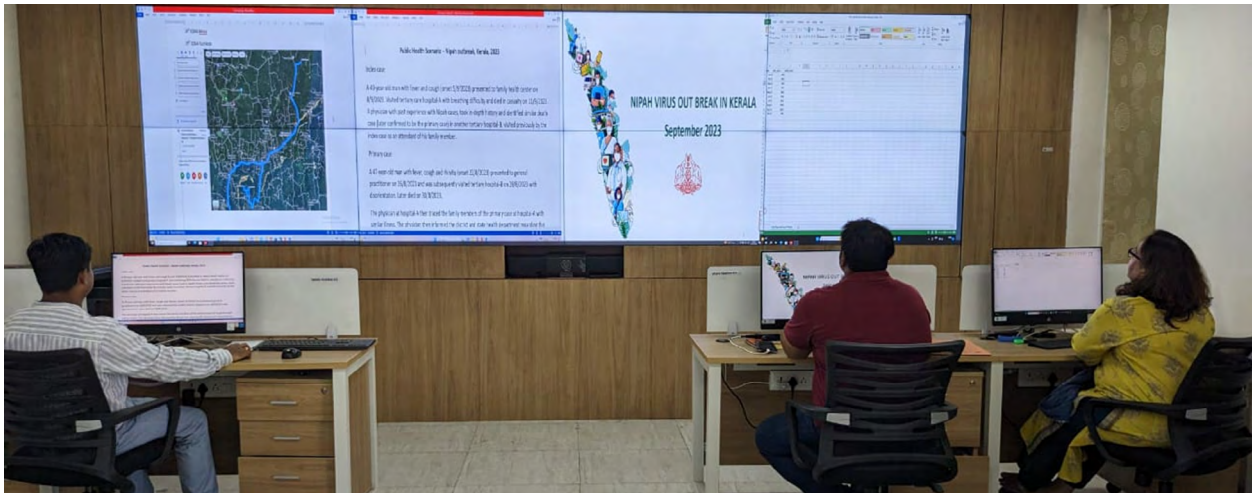


Figure 5: Public Health Emergency Operations Centre at NCDC (Credit: Dr Sanket Kulkarni, Joint Director, IDSP, NCDC)

The NCDC PHEOC is intended to act as the physical location at which the coordination of information and resources to support incident management/response activities normally occurs (Figure 5). It is fitted with state-of-the-art information technology gadgets and a video/audio conference facility capable of transferring data, audio and video at high speed, as well as real-time information exchange, operations planning and virtual networking.

The characteristics associated with each PHEOC type (Table 1) describe a mix of resources and functions scaled to address countries' varying public health security needs, using the IHR (2005) requirements as a baseline.

Kindly Note: The classification of physical EOCs/PHEOCs (Types A, B, and C) provided by the WHO in "Framework for a Public Health Emergency Operations Centre" published in 2015, serves as a standard framework to assist member countries in setting up PHEOCs. However, lessons and experiences from recent emergencies and pandemics underscore the importance of establishing these centres at multiple levels—national, regional, sub-national, community, and even event-specific Field-EOCs/PHEOCs for mass gatherings. Therefore, it is suggested that the underlying rationale and operational needs for creating an EOC/PHEOC be prioritized to ensure that it aligns with the specific requirements.

Table 1: Physical EOC/PHEOC Characteristics by Type			
EOC/PHEOC Characteristic	**Type A**	**Type B**	**Type C**
Context	Multi-hazard national public health emergency preparedness and response plan developed. The plan is implemented/ tested in actual emergencies or exercises and is updated as needed.	Plans and procedures are in place to reallocate or mobilize resources from national and subnational levels to support local responses.	The national public health emergency or disaster operations plan is implemented/ tested in actual emergencies or exercises and is updated as needed.
Size / Scope	Simplest, Smallest	More capabilities than Type A	Most capabilities
Costliness	Least Costly	Moderate costly	Most costly
Able to Respond to	A single national PH event or disaster	>1 subnational PH emergency or disaster OR 1 large-scale national PH emergency or disaster	Multiple national, regional or international responses simultaneously
Concept of Operations (CONOPS)	EOC/PHEOC operations support direct response, coordinat with other government sectors, which provides support to a multisectoral response led by competent authority.	Able to conduct simultaneous response operations and independently manage public health components of a complex multisectoral response within objectives set by the competent authority.	Able to support simultaneous, complex operations in a regional or international environment and/or manage the public health component of a whole-of-government response to any incident with public health consequences.
Emergency Operations/ Response Plan	Response operations only.	Response and recovery operations. Limited preparedness and prevention.	Prevention, preparedness, response and recovery operations.

Table 1: Physical EOC/PHEOC Characteristics by Type			
EOC/PHEOC Characteristic	**Type A**	**Type B**	**Type C**
Risk Assessment	A basic public health or national identification of threats and hazards is performed by the Ministry of Health. Public health risks are mapped based on the IHR (2005). Vulnerable populations are identified and mapped.	Extensive all-hazards public health risk and threat identification is made annually, including those in which public health provides only a supporting role. There is a risk management programme in place with priority risks mitigated where practical. Patterns of domestic population vulnerabilities are included in a baseline database.	All in-country and external current and emerging hazards and threats are identified and included in a comprehensive prevention and mitigation programme. International vulnerabilities are mapped.
Resources	Capacities and capabilities have been assessed and response resources identified on the basis of essential resource needs identified in the base EOP. Plans are in place for access to and distribution of resources from external stockpiles and donations.	Type A characteristics plus dedicated domestic CBRN emergency response resources are available for immediate use (based on capability requirements identified in the risk assessment process). Plans for the distribution of resources are managed at national and subnational levels. Procurement processes are established for preidentified vendor-managed resources.	Dedicated domestic response resources are available 24/7 for local and international deployment, with access at short notice to multiple extra jurisdictional and sectoral resources. Jurisdiction has established the necessary access agreements (e.g. mutual aid compacts, regional stockpiles, etc.).

Table 1: Physical EOC/PHEOC Characteristics by Type			
EOC/PHEOC Characteristic	**Type A**	**Type B**	**Type C**
Incident Response System (IRS)	IRS is described to the section level for the four core functions in the Framework, with associated terms of reference.	IRS core functions are described to unit level, including management/ command staff positions and common public health task force positions in operations, with terms of reference, internal communications requirements, and supporting SOPs.	IRS is described to identify all possible public health functions in the full family of plans.
Facility	As needed, convertible space or mobile.	Dedicated facility. Core hours of operation 08:00–17:00	Dedicated facility. 24/7/365 operation.
Staffing	On-call with dedicated facility manager and assigned[2] IT support. Staffed on activation.	Dedicated[3] EOC/ PHEOC facility manager, core staff for IRS/IMS functions (operations watch staff planners and logistics with IT support), plus surge staff.	All IRS/IMS functions are fully implemented with three-person redundancy. Full-time facility manager and IT support.
Activation SOP	Procedures in place for activation, with the point of contact available 24/7 to guide the process.	Dedicated trained staff, who have practised activating a response within two hours.	Facility is operational 24/7 and escalation from watch to alert level is exercised at least twice annually.

Source: (WHO, 2018a)

2.2.2 Virtual EOC/PHEOC

A virtual EOC/PHEOC is an information system that can be accessed through various networked devices, including laptops, tablets, and smartphones.

Virtual EOCs/PHEOCs are **often used with physical EOCs/PHEOCs;** ideally, both should be accessible. However, in cases where only a virtual EOC/PHEOC is being considered, there are certain advantages and disadvantages.

Some advantages of this approach include:

- **Reduced Initial Costs:** Virtual EOCs/PHEOCs primarily consist of emergency management software applications. Typically, launching a cloud-based software platform is more cost-effective than constructing or leasing physical facilities and procuring the necessary equipment.
- **Access Anytime, Anywhere:** Users of a virtual EOC/PHEOC can access the platform from any location and at any time, provided there is internet connectivity and appropriate devices.
- **Safety During Epidemics and Pandemics:** Virtual EOCs/PHEOCs eliminate the need for physical gatherings, reducing interpersonal contact and the risk of disease transmission.

However, there are drawbacks to this approach, which include:

- **Vulnerability to Physical Infrastructure Disruptions:** Virtual EOCs/PHEOCs rely on functioning user terminals and cloud services, requiring power and internet access. During disasters like earthquakes or cyclones, damage to these resources can make the virtual EOC/PHEOC ineffective.
- **Potential Cloud Service Failures:** Regardless of their claimed dependability, cloud services can face periods of downtime. Structured and supervised physical EOC/PHEOCs might provide a reliable option for telecommunications and information technology infrastructure.
- **Concerns about Data Confidentiality and Security:** Centralized data access is generally considered more secure than access spread across multiple locations.
- **Coordination Challenges:** Virtual EOCs/PHEOCs allow users to participate from different places but may not fully replace the interactions lost in a shared physical workspace.
- **Technical Limitations:** Virtual EOCs/PHEOCs rely on network conditions especially when using video streaming. The EOC/PHEOC should be able to adapt bandwidth and accessibility to accommodate changing staff levels.

2.2.3 Hybrid EOC/PHEOC

Physical and virtual strategies, for EOC/PHEOC can work together efficiently. One approach is to establish an EOC/PHEOC that leverages computers and smart devices at locations in conjunction with a physical EOC/PHEOC creating a unified workspace that combines both virtual and physical elements. It is advisable to plan for an EOC/PHEOC that seamlessly transitions between, in-person interactions and virtual operations.

2.2.4 EOC/PHEOC IN-A- BOX

In times of public health emergencies and disasters, it is essential to have a method of response. The idea of an "EOC/PHEOC IN-A-BOX" offers a solution to address this need. This portable command centre serves as a backup during a health crisis, aiding in effective responses across settings (Figure 6).



Figure 6: EOC/PHEOC IN-A-BOX (Source: Dr Steven G. Sachs, 2023)

Key Components

- **Control Command Infrastructure:** The core of an EOC/PHEOC IN-A-BOX is its command centre, which is equipped with communication tools, data management systems, and coordination resources for real-time decision-making.
- **Logistics and Supplies:** This package includes essentials such as gear, communication devices, medical supplies, and logistical support for setting up an operational response unit.
- **Emergency Management Software:** The EOC/PHEOC IN-A-BOX is equipped with software for incident management resource tracking and data analysis, which improves response coordination and resource allocation.
- **Power and Energy Sources:** The box contains power sources like generators or solar panels, along with an energy storage system, to ensure independence in any situation.

While EOC/PHEOC IN-A-BOX offers advantages, it is essential to consider aspects such as upkeep, training requirements and ensuring compatibility with existing systems. Additionally, it is crucial to comply with frameworks in geographical locations.

Applications of PHEOC IN-A-BOX

- **Rapid Deployment in Remote Areas:** EOC/PHEOC IN-A-BOX proves valuable for reaching distant or underserved areas. It guarantees the initiation of emergency response in regions with limited infrastructure.
- **Strengthening Capacity for Surges:** During disasters or pandemics, existing EOCs/PHEOCs may become overwhelmed. EOC/PHEOC IN-A-BOX can act as a solution to boost capacity during these moments, enhancing response capabilities.
- **Assistance for Mobile Response Teams:** Field epidemiologists or medical units forming mobile response teams can utilize EOC/PHEOC IN-A-BOX to set up a command centre wherever they are deployed. This facilitates improved coordination and data collection.
- **Exercise and Training Sessions:** EOC/PHEOC IN-A-BOX is suitable for training drills, enabling emergency responders to simulate the establishment and operation of an emergency command centre.

Benefits of EOC/PHEOC IN-A-BOX

- **Quick Response:** EOC/PHEOC IN-A-BOX, allows for response in any setting, cutting down on response time.
- **Increased Versatility:** It can adjust to emergency situations providing the ability to tackle a range of public health emergencies.
- **Resource Sharing:** EOC/PHEOC IN-A-BOX supports resource sharing across regions or EOCs/PHEOCs, optimizing the use of limited resources.
- **Cost-Efficient:** The portable nature of this solution eliminates the need for permanent infrastructure, reducing costs.

Table 2: Comparison of Types of EOC/PHEOC				
	Physical EOC/ PHEOC	**Virtual EOC/ PHEOC**	**Hybrid EOC/PHEOC**	**EOC/PHEOC IN-A-BOX**
Cost	Initial and ongoing costs of the physical structure	Cost to set-up is low	System redundancy can increase costs	Portable nature of this solution eliminates the need for permanent infrastructure, reducing costs
Access	Allows in person meetings and extensive data displays	Can be accessed from any location at any time	Allows to meet both virtually and in person	Enables near-real time response in any location, reducing critical response time.
Safety	Can be a secured site with adequate security personnel	Decreased potential for transmission of communicable disease	Can flex to decrease person-to-person contact or meet increased needs for in-person meetings	Can be secured system with adequate security personnel
Data Security	Onsite secure servers reduce (but do not eliminate) risk	Depends on the cloud based security	Can use a hybrid of commercial cloud services and data hosting in the physical PHEOC	Depends on the cloud based security

2.3 Standards and Benchmarks for EOCs/ PHEOCs

Standards and benchmarks for EOC/PHEOC play a vital role in ensuring effective response to emergencies and disasters. While there are no specific universal standards and guidelines available for EOCs/PHEOCs at various levels, it is important to establish clear protocols, operational procedures, and functional requirements tailored to the specific country, region, or jurisdiction.

The following are some key elements that can be considered as standards and benchmarks for EOCs/PHEOCs:

1. **Clear Standard Operating Protocols:** Each level of EOC/PHEOC should have well-defined protocols for incident management, coordination, decision-making processes, information sharing, resource allocation, and communication channels. These protocols should be regularly reviewed and updated based on lessons learned from previous emergencies.

2. **Functional Requirements:** EOCs/PHEOCs should have the necessary infrastructure, equipment, technology systems (such as advanced communication systems), and resources to support effective emergency response operations. This includes dedicated spaces for incident management teams, access to real-time data and information sources, secure data storage capabilities, and backup power supply.

3. **Trained Human Resources:** It is essential to train personnel involved in EOC/PHEOC operations on emergency management principles, incident management/command/response system (IMS/ICS/IRS), public health emergency and disaster response protocols, risk assessment methodologies, data analysis techniques, crisis communication strategies, and other relevant skills. Regular training exercises and simulations should be conducted to ensure readiness and competency.

4. **Collaboration and Coordination:** EOCs/PHEOCs should establish mechanisms for collaboration with relevant stakeholders such as government agencies at different levels (national, regional/local), healthcare providers, public health departments, disaster management, animal sectors, law enforcement agencies, non-governmental organizations (NGOs), international partners/organizations involved in emergency response efforts. This includes establishing clear lines of communication and coordination structures.

5. **Continuous Improvement:** Regular evaluation of EOC/PHEOC performance through after-action reviews (AARs) is essential to identify strengths and areas for improvement. Lessons learned from previous emergencies should inform updates to protocols, operational procedures, training programs, technology systems/tools used in the centers.

It is important to note that these standards may vary depending on the context of each country or jurisdiction, including sub-national levels such as state, district, and local levels. Therefore, it is recommended that each country develops its own specific standards and benchmarks based on their unique needs while considering international best practices in emergency management. These standards once developed should be followed at various levels, including national and sub-national levels.

In a nutshell, there is no need for a state-of-the-art and fancy EOC/PHEOC facility. Instead, the design and setup should be based on critical needs, available resources, and legal mandates. Even a small room equipped with a projection or smart TV, a telephone line, and two personnel can be converted into an EOC/PHEOC facility. In some cases, temporary facilities can be established during emergencies such as Kumbh Mela or other mass gathering events. Additionally, the concept of web based and mobile EOC/PHEOCs can also be considered.

However, regardless of the size or type of facility used as an EOC/PHEOC, the most important aspect is having trained human resources and standard operating protocols in place for effective functioning. These trained personnel should have knowledge in emergency management principles, ICS/IMS/IRS, public health emergency response protocols, risk assessment methodologies, data analysis techniques, crisis communication strategies, and other relevant skills.

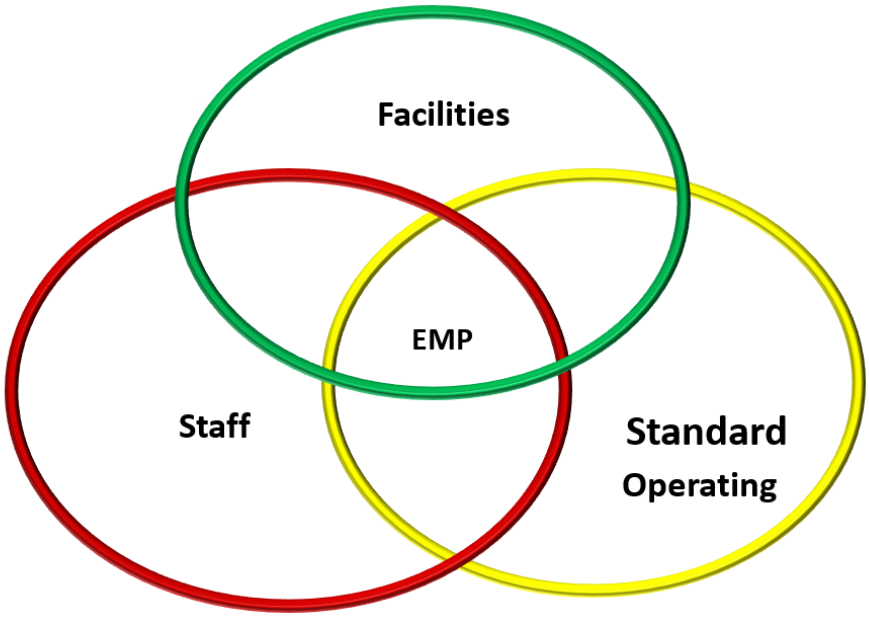


Figure 7: It demonstrates that the Emergency Management Program (EMP) is a single, integrated program where emergency management principles intersect public health practice.

By prioritizing trained personnel and standardized protocols over a high-end facility alone ensures that an EOC/PHEOC can effectively respond to emergencies regardless of its physical setup. This approach allows for flexibility in adapting to different contexts while maintaining the core principles of emergency management.

2.3.1 National Level EOCs/ PHEOCs

- Typically, responsible for coordinating response efforts at the national level.
- Should have robust interoperable communication systems to interact with regional, state, district and local EOCs/PHEOCs.

- Staffed with experts from various sectors such as public health, disaster management, logistics, communication, and public safety.
- Equipped with technology for data analysis, decision-making support, and resource allocation.
- Should have designated areas for briefing rooms, command centres, and situation monitoring.

2.3.2 State Level EOCs/ PHEOCs

- Act as a bridge between national and local response efforts.
- Coordinate resources and information flow between the national and local levels.
- Should have robust, interoperable communication systems to interact with regional, state, district and local EOCs.
- Maintain communication channels with local health departments, hospitals, and other stakeholders.
- Conduct regular training and exercises to ensure readiness for emergencies.

2.3.3 District Level EOCs/ PHEOCs

- Coordinate response efforts within a specific geographical area or district.
- Serve as the primary point of contact for local health departments, hospitals, disaster management and emergency responders.
- Should have access to real-time data on health emergencies within the district.
- Establish partnerships with local organizations, community leaders, and volunteer groups for effective response.
- Conduct drills and exercises to test emergency response plans and procedures.

2.3.4 Sub-District or Local Level EOCs/ PHEOCs

- Located within municipalities, towns, or smaller administrative units and community levels such as village panchayat.
- Focus on immediate response and coordination within their respective areas.

- Liaise with district-level EOCs/PHEOCs and other local stakeholders during emergencies.
- Often staffed by personnel from local health departments, emergency services, and community organizations.
- Maintain inventories of local resources, including medical supplies, facilities, and personnel.

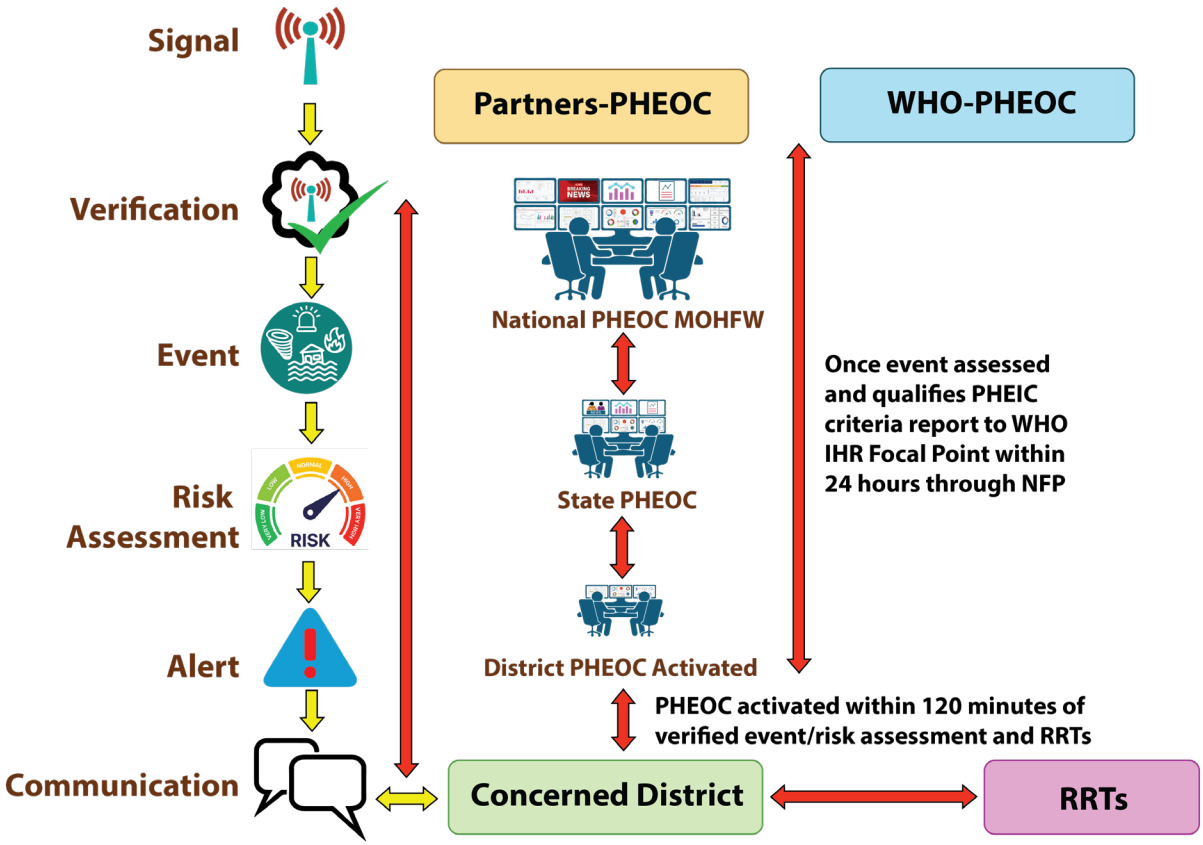


Figure 8: PHEOC Networks in India – Information/Data Flow

Developing a network of PHEOCs at national, regional, and global levels can significantly enhance preparedness and response capabilities (Figure 8). By fostering collaboration and information sharing across borders, such a network can:

- Facilitate rapid exchange of critical information and best practices during emergencies.
- Enable coordinated response efforts to mitigate the spread of infectious diseases and address other health threats.
- Enhance resource mobilization and allocation by leveraging collective strengths and capabilities.

- Strengthen global health security by promoting early detection and containment of outbreaks.
- Improve capacity-building initiatives through joint training exercises and knowledge sharing.

Establishing and maintaining a network of PHEOCs requires strong leadership, institutional support, and sustained investment in infrastructure and human resources. However, the benefits of such a network in enhancing global health preparedness and response far outweigh the challenges.



3. Operational Planning and Assessment Requirements for EOC/PHEOC

3.1 Key Operational Aspects of EOC/PHEOC



The operation and management of EOCs/ PHEOCs are guided by the core principles of planning, organizing, staffing, leadership, coordination, communication and financial management. These principles cover elements of structuring an organization, such as assigning authority and responsibilities (MoHFW, 2023a).

To ensure that a PHEOC meets its operational requirements, several essential features must be present:

I. **Nerve Centre for Public Health Emergency Management (PHEM):** It will be the nerve centre for all PHEM activities.

II. **Access Control:** Irrespective of the class and type of EOC, the access to the facility and the information systems should be provided only to the authorized users

III. **Incident and Information Management:** It will support incident management and information management (data, voice, and video) during all stages of PHEM, including highly complex and multi-sectoral incidents.

IV. **Coordination Capabilities:** It can coordinate a whole-of-Government response and is able to support multiple National/ Regional/ International responses simultaneously.

V. **Data Hub with 24/7 Operability:** It would be a hub for data gathering, analysis, information and intelligence dissemination, media management, etc., with 24/7 operability.

VI. **Redundant Communication Network:**

- The emergency communication network will be based on different communication technologies to provide the required level of redundancy to achieve high reliability.
- The communication system is based on terrestrial, wireless, and satellite network resources.

VII. **Unified Communication System:**

- A full-featured unified communication system with the **capability to share data**, audio, and video in real-time.
- Able to establish one-to-many, many-to-many, Simplex/Duplex communication channels using hardware and software technologies without compromising quality.
- Platform independent (Windows, Linux, macOS, iOS, and Android) and able to provide support to a wide range of devices but not limited to smartphones, laptops, desktops, etc.
- Able to connect and support a large number of users (as per requirement) during Virtual Conferences (VCs).
- Able to seamlessly share network resources such as printers, Fax machines, interactive whiteboards, etc.
- Able to connect with VC equipment.

VIII. **Remote Communication Capabilities:** The EOC/PHEOC should be capable to establish communication with even remote locations/disaster-affected regions using satellite phones or with desktop/mobile VC using data card/mobile network if available.

IX. **Information Dissemination and Management:**

- Provide easy and user-friendly webcast solutions for information dissemination to a large number of people.
- Support mass mailing and messaging.
- Support data acquisition, analysis, dissemination, and archiving.
- Be able to issue alerts and public health emergency warnings.
- Support call centre/helpdesk facility to address public inquiries.
- Provide a multi-media management system for handling live video feeds from multiple sources.

X. **Hardware and Infrastructure:**

- The EOC/PHEOC will be supported by required hardware, including servers, workstations, and peripherals.
- Backup power supply excluding generator.

XI. **Security and Monitoring:** Would provide requisite security, monitoring, and management.

XII. **Cloud Integration:** Future-ready and would be able to integrate with Cloud Computing.

3.2 EOC/PHEOC Planning Guidance

Planning plays a crucial role in outlining the path to achieve a goal. It becomes impossible to effectively complete a task, without a clear goal or defined aim. Plans and planning procedures lie between providing authoritative guidance and implementing actions on a continuum. As part of the policy-making process, plans may involve the developing or adopting performance criteria, which provide strategic direction and form the foundation of necessary actions.

The mission of a plan is to bridge the gap between strategies and tactics by detailing the specific procedures, actions, and operations required to achieve the set objectives. The planning process is shaped by policies and standards, which offer courses of action based on overarching concepts (Figure 9).

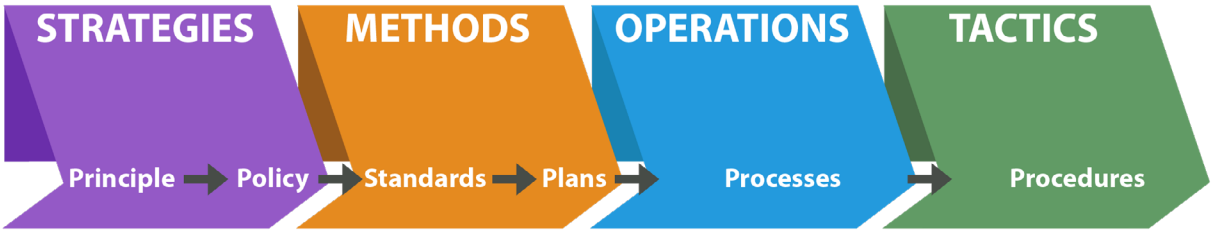


Figure 9: From Strategy to Tactics: Importance of Planning (Source: WHO 2018a)

A well-designed plan is a prerequisite for the development of a EOC/PHEOC. Developing a EOC/PHEOC is a process that evolves over time (WHO RO Africa, 2021a). The essential steps to develop a EOC/PHEOC are:

I. Establishment of legal authority and planning guidance.

II. Formation of a steering committee.

III. Developing the main objectives of the EOC/PHEOC.

IV. Defining essential functions of the EOC/PHEOC.

V. Developing the core components of the EOC/PHEOC.

VI. Training and exercises.

VII. Monitoring and evaluation.

VIII. Costing, funding and sustaining the EOC/PHEOC.

3.2.1 International and National Legislation, Regulations and Policies

Massive efforts have been made over the years to draft regulations requiring the management of disasters, including public health emergencies. The statutes and regulations listed below serve as the legal framework for emergency management operations at the international level.

International Treaties and Global Initiatives:

- International Health Regulations 2005 (IHR 2005)
- Sustainable Development Goals (SDGs)
- Sendai Framework for Disaster Risk Reduction 2015-2030
- The Pandemic Influenza Preparedness Framework, 2nd Edition, 2021, WHO
- The Paris Agreement on Climate Change, 2015, United Nations
- The Global Health Security Agenda (GHSA) 2024 Framework
- Universal Health Coverage (UHC) 2030

In India , the constitution and several acts structure the state's engagement in preparing for and responding to emergencies. In terms of the environment, the population's continuous well-being, and their protection from dangers, the constitution specifies the basic responsibilities of the State and the rights of citizens. At the national level in India, public health emergencies and disasters are covered by the following laws, regulations, and policies:

National Initiatives:

- High Powered Committee on Disaster Management (Pant Committee) 1999 (HPC 2001)

- Disaster Management Act 2005 (DM Act 2005)
- National Policy on Disaster Management 2009 (NPDM 2009)
- National Health Policy 2017 (NHP 2017)
- National Disaster Management Plan 2019 (NDMP 2019)
- The Epidemic Diseases Act 1897 and (Amendment) Ordinance, 2020 (MoHFW 2023b; Sansad 2023)
- Airport and Seaport Rules for Health

3.2.2 Development of Legal Authority for a EOC/PHEOC

An operational EOC/PHEOC which is key to the national emergency management system is also crucial to fulfilling the IHR criteria. Notably, legal power granted by law or government order can be used to grant an institution (public health department, ministry, or agency) the necessary capacity to manage public health crises.



Figure10: PHEOC Legal Mandate (WHO 2021a)

The creation of the necessary legal authority for the proper operationalization of PHEOC may be supported using a legislative framework to assist the growth of emergency

management operations. A PHEOC cannot effectively handle public health incidents in multisectoral engagement without a formal legal mandate. The goal is to construct an emergency management directive that specifies the requirements of an EOC/PHEOC. The processes for the formation of legal power may differ for each nation.

A mandate lays the groundwork for the following (WHO 2018a):

- The existence of the centre, its roles in a variety of emergencies;
- Its responsibilities and accountabilities;
- The need to develop and manage operational plans and mechanisms for coordination with local, national, and international resources for disaster and humanitarian crisis management; and
- A framework for budgeting and funding allocation.

The legislative mandate might provide a specific scope for the EOC's/PHEOC's activity and operational engagements . A voiding potential misunderstandings and pointless effort duplication promotes institutional synergy.

The National Disaster Management Plan (NDMP) of 2019 focuses on biological and public health emergencies, with preparation and response being key sub-thematic areas for disaster risk reduction. The NDMP emphasizes the crucial role of developing Health Emergency Operations Centres (HEOC) and integrating them with centralized Emergency Operations Centres (EOC). It is stipulated that every ministry, department, or agency of the central and state government assumes direct and indirect supporting roles within the HEOC, contingent upon the nature of the disaster, its location, and the prevailing context. Moreover, every department is advised to play a role in improving surveillance systems by conducting studies to assist in identifying and researching any disease outbreaks. Alongside these duties, departments are encouraged to prioritize the development of response skills designed for biological emergencies. This cooperative strategy guarantees an efficient reaction to public health emergencies and disasters (NDMP 2019) leading to effective Public Health Emergency and Disaster Management (PHEDM).

3.2.3 Process for Engagement and Development of Legal Authority for a EOC/PHEOC

The process of establishing and operating an EOC/ PHEOC involves steps to ensure its effective functioning (Figure 11). While these steps can differ from one country to another, the common steps include the engagement of a champion to lead the development process, existing emergency management structure, advocacy, technical workgroup, development of the legal framework and s ubmission (WHO 2021a).

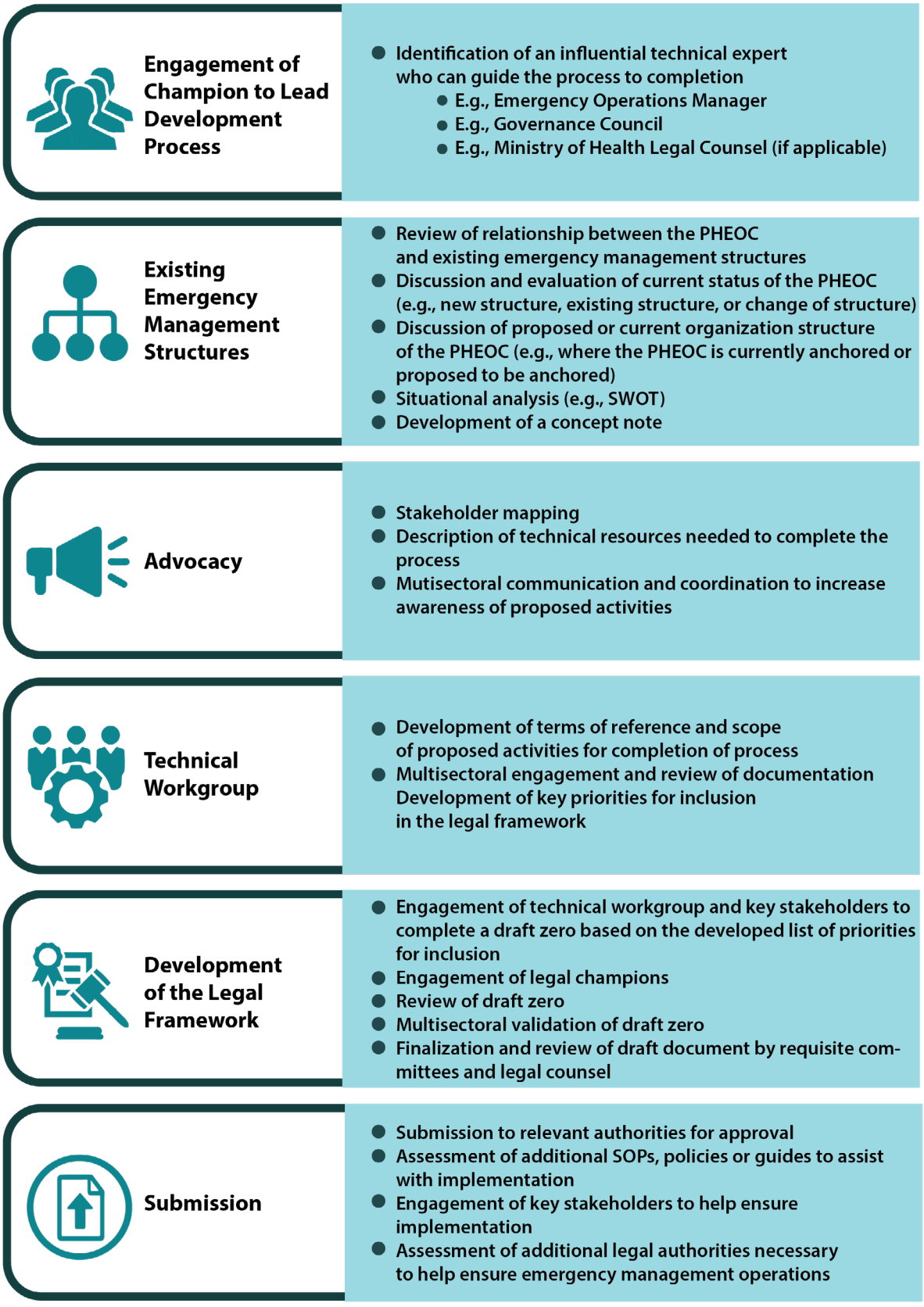


Figure 11: Process for Engagement and Development of Legal Authority for a PHEOC (Source: WHO 2021a)

3.2.4 Establishing a Policy Group

The executives and policymakers of the governing body find the accountability, risk mitigation and operational efficiency provided by the centre intriguing. Staff members stationed at the facility prioritize factors like accessibility, resource quality, equipment availability, receiving guidance and having adequate workspace in their roles. The establishment of a senior representative policy group is the first step towards meeting all of these needs in a coherent manner. These might include the leaders of the main stakeholder organisations, important subject area specialists, such as legal and ethical consultants, government representatives, and other professionals in charge of strategic leadership (WHO 2018a).

The governance framework that lends legitimacy to the EOC/PHEOC includes the policy group. Its responsibility is to acquire funds for EOC/PHEOC development while providing supervision and policy guidance. If required to do so, the policy group may supervise EOC/PHEOC operations. If no mutual aid agreements have been made in advance with other jurisdictions, the policy group may also be the body responsible for handling requests for outside material or monetary support, particularly in complicated, multisectoral, or multijurisdictional emergencies. Representatives from the NDMA may be included to guarantee a multisector planning viewpoint.

3.2.5 Working Groups, Steering and Planning Committees

A steering committee should be established for the design and development of the EOC/PHEOC (Figure 12). Its members should typically include important stakeholders. The steering committee should adhere to incident management standards throughout the planning phase. To make judgements on the EOC's/PHEOC's scope, operational structure, and overall model for Public Health Emergency and Disaster Management, the committee needs to perform risk and capacity assessments (WHO 2018a).

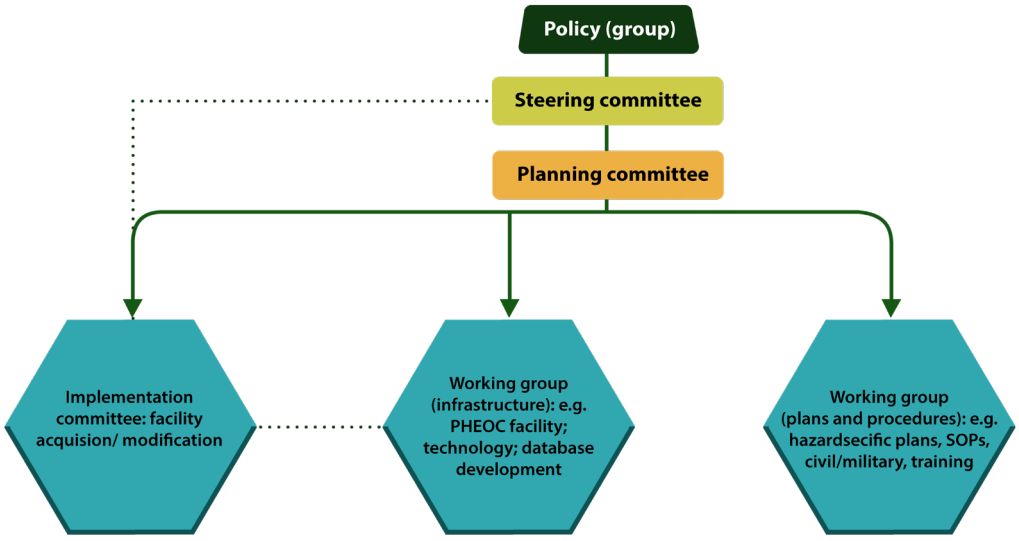


Figure 12: The Committee-Based Guidance Process (Source: WHO 2018a)

Initially, the steering committee's responsibilities include conducting capacity and risk evaluations and ensuring the orderly progression of planning. The committee should also consider the aspects of the EOC/PHEOC , which involve creating strategies for maintaining operations, conducting preparedness exercises and implementing measures to address risks and challenges effectively. By including a range of viewpoints and skills, the steering committee has a role in shaping an efficient EOC/PHEOC that can respond effectively to public health emergencies and disasters.

3.2.6 Cross-Cutting Issues

Addressing key cross-cutting issues is crucial when planning an EOC/PHEOC to ensure a thorough and efficient emergency response. These overlapping matters carry consequences and may need particular focus. Some cutting issues include ethics, human rights, gender mainstreaming and diversity, sustainability and the environment.

3.2.6.1 Ethics

In times of crisis, situations often raise ethical questions, such as deciding on using unauthorized treatments, distributing scarce resources among different at- risk populations, adjusting care standards, addressing privacy issues and sharing information. Therefore, an EOC/PHEOC must have access to ethical advice. As a result, an EOC/PHEOC needs to have access to proper ethical and legal guidance.

3.2.6.2 Human Rights

Human rights issues may include protection from exclusion and discrimination, security of individuals and groups and timely access to accurate, comprehensible information.

3.2.6.3 Gender Mainstreaming and Diversity

Planning for PHEOC should take into account the fact that women and minority groups experience inequity frequently. The EOC/PHEOC should promote diversity and gender equality while considering regional customs.

3.2.6.4 Sustainability

The EOC/PHEOC should emphasise primary and secondary prevention and mitigation as a fundamental sustainability strategy as part of a comprehensive risk management programme, understanding that prevention and mitigation actions generate a favourable return on investment in comparison to the high costs of emergency response.

3.2.6.5 Environment

The impacts of disasters on the environment and development are manifold. Disasters create substantial environmental degradation and ecological imbalance, hinder socio-

economic development and retard the process of improving the quality of life of the people. The interaction of disasters and the environment has both short-term and long-term effects. These interactions and interdependencies work in a complicated way, affecting people, ecosystems and biodiversity. These environmental issues need to be acknowledged and efforts must be made to mitigate them.

3.3 Assessing Needs and Requirements for EOCs/PHEOCs



Public health risk assessment as a part of a comprehensive risk management programme can be complicated or relatively simple, depending on the techniques used and the inherent complexity of the planning context. Although most public health workers have received training in quantitative and qualitative risk assessment techniques, consulting with specialists in the field is frequently beneficial. A lead agency should conduct a public health risk assessment, most likely the Ministry of Health, or it should be done in collaboration with another appropriate ministry.

In its broadest sense, risk assessment entails five steps:

- Recognizing the risk environment by assessing the resilience, resources, and capabilities of health systems in relation to the vulnerability of people, keeping in mind that the lack of capacity is a quantitative risk.
- Recognizing hazards and risks (latent and potential harms) using standardized tools. Threat and Hazard Identification and Risk Assessment (THIRA 2019) and Strategic Toolkit for Assessing Risks (STAR 2021) are examples of such tools.
- Examining the dangers in light of exposure's potential for morbidity and death.
- Assessing and ranking the risks according to likelihood, exposure, and consequences to gauge the danger.
- Assessing potential preventative and mitigation measures to address risks and reduce potential impact.

Planning for the worst threat or risk (or one with the greatest potential impact) while taking into account a community's capabilities for coping and recovery is standard procedure in all- hazards planning. Using scenario-based planning, this approach identifies and ranks several emergency event types and their implications to decide which is most likely to have a negative impact. The likelihood of each event's appearance and progression is calculated, and the resources required for a reaction are determined. It is crucial to keep in mind that identifying particular threats and making plans to deal with them are just two critical components of disaster preparation; the other crucial component is the infrastructure for organising an all-hazards response. The template for risk assessment of an event is in Annexure II.

3.3.1 Capacity and Capability Assessment

A needs assessment is created by doing a gap analysis, which compares existing capacities and capabilities (knowledge, skills, and abilities) with projected response and management requirements obtained from a risk assessment. A risk management programme is required to manage and reduce various threats, and the risk assessment indicates what may harm a community and what would test a public health authority's resources and skills. The capacity and capability evaluation evaluates the present condition of response resources, including general and specialised human and physical infrastructure. The absence of talent and capacity increases vulnerability and risk (WHO 2018a).

3.3.2 Determining Planning Goals for the EOC/PHEOC

The risk and capacity evaluations list gaps or inadequacies in planning, management, and resource allocation and help identify requirements. The steering committee ought to give precedence to these requirements, typically prioritizing the needs of the EOC/PHEOC itself over broader community resource development needs, which should be considered secondary. (Except where enhancing a particular community resource enables significant hazard mitigation).

A needs assessment will identify certain needs and opportunities that may not be feasible to tackle directly within the scope of the EOC/PHEOC. For instance, implementing programmes to mitigate the impact of specific hazards or threats falls within comprehensive emergency management's initial functions: prevention/mitigation and preparedness. While risk assessments often emphasize the adverse aspects or downsides of risks, impact reduction programmes embody the positive outcomes of risk assessments—namely, the opportunities for improvement.

3.3.3 Events and Exercises

Examining the findings and suggestions from after-action assessments and/or evaluations is crucial to identifying the strengths and shortcomings in current response and management plans where systems for handling public health crises or testing plans via exercises are already in place. This crucial step in the preparation process establishes the kind and volume of current and future investments in developing effective response capability and capacity (WHO 2018a).



3.4 Developing Overarching EOC/PHEOC Plans

Four general types of plans are required (WHO 2018a):

- **Emergency Operations Plan (EOP):** To accomplish coherent responses to public health emergencies, an Emergency Operation Plan (EOP) builds on what currently exists and outlines how the different elements of the emergency response system will cooperate.

- **All-Hazards EOC/PHEOC Plan:** A technical, all-hazards EOC/PHEOC plan, manual, or handbook guides designated workers as they carry out their responsibilities in the centre.

- **Hazard-Specific Response and Support Plans:** Special reaction needs for distinct sorts of disasters or occurrences are covered in depth in a number of hazard-specific response and support plans. Support plans outline the procedures and actions carried out in response to an occurrence when a body other than the public health authority assumes leadership but which has secondary public health repercussions (e.g. a release of hazardous material).

- **Precautionary Principle:** The preventative and mitigation steps performed to minimize the effects of prioritised risks both before and during a risk occurrence are outlined in a plan. Based on the precautionary principle, action should be taken to mitigate risks that are known to exist and have the potential to have significant negative effects.

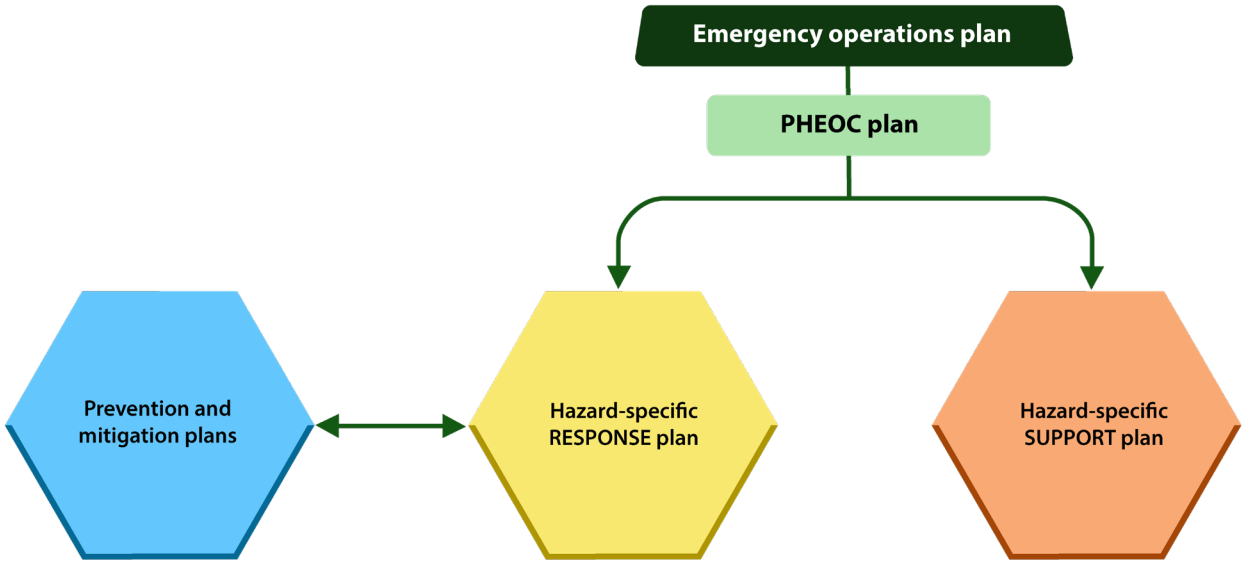


Figure 13: Hazard-specific and incident-specific STRATEGIC plans (Source: WHO 2018za).

4. EOC/PHEOC Planning and Stakeholder Coordination



The planning process is based on an analysis of the risks, vulnerabilities, and consequent hazards to which the EOC/PHEOC may be required to respond, and it necessitates a baseline response capacity evaluation. A comprehensive Public Health Emergency Management (PHEM) programme that considers all risks and involves all pertinent authorities is necessary.

4.1 Emergency Response Plan (ERP)

Public health emergencies of a larger scale and spanning multiple sectors necessitate capabilities and resources that are typically not within the purview of a health ministry and might not be readily available in the health sector. Therefore, when necessary, the responsible health authority may need to collaborate with the National Disaster Management Authority (NDMA) and other relevant agencies, including international organizations, to access these essential resources by implementing an Emergency Response Plan (ERP). It delineates the roles and responsibilities of involved government departments and agencies, the available resources, and a clearly defined chain of authority. The ERP encompasses preparedness, response, and post-emergency recovery phases for public health emergencies. Furthermore, it should elucidate the health authority's obligations in providing technical assistance and guidance for managing the health-related consequences of a broader spectrum of emergencies.

In India, Disaster Management and the Role of District Authorities under the Disaster Management Act, 2005

The **Disaster Management Act, 2005**, particularly **Chapter IV, Section 30**, vests significant powers in the **District Authorities**—most notably the **District Magistrate** or **District Collector**—for the effective planning, coordination, and implementation of disaster management activities at the district level. These authorities are empowered to take all necessary measures for managing emergencies or disasters in accordance with the guidelines laid down by both the **National Disaster Management Authority (NDMA)** and the respective **State Disaster Management Authority (SDMA)**.

As part of their mandated role, district authorities are responsible for:

- Preparing district-level disaster management plans.
- Ensuring the coordination of activities between various agencies and stakeholders.
- Taking necessary actions to prevent or mitigate the effects of disasters.

- Mobilizing resources and manpower for disaster response and relief.
- Coordinating with the local community to strengthen preparedness and capacity-building efforts.

Collaboration with Local Health Authorities

At the district level, collaboration between the **District Disaster Management Authority (DDMA)** and local health authorities is crucial for enhancing emergency response capabilities, especially in public health emergencies. The integration of health services into disaster management plans ensures better preparedness and quicker response to health-related crises during disasters. This collaboration could include:

- Establishing joint protocols for emergency response,
- Conducting training and capacity-building programs for medical and emergency personnel,
- Coordinating the distribution of medical supplies and health services during disasters,
- Ensuring a unified response to public health emergencies, such as disease outbreaks, which can be exacerbated by natural or man-made disasters.

The Disaster Management Act emphasizes a decentralized approach, where **district authorities** play a pivotal role in disaster preparedness, response, and recovery. Through effective collaboration with local health authorities and adherence to the guidelines of the **NDMA** and **SDMA**, the district administration can significantly bolster disaster resilience and ensure swift action in times of crisis.

4.2 Emergency Operations Plan (EOP)

An Emergency Operations Plan (EOP) is a strategic document concerned with the broad picture of who will do what and when. Although ERP is occasionally used to refer to an EOP, the word ERP appropriately refers to a particular component of an EOP that has been completely established.

The partners and other important stakeholders should be involved in creating an EOP. Public health emergencies, particularly large-scale and complicated ones, involve partners who may have little awareness of the occurrences but who have the resources needed to support the response.

The EOP specifies the manner and timing of such partners' participation. It should state which government agency is in charge of the EOC/PHEOC, the sources of core and surge staff and financing to cover response expenses.

Type-A EOC/PHEOC will have its EOP largely focused on response-related activities, a Type-B EOC/PHEOC will handle response and recovery, and a Type-C EOC/PHEOC will cover all aspects of prevention, readiness, response, and recovery.

The National Level Health Sector Emergency Response Framework is included in the Basic Plan, along with all the essential elements of the EOP. It contains the following information: the goal, the scope, the situation overview, the Concept of Operations (CONOPS), the organisation and delegation of duties, the direction, control, and coordination, the communication, the administration, the finances, and the resources, the creation and upkeep of the plan, as well as the authorities and references.

All users of the EOP need to be oriented and familiar with this part of the EOP.

4.3 Plan Development, Implementation and Maintenance

During the plan development process, key stakeholders and partners of the health sector need to be consulted at the national and local level. They include the Ministry of Health and Family Welfare, Ministry of Home Affairs, Ministry of Environment Forest and Climate Change, Meteorological Services, Ministry of Fisheries, Animal Husbandry and Dairying, and Indian Red Cross Society at the State level and Local Councils. In addition, other relevant Ministries/Departments may be included during the process on a need basis.

All stakeholders involved in emergency management within the health sector should be oriented to the EOP. They should be clear about their roles and responsibilities during health emergencies. Efforts should be made to orient new staff or committee members when the members within an agency or committee change. Main responsibility of orientation lies with Ministry of Health and Family Welfare /Directorate of Health Services.

Departments and committees with specific functions should be trained as per their roles and responsibilities and according to specific preparedness plans to ensure effective and efficient emergency management when an emergency occurs. Exercises (simulations, desktop drills etc.) should also be conducted to evaluate the effectiveness and efficiency of the plan. Departments and committees can conduct separate training, exercises and mock drills to prepare for their functions. Lessons learnt and new information from such training exercises and mock drills should be used as feedback to improve this EOP.

The Directorate General of Health Services (Dte.GHS) shall initiate a review of this plan once every year or as required with the involvement of respective departments, agencies, key stakeholders and partners. However, the EOP should be reviewed and revised after each of the situations below:

a. A major public health emergency, incident, or disaster

b. Change in operational environment (change related to acts and policies, management, elected officials).

c. Major exercise with After Action Review (AAR) reports

d. Change in demographics or hazard/risk environment.

The Dte.GHS will ensure that essential changes and amendments to the plan are prepared, organized, and circulated. The EOC/PHEOC will provide a copy of the plan revisions to all departments, agencies and international organizations responsible for the implementation of the plan. If none of the above changes occur, the plan should still be reviewed yearly.

4.4 Alert Notification, Warning and Advisories

The following alert codes in EOC/PHEOC may be used for public health emergency alert notifications, warnings and advisories. The alert codes outlined in Table 3 are intended for use in relation to nationally led communications.

Table 3: Alert codes used in various phases

Phase	Measures	Code
Information	Notification of a potential emergency that may impact the population or specific information important to the health sector. **Example:** Emergence of a new infectious disease with pandemic potential or early warning of extreme weather conditions.	White
Standby	Warning of imminent code red alert that will require immediate activation of health emergency plans. **Example:** Imported case of a new and highly infectious disease in State/District without local transmission, or initial reports of a major mass casualty incident in a highly urbanized district which may require assistance from District/city or national level. Neighboring districts should also be prepared to pitch in such an eventuality.	Yellow

Table 3: Alert codes used in various phases		
Phase	**Measures**	**Code**
Activation	Major emergency in State/District exists that requires immediate activation of health emergency plans. **Example:** Large-scale epidemic or pandemic or major mass casualty incident in any part of the country requiring immediate response, assistance and coordination from all the national level agencies and partners.	Red
Stand-down	Deactivation of emergency response. **Example:** End of outbreak or epidemic. Recovery activities will continue.	Green

It is not necessary for PHEOCs, hospital EOCs, health centre EOCs and other government health care facilities to be at equally corresponding levels of alert. The appropriate level will be determined by the impact and the ability of available health care providers to respond or provide support for the response. For example, a district hospital in the northern part of the country may be in code red, while the district hospitals in the southern part are in code yellow. Geographical location and nature of the health emergency have to be considered.

EOC/PHEOC builds effective collaboration with local units and facilities (e.g., hospitals) during preparedness and crisis.

During crisis:

- Implement PHEOC response and action plan and any directly communicated instructions.
- Provide feedback on response and action plans.
- Report progress, complications and any issues/insights related to infections and patient treatment.

In non-crisis times:

- •Develop own regional and local response plans in line with PHEOC guidance.
- Assess capability gaps, develop gap closure plans, and implement required capabilities.
- Be ready to always support PHEOC spot checks.

- Train staff on reporting requirements, reporting data on time and monitoring data quality.

- Ensure staff and doctors directly reach out to the EOC/PHEOC hotline to report infection risks or other issues.

4.5 Concept of Operations (CONOPS)

Emergency Operation Plans must include a Concept of Operations or CONOPS. The system's intended function is described in the CONOPS. A complete national CONOPS contains three essential components:

I. Identifying all intended levels, stakeholders, and roles in response and response management, as well as the place that each responsible organisation occupies within the response system, results in three groupings, namely strategic level, operational level and tactical level.

II. Determining a decision-making authority framework or matrix.

III. Instructions to activate the PHEOC, including when, where, and by whom.

The CONOPS describes the structure and organisation of the overall response, the event grading to determine necessary response levels, the nature of escalating response levels, and how the response's various components interact. It also defines the intended operation of the entire public health emergency response system.

CONOPS outlines how and when to include various governmental divisions and levels and other partners (including international agencies) in the event management system. The CONOPs are crucial for outlining the strategic, operational, and tactical aspects of multisectoral cooperation (Figure 14).

- **Strategic Level-** Responsible for strategic coordination and policy making.

- **Operational Level-** Responsible for the effective coordination of all response elements and maintenance of situational awareness for strategic level authorities.

- **Tactical Level-** Responsible for the day-to-day actions that will achieve established strategic goals and objectives.

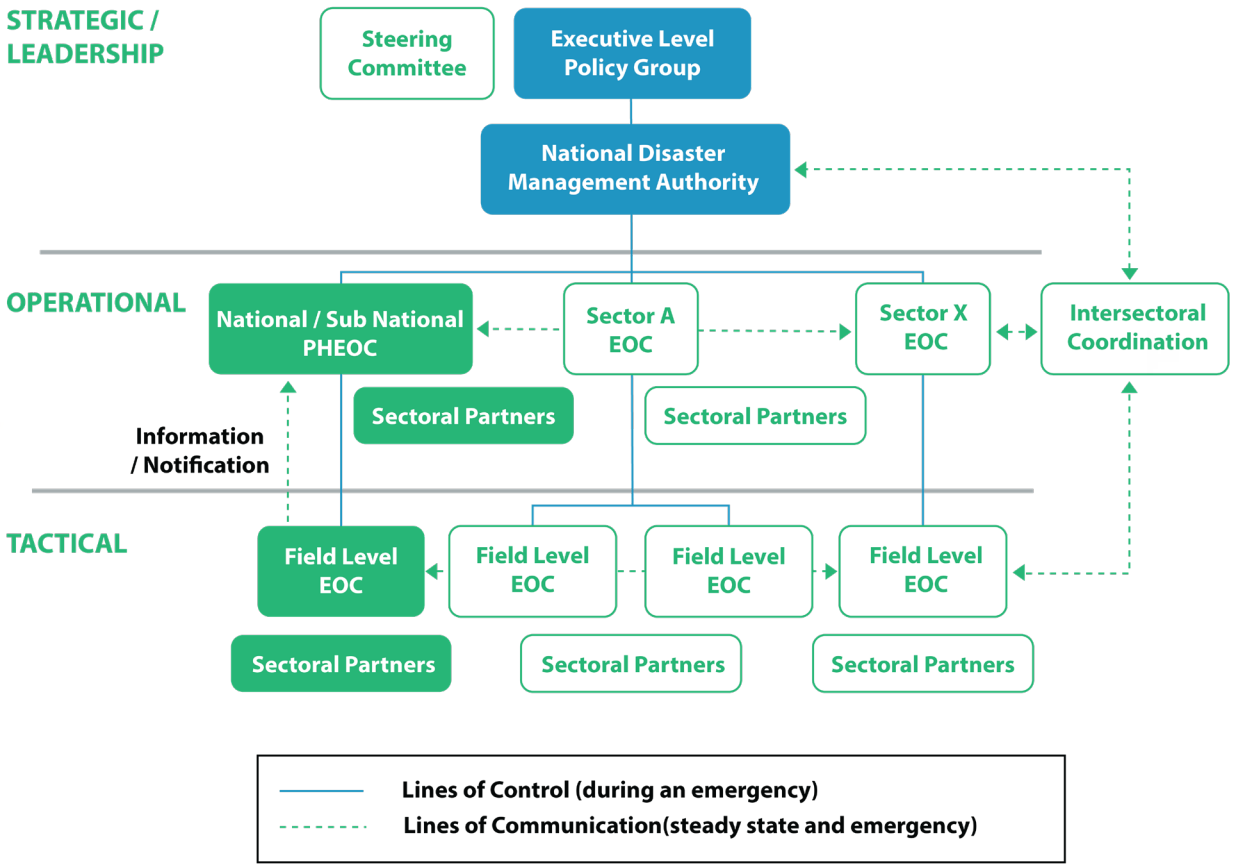


Figure 14: Sample National Level Concept of Operations (CONOPS) (WHO 2015)

4.6 Incident Action Planning Process "The Planning P"

The Incident Action Planning (IAP) Process is indispensable for efficient incident management, providing a structured framework that aligns operations with overarching objectives. Beyond paperwork, it establishes a consistent rhythm and structure crucial for effective incident response. Crafted for each operational period, the IAP, guided by a concise template, communicates expectations, detailing objectives, resources, actions, and operational details. It informs stakeholders, such as partners and EOC staff, outlining work assignments, organizational structure, and key meetings. The IAP provides guidance and thorough information about strategies and tools, ensuring a structured plan with specific deadlines to reach goals. Sequential execution of process steps contributes to the development of a thorough and effective IAP.

The development of IAPs constitutes a cyclical process, with personnel engaging in planning steps during each operational period, as illustrated by the Operational Period Planning Cycle (Planning P). Highlighting the significance of scheduling planning gatherings, team members formulate IAPs based on the up-to-date information during the Planning Meeting. In handling incidents often marked by circumstances and a lack of complete situational understanding, the Incident Commander promptly devises a straightforward plan conveyed through brief verbal updates. As the situation progresses, extra resources and advancements in technology facilitate planning processes. The process involves repeated cycles of planning and operations, including meetings

such as Objectives Development/Update, Strategy Meeting/Command and General Staff Meeting, preparing for the Tactics Meeting, Tactics Meeting, Preparing for the Planning Meeting, Planning Meeting, IAP Preparation and Approval, and Operational Period Briefing. This systematic approach ensures a continuous and informed response throughout the incident or event.



Figure 15: Operational Period Planning Cycle 'Planning P' (FEMA 2012)

5. EOC/PHEOC: Infrastructure and Information Technology



An EOC/PHEOC processes large amounts of sensitive information on open displays, so only validated personnel must be allowed into the EOC/PHEOC location. Since it is a high-pressure work environment, media and photo opportunities should be held off-site or staged when it is convenient for EOC/PHEOC staff and sensitive information is not visible. Securing data and systems is critical.

Computer networks should be protected from external threats, including network attacks, power surges, and outages. To prevent a security breach, firewalls, encryption, password protection, up-to-date anti-virus software and redundancy of data and hardware should be used to support rapid service recovery (NIDM, 2022b).

EOC/PHEOC technology solutions include:

- Selection of telecommunication systems and networks based on available connections for workstation computers, mobile devices, and hardwired telephones.
- Ability to conduct teleconferences (with video conferencing if feasible).
- Large screen video displays that support visual images to show the status and contextual aspects of an event.
- Media monitoring capability (e.g., television, radio, etc.)
- Video recording and playback capability.
- All the usual office equipment and supplies, such as computers, printers, copiers, document scanners, fax machines, application hosting, data storage servers, and forms, are to be designed to provide paper-based backups in case of technology failures.

5.1 EOC/PHEOC Infrastructure Facilities

There are two main types of EOC/PHEOC infrastructure facilities:

I. **Dedicated Facilities:** The ideal arrangement is to use dedicated space for an EOC/PHEOC . These facilities are common at regional, provincial, and national government levels. Dedicated facilities need an alternate location to be activated in case the primary EOC/PHEOC becomes unusable or unsuitable. These backup locations should be fully functional within minutes in case of technological or other failures.

Depending on the magnitude and impact of the anticipated emergency, it may be possible to use an alternate site that does not fully satisfy all the requirements of an EOC/PHEOC. Therefore, this alternate site may require equipment and personnel from the primary site if needed.

II. **Multi-purpose Facilities:** The most common EOC/PHEOC facility is dual or multi-purpose, which means the space is routinely used for activities that are not related to emergency preparedness and response, for example, capacity building training. The space is converted into an EOC/PHEOC when required. A dual or multi-purpose EOC/PHEOC is beneficial because the space is most likely in a central location where most EOC/PHEOC surge staff is drawn. The Information and Communications Technology (ICT) equipment is also more likely to be maintained because it is routinely used (NIDM, 2022a).

5.2 EOC/PHEOC Facility Requirements

An EOC/PHEOC facility should:

- Be large enough to accommodate all preparedness and response functions.
- Be close to the designated lead and partner agencies.
- Allow adequate space for staff and ample parking for private vehicles.
- Contains open common areas, relatively quiet working spaces, and closed workspaces suitable for meetings, conference calls, and small group activities.
- Provide adequate sanitary facilities, rest areas, and food amenities for people working for long periods.
- Be physically and environmentally secure, accessible, and capable of sustaining operations during a threat or disaster.

In a situation where it is difficult to get space for establishing permanent or temporary EOC/PHEOC, the virtual EOC/PHEOC using the IT network can be used. Ministry of Health and Family Welfare (MoHFW), Government of India (GoI), has given specifications for setting up HEOC, which is in **Annexure III**.

5.3 Securing an EOC/PHEOC Facility

On-site features like perimeter security and entry/exit restrictions are advised to safeguard the facility, resources, and staff from common hazards and potential break-ins. These could include safeguards like perimeter defences, access/entry restrictions, and closed-circuit television surveillance systems. The regular use of firewalls, encryption, password protection, up-to-date anti-virus software, and redundancy of data (and, to

some extent, hardware) is required to maintain the security of EOC/PHEOC data and the systems that process and store it (Republic of the Gambia 2018). This supports quick service recovery in the event of a security breach. A risk assessment of the facility and its surroundings should be carried out to determine the facility's most probable hazards.

5.3.1 Security

The EOC/PHEOC handles substantial volumes of sensitive information, often displayed openly. The work environment is high-pressure and intolerant of distractions. As a result, it's advisable to hold media conferences and photo opportunities off-site or, at times, that do not expose sensitive information to EOC/PHEOC staff. All electronic connections should use encryption and password protection, ensuring information security during transmission and storage. PHEOC personnel should be trained to counter social engineering attempts aimed at accessing confidential data. Furthermore, computer networks should be shielded from external threats, including network attacks, power fluctuations, and outages.

On-site measures protect the facility, resources, and personnel from routine hazards and potential attacks. These measures may include closed-circuit television surveillance systems, perimeter security, and access control. Maintaining the security of PHEOC data and its processing systems necessitates using firewalls, encryption, password protection, up-to-date antivirus software, and data redundancy. This redundancy, and to some extent hardware redundancy, supports rapid service recovery through techniques like "hot" failover in the event of a security breach (Republic of the Gambia 2018).

Data security is paramount to ensuring compliance with relevant information regulations. Every reasonable measure should be taken to shield data from cyberattacks. This includes addressing human factors in data security and ensuring well-trained staff to prevent system mis operation, whether intentional or accidental.

5.3.2 Safety

An EOC/PHEOC must be able to withstand the foreseeable risks identified during a pre-development risk assessment. Furthermore, it is crucial to establish contingency plans for technological failures within the EOC/PHEOC and to designate an alternative site for the EOC/PHEOC in situations where the primary facility becomes inoperable or unsuitable.

Depending on the scale and impact of potential emergencies, it might be feasible to designate an alternative site that doesn't completely meet all EOC/PHEOC requirements, necessitating the relocation of certain equipment and personnel from the primary site. This type of backup is commonly referred to as a "warm" site. However, a permanent EOC/PHEOC that is frequently or continuously in use should have an alternative location that can be activated with full functionality within minutes, known as a "hot site." To

ensure operations during any circumstances, all EOCs/PHEOCs need robust continuity plans. Moreover, having a succession strategy is crucial for handling the absence of staff members, whether due to anticipated or sudden reasons.

Ensuring the safety and well-being of EOC/PHEOC personnel is crucial, and comprehensive first aid provisions within an EOC/PHEOC play a role in achieving this. In the fast-paced world of emergency response, where quick decision-making is key, having easy access to first aid resources is essential. An equipped first aid setup within the EOC/PHEOC ensures that immediate medical assistance can be provided when needed, aiding in the recovery and resilience of personnel. Additionally, a strong first aid system promotes a culture of safety and preparedness among all involved.

5.3.3 Confidentiality

EOC/PHEOC data comes from various sources and is used for different reasons both within the EOC/PHEOC field and outside of it. Health authorities utilize it in non-emergency situations. As a result, the realm of EOC/PHEOC data is complex and involves a variety of entities. The utilization, release, disclosure, and exchange of EOC /PHEOC information should adhere to the legal frameworks in the respective countries or regions.

To ensure the ethical utilization of data and information, public health practitioners should address questions and concerns and identify significant issues that may arise when engaging in data-related activities. Pertinent considerations encompass, but are not limited to:

- Who is holding the data;
- What the data contain;
- Why these data were collected;
- Why were these data requested for release, and
- Who has requested the data?

The EOCs/PHEOCs collect and store digital data that may have elements of personal identifiers. The security of all such data should be in accordance with the Digital Personal Data Protection Act, which requires the identification of a data fiduciary and the data security measures to be put in place. Exemptions to the provisions are also applicable in certain cases and may be considered when dealing with personal digital data.

5.4 Designing EOC/PHEOC Layouts

5.4.1 Site Requirement and Layout of EOC/PHEOC

Special engineering and construction requirements must be considered for previously identified and assessed hazards associated with the proposed EOC/PHEOC location.

The physical EOC/PHEOC layout will have the following functional spaces:

I. Operations room with workstations

II. Communication centre cum conference room

III. EOC/PHEOC Incharge room

IV. Separate meeting room for priority discussions (mini conference room)

V. Personal hygiene facility

VI. Water/food storage and pantry facility

VII. ICT support/equipment room

VIII. Storage space

IX. Back - up electricity room

X. Recreational space

XI. Access control

Model Layout

Layout 1

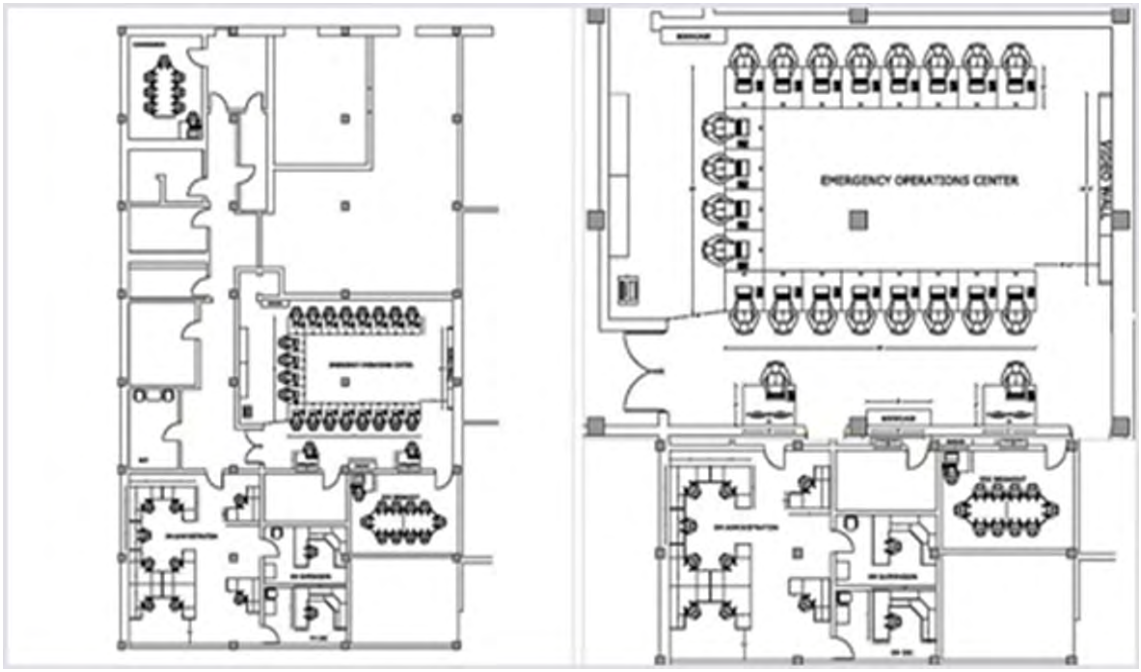


Figure 16: Layout 1 (NIDM 2022a)

Modern emergency operations centre design includes four general configurations. The number of seats in the operations room is determined by the number of staff required to maintain continuous operations (Figure 16). Regardless of the chosen furniture layout, staff must see shared large screens and speak to the people they need to interact with throughout the event (NIDM 2022a).

Layout 2

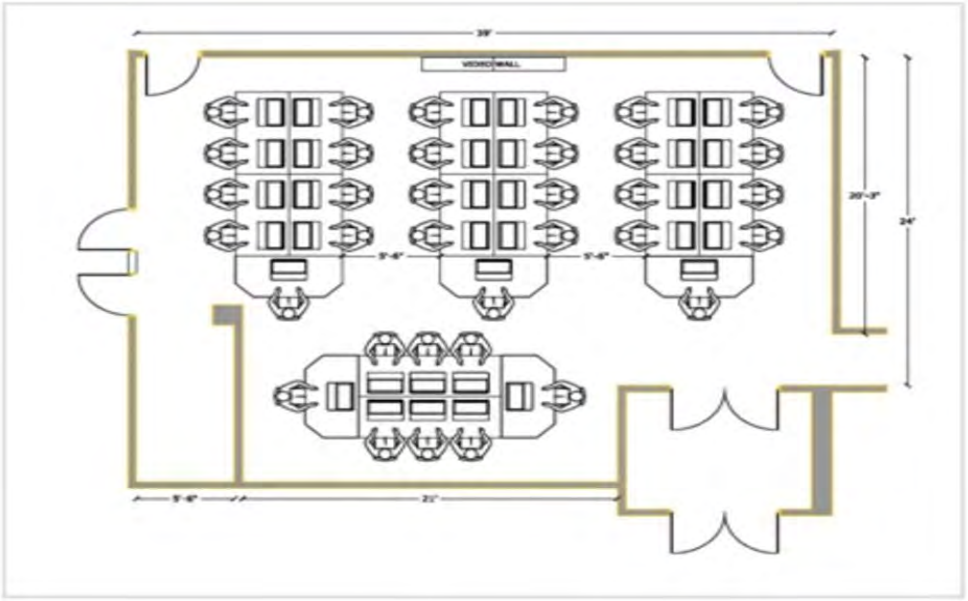


Figure 17: Layout 2 (NIDM 2022a)

This arrangement emphasizes working groups or teams of different specialities under the leadership of one or more staff facing the groups (Figure 17). If a video wall is included at the front of the room, the leadership would be placed at the head of each cluster or the back of the room to see the large displays (NIDM 2022a).

Layout 3

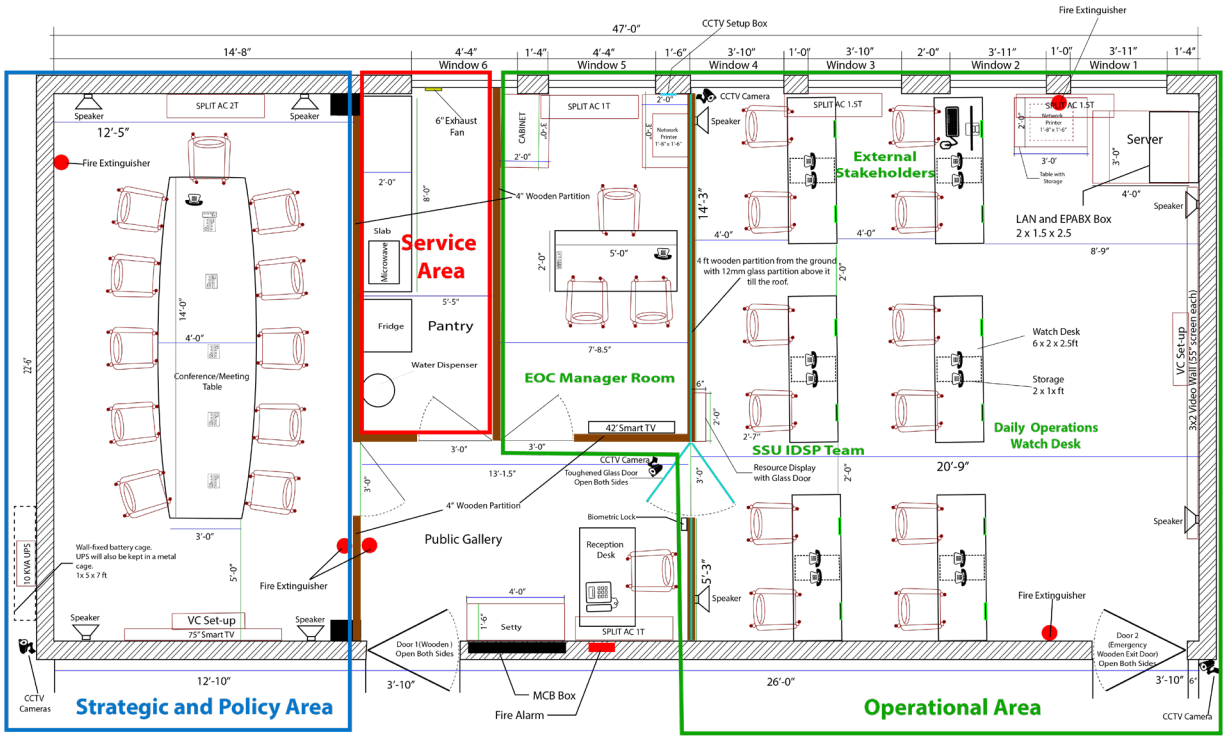


Figure 18: Layout 3

This layout is carefully structured to enable efficient coordination and response during health crises. Typically, it comprises a central command and control area where designated officials and decision-makers oversee the response efforts (Figure 18). Surrounding this core area are specialized sections responsible for key functions, including epidemiological surveillance, healthcare delivery coordination, logistics and supply management, public communication, and data analysis. These sections are interconnected, allowing for seamless information sharing and swift decision-making.

Considerations in Designing EOC/PHEOC Layouts

There are multiple EOC/PHEOC designs, namely the boardroom, mission control, and bull's-eye EOC/PHEOC. The choice of room design doesn't matter much. What is crucial is making sure that the staff can see the screens.

- **Boardroom Layout:** This setup mirrors the EOC/PHEOC configuration, where team members from departments sit around a U-shaped table with the main screen positioned at the front (Figure 19). Support personnel are behind the primary team, with the extra screens on the walls behind them. This layout promotes teamwork and synchronization among team members.

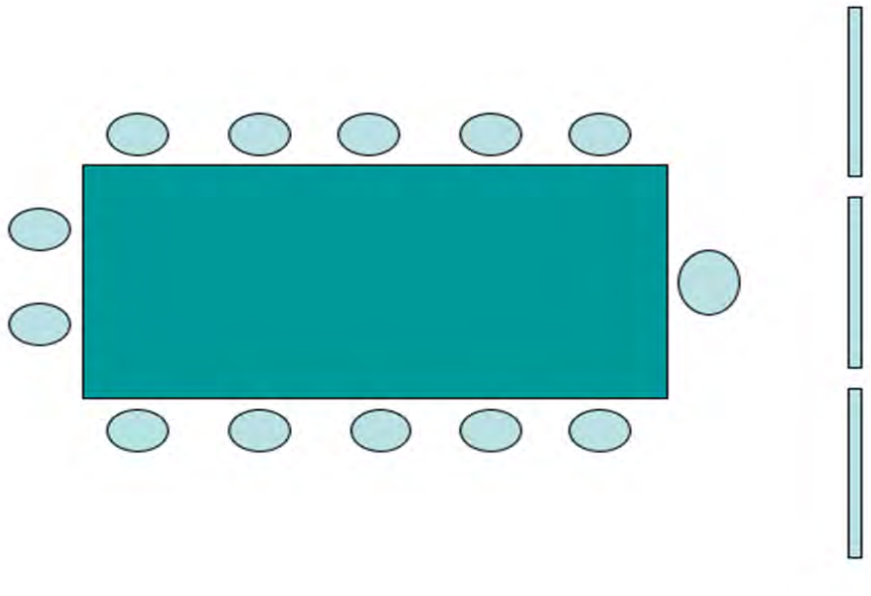


Figure 19: Boardroom Layout

- **Mission Control Layout:** The setup resembles a lecture hall, where employees sit in rows or semicircles facing screens (Figure 20). Technology plays a role as employees utilize incident management software for communication.

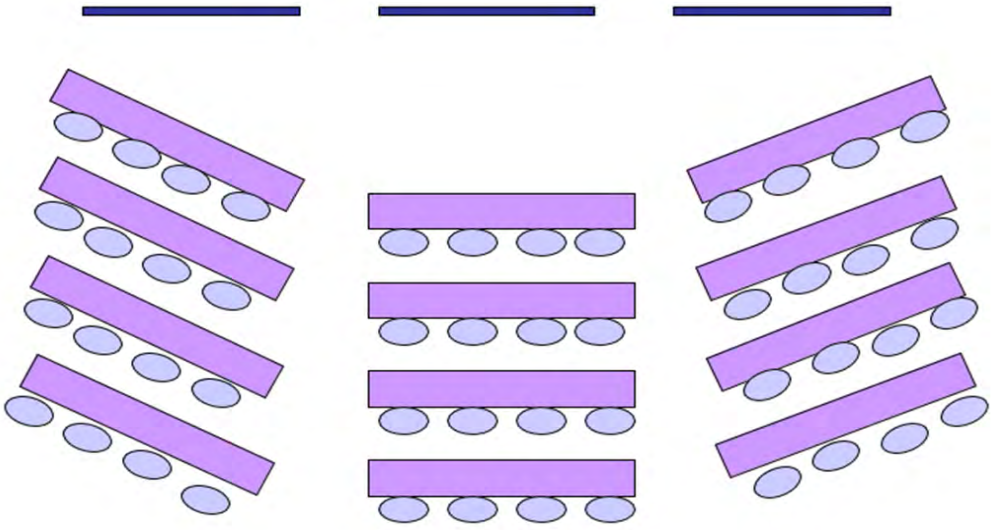


Figure 20: Mission Control Layout

- **Bull's-Eye Layout:** In this design, key leaders are seated at a central table, while additional staff sit at tables arranged in concentric circles behind them. This configuration highlights the importance of key individuals but can restrict collaboration. Due to its space-intensive nature and limited collaboration potential, the bull's-eye layout is not considered the ideal choice for an EOC/PHEOC setup.

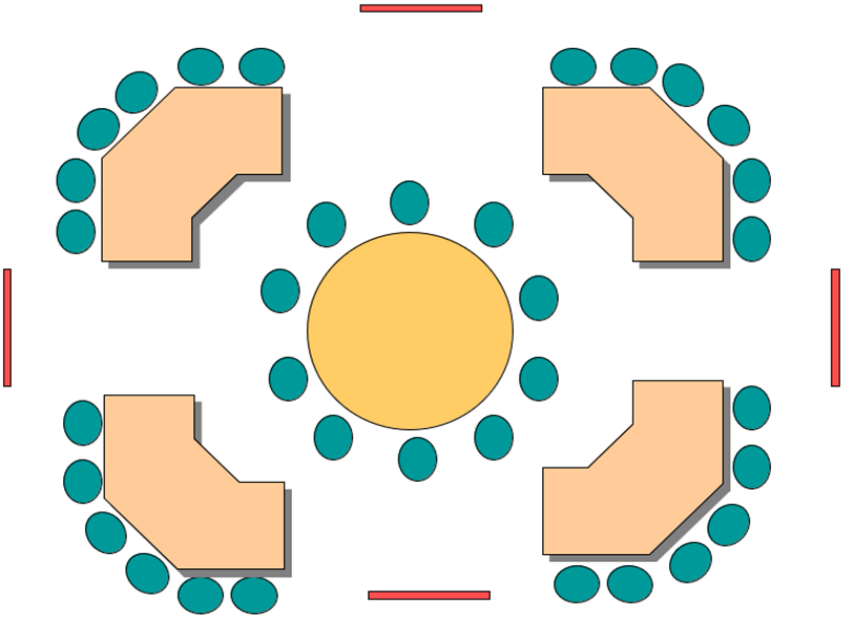


Figure 21: Bull's Eye Layout

As per the global standards, the other physical PHEOC layouts is given in Figure 22:

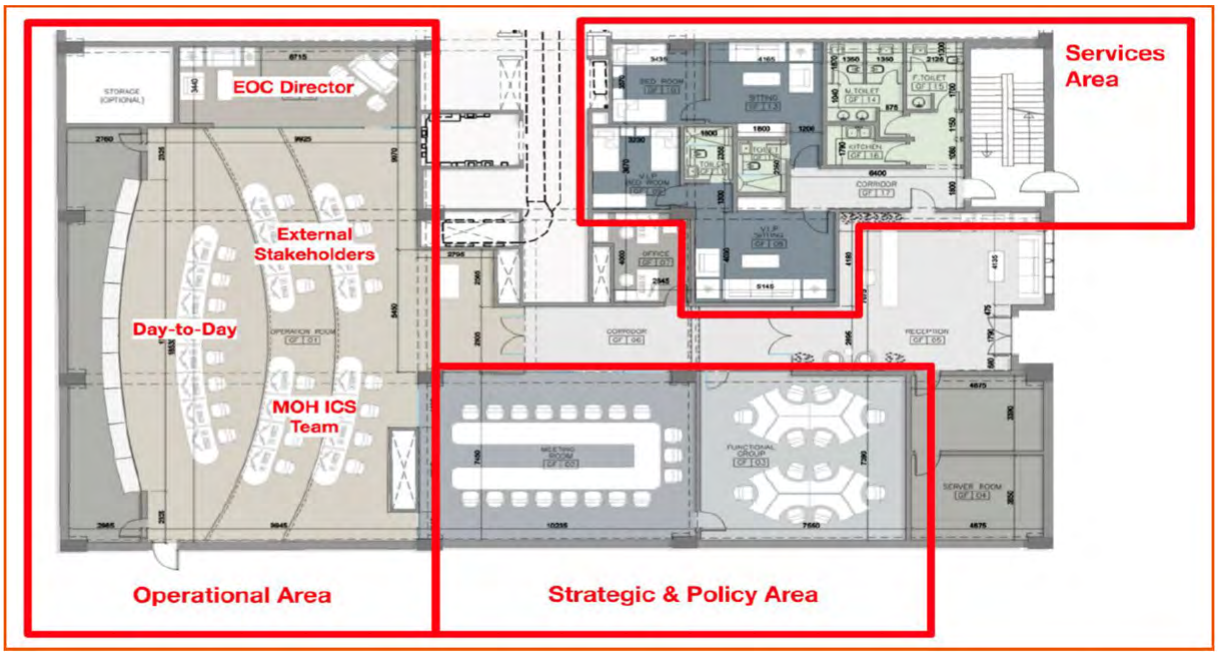


Figure 22: Layout of PHEOC - Source: Saudi Arabia- National Health Emergency Operations Centre

5.4.2 The Facility Features

- A controlled main access from the highway towards the building.
- Secured fence boundary from 4 sides.
- Governmental building far from residential neighbourhoods, resisting human-induced hazards.

- Internal and external Voice Over Internet Protocol (VOIP) connection.
- Short Message Service (SMS) gateway server.
- High-Speed Internet connectivity.
- Access control and Closed Circuit Television (CCTV) for maintaining the facility's security.

The EOC/PHEOC room acts as the 'nerve centre' of the EOC/PHEOC by collecting data, monitoring key triggers, and raising alerts to respective platforms to take actions.

- Establish and sustain a data collection channel.
- Ensure data quality.
- Monitor for triggers on Operational readiness and case data.
- Raise alerts and ensure operational response through follow-up and escalation.
- Publish reports on data collected by the Situation Room.
- Support continuous improvement of protocols and data collection.
- Support advanced analytics.
- Overall, a multi-sectoral coordination organization structure was put in place.

5.4.3 Electrical Requirements including Cabling System

- Interior lighting requirements will vary depending on the type of operation. There will be a combination of natural and artificial lighting to accommodate long working hours.
- EOC/PHEOC should be equipped with a standalone and independent Heating, Ventilation and Air Conditioning (HVAC) system to provide climate control within the premises.
- There should be a cabling plan for electrical and tele-communication requirements that would address accidental damage, electrical safety, reliability and system redundancy.
- Back-up generators/ Uninterruptible Power Supply (UPS) would take care of the electric load requirement of the entire EOC/PHEOC premises. Capacity of the back-up power supply should be able to support continuous back-up to all key/ critical functions of PHEOC.

5.4.4 Acoustic Treatment

The operational areas, including the conference room and video conference facility, should be acoustically treated to minimize external/internal noise disturbance. This includes acoustic insulation of ceilings, walls, windows and doors that meet sound isolation criteria.

5.4.5 Office Furniture

The furniture should be ergonomic in design considering the comfort, occupational health, and safety of EOC/PHEOC workers. The furniture layout and size should not interfere with the passage or work area and should have manoeuvrability.

5.4.6 Fire Safety System

The entire EOC/PHEOC premises should be compliant to the existing fire safety norms of the fire department, including fire detection and alarm system, provision of fire sprinklers, fire exits, signages etc.

5.4.7 Office Equipment and Supplies

The operational area should have a networkable heavy-duty multifunction printer (colour) with copier-scanner-fax capabilities. Similar equipment would also be available in the incident manager's chamber. This will ensure adequate preparation.

The EOC/PHEOC studio should have a smart electronic whiteboard that provides advanced features such as multi-party interaction, connectivity to computers, interaction with projected content, etc.

An adequate supply of office consumables should be provided to ensure business continuity. This should include paper, ink/toner cartridges, Universal Serial Bus (USB) drives, fasteners [clips, binders, tapes, staplers (incl. heavy duty staplers)], desk organizers with envelopes, binders, albums, boxes, and crates.

5.4.8 Cybersecurity

EOCs/PHEOCs must safeguard their systems from physical and digital threats, such as unauthorized access, denial of service attacks, and ransomware. With the increasing complexity and sophistication of cyber threats and vulnerabilities, the frequency and severity of incidents targeting EOCs/PHEOCs are rising. Therefore, it is imperative for EOCS/PHEOCs to proactively manage their cybersecurity risks. The establishment of cybersecurity risk management is essential as it assists EOCs/PHEOCs in identifying and prioritizing risks, safeguarding their assets, detecting potential threats, and enabling a

coordinated and effective response and recovery. Cyber mishaps may inevitably occur despite best attempts.

EOCs/PHEOCs need to be well-prepared to carry out response procedures, prevent incidents from escalating and reduce their impact. Having plans for incident response, recovery or resilience, and continuity of operations is essential in dealing with cybersecurity incidents. Improving planning processes and strategies by incorporating lessons learned from incidents is crucial for continuous upgrades. Response team members should undergo training on security measures, resilience practices, continuity plans, and operational best practices. It's important for them to regularly update their skills as new technologies and methods emerge.

5.4.9 EOC/PHEOC Call Centre (Toll-Free Public Information Service)

The EOC/PHEOC will act as hubs for managing public health emergencies, addressing inquiries from the general public, healthcare professionals, potential patients, and caregivers. To support this role a Private Branch Exchange (PBEX) system should be set up to facilitate communication via telephone within the EOC/PHEOC. Additionally, it should incorporate Voice over Internet Protocol (VoIP) technology to seamlessly integrate telephone services and an automated call-handling system. An Automatic Call Distributor (ACD) will manage calls by accepting, queuing, routing, and tracking them efficiently. The integration of an ACD with the PBEX system is highly advantageous. Moreover, the system will be linked to office computers through a Computer Telephony Integration (CTI) server.

Another important consideration is assigning a toll-free phone number for the Public Information Service managed from the designated Public Information area. If necessary, multiple phones and operators can be assigned to this hotline. The Information Officer must ensure that operators are well-informed to address queries without disrupting the EOC/PHEOC staff.

If setting up a toll number proves unfeasible, allowing collect calls should be considered. The EOC/PHEOC telephone numbers aside from the Toll Free Public Information Service should not be shared with the public.

5.4.10 Media Scanning and Verification Cell (MSVC)

Within an EOC/PHEOC, the Media Scanning and Verification Cell (MSVC) plays an important role. EOCs/PHEOCs are established to oversee and organize responses to health crises, such as disease outbreaks, disasters, human-induced disasters or other health emergencies. The MSVC team within the EOC/PHEOC monitors, evaluates, and confirms information from media outlets encompassing both traditional and social media. Its primary objective is to ensure that accurate time and trustworthy information guide public health decision-making and communication strategies in times of crisis.

Listed below are some functions of how the MSVC Cell operates within an EOC/PHEOC:

- **Information Gathering:** The MSVC actively monitors various media sources, including news outlets, social media platforms, government reports, and updates from international organizations.
- **Fact Checking:** In crises, there is usually an overflow of information, some of which may not be accurate or reliable. The MSVC is responsible for confirming the truthfulness of information by consulting sources and conducting fact checks to ensure that decision-makers have access to reliable information.
- **Real Time Awareness of Situations:**The MSVC provides updates on emergencies, supporting leaders and responders in making well-informed decisions. These updates include details on the status of emergencies, affected areas, case counts, available resources and the community's feelings.
- **Addressing Rumors:** False information and rumours can spread rapidly during health emergencies and disasters. The MSVC identify and dispell rumours through accurate and transparent communication.
- **Enhancing Public Communication:** The data verified by the MSVC influences public health communication strategies. It helps in creating messages tailored to situations that effectively address concerns.
- **Coordination:** The MSVC works closely with other EOC/PHEOC units, such as the Epidemiology Team, Medical Operations, and the Public Information team, to ensure coordinated and well-informed response efforts.
- **Data Analytics:** The MSVC can also utilize data analytics tools to recognize trends, patterns, and public sentiment to predict needs, challenges, and public reactions.
- **Continuous Adaptation and Learning:** In time, the MSVC adjusts its monitoring and verification processes, drawing insights from incidents to enhance future emergency responses.

5.5 Information and Communication Technology (ICT)

The EOC/PHEOC brings together highly trained experts and state-of-the-art technology to coordinate resources, information, and crisis and emergency risk communication to strengthen our nation's ability to detect and respond to public health threats.

Daily EOC/PHEOC operations rely on a variety of ICT infrastructure. One of the most critical components of the EOC/PHEOC is its communications system. Information and strategic orders can be passed into and out of the facility without interruption. EOC/PHEOC technological solutions incorporate hardware and software systems, internal

and external telecommunications, and all aspects of information management.

It is vital to have at least a basic ICT facility to enhance communication, including:

- Technological infrastructure (computers, data storage, display screen, VSAT etc.)
- Network infrastructure (networking of communication, computers, and other appliances)
- Tele-communication equipment and services (internet, telephone, radio, etc.),
- IT security (antivirus, firewall, etc.)
- Office equipment (printers, scanners, fax, etc.)

There are no set standards for equipping an EOC/PHEOC or for the systems that should be installed. Requirements will depend on numerous factors, including but not limited to the type or types of incidents anticipated, the geographic location, and the number of staff.

5.5.1 Role of Information and Communication Technology in Information Management

Good information is relevant for its purpose, sufficiently accurate, complete enough for the problem, reliable, timely, and understandable. IT builds the technical information infrastructure that facilitates the efficient processing and movement of data, files, and messages. The IT infrastructure provides access to applications, databases, and mail and communication services that enable the organization to perform its work with accuracy, reliability, and speed.

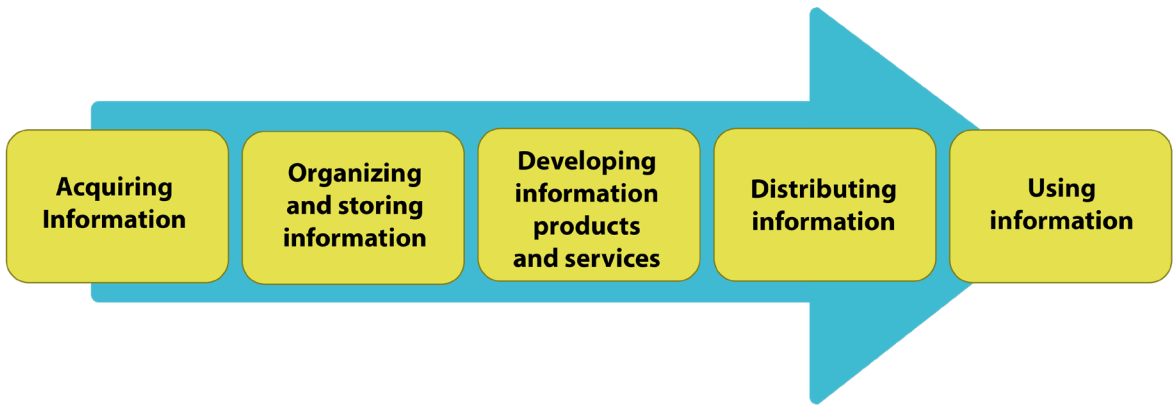


Figure 23: Flowchart of Information Collection, Distribution, Usage and its Management (WHO)

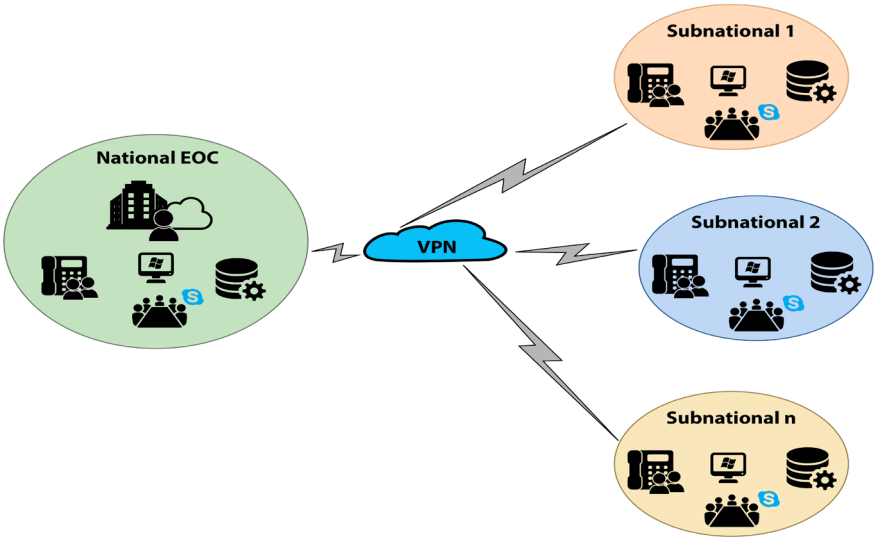


Figure 24: Generic Technology and Infrastructure Specification Requirement

5.5.2 Hardware Components of a Modern EOC/PHEOC

An EOC/PHEOC should be able to survive the probable hazards identified in a pre-development risk assessment. It is necessary to have back-up plans for technological failures within the EOC/PHEOC and to have an alternate site for the EOC/PHEOC in circumstances that make the designated facility unusable or unsuitable.

- **Communications:** A telecommunications system or network comprising a variety of choices depending on available connectivity options. Within the EOC/PHEOC, personnel will require workstation computers with internet connections and a mobile or a hardwired telephone.
- **Information Management:** Large screen video displays support visual representation of the status of the event and its contextual aspects that influence decision-making. In addition, media monitoring capacity (television, radio, etc.) is required. It is useful to have video recording and playback capability.
- **Resiliency:** Alternate power, connectivity, data backup.

5.5.3 Communication

Effective emergency communications are integral to effective emergency response and decision-making. Sharing information with vertical and horizontal response partners supports situational awareness and decision-making at all levels of emergency management. Timely communication of incident information, including impact on the Public Health and Medical System, current and anticipated resource needs, and the capacity to respond, are essential to developing a common operating picture. All emergency communications shall be managed through the EOC/PHEOC.

MoHFW and its departments have established communication mechanisms with all other entities and organizations for regular communication needs and information management. The same mechanism and means, if unaffected, shall be used during health emergencies by the response personnel. The primary means of communication within the health sector include landline telephones, mobile cell phones, emails, and face-to-face communication to alert, notify, and share information during an emergency. EOC/PHEOC maintains an updated telephone contact list of key stakeholder needed in an emergency.

EOC/PHEOC will have dedicated hotlines, mobile phones, internet devices and a satellite phone for internal and external emergency communication. Public and private healthcare facilities and medical service organizations have their landlines and assigned mobile phones as primary and secondary contact numbers, which should be utilized as the main means for emergency communications. This function during emergency response is managed and coordinated by the communications unit in the Logistics Section of the EOC/PHEOC.

Public health emergencies such as endemic and pandemic disease outbreaks are unlikely to affect the communication system. However, t in the disaster-prone states in India, the risk of catastrophic events like flash floods /floods, cloudbursts, avalanches, landslides, mudflows, and earthquakes may destroy and damage the communication service infrastructure in the affected areas leaving the hospitals and health facilities with no communication until the issue is restored. In such situations, all other communication means available within the coordinating and supporting agencies will be utilized, such as the Police Department and National Disaster Response Force (NDRF) etc., because they have emergency communication systems throughout the national and subnational levels.

The Emergency Communications Framework should be established which would describe the communication and IT protocols and coordination procedures between response functions during public health emergencies. It shall discuss the mechanism for delivering communications support and its development, including hardware, set-up, and resource allocation to communicate during disasters and emergencies effectively and strategically.

5.6 Information Systems

The goal of an effective EOC/PHEOC information system is to increase the availability, accessibility, quality, timeliness and usefulness of emergency operations information for public health action (MoHFW 2023a). The purpose of the EOC/PHEOC information system is to collect, collate, store, analyse and share data to support all functions of EOC/PHEOC.

It should support all functions and have the capacity to:

- Ensure data security, privacy, and confidentiality.
- Make sure system operations are uninterrupted.
- Adopt data and information technology standards that allow EOC/PHEOC information systems to integrate seamlessly with other relevant national health information systems. This includes common data-sharing platforms, the development and use of a common communications plan, and interoperability of communications equipment, procedures, and systems.

The EOC/PHEOC information system must seamlessly integrate with other relevant national information systems. Development and improvement of an EOC/PHEOC information system should follow general approaches, principles and processes for strengthening health information systems in the country.

5.6.1 Information Flow Chart

The information flow within all EOCs/PHEOCs' modes will follow the pattern outlined in Figure 25. States can collaborate with other stakeholders, including public and private departments, to obtain information in watch and response mode.

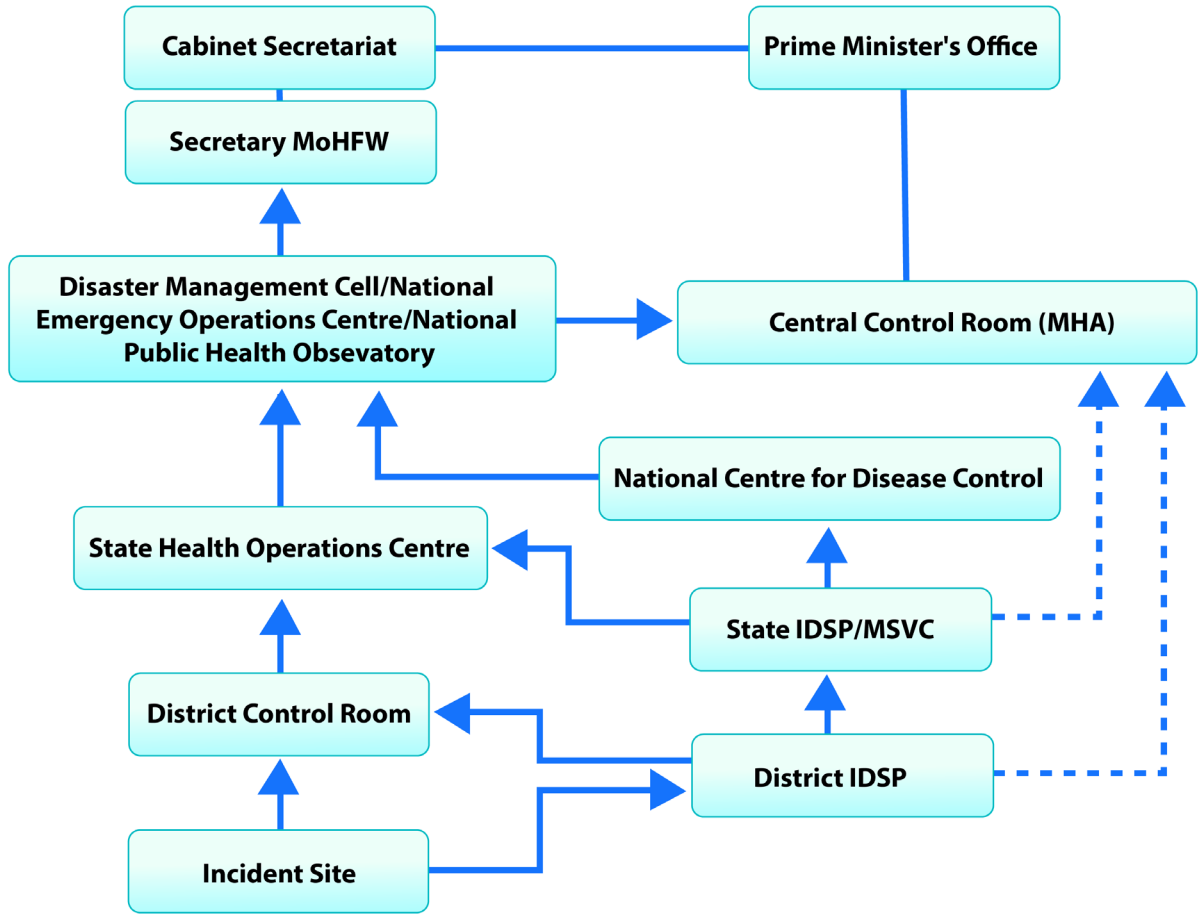


Figure 25: Information Flow Chart (MoHFW 2023a)

5.7 Data Types and Standards

Three general types of data must be routinely captured, processed, and displayed in an EOC/PHEOC (Table 4). There are varying levels of detail that should be tailored to the needs of the event and the responsible jurisdiction.

Table 4: EOC/PHEOC Data Types

Event-specific data	Event management information	Context data
• What • How many • Where • Who • How quickly • Current status	• Human and material resources • Status of interventions and partner activities • Resource deployments • Expenditure • Progress in achieving objectives	• Mapping population distribution • Transportation links • Location of fixed and temporary facilities • Availability of clean water • Climate and weather

5.8 Human Resource

The leading and overall responsible agency for EOC/PHEOC, i.e., Ministry of Health and Family Welfare (MoHFW), will direct, coordinate, and mobilize all available resources as necessary within the jurisdiction of the ministry and other resources from coordinating and supporting agencies to mitigate the effects of the disaster event, or impending public health emergency. All employees and temporary staff working under MoHFW shall be considered emergency workers and, as such, may be called upon to respond in a duly proclaimed emergency. To the extent possible, the same personnel and material resources used in normal day-to-day functions will be employed in EOC/PHEOC and emergency response operation and recovery efforts.

An EOC/PHEOC requires competent and trained persons to successfully achieve its objectives and functions. Ideally, EOC/PHEOC staff should be familiar with the structure and components of public health response. Human resource needs for maintaining and operating an EOC/HEOC include routine and surge staff. Their training and exercise needs, both at the outset and on an ongoing basis, should be communicated to the staff members and their supervisors. Adequate time and financial resources should be allocated to support their training and exercise requirements. Additionally, for new hires, initial training in IRS/IMS should be provided, followed by role-specific training tailored to their responsibilities within the EOC/PHEOC as determined.

5.8.1 Routine Staff

As per global standards, the minimum Human Resources required for the National/Sub-national EOC/PHEOC are detailed below:

- EOC/PHEOC Manager- 1
- Situational Awareness Unit
  - Watch desk – Technical officer 1, Assistant - 1
  - Media Verification Cell - Technical Officer 1, Assistant - 1
- Operations Unit
  - Operations Officer-1
  - IT Consultants -2
- Planning Officer – 1
- Logistics Officer – 1
- Admin and Finance Officer - 1
- Capacity Development and Documentations Unit
  - Training Manager- 1
  - Documentation Officer - 2
  - Communications Officer – 1
  - Data Entry Operators - 4
- Support Staff – 4

5.8.2 Surge Staff

The EOC/PHEOC will maintain a roster of multi-disciplinary and multisectoral experts who can be mobilized to staff the activated EOC/PHEOC . When the IRS/IMS is activated, depending on the scale of the incident, positions will be identified in the IRS/IMS. A human resource response plan will be developed based on the positions identified.

A request for assistance needs to be made to key partners should there be a need to

fill required positions. Government Ministries, Departments, Agencies and NGOs will make available their resources to EOC/PHEOC during health emergencies to support the following activities when required and requested:

a. Emergency communication.

b. Transporting and logistics.

c. First responders, rescue, temporary shelter, or other immediate relief, drinking water, essential provisions, healthcare, and other services in an affected area.

d. Emergency infrastructure (setting up isolation and quarantine facilities).

e. Provide assistance in the disposal of medical waste.

f. Funeral proceedings for the victims who lost their lives in the event of disaster.

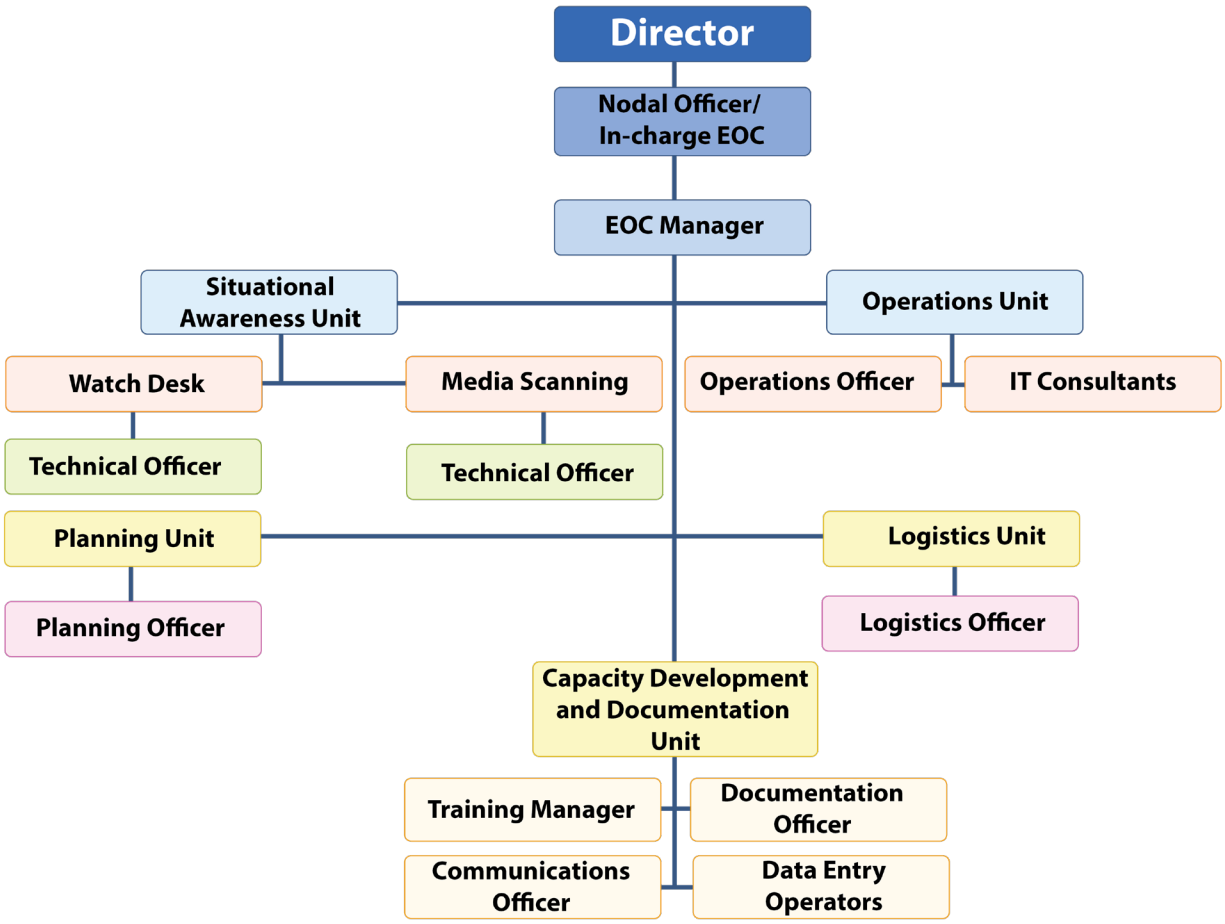


Figure 26: Organogram for the EOC/PHEOC.

5.9 Use of Artificial Intelligence (AI) and Machine Learning Tools

The use of Artificial Intelligence (AI) and machine learning technologies in emergency management within EOC/PHEOC environments has the potential to significantly enhance preparedness, response and recovery procedures. Here are some ways in which AI and machine learning tools can be applied:

- **Early Identification and Risk Assessment:** By employing AI algorithms to analyze data from sources such as weather forecasts, sensor networks and historical records, it becomes feasible to predict and assess hazards. Machine learning models can provide alerts for disasters, disease outbreaks or chemical incidents, enabling planning for readiness and response.

- **Situational Awareness:** Data analysis powered by AI technology can support EOCs/PHEOCs in monitoring real-time information from sources like social media platforms, news and official reports to quickly grasp the unfolding emergency situations. This aids in enhancing decision-making processes and expediting coordination of response efforts.

- **Optimization of Resource Management:** Leveraging machine learning capabilities allows for allocating resources such as supplies, personnel and equipment based on demand-supply dynamics. This ensures that resources are distributed effectively to areas where they are most required.

- **Predictive Forecasting, with AI:** Through AI driven models, experts can forecast the spread of diseases, enabling authorities to allocate resources and implement targeted interventions. Machine learning can also analyze data to identify trends and patterns that could impact emergency scenarios.

- **Examining images and videos:** AI technology can review visuals from drones, satellites or surveillance cameras in disaster-stricken regions. This process aids in understanding the extent of the damage and facilitating response actions.

- **Understanding through Natural Language Processing (NLP):** NLP algorithms play a role in analyzing and summarizing textual data like social media posts, news articles and official reports. This assists EOCs/ PHEOCs in understanding sentiment, detecting misinformation and sharing information with the public.

- **Anticipating Resources and Forecasting Demand:** AI can forecast the demand for supplies, healthcare facilities and other resources during emergencies by leveraging data, real-time inputs and evolving circumstances. This proactive approach ensures the availability of resources.

- **Engaging Communication with the Public:** Chatbots and virtual assistants powered by AI offer automated responses to inquiries from the public during emergencies. They have the ability to share information, provide guidance and reduce the workload of call centres.

- **Identifying Vulnerabilities and Risks:** Machine learning can analyze geographic and socio-economic data to pinpoint populations particularly vulnerable to emergencies. This data helps in targeting response efforts.

- **Planning for Recovery and Analysis:** AI can support event analysis by examining data on the impact effectiveness of responses and recovery operations. This data assists in refining strategies for preparedness and response.

Integrating AI and machine learning tools into an EOC/PHEOC can result in decision-making based on data, improved management of resources, and increased public involvement during emergencies. However, it is crucial to ensure that these tools are secure, reliable and tailored to the needs and capabilities of the EOC/PHEOC and the wider emergency management framework.

A compilation of AI and machine learning tools in emergency management settings and within an EOC/PHEOC:

- **IBM Watson Studio:** IBMs platform offers a variety of AI and machine learning tools to develop, train and implement models for tasks like evaluating risks, creating models and allocating resources.

- **Google Cloud AI:** Google Cloud provides AI services such as analyzing language, images, videos and building predictive models that can be integrated into systems for handling emergencies.

- **Microsoft Azure Machine Learning:** Azure's machine learning services support the creation of models, anomaly detection, and real-time analytics to aid decision-making in emergency situations.

- **Amazon Web Services (AWS) Machine Learning:** AWS offers machine learning services for analyzing data, creating models and making decisions during emergency situations.

- **H2O.ai:** H2O.ai offers an open-source platform for machine learning and predictive analytics that can be customized for emergency management applications.

- **Tableau:** By integrating Tableaus data visualization tools with AI and machine learning algorithms, interactive dashboards can be designed to offer insights into emergency scenarios and response efforts.

- **PowerBI:** PowerBI is a business intelligence tool with AI features for analyzing data, visualizing information and predicting trends to support decision- making in sectors including emergency management.

- **RapidMiner:** RapidMiner is a data science platform that provides functionalities like machine learning, text analysis and predictive analytics to aid in planning, for emergency responses.

- **TensorFlow:** TensorFlow is a machine learning framework created by Google that helps build and use AI models for handling emergencies.

- **PyTorch:** PyTorch, another free machine learning framework, for free allows flexibility in creating AI models. It Ccan be used for tasks like analyzing images and processing language.

- **C3.ai:** C3.ai provides a platform powered by AI that supports emergency management applications offering analytics, resource optimization and risk assessment.

- **Ayasdi:** Ayasdi uses machine learning and data analysis to uncover patterns from datasets to and aid in planning responses to emergencies.

- **BlueDot:** BlueDot uses AI and natural language processing to track and predict disease outbreaks, assisting public health officials in decision- making.

- **OneConcern:** OneConcern offers AI driven solutions for disaster response and recovery planning through modeling tools for risk assessment.

- **Enview:** Enview employs AI and machine learning to analyze sensor data and identifying hazards, such as vegetation growth near power lines, to prevent emergencies.

- **Artificial Intelligence for Disaster Response (AIDR):** AIDR is an open- source platform utilizing machine learning to analyze social media content related to disasters, for awareness.

It's important to grasp that while these AI and machine learning tools are considered safe and dependable, it's vital to adhere to data protection regulations, privacy protocols and security measures when implementing them. This safeguards data and instills trust among those affected.

6. Public Health Emergency Management (PHEM)



All public health emergencies and their management occur in a particular context, which can be affected by factors including:

- Magnitude, location and impact of the event.
- Availability of human and material resources to address it.
- Legal and policy environments and mandates.
- Strengths and limitations of emergency response and management agencies.
- Degrees of resilience in individuals, social systems and health service agencies.
- Other factors that contribute to the uniqueness of each situation.

Different settings require varying degrees of engagement with response partners and the scope of essential management actions.

The management of public health emergencies includes a variety of operations, from high-level policy and logistical coordination by a national government or international organisation to direct response at the local or field level. Tactical operations differ from strategic operations in their specific focus areas t o safeguard public health and safety, maintain or restore key services, offer emergency assistance, and manage event-associated risk . Emergency management efforts during public health emergencies supplement ordinary public health tasks rather than taking their place.

6.1 Elements of Public Health Emergency Management (PHEM)

A comprehensive Public Health Emergency Management (PHEM) Programme has five commonly recognized elements (Figure 27):

I. **Risk Assessment** includes hazard identification, vulnerability or threat assessment, risk estimation and surveillance and monitoring of potential or evolving threats.

II. **Prevention and Mitigation** involve treating identified risks to prevent them or introduce measures to reduce their impact. It may include disease detection and outbreak prevention and control, vaccination of populations, food and water

safety, environmental protection programmes, community education and social mobilisation.

III. **Preparedness** involves assessment of capacities and capabilities, development of plans, development and maintenance of infrastructure, maintenance of stockpiles, design and implementation of procedures, and training of personnel. It also includes technical capacity building, planning and training and exercising.

IV. **Response** involves utilizing preparedness resources, undertaking activities to react to an event and managing the event proactively. Response activities may include situation assessment, mobilisation of resources, enhanced surveillance, contact tracing, environmental health intervention and monitoring.

V. **Recovery** refers to restoring damaged infrastructure and resources, restoring routine surveillance and monitoring activities and licensed health facilities, restoring community infrastructure and resilience, evaluating response outcomes, conducting an after-action review and implementing an action plan to mitigate risks and improve future responses.



Figure 27: Elements of Emergency Management Programme (NIDM 2022b)

The response phase occurs in the immediate aftermath of a public health emergency. During this phase, operations do not function normally. Personal safety and wellbeing in an emergency and the duration of the response phase depend on the level of preparedness. These capabilities are central to an effective PHEOC, which is created and maintained through training selected staff and coordination with other relevant sectors.

To respond to public health emergencies, the following management procedures and frameworks are necessary:

- Effective human and financial resourcing and accountability.
- Confident and competent decision-making and operational execution.
- Reliable and quick processing of data and information into action plans.
- Rapid resource deployment.

It is incredibly beneficial to have a uniform organisational model or framework for all tiers of emergency management accountability within a jurisdiction, from the national government to front-line emergency response agencies. The Incident Management System (IMS), the concept on which this framework is based, is evolving into standard procedure in many areas of the world. In India, a similar Incident Response System (IRS) is followed.

6.2 Incident Management System (IMS) at Global Level

An Incident Management System (IMS) is an emergency management structure and set of protocols that provide an approach to guiding government agencies, the private sector, non-governmental organizations, and other sectors to work in a coordinated manner primarily to respond to and mitigate the effects of all types of emergencies. PHEOCs play a vital role in the IMS, as they are the focal points or hubs for the coordination of information and resources to support incident management activities. The IMS may support other aspects of emergency management, including preparedness and recovery.

The IMS model has the following core functions (Figure 28):

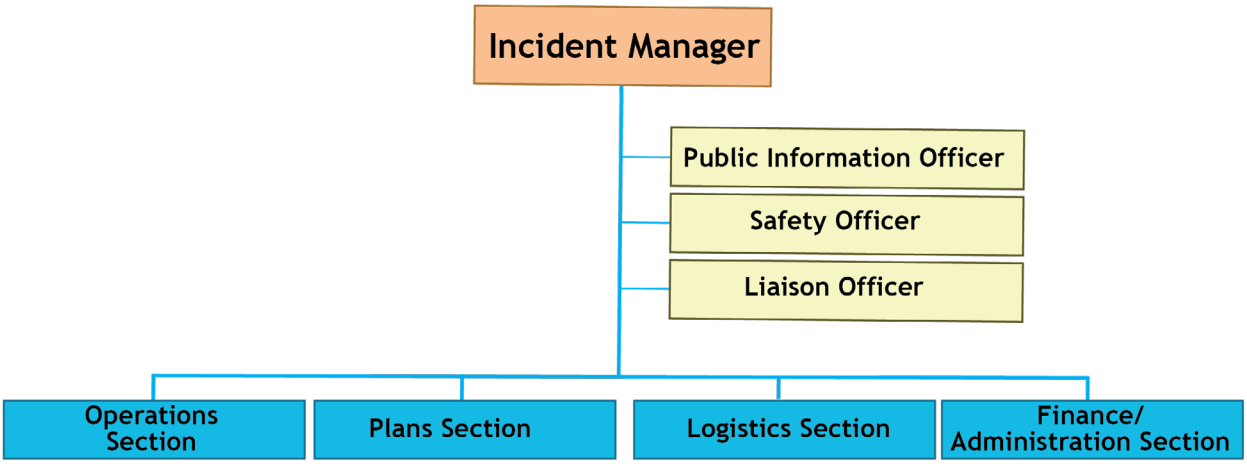


Figure 28: Functions of Incident Management System (IMS) (WHO)

6.2.1 Management Function

The Management function is an executive, strategic, operational, command, and coordination activity that:

- Assumes overall responsibility for a response.
- Directs activities based on explicit authority, such as establishing incident objectives, strategies, and priorities.
- Involves decision-making and coordinating risk communication.

Management roles include:

1. **Incident Manager:** Responsible for the overall management of the incident.
2. **Liaison Officer:** Liaison with assisting or cooperating agencies i.e., those providing tactical resources or external support.
3. **Public Information Officer:** Interfaces with the public, media and/or other agencies with incident-related information requirements.
4. **Safety and Security Officer:** Responsible for the safety and security (including the health) of the personnel involved and advising the Incident Manager accordingly.

6.2.2 Operations Function

The Operations function is an activity that establishes tactics and directs operational resources to achieve incident response objectives. Operations inform decision makers of all information requirements besides coordination and daily response activities.

6.2.3 Plans Function

The Plans function is an activity that:

- Collects, processes, analyzes and evaluates the information to predict the evolution of an emergency.
- Identifies strategies and objectives for addressing an emergency.
- Prepares and disseminates status reports and documents incident response activities.

- Prepares and distributes plans.
- Conducts evaluations of exercises and responses.

6.2.4 Logistics Function

The logistics function is an activity that deals with the ordering, distribution, maintenance, replacement and return of material and human resources. It includes infrastructural support and provision of services to response staff to meet resource needs.

6.2.5 Finance and Administration Function

The Finance and Administration function:

- Tracks expenditures and resources
- Makes payments
- Provides administrative services needed to initiate, operate, and sustain a PHEOC

This function partners with the logistics function to ensure funding is available to support response needs.

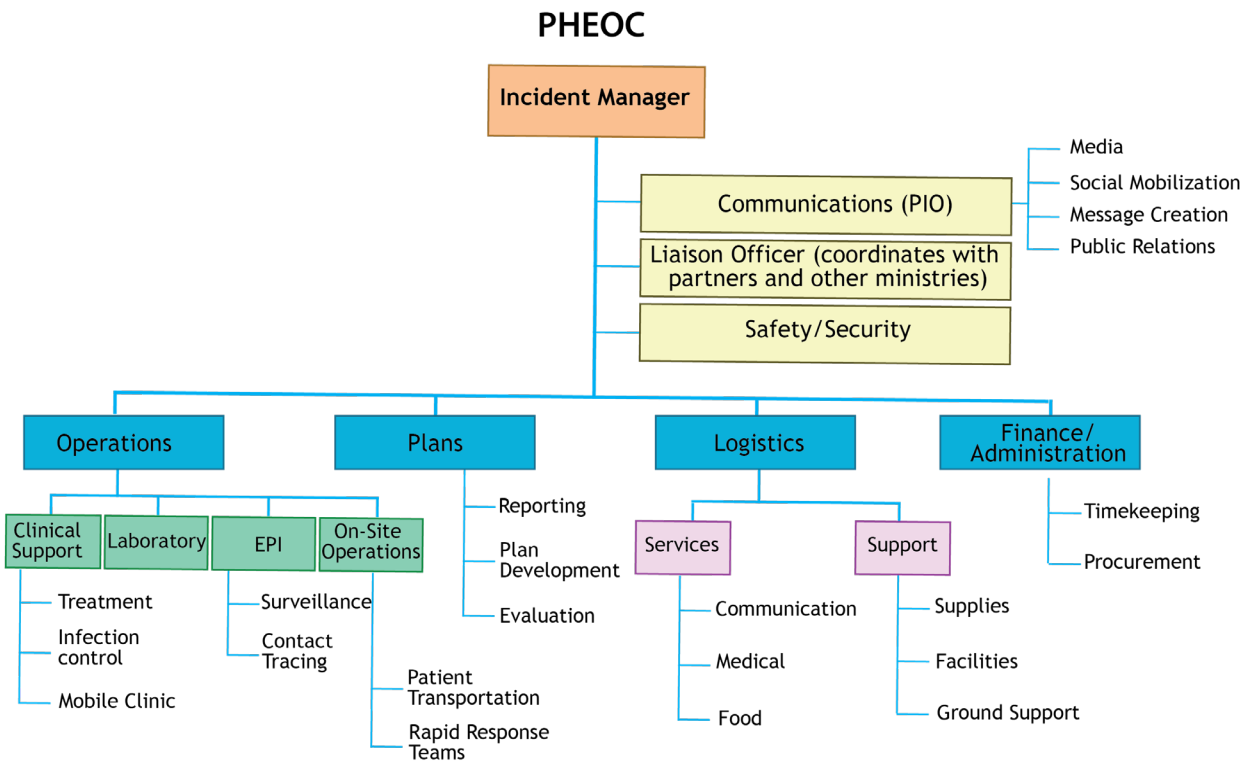


Figure 29: Example of a Fully Expanded IMS Structure for a Specific Response

6.3 Incident Response System (IRS)

The Incident Response System (IRS) effectively reduces the scope of ad-hoc measures in response. It incorporates all the tasks that may be performed during disaster management, irrespective of their level of complexity. It envisages a composite team with various Sections to attend to all the possible response requirements. The IRS identifies and designates officers to perform various duties and gets them trained for their respective roles. If the IRS is put in place and stakeholders are trained and made aware of their roles, it will greatly help in reducing chaos and confusion during the response phase. Everyone will know what needs to be done, who will do it and who is in command, etc.

6.3.1 Incident Response System (IRS) in India

The Government of India (GoI) looked at the world's best practices after realizing certain shortcomings in response and a desire to close critical gaps. In this pursuit, the High-Powered Committee (HPC) on Disaster Management constituted by the GoI under the Chairmanship of Mr J. C. Pant, I.A.S (Retd.), Former Secretary, GoI, decided to look closely at the United States of America (USA) Incident Command System (ICS), which was identified globally as one of the best practices in disaster management.

The journey of the IRS in India included, studying ICS, reflecting upon our disaster management system, – its strengths & weaknesses and picking up the learning points from ICS. It also included exploring institutionalization issues, training strategies, the actual conduct of training and practicing this system by some trained officers. Additionally, NDMA conducted pilot projects in three states, and various workshops throughout the country in the course of preparation and finalization of the IRS guidelines. This was followed by the NIDM taking up training programmes and finalizing the IRS training manual . This journey has been one of consistent progress and forward movement.

6.3.2 IRS Organisation

The IRS envisions a multi-sectioned composite team to handle all conceivable reaction requirements (Figure 30). It assigns officers to diverse responsibilities and trains them in their new jobs. It also stresses the need to properly document diverse operations to improve planning, accountability, and analysis. During the response phase, this will tremendously assist in decreasing chaos and confusion. Everyone will be aware of what has to be done, who will be responsible for it, and who is in charge.

At the state and district levels, Responsible Officers (ROs) have been selected to oversee incident response management. The Incident Commander (IC), who will handle the incident through Incident Response Teams (IRTs), may assign responsibility to the responsible team. In severe / emergency situations at the district level, the District Magistrate/ Collector is expected to take command of the situation, ensure synergy

between all wings of government at the District level, and liaise with the State and Central Governments / Authorities if necessary.

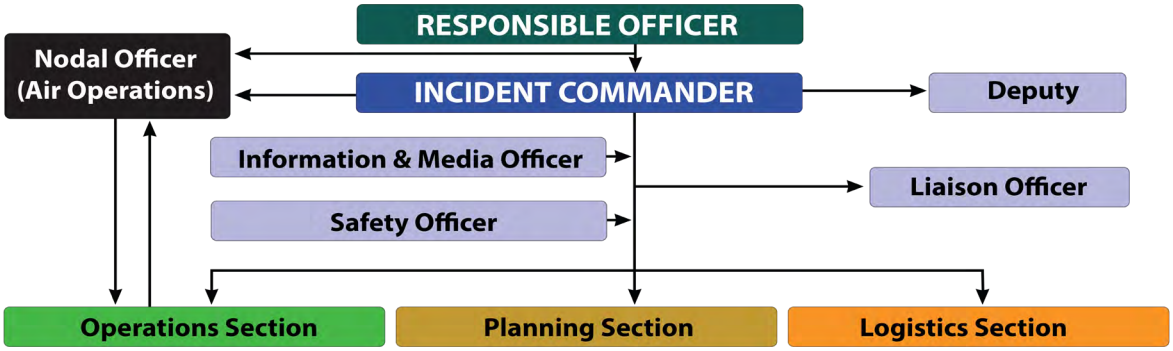


Figure 30: Broad organization of IRS (Source: NDMA 2010)

6.3.3 Features of IRS

IRS is the facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

The IRS, being a management system, has several salient features. This development package highlights the information that will help sharpen management skills and better equip personnel to be effective incident or event managers.

The IRS has a number of attributes or system features and has the flexibility and adaptability to be applied to a wide variety of incidents and events, small and large. These features make the IRS a real management system. Twelve major features of the system are mentioned below:

- Management by Objectives
- Unity of Command and Chain of Command
- Transfer of Command
- Organisational Flexibility
- Span of Control
- Area Command
- Unified Command (UC)
- Common Terminology
- Accountability

- Integrated Communications
- Resource Management
- The Incident Action Plan (IAP), Briefing and Debriefing Meetings

6.3.4 Incident Response Teams (IRTs)

As indicated in the Figure 31, the IRT comprises all ranks within the IRS organisation and is led by the Incident Commander. The Operations Section assists in the planning and executing various tactical operations necessary for disaster response. The Planning Section assists in the gathering of information and the preparation of plans as needed. The Logistics Section evaluates resource availability and demand and takes steps to acquire them.

IRTs will function at State, District, Sub-Division and Tehsil / Block levels. The IRTs will be pre-designated at these levels, and when the relevant Responsible Officer receives an Early Warning, they will be activated. If a disaster strikes without notice, the local IRT will respond and, if necessary, call the Responsible Officer for additional assistance. The IRTs will be pre-designated at these levels, and when the relevant Responsible Officer receives an Early Warning, they will be activated. If a disaster strikes without notice, the local IRT will respond and, if necessary, call the Responsible Officer for additional assistance.

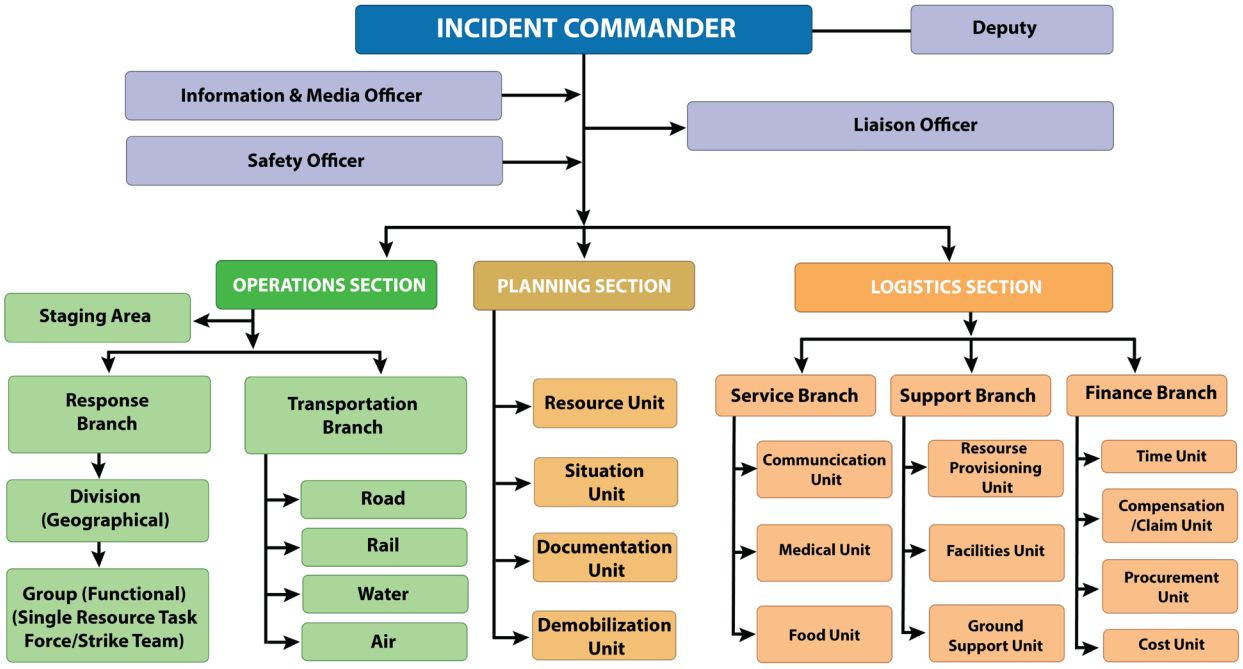


Figure 31: Organisational Chart of IRS (Source: NDMA 2010)

7. Operational and Functional Plans

7.1 Operational Plans



Operational plans guide what actions should be taken to address priority hazards/risks.

7.1.1 All-Hazards Response Plan

The IRS/IMS inherently adopts an all-hazards strategy. However, it calls for a response strategy considering the CONOPS-identified public health and partner agencies and their capacities, organisational structures, and roles.

A list of recommended all-hazard response strategies is impractical due to the variety of contexts, but some general public health tactics include sheltering in place, personal hygiene advice, evacuation, infection control, isolation and quarantine, mass vaccination and medication programmes, setting up treatment centres and mass care facilities, and developing public health services for large-scale events and mass casualty incidents (WHO 2018a).

7.1.2 Hazard or Threat-Specific Contingency Plans

One of the distinguishing characteristics of a hazard-specific response plan is that it concentrates on dealing with the effects or repercussions of the emergency occurrence after the hazard has been mitigated or decreased to the maximum degree feasible. Hazard-specific plans rely on the fundamental all-hazards Emergency Operations Plan (EOP) for standard reaction and management procedures. But, they differ because they specify resources, responses, management, linkages, and communications particular to the hazard or event and its context (WHO 2018a).

7.1.2.1 Infectious Disease Outbreaks, Epidemics and Pandemics

When it comes to the types of resources and actions needed to respond to a disease epidemic, the main distinctions may be found in the size, severity, location, and pace of spread of the outbreak. Detection, surveillance, contact tracing, epidemiological and laboratory analysis, pharmaceutical treatment, convalescent care, some social isolation, protective gear for first responders and care providers, mass pharmaceutical prophylaxis or vaccination, if appropriate and available, supply chains and logistics plans, and point-of-entry monitoring are all necessary for outbreaks.

In the event of vector-borne diseases, there is also the additional factor of supplies for vector management. Food- and water-borne diseases typically require more rigorous front-end surveillance, analysis, and front-end detection activities, as well as a focus on eradicating the sources of infection. It is conceivable to combine all of these initiatives into a single hazard-specific disease outbreak control strategy with appendices addressing variations in individual responses. The development of extraordinary capabilities for treatment, community infection control, mortuary administration, and the disposition of remains may be necessary in complicated strategies for diseases with high rates of mortality and morbidity (WHO 2018a).

7.1.2.2 Hazardous Materials: Release of Chemical, Biological or Ionizing Radiation Agents

Hazardous substance releases may occur accidentally (due to human mistake, a natural disaster, or a transportation mishap) or on purpose (which constitutes terrorism regardless of the context). Similar results are seen in both scenarios: a range of persons sustain short or long term injuries or illnesses. The release site can be inaccessible for a few hours to a generation or longer. The role of public health is twofold: after a release is discovered, the appropriate agency has secured the scene, and the immediate victims have been treated by the medical services first to facilitate and support recovery to a normal state and second to help protect the public from any exacerbation of the event, such as contamination of water and food supplies or the spread of a communicable disease.

The management procedures are fundamentally all-hazard in nature and resemble those used in a disease epidemic. The partners and stakeholders that may need to be included, such as biological, toxicological or radiological laboratories and specialists, hazardous materials response and disposal organisations, and environmental health experts, may differ greatly.

An effective coordination function would be played by a national or subnational PHEOC in procuring the funding needed to carry out a response. The generic all-hazards notification, alerting, communication, and mobilisation of available resources would be covered by a hazard-specific plan, but any unique subnational, national, and international notifications mandated by policies, laws, or treaties would be covered as hazard-specific components of the plan (WHO 2018a).

7.1.2.3 Consequences of Disasters

Disasters such as earthquakes, tsunamis, floods, urban interface wildfires, and severe weather events often destroy infrastructure, leading to potential for mass casualties and population displacement that exceed the capacity of social services systems to provide critical housing and feeding resources.

To protect life and safety, reduce suffering, and stop disease outbreaks in high- risk environments, public health must collaborate with partner organisations (such as public works, disaster management and other government departments, private sector organisations, and humanitarian aid agencies) through the designated NDMA when dealing with large populations without access to shelter, clean water, or sanitary facilities.

The contribution of public health to the support of systemic operational continuity is described in a hazard-specific public health response strategy for disasters. The strategy needs to list partner organisations, crucial liaison roles and connections within the national disaster management architecture, and the public health agency resources that are already accessible, such as emergency medical supply stocks, mobile clinics, and hospitals.

The response plan must specify how this will be carried out in jurisdictions where public health and medical care systems work together as a single entity during an emergency, owing to resource limitations. Authorities, credentials, and any potential legal repercussions should all be given special consideration (WHO 2018a).

7.1.2.4 Mass Care

When there is an unanticipated migration and/or gathering of large numbers of individuals who have been displaced for a variety of reasons , mass care scenarios might occur due to hostilities, poverty, and/or persecution may be the causes. To provide humanitarian aid to such communities, public health must assist in developing and administrating fundamental public health infrastructure, including providing clean water, sanitary conditions, illness detection, and immunisation where necessary. Authorities on public health may occasionally offer parts of services for medical diagnosis and treatment.

7.1.2.5 Mass Gatherings

Mass gatherings are organised occasions with very large and diverse populations. They include governmental inaugurations, religious pilgrimages, sporting events, and appearances by celebrities with extremely huge followings. If something goes wrong, these events might swiftly overwhelm the current public services due to the size of the crowds they create.

A large assembly of population pose a significant risk to public health by increasing the likelihood of an infectious disease epidemic. COVID-19 pandemic is an example of this. There are also significant potential issues for public health partners. These include managing crowds, offering suitable sanitary facilities, supervising the provision of food services, and preventing terrorist attacks and accidents that might result in a large number of casualties.

A public health agency's job is to set up plans for disease detection and response, as well as a support plan to provide resources, like public health unit clinics, stockpiled field emergency medical facilities.

7.1.3 Prevention and Mitigation Plans

Prevention and mitigation plans aim to prevent risk events from happening and reduce their impact when they do, which is a complete risk management programme component. **Such planning should take place in three stages: before an event, during an event and after the event.**

7.1.3.1 Pre-Event Prevention

H ydro-meteorological and geological risks are rarely preventable before they occur, but their effects can be greatly reduced by taking precautions, such as relocating vulnerable population . The quick deployment of containment and treatment resources when an incident occurs, in addition to careful monitoring, early detection, and early action can dramatically reduce the risk of biological hazards. Although human-induced dangers are avoidable, they frequently need sophisticated economic and policy expenditures. Investments and interventions can have major mitigating impacts even if only partially successful.

7.1.3.2 During the Response to an Event

There are two key chances to control risk and prevent the situation from worsening during the response to an occurrence. The first is the obligatory practice of protecting emergency response workers. The second strategy is to focus treatments on the groups most at risk initially (for instance, by administering medicine or selective prophylactic vaccination during disease outbreaks). For this, the PHEOC needs data management tools to enable the required analysis.

7.1.3.3 Post-Response Recovery Planning

Planning for post-response recovery offers the chance to prevent or reduce the impact of future occurrences by making vulnerable groups less vulnerable through social mobilisation, policy, and economic measures. Allowing populations affected by vector borne disease to improve the conditions that favour the vectors and teaching them to collaborate to prevent or reduce future outbreaks are two examples that come to mind (e.g., malaria control initiatives).

7.1.4 Emergency Medical Team (EMT)

The Emergency Medical Team (EMT) is a group of health professionals, including doctors, nurses, paramedics, support workers and logisticians, who treat patients affected by

an emergency or disaster. They come from governments, charities/ NGOs, the military, civil protection and international humanitarian networks, including the International Red Cross and Red Crescent Movement, Médecins sans Frontières (MSF), United Nations contracted teams and the private-for-profit sector. They work according to minimum standards agreed upon by the EMT community and its partners and deploy fully trained and self-sufficient so as not to burden an already stressed national system (WHO 2021b).

In order for EMTs to guarantee proper operational and professional capacity and capability to deliver high-quality care for the population they serve while safeguarding personnel and not placing an undue burden on the host nation, a number of overarching areas and crucial procedures are outlined in the EMT core standards. The EMT core standards are coordination of teams, training of teams, human resources, administration and organization, management, records and reporting, support national/local clinical system and patient referral, self-sufficiency, professional licencing and conduct, team field management and operations and support wider public health response (Figure 32).



Figure 32: Core Standards of EMT

7.1.5 Rapid Response Team (RRT)/ Quick Response Team (QRT)

An RRT is a trained, equipped multidisciplinary team that can quickly deploy to respond to a public health emergency in collaboration with other response activities in an efficient and effective manner. The RRT member composition described in this paper covers both team and individual deployments of RRT members and is meant to be adaptable and responsive to changing outbreak response demands (CDC, 2020). In India, the RRTs operate under the Integrated Disease Surveillance Programme (IDSP) facilitated by the National Centre for Disease Control (NCDC). Coordinated by the IDSP, these teams are instrumental in the early detection of potential health threats, enabling a proactive response to prevent the spread of diseases and protect public health. The RRT's integration into the broader IDSP framework reflects India's commitment to maintaining a robust and responsive public health system.

Ideally, RRT management would be part of the emergency coordination unit (i.e., a public health emergency management program employing an IMS or country-equivalent system), which would be a part of the wider emergency response plan (Figure 33). In the non-emergency phase, without an active emergency response, RRT management may be in charge of rostering, staffing, planning, training, and developing exercises to get RRT personnel ready for an efficient and successful outbreak response. RRT management should be within the national EOC/PHEOC during a disaster response. RRTs are typically located in the operations sector of an IMS-employed country, following the chain of command via that section; however, this might vary based on the scope of the epidemic and the response organization in place.

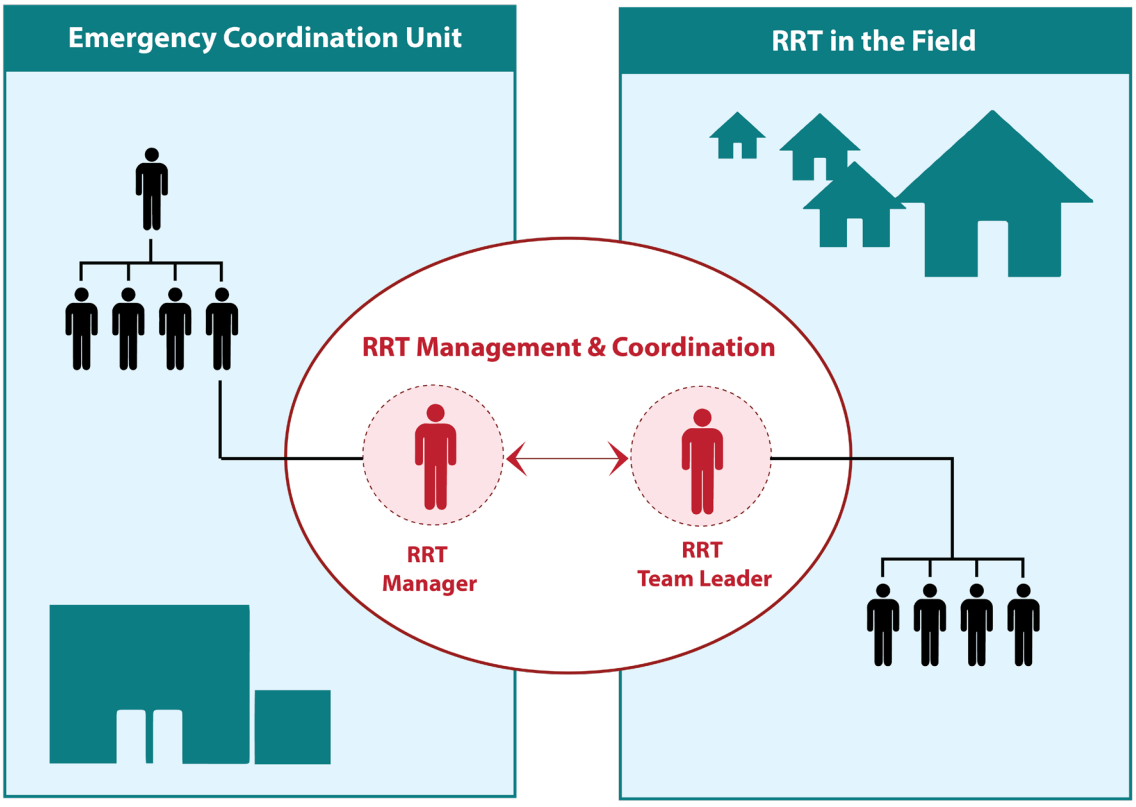


Figure 33: RRT Management and Coordination (CDC 2020)

As part of IMS/IRS, an RRT is situated within the Operations Section, taking on case investigation, contact tracing, and infection control measures (Figure 34). It is crucial to note that the scope of the RRT's role is adaptable and contingent upon the available resources and the exigency of the response required. The IMS/IRS structure itself is designed to accommodate varying sizes—small, medium, and large—where the RRT, in this framework, reports directly to the Incident Manager. This arrangement allows for efficient coordination and streamlined communication, ensuring a prompt and effective response to public health emergencies.

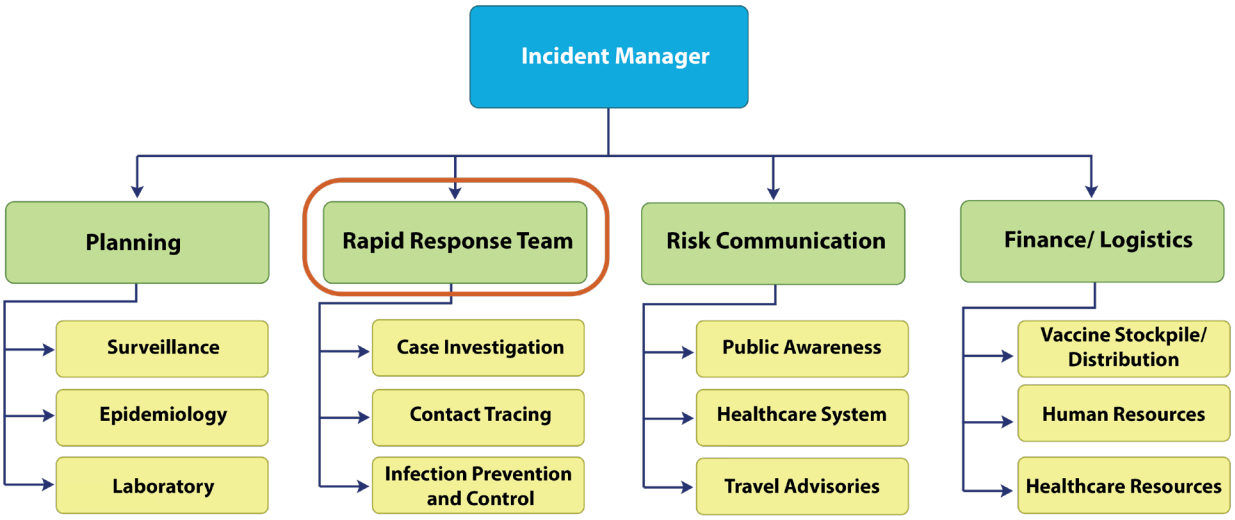


Figure 34: RRT Operation Unit for Response

Figure 35 illustrates various examples of RRT roles and compositions within the context of COVID-19. The roles assumed by the deploying RRT are intricately linked to the specific response needs and contextual factors at play.

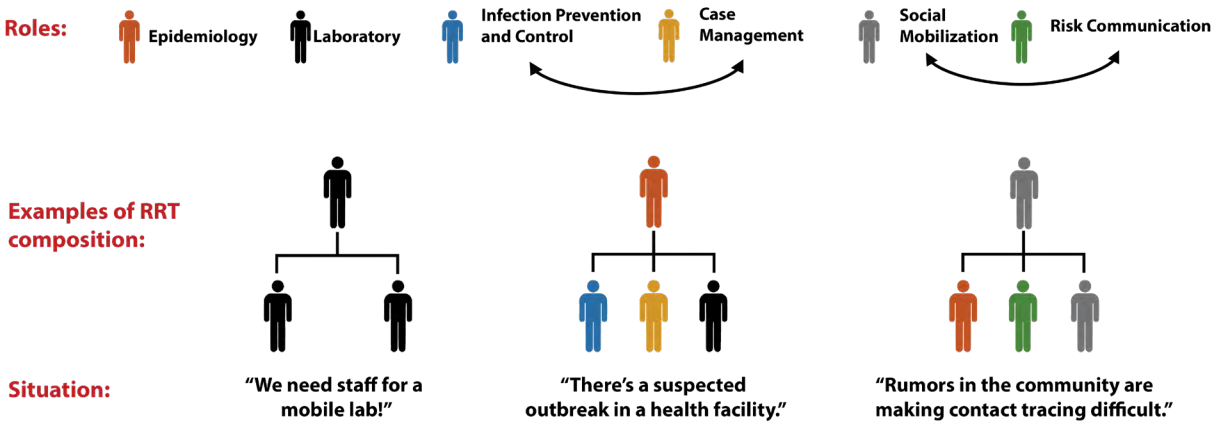


Figure 35: Examples of RRT roles and composition in the context of COVID-19

7.1.6 National Disaster Response Force (NDRF)

The Disaster Management Act (2005) includes legal provisions for establishing the National Disaster Response Force (NDRF), intended to provide specialist assistance in man-made and natural catastrophes. As a result, the NDRF was established in 2006 with eight battalions, now extended to sixteen battalions from the Assam Rifles, BSF, CISF, CRPF, ITBP, and SSB. Each battalion has eighteen self-contained, specialized search and rescue teams, comprising engineers, technicians, electricians, dog squads, and medical/paramedic personnel. Each of the 16 battalions has a total strength of 1,149, and all are fully prepared to respond to natural and man-made calamities and Chemical, Biological, Radiological, and Nuclear (CBRN) events. To reduce the reaction time for their deployment at a catastrophe site, these NDRF battalions are dispersed among 16 distinct places around the nation in accordance with the country's risk profile (Figure 36) (Detailed information available at https://www.ndrf.gov.in/).

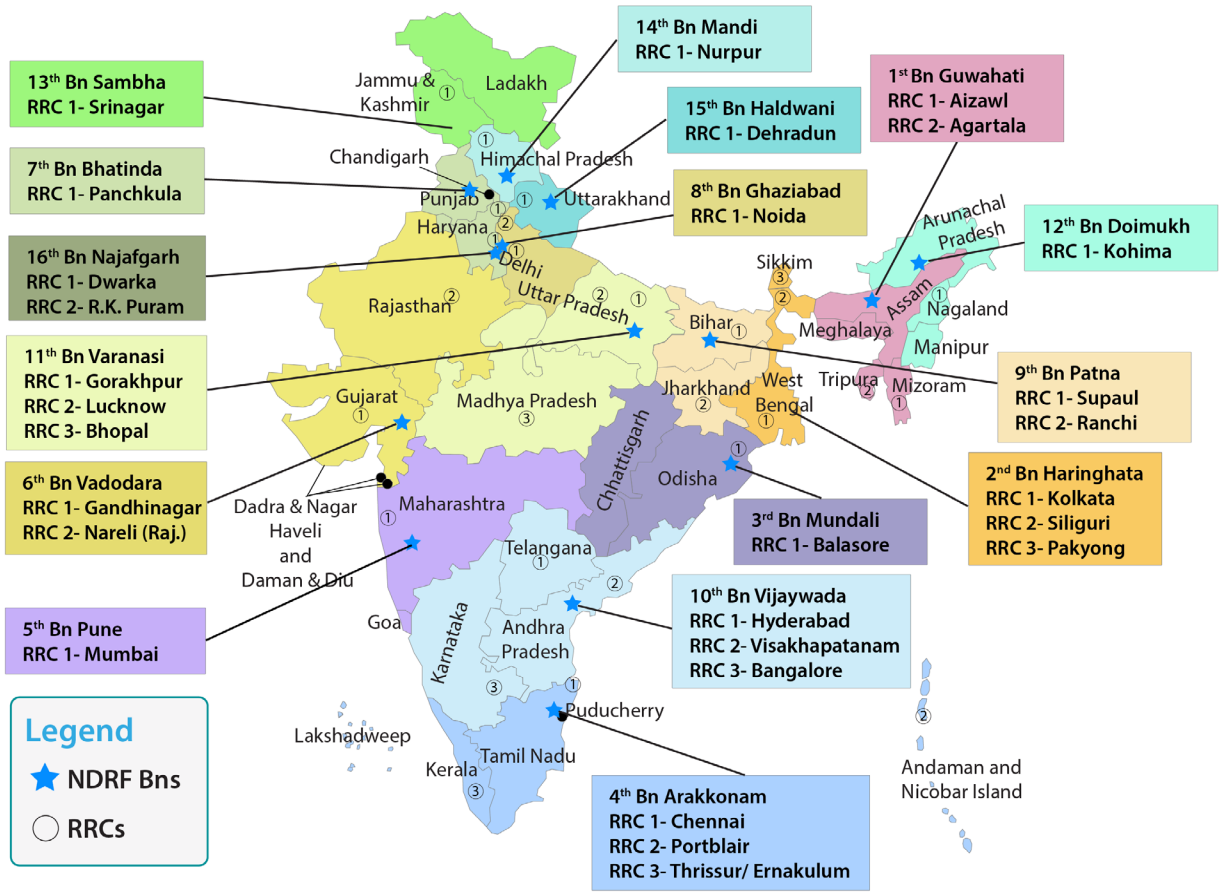


Figure 36: Map Showing NDRF Battalions Locations and their Respective Area of Responsibility
(Source: https://www.ndrf.gov.in/)

7.1.7 State Disaster Response Force (SDRF)

The State Disaster Response Force (SDRF) is a part of India's disaster management system at the state level. It works alongside the NDRF to ensure a localized response to disasters like floods, earthquakes, cyclones and other emergencies. Each Indian state has its SDRF team of trained individuals with the skills and resources needed for search, rescue, relief and rehabilitation. The SDRF collaborates closely with authorities and community organizations to boost readiness and promote a disaster management approach within each state. Being on the lines, the SDRF plays a role in addressing the specific challenges posed by disasters to different regions, thus contributing significantly to India's overall resilience.

7.1.8 District Disaster Response Force (DDRF)

States such as Manipur in India have established the District Disaster Response Force (DDRF) to ensure prompt and effective responses to emergencies tailored to each district's unique vulnerabilities and risks. Comprised of personnel and necessary resources, the DDRF conducts search, rescue and relief efforts during disasters in collaboration with local authorities and community groups. Through community involvement, educational initiatives and proactive disaster preparedness measures, the DDRF significantly strengthens disaster management capabilities.

Kindly Note: In the event of a severe emergency that surpasses the normal coping capacity at the district level, it is crucial to have a comprehensive approach to emergency response before receiving external support. This includes ensuring the availability of trained workforces both at professional and community levels, as well as effective information management and access to necessary equipments.

Firstly, there should be a readily available list of important telephone numbers of trained personnel who can respond swiftly during emergencies. This includes members of the District Disaster Response Force (DDRF), Quick Response Teams (QRT) , Aapda Mitra of disaster management; firefighters; civil defence personnel; Rapid Response Teams (RRT), Emergency Medical Teams (EMT), Community Health Officers (CHO), Auxiliary Nurse Midwife (ANM), Accredited Social Health Activist (ASHA), Community Emergency Management Teams (CEMTs), Community Emergency Response Teams (CERTs) of health department. There should be a contact list of doctors, including private doctors, along with their field/area of specialization. This repository list should be updated regularly at least once a year, and local officials should be made responsible for this task. These individuals play a vital role in providing immediate assistance and support during crisis situations, meeting surge capacity needs.

Additionally, maintaining an inventory of essential equipment is crucial for efficient resource management. This may include computers, printers, HAM radios, satellite phones, power backup systems, as well as medical diagnostic, therapeutic, emergency

life-support system, and imaging equipment. Having these resources readily available ensures that they can be promptly deployed when needed. The number of beds and their location should be readily available, and for this purpose a record should be maintained. There should be a doctor at the facility to decide and articulate the need for additional equipment / personnel. It should have been decided well in advance as to who will be available at the centre.

Furthermore, effective information management is essential for coordinated emergency response efforts. This involves establishing robust systems for data collection, analysis, and dissemination. Utilizing technology such as computer systems, databases, and communication networks facilitates efficient information flow among stakeholders involved in emergency response. Trained personnel proficient in information management techniques are also necessary to organize data, conduct analysis, generate reports, and effectively communicate critical information.

7.2 Functional Plans



Operational plans describe **WHAT** to do and functional plans describe **HOW** to do it.

7.2.1 EOC/PHEOC Internal Communications Plan

Organizational units in an incident management system should have no more than seven direct reports, as this is the utmost number of people a supervisor can efficiently supervise in a high-stress emergency scenario.

Maintaining a high degree of situational awareness in their work unit is the responsibility of every supervisor at every level and across all roles within the response organisation. This calls for regular communication of the status of both people and material resources, changes in the environment, and the progress being made toward reaching goals. The process of required systematic briefings, horizontally across all active IMS functions and vertically from the incident management to all teams, task forces, or single resources, serves as the medium for these exchanges.

Vertical briefings frequently take place at staff meetings or as staff briefings by supervisors. The main management control mechanism is the vertical communication process. To create coordination and unity of effort, the **horizontal process** is used. The **transition briefing**, which is required for every individual ending a period of service, is an extra necessary briefing.

The briefing must be given, either orally or in writing. The departing employee and the supervisor should give a briefing to those taking over the function as it provides a status report on the previous occurrences to the arriving person.

Situation Reports (SITREPS) and **status boards** are two essential components of any emergency operation and support the necessary interpersonal briefing processes. SITREPS are created by planning function staff, given to all PHEOC workers, and authorised by the incident/event management. They are mainly sent electronically, while print is also an alternative. Status boards, which are prominently displayed in the PHEOC for everyone to see and offer real-time updates on much of the same information as a SITREP, help to create a consistent operational picture and uniform understanding of the situation.

7.2.2 Public Communications Plan

The EOC/PHEOC plan should include two public outreach strategies:

- **The All-Hazards or Generic Approach:** This approach involves delivering clear and comprehensive risk communications to the public, empowering and motivating people and communities to take informed steps to reduce risk exposure. The information communicated in this strategy is typically applicable across different situations and contexts, making it more generic. The goal is to identify the information needs of various audiences and determine the most effective communication techniques to reach them.

- **The Hazard- or Impact-Specific Approach:** This approach focuses on pre-scripting specific messages tailored to convey incident-specific information that meets the needs of different target audiences. It recognizes that each audience may have unique requirements, and therefore, customized messages are prepared accordingly. These communications may include standardized instructions for common public health actions relevant to the specific hazard or impact. Additionally, the public relations plan should identify reliable spokespersons and subject-matter specialists who can effectively communicate with the public. If a senior government official is designated as the visible spokesperson, the strategy must outline the approval procedure for briefings and speaking notes.

7.2.3 Continuity of Operations Plan

Personnel of EOC/PHEOC are instructed on what to do by the continuity of operations plan if the EOC/PHEOC's operation is disrupted or compromised. The plan will consist of two parts (WHO 2018a):

1. What steps should be taken if the EOC/PHEOC is severely damaged and must be evacuated?

2. What procedure should be followed for handling the loss of key personnel, including plans for their replacement or delegation of responsibilities?.

Such a plan focuses only on addressing the consequences of EOC/PHEOC disruption rather than its reasons. The consequences can include:

1. Damage to the site's operational and physical infrastructure from fire, flood, or structural collapse; an outside assault brought on by a breach in security; and malfunctions in information technology, electricity, or telecommunications that make the site unusable or render its electronic tools inoperable. The damage might necessitate moving the centre to a different location. A "hot site" with all the resources needed for activation, a "warm" or "cool" site with less resources needed for a planned, acceptable functional deterioration, or a "virtual PHEOC"—a distant operation conducted in an electronic environment—could all be examples of such a site.

2. Disruption, involving personnel loss due to any cause other than regular staff rotation, especially important decision-makers. The conventional method for handling this is to budget for enough staff such that there are three qualified candidates for each PHEOC post. This way, there is always a backup, and there is a strategy in place for decision-makers' delegation and succession.

3. The third category deals with the breakdown of vital supply chain components that offer reaction resources. This usually doesn't mean moving the facility or changing the duties of the staff, but it does need finding alternate resource providers in advance and setting up protocols for using them.

8. EOC/PHEOC Implementation Plan

8.1 Implementation of the EOC/PHEOC



This section offers direction for the creation of the PHEOC by outlining certain crucial factors to take into account, specifically:

- Determining the objectives
- Outlining each functional team's responsibilities
- Establishing the structure
- Specific responsibilities and obligations for each functional area.

8.1.1 Setting the objectives of an EOC/PHEOC

It is imperative to consider the outcomes and the costs of managing public health emergency or event during setting the objectives (WHO, 2015). The objectives may include:

- Timely, event-specific operational decision-making using the best available information, policy, and plans.
- Communication and coordination with key stakeholders, including response partners, to support audience, awareness, outreach, and social mobilisation.
- Collection, collation, analysis, and utilization of data.
- Deployment of resources, including surge capacity.
- Monitoring financial commitments and providing administrative services for the PHEOC.

8.1.2 Overall Objectives of the EOC/PHEOC

Ensure prevention, preparedness and fast response and recovery to any type of crisis that poses a threat to the health of the population (e.g., infectious disease outbreak, mass causalities, etc.).

Table 5: EOC/PHEOC		
Key Objectives	**Activities**	**Capabilities and outputs**
Preparedness	• Minimize the likelihood of a health crisis through prevention measures. • Ensure that sufficient medical infrastructure, staff, and equipment are in place. • Develop response plans that will be followed in a situation of crisis. • Train and drill on response plans.	• Central and regional Planning units: response plans and gap closure plans • Operations Unit: gap closure support and progress tracking • Audit Capability: spot checks on preparedness level of facilities.
Surveillance	• Monitor all potential threats and trigger an alert if risks for public health are detected. • Monitor preparedness capacity in all regions and facilities.	• Automated data collection system throughout the State • Human Resources for data management and analysis.
Mitigation	• Coordinate structural and non-structural mitigation strategies. • Overseas the implementation of protective measures.	• Supporting functions planning and executing mitigation actions
Response	• Supervise the development of short-term and long-term recovery plans with relevant stakeholders.Develop a crisis-specific action plan. • Monitor and follow up on all crisis response activities	• Incident Response System (IRS) (activated in crisis) • Incident Assessment Team (IAT) (activated in crisis: With specific functions that support the overall operations)

Table 5: EOC/PHEOC		
Key Objectives	**Activities**	**Capabilities and outputs**
Recovery	• Supervise the develop short term and long-term recovery plans with relevant stakeholders. • Monitor the recovery plan of the health system in coordination with relevant stakeholders. • Supervise overall health system needs assessment.	• Central and Regional Planning Units: response plans and gap closure plans. • Operations Room to monitor recovery phase.

8.1.3 Benefits of IRS/IMS in EOC/PHEOC

IRS/IMS provides multiple benefits in PHEOC. These include:

- Standardized, scalable, and flexible approach (fulfilling the needs of all incidents, regardless of cause, size, location, or complexity).
- Enhanced cooperation and interoperability through clearly defined roles.
- Efficient resource coordination.
- Comprehensive all-hazards preparedness.
- Measurable, achievable objectives.
- Avoids duplication of efforts.
- Improves effective communication.

8.2 Incident Action Plans (IAPs)



Priorities, strategies, and objectives for operational and support operations are established and communicated through incident action planning. An event that lasts longer than one operating period, usually a single day, should include an Incident Action Plan (IAP), which is a fundamental PHEOC product that can be either oral or written (though the incident manager or the unified management team may decide to demand written IAPs). The utilization of a written action plan aids in maintaining continuity of action and management,

particularly in the face of personnel changes. Initiated at the outset of the incident, incident action planning persists until the situation is resolved and a response evaluation is conducted (WHO 2018a).



Figure 37: Incident Action Plan (WHO 2018a)

As emergencies become complex or involve multiple agencies or jurisdictions, the importance of clear, written, and well-communicated IAPs escalates, serving as essential management tools to bolster safety, situational awareness, unity of effort, and efficiency. Each emergency incident/event, operational period, and site necessitates a specific action plan. In instances with multiple incident sites, individual action plans are required, and each section of the PHEOC develops a subplan contributing to the overarching IAP. **Annexure IV** contains a sample format for an incident action plan (WHO 2018a).

8.2.1 Steps to Develop Incident Action Plans

8.2.1.1 Initial Action Plan

Upon the activation of an EOC/PHEOC, the initial planning endeavors diverge from subsequent activities. These early planning actions encompass:

- Establishing preliminary situational awareness through the collection and analysis of data to comprehend the emergency's nature, scope, and repercussions.

- Identifying response partners, stakeholders, and potential participants for a unified management group.
- Determining available resources for addressing the emergency.
- Establishing response and management priorities based on existing capacities and capabilities.
- Forming a planning team within the planning section, comprising representatives from agencies potentially involved in the unified management group.
- Addressing staffing and support requirements for the EOC/PHEOC.
- Identifying incident management priorities.
- Issuing leadership statements of intent, typically at the policy level, outlining key objectives.
- Communicating initial findings and activities to the IRS/IMS team.
- Initiating action planning for the inaugural operational period.

For a sizable emergency, the IAP may concentrate on organizing the response, considering factors such as the number of field implementation units (command posts) and their geographic distribution. In situations where a national or subnational EOC/PHEOC must support operations in regions competing for limited resources, adjustments to the IRS structure may be necessary to accommodate geographical realities. However, in scenarios where this is not a concern, the standard IRS functional organization should suffice. Furthermore, the initial action plan should outline the reporting relationships between subject matter experts and advisors within the EOC/PHEOC and the IRS structure.

8.2.1.2 Ongoing Action Planning

Once the organization and priorities are established, incident objectives are developed on the basis of:

- agency mandate and policy;
- incident priorities;
- direction from the policy group;
- the realities of the situation;
- the experience and judgement of IMS team members.

Incident objectives should be:

- specific, observable or measurable
- achievable with available resources
- realistically achievable within the stated time
- time-limited (this last factor defines the operational period)

The goals of the incident should be clear and flexible enough to encourage creativity in achieving them. Objective statements should use action-oriented verbs like "evacuate," "vaccinate," or "build" rather than vague ones like "support" or "maintain." The incident manager must approve these objectives. Once objectives are set, the next step is to figure out how to achieve them by exploring different strategies. These strategies need to be safe, practical, cost-effective, and in line with legal, ethical, and political considerations, while also acknowledging any limitations faced by the involved organizations (WHO 2018a).

Once the EOC/PHEOC management has approved the preferred options or strategies, allocating and coordinating sufficient resources to is important implement them effectively. This involves considering the time needed to deploy resources to the required locations and obtaining additional resources if necessary. Typically, a national or subnational EOC/PHEOC doesn't directly use assigned resources but allocates them to tactical implementation units. This means that the EOC's/PHEOC's operational focus is mainly logistical. Each resource allocated to a team or individual IMS function should come with detailed written instructions, including:

- The specific tasks to be completed.
- The responsible organizational position, along with any reporting requirements.
- Any specialized knowledge, skills, or abilities needed.
- Any limitations on the capabilities of the resources.
- Special equipment requirements.
- Logistical support needs.
- Relevant contact information.

As the response progresses, the EOC/PHEOC keeps a close eye on the results of its interventions and activities. It assesses what's working and what's not, and then adjusts its objectives, strategies, and resource allocations accordingly. This ongoing cycle of setting goals, taking action, and reassessing is at the heart of the EOC's/PHEOC's mission:



pinpointing problems, making decisions, and effectively managing resources until the situation is resolved.

8.2.2 Deactivation, Demobilization and Recovery Planning

In due course, morbidity and mortality associated with the event or incident will decline to pre-event or baseline levels, indicating that the emergency is nearing resolution. This signals that activities within the EOC/PHEOC can gradually be scaled back, paving the way for an organized transition back to normalcy. Although closely related, demobilization and deactivation planning are two distinct processes that are sometimes confused. Planning for the orderly, gradual termination of operations once the emergency is controlled is known as deactivation planning. Complete deactivation of the EOC/PHEOC initiates a post-event assessment (a "hot wash") and/or staff leave interviews. Additionally, it starts the demobilization plan, which deals with gathering and returning resources, including workers who assisted with the reaction, and closing down businesses connected to the incident. A deactivation strategy that reduces operations in an orderly manner and has the approval of the incident management team and higher authorities in the policy group is necessary to handle the termination of PHEOC operations. While this is going on, a number of problems still need to be resolved, as listed below, in a demobilization plan that deals with taking down the incident-specific response infrastructure (WHO 2018a).

- Unused resources must be returned or allocated.
- Personnel and response resources and equipment must be accounted for and returned.
- Financial accounts related to the incident need to be closed and concluded. Initiatives related to public health treatment, prevention, and mitigation that were implemented as part of the response should be transferred, together with any uncommitted resources, to ongoing programs for preventive and mitigation. This is included in the recovery planning.

An emergency frequently has long-term effects that may affect generations. Key EOC/PHEOC officials have a leading role in initiating community recovery efforts due to their expertise in the disaster incident.

Planning for the post-event recovery of a community can highlight a dynamic tension between those whose idea of recovery is a simple restoration or going back to the way things were and those whose idea is more forward-thinking and aims to make things better than they were. If the crisis was made worse by the status quo and the more innovative idea calls for more preventive and mitigation, then individuals involved in the response have a clear chance to advocate for and educate the public about public health (WHO 2018a).

When the emergency is still unfolding, with no apparent short-term solution, a different type of recovery planning might occur. Such a scenario can be seen in the majority of refugee camps, where public health workers work to provide basic infrastructure and services for public health. It is challenging and, to some extent, superfluous to keep an EOC/PHEOC running in full emergency mode in these circumstances. A more practical strategy is programmatic, emphasizing longer-term answers to the problems of displaced individuals residing in unsatisfactory circumstances. Although the form and operation of such a programme may resemble EOC/PHEOC, it will have a longer planning horizon and a slower tempo of activity to make it more sustainable.

9. Activation and Deactivation of EOC/PHEOC

9.1 Standard Operating Procedures (SOPs)



Standard Operating Procedures (SOPs) outline the proper course of action and the organisational roles in charge of doing so. They direct how proven skills are put into practice.

SOPs are the established operational guidelines and procedures for tasks that support the incident/event management process. They are based on or modified from the operational processes and policies of the responsible jurisdiction, depending on the situation and the relevant jurisdiction, and they are adjusted as necessary to meet the needs of partners and stakeholders. A model format for SOP is discussed below (WHO 2018a).

9.1.1 Sample Format for SOPs

SOPs can take on a wide variety of forms.

I. The simplest form for Type A PHEOC would include the following information:

- **Introduction, Background, and Purpose:** A brief explanation of the procedure's subject matter, goal, and relevance to the emergency response.
- **Procedure:** Whose organisational position is in charge of it, its objective, its result or output, and the sequential steps necessary to complete it.
- **Safety:** any guidelines that may be required.
- **Addenda:** any more explanation or supporting information, such as contact information, the locations of resources, particular instructions for using communications equipment, etc.

II. In addition to Type A material, the following would also be included in a PHEOC with Type B capacity:

- Identification of the agency policy supporting the SOP;
- Approval levels for adjustment to the SOP;
- Description of the scope of discretion of adjustment that is within the responsibility of the designated staff member(s);

- Identification of who owns the document and who is responsible for necessary revisions;
- Graphic or visual representations of complex or multistep procedures.

III. A PHEOC with Type C capability, capacity, mission, and accountabilities may need very complicated SOPs, especially if it works with other emergency response platforms. At this level, SOPs would contain the information for Type A and B in addition to:

- Information on who wrote the SOP, when it was authorised, and by whom;
- Instructions for version control and a review date;
- Identification of all parties impacted and any notification requirements.

Instructions for writing SOPs: Concise, plain language and remember that procedures include activities. Use verbs of action like "prepare", "contact", "put", and "assign", among others. Flowcharts may be more effective at communicating than text.

The SOP may take the shape of a Standard Operating Guideline (SOG) when a certain operational aim can be achieved in several ways, depending on the situation. Depending on the PHEOC's level of activation, SOPs frequently provide an escalation mechanism (WHO 2018a).

9.2 Watch Level

A risk management programme requires ongoing threat and hazard monitoring in the interim between PHEOC activations. The PHEOC may be used for this monitoring, keeping the facility in "watch" mode. As part of this, a SOP would cover:

- The hazards to be monitored.
- How the monitoring should occur?
- Which organizational positions are responsible for it?
- What should they do when certain threat thresholds are exceeded?
- What should they do when new threats are detected and evaluated?

9.3 Alert Level

The alert level is the initial "stand up" or standby activation phase that occurs when an emergency has happened or is about to occur. Each IRS/IMS function will have a list of proactive steps and the possible requirements for an action will be identified (although not all functions will necessarily be activated).

In a jurisdiction where comprehensive IRS/IMS implementation is not realistic (or feasible), a designated event manager will ensure response readiness by locating resources and creating connections based on established processes, presumably with support from others. There may be thresholds or triggers involved in this to raise the amount of activation.

9.4 Response Level

Response mode involves either partial or full activation of the centre, with assigned staff doing their duties in accordance with their job descriptions. The SOPs will include detailed instructions on how and when the processes will be carried out, including who to involve, what actions are necessary and why.

These regulations will touch on laws, regulations, and best practises. EOC/PHEOC staff are expected to work as a team to improvise the proper responses when elements of the emergency call for actions that are not anticipated in the response plan. It is typical to establish many response levels in the response mode because different grades or scales of emergencies necessitate various degrees of response. The events with the largest scope, effect, and scale will receive the highest level of response since they require the most coordination, resources, and involvement from international partners. The lowest level of response deals with relatively minor occurrences, for which all response actions generally fall within the purview of the national EOC's/PHEOC's competencies and resources.

9.4.1 Partial Activation

Partial activation may be categorised as having a low and medium level of activity. The EOC/PHEOC employs the lowest level of resources during a lowest-level (grade) activation, including regular EOC/PHEOC employees, with minimal resource augmentation for the response and reporting requirements. The EOC/PHEOC employs more resources during a medium-level activation, including more employees (in addition to the usual EOC/PHEOC staff), a more affordable response, and greater but manageable reporting obligations. According to their assigned tasks and responsibilities, surge staff will be called to carry out the proper actions when the EOC/PHEOC is triggered. In addition to mobilising new resources, the EOC/PHEOC needs assistance from other departments. The EOC/PHEOC will be ready for any escalation, work additional hours or even be around the clock. For each level of activation, countries must define the triggers of EOC/PHEOC (WHO RO Africa, 2021).

9.4.2 Full-Scale Activation

This stage corresponds to the highest grade (or activation) level. The EOC/PHEOC will handle the emergency with the greatest scope, complexity, and effect. The most resources and coordination are needed for this. During this stage, there is an urgent need for significant foreign assistance since national resources and capacities are exhausted. The national level will use its existing resources and needs significant international assistance. The health sector will enlist the assistance of several stakeholders and sectors. At this stage of the activation, the health sector will oversee coordination of the response, or it may be taken over by a higher coordination body, and the health sector will take the lead in accordance with the national rules and procedures. A complete crew and 24/7 operation may be necessary at this level.

9.4.3 EOC/PHEOC Grade and Operational Hour

Ideally, the EOC/PHEOC should maintain continuous functionality, even during watch mode, with minimal staffing. However, this may not always be feasible. When activated for the coordination of responses, the EOC/PHEOC may need to operate for extended hours, potentially 24/7.

Based on the level of activation, the EOC's/PHEOC's operational hours will vary (Table 6). Qualified staff members responsible for EOC/PHEOC activities will work in shifts, ensuring uninterrupted coverage. A comprehensive shift staffing schedule will be established for the duration of operations.

The incident manager, typically a designated senior officer, with support from other staff, will be responsible for developing a rotation plan. A brief handover, lasting at least 15 minutes, should be conducted when staff members are replaced. E ach individual should work a maximum of 8-12 hours in a single shift. The shift schedule will be documented and displayed in the EOC/PHEOC.

Table 6: EOC/PHEOC Operational Hours

Grade of Activation	EOC/PHEOC Working Hours	Time (24hrs) (can be change as per situation)
Grade-1	8 Hours	0900 hrs to 1700 hrs
Grade-2	12 Hours	0800 hrs to 2000 hrs
Grade-3	24 Hours	24 hrs

Note: Every EOC/PHEOC staff member is required to sign the Log Register (attendance sheet), indicating their In and Out timing.

Template of Log Register is placed in **Annexure V**. The objective of the log register is twofold: first, to track usage and second, to aid in reconstructing the event for post-response operation evaluations once they are completed.

9.4.4 Level of Response

The disaster management and its planning at various tiers take into account the vulnerability of disaster-affected area and the capacity of the authorities to deal with the situation. Using this approach, the High Powered Committee on Disaster Management, in its report of 2001, categorized disaster situations into three 'levels': L1, L2, and L3. The period of normalcy, L0, should be utilized for disaster risk reduction.

- **Level-L1:** The level of disaster that can be managed within the capabilities and resources at the District level. However, the state authorities will remain in readiness to provide assistance if needed.

- **Level-L2:** This signifies the disaster situations that require assistance and active mobilization of resources at the state level and deployment of state-level agencies for disaster management. The central agencies must remain vigilant for immediate deployment if required by the state.

- **Level-L3:** This corresponds to a nearly catastrophic or large-scale disaster that overwhelms the State and District authorities.

For example, US CDC also has a graded activation plan. At Level 1, the highest echelon, reserved for critical situations, the CDC mobilizes its maximum workforce to operate around the clock in response. Notable Level 1 activations include the Ebola outbreak in 2014, the H1N1 influenza outbreak in 2009, and the aftermath of Hurricane Katrina in 2005. Level 2 responses involve disease experts taking the lead, supported by a substantial team from the program area, while the Emergency Operations Centre may contribute additional personnel. At Level 3, the response is led by disease experts with some of their staff, and assistance from the EOC is contingent upon CDC's assessment of the situation. These activation levels exemplify the CDC's dynamic and strategic approach to emergency response tailored to the specific nature and magnitude of each crisis (CDC 2014).

9.5 Deactivation Level

The goal of SOPs for deactivation is to gradually return to normalcy by reducing response operations. There will be two types of procedural instructions:

- Those who give guidance on when and how to stop participating in response actions.

- Those giving instructions for demobilising, accounting for responding resources, including people, and starting an evaluation process.

The EOC/PHEOC will be deactivated when the response is complete and regular monitoring is resumed. The EOC/PHEOC must be deactivated by the Health Minister or other authorised authority.

Deactivation requirements include some of the following:

- Fields' patterns and statistics point to a decline in the problem being treated.
- Problem no longer poses a concern to public health.
- Sub-national level is no longer overburdened and can deal with the event.
- Additional Resources are no longer needed.
- Ministry of Health or other designated authority has pronounced the event or state of emergency over.

10. Coordination, Communication and Joint Information Centre (JIC)

10.1 Coordination and Communication



The control of the reaction depends on an efficient, rapid, and accurate communication system, and the EOC/PHEOC provides this platform. The EOC/PHEOC establishes external communication with partners, the government, the commercial sector, and the general public in addition to internal communication inside the IRS/IMS (PHEOC Handbook 2021).

10.1.1 Internal

The following steps must be followed to ensure efficient communication between the various IRS/IMS sections and the fields:

10.1.1.1 Regular IRS/IMS Team Coordination Meeting

IRS/IMS team meetings should be organised regularly when the EOC/PHEOC is activated. Based on the severity and progression of the event, the frequency of meetings should be decided. Communication between the various divisions is made easier by the EOC/PHEOC platform, which also acts as a tool for updating the overall operating picture, making decisions about what to do, and coordinating the emergency response. The meeting, guided by the incident manager, should be attended by all members of the IRS personnel and partner organisations. The task tracker will be used to track the implementation of the action items from this meeting against the designated timeline. The Incident Commander and function leaders have the responsibility of assigning responsibilities and overseeing the execution of tasks.

Within 24 hours of the meeting, the minutes should be prepared, shared with the team for feedback and finalised. The planning group would be in charge of creating the minutes and storing them in a central location. During the leadership meeting, the incident manager will present the leadership concerns and challenges that need to be resolved.

10.1.1.2 Sections Coordination Meetings

To improve communication and enable response coordination, each section should meet frequently. The frequency of meetings needs to be determined based on the situation and availability of all the key personnel.

10.1.1.3 Strategic Communication

I. **Reporting to Leadership:** The incident commander should regularly prepare leadership update reports and distribute them to the leadership. A two-page summary should be created, providing a concise account of the incident, the measures taken, and the future steps. The template for the summary of incident updates to higher authorities is in **Annexure VI**.

II. **Leadership Meeting:** The minister or other appointed authority chairs this gathering. All relevant health directors, IRS/IMS staff, leaders of the responding partners, and other interested parties participate. This forum allows important stakeholders to communicate strategically and make crucial decisions. Situational awareness will be provided by the section leaders and incident management. Meeting minutes should be correctly recorded in the EOC/PHEOC repository and routinely disseminated to track activities.

III. **EOC/PHEOC Email:** The EOC/PHEOC mailbox serves as the organization's main mail archive. The EOC/PHEOC mailbox should be used for all communications with and going out from the EOC/PHEOC. Staff members of EOC/PHEOC must have access to and should use EOC/PHEOC email to communicate.

IV. **Situation Reports (SITREP):** These are routinely generated. It is necessary to create an email distribution list with all the taskforce members. The SITREP should be widely communicated to IRS/IMS members, all levels of the delivery of the health system (regions, districts, etc.), pertinent private and public sectors, and partners, as well as displayed in the EOC/PHEOC.

V. **Communication with the Field:** The field response team must keep in constant contact with the EOC/PHEOC, and information must flow to the EOC/PHEOC without interruption. The EOC/PHEOC must have a complete operational understanding of what is taking place in the field. The EOC/PHEOC must implement a system or steps to create consistent communication with sub-national levels. To interact and exchange information at the sub-national level, teams must have access to fundamental communication tools like telephones (with timelines), the internet, etc.

10.1.2 External

In accordance with the government's communication policy, the EOC/PHEOC engages in external communication with pertinent partners, the public, the government, and the private sector. A communications unit must be established beforehand with clear duties and responsibilities that facilitate communication between the EOC/PHEOC and pertinent partners in the public and commercial sectors. A public health emergency requires important pre-planning to be done. During a health emergency, SOPs with

important time frames must be created and followed, and the results must be tracked and assessed. Understanding the distinction between risk communications and business communications is essential.

A website or newsletter with frequent situation reports, regular press conferences, and press releases detailing measures completed and places needing help are all examples of communications.

10.1.2.1 Public Communication

I. **Communication Preparedness for a Public Health Emergency:**

- Establishing a team with clearly defined roles and duties that individuals may shift into when an emergency arises, **building on the present communications infrastructure**.
- **Mapping the Media** and establishing relationships with journalists and outlets with the most influence and appeal
- **Partner Mapping**, assembling a list of crucial communications partners who will take part in the reaction, and developing a communications infrastructure.
- **Building Capacity** and selecting important spokespersons and representatives who will communicate with the public and media. Before a crisis, media training should be offered.
- **Establishing SOPs** with important deadlines for communications during a public health emergency.
- **Preparing Preliminary Statements** on various potential situations and keeping them in a "bank" to make sure that the media and other important stakeholders receive the incident's initial information as quickly and precisely as feasible. These would include Fact papers, Questions & Answers, and Important Telephone Numbers and Contacts.

II. **During the Public Health Emergency:**

- Distributing the daily situation report to key contacts in the media and stakeholder groups and posting it on the MoH website.
- Holding frequent press conferences to discuss the issue.
- Regularly communicating critical messages with partners to ensure that everyone is speaking with the same voice.

- Publishing press releases at critical points in the response: when the epidemic is announced, when support is ramped up and important controls, like vaccination drives, are implemented, and when the outbreak is contained and ends.
- Media training for important journalists and outlets to make them aware of important preventative and other measures.
- Daily monitoring of news channels, including social media, to notice any misinformation or rumours circulating.
- Collaborating with colleagues in risk communications, health promotion, and community engagement to promote important preventative and other measures via radio, social media, and other communications channels.
- Speaking with the general population to alert them of the situation, safety precautions, and hazards.
- Using social media channels to discover topics of concern, share important information, and put the lie to rumours.

III. **After the public health emergency has ended, follow-up activities include:**

- Examining the volume of press releases, briefings, interviews, and social media postings.
- Analyzing coverage to see whether the messaging is consistent.
- Archiving helpful papers for future reference.
- Reviewing procedures and processes to determine what worked well and what may be improved moving forward.
- Maintain your network of contacts in anticipation of the next crisis.

10.1.3 Coordination and Partnership

Regardless of the type of EOC/PHEOC or its level (i.e., national, subnational or local), the need for coordination with other responders is likely. Coordination can be implemented in several ways. It can occur through a liaison officer who works for the Incident Manager and an agency representative who represents the partner agency. It can occur through a "partnership" section within the IRS/IMS structure. It may occur through any other function that best helps achieve unity of effort with the partners.

10.1.3.1 Possible Partners

National-level EOC/sPHEOCs may seek assistance from external partners capable of offering technical expertise, operational support, and additional staffing. Here are five examples of international organizations that could potentially engage in such partnerships:

- **Global Health Cluster:** The Global Health Cluster plays a pivotal role in responding to worldwide health crises. With the collaboration of over 900 partners, this cluster harnesses technical and operational capabilities to support national health responses in crisis-affected regions, ensuring that essential healthcare reaches those in need.

- **Global Outbreak Alert & Response Network (GOARN):** GOARN is entrusted with the responsibility of ensuring that the right technical expertise and skills are deployed to crisis areas during public health emergencies, precisely when and where they are most needed.

- **International Emergency Medical Teams (EMTs):** EMTs consist of groups of healthcare professionals tasked with providing treatment to individuals affected by emergencies or disasters. These teams comprise individuals from governments, NGOs, military forces, and international organizations like the International Red Cross/Red Crescent movement. EMTs adhere to the classification and minimum standards established by the World Health Organization (WHO) and its partners and are trained to be self-sufficient to avoid burdening national healthcare systems.

- **Regional Bodies:** Multinational regional organizations, such as the Association of Southeast Asian Nations (ASEAN), can offer technical and financial aid and assist in coordinating activities among member states.

- **UN Standby Partners:** UN Standby Partners, accessible at https://www.standbypartnership.org/, provide support to United Nations agencies involved in humanitarian responses worldwide through the deployment of skilled personnel voluntarily. Each Standby Partner maintains its roster of humanitarian experts who can be called upon to fill staffing gaps in UN operations.

10.1.3.2 Multi-Agency Coordination

In an emergency response, it's imperative to establish coordination with other responding agencies. The Emergency Response Plan (ERP) should incorporate mechanisms for initiating multi-agency coordination when an incident unfolds. Typically, this involves designating a lead agency and identifying supporting agencies. The lead agency formulates objectives to address the incident while supporting agencies develop

objectives that align with and facilitate the lead agency's objectives. This collaborative planning among multiple agencies can take place through a multi-agency coordination centre or group that employs a standardized planning process throughout the response.

10.1.3.3 Area Coordination

Similar to the concept of multi-agency coordination, area coordination establishes a centralized command structure within a specific geographic area. This adds an extra level of leadership and coordination, fostering connectivity among sub-national EOCs/PHEOCs. It serves as a mechanism for efficiently distributing limited resources, such as epidemiologists and GIS specialists, which are shared among different EOCs/PHEOCs. Additionally, area coordination can facilitate the establishment of a Joint Information Centre (JIC), which collaboratively formulates consistent messaging strategies and operational plans.

10.2 Joint Information Centre (JIC)



In public health emergency response, timely and accurate information is paramount. Effective communication ensures that information flows seamlessly, decisions are well-informed, and resources are allocated efficiently. To achieve this, a structured framework, prominently featuring the JIC, is instrumental in the management and dissemination of information during public health emergencies.



Figure 38: Pictorial Representation of Essential Features of Joint Information Centre (JIC)

During times of public health crises, such as disease outbreaks or disasters, it is crucial for everyone to work together to protect and reduce harm to communities. It's important for different groups like government agencies, healthcare workers and the public to collect, analyze and exchange information. Clear, brief and unified communication is key to handling and controlling emergencies successfully.

10.2.1 Context

When an EOC/PHEOC is functional and running smoothly, the JIC serves as the point for handling information. EOCs/PHEOCs are set up to coordinate response activities and promote a strategy for dealing with public health crises. The JIC plays a role in this setup and is committed to enabling communication among different response collaborators.

10.2.2 Role of a Joint Information Centre (JIC)

During times of public health crisis, it is crucial for people to receive up-to-date, reliable and easily accessible information promptly. These emergencies encompass a range of events, including public health calamities, disasters, and man-made crises. The main objective of the JIC at EOC/PHEOC is to ensure that accurate information reaches those who need it most. This centre plays a role in gathering, analyzing and sharing information effectively. Acting as a hub, the JIC consolidates data from sources, verifies its authenticity and transforms it into valuable insights that can be acted upon. The JIC performs functions such as:

- **Information Collection:** Gathering data from sources like healthcare facilities, laboratories, government entities and the media.
- **Analysis and Summarization:** Assessing data to understand the severity of the situation, identify trends and determine potential impacts on public health.
- **Message Creation:** Developing messages based on evidence for distribution to public healthcare professionals and other relevant parties.
- **Media Relations:** Handling media inquiries to ensure timely information dissemination while addressing misinformation.
- **Collaboration:** Serving as a point, for sharing information among different response partners to encourage teamwork and avoid redundant efforts.

How JIC Functions in an EOC/PHEOC:

In an EOC/PHEOC, the JIC functions as a unit that collaborates seamlessly with departments like operations, logistics, medical services and incident management. The information processed by the JIC influences the decisions of the Incident Management Team aiding in resource allocation and response planning. By ensuring a flow of information to all stakeholders, the JIC enhances the effectiveness of emergency response efforts.

To support public health response initiatives, the JIC deploys teams of health communication specialists who work closely with experts and scientists to develop actionable public health messages. These teams serve as points of contact for target

groups, ensuring that message content is easily understood and relevant. Moreover, scientific data is localized into different languages before being shared with diverse audiences.

During emergencies, recognizing that people seek health related information from sources, JIC teams ensure that vital messages reach individuals through channels such as traditional media outlets, online platforms, social media networks, partner collaborations and other communication channels. Additionally, JIC teams customize messages for audiences, including healthcare professionals, healthcare partners, community members, and the general public.

The JIC acts as the communication link between state, national and international health partners. In times of health crises, the JIC ensures that a wide range of audiences receive information that's clear, accurate, easy to understand, easily accessible and most importantly, actionable.

Within an EOC/PHEOC setting, JIC functions as a 24/7 emergency communication hub for coordinating information during an IRS/IMS activation. It is operated by emergency communicators who work tirelessly to rapidly disseminate health protection details through platforms. Due to their pivotal role in boosting coordination and response effectiveness during public health emergencies, it is said that the JIC never rests.

11. Training, Exercises and Evaluation

11.1 Training and Exercises



To provide a coordinated and integrated approach to developing, sustaining, and delivering the fundamental competencies of the permanent and surge employees at the EOC/PHEOC, a training and exercise programme should be designed. To prepare its personnel for the responsibilities and increased workload that would come with emergency response, the EOC/PHEOC should train its employees and do simulation exercises during the non-response period. Included in these are the fundamental EOC/PHEOC training curriculum, such as EOC/PHEOC operations, incident management system, risk communications, early warning systems, design and delivery of table-top exercises and field simulations, information and communication technology, logistics, finance and administration, personal security, Rapid Needs Assessment (RNA), training on public health emergencies, contingency planning, etc. (WHO 2018b).

11.1.1 The Preparedness Cycle

The EOC's/PHEOC's preparedness exercises and training are part of an overarching plan that supports the "preparedness cycle", which entails planning, organising and equipping, training and exercising, assessing, correcting and approving. Whenever possible, national and/or international players, such as the United Nations, the Red Cross/Red Crescent Movement, NGOs, and bilateral cooperation partners, should be included in training and exercises.

A comprehensive, nationally led Disaster Risk Management (DRM) cycle that encompasses prevention, mitigation, preparedness, response, continuity of essential activities, and recovery measures should be included while considering preparedness. This cycle will also be influenced by the lessons gleaned from actual emergency responses (WHO 2018b).

11.1.2 EOC/PHEOC Training

Training is any activity that aids people in achieving a specific level of competency by transferring or improving information, skills, and/or abilities via learning experiences. A person may engage in training for a variety of reasons, such as the desire to maintain proficiency levels and in reaction to shifting circumstances.

11.1.2.1 Training Programme

As successive groups of trainees advance from basic awareness through working-level knowledge to higher levels of competence, a proper training programme should be planned, developed, and frequently reviewed. A training programme comprises:

- Needs assessment
- Goals and learning objectives
- Content, methods, and materials
- Outcomes to be achieved
- Monitoring, evaluation, and review

Formulating Objectives

Creating training objectives by comparing the needs with known or identified shortcomings. Before creating a training curriculum, it is crucial to specify specific objectives for learning. What every learner is supposed to know and be able to accomplish after completing the course should be clearly stated in the objectives.

Outcomes to be Achieved

Outcomes to be achieved from a training program should be specific, measurable, aligned with organizational goals, and designed to bring about meaningful changes in participants' knowledge, skills, behaviors, and performance. These may include:

- Knowledge and Skill Acquisition
- Behavioural Changes
- Application and Transfer
- Improved Performance and Productivity
- Employee Satisfaction and Engagement



Need Assessment

Assessment of the knowledge, talents, and skills people need in order to operate successfully in a PHEOC, as well as their training requirements and the opportunities that already exist for collaboration with partners and other sectors. It may be conducted through:

- self-reporting
- instructor observations
- student presentations
- exercises
- regular reviews conducted by PHEOC management
- evaluation of a response (after-action review)

Training Curriculum

For individuals that will work at the PHEOC or support it, a training programme should be developed and maintained. The training goals, prerequisites, logistics, equipment needs, learner and trainer identity, training time and location, and assessment process information should all be included in the curriculum. As subsequent groups of learners evolve from basic awareness to working-level knowledge, then on to advanced competence, a training programme is then created, developed, provided, evaluated, and projected forward to the next level of training requirements.

Training Evaluation

Early on in the development of the training plan, the assessment methodologies should be devised. These will allow instructional designers to assess how learners feel and determine whether learning objectives have been achieved. Pre-tests, post-tests, observations, presentations, exams, exercises, and self-reports are a few examples of probable evaluation techniques.

Figure 39: Training Programme (WHO 2018b)

11.1.2.2 Typical Staff Competencies

The following minimum competencies for staff members should be in line with the PHEOC's functions:

- **Leadership** (e.g., knowledge of applicable enabling laws and regulations and the ability to explain them to others).
- **Frameworks for Emergency Management** (e.g., knowledge of the Incident Management System).
- **Functions of Emergency Management** (e.g., knowledge of the EOC/PHEOC plan, policies, procedures and guidelines, and risk assessment).
- **Information Systems/Information Technology** (e.g., knowledge of hardware, software, systems, databases, networking and operating systems.)
- **Emergency Management Communications** (e.g., crisis and emergency risk communication, media and public communications, alert notifications, informationsharing).
- **Partnership and Collaboration** (e.g., developing and maintaining relationships with internal and external partners).
- **Training Development and Facilitation** (e.g., analysis of training needs and instructional strategies).
- **Evaluation** (e.g., assessing needs and capacities, recommending actions to address identified gaps, programme and performance evaluation).

11.1.2.3 Types of Training

EOC/PHEOC training can be customized for an individual (including independent study and attendance at classes, seminars, and workshops) or an organisation (involving training and exercise activities that enhance learning opportunities for all EOC/PHEOC staff). Training pertinent to staff members working in an EOC/PHEOC consists of:

- Training in the IRS/IMS used in the EOC/PHEOC;
- Training in the specific function the person is expected to fulfil within the EOC/PHEOC, including leadership training;
- Training on the application of subject matter expertise to PHEM.



Individual Training

The knowledge, skills, and abilities that staff members need to perform well in an EOC/PHEOC are developed through a variety of recognised methods of training.

These include:

- Classroom-based courses.
- E-Learning courses.
- Participation in the planning and development of EOC/PHEOC operating procedures.
- Internships, fellowships, and orientation sessions.
- Site and field assignments that provide training through experience, including lessons identified during real emergencies.
- Participation in exercises, peer-to-peer learning, coaching, mentoring, and team building.

Organizational Training

The all-hazards approach to public health emergency preparedness should be reflected in organisational training. This necessitates that people be knowledgeable about a variety of potential crises and educated to handle the worst risks in accordance with the principles of riskbased planning. Such training can be undertaken at the international, national, or subnational levels and can be single- or multi-agency.

Exercises that cover the complete emergency management cycle, particularly combined exercises with partners and other agencies, aid in familiarising EOC/PHEOC staff with emergency plans and give other agencies a chance to experience cooperating as teams.

11.1.2.4 Training Needs Assessment (TNA)

Training Needs Assessment (TNA) is determining the knowledge, skills, and abilities needed for employees to perform successfully in an EOC/PHEOC and determining the training requirements and possibilities already in place for collaboration with partners and other sectors. These needs are compared to known or identified inadequacies to create training objectives. The needs assessment may be conducted through self-reporting, instructor observations, student presentations, exercises, regular reviews conducted by EOC/PHEOC management and evaluation of a response (After-Action Review) (WHO 2018b).

WHO's Handbook of Developing a Public Health Emergency Operations Centre, Part C: Training and Exercises (WHO 2018b) includes guidance for:

- Public health emergency management core competencies (**Annexure VII**).
- Required knowledge, skills, and abilities for essential PHEOC functions (**Annexure VIII**).
- Training needs assessment template (**Annexure IX**).
- Suggested template for developing PHEOC training package (**Annexure X**)

Identifying Who Needs What Training?

The organisation tasked with running the EOC/PHEOC is accountable for ensuring that every employee is suitably trained, qualified for, or familiar with their intended position. As a consequence, a multiyear plan for training all EOC/PHEOC and key partner agency personnel is necessary to account for staff replacement and attrition, changes to response plans, new information processing technologies, shifts in the risk environment, and changes to the agencies' missions.

A requirements assessment is crucial for identifying individual and organisational gaps in the specific Knowledge, Skills, and Abilities (KSA) needed to function well in an EOC/PHEOC. Need assessment also involves detecting gaps in current programming for a given EOC/PHEOC, organisation, or nation.

Conducting Training Need Assessment

If the EOC/PHEOC is a new project for the organisation, it is best to expect that all staff members will need a fundamental introduction to organisational ideas, functions, and their roles in the EOC/PHEOC: Permit individuals to self-assess what they are already aware of and what they still need to learn.

To guarantee that the personnel, including senior leaders, have trust in the IRS/IMS structure, it is necessary to examine the training requirements and materials for the staff (including newcomers to the nation). It can be done by HR specialists (depending on work requirements), mentors for less experienced employees, regular evaluations by the EOC/PHEOC management, AAR after response, a SWOT analysis of running a PHEOC, exercises/simulations, and self-reporting. Determining the consequent training requirements for individuals and organisations while considering available resources and potential opportunities for collaboration with partners and other industries.

IRS Capacity Building at NIDM

NIDM has taken up the nodal role in developing the training modules to promote the IRS among disaster responders, i.e., disaster management teams and administrators.

These modules are designed to provide management skills to those working in disaster management and incident response planning. The modules also provide detailed quick planning on handling the disaster effectively, including Training of Trainers (ToTs).

List of Training modules prepared by NIDM on IRS is given in **Annexure XI.**

Online Training by Federal Emergency Management Agency (FEMA) and WHO

FEMA and WHO offer online training programmes for public health emergencies and disasters. These courses cover various aspects of emergency management, including incident command, disaster logistics, emergency communications, and hazard-specific training. These online courses are self-paced, allowing individuals to complete them at their convenience.

List of online trainings by WHO, CDC and US-FEMA regarding PHEOC, IMS, IAR, AAR, PHEM, and CERT are given in **Annexure XII**.

11.1.3 EOC/PHEOC Training Curriculum

A training programme for individuals who will staff the EOC/PHEOC and those who will be assisted by it should be developed and maintained. The training objectives, prerequisites, logistics, equipment needs, identification of trainees and instructors, training time and location, and evaluation procedure should all be covered in the curriculum. Before creating a training curriculum, it is crucial to specify precise learning objectives. What each learner is anticipated to know and be able to perform after finishing the course should be clearly stated in the goals.

11.1.4 Training Evaluation

Early in the development of a training programme, the evaluation methodologies should be determined. These will allow instructional designers to assess student satisfaction and determine whether learning objectives have been reached. Pre- and post-tests, observations, presentations, exams, activities, and self-reports are a few examples of potential assessment techniques.

11.1.5 EOC/PHEOC Exercises

Exercises are controlled, objective-driven activities for testing, practicing or evaluating emergency management processes, procedures or capabilities. Exercises are used to build staff competency in their roles and responsibilities; validate policies, plans, and procedures, and the training curriculum; test and reinforce the functional areas' and the PHEOC's overall capabilities. The following operational elements should be considered for inclusion in a PHEOC exercise

- Organization/management (putting the IRS/IMS into practice);
- Activation, escalation, and deactivation procedures for the EOC/PHEOC plan and emergency response plan;
- Adherence to plans and procedures;
- Ability of staff to communicate effectively (i.e., practice of internal and technical communications);
- Coordination and transfer of information between sections of the IRS/IMS and other response entities;
- Evaluation of teamwork and decision-making;
- Practice and evaluation of public risk communication strategies;
- Assessment of needs and utilization of resources, including Information and Communication Technologies (ICT).

11.1.5.1 Exercise Needs Assessment

To ensure an effective workout built around specific goals, an exercise needs assessment is necessary. It entails four steps, each concentrating on a distinct aspect, such as understanding of:

- The priority risks;
- The reasons for conducting the exercise;
- The function to be exercised;
- The system, plans, or training level in place.

Prior to an exercise, vulnerability risk assessments and mapping should always be carried out because they reveal the dangers a nation is most likely to encounter. This clarifies the objectives of the exercise, the tasks to be performed, and the results that should be expected.

Examining existing emergency plans, systems, community resources, and other pertinent information is a necessary part of determining what needs to be practised. Reports from earlier exercises, "lessons learned" and "after-action" documentation can all be included in this assessment.

11.1.5.2 Exercise Planning Tool (EPT)

To support the planning of comprehensive exercise programs, an Exercise Planning Tool (EPT) should be developed. The standard tool is divided into seven sections:

- Activity
- Status
- Subject area
- Geographical location
- Target audience
- Responsible planning
- Timelines

A requirement checklist, a cost calculator, and an exercise calendar are all included in the EPT. The "building-block approach" can be used with the exercise calendar to arrange activities based on how well they fit into the overall exercise programme. It should be noted that this calendar might not be based on a January to December time frame but rather might be matched to the period covered by the readiness cycle. The frequency of exercises throughout the year will be decided by the exercise calendar. The target audience has to be informed about this message; they should be multidisciplinary and ideally include the response partners and the County-based PHEOCs.

11.1.5.3 Types of Exercise

The exercise's goals will determine the kind of exercise to be performed. The whole timetable for training and exercise should be taken into consideration when choosing a workout. Exercises may be divided into two categories: discussion-based and operations-based. To achieve certain goals or when resources are limited, the different exercise kinds mentioned here may be changed and/or combined in practice (WHO 2018b).

Exercises that depend on discussion demand only modest resource commitments. Exercises that focus on operations use a lot of resources and demand careful supervision. Figure 40 summarises the exercise types that an EOC/PHEOC can perform in respect to their difficulty and cost.

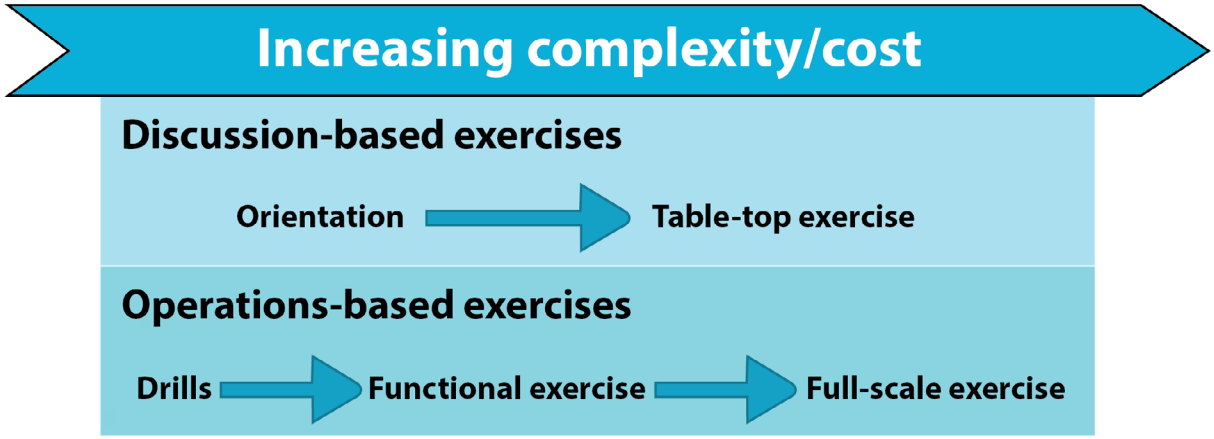


Figure 40: Types of exercise in relation to complexity and cost (Source WHO 2018b)

Discussion-Based Exercises

Discussion-based exercises familiarise participants with present plans, policies, agreements, and procedures or may be used to create them.

a. **Orientation Exercises:** Orientation exercises are often done as informal discussions to familiarise personnel with goals, responsibilities, and SOPs, focusing on collaboration and accountability. A discussion about potential changes should be the goal of an orientation exercise. Seminars or workshops with case studies and a focus on current procedures might be utilised as orientation activities. Orientation exercises should be considered the minimum need for assessing and verifying current plans or plans under development since they are the least expensive and least complex exercise. Seminars and workshops are two examples of orientation exercise types (WHO 2018b).

b. **Table-Top Exercises:** Table-top exercises are discussions in groups concerning a simulated emergency response. They are typically held as meetings in a relaxed atmosphere, such as a conference room. Staff members assigned to the EOC/PHEOC are confronted with simulated emergency circumstances (scenarios) under the direction of a facilitator using prepared messages (injects) and problem statements that concentrate on probable issue areas established in advance. Tabletop exercises allow for a more thorough examination and evaluation of EOC/PHEOC plans, processes, and event-specific emergency responses without the burden of time restrictions. Problem-solving should be prioritised above impulsive decision-making. Tabletop exercises can range in difficulty and duration. When assessing the EOC's/PHEOC's capacity for coordination and problem-solving, this degree of engagement should be taken into consideration as the minimum.

c. **Use of Gaming:** Using internet video to improve simulation in emergency management drills is an important new development. The ability to make simulation games and workouts more potent and accessible has been made possible by

the widespread usage of the Internet. Simulated events and computer-based simulations benefit from the addition of supposedly "serious" games. The games are designed to be participatory and contextual despite being quite expensive. Online games are easily adaptable to fit fitness objectives and may be played by participants anywhere in the world.

Operation-Based Exercises

In an operational setting, operations-based exercises evaluate plans, rules, agreements, and procedures, define roles and responsibilities, and pinpoint resource shortfalls. Whenever conducting district-level exercises to address emergency situations, it is essential to promptly notify key authorities, including the District Magistrate/Collector, the Superintendent of Police, and the Chief Medical Officer.

a. **Drills:** Drills are utilised as a minor facet of bigger organisational responses to train in specific abilities and foster collaboration. Through the use of EOC/PHEOC operating procedures in a simulated emergency response, drills assist participants in gaining confidence in the use of their abilities. Drills are frequently used to evaluate a particular process or function, such as alert and notification, information flow, emergency plan activation, or other abilities.

b. **Functional Exercises:** A functional exercise is made to put plans, methods, and policies to the test. Functional workouts are more difficult than tabletop exercises and need more planning and preparation times. A functional exercise allows strategic and operational concerns to be assessed at the specified PHEOC by testing all available tools, technologies, and processes as though a real event were happening. Although a functional exercise could simulate field work, no resources will be used in its execution.

c. **Full-Scale Exercises:** For assessing the whole operational capabilities of the EOC's/PHEOC's emergency preparedness and response processes and systems, a full-scale exercise may be suitable. Many facets of the PHEOC response and recovery operations will be tested during a full-scale exercise. Along with the field deployment of troops and resources, the exercise may involve other regional, national, or international partners or organisations. Planning is necessary for large-scale drills simulating public health emergencies.

Table 7: Indicative EOC/PHEOC Exercise Programme Cycle					
Type of exercise	**Factors to be considered**	**Format**	**Preparation and planning**	**Conduct and review**	**Frequency**
Orientation exercise	A prerequisite for the conduct of other types of exercise. The orientation exercise should be conducted as required and may take the form of a workshop or seminar. Useful for familiarizing management and staff with aspects of existing plans or plans under development.	Informal, facilitated discussion/ seminar with participants encouraged to ask questions. Duration: 1–3 hours	1–2 weeks	1 day	As required (minimum 6 monthly) Basic
Table-top exercise	Group discussions with emphasis on problem solving Rather than spontaneous decision-making. Larger table-top exercises may need to include facilitators and evaluators in order to be successful.	Structured, facilitated discussion based on a hypothetical scenario and conducted in a relaxed environment. Duration: from 3 hours to 1 day	2–3 weeks	1–2 days	6-monthly Basic

Table 7: Indicative EOC/PHEOC Exercise Programme Cycle					
Type of exercise	Factors to be considered	Format	Preparation and planning	Conduct and review	Frequency
Drill	A drill can be led by a manager, supervisor, department head or exercise designer and can be conducted within a facility, in the field, or at the EOC/ PHEOC or other operating centre.	Simplest of the operations-based exercises. Can be spontaneous. Duration: 1–6 hours	2–3 weeks	1 day	Regularly (minimum 3-month) Basic
Functional exercise	Involves creating a situation and facilitating a "real" response and is simulated to a significant level of detail, usually covering multiple functions. Requires extensive planning and preparation. Staff members need considerable experience with the functions being tested. A functional exercise is always a prerequisite to a full-scale exercise.	Conducted as an interactive, scenario-based exercise. Participants are required to respond to injects as they would in a real emergency, communicating and collaborating with each other in a realistic setting. Duration: 1–2 days	2–6 months	2–3 days	Annually Standard/ advanced

Table 7: Indicative EOC/PHEOC Exercise Programme Cycle					
Type of exercise	**Factors to be considered**	**Format**	**Preparation and planning**	**Conduct and review**	**Frequency**
Full-scale exercise	Costly and time-consuming. All levels of personnel should take part. The EOC/PHEOC is activated, and command posts may be established. Simulation information is conveyed on paper, by telephone, through pseudo media, and victims or others (simulated by role-players). Requires extensive planning and preparation.	A "dress rehearsal" for an emergency response. May Include other partners/ agencies and deployment of assets and personnel. Duration: 2–3 days	3–9 months	2–5 days	Once every 2 years Advanced

Source: WHO 2018b



11.1.5.4 The Exercise Management Cycle

In a cycle of increasing difficulty, complexity, and refinement, each exercise should build on previous exercises and specific occurrences while addressing certain skills. This programme should be evaluated and changed as required, ideally every three months. Figure 41 displays a typical exercise management cycle. The procedures for organising and carrying out operations-based exercises are described in the following sections. Even if discussion-based exercises and drills don't require as much meticulous planning or work, the same ideas still hold true.

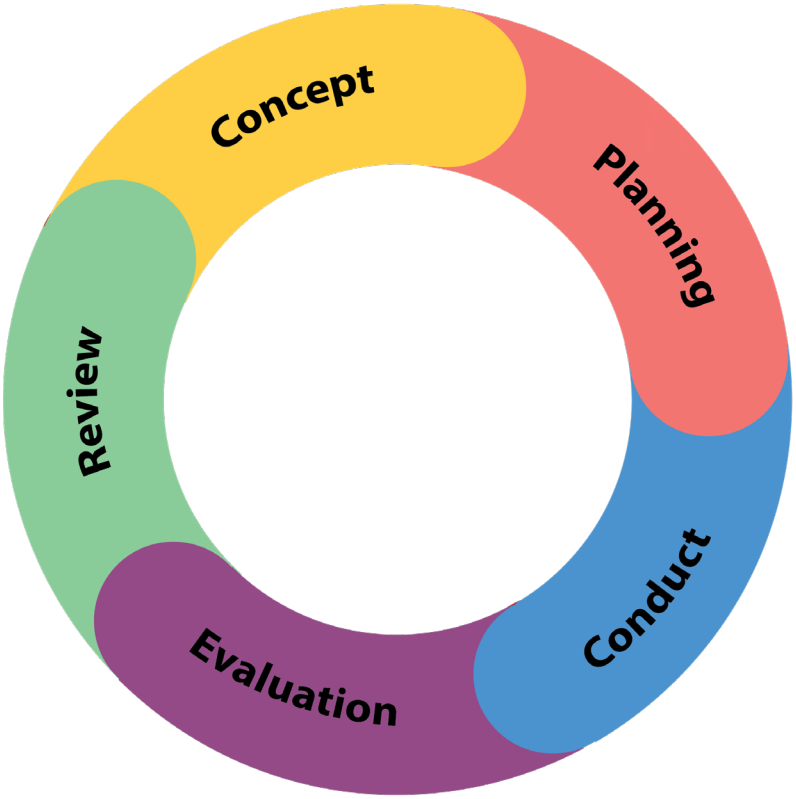


Figure 41: Exercise Management Cycle (WHO 2018b)

11.2 Monitoring, Evaluation and Performance Improvement



The IMS/IRS incorporates a process for collecting data on the effectiveness of event handling based on event preparations and participant feedback. Two important debriefing sessions, the After-Action Review and the event reaction evaluation, play a key role in assessing the overall management of the situation. These meetings generate reports that often include valuable recommendations for improvement. Additionally, for lengthy events, an in-process review option is available.

11.2.1 Post-Event and Exercise Evaluations and Recommendations

The appointed members of the EOC/PHEOC take part in the after-action evaluation procedure, commonly referred to as a "hot wash", which specifically assesses the performance of the EOC/PHEOC during the incident. Usually led by the head of the planning function department, this evaluation occurs after the event has concluded and the decision to deactivate the EOC/PHEOC has been made. Conducted orally, this process captures details and impressions while they are still fresh in people's minds.

For the evaluation of the larger event response, all major partners are involved. This evaluation typically occurs a few days or weeks after the incident. During this meeting, participants review actions, outcomes, and challenges, and formal recommendations are made for further action. To ensure impartiality, engaging an external examiner is often the most effective approach.

The aim of the post-event and exercise debriefings and evaluations is to achieve the following objectives:

- Identify ways to enhance the functioning of the EOC/PHEOC and its various plans and procedures;
- Gather evidence to support necessary improvements.
- Identify any additional staff training needs.

When evaluating the performance of the EOC/PHEOC infrastructure that supported the response or was tested during an exercise, the primary focus should always be on functionality. There are two main approaches to assessing the effectiveness of an EOC/PHEOC: Standards-Based Assessment and Capabilities-Based Evaluation. The Standards-Based approach involves the following questions for each EOC/PHEOC management component:

- What aspects met or exceeded standards?
- What aspects partially met standards?
- What aspects failed to meet a standard?
- Were the failures due to the standard being unachievable, or were they indicative of a need for more training and/or resources?

11.2.1.1 After-Action Review (AAR)

Countries must build fundamental public health capabilities to prevent, identify, and respond to public health emergencies in accordance with the International Health Regulations (IHR 2005). WHO has created an IHR Monitoring and Evaluation Framework (IHRMEF) with three additional components in response to the recommendations of the IHR review committee on the second extension for establishing national public health capacities and on IHR Implementation in 2014. One of the three elements is the after-action review, which is a qualitative assessment of functional capability carried out following the reaction to events or crises involving public health.

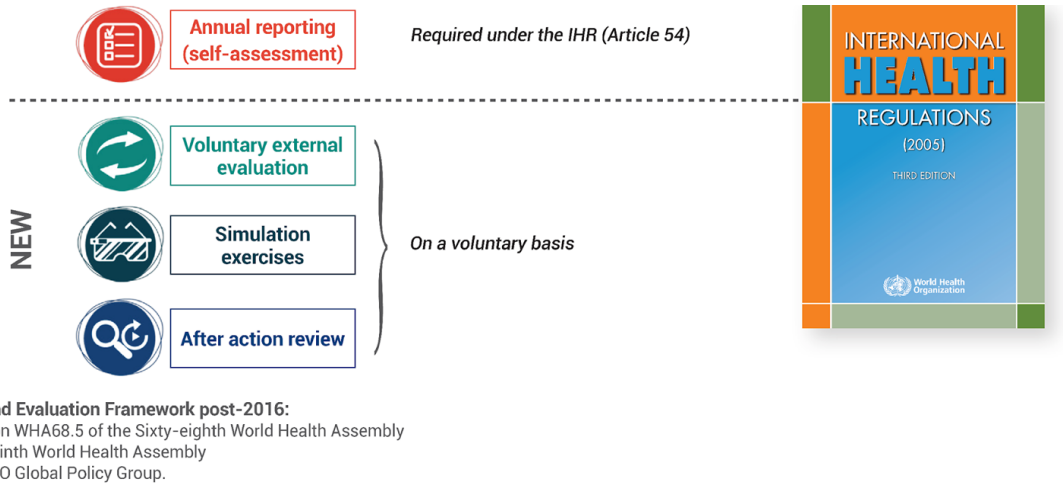


Figure 42: IHR Monitoring and Evaluation Framework (Source: WHO 2019b)

To capitalise on best practises, identify areas and actions for improvement, and foster both individual and group learning, it is crucial to examine and assess all activities conducted as part of a public health response.

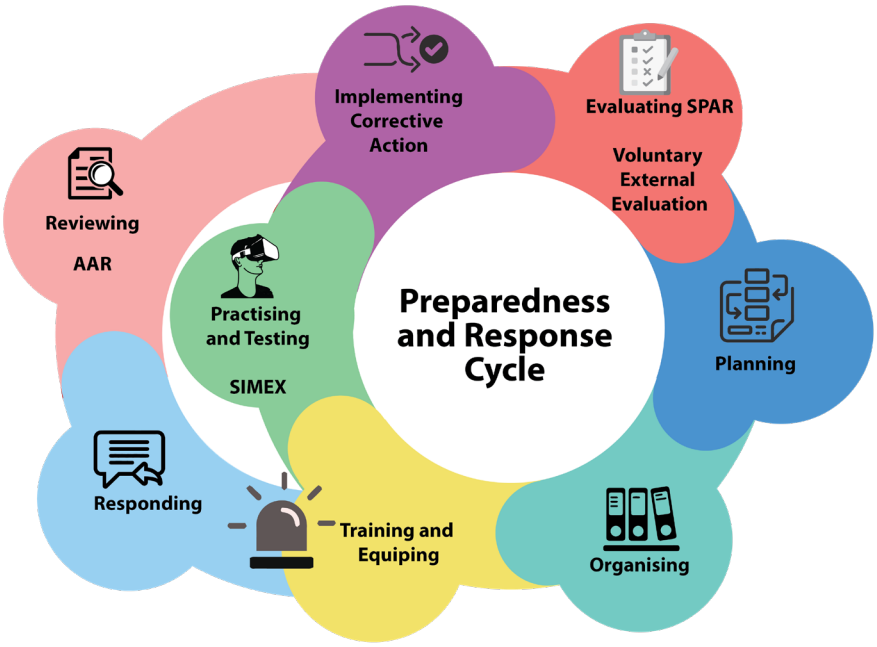


Figure 43: After Action Reviews in the Preparedness and Response Cycle (WHO 2019b)

An AAR gives the chance to assess how well public health and emergency response systems are functioning and to pinpoint concrete areas that might use further development. It may be put into practise as a component of the cycle of readiness and reaction shown in figure 43.

The WHO has issued guidance for After Action Review (AAR) presenting the methodology for planning and implementing a successful AAR to review actions taken in response to public health events and as a routine management tool for continuous learning and improvements (WHO 2019b).

11.2.2 In-Process Review

The in-process evaluation assesses the effectiveness of the EOC's/PHEOC's operation during an emergency response. There are two main methods for conducting an in-process review:

a. The first approach is similar to an AAR, where EOC/PHEOC staff and members of the policy group have the opportunity to assess and criticise current procedures and results.

b. The second method involves an impartial observer who is not directly involved in the response effort conducting the review. This approach may be required by the steering committee, policy group, or event management.

11.2.2.1 Intra-Action Review (IAR)

The WHO Guidance for Conducting a Country COVID-19 Intra-Action Review (IAR) was developed to guide countries in conducting periodic reviews of their national and subnational COVID-19 response, ensuring critical learning opportunities for learning and improvement to better respond to the COVID-19 outbreak in their countries are not missed (WHO 2020a). The IAR is a country-led guided process that brings together a small group of COVID-19 responders with expertise in the public health response pillars under assessment during the COVID-19 outbreak in-country. Although IARs can be administered online or in person, the online approach is preferred, particularly if community transmission stays strong in the nation. The IAR will identify practical areas for immediate rectification and long-term improvements to the ongoing response (WHO 2020b).

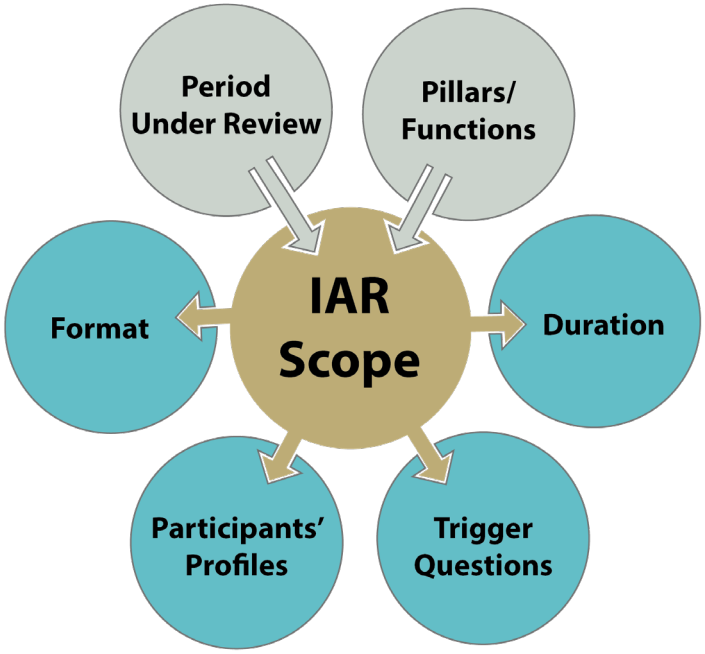


Figure 44: The Scope of a Country COVID-19 Intra-Action Review (IAR) Determines How it will be Conducted (WHO 2020b)

11.2.3Continuous Improvement Programme

Within comprehensive emergency and risk management, the loop encompassing preparedness planning, response, and recovery is concluded by an EOC/PHEOC improvement plan following an exercise or post-event evaluation. This plan initiates a fresh cycle of preparedness planning and testing, serving as the foundation for an ongoing enhancement programme to refine systemic capabilities, capacities, plans, and processes.

11.2.4 Joint External Evaluation (JEE) Tool

The WHO's Joint External Evaluation (JEE) tool plays a significant role in developing and strengthening EOCs/PHEOCs in member countries. The JEE is a crucial tool in assessing a country's core capacities for health security and identifying areas for improvement. Here's how the JEE is utilized in developing EOCs/PHEOCs:

- **Assessing Core Capacities:** The JEE evaluates a country's ability to prevent, detect, and respond to public health threats, including emergencies and disasters. This assessment includes evaluating the specific core capacities relevant to EOCs/PHEOCs, such as the EOC/PHEOC capacity, coordination mechanisms, and response systems.

- **Identifying Gaps and Priorities:** Through the JEE process, countries can identify gaps in their EOC/PHEOC development and emergency response capabilities. The evaluation highlights areas that require attention and improvement, serving as a roadmap for prioritizing interventions and resources to develop EOCs/PHEOCs effectively.

- **Developing National Action Plans:** Based on the findings of the JEE, countries develop National Action Plans (NAPs) to address the identified gaps and weaknesses in their EOC/PHEOC capacities. These action plans outline specific strategies, timelines, and responsibilities to enhance PHEOC development and ensure an effective response to public health emergencies.

- **Strengthening EOCs/PHEOCs:** The JEE assessment provides valuable insights into the strengths and weaknesses of existing EOCs. It helps refine the structure and functionality of the EOCs/PHEOCs to align with international best practices and standards for emergency preparedness and response.

- **Enhancing Coordination Mechanisms:** The JEE evaluates how agencies and sectors coordinate during public health emergencies. It highlights opportunities to strengthen coordination between EOCs/PHEOCs, health authorities, disaster management agencies, and other relevant stakeholders to create a unified response mechanism.

- **Building Multi-Sectoral Collaboration:** The JEE process involves collaboration between various sectors, including health, security, environment, and animal health. This multi-sectoral approach is critical for effective EOC/PHEOC development and response efforts, as public health emergencies often require a coordinated and comprehensive response.

- **Guiding Resource Allocation:** The JEE findings assist in identifying resource needs and gaps in developing and sustaining EOCs/PHEOCs. Governments and international partners can use this information to allocate resources effectively, ensuring EOCs/PHEOCs have the necessary infrastructure, technology, and trained personnel.

- **Monitoring Progress:** The JEE is not a one-time assessment but a cyclical process that encourages regular evaluations to track progress and improvements in EOC/PHEOC development. Countries can use subsequent JEEs to measure the impact of their action plans and adjust strategies based on changing health security needs.

The Joint External Evaluation provides a systematic evidence-based approach to assess and enhance EOC/PHEOC development. By leveraging the JEE process, countries can strengthen their capacity to effectively respond to public health emergencies, protect public health, and ensure a resilient and coordinated response system (WHO 2022).

11.2.4.1 Health Emergency Management

Target: This capacity focuses on the management of health emergencies and systems for enabling countries to be prepared and operationally ready for response to any public health event, including emergencies, as per the all-hazard requirement of IHR. Ensuring risk-based plans for emergency preparedness, readiness and response, robust emergency management structures and mobilization of resources during an emergency is critical for a timely response to public health emergencies (JEE Tool, 2022).

As measured by:

I. Existence of national strategic multi-hazard emergency assessments (risk profiles) and resource mapping.

II. Existence of emergency readiness assessment.

III. Development of national health EOC plans and procedures.

IV. Establishment of an emergency response coordination mechanism or incident management system.

V. Evidence of at least one response to a public health emergency within the previous year that demonstrates that the country sent or received medical countermeasures and personnel according to written national or international protocols.

VI. Existence of an emergency logistic and supply chain management system/ mechanism. vii. Existence of policies and procedures for research, development and innovation for emergency preparedness and response

Desired impact: Multisectoral actors at national intermediate and primary public health response levels are well coordinated and have a common understanding of the priority risks, and are ready to implement timely, effective and efficient emergency response operations for outbreaks and other emergencies. Countries have the necessary legal and regulatory processes to allow for rapid national or cross-border deployment and receipt of public health, medical personnel and logistics and supplies during emergencies.

Table 8: Emergency Risk Assessment and Readiness		
Level	**R1.1. Emergency Risk Assessment and Readiness**	**Choose One Level**
Level 1	A national all hazards risk profile based on a multihazard risk assessment is not in place or has not been updated in the past five years and there is no formal mechanism for the readiness assessment for potential public health emergencies.	
Level 2	A national all hazards risk profile developed based on a multihazard risk assessment and capacity/readiness assessment for potential public health emergencies conducted in the past five years is in place with priorities identified.	
Level 3	A capacity/readiness assessment for potential public health emergencies has been conducted in the past two years and a national all hazards risk profile developed based on a multihazard risk assessment that has been conducted in the past two years is in place with priorities identified.	
Level 4	National and intermediate all hazards risk profiles developed based on a multihazard risk assessments that have been conducted in the past two years are in place with priorities identified. AND The readiness and/or contingency plan(s) have been adequately resourced and implemented in the past two years, including at intermediate levels.	
Level 5	National and intermediate all hazards risk profiles based on multisectoral multihazard risk assessments and readiness plans are annually reviewed and updated to accommodate emerging threats, and are shared regularly among sectors.	

(Source: JEE Tool 2022)

Table 9: Public Health Emergency Operations Centre (PHEOC)		
Level	**R1.2. Public Health Emergency Operations Centre (PHEOC)**	**Choose One Level**
Level 1	A PHEOC has not been identified at the national level and no PHEOC handbook is in place.	
Level 2	A national PHEOC, occupying a designated permanent or ad hoc facility, has been established AND A national PHEOC handbook with basic content is in place AND Staff to conduct core incident management system (IMS) functions within the national PHEOC have been identified	
Level 3	A national PHEOC, occupying a designated permanent or ad hoc facility, has been established. AND A national PHEOC handbook with full content is in place. AND Staff identified to conduct core IMS functions within the national PHEOC have been trained against public health emergency management (PHEM) competencies.	
Level 4	A national PHEOC, occupying a designated permanent facility, has been established and an associated PHEOC handbook with full content is in place. AND An operating budget exists for the core staffing, daily operations. and maintenance of the national PHEOC. AND The national PHEOC is capable of activating a coordinated response within 120 minutes of receiving an early warning or other information of an emergency requiring PHEOC activation. AND PHEOCs have been established at intermediate levels, their associated PHEOC handbooks with full content are in place, and their staff identified to conduct core IMS functions have been trained against PHEM competencies.	
Level 5	The activation operation and deactivation of PHEOCs at all levels have been tested and PHEOC handbooks (with their associated plans and SOPs) have been updated annually. AND National and intermediate PHEOCs have trained surge staff identified to sustain PHEOC operations across multiple shifts for extended periods.	

(Source: JEE Tool 2022)

Table 10: Management of Health Emergency Response		
Level	**R1.3. Management of Health Emergency Response**	**Choose One Level**
Level 1	An IMS integrated with a national PHEOC or equivalent structure is not available or is under development.	
Level 2	An IMS integrated with a national PHEOC, or equivalent structure is developed but not operational.	
Level 3	An IMS integrated with a national PHEOC, or equivalent structure, is in place and operational at the national level.	
Level 4	An IMS integrated with a national PHEOC, or equivalent structure, is in place and operational at the national level and able to support intermediate levels.	
Level 5	An IMS integrated with a national PHEOC, or equivalent structure, is in place and operational at the national level and is able to support Intermediate and primary public health levels and is exercised reviewed, evaluated and updated, with improvements based on SimExs and lessons learned from real-world events, e.g., IARs or AARs.	

(Source: JEE Tool 2022)

Table 11: Activation and Coordination of Health Personnel and Teams in a Public Health Emergency		
Level	**R1.4. Activation and Coordination of Health Personnel and Teams in a Public Health Emergency**	**Choose One Level**
Level 1	No national personnel surge plan has been drafted or is under development.	
Level 2	National plans that outline a system for pre-deployment, deployment and post-deployment of surge personnel and teams, including sending and receiving personnel during public health emergencies have been drafted, including the development of plans for emergency management teams (EMT) and rapid response teams (RRTs) for national response.	
Level 3	National and intermediate level plans have been drafted that outline a system for pre-deployment, deployment and post-deployment of surge personnel, including sending and receiving personnel and teams during public health emergencies have been drafted, including the development of plans for EMTs and RRTs.	
Level 4	Table top exercise(s) has been conducted to test decision-making and protocols for the deployment of surge personnel and sending and receiving health personnel and teams from another country during a public health emergency, and training and equipment are available for EMTs and RRTs.	
Level 5	Table top exercise(s) has been conducted to test decision-making and protocols for the deployment of surge personnel and sending and receiving health personnel and teams from another country during a public health emergency, and training and equipment are available for EMTs and RRTs. Country participates in a regional/international partnership or has a formal agreement with another country or international organization that outlines criteria and procedures for sending and receiving surge personnel and has participated in an exercise or response within the past year to practice.	

(Source: JEE Tool 2022)

Table 12: Emergency Logistic and Supply Chain Management		
Level	**R1.5. Emergency Logistic and Supply Chain Management**	**Choose One Level**
Level 1	Emergency logistics and supply chain management system/ mechanism is under development and/or not able to provide adequate support for health emergencies.	
Level 2	Emergency logistics and supply chain management system/ mechanism is developed but not able to provide adequate support for health emergencies.	
Level 3	Emergency logistics and supply chain management system/ mechanism is developed and is able to provide adequate support for health emergencies at the national level.	
Level 4	Emergency logistics and supply chain management system/ mechanism is developed and is able to provide adequate support for health emergencies at national and intermediate levels.	
Level 5	Emergency logistics and supply chain management system/ mechanism is implemented at national, intermediate and primary public health levels, and is exercised, reviewed, evaluated and updated on a regular basis.	

(Source: JEE Tool 2022)

Table 13: Research, Development and Innovation		
Level	**R1.6. Research, Development and Innovation**	**Choose One Level**
Level 1	Research and development activities (operational and implementation), including approvals of research, are conducted on an ad hoc basis.	
Level 2	A health emergency action plan or framework, which includes mechanisms for directing research and development and regulatory review for emergency preparedness and response, is under development. There is some existing national (public or private entities) funding for conducting research and development (R&D), and the country can facilitate and conduct regulatory reviews.	
Level 3	A health emergency action plan or framework, which includes mechanisms and procedures for R&D and regulatory review for emergency preparedness and response is implemented and includes identification of institutions (i.e., within and/or outside the country) to support research.	
Level 4	A health emergency action plan or framework has dedicated resources and networks for R&D. AND The relevant institutions conduct research in priority areas, document and disseminate findings of research, development and innovation and their application in emergency preparedness and response.	
Level 5	There is ongoing systematic generation of evidence-based solutions from R&D for enhanced emergency preparedness and response, as evidenced by one or more completed or ongoing research projects. AND Utilization of evidence from research, development and innovation in emergency preparedness and response is documented and disseminated.	

(Source: JEE Tool 2022)

11.2.4.2 Technical Questions

Emergency Risk and Readiness Assessment

1. Does the country have a national emergency risk profile based on strategic multihazard emergency risk assessments?

    a. When was the last national strategic multihazard risk assessment conducted? Which sectors participated in the risk assessment?

    b. What are the findings of the national strategic emergency risk assessment?

    c. Are strategic risk assessments conducted by all sectors? Do health sector strategic risk assessments contribute to national multisectoral risk assessments?

    d. Are strategic risk assessments conducted at intermediate and primary public health levels? What proportion of intermediate or local entities has conducted risk assessments?

    e. Are risk mapping and vulnerability assessment conducted at the community level?

    f. Is there a capacity to monitor priority risks or emerging risks? How often are national emergency risk profiles reviewed and updated to accommodate emerging threats or changing risks?

    g. How are national risk profiles and resources shared among sectors? Are IT capacities utilized to support availability, accessibility, analysis, updating, reporting and sharing of risk assessments?

    h. Are strategic risk assessments used as the basis for emergency preparedness measures?

2. Is there a formal mechanism for the readiness assessment for potential public health emergencies? E.g., WHO approved readiness assessment checklist or SimEx and/or drills?

    a. Does the mechanism include all relevant stakeholders both from government, public and private sectors at all levels?

    b. Is the readiness assessment adequately resourced with the necessary funding, logistics, human resources and temporary infrastructure?

3. Has the country conducted a readiness assessment of potential public health emergencies and developed readiness plan(s)? Or say informed emergency response plans? Or identified targeted, priority operational readiness interventions to inform

emergency response plan with clear triggers for activation/scale-up of preparedness/ response measures?

a. When was the last national readiness assessment conducted?

b. Was the assessment conducted across all stakeholders at different levels; national, intermediate and primary public health levels?

c. What is the finding of the readiness assessment and how are they shared with stakeholders?

d. Are the findings from the readiness assessment used as a basis to update the emergency response plans and to inform plans and mechanisms for coordinating multisectoral multihazard emergencies?

e. Does the country have a community readiness assessment checklist and mechanism to conduct community readiness assessment?

Public Health Emergency Operations Centre

1. Describe the health EOC at the national level (these questions are to be answered whether there is a permanent EOC, temporary EOC or virtual EOC).

   a. If there is a dedicated EOC (physical), provide a floor plan and description of equipment?

   b. What is the total staff capacity for the EOC? Is there a plan in place to accommodate additional staff if necessary?

   c. Is there a reliable power source for the EOC?

   d. Is there a reliable communications structure for the EOC? Does this include Internet, email and phone capabilities?

   e. Is the organization able to convene participants from ministries and agencies of all relevant sectors and other national and multinational partners as appropriate?

2. Describe the plans and SOPs that are in place for the EOC.

   a. Are the plans and procedures based on an IRS/IMS? Do they include the following functions and resources:

      - incident
      - incident command,

- operations,
- planning,
- logistics,
- finance.

b. When there is a national emergency, who serves as the incident manager for the health EOC?

c. Is there a procedure in place for decision-making in the EOC?

d. Does the national health EOC plan include roles for public health science (epidemiology, medical and other subject matter expertise), public communications and partner liaison?How often are these procedures updated? When was the last time they were updated?

e. How are EOC records and procedures maintained and distributed?

3. How long after the receipt of an early warning or information does it take for the activation of the EOC?

   a. How many times was the EOC activated in the past five years?

4. 4. Are there intermediate health EOCs with staff who are trained in emergency management and EOC SOPs?

5. How often are exercises conducted to test national EOC activation and networking with intermediate and multisectoral EOCs? When was the last time this happened?

6. Describe roles for staff that have been identified for EOC functions. Are there role descriptions and job aids for national EOC functional positions?

7. Describe how staff have been trained for their role in EOCs?

   a. Is there a training programme for EOC staff?

   b. How are EOC surge staff identified? Is there training available to EOC surge staff in advance of a response? Is there "just in time" training available?

8. Does the EOC use standardized forms and templates for data/information management, reporting, briefing, etc.?

9. Describe the availability/dissemination of situational awareness reports from health EOC for different target groups.

Management of Health Emergency Response

1. Is there an IRS/IMS for health emergencies?
2. Is the IRS/IMS integrated with a national EOC/PHEOC, or equivalent structure is in place and operational at the national and able to support intermediate and primary public health levels?
3. Are there relevant incident management SOPs for health emergencies?
4. Is the IRS/IMS reviewed and/or tested, and improved through exercises and lessons learned from real-world events (e.g., SimEx, IARs or AARs)?

Activation and Coordination of Health Personnel in a Public Health Emergency

1. Does the country have a plan that identifies procedures and decision-making related to sending and receiving health personnel during a public health emergency?
    a. Does the plan address regulatory and licensure concerns of requesting/ accepting and receiving health personnel from an international source?
    b. Does the plan identify training criteria and standards for health personnel who will be sent or received during a public health emergency?
    c. Does the plan address liability concerns for using medical personnel during an international deployment?
    d. Does the plan address safety concerns for health personnel during a national or international deployment?
    e. Does the plan address financial concerns for health personnel during a national or international deployment?
    f. Are other sectors (i.e., security authorities, animal health) included in plans for sending/ receiving personnel during an emergency?
2. Does the country have a plan for surge staffing for public health emergency response?
    a. Have training procedures and materials been developed to orient surge personnel?
    b. Have due considerations been paid to the gender composition of surge personnel, including in leadership and decision-making roles?

3. Does the surge personnel system include other sectors (chemicals, radiation, animal health) or do separate systems exist?

4. Has the country exercised surge plans for health personnel within the past year? If yes, describe the exercise and specific outcomes.

5. Is the country part of any regional/international personnel deployment agreements, such as WHO Global Outbreak Alert and Response Network? If yes, describe.

    a. Are policies and resources in place to ensure that technical institutions and networks are able to be active partners in the Global Outbreak Alert and Response Network? If yes, describe.

    b. Does the country have a pandemic preparedness plan or other emergency preparedness plan that addresses personnel deployments? If yes, describe.

6. Does the country participate actively in the EMT initiative, adopt and use the EMT guiding principles and minimum standards?

    a. Has the country designated EMT focal points at policy and operational levels?

    b. Has the country participated in EMT training events or regional/global meetings?

    c. Has the country taken on an active role in the EMT initiative at the regional or global level, i.e., has it taken on the role of regional chair or vice-chair? Has it offered members for EMT technical working groups? Does the country provide experts to the EMT mentorship pool?

    d. Does the country have a WHO classified EMT for international deployment?

    e. Does the country have a quality assurance or accreditation system in place for nationally deployable EMTs?

    f. Does the country have a set of regulations and norms to support the development of nationally deployable EMTs and a mechanism to coordinate them?

Emergency Logistics and Supply Chain Management

1. Does the country have a plan that identifies procedures and decision-making related to sending and receiving medical countermeasures during a public health emergency?

    a. Does the plan address regulatory concerns of requesting/accepting and receiving drugs or devices from an international source?

b. Does the plan address logistic concerns related to sending, receiving and distributing medical countermeasures during a public health emergency?

c. Does the plan address security concerns that may emerge related to sending/ receiving/ distributing medical countermeasures during a shortage?

2. Has the country exercised plans for sending or receiving medical countermeasures within the past year? a) If yes, describe the exercise and specific outcomes.

3. Does the country have a stockpile of medical countermeasures for national use during a public health emergency?

   a. Does the country have the capacity to produce antibiotics, vaccines, laboratory supplies/ equipment or others?

   b. Does this include countermeasures for other sectors (e.g., PPE for animal culling)?

   c. If the country has a stockpile of drugs and equipment, specify for how long this may last and for how many patients?

   d. Is there an annual budget available for stockpiling?

4. 4. Does the country have agreements with manufacturers or distributors to procure medical countermeasures during a public health emergency? If yes, describe.

5. Is the country part of any regional/international countermeasure procurement agreements? If yes, describe.

6. Is the country part of any regional/international countermeasure sharing agreements? If yes, describe.

7. Is the country part of any regional/international countermeasure distributing agreements? If yes, describe.

8. Are there dedicated resources/staffing identified for logistics related to delivery and receipt of countermeasures?

9. Are there dedicated resources/staffing identified for tracking and distribution of countermeasures?

10. Does the country have a pandemic preparedness plan that addresses countermeasures? If yes, describe.

11. Does the country have a plan, procedure or legal provision for procuring animal countermeasures? If yes, describe.

12. Does the country have a plan, procedure or legal provision for distributing animal countermeasures? If yes, describe.

Research, Development and Innovation

1. Is there a national strategic framework for operational research in health emergencies?
2. Does the framework include emergency preparedness research?
3. Has the country identified institutions with research capacity (i.e., within or outside the country) for various components of emergency response, e.g., legislation and policy, case management, laboratory diagnostics, vaccines, etc. to address research priorities?
4. Does the country have dedicated resources and networks for research, development and innovations?
5. Has the country had arrangements for the documentation and dissemination of research findings, development and innovation and their application in emergency preparedness and response, e.g., publication in peer-reviewed journals?
6. Does the country have trained staff for research and regulatory review?
7. Is there a human resource development plan for research and regulatory review personnel?

Documentation or evidence for the level of capability:

- Plans of the EOC/PHEOC and listing of available equipment;
- Training plans for emergency operations staff;
- Exercise plan, including evaluation and corrective action plan, if available;
- Activation plan for emergency response, such as a roster of emergency operations staff and role.

The assessment tool for *Type A, Type B and Type C* EOC/PHEOC is in **Annexure XIII**.

12. Costing, Funding and Sustaining an EOC/ PHEOC



To facilitate the development of an EOC/PHEOC, it is essential to have a grasp of fixed and recurring cost classifications. Fixed cost categories encompass expenses associated with the procurement and maintenance of physical infrastructure, utility services, investments in ICT, and the core workforce essential for the EOC/PHEOC. On the other hand, recurring variable cost categories encompass meetings, consultancy fees, training, materials, equipment, supplies, travel, transportation, and the expenses related to surge staff.

As part of the steering committee's responsibilities, it is imperative to conduct cost assessments for the implementation and ongoing operation of an EOC/PHEOC. Identifying funding sources is key, whether from internal budgets, international organizations, or third-party sponsors. The scale of an EOC/PHEOC should align with the available funding resources.

An EOC/PHEOC is a component of a programme aimed at improving and maintaining institutional readiness. All the aforementioned planning and development expenditures for an EOC/PHEOC are included in the costs of an EOC/ PHEOC to reach the minimum essential scope and size as determined by an evaluation of expected demands. Future improvements that raise the EOC/PHEOC to a higher degree of performance should also be given greater thought when needs shift and brand-new technical possibilities develop.

MoHFW has a statutory responsibility to establish a public health emergency fund that will be used during any threatening public health emergency or disaster. This fund will be regulated, monitored, and spent according to a regulation under the government Financial Act in a way that would not hinder disaster mitigation and response. According to the Public Health Protection Act:

- An amount must be included in the government budget every year to be used in the event of a public health emergency.
- The defined amount must be estimated by the Ministry and the Director General, considering what actions need to be taken in the event of an emergency and estimated cost for these actions.
- The money allocated for public health emergencies cannot be used for other purposes.

An adequate amount of immediate funding should be readily available for local and district level emergencies in the relevant territory in local administration based on the situation and response required. The MoHFW shall also seek support from national and international development partners, civil society, the private sector and all organizations, private and public, involved in emergency preparedness and response for capacity development within the health sector and nation. Funding gaps may also be addressed through the Public Private Partnerships and Corporate Social Responsibility actions and how they influence the progression of a response, the nature of the disease triggering the response, and its economic ramifications.

Teams involved in the establishment or reinforcement of EOCs/PHEOCs should collaborate with academic partners and seasoned public health professionals to create a standardized set of metrics for assessing and appraising exercises and real-world response efforts. Encouraging multi-stakeholder and interdisciplinary platforms for information exchange, sharing insights, and providing advice on enhancing metrics and strengthening emergency operations is crucial.

Leveraging existing thematic platforms for health emergency and disaster risk management research and initiatives like EOC-NET should be prioritized to promote collaborations among stakeholders, bolstering the scientific and technical work occurring in the EOC/PHEOC domain. These metrics should be disseminated and employed across regions to facilitate the more robust development and implementation of evidence-based practices.

13. Public Health Emergency and Disaster Management (PHEDM)

In the face of global challenges posed by public health emergencies and disasters, it becomes imperative to proactively address the need for comprehensive training in Public Health Emergency and Disaster Management (PHEDM). Capacity building is an essential component of the PHEDM system, and it facilitates the strengthening of the response mechanism and empowers all the stakeholders to take appropriate preparedness measures. The necessity to develop a standard course for the capacity building of professionals in Public Health Emergency and Disaster Management (PHEDM) led to a unique initiative undertaken through the partnership of the National Institute of Disaster Management (NIDM), National Centre for Disease Control (NCDC), with technical support from U.S. Centers for Disease Control and Prevention (CDC), Country Office – India. This collaboration resulted in the creation of a five-tiered Public Health Emergency and Disaster Management Capacity Development Programme and a Professional Development Programme (PHEDM-CDP to PDP).

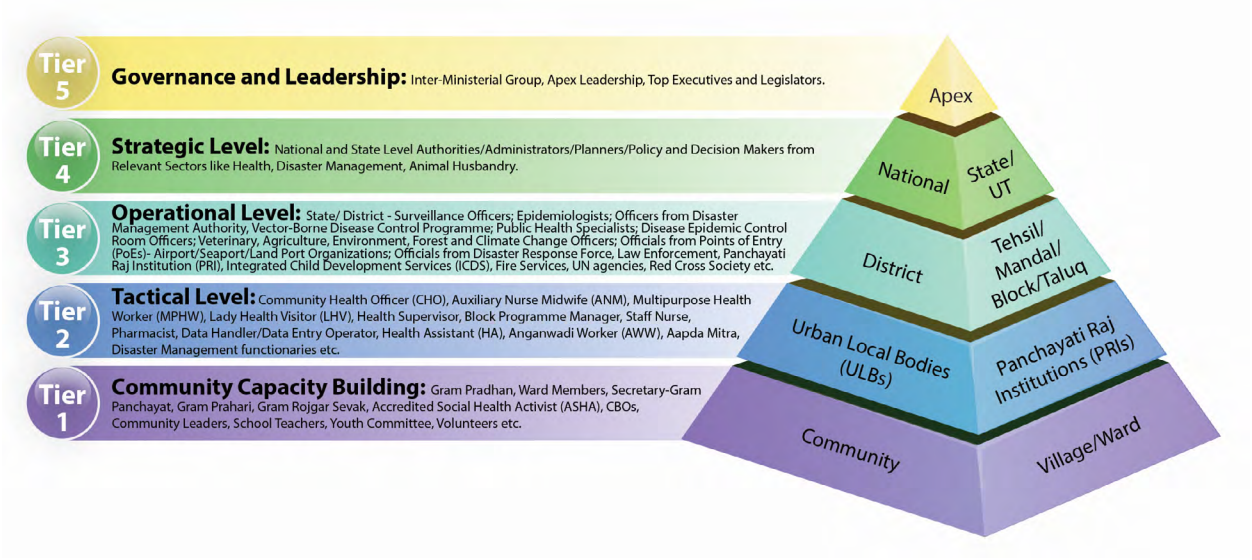


Figure 45: PHEDM Tiered Approach

PHEDM Tier I and II

Globally, communities are vulnerable to various public health emergencies and disasters, from disease outbreaks to floods, earthquakes, and more. These events can devastate people's lives, infrastructure, and local economies. Community resilience and preparedness are crucial for effective PHEDM.

Since communities situated at the site of emergencies are the first to experience their impact, they assume the vital role of "First Responders." Consequently, fostering adequate awareness and preparedness at the community level becomes crucial.

Frontline workers (FLWs) are instrumental in ensuring the safety of all village residents. They raise awareness and act as the initial defence against infectious diseases and other hazards.

Recognizing the pivotal role of community engagement, India is shifting from a "Whole of Government" to a "Whole of Government and Whole of Society" approach in addressing public health emergencies and disasters at the village level. PHEDM Tier I and II entail capacity enhancement of the FLWs and community for effective and efficient management of public health emergencies and disasters.

PHEDM Tier-III

The PHEDM Tier-III Training is tailored explicitly for operational-level functionaries to equip them with the necessary knowledge and skills, empowering them to efficiently carry out their roles and responsibilities while facilitating effective communication, coordination, and response efforts. The training aims to help participants understand the concept of PHEDM, including the One-Health Approach, the five-tiered Institutional PHEDM Capacity-Building Model, and the international and national frameworks for PHEDM. Additionally, it seeks to describe the concept and purpose of the PHEDM Assessment Tool, Emergency Operations Plans (EOPs), Concept of Operations (CONOPs), organizational models for response, Points of Entry (PoEs), Risk Communication and Community Engagement (RCCE), and Psychosocial support within the context of PHEDM.

PHEDM Tier-IV

Recognizing the importance of a diverse and trained workforce with different critical expertise alongside tested plans and protocols, PHEDM Tier-IV aims to achieve expected emergency risk management outcomes outlined in national and global frameworks. The proposed India International Public Health Emergency Management (PHEM) Fellowship program under this tier will play a pivotal role in capacitating and enabling key personnel from PHEOCs/EOCs and other relevant authorities at national, state, and district levels by improving emergency response and preparedness, developing and implementing the PHEDM-PDP, strengthening regional and national capacity to address public health threats and disaster events, and fostering leadership capacity among mid to senior-level public health professionals for effective emergency response. By the end of the fellowship, participants will comprehensively understand public health emergency and disaster management principles. They will possess practical skills, including critical information analysis, effective emergency management, familiarity with EOC operations, and the ability to train relevant professionals in their home State/UTs.

PHEDM Tier-V

At the policy and strategic level, leadership is crucial in providing direction, resources, and coordination to efficiently respond to and mitigate the effects of public health emergencies and disaster events. PHEDM tier-V intends to sensitize the executive and

policy-level leadership with an understanding of the Public Health Emergency and Disaster Management (PHEDM) concepts, processes, principles, and tools that help decision-making strengthen emergency response capabilities and develop a sustained and resilient programme. This training module aims to advocate leadership at the policy and strategic levels.

13.1 Research Opportunities in PHEDM

A preliminary search of the PubMed database shows that establishing a research agenda to determine avenues for enhancement of PHEDM research would be advantageous. These avenues or gaps include:

a. **Multi-Agency and Interdisciplinary Collaboration:** Despite the inherently multidisciplinary nature of public health emergencies and disasters, there needs to be more comprehensive research that seamlessly integrates insights from diverse fields and agencies, such as medicine, sociology, psychology, urban planning, animal husbandry, and civil defence. Bridging these gaps is essential for a holistic understanding of the complexities involved.

b. **Long-Term Psychological Impact:** While immediate responses to emergencies are well-documented, there needs to be more research examining the long-term psychological effects on individuals and communities. Understanding the lasting impact is crucial for effective post-disaster interventions and mental health support.

c. **Technological Integration:** With the rapid advancement of technology, there is a need for research exploring the integration of cutting-edge technologies such as artificial intelligence, big data analytics, and remote sensing in enhancing early warning systems, resource allocation, and response strategies.

The research agenda, therefore, would extend beyond the conventional "lessons learned" and after-action review, aiming for a more comprehensive approach that validates existing best practices and supports adaptive changes in the incident management system and PHEDM. This agenda would adopt an outcomes-based approach, examining critical timing.

While significant progress has been made in understanding and addressing the challenges of PHEDM, several opportunities exist for research to enhance the evidence base on PHEDM.

Opportunities for Research:

a. **Community Resilience:** Investigating factors contributing to community resilience in public health emergencies and disasters can provide valuable insights. This includes understanding community networks, cultural influences, and the role of local leadership in fostering resilience.

b. **Policy Evaluation:** Assessing the effectiveness of existing policies and frameworks for emergency management can inform evidence-based policy adjustments. This research avenue is crucial for ensuring that governance structures are adaptive and responsive to evolving challenges.

c. **Global Health Security:** With the increasing interconnectedness of our world, there is an opportunity to explore how international collaboration and global health governance can be strengthened to address cross-border health emergencies and future pandemics effectively.

Addressing these gaps and exploring the outlined opportunities will undoubtedly contribute to advancing our understanding and preparedness for public health emergencies and disasters.

14. Institutional Framework and Emergency Support Functions (ESF)- Organizational Roles and Responsibilities

14.1 Institutional Framework



A robust institutional framework is essential for effective emergency and disaster management. This framework establishes the structure, roles, and responsibilities of various organizations involved in emergency response, ensuring a coordinated and efficient approach to handling crises.

The institutional framework provides the foundation for emergency and disaster management. It encompasses government agencies at different levels, non-governmental organizations (NGOs), community-based organizations, private sector entities, and other stakeholders. This framework outlines the relationships between these entities, defines lines of authority, and establishes communication channels necessary for effective coordination during emergencies.

14.2 Emergency Support Functions (ESFs)

Within the institutional framework, Emergency Support Functions (ESFs) play a vital role in organizing specific areas of expertise required during emergencies. ESFs are responsible for coordinating resources, capabilities, and expertise across multiple agencies or organizations to address specific functional needs. These functions cover critical areas such as search and rescue operations, transportation, communications, public health services, mass care services, logistics management, and infrastructure restoration.

ESFs serve as the backbone of emergency response efforts by ensuring that the necessary resources and expertise are mobilized efficiently and effectively. Each ESF is led by a designated agency or organization with specialized knowledge and experience in the respective area. This leadership ensures a coordinated approach to addressing the unique challenges posed by different aspects of an emergency.

By establishing clear lines of responsibility and coordination through ESFs, the institutional framework enables a seamless integration of efforts among various stakeholders involved in emergency response. This collaborative approach enhances overall preparedness and response capabilities, ultimately leading to more effective management of emergencies and disasters.

14.3 Organizational Roles and Responsibilities

Each organization involved in emergency and disaster management has distinct roles and responsibilities within the ESFs to ensure a well-coordinated response. These roles may include:

1. **Government Agencies:** Government agencies at various levels have primary responsibilities in coordinating overall emergency response efforts. They establish policies, provide guidance to other organizations involved in emergency management activities while ensuring compliance with legal frameworks. Government agencies also oversee resource allocation and facilitate interagency collaboration.

2. **Non-Governmental Organizations (NGOs):** NGOs play a crucial role in providing support services during emergencies. Their responsibilities may include delivering humanitarian aid, conducting outreach programs for affected communities, providing shelter facilities or medical assistance. NGOs often have specialized expertise that complements government efforts.

3. **Community-Based Organizations:** Community-based organizations are essential partners in emergency management as they possess local knowledge and connections within communities. They assist in disseminating information to vulnerable populations or mobilizing community resources during crises. These organizations play a significant role in promoting community resilience before, during, and after disasters.

4. **Private Sector Entities:** Private sector entities contribute valuable resources such as infrastructure support or specialized expertise during emergencies. Their responsibilities may involve offering logistical support or participating in public-private partnerships to enhance preparedness efforts. Private sector involvement ensures efficient resource utilization while leveraging their business continuity plans to aid recovery efforts.

5. **International Organizations:** Depending on the type and scale of emergencies, support from the countries having expertise and resources may be required which can be mobilized through the Ministry of External Affairs or with the help of UN agencies and in case of international crisis, required support to affected countries may be provided.

Effective emergency management requires a well-defined institutional framework that outlines clear delineation of roles and responsibilities ensures effective coordination among these diverse entities within the institutional framework and ESFs. It enables seamless collaboration, efficient resource allocation, and maximizes the utilization of available expertise during emergencies. This promotes a unified approach to preparedness, response, and recovery, ensuring that all stakeholders understand

their roles and work together towards a common goal. The result is a more resilient community better equipped to handle emergencies and mitigate their impact.

The link between the institutional framework, Emergency Operations Centers (EOCs), and Public Health Emergency Operations Centers (PHEOCs) is crucial for effective emergency and disaster management. EOCs and PHEOCs serve as central command centers during emergencies, responsible for coordinating response efforts across various organizations and agencies. The following are guidance for integration:

1. **Clear Roles and Responsibilities:** The organizational roles and responsibilities defined within the institutional framework should be reflected in the structure of the EOC/PHEOC. Each organization involved in emergency management should have a designated role within the EOC/PHEOC based on their expertise and assigned ESF responsibilities.

2. **Communication and Information Management:** Effective communication is vital within an EOC/PHEOC to ensure timely sharing of information among participating organizations. The institutional framework should establish communication protocols that guide information flow between different entities involved in emergency response. This includes processes for data collection, analysis, decision-making, and dissemination of critical information.

3. **Resource Coordination:** The EOC/PHEOC plays a key role in resource coordination during emergencies. It ensures that necessary resources are allocated efficiently based on identified needs within each ESF area. This includes personnel, equipment, supplies, funding, and other essential resources required for effective response operations.

4. **Collaboration with Stakeholders:** The institutional framework should emphasize collaboration with stakeholders at all levels of government, NGOs, community-based organizations, private sector entities, and volunteers. The EOC/PHEOC serves as a platform for these stakeholders to come together, share information, coordinate efforts, and make collective decisions to address emergency situations effectively.

5. **Training and Exercises:** To ensure seamless integration between the institutional framework and EOC/PHEOC operations, regular training programs and exercises should be conducted involving all relevant organizations. These activities help familiarize participants with their roles, test communication systems, and enhance overall preparedness for coordinated emergency response.

6. **Management of Expertise:** The EOC/PHEOC should have mechanisms in place to effectively manage the expertise available within organizations and participating agencies. This includes identifying subject matter experts, establishing processes for their deployment and utilization, and ensuring that their skills and knowledge are effectively utilized during emergency response operations. The institutional

framework should outline procedures for mobilizing and coordinating these experts within the EOC/PHEOC structure, ensuring that their expertise is leveraged to address specific needs within each ESF area.

By integrating the institutional framework with EOCs and PHEOCs through these guidance points, emergency or EOC manager can ensure a more coordinated approach to emergency response operations. This integration enhances overall preparedness, facilitates efficient resource allocation, improves communication flow, and ultimately leads to more effective management of emergencies and disasters.

India

India's institutional and legal framework for disaster management is comprehensive, with a multi-tiered system that operates under the Disaster Management (DM) Act, 2005. This framework incorporates national, state, and district-level authorities, supported by specialized agencies for effective disaster risk reduction (DRR) and response. The DM Act, 2005 forms the legal basis for the institutional framework, and EOCs are part of the operational strategy adopted by disaster management agencies at different levels. EOCs serve as central command and control centers during emergencies, facilitating coordination, communication, and decision-making among different stakeholders involved in disaster response.

National Level

1. **National Disaster Management Authority (NDMA):** Chaired by the Prime Minister of India, NDMA is the apex body responsible for formulating disaster management policies, plans, and guidelines, coordinating efforts across the country, and implementing disaster risk reduction measures.

2. **National Crisis Management Committee (NCMC):** Chaired by the Cabinet Secretary, the NCMC plays a key role in the country's crisis response. It is activated in the event of a major disaster or emergency, ensuring high-level coordination across ministries and departments to manage crises.

3. **National Executive Committee (NEC):** Led by the Union Home Secretary, the NEC supports the NDMA by preparing the National Plan for disaster management and ensuring its implementation by various ministries and departments.

4. **National Institute of Disaster Management (NIDM):** NIDM focuses on building disaster management capacities through training, research, and policy advocacy. It supports knowledge dissemination and skill development for disaster preparedness and response.

5. **National Disaster Response Force (NDRF):** A specialized force created for disaster response, the NDRF operates across India and provide support to foreign nations with battalions trained in handling various types of natural and human-induced disasters.

6. **National Centre for Disease Control (NCDC), Disaster Management Cell (DMC) and Emergency Medical Relief (EMR) Division:** Public Health Emergencies are detected at an early phase and responded thereto through Integrated Disease Surveillance Program (IDSP) and a system of Rapid Response Teams (RRT) at National, State and District level for investigation and containment.

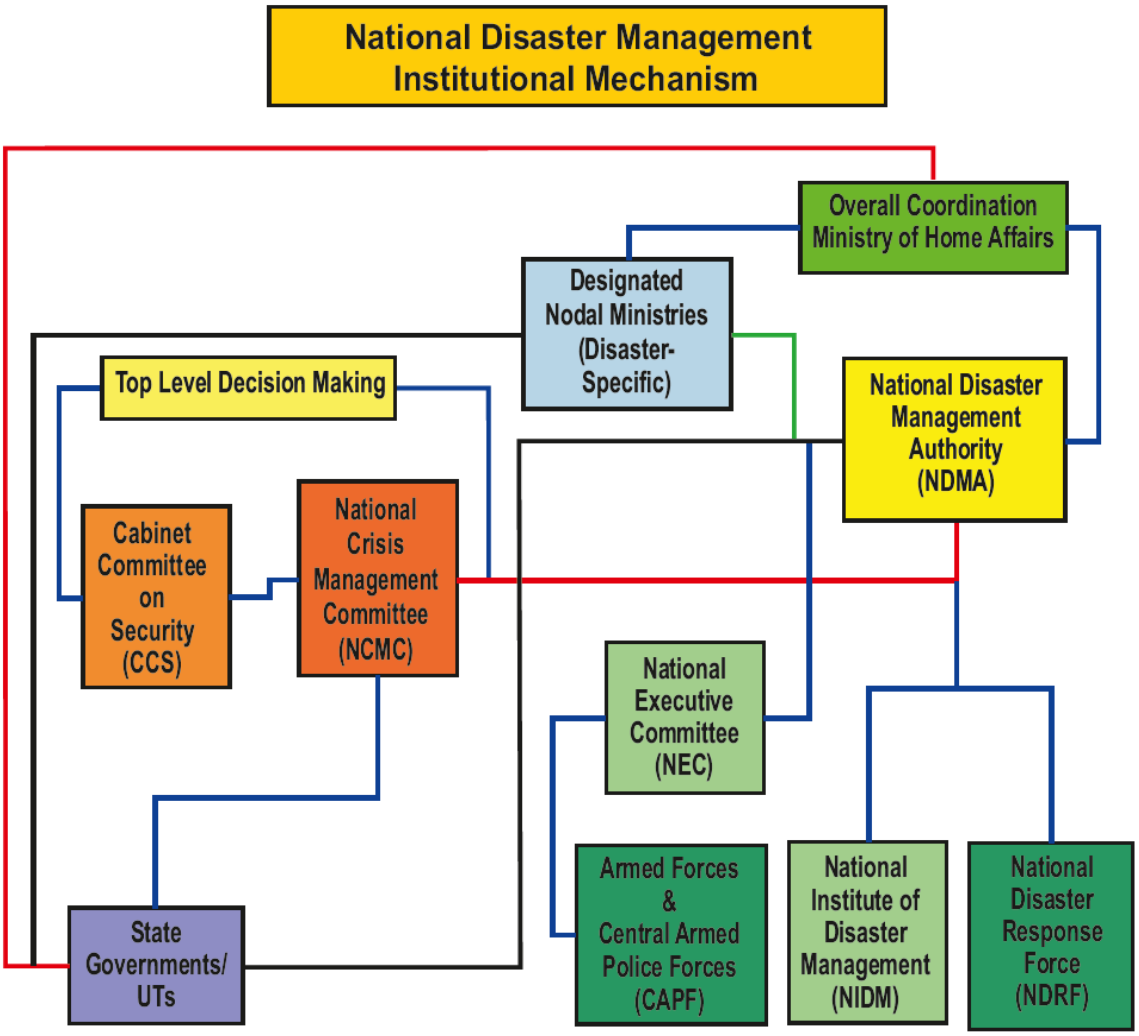


Figure 46: National-level disaster management - basic institutional framework (Source: NDMP, 2019)

State Level

1. **State Disaster Management Authority (SDMA):** Headed by the Chief Minister, the SDMA is responsible for creating and implementing state-specific disaster management plans (SDMP) and coordinating with national authorities to ensure preparedness and response at the state level.

2. **State Executive Committee (SEC):** Led by the Chief Secretary, the SEC oversees the execution of disaster management policies and plans within the state and works closely with the SDMA to manage state-level responses to disasters.

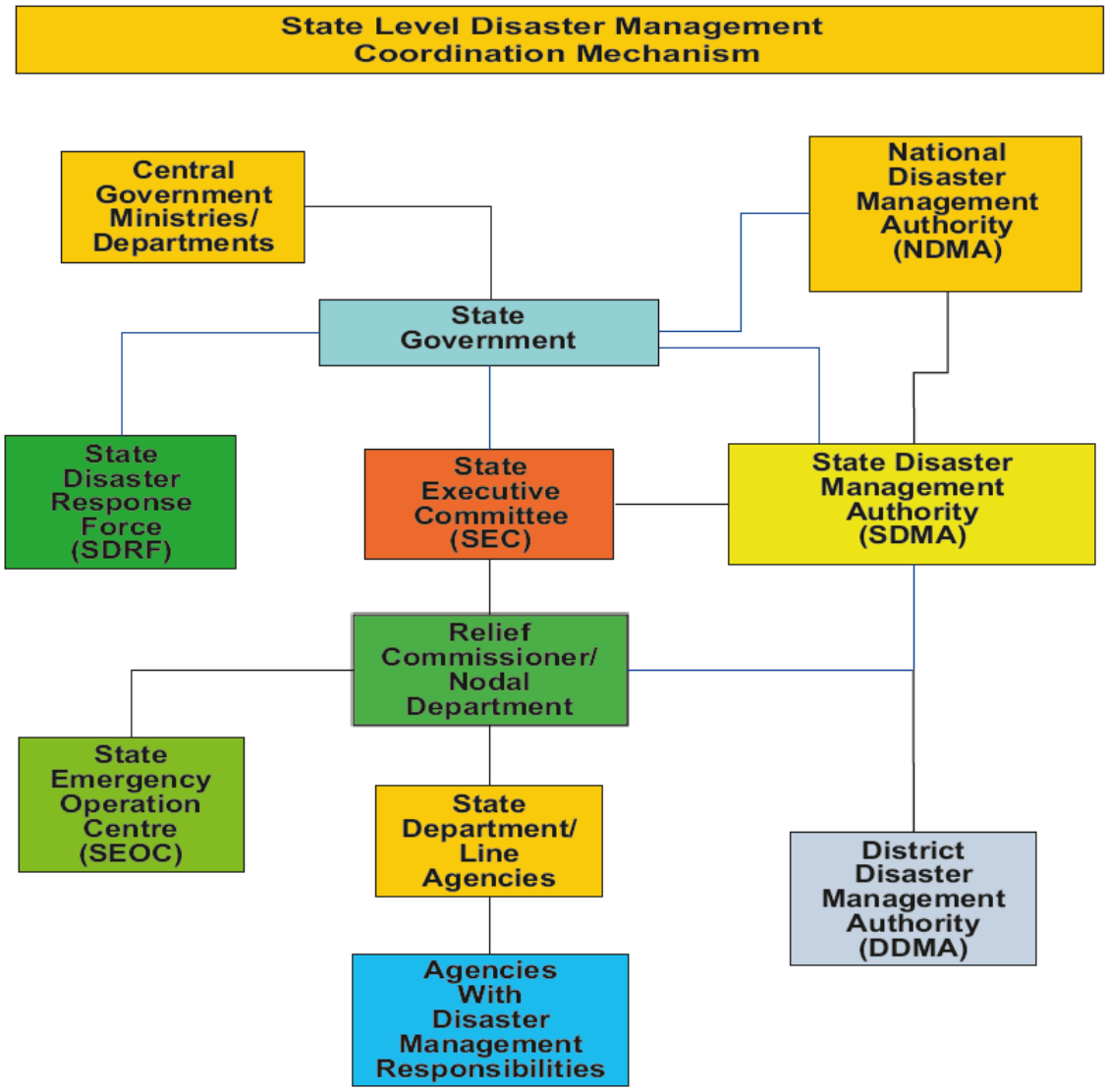


Figure 47: State-level disaster management - basic institutional framework (Source: NDMP, 2019)

District Level

1. **District Disaster Management Authority (DDMA):** Chaired by the District Collector/Magistrate, DDMAs are responsible for planning, coordinating, and implementing disaster management measures at the district level. They are critical in ensuring localized response and preparedness.

Local Authorities

1. **Panchayats** and **Municipalities** work under the guidance of DDMAs and are responsible for implementing disaster management activities at the grassroots level. Their role is vital in ensuring last-mile connectivity in disaster preparedness, response, and recovery efforts.

Other Key Institutions

1. **Ministry of Home Affairs (MHA):** The nodal ministry for disaster management, the MHA oversees the functioning of the NDMA, NCMC, and NDRF, ensuring central-level coordination and response to emergencies and if need be by involving Central Armed Police Forces (CAPFs).

2. **Ministry of Health and Family Welfare (MoHFW):** The nodal ministry for the management of biological emergencies, implementation of International Health Regulations (IHR 2005) and to oversee the functioning of NCDC, DMC and EMR at central-level and response through State and District Health Organizations.

3. **India Meteorological Department (IMD):** The IMD provides early warnings, particularly for weather-related disasters such as cyclones, floods, and heatwaves.

4. **Central Water Commission (CWC):** The CWC monitors water bodies and provides flood forecasts, essential for managing and mitigating flood risks.

The roles, duties and responsibilities of departments/stakeholders are represented in **Annexure XIV**.

Glossary of Terms

Terms	Definition
Action Plan	Often called an incident action plan, this is a statement of intent that is specific to an incident or event.
Activation Level	A level of readiness or emergency response describing an EOC's/ PHEOCs activities in response to predetermined criteria related to the severity of an incident.
Administration	The response management function that attends to accounting, budgeting, time- and record-keeping, payments and disbursements and procurement contracting. Commonly also identified as finance and administration.
After Action Review	After an activation, operation or exercise has been completed, a process involving a structured facilitated discussion to review what should have happened, what actually happened, and why.
All-Hazards	An approach to the management of the entire spectrum of emergency risks and events based on the recognition that there are common elements in the management of these risks, including in the responses to virtually all emergencies, and that by standardizing a management system to address the common elements, greater capacity is generated along with specific measures to address the unique characteristics of each event.
Assisting Agency	An agency or organization providing personnel, services, or other resources to the agency with lead responsibility for incident management.
Business Continuity Plan	A document that describes how an organization will maintain and restore critical operational functions and services to a predetermined acceptable level in the event of an occurrence that disrupts its operational capabilities. The focus is not on the nature of the occurrence but on recovering from the damage to the organization. Often called a continuity of operations plan, particularly for government agencies.
Capability	Possessing the demonstrable ability to perform a particular task.

Terms	Definition
Capacity	A combination of all the strengths, attributes and resources available within an organization, jurisdiction, society or community that can contribute to managing and reducing the level of risk and strengthening resilience. Capacity can include infrastructure and physical means, institutions, social coping abilities, or economic assets as well as human knowledge, skills and collective attributes such as social relationships, leadership and management capability.
Cold Debrief, Cold Wash	A debriefing session held after a period of time has passed following an exercise or incident, in order to discuss, with the benefit of hindsight, any observations and issues that may have been overlooked during a hot wash.
Command	The act of managing, directing, ordering, or controlling by virtue of explicit statutory, regulatory, or delegated authority. The common short name for 'incident command', involving making decisions, implementing plans to manage an incident, and controlling their effects.
Command and Control	Aspects of a management system that provide for vertical authority and accountability (a 'chain of command') and control of resources such as staff and assets.
Command Post	A form of site-level emergency operations centre, which may be mobile and assembled as needed by the agency or agencies responding to an incident.
Common Operating Picture	A single, continuously updated overview of an incident compiled throughout its life cycle from data shared between integrated systems for communication, information management, and intelligence and information sharing. A common operating picture is available to all EOC/PHEOC personnel, creating uniform situational awareness.
Communications, Technical/Internal	The processes, protocols and content of event management information exchanged vertically and horizontally within an incident or event management organization.

Terms	Definition
Complex Emergency	A disaster complicated by civil violence, government instability, macroeconomic collapse, population migration, elusive political solutions, etc., in which any emergency response has to be conducted in a difficult political and security environment, potentially involving a multi-sectoral, international response that goes beyond the mandate or capacity of any single agency.
Comprehensive (Progressive) Exercise Programme	A training and exercise programme consisting of a progression of increasingly complex exercises designed to increase understanding of, practice, and evaluate different emergency management capabilities. Five general types of exercises comprise a comprehensive programme: orientations; drills; table-top exercises (TTXs); functional exercises; and full-scale exercises.
Comprehensive Emergency (Risk) Management Programme	A corporate or government programme that commits resources to a range of measures to implement prevention and mitigation, preparedness, response and recovery (also disaster (risk) management programme). Typically, this programme includes the full range of capacities for managing risks associated with emergencies and disasters.
Concept of Operations (CONOPS)	A section or statement in an agency emergency plan or EOC plan that identifies policies, roles and responsibilities and how the structural or functional elements of the organization will work together to produce a coherent management response.
Consequence Management	The coordination and implementation of measures and activities to alleviate the damage, loss, hardship, and suffering caused by an emergency. The term intends to be distinct from crisis management i.e. it distinguishes between dealing with the immediate emergency event (e.g. putting out the fire) and dealing with the consequential effects or aftermath of the event (e.g. treating burn victims). Some examples of consequence management in the health sector include mass casualty management; psychosocial services; communicable disease control; and environmental health measures. Consequence management also includes measures to restore essential government services, protect public health and provide emergency relief to affected governments, businesses, and populations.



Terms	Definition
Context	As applied to emergency (risk) management, context is described by a number of factors related to the setting, circumstances and environment of risks and events. These include the cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive environment—whether local, national, regional or international—and those factors related to the governance, organizational structure, roles, accountabilities, policies, objectives, and strategies that are in place to achieve those objectives. They also include the capabilities of and relationships between the internal and external actors and stakeholders.
Contingency Plan	A plan to deal with particular aspects of a specific threat that is different from other threats. For example: while the general management of emergencies is similar for most, and therefore efficiently addressed by a generic (all hazards) approach, the specific resources and actions that would be required to address a communicable disease outbreak are different from those used to respond to an earthquake. Each would require a different contingency plan (see plans).
Control	The application of authority, combined with the capability to manage resources, in order to achieve defined objectives. Refers to the overall direction of the activities, agencies or individuals concerned and operates horizontally across all agencies/ organisations, functions and individuals.
Cooperating Agency	An agency supplying assistance other than direct operational or support functions or resources to the incident management effort.
Coordination	Management processes to ensure integration (unity) of effort. Coordination relates primarily to resources, and operates vertically (within an organisation) as a function of the authority to command, and horizontally (across organisations) as a function of the authority to control.
Coping Capacity	Coping capacity is the ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters. The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during disasters or adverse conditions.

Terms	Definition
Credentialing	A process that results in authentication and verification of the certificates, licenses, identity, and competence of personnel, including designated incident managers, emergency responders, and professional, technical, or managerial personnel.
Debrief/ Debriefing	A critical examination of a completed operation or exercise in order to evaluate actions.
Disaster	A catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area
Disaster Management Cycle	A collective term encompassing all aspects of planning for and responding to disasters, including both pre (prevention, mitigation and preparedness) and post disaster (response, search and rescue, relief, reconstruction and rehabilitation) activities. It may refer to the management of both the risks and consequences of disasters.
Discussion-Based Exercise	An exercise that consists of a facilitated discussion that allows players to familiarize themselves with response plans, policies and procedures, and to explore their application in specific emergency scenarios. Discussion-based exercises include seminars, work-shops, table top exercises and games.
Drill	A limited form of operational training exercise, the purpose of which is to establish and maintain specific response behaviours and procedural skills, and evaluate how the EOC facility supports the procedures.
Emergency	A type of event or imminent threat that produces or has the potential to produce a range of consequences, and which requires coordinated action, usually urgent and often non-routine. Emergencies have effects that may be considered on a continuum from local emergencies with limited consequences to wide area disasters with catastrophic consequences. Incidents or events are often referred to as emergencies, with the terms used interchangeably, but not all incidents or events are emergencies.

Terms	Definition
Emergency (Risk) Management	Also referred to as disaster (risk) management. Emergency (risk) management is the application of policies, processes and actions to prevent new risks, reduce existing risks and manage residual risk. It includes the organized preparedness for and response to risk events and post-event support for recovery, rehabilitation and reconstruction of affected communities and societies.
Emergency (risk) Management Agency or Organization	An organization, often a government agency, specifically mandated to provide a single point of accountability for the coordination of multi-sectoral and interagency emergency activities, including risk assessment, prevention, mitigation, preparedness, response and recovery activities within a particular area. Also called a disaster (risk) management organization
Emergency Coordination Centre	A term used to describe a type of EOC that has no direct, tactical or operational function, but which serves as a point of control and coordination for the strategic allocation of re- resources and management of policy issues.
Emergency Operations Centre (EOC)	An EOC is a physical location or virtual space in which designated emergency management functions are performed, supported by appropriate legislation and regulations, and designed and resourced with sustainability in mind
Emergency Operations Centre Plan	A document that describes the structure, functions and standard operating procedures or operating an EOC. It is the primary resource manual for EOC staff, containing samples
Emergency Operations Centre/ Public Health Emergency Operations Centre (EOC/PHEOC)	An emergency operations centre specializing in the command, control, and coordination requirements of responding to emergencies involving health consequences and threats to public health.

Terms	Definition
Emergency Response Plan (ERP)	A document that describes how an agency or organization will manage its responses to emergencies of various types by providing a description of the objectives, policy, and concept of operations for the response to an emergency; and the structure, authorities, and responsibilities for a systematic, coordinated and effective response. In this context, emergency plans are agency- or jurisdiction-specific and detail the resources, capacities, and capabilities that the agency or organization will employ in its response (see plans). Also referred to as an emergency or operations plan.
Event	An emergency incident or occurrence. 'Event' and 'incident' are often used interchangeably. An event may be insignificant or could be a significant occurrence, planned or un-planned (e.g. extreme weather event or mass gathering), that may impact the safety and security of communities. Under the International Health Regulations (2005) (Article 1) an event is defined as 'a manifestation of disease, or an occurrence that creates a potential for disease' (with particular reference to public health events of international concern, or PHEIC).
Exercise	A form of practice, training, and evaluation of capabilities involving the description or simulation of an emergency, to which a described or simulated response is made based on agency emergency plans or contingency plans, and an EOC plan. Exercises can be used for validating policies, plans, procedures, training, equipment, and inter-organizational agreements; clarifying and training personnel in roles and responsibilities; improving inter-organizational coordination and communications; identifying gaps in resources; improving individual performance and identifying opportunities for improvement; and as a controlled opportunity to practice improvisation.
Full-Scale Exercise	An operational exercise that focuses on operational capabilities by actually deploying agency resources in real time, in a simulated setting that is as realistic as possible, with- out putting public and staff safety at risk. Full-scale exercises are the most complex and costly form of training and evaluation.

Terms	Definition
Function	One of the five major activities in the incident command system (which are, respectively, command, operations, planning, logistics, and finance/administration). The term 'function' is also used when describing the activity involved (e.g. 'the planning function'). Other functions, such as intelligence/investigations, may be established if it is required in order to meet incident management needs.
Functional Exercise	A fully simulated complex operational exercise (involving no deployment of resources) for evaluation and training, which focuses on policies, roles, responsibilities and management capabilities within an emergency response management system. A functional exercise will usually involve challenging time constraints and occur within the EOC or coordination centre, so that the available tools and technologies can be used and evaluated.
Geospatial Information Systems (GIS)	A computerised database for the capture, storage, analysis and display of geographically defined information. An organized collection of computer hardware, software, geographical data and personnel designed efficiently to capture, store, update, manipulate, analyse and display all forms of geographically referenced information. It is first and foremost an information system with a geographical variable, which enables users easily to process, visualize and analyse data or information spatially. Also "geographic information mapping" or "geographic information system."
Hazard	A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.
Health Communication	Activities for informing, influencing, and motivating individual, institutional, and public audiences about important health issues.
Health Emergency	A type of event or imminent threat that produces or has the potential to produce a range of health consequences, and which requires coordinated action, usually urgent and often non-routine. A health emergency may pose a substantial risk of significant morbidity or mortality in a community.

Terms	Definition
Health Emergency Response Plan	A document that describes how an agency or organization will manage its responses to emergencies of various types by providing a description of the objectives, policy and concept of operations for the response to an emergency; and the structure, authorities and responsibilities for a systematic, co-ordinated and effective response. In this context, emergency plans are agency- or jurisdiction-specific, and detail the resources, capacities and capabilities that the agency or organization will employ in its response (see plans). Also referred to as an emergency or operations plan.
Hot Site	An alternate EOC site that can be either fixed or mobile, and which is fully equipped for swift resumption of the delivery of critical services affected by a disruption.
Hot Wash/Hot Debrief	A debriefing session held immediately after an exercise or incident to identify the strengths and weaknesses of plans, policies and procedures. See also cold wash.
Incident	An actual or imminent occurrence of a natural or human-induced event (see event) that requires a response to prevent or minimize illness, loss of life or damage to property or the environment, and to reduce economic and social losses.
Incident Action Plan	An oral or written plan outlining objectives related to the strategy for managing an incident. It may include the identification of operational resources, assignments, attachments that provide direction, and important information for management of the incident during one or more operational periods. Also event action plan.
Incident Command (Function)	The lead managerial position in an EOC with responsibility for setting the incident objectives, strategies, and priorities, and which has overall responsibility for incident management.

Terms	Definition
Incident Management System (IMS)	An emergency management structure and set of protocols that provides an approach to guiding government agencies, the private sector, non-governmental organizations and other actors to work in a coordinated manner primarily to respond to and mitigate the effects of all types of emergencies. The incident management system may also be utilised to support other aspects of emergency management, including preparedness and recovery. Also incident command system.
Information and Communications Technology (ICT)	A system of hardware, software and networks that move information, and the personnel required to design, implement and support the system.
Information Management	A set of processes and procedures to collect, store, analyse and distribute data and information to enable EOC functions.
Information System	An integral set of computational components to ensure availability, accessibility, quality, timeliness and usefulness of data and information for EOC functions. The components include resources (coordination and leadership, policies, financial and human resources, infrastructure); data requirement and information needs; data sources; data management (data storage, data quality, data processing and compilation); information products; and information use.
Interoperability	The ability of two or more systems or components to exchange data using common standards.
Joint Management	Commonly referred to as unified management or unified command, this is a form of EOC management where agencies with complementary jurisdictions, or mandates in an emergency, work together to share the control and direction of the EOC, with agreement that one manager will take the lead for the duration of the emergency event or for an agreed operational period.
Jurisdiction	An organization (level of government or designated agency) with the authority and responsibility to provide particular functions and services within a defined area.
Lead Agency	Agency or sector responsible for managing specific types of emergencies.

Terms	Definition
Leadership	The process of engaging others and fostering constructive processes for working together and sustaining collaborative interaction to guide activities and achieve objectives.
Lessons Learned	Identified issues for which remedial actions may be implemented, in order to improve performance.
Liaison	A process of linking and coordinating joint planning and efforts of agencies that are external to the jurisdiction responsible for the emergency response. Such agencies may have either a policy or an operational interest in the response and may participate through a liaison officer either by assisting in the response (assigning tactical resources to the event) or cooperating (providing external support). Liaison officers are considered part of the command/management staff and report to the incident manager/incident commander.
Location	A field or site-level EOC (command post) commonly located near to where tactical operations (direct application of resources) need to occur. The facility will often be the responders' normal office or field workspace or may be a mobile unit that moves to new sites as needed. For many public health emergencies, it is best located near the geographical perimeter of the event, with good transportation access, rather than in the middle.
Logistics	The aspect of emergency (risk) management that deals with the procurement, distribution, maintenance, replacement and repatriation of material and human resources, including the provision of support infrastructure and services to response staff.
Management by Objectives	A management approach that entails: establishing overall incident objectives; developing strategies based on the objectives; developing and assigning appropriate resources; establishing specific, measurable results or tasks for various incident response activities; directing efforts to achieve the results; and evaluating results to measure achievement and facilitate corrective action.

Terms	Definition
Minimum Dataset	A set of data elements developed and used for essential EOC functions. The EOC minimum dataset consists of: domains; associated indicators (data and information needs); definitions for each indicator to provide standardization; possible sources of data for each indicator; a rationale for why each indicator is important; and additional supporting information.
Mitigation	Activities designed to reduce or limit risks to persons or property or to lessen the actual or potential effects or consequences of an incident. Mitigation measures may be implemented prior to, during or after an incident. Mitigation involves ongoing actions to reduce hazards and vulnerability and exposure to hazards, and to increase capacities.
Mobile Command post	A vehicle, employed by response agencies, designed and equipped to support tactical level coordination and control of personnel and agencies involved in responding to an emergency at field or site level.
Modularity	An organizational characteristic where components are standardized to support flexibility in building or adjusting the organization to address changing requirements.
Objectives	Results or outcomes of specific activities to be achieved over a stated time. Objectives are specific, measurable, and realistic statements of intention.
Off-Site EOC	Established to support responses to larger, often multi-site emergencies that entail a more complex set of considerations. Proximity to decision-makers, partners, stakeholders, donors and humanitarian agencies is a significant consideration for establishment of such an EOC. Commonly, it will reside within the normal office infrastructure of a re- sponsible agency. To the greatest extent possible, if the EOC is providing multi-site area coordination, it is best located separately from the incident.
Operational Period	The time required to achieve a particular set of objectives.
Operations (EOC Function)	The function that establishes tactics and directs operational resources to achieve incident response objectives.

Terms	Definition
Operations-Based Exercises	Exercises characterized by fully simulated or actual responses with use of equipment and resources and commitment of personnel. Operations-based exercises are used to validate capabilities, plans, policies, agreements and procedures. They include drills, functional exercises and full-scale exercises.
Orientation	A discussion-based process that is the simplest form of training and evaluation exercise, designed to acquaint users of an emergency plan or emergency management facility with the features of the plan or facility and how they should be used. An orientation uses low levels of simulation to focus on issues of coordination and assignment of responsibilities.
Personal Protective Equipment (PPE)	Protective clothing (gowns, gloves, boots etc.) and equipment (masks, shields, respirators, earplugs etc.) necessary to shield or isolate a person from biological, chemical, physical, sonic and thermal exposure.
Planning (EOC/ PHEOC Function)	In an EOC/PHEOC, the planning function is responsible for collecting, processing, analysing and evaluating information to predict the evolution of the emergency, and identifying strategies and objectives for addressing it. This function is also responsible for the preparation and dissemination of status reports and documentation of the incident response. Generally, planning is comprised of the intellectual and interpersonal processes of designing, developing, testing and evolving activities necessary to achieve objectives. An inclusive, comprehensive planning process usually results in the value of the product (the plan) being less important than the value of the planning process, which builds on the synergy of bringing together people and agencies with common interests to analyse and solve problems cooperatively.
Plans	Generic reference to documents designed to identify, at various levels, responsibility for a range of activities and intended objectives, strategies and tactics. The purpose of plans is to maximize effectiveness and minimize response time to events, and to standardize routine activities associated with response and management so that additional capacities can be focused on addressing the unique characteristics of each event. Plans are specific to their intended users. See also contingency plan, EOC/ PHEOC plan and support plan.



Terms	Definition
Policy	The rules, guidelines and principles of action of an organization or government.
Policy Level, Policy Group	A policy group consists of representatives drawn from the policy level of one or more organizations. The policy level is responsible for articulating the overall rules and principal actions of an organization and is typically at either the governance or executive level.
Preparedness	The state of readiness to deal with a threatening disaster situation or disaster and the effects thereof.
Prevention	Activities and measures to avoid existing and new disaster risks. Prevention expresses the concept and intention to completely avoid potential adverse impacts of hazardous events. While certain disaster risks cannot be eliminated, prevention aims at reducing vulnerability and exposure in such contexts where, as a result, the risk of disaster is removed.
Public Communication	The discipline and process of providing public audiences with information that creates awareness and knowledge so that people can adjust their personal understanding of risks, and their reactions, decisions, and responses to threats and crisis situations.
Public Health Emergency	An occurrence, or imminent threat, of an illness or health condition that poses a substantial risk of a significant number of human fatalities, injuries or permanent or long term disability. Public health emergencies can result from a wide range of hazards and complex emergencies.
Public Health Emergency of International Concern (PHEIC)	An extraordinary event which is determined, as provided in the [International Health] Regulations: (i) to constitute a public health risk to other States through the international spread of disease and (ii) to potentially require a coordinated international response.
Readiness	The ability to respond quickly and appropriately when required
Redundancy	Having secondary or backup human and physical resource capacity in case primary resource capacity is impaired or becomes unavailable for any reason.

Terms	Definition
Risk	The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.
Risk Assessment	An approach to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.
Risk Communication	The real-time exchange of information, advice and opinions between experts or officials and people who face a hazard or threat to their survival, health, or economic or social wellbeing.
Risk Management	Coordinated activities to direct and control an organization or entity with regard to risk. The systematic approach and practice of managing uncertainty to minimize potential harm and loss (of life, assets and resources, injury, illness and other adverse effectives). Activities include conducting risk assessments, implementing risk treatment measures, and evaluation, monitoring and review.
Scalability	The capability to expand or reduce in size in order to adjust capacity and capability by adding or deactivating organizational modules to adapt to changes in demand without the need for reconfiguration of a basic structure.
Sector	A division or collective aspect of a geographical area, economy or society.
Site-level	The actual location of the hands-on, tactical-level response to an emergency. When site-level emergency response capacities are overwhelmed, the role of a site-support (operational level) EOC is to provide assistance with logistics (resources) and strategy (direction and coordination).
Situation Report (SITREP)	A routinely produced report that provides current information about an emergency response and immediate and future response actions, an analysis of the impact of the emergency, and identification of related management issues.

Terms	Definition
Situational Awareness	Being aware of and attentive to what is happening in a given environment at a particular time, with particular emphasis on the effect of changes in the environment; in effect, knowing how an incident or event is evolving.
Standard Operating Procedure/s (SOP/s)	A set of instructions or directions detailing what actions should be taken by EOC personnel – as well as how, when, by whom and why – for specific events or tasks.
Steering Committee	An oversight or user committee responsible for providing sponsorship, leadership, policy and funding support to a working group assigned to develop an emergency operations centre.
Strategic	The defining characteristic of something 'strategic' is that it deals with relatively long- term, high-level, big picture concepts in order to integrate an organization's major goals, policies, and action sequences into a cohesive whole. It may also have a normative or standard-setting component.
Supporting Agency	An agency that provides essential services, personnel, or material to support or assist a lead agency (the supported agency). Supporting agencies may support either by assisting (i.e. contributing their own operational resources) or cooperating (providing indirect assistance).
Surge Capacity	The ability to draw on additional resources to sustain operations and increase capacity, usually for emergency response, as required.
Surveillance	The systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response as necessary otherwise known as signal investigation.
Tabletop (Exercise) (TTX)	A discussion-based form of training or evaluation exercise where all the personnel as- signed to an EOC gather informally, without the pressure of tight time constraints, to examine hypothetical emergency situations. They discuss intended responses, and identify and solve problems based on the EOC operational plan and the agencies' emergency plans.

Terms	Definition
Tactical	Those activities, resources and manoeuvres that are directly applied at a task level in order to achieve goals. Compare with strategic. The tactical level is the level (below strategic level and above operational level) at which the response to an emergency is managed.
Technical Communications	Communications related to the protocols, procedures and methods used to pass critical information among key participants during the management of an emergency.
Unified Management/ Command	A team approach to the management of complex, multi-agency or multi-jurisdictional emergencies that allows all agencies with complementary geographical or functional responsibilities in the response to establish a common set of objectives, strategies and operations. A lead agency is established based on agreement on the primary problem being addressed; other agencies share responsibility and participate fully in decision-making. See also joint management.
Vulnerability	The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

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ANNEXURES

ANNEXURES

Annexure I: Technical Specification for Setting up PHEOC

(Source: WHO 2015)

S.N.	Items	Remarks
I. **Auxiliary Power**		
1	UPS/Inverter with Batteries	Protect against power interruptions. Provide adequate power during short-term interruptions and "ride-through" time to convert to backup supply. Refine the quality of the power as it reaches your building, office and equipment.
2	Generator (Automated Gen Set for Power Backup 30KVA)	Generators, typically powered by diesel engines, can protect EOC by restoring normal power when the regular power grid is disrupted due to bad weather, animal damage to power lines, a brownout, a blackout, or scheduled maintenance.
II. **Communications**		
1	Land Line Telephone (Annual Cost)	Phone system is required under EOC for communication with District and other key stakeholders.
2	Dedicated Lease Line for Internet Connectivity (Annual)	For better security, point-to-point line will offer a secure and direct connection between multiple sites. With broadband, SDSL or bonded DSL, your data is going across a public network. With a point-to-point connection will keep your data private and secure.
3	Satellite Based internet connection (Annual)	Satellite internet is a great option if you live in a rural area with no DSL, cable, or fiber internet options. Satellite offers faster speeds than dial-up.
4	HF Radio/HAM Radio (Optional)	Dependable use in emergency communications. Operators use HF radio equipment because of its ability to provide reliable communications even in remote locations or areas where conventional communication methods are compromised. It includes walkie talkie

S.N.	Items	Remarks
5	Satellite Phone (Optional)	Satellite phones can be more useful in emergency situations because they do not rely on land-based towers and networks to operate. Many emergency responders rely on satellite phones because they allow for communication even during power outages, which often shut down land-based communications.
6	TV (LED Smart TV), 49 inch	Required for Media scanning and verification
7	TV Satellite connections and Annual subscription	Required for Media scanning and verification
8	Group Video Conferencing Webcam	Video conferencing system for mid- to large-sized conference rooms, allows any meeting place to be a video collaboration space. (at least for 12 peoples) and compatible with video wall
9	Web EOC Software include WEB EOC mobile app	Prepare for and respond to emergencies with WebEOC, the world's most widely-used, battle-tested emergency management software
10	GIS Software (1 Creator + 5 Viewers)	Tracking the sources of diseases and the movements of contagions, agencies can respond more effectively to outbreaks of disease by identifying at-risk populations and targeting intervention.
III. **Displays**		
1	Maps	Map for display in EOC and meeting/training rooms are required
2	Charts/Displays	Charts/displays are required in EOC and meeting/ training rooms
3	White Board with stand	The purpose of a whiteboard is to visualize thoughts, concepts, write down ideas, explain and teach, to plan and create in the group and many other things.

S.N.	Items	Remarks
4	Bulletin Boards	Bulletin boards provide a way to introduce new material, display EOC work and important information.
5	Easels with Flipcharts/ pads	Flip charts are economical - They do not require you to use any special films or printers to produce them. Color can be added very easily - An inexpensive box of flip chart markers allows you all the creativity you want and can be used during trainings and meetings.
6	Video Wall (consist of 9 cubes) having Audio & Video compatibility	Video wall is a collection of screens that are combined/tiled together to create one large display. Typical display technologies used include LCD, direct LED tiles, rear-projection and laser displays. They can be used in EOC and shall be compatible with Group Video Conferencing
7	Led TV 65 (Smart TV) for Meeting/Training Room	To do presentation, training and workshop one is required in meeting/training room.
IV. **Furniture**		
1	Chairs	Of 43 chairs, 12 are required in EOC Room, 6 are required with Desks and 25 are required for Meeting/training room.
2	Desks (for 6 desktops)	6 desk are required for staff of the EOC.
3	Clocks	one clocks is required for each room
4	Dockstations	2 dockstations are required at EOC room
5	Meeting Table (in EOC room)	Boardroom type table is required in EOC Room
6	Mic setup for 25 peoples (in EOC room)	
7	Meeting/Training Room Table (in meeting room)	Meeting table for 25 people is required in Meeting/Training Room
V. **Office Equipment (Electric.)**		
1	Computers (Desktops)	5 desktops are required for EOC staff.

S.N.	Items	Remarks
2	Laptops	20 laptops are required for staff working in EOC
3	Antivirus for desktops (with VPN)	Antivirus for desktops and laptops
4	Microsoft Office for Desktops	Microsoft Office, for desktops and laptops
5	Storage Devices (2TB External Drives)	5 storage devices (External hard disk- 2TB) are required for storing important data relating to the EOC as a safeguard and carrying data to different locations where trainings/workshops will be held.
6	Wifi routers	A WiFi connection is established using a wireless adapter to create hotspots in the vicinity of a wireless router that is connected to a network and allows users to access the wireless technologies.
7	LAN Cables (10 meters)	LAN cables are required to connect desktops and other IT equipment to internet
8	Virtual Meeting Software (ZOOM/ MICROSFT TEAMS)	Virtual Meeting software is required to communicate across a distance (like conference calls or email), virtual meetings facilitate more engaging conversations and personal connections with the use of video.
9	Photocopiers (All-in one network printer)	One all in one photocopier networking machine required for printer modules, short documents in the EOC
10	Paper Shredder	5 paper shredders are required to protect EOC information and get rid of any document that contains the confidential information.
11	Extension Cords (10 meters)	Extension cords are require to provide power for devices with cables that can't reach any nearby electrical outlets.

S.N.	Items	Remarks
VI. **Record Keeping**		
1	Recording System and Equipment (Audio & Video)	For recording the audio of meeting and conference.
VII. **Pantry Supplies**		
1	Dispenser	Water dispenser offers safe, clean and purified drinking water, with a preference of either cold, moderate or hot tab options.
2	Water Purifier	At an EOC, the drinking water requirements are quite steep. Not only is water in large quantities required, but it also must be kept safe to ensure employees' health safety.
VIII. **Security**		
1	CCTV Cameras (including recording system)	For security of staff CCTV camera with recording facility is required.
2	Sound Proofing (EOC)	EOC and Meeting/Training Room
3	Audio setup in every meeting room and main EOC room	EOC and Meeting/Training Room
4	Refurbishing of wall , roof and floor of EOC.	To create more space, which can fit your expanding workforce more comfortably. Also office was not used fir a while, general wear and tear might have caused some damage to the fixtures, which can be a huge health and safety risk to your workers. An entire new office will be completely safe and secure, greatly reducing the risk of workplace accidents.
5	Fire Extinguisher	Fire protection systems: fire fighting equipment
6	Smoking Sensor	Smoke detectors/fire alarms (audible and visual are required

S.N.	Items	Remarks
IX. **Sanitary, Hygiene Facilities**		
1	Toilets supplies	
2	Sanitation kits: chemical disinfectants	
3	Thermometers	
4	Hand Sanitizer	
5	Testing kits	
6	Gloves, face masks/ shields and other necessary PPE	
7	Additional cleaning supplies/disinfectant to sanitize all communal equipment and spaces.	
X. **Supplies**		
1	Pencils	
2	Pens	
3	Printer Cartridge	
4	Writing Pads	
5	Paper Clips	
6	Tape	
7	Push pins	
8	Staplers/Staples	
9	Scissors	
10	Name tags	
11	Folders	
12	Boxes	
13	Clipboards	
14	Binders (In a COVID-19 environment, this may include signs and posters reminding staff to adhere to social distancing.)	

S.N.	Items	Remarks
XI. **Garbage, Trash Supplies**		
1	Brooms	
2	Sponges	
3	Mops	
4	Buckets, Pails	
5	Other Cleaning Supplies	
6	Trash Cans	
7	Shovels	
XII. **Mechanical**		
1	Lighting	
3	Flashlights	
4	Batteries	
5	Bulbs	
XIII. **Others**		
1	Health Education Material for Risk Communication and Emergency Crisis Communication as per National Guidelines.	
2	Halogen Tablets, OT Reagent	
3	Rapid Diagnostic Kits- as per National Guidelines.	

Annexure II: Template for Risk Assessment of an Event

(Source: WHO RO Africa 2021b)

Rapid Risk Assessment – Acute Event of Potential Public Health Concern	
Event Name / Location	
Date and Version of Current Assessment	
Date(s) and Version(s) of Previous Assessment(s)	

Overall Risk and Confidence (Based on Information Available at Time of Assessment)					
Overall Risk			Confidence in Available Information		
☐ National ☐ State ☐ District			☐ National ☐ State ☐ District		
Low	☐		Low	☐	
Moderate	☐		Moderate	☐	
High	☐		High	☐	
Very High	☐		Very High	☐	

Risk Statement
Give a brief justification of why the overall risk categorization was chosen. This should be very short and there is no need to repeat all the different aspects of the hazard, exposure and context assessment. The aim is that the first page of the RRT/QRT gives a very concise overview of the risk of an event, only including the most pertinent information.

Risk Questions (Assess Scenario Where no Further Interventions are Implemented)					
Risk Question		**Assessment**		**Risk**	**Rationale**
		Likelihood	Consequences		
		Very unlikely Unlikely Likely Highly likely Almost certain	Minimal Minor Moderate Major Severe	Low Moderate High Very High	
Potential risk for human health? The hazard: morbidity, contribution to overall mortality, case fatality rate The type of exposure: how frequently does it occur Transmission: transmission route, how easily is it transmitted, taking into account the context. Think of the impact on the health of population if they are exposed: how likely is it that the population will be exposed and what will be the consequences for that exposed population?	☐ National ☐ State ☐ District	☐ Very unlikely ☐ Unlikely ☐ Likely ☐ Highly likely ☐ Almost certain	☐ Minimal ☐ Minor ☐ Likely ☐ Moderate ☐ Major Severe	☐ Low ☐ Moderate ☐ High ☐ Very High	

Risk Questions (Assess Scenario Where no Further Interventions are Implemented)					
Risk of event spreading? Where is this event occurring? Urban? Rural? Crowded? Level of sanitation? Mode of transmission (airborne, waterborne, person-to-person, fomites, etc.) Is the basic reproductive rate known? How susceptible is the population? Population mobility Ecosystem	☐ National ☐ State ☐ District	☐ Very unlikely ☐ Unlikely ☐ Likely ☐ Highly likely ☐ Almost certain	☐ Minimal ☐ Minor ☐ Likely ☐ Moderate ☐ Major Severe	☐ Low ☐ Moderate ☐ High ☐ Very High	

Risk Questions (Assess Scenario Where no Further Interventions are Implemented)					
Risk of insufficient control capacities with available resources? This question aims to identify if, given the current situation and if no further resources become available, the country is able to implement control measures that are likely to contain the outbreak.	☐ National ☐ State ☐ District	☐ Very unlikely ☐ Unlikely ☐ Likely ☐ Highly likely ☐ Almost certain	☐ Minimal ☐ Minor ☐ Likely ☐ Moderate ☐ Major Severe	☐ Low ☐ Moderate ☐ High ☐ Very High	
Add additional risk question if needed; otherwise delete Who is likely to be affected, including whether any particular subgroups have a different risk assessment from the general population (consider doing separate risk assessment for subgroups if helpful) What is the likely exposure to the hazard When, why and how might the population be affected by the exposure to the hazard	☐ National ☐ State ☐ District	☐ Very unlikely ☐ Unlikely ☐ Likely ☐ Highly likely ☐ Almost certain	☐ Minimal ☐ Minor ☐ Likely ☐ Moderate ☐ Major Severe	☐ Low ☐ Moderate ☐ High ☐ Very High	

MAJOR ACTIONS RECOMMENDED BY THE RISK ASSESSMENT TEAM

Agree on and tick the actions to be taken; list any immediate actions in section 1 and define due dates and persons responsible for those actions. If no immediate actions are required, state this.

E.g. of immediate actions:

- Immediate activation of PHEOC as urgent public health response is required
- Develop response plan or activate national contingency plan if available
- Request for technical support to key stakeholders and other partners as required
- Immediate support to response
- Support districts to undertake preparedness measures
- Continue to closely monitor

Section 1: To List Any Immediate Action

	Action	Timeframe
☐		
☐		
☐		
☐		
☐		
☐		
☐		

Communications

Target audience/channel	Planned	Done	First Date	Last Update
Inform National Authorities	☐	☐		
Inform State Authorities	☐	☐		
Inform District Authorities	☐	☐		
	☐	☐		
	☐	☐		

Supporting Information

Hazard assessment:

- This section is written as text
- Identify the hazard(s) that could be causing the event
- Review key information about the potential hazard(s) (i.e. characterizing the hazard)
- Rank potential hazards when more than one is considered a possible cause of the event

Exposure assessment:

- This section is written as text.
- Brief update on the epidemiology (number of cases and deaths reported, affected area, affected persons (age / sex, gender, occupation or any other relevant characteristics).
- Information on previous outbreaks.
- Number of people or group known or likely to have been exposed (take into consideration mode of transmission etc.).
- Number of exposed people or groups who are likely to be susceptible (take into consideration people who have previously been exposed and may be immune, vaccination coverage etc.).



Context assessment:

- This section includes a brief text summary of the context, and a table highlighting the vulnerabilities and capacities;
- Consider social, technical / scientific, economic, environmental, ethical and policy / political (i.e. STEEEP) factors that may influence the public health impact
- State the quality of the evidence used for the RRA (i.e., confidence in available information). Poor quality information may increase the overall perceived risk due to the incertitude in the assessment and requires the urgent need to gather further information.

Capacities	Vulnerabilities
These can decrease the likelihood and impact of the event	These can increase the likelihood and impact of the event

Immediate Actions
Not a detailed response plan, State if no action required

Risk Assessment Team Members
List Names and Roles

Reference Documents Used for Risk Assessment

Annexure III: Detailed Specification of Physical Infrastructure of HEOC

(Source: MoHFW 2023a)

1. Specification of HEOC ROOM/STUDIO

S. NO.	Item	Specifications
1.1	Wall	1.1.1 EOC Studio cum conference room Brick wall partition up to ceiling height, acoustical treatment on walls with wall panelling tiles (soft board & perforated). Backed with resin bonded glass wool fixed metal/ wooden framework up to ceiling level of approved shade.
		1.1.2 CMO'S Room Providing & fixing 1200 mm heights partition walls (QED) with provision of wire management for/data/computer/ telephone cabling. Toughened glass partition up to 150mm below ceiling.
		1.1.3 Operational room with workstations Providing & fixing 1200 mm heights partition walls (QED in true plumb and line comprising of 100 mm thick solid calcinated phospho-gypsum panels of size 666mmx500mm having tongues on two edges and grooves on the other two jointed to each other , and to the floor and other masonry structures , with recommended bonding plaster. The panels shall have a density of 900 kg/m3 and a compressive strength of 9.3 kg/cm2 and a co-efficient of thermal conductivity of 0.35 kcal/m2 / hour IC . The fire rating of the panels as per BS476 shall be 180 mins. With provision of wire management for data/ computer/telephone cabling.

S. NO.	Item	Specifications
1.2	Flooring	1.2.1. EOC Studio cum conference room Wooden flooring of approved shade on resilient support underneath; Providing and fixing kiln dried, identified lacquer polished solid hardwood flooring having tongue and groove with double dovetail system suspended to clip system on an underlay of polyfill (Weighing 500 gm/sqm) complete as per approved sample. The wooden floor shall be 18mm thick (±2mm variation), width will be from 120mm to 180mm, length will be 1200mm (± 100mm variation) except at ends which will be as per requirement at site. Tongue & grooved, micro bevelled/right angled on all four sides, having moisture content 8% (±2%) resistance to indentation 34N/mm square (minimum) wooden floor shall be coated with a lacquered surface on top and will be coated with a UV varnish/lacquer/oil at bottom or back as a moisture balances. The priming shall be several coats of UV-light curing primer and top finish two-component polyurethane lacquer or aluminium oxide coating. Total film thickness is 40 micron, expansion gap of 10 to 12mm has to be provided along the periphery of the walls. (a) Junker/or Parquet or Insignis floor/or Karelia or BP Ergo or Vista or equivalent as per approved sample.
		1.2.2. Consultants Cabin, CMO'S Room. Sound Room. Rest Room, corridors, pantry and toilets Providing and laying polished/Antiskid vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08%, using 5 kg, adhesive per sqm of tile area, in average 3mm thickness, including grouting the joints with white cement and matching pigments etc., complete. 600X1200 of Somani /Asian Granite/Restile/Kajaria or equivalent make of approved shade.

S. NO.	Item	Specifications
1.3	DADO	1.3.1 Pantry, Toilet Providing and fixing vitrified wall tiles (thickness to be specified by the manufacture) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12mm thick bed of cement Mortar 1:3 (1 _cementslurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete. Size 300x600 upto ceiling height of Somani /Asian Granite/ Restile/Kajaria or equivalent make of approved shade.
1.4	Internal Finish	Internal faces of walls above skirting shall be finished with acrylic emulsion paint of approved shade. Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade: (a) Two or more coats on new work. Providing and applying plaster of Paris putty of 6mm thickness over plastered surface to prepare the surface even and smooth complete. Applying wall putty mixed with Synthetic enamel paint on existing wall by scrapping, rubbing and sand papering etc. compete as per direction of Engineer-in-Charge.
1.5	False Ceiling	Note: - Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/openings (cutouts) nor shall extra payment be made either for extra materials or labour involved in making. The calcium silicate ceiling tiles shall be regular edged having noise reduction coefficient (NRC). Value 0.50 (Minimum), light reflection> 85% non¬-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity < 0.043 w/ m0 KC as per ECBC code 2007, density of 450kg/m3 on the edges having 24mm collar and average density of 350 kg/ m3 across the tile.

S. NO.	Item	Specifications
1.6	Doors	1.6.1.EOC Studio, CMO's Room Frameless door with toughened glass
		1.6.2 Main Entry+ side entry from staircase. Double-skinned rebated on 3 sides filled with composite timber completely covered with steel sheet and glued over entire surface with access control of Hormann India Pvt. Ltd. With aluminium frame (powder coated) or equivalent. Biometric Reader RS 485 - Interface to GCDU200 high-resolution optical biometrics Sensor with 500-dpi,PIN keyboard 10-28 V DC 115X65X50mm Enclosure rating: IP 65 -10°C to +50° Celsius on request: integrated i Class reader
		1.6.3. Pantry, Rest Room & Sound Room and Toilet Providing and fixing ISI marked flush door shutters, decorative type, core of block board construction with frame of 1st class hardwood and well-matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters. (a) 35mm thick including ISI marked Stainless Steel butt hinges with necessary screws.
1.7	Windows/ Ventilators	All windows shall be UPVC frame with grill only on openable shutters and toughened float glass shutters. All windows shall have granite cladding with moulded edges at CILL level full width.

S. NO.	Item	Specifications
1.8	Counter	1.8.1. Toilet & Pantry Black granite stone counter. Providing and fixing 18mm thick gang saw cut mirror polished (pre-moulded and pre-polished) machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement: 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing and moulding.
1.9	Curtain	Vertical blinds. Providing and fixing vertical blinds made of fabric waves in required shade I/c operating system complete of approved brand and manufacture (MAC/VISTA LEVELOR or equivalent or as per direction of Engineer-in-charge I/c all accessories required to operate including cutting and making openings for Air Conditioner wherever required.
1.10	Fixtures	Vitreous China washbasin size 550X400mm with bottle trap with pedestal recessed at back for reception of pipes & fitting etc. complete of Jaguar make or equivalent. Soap dispenser: Providing and fixing C.P. Brass soap dispenser of Jaguar makes or equivalent. Towel hanger: Providing & fixing C.P. Brass towel rail of 600mm long Jaguar make or equivalent etc. Toilet paper holder of Jaguar make or equivalent Providing and fixing Napkin dispenser of approved size Shower panel of Jaguar or equivalent make Wall-mounted WC with health faucet: Providing and fixing colored vitreous china water closet (European type W.C. pan) double symphonic wall hung with seat and lid with CP Brass hinges and rubber buffers with toilet low level flushing cistern with fittings and C.1./M.S. brackets, 4mm Flush bend, overflow arrangement with specials of standard make and mosquito proof

S. NO.	Item	Specifications
		coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors where required (WS pan with color plastic seat and lead with colored vitreous china flushing cistern and CP flush bend of or equivalent; all complete as per direction of Engineer-in-charge. Mirror -size 600x600mm Stainless steel sink in pantry with mixer. Heat normal and cold water dispenser voltas or equivalent make Water heating unit -25 L- or equivalent in washroom and instant geyser in pantry.
1.11	Communication	-Provision of telephone & Intercom connectivity between workstations, CMO room, Studio and Audio room , Provision of Fax. -Provision of WI-FI Internet, as per NIC specification LAN of minimum 25 nodes from existing LAN network of concerned departrment. (Extension of existing department LAN with WI-FI). -Dedicated Leased line for internet connectivity with data capability of Audio¬ video Conferencing.
1.12	Office Equipments	Writing Magnetic with board with magnetic duster and markers : Size: 1200 X 1600 mm
1.13		**Multi-functional laser Colour Printer & scanner: Quantity: 01** • Max original size: A3 • Paper Size: A3, A4, A4R, ASR, Envelope, custom sizes • Resolution: 600 dpi X 600 dpi (reading, copying), 1200 dpi X 600 dpi (printing) • Copy/ print speed: up to 40 ppm (BW, A4), 15 ppm (BW, A3) • Scan Speed: 45/34 ipm (A4, 300 dpi, colour B/W)

S. NO.	Item	Specifications
		• Zooming: 25% - 400% • Warm-up time: 30 seconds • Multiple copies: 1 - 999 sheets • Paper Capacity: 550 sheets per cassette Connectivity: Ethernet (100 Base-TX/ 10 Base - T); USB Host I/F 2.0 X 1 port; USB Device 1.0 X 1 port; EIO slot; Fax port; F. H port; PCI Express • Duty cycle (monthly, A4): up to 200,000 pages • Memory: Minimum 512 Mb
1.14		**Fax: Quantity: 01** • Size support: A4 • Modem speed: upto 33.6 kbps • Fax resolution: 406 X 391 dpi • Transmission time: approx. 3 seconds
1.5		**Laptop Computer: Quantity: 02** • CPU: Quad-core, minimum i5 processor, 3M Cache, 3.8 GHz • Memory: Minimum 8 GB RAM • Hard Drive: >1 TB SSD • Optical drive: DVD read/ write • Windows 10.0 or more with license office application • Interface: Gigabit Ethernet; Wireless LAN: 802.11 ac, 802.11 b/g/n; Bluetooth v4.0, Wise screen LCD of size 14" or 15.6 or higher • Weight< or= 1.7 KG

S. NO.	Item	Specifications
1.16		**Server: Quantity: 01** • CPU: 16 cores; 2.5 GHz; L3 cache 37.5 MB; (Single) • Memory: 128 GB • RAID Support: 1+0, 1,5 • DVD-RW • 6*1200 GB 10K SAS; 2*400 GB SAS SSD • 6*Giga Ethernet ports • Redundant Power Supply (100 - 240V, 50 - 60 Hz)
1.17		**Data Storage:** RAID
1.18		**Media Streaming:** Media streaming server
1.19		**Satellite Phone: Quantity:** 02
1.20	Miscellaneous	Provision of fire detection with fire alarm system as per the requirement of Delhi Fire Services and their certification.
1.21		Waterproofing of existing roof to prevent future water seepage
1.22		Termite treatment and pest control of the walls to prevent damage to wall paneling, flooring and false ceiling.

2. Electrical & Miscellaneous items

S. NO.	Item	Quantity	Specifications
2.1	Electrical Provisions		Provision of recessed mounted CFL light fixtures with diffused/indirect lighting 600X600 shall be fixed in the ceiling. Provision of split A.C. and ceiling fans, ASC points, power points shall be made. All wiring shall be concealed in walls and ceiling.

S. NO.	Item	Quantity	Specifications
2.2	100 KVA DG Set	1 (One)	S/I/T/C of 100 KVA Silent DG Set with engine, alternator, base frame, radiator/ heat exchanger, fuel tank, control panel, fuel piping, foundation, all electrical interconnection, loop earthing, silencer pipe and all connected standard accessories and soundproof enclosure, batteries with leads, AVM pads along with AMF panel with MCCB etc complete as required. UG armoured aluminium conductor XLPE cable, end termination, Earthing with G.I. earth plate/GI strip and vertical TP DB with MCB etc complete as required.
2.3	Electrical Work	52 points	Wiring for light/fan/call bell point, with 1.5 sq.mm FRLS PVS insulated copper conductor with modular switch/front plate etc as required.
2.4		100 M	Wiring for light circuit with 1.5 sq.mm PVC insulated copper conductor cable in steel conduit/aluminium channel etc. as required
2.5		22 Nos.	Wiring for 15 Amp power point with 4 sq. mm size FRLS PVS insulated copper conductor cable in steel conduit/aluminium channel with modular switch/socket etc. as required.
2.6		13 Nos.	Wiring for plug point for computer etc. with 4 sq.mm size FRLS PVC insulated copper conductor cable in steel conduit/aluminium channel with modular switch/socket etc. as required.
2.7		8 Nos.	Wiring for power points for AC with copper wiring & MCB etc. as required.
2.8		26 Nos.	S.I.T.C. of 600mmX600mm CFL light Fitting Complete as required.

S. NO.	Item	Quantity	Specifications
2.9		7 Nos.	S.I.T.C. of 1X18 watt CFL downlight fitting complete as required.
2.10		1 L.S.	Provision for strengthening of EDBs as required.
2.11		7 Nos.	S.I.T.C of ceiling fan as required
2.12		2 Nos.	S.I.T.C. of exhaust fan as required.
2.13		250 M	Provision of aluminium channel/for communication/wire etc.

3.Air Condition (A/C) System & Pdg AFAS

S. NO.	Item	Quantity	Specifications
3.1	Split Ac Type	10 Nos	Supply of 1.5 TR capacity split AC unit complete with indoor & outdoor units as required (5 star).
3.1.1		10 Nos.	Installation, testing, and commissioning of 1.5/2 TR capacity split AC unit i/c fixing of cooling coil, condenser unit and drawing of copper piping from condenser unit to cooling coil complete as required.
3.1.2		40 mtrs.	P/F of 100X50mm size rigid PVC trunking with the help of rawl plug, steel screws i/c dressing etc complete as required.
3.1.3		20 mtrs.	P/F extra refrigeration gas piping comprising of 1/4" & 5/8" copper tube i/c insulation of copper piping & 3-core wire of 80/0.20 size PVC drainpipe connection, welding etc. complete as required.
3.1.4		10 No.s	S/F wall/floor mounted type powder coated M.S. stand for condenser unit of 1.5/2 Tr. Capacity split AC unit with fastener, nut bolts etc, complete as required.

S. NO.	Item	Quantity	Specifications
3.2	Pdg AFAS system.		
	Pdg AFAS system, (a)	50 Mtr 2X1.5·sq.mm	Supplying & Fixing of following size PVC insulated, PVC sheathed, armoured copper conductor cable ISI marked suitable for 1.1 KV grade on ceiling/cable Tray/surface complete as required.
	(b)	100 Mtr 3X1.5 sq.mm	
3.3		19 Nos.	S/F following type detectors with Universal base and circuit in place of defective & cold detector of existing fire alarm system suitable for electrical fire alarm system and LED indicator i/c connection testing and commissioning etc. as required. Optical-type smoke detector with indicator
3.4		2 Nos.	S/F response indicator made of 18 SWG M.S. sheet in place of defective and old response indicator having 2 Nos. LED connection testing commissioning etc as required.
3.5		9 Nos.	S/F of surface mounted Junction box made out of ABS (polycarbonate) of size 150mm X80mm dia suitable for fixing of detector base & termination of cable complete as required. (Bosch/Agni make).

4. Specifications of Furniture & Miscellaneous items

S. NO.	Item	Quantity	Specifications
4.1	Work Station	10 (Ten)	Modular Workstations 1200X600mm with tile-based partition of 50mm thick of height 1200mm. The basic framework is made up of aluminium with thickness of 1.3mm Vertical & Horizontal rail is made up of 1.2mm thick of aluminium extrusions. Cover Section (Raceways) is made up of 0.8mm

S. NO.	Item	Quantity	Specifications
			thick CRCA steel. The Worktop is made of 25mm thick particle board with 0.8mm thick post-lamination on top & 0.6mm thick lamination below with curvica front edge of approved shade supported by pre-laminated particle board thick. All flat edges shall be finished with hot melt PVC edge banding of 1.2 - 2mm Thickness. All steel parts shall be pre-treated for seven stage anticorrosion treatments followed by epoxy powder coating. The thickness of the powder coating for all the steel and aluminium parts shall be min 45 microns. (Raceways shall be provided at below the worktop on tile and at skirting level (100mm high) and above the worktop at 900ht. as per requirement. Lower module finish shall be in pre-laminated finish and upper module shall be fabric of approved shade. One magnetic pinup and one white grid marker shall be provided for each user. Keyboard: Providing and fixing post-formed keyboard tray with telescopic slides (nylon roller slides) of size 600mmx350mm made out of 25 mm thick particle board with post-formed decorative laminate on top and having balancing lamination on the unexposed face in work stations, in approved colour.
4.2	Staff Table Side Unit	10 (Ten)	Modular side table: Top is made of 18mm with 2 drawers. Side cabinet of size 900mm (L) x 750mm (H) x 400mm (D) (as per salient design and technical feature, specification) and a drawer Box with one drawer of 150mm and 450mm of one filing drawer complete.

S. NO.	Item	Quantity	Specifications
4.3	Executive Table for CMO's Room	1 (One)	Executive table of size 1800mm(L) x 900mm(D) x 750mm(H). The Worktop is made of 25mm thick commercial board with 0.8mm thick post-lamination on top & 0.6mm thick lamination below with curvica front edge of approved shade supported by pre-laminated commercial board thick. All flat edges shall be finished with hot melt PVC edge banding of 1.2 - 2mm Thickness. One no Modesty panel made of commercial board. Pedestal - with drawer unit having size 375mm x 750mm or as per the size of the table with 2 drawers + filing cabinet.
4.4	Executive Table Side Unit for CMO Room	1 (One)	Top is made of 18mm with 2 drawers Side cabinet of size 900mm(L) x 695mm (H) x 400mm(D) (as per salient design and technical feature, specification) and a drawer Box with one drawer of 150mm and 450mm of one filing drawer complete. Keyboard: Providing and fixing post-formed keyboard tray with telescopic slides (nylon roller slides) of size 600mmx350 mm made out of 25 mm thick particle board with post-formed decorative laminate on top and having balancing lamination on the unexposed face in work stations, executive table or side units in approved colour and texture as per salient technical features, specifications.
4.5	Conference Table	2 (Two) One 20 seater for EOC studio	Conference Table having size as per drawing round at the corners, top made of 36mm thick board, pressed with 0.4mm thick membrane foil clad pressed with PU glue. The foil shall be pre-coated with a layer of polyurethane for better scratch resistance.

S. NO.	Item	Quantity	Specifications
		and another 6 seaters for mini conference room	The table shall have under structure with verticals made of 25mm thick post-formed particle board & modesty made of 18mm thick pre-laminated particle board having decorative laminate on both sides. Table shall also have shelf below made of 18mm thick pre-laminated particle board. The Round corner piece shall be made up of 36mm thick board pressed with 0.4mm thick membrane foil clad pressed with PU glue and supported with post of 65mm dia. made of CRCA sheet duly powder coated as per salient technical features. The table should be only in one approved colour. The table shall also have provision for carrying wires & mounting switches etc. necessary provision for wire management, data/computer/telephone cabling.
4.6	Wooden Cupboard	10 (8+2) (Ten)	Wardrobe of size 800mm x450mm x2100mm. using 19mm thick Marine Plywood of approved manufacturer I brand (Kitply Anchor/Garnet/Equivalent), all external faces to be cladded with good best quality teak veneer (4 mm thick) on all sides including backside, teak veneer should be finished with melamine polish in 2 or more coats as per standard procedure, with 2 nos. of shutters 'C' type, 6" handle of brush steel finished, tower bolts, SS rod for hangers, hinges of best quality, inner sides of wardrobe to be finished with 1.0mm thick laminate of approved brand and shade, melamine polish wherever laminate is not there, all other accessories, complete.
4.7	Low Height Credenza Units	3 (Three)	A 400mm deep x 2'-6" ht, side running filing unit as per drawing and details. The storage unit should be made out of 18mm thick commercial ply for top, sides and base,

S. NO.	Item	Quantity	Specifications
			6mm thick commercial plyback,18mm thick commercial ply shutters with auto closing hinges and t.w. lipping matching with approved 4 mm thick veneer on all the sides/edges. All external surfaces to be finished in 1.0 mm laminate (suede finish) of approved make. Division of shutters shall be made equally according to the length of the storage, and complete rates shall be inclusive of all necessary approved fittings like auto closing hinges, locks, 75mm long s.s. brushed finish handles, tower bolts, magnetic ball catch and any miscellaneous hardware items as per Architect's instructions.
4.8	Executive Revolving Chair	1 (One)	With overall height 1200 mm max., overall width less than 750 mm, overall depth 750 mm, seat size 50mm (W) x 530mm (D) and back size 530mm (W) x 790 (H). Seat and back are made up of 15 mm thick hot pressed single moulded plywood upholstered with leatherette and moulded with polyurethane foam of 40 densities and 32 densities in the seat and back respectively. The back foam shall be designed with contoured lumbar support for extra comfort as shown in drawing, with 1 piece armrest made of 50mm wide and 6mm thick extruded die cast alloy fabricated in the requisite design. The chair shall have knee tilt mechanism with 360 deg. revolution, 17 degree max. Tilt; Tilt tension adjustment and upright locking. The pedestal 650mm pitch centre dia. shall be out extruded die cast alloy fitted with 5 nos. twin wheel castors with castor wheel dia.50 mm. The pedestal shall be covered with a polypropylene moulded cladding as per modern standards. The bellow shall be a 3 piece telescopic type and will be injection moulded in black polypropylene. The pneumatic height. The bellow shall

S. NO.	Item	Quantity	Specifications
			be a 3 piece telescopic type and will be injection moulded in black polypropylene. The pneumatic height adjustment shall have an adjustment stroke of 100mm and shall be operated at 30 kg's extension force.
4.9	Visitors Chair	5 (Five)	Chair having Centre Tilt Mechanism with Tilt Locking and upright lock facility designed with contoured lumbar support for extra comfort. Specification : I. Width - 75.0 Cm, Depth - 75.0 Cm, Height -105 Cm-117.5 Cm II. Seat Height - 46.0 Cm - 58.5Cm III. Unspecified Tol = +0.5 Cm. The chair shall have 360 deg. revolutions, 17 degree max. Tilt. Tilt tension adjustment and upright locking. The pedestal 650mm pitch centre dia. shall be out extruded die cast alloy fitted with 5 nos. twin wheel castors with castor wheel dia. 50 mm. The pedestal shall be covered with a polypropylene moulded cladding as per modern standards. The below shall be a 3 piece telescopic type and will be injection moulded in black polypropylene. The pneumatic height adjustment shall have an adjustment stroke of 100mm and shall be operated at 30 kg's extension force.
4.10	Office Chair	10 (Ten)	Chair having Centre Tilt Mechanism with Tilt Locking and upright lock facility with medium high back. The chair shall have 360 deg. Revolutions, Tilt tension adjustment and upright locking. The pedestal 650mm pitch centre dia. shall be out extruded die cast alloy fitted with 5 nos. twin wheel

S. NO.	Item	Quantity	Specifications
			castors with castor wheel dia. 50 mm. The pedestal shall be covered with a polypropylene moulded cladding as per modern standards. The bellow shall be a 3 piece telescopic type and will be injection moulded in black polypropylene. The pneumatic height adjustment shall have an adjustment stroke of 100mm and shall be operated at 30 kg's extension force.
4.11	Conference Room Chair	20 (Twenty)	• Upholstery of approved shade • Arms To Floor Min. 29.5"H • Breathable Mesh Back with Built-in Lumbar Support • One Touch Pneumatic Seat Height Adjustment • Self-adjusting Synchro Tilt Control • Fixed Back Height • Flip Up Arms with PU Pads • Heavy Duty Angled Polished Aluminium Base with Dual Wheel Carpet Casters • Already assembled OVERALL SIZE: 26.5"Wx25"Dx39"H • CU.FT: 5.44 SEAT SIZE: 20"Wx18"Dx19-22.75"H • BACK SIZE: 21"H

S. NO.	Item	Quantity	Specifications
4.12	3-SEATER SOFA for rest room 2 seater + 1 Seater for CMO room	1 (One) 1 (One)	SIZE: 6'-0" X 3'-0" HT X 2'-6" DEEP. Supplying of 3 Seater Sofa of above mentioned size, using teak wood (best quality BTC) carved frame of 3"x1.5" size, seat, backrest and armrests - padded with polyurethane foam and upholstered in beige and/ or light grey or as per selection, woven fabric. Frame of sofas made of teak wood and the base of seat and backrest equipped with metal z-shape springs, and for base six nos. of (round legs) of 1½" outer diameter, using BTC teakwood and superior quality melamine polish finished, complete in all respects, as per enclosed drawing.
4.13	Centre Table	2 (Two)	Centre Table of size (900mm x 450mm x 450mm (H) having top made of 12mm thick bevelled glass and understructure made of 18mm thick prelaminated particle board and having all exposed edges sealed with PVC edge banding tape complete. It should have a proper match with the Sofa set provided.
4.14	Side Table	2 (Two)	Side table as per the drawing. Top (900X450X705mm) & side panel shall be 25mm thick plain particle board clad with 0.6mm thick post-formed laminate and 1mm thick backing laminate and flat edge duly sealed with 2mm thick PVC beading. Modesty shall be 18mm thick plain particle board clad with 1mm thick decorative laminate on both sides and edge sealed with 2mm thick PVC beading etc. complete as per design, drawing, and as per specifications/ additional specifications.
4.15	Single Bed with Mattress	1 (One)	Outer dimension of the bed: 74" X 38" X 18", Ready Size 6'X3'. Frame made of 2"X1" rectangular CRCA pipe (Prime Quality) and inner frame of 1"x1" pipe (CRCA prime quality) to place the ply. Full structure with thickness 16 gauge/(1.60mm) duly powder coated with minimum 4 Supporting pipe in

S. NO.	Item	Quantity	Specifications
			between for better support of ply. Powder coating will be done with 7 Tank Chemical treatments to avoid any rusting in the future. Color: Black . Plywood should be ISI mark, 12mm thickness, size 6'X3', boiling water proof, termite proof, of approved make Kitply /Greenply. High-density coir form 8 inches of sleep well or equivalent make.
4.16	Microwave Oven	1 (One)	28 Litre Capacity, Convection Microwave, Convection 1250 Watts Power Consumption, 230V/50Hz,900Watts Output Power LED Bar,6 Power Levels, Membrane, Handle, Turntable, Ceramic Enamel Cavity Interior Physical Specifications: 504set I 40ft Loading Quantity 18kg Net Weight 567 x 310 x 460mm Outside Dimension
4.17	Electric Kettle	1 (One)	Features: Cordless electric kettle with 360° base. Optional wall mount, ergonomic handle, one-touch opening, water level indicator, safety lid with automatic switch off, and removable lime scale filter. Capacity: 1.2 liter Power supply: AC 220-240V~50/60Hz, 2200 W max. Operation temperature : Approx. 120°C Cable specifications : H05RR-F 3G*0.75-1 .0 mm2 250V~16A L = 0.85 m

S. NO.	Item	Quantity	Specifications
			ON/OFF : ON/OFF button with blue light indication. Safety standard: GS/CE Electric shock protect grade: I Dimensions: H 210 mm x W 214 mm x D 130 mm Weight: Approx. 1.2 kg Material: PC, PP, sandblasted aluminium,PA66+GF
4.18	Refrigerator	1 (One)	Description: Frost-free Capacity 300-350litres, environment friendly, 5 Star rating, Safety standard: GS/CE, can work without Stabilizer (can operate within the range of 100-290V & can withstand voltage fluctuations)

Annexure IV: Sample Format for an Incident Action Plan

An IAP can have many possible formats, which may be both event/incident-specific and agency-specific. However, these formats have several plan elements in common. These are outlined below:

- Situation assessment
  - Current
  - Predicted
  - Objectives
  - Strategic
  - Tactical, current and alternative
- Execution
  - Tasking
  - Coordination
  - Safety
- Logistics
  - Supply
  - Support communications
  - Responder medical care
  - Facilities
  - Catering
- Administration
  - Finance
  - Responder accommodation

- Control, coordination and communication
  - Which IMS functions are activated?
  - Which other agencies are involved through unified management or liaison?
  - What are the communications plans, and which audiences do they address?

Annexure V: Template of Log Register

(Source: WHO RO Africa 2021b)

S. NO.	Date	Name	Designation	Purpose	Sign In Time	Sign Out Time

Annexure VI: Sample of Reporting Templates of Summary of Incident Update to Leadership

(Source: WHO RO Africa 2021b)

Incident Update to Leadership	
As of (dd/mm/yyyy)	**Update #**
Situation Update Very brief summary	
Actions Undertaken Very brief summary in bullet points	
Issues and Challenges Highlight major issues and challenges that require leadership attention	
Next Steps for Decision Bullet points that require high level decision	
EOC/PHEOC Contact Physical address, email, telephone number	

Annexure VII: Public Health Emergency Management Core Competencies

(Source: WHO 2021b)

1. Leadership

1.1 Develops strategic plans to define the organization's vision, mission, values, structure, goals, objectives, performance measures, outcomes, resources, budget and continuous quality improvement methods to align with the people and processes and to build capacity.

1.2 Aligns activities with the organization's vision, mission, values, goals and strategies.

1.3 Applies knowledge of change management principles to impact organizational development and improvement.

1.4 Builds interdisciplinary teams to generate solutions collaboratively.

1.5 Applies leadership methods when interacting with partners, teams, and staff.

1.6 Applies self-control and composure to manage relationships constructively and with professionalism while under pressure during a crisis.

1.7 Applies decision-making and problem-solving methods to develop solutions to problems and to adjust systems accordingly.

2. Emergency Management Frameworks

2.1 Demonstrate comprehensive knowledge of public health emergency management (e.g., WHO Framework for Public Health EOCs, the International Health Regulations, national preparedness frameworks and national incident management systems).

2..2 Apply knowledge of public health and emergency management authorities, including laws, regulations, guidelines, treaties, and other policy documents, and acts within the scope of those authorities.

3. Emergency Management Functions

3.1 Conducts threat and hazard identification and risk assessment.

3.2 Develops strategic and operational plans using key planning principles.

3.3 Assesses and coordinates emergency management operations to maintain an in-depth comprehension of the operational environment to anticipate, identify and report public health threats.

3.4 Integrates foundational emergency management principles into public health systems within the respective Ministry of Health.

3.5 Synthesizes and shares information and data to inform decision-making across public health emergency management organizational functions.

3.6 Conducts logistics and resource management activities.

3.7 Demonstrates knowledge of public health emergency management technologies and systems.

4. Emergency Management Communication

4.1 Integrates crisis and emergency risk communication principles into all stages of an incident.

4.2 Manages and shares information across internal and external public health partners.

4.3 Applies comprehensive knowledge of emergency alert systems to ensure crisis information and guidance are delivered to partners, stakeholders and the public.

4.4 Applies knowledge of interoperable and integrated communication strategies to facilitate information sharing during an emergency.

5. Partnership and Collaboration

5.1 Collaborates with governmental and nongovernmental organizations to ensure coordination of preparedness and response activities.

5.2 Develops and maintains relationships within internal teams and external partners.

5.3 Collaborates with individuals, teams and partners to obtain feedback, solve problems and handle challenges within an emergency management environment.

5.4 Applies knowledge of partner organizations' capabilities, mission, roles, responsibilities and priorities when developing public health emergency standards, guidelines and protocols.

6. Training Development and Facilitation

6.1 Applies systematic methods to analyse training needs, and to design and develop educational briefings, presentations and materials.

6.2 Develops instructional strategies and methods to use for achieving training goals and objectives, including examples and practice activities.

6.3 Delivers emergency management training according to the instructional strategies.

7. Evaluation

7.1 Develops tools, metrics and methods for evaluating progress towards preparedness and response objectives.

7.2 Evaluates capacities and provides recommendations to address identified gaps.

7.3 Evaluates processes and procedures to assess preparedness and response actions.

7.4 Applies exercise programme management principles to validate and improve operational capability.

7.5 Applies evaluation methods to assess levels of learning that occur as a result of training presentations, briefings and materials.

7.6 Develops strategies and tools to ensure sustainability of the Emergency Management program.

Annexure VIII: Required Knowledge, Skills and Abilities for Essential PHEOC Functions

(Source: WHO 2021b)

Policy

- Identify current health trends and gather information that can inform options for policies, programmes and services.
- Recognize the value of having an incident command structure during an emergency.
- Identify limits to legal knowledge, skills and authority and identify key system resources, including legal advisors for consultation on matters that exceed those limits.
- Describe the legal authorities related to the distribution and dispensing of medical supplies and the effect of a state and/or federal emergency or public health declaration on those authorities.

Planning

- Contribute to the development and implementation of the organizational strategic plan and emergency plans.
- Gather appropriate information for evaluating policies, programmes and services.
- Apply strategies for continuous quality improvement.
- Verify the credibility of information sources.
- Use analytical tools to analyse information and recommend specific actions.

Command

- Demonstrate an ability to set and follow priorities, and to maximize outcomes based on available resources.
- Demonstrate an ability to fulfil functional roles in response to a public health emergency.
- Develop staff by providing professional development opportunities for individuals and teams (e.g. training, mentoring, peer advice, coaching) and encouraging use of these opportunities.

- Manage organizational change to modify practices in response to change (e.g. social, political, economic and/or scientific changes).
- Facilitate collaboration with internal and external emergency response partners.
- Demonstrate advanced problem-solving skills under emergency conditions.
- Utilize staff and technology to maintain situational awareness.
- Distinguish the roles of staff involved in collecting and disseminating information for audiences (e.g. coordinator, public information officer, technology/IT departments, etc.).
- Distinguish routine from urgent management information.
- Classify information for internal and external audiences.
- Clarify the roles of team members in the Incident Management System.
- Summarize the roles and responsibilities of public health personnel in a variety of public health emergencies and in the Incident Management System.
- Demonstrate commitment to the safety of personnel by employing protective behaviours according to changing conditions, personal limitations and threats.
- Categorize and evaluate potential threats and emergencies.
- Describe the relationship between protective measures and behaviours and the reduction of risk of injury or illness for personnel.
- Employ practices to minimize exposure to dangerous agents and hazards during an emergency.
- Know and act within the scope of national, state, tribal and/or local statutory and regulatory authority during public health emergencies and through state and/or national declarations of emergency.

Operations

- Interpret and communicate procedures in emergency operations plans related to information management.
- Recognize information that is potentially relevant to the identification and control of an emergency and report it through the chain of command.
- Know, and manage or apply, decontamination or disinfection procedures as necessary.

- Use information technology in accessing, collecting, analysing, using, maintaining and disseminating data and information.
- Use informatics standards.
- Apply ethical principles in accessing, collecting, analysing, using, maintaining and disseminating data and information.
- Determine quantitative and qualitative data and information.
- Collect, analyse and interpret data to determine validity and reliability.
- Practise process improvement.

Communications

- Differentiate between risk communication and emergency crisis communication.
- Prepare and deliver messages using the principles and guidelines of crisis and risk communication.
- Demonstrate cultural sensitivity as essential in communicating with diverse populations.
- Convey information to professionals, personnel and the public using a variety of approaches (e.g. reports, presentations, press releases, emails, social media, etc.).
- Communicate effectively in writing and orally, in person and through electronic means, with linguistic and cultural proficiency.
- Maintain relationships with diverse community partners to assist with communicating preparedness planning and population-specific messages.
- Verify the credibility of information and sources.: Training and Exercises

Logistics

- Support information systems development.
- Administer procurement procedures and protocols, particularly those most relevant to public health.
- Perform IT systems operations and maintenance.
- Use inventory management systems.
- Plan and implement distribution systems.

- Know hazardous materials regulations.
- Practise supply chain management.
- Know human resource policy, procedures, recruitment and rostering practices.
- Provide or administer facilities maintenance services.
- Develop and maintain a database of contact persons, experts, facilities, inventory, etc.
- Utilize records management systems that satisfy agency standards for important documents and financial records.
- Distinguish between different types of electronic information and sources.
- Describe and utilize the financial planning, budgetary and cash flow processes of the agency.
- Design and implement financial plans for assigned operational projects.
- Prepare proposals for funding (e.g. to foundations, government agencies, corporations, etc.).
- Negotiate contracts and other agreements for programmes and services.
- Process compensation claims (incentives, insurance, expenses).

Annexure IX: Training Needs Assessment Template

(Source: WHO 2021b)

Role/ position title	Name	Responsibilities	Competency (Knowledge, Skills, Abilities)	Training Needs	Planned Dates	Remarks
Incident Manager						
EOC/PHEOC Facility Manager						
Public Communications Officer						
Operations Staff						
Planning Staff						
Logistics Staff						
Finance and Administrative Staff						

Annexure X: Suggested Template to Develop PHEOC Training Package

(Source: WHO 2021b)

A training program should be developed and regularly updated for individuals who will be working in the Public Health Emergency Operations Centre (PHEOC), as well as those who will be receiving support from it. The capabilities and capacities listed in Annexure VI can be built with a training programme that will:

- Offer staff the opportunity to gain the skills required to perform their tasks within the response structure and;
- Provide opportunities for other staff to develop the skills to function as surge support in an emergency response.

Training Courses

Course 1: Introduction to emergency management and Incident Management System in the PHEOC

This course is designed for those responsible for, and involved in, the establishment of a PHEOC. It explains and explores the principles and practice of emergency and disaster management and the role of the PHEOC in response to a public health emergency. The course is built around the following thematic areas:

Principles of emergency management

- Definition of key terms and concepts.
- The emergency mitigation and management process:
  - mitigation
  - preparedness
  - response
  - continuity of vital operations
  - recovery.
- The Emergency Response Plan, addressing multiple threats and hazards.
- Current national emergency management practices and stakeholders.

- Identification of necessary legislation, plans and procedures as they relate to public health emergencies.
- Description of the role PHEOCs play in emergency management:
    - fixed versus temporary PHEOCs
    - national, subnational, and local levels
    - field level.

The role of the Incident Management System in Emergency Management

- Definition of key terms and concepts.
- Explanation of the main areas and functions of the Incident Management System.
- Management by objectives.
- Span of control.
- Action plans.
- Interagency and bilateral coordination.

PHEOC Considerations

- The composition and role of the PHEOC steering committee.
- The PHEOC concept of operations.
- Risk/hazard vulnerability analysis.
- Functions to be performed.
- Number of staff required to operate the PHEOC.
- Space requirements.
- Funding requirements.
- Different functional layouts of the PHEOC.
- Requirements for information and communication technology.
- Data collection and analysis requirements.

- Equipment and supplies needed.
- Media and risk communication.

Learning Objectives

- Demonstrate an understanding of emergency management principles and terms.
- Discuss the role of the PHEOC in the overall national emergency/disaster management and response structures.
- Describe current emergency management practices and the arrangements currently in place.
- Explain legal and regulatory elements relevant in an emergency.
- List the stakeholders involved in different emergency responses, including non-governmental organizations and any bilateral or international support expected.
- Explain the rationale for implementing the Incident Management System in emergency responses.
- Describe the main functions within the response structure of the Incident Management System.
- List factors to be considered when establishing a PHEOC.

Course 2: Advanced Emergency Management and PHEOC Operations

The course is intended to build on the skills and concepts of the first course, and give key individuals involved in managing a PHEOC more in-depth knowledge. The course is built around the following thematic areas:

Emergency Management and the PHEOC

- The relationship between the Emergency Response Plan and the concept of operations.
- Grading of emergencies and linking them to PHEOC activation levels.
- Identifying interagency stakeholders and parameters for coordination.
- Definition of operational periods.
- Development of action plan.ng and Exercises

The Incident Management System in Action

- Strategic and tactical demands during an emergency, and how the Incident Management System can support meeting these demands.
- How and when the Incident Management System can be altered to expand or contract an emergency response.
- Incident Management System functions at different levels of the response.
- Staffing needs.
- Job action sheets.
- Coordination with the United Nations, Red Cross/Red Crescent Movement, nongovernmental organizations and bilateral partners.

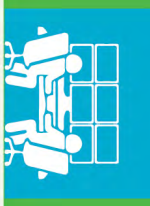
PHEOC Operations

- Standard operating procedures: when they are needed and what they contain.
- PHEOC physical layouts.
- Information flow in and out of the PHEOC.
- Infrastructure and services.
- Data collection and storage processes.
- Staffing the PHEOC.
- Techniques for managing staff in a PHEOC environment.

Learning Objectives

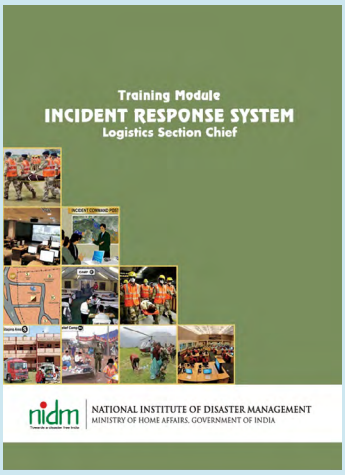
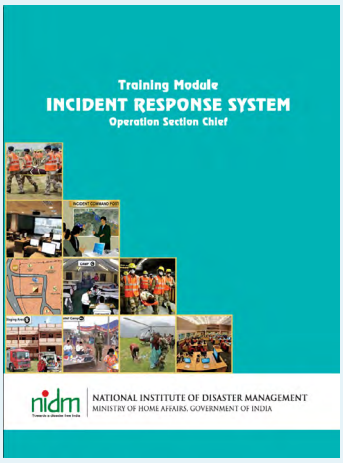
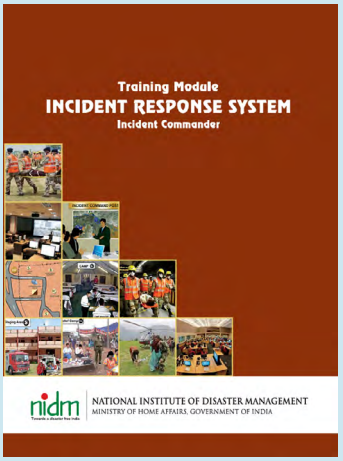
- Determine the level of activation required for the emergency.
- Identify the best functional layout for the PHEOC based on operational requirements.
- Develop a staffing plan for the functions of the Incident Management System.
- Identify needs for information and communication technology and data management.
- Explain the need for, and identify, key partners in interagency coordination.

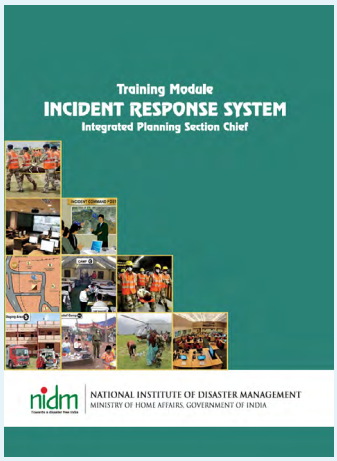
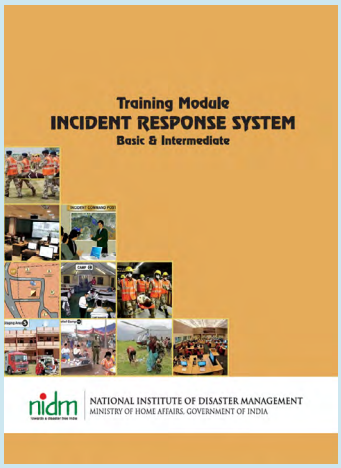
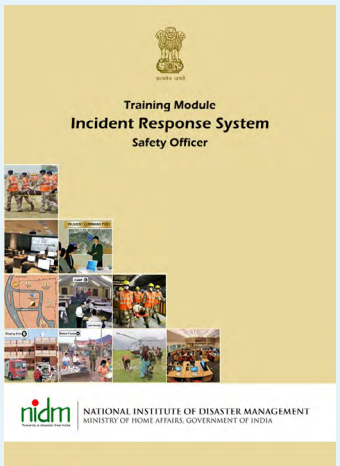
- Demonstrate the ability to access the PHEOC and its resources.
- Complete a template for action planning.
- Develop job action sheets for the main functions of the Incident Management System.

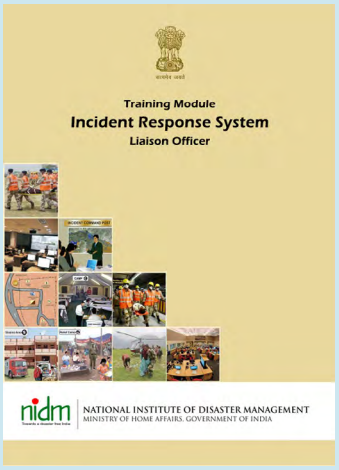
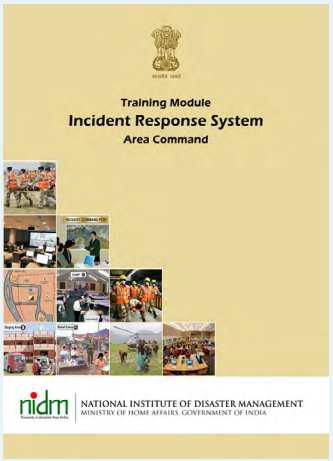
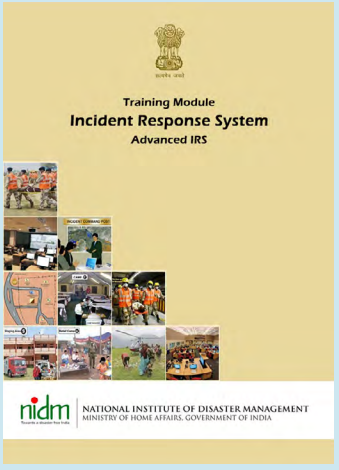


Annexure XI: List of Training Module Prepared by NIDM on IRS

(Source: NIDM 2022a)

Sl No.	Module	Title of Module	Year of Publication
1		Incident Response System - Logistics Section Chief: Training Module (https://nidm.gov.in/PDF/modules/irs-5.pdf)	2015
2		Incident Response System - Operations Section Chief: Training Module (https://nidm.gov.in/PDF/modules/irs-4.pdf)	2015
3		Incident Response System - Incident Commander: Training Module (https://nidm.gov.in/PDF/modules/irs-2.pdf)	2015

Sl No.	Module	Title of Module	Year of Publication
4		Incident Response System - Integrated Planning Section Chief: Training Module (https://nidm.gov.in/PDF/modules/irs-3.pdf)	2015
5		Incident Response System - Basic & Intermediate: Training Module (https://nidm.gov.in/PDF/modules/irs-1.pdf)	2015
6		Incident Response System - Safety Officer: Training Module (https://nidm.gov.in/PDF/modules/irs-10.pdf)	2014

Sl No.	Module	Title of Module	Year of Publication
7		Incident Response System - Liaison Officer: Training Module (https://nidm.gov.in/PDF/modules/irs-8.pdf)	2014
8		Incident Response System - Area Command: Training Module (https://nidm.gov.in/PDF/modules/irs-7.pdf)	2014
9		Incident Response System - Advanced IRS: Training Module (https://nidm.gov.in/PDF/modules/irs-6.pdf)	2014

Annexure XII: List of Online Trainings by WHO, CDC and US-FEMA regarding PHEOC, IMS, IAR, AAR, PHEM, CERT

A. WHO: Management and Facilitation of a Country COVID-19 Intra-Action Review (IAR)

Course Overview: The Country COVID-19 Intra-Action Review (IAR) is a facilitated process that brings together COVID-19 responders from multiple sectors for experience sharing and collective learning, and it has been modelled after the WHO After Action Review (AAR) methodology. This course provides a general introduction to the management and the facilitation of an IAR during the ongoing COVID-19 pandemic through presentations, quizzes and an assessment at the end of the course to test the knowledge acquired. It targets any individuals or entities involved in the preparedness of and response to the COVID-19 outbreak at the national or subnational levels, including but not limited to Government officials, WHO staff, public health professionals, communities and partners.

Course Objectives:

- Explain the context and the purpose of a Country COVID-19 IAR;
- Describe the general flow of the Country COVID-19 IAR process;
- Describe the resources available for conducting an IAR, when to use them, and where to find them;
- Distinguish the roles and responsibilities of the IAR lead coordinator, facilitators, moderator, note-takers and report writer, IT support, and participants in the IAR process and describe the techniques for participatory facilitation and tips for online facilitation.

Primary Audience: This online course is designed as a companion to targets any individuals or entities involved in the preparedness of and response to health emergencies, including IHR NFPs, WHO staff, Government Officials public health professionals and partners.

Prerequisites: None.

Course Length: 2 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: *https://openwho.org/courses/covid-19-intra-action-review-en*

Since the launch of this online course, WHO has now published an addendum to the Guidance for conducting a country COVID-19 intra-action review (IAR), which provides additional directions and supplements but does not replace the guidance. Please also note that the accompanying tools have also been updated and revised accordingly. Please refer to the IAR webpage for the most updated materials and proposed public health response pillars for countries' consideration during an IAR.

B. WHO: The Public Health Emergency Operations Centre (PHEOC)

Course Overview: In 2012, WHO established the Public Health Emergency Operations Centre Network (EOC-NET). WHO developed the Framework for a Public Health Emergency Operations Centre (PHEOC), in collaboration with EOC-NET partners. The Framework provides high-level methodical guidance for designing, developing and strengthening of PHEOCs. This online course provides an outline of the PHEOC Framework and relevant references.

Course Objectives:

- Describe the content of the PHEOC Framework;
- Explain the key concepts of PHEOCs and emergency management.
- Define the objectives and function of PHEOCs;
- Describe major planning and implementation considerations, the core components, and essential requirements of a PHEOC; and
- Apply the PHEOC Framework and relevant tools for designing, developing, and strengthening PHEOCs.

Primary Audience: This online course is designed as a companion to WHO's Framework for a Public Health Emergency Operations Centre and is aimed at health emergency preparedness and response professionals, policy makers and partners seeking to implement and sustain Public Health Emergency Operations

Prerequisites: None.

Course Length: 5 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/PHEOC-EN

A Public Health Emergency Operations Centre (PHEOC) is a physical location for the coordination of information and resources to support incident management activities. PHEOCs are also referred to as "operations centres", "situation rooms" and "command centres". Experience has shown that timely implementation of a PHEOC provides an essential platform for the management of public health emergencies and can help avoid common failings such as lack of clear leadership leading to delayed decision making, mismanagement of resources and poor coordination.

C. WHO: Management and Facilitation of an After-Action Review (AAR)

Course Overview: This course provides a general introduction to the management and the facilitation of an After Action Review (AAR) following the response to an event of public health concern through interactive presentations and an assessment at the end of the course to test the knowledge acquired. It targets any individuals or entities involved in the preparedness of and response to health emergencies, including IHR NFPs, WHO staff, health professionals and partners.

Course Objectives:

- Explain the context and the purpose of an AAR;
- Describe the general flow of the AAR process (by using the working group format);
- Distinguish roles and responsibilities of facilitators in the AAR process and describe the techniques for participatory facilitation; and
- Indicate the resources available for conducting an AAR and know where to find them.

Primary Audience: This online course is designed as a companion to targets any individuals or entities involved in the preparedness of and response to health emergencies, including IHR NFPs, WHO staff, health professionals and partners.

Prerequisites: None.

Course Length: 1 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/AAR-en

D. WHO: Incident Management System (Tier 1)

Course Overview: The course is designed as an interactive learning experience, built around individual learning modules. Students will be expected to actively engage in all online sessions and immerse themselves in the course content. All sessions are geared towards enabling the staff to be able to work with and within the new WHE programme and to build their understanding and confidence in the basic concepts and theory. The course content is split into four learning modules, with each module covering a key aspect of the WHE approach to emergency management. The training content is limited to an overview and introductory level of knowledge, required as part of your role within WHE programme. A post-course knowledge check is mandatory, to ensure that all participants have a minimum level of knowledge on completion of the course.

Course Objectives: Gain a foundational understanding of the Incident Management System (IMS) structure and its procedures.

Primary Audience: This online course is designed as a companion to all current or potential members of IMS functional teams, including non-WHO staff who will deploy.

Prerequisites: None.

Course Length: 3 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/incident-management-system

E. WHO: IMS Tier 2 Working in WHO's Incident Management System

Course Overview: Every individual working in emergencies for WHO must be familiar with the Incident Management System (IMS). This course builds on the introductory IMS course to provide a deeper understanding of the system that WHO uses to organize and manage its response. It should be completed by all current or potential members of IMS functional teams, including non-WHO staff who will deploy.

The course consists of 5 modules with audio narration and quiz. It covers: (1) the key elements of WHO's IMS and working in Emergency Operations Centres; (2) how the functional teams within the IMS work together; (3) the ethical standards that are required to be upheld by those deployed by WHO during emergency response; (4) how to work effectively in a team; and (5) the process of deploying and staying healthy.

Before enrolling, participants are recommended to complete the introductory IMS course.

Course Objectives:

- Explain the role of the Incident Management System in WHO's emergency response;
- Describe the roles of the functions within WHO's IMS;
- Describe the ethical principles which underpin WHO's work in emergencies;
- Explain different factors that contribute to effective teamwork; and
- Describe how to prepare for a deployment.

Primary Audience: This online course is designed as a companion to all current or potential members of IMS functional teams, including non-WHO staff who will deploy.

Prerequisites: None.

Course Length: 3 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/incident-management-system-tier2

F. WHO: Introduction to the Emergency Response Framework (ERF)

Course Overview: Every individual working in and responding to outbreaks and public health emergencies for WHO must be familiar with WHO's approach to emergency management, including the principles of the Emergency Response Framework (ERF), such as WHO's core commitment and guiding principles in emergencies, WHO's grading of emergencies, and the Incident Management System (IMS), among others. This course is intended to provide an overview of WHO's approach to emergency management, the ERF and the IMS, with a fictional outbreak to guide learners through an emergency response from detection to response.

The course consists of 6 modules with audio narration and quiz. It covers: (1) Introduction to the Emergency Response Framework (ERF); (2) WHO responsibilities and funding for emergency response; (3) the ERF and signal detection, verification and assessment; (4) grading of public health events and emergencies; (5) the incident management system and (6) the fictional case study.

Course Objectives:

- Explain the principles of the Emergency Response Framework
- Identify and describe WHO's responsibilities and accountabilities during emergency response
- Describe emergency related resources, such as the eSOPs for emergencies and the contingency fund for emergencies

Primary Audience: This online course is designed as a companion to all current or potential members of IMS functional teams, including non-WHO staff who will deploy.

Prerequisites: None.

Course Length: 2 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/ERF

G. WHO: Health Emergency and Disaster Risk Management for Resilient Cities

Course Overview: With a projected 68% of the global population expected to be living in cities by 2050, risk-informed emergency preparedness and multi-sectoral planning in cities are critical to prevent, prepare for, and mitigate the impacts of emergencies. This course aims to highlight the importance of health emergency and disaster risk management for city resilience in line with the International Health Regulations (2005) and the Sendai Framework for Disaster Risk Reduction. The course consists of 4 modules with audio narration and quiz which focus on the:

- Concepts and tools of Health Emergency and Disaster Risk Management;
- Strategic risk assessment and planning;
- Safety, security and resilience of health facilities;

- Multisectoral partnerships through resource mapping and impact analysis;
- Concepts and tools to address the challenges of zoonotic hazards in urban and suburban settings and the approach to limit their spread using the Joint Risk Assessment Operational Tool, applying one-health principles; and
- The critical operational tools for continuous system testing and improvements in cities using Country Simulation Exercises (SimEx) and reviews.

Course Objectives:

- Explain the importance and key areas of all-hazard disaster risk management in cities, for better preparedness against health emergencies and disasters;
- List and describe relevant concepts and existing tools for local risk assessment, one health in cities, simulation exercises, resource mapping and partnerships, aiming all-hazards risk reduction in cities.

Primary Audience: The target audience for this course are local and national government officials in charge of disaster risk reduction and management, urban development and planning, public health; emergency preparedness, national associations of municipalities; urban resilience and development practitioners; civil society, private sector, academia.

Prerequisites: None.

Course Length: 1.5 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/hedrm-in-cities

H. WHO: Ready4Response Tier 1- Response context and principles

Course Overview: Ready4Response aims to develop consistent learning standards across the emergency response workforce, equipping participants with essential competencies needed to work across the various levels of response. In Tier 1 you will learn about the emergency response context and principles, focusing on the all-hazards approach. Through examining the various response actors, their roles and structural relationships, you will become more familiar with how to best manage a response and maximize intersectional cooperation.

Course Objectives:

- Describe the principles of all-hazards emergency response;
- Explain the humanitarian principles and key principles of Human Rights and International Humanitarian Law to health emergency response;
- Describe the commitments that key stakeholders have under the International Health Regulations (IHR 2005) in detecting, notifying, and responding to public health events; and
- Describe the roles and responsibilities of organizations that make up the health emergency landscape and architecture at national, regional, and global levels.

Primary Audience: A core curriculum developed to train health workers and responders who work in, or are interested in working in, health emergency response. It has been designed to be applicable to staff working in government Ministries in Member States and WHO staff across all regions

Prerequisites: None.

Course Length: 7 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/ready4response-tier1-EN

Please note that this course includes photographic depictions of emergency response scenarios prior to the outbreak of COVID-19. Please adhere to your local national guidelines on COVID-19 precautions, including physical distancing of at least 1 meter as well as appropriate usage of masks when indicated.

I. WHO: Ready4Response Tier 2- Systems, Structures and Skills

Course Overview: Ready4Response aims to develop consistent learning standards across the emergency response workforce, equipping participants with essential competencies needed to work across the various levels of response. In Tier 2 you will learn about the Incident Management System (IMS), its core functions and various sub-functions. You will also learn about the core skills required to work effectively in a response team.

Course Objectives:

- Describe the main functions, roles and outputs of the Incident Management System and how these are operationalized in the Emergency Operations Centre;
- Describe principles for successful teamwork in a response context;
- Describe a basic decision-making process; and
- Describe a basic risk management process.

Primary Audience: This online course is designed as a companion to WHO's Framework for a Public Health Emergency Operations Centre and is aimed at health emergency preparedness and response professionals, policy makers and partners seeking to implement and sustain Public Health Emergency Operations

Prerequisites: None.

Course Length: 5 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/ready4response-tier2-EN

Please note that this course includes photographic depictions of emergency response scenarios prior to the outbreak of COVID-19. Please adhere to your local national guidelines on COVID-19 precautions, including physical distancing of at least 1 meter as well as appropriate usage of masks when indicated.

J. WHO: Learning package for Rapid Response Teams in the context of COVID-19 in India

Course Overview: In the context of the ongoing COVID-19 pandemic, Rapid Response Teams (RRTs) are one mechanism of a larger emergency response strategy that can be utilized for efficient response. With the current need for surge capacity, a multidisciplinary public health approach is required.

Capacity building of RRTs is very crucial in the current scenario for emergency response and this online learning package is intended to provide the key knowledge and understanding needed to mitigate, detect and respond effectively to the COVID-19 outbreak.

Course Objectives:

- Constitute an RRT for emergency response during the COVID-19 outbreak;
- Conduct active case finding and contact tracing in the context of COVID-19;
- Manage the epidemiological data for decision-making in the context of the COVID-19 outbreak;
- Manage laboratory samples (collection, packaging and transportation) in the context of COVID-19;
- Prevent and control infections (early identification and source control, environmental cleaning and disinfection, home-based care, safe management of a dead body, biomedical waste management, etc.) related to COVID-19; and
- Engage communities and communicate risk in the context of COVID-19.

Primary Audience: This learning package targets the elements of RRTs which can be multidisciplinary such as emergency coordination; epidemiology; clinical/case management; data management; Infection Prevention and Control (IPC); laboratory; social mobilization/anthropology; risk communication; psychological support; and logistics. In addition, it targets health officials who are responsible for oversight and technical support at the national, sub-national, district and sub-district levels.

Prerequisites: None.

Course Length: 2 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://openwho.org/courses/covid-19-rrt-india

K. Public Health Emergency Management (PHEM) Fellowship Residential Program

Course Overview: The CDC's Public Health Emergency Management (PHEM) Fellowship program is a four-month residential program held in Atlanta, Georgia, USA. Its primary objective is to enhance the Public Health Emergency Management (PHEM) capabilities of public health authorities in partner nations. This program offers comprehensive training, mentorship, and technical support to assist other countries in acquiring and applying emergency management principles for effectively addressing public health challenges and responding to emergencies. To apply for this program, interested

candidates must submit their applications through CDC Regional and Country offices, which are responsible for facilitating the processing of applications by CDC Atlanta for each cohort.

Course Objectives:

- Provide in-depth exposure to public health emergency management frameworks, functions, staff, and program elements.
- Provide in-depth exposure to the functioning of a Public Health Emergency Operations Centre (PHEOC).
- Furthermore, they will be able to demonstrate the following skills:
- Collect, analyse, and disseminate critical public health information.
- Manage an emergency situation effectively.
- Have an understanding of emergency operation centres operations, organizational structure, staffing, and schedules.
- Interact with staff responsible for carrying out emergency management.
- Train relevant professional staff members in their home country.

Primary Audience: The PHEM Fellowship targets mid-career professionals who work in public health preparedness and response. PHEM fellows come from diverse cultural and career backgrounds, including various positions within ministries of health.

Prerequisites: None

Course Length: 4 months

Cost: 50,000-75,000 USD

Certification: A Fellowship certificate is awarded on completion

URL: https://www.cdc.gov/cpr/eoc/EmergencyManagementFellowship.htm

L. IS-100.C: Introduction to the Incident Command System, ICS-100

Course Overview: ICS 100, Introduction to the Incident Command System, introduces the Incident Command System (ICS) and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational

structure of the Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS).

Course Objectives:

- Explain the principles and basic structure of the Incident Command System (ICS).
- Describe the NIMS management characteristics that are the foundation of the ICS.
- Describe the ICS functional areas and the roles of the Incident Commander and Command Staff.
- Describe the General Staff roles within ICS.
- Identify how NIMS management characteristics apply to ICS for a variety of roles and discipline areas.

Primary Audience: The target audience includes persons involved with emergency planning, and response or recovery efforts.

Prerequisites: None

Course Length: 2 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-100.c

M. IS-200.C: Basic Incident Command System for Initial Response, ICS-200

Course Overview: IS200, Basic Incident Command System for Initial Response, reviews the Incident Command System (ICS), provides the context for ICS within initial response, and supports higher level ICS training. This course provides training on, and resources for, personnel who are likely to assume a supervisory position within ICS.

Course Objectives:

- Summarize basic information about the Incident Command System (ICS) and National Incident Management System (NIMS):
- Describe how the NIMS Management Characteristics relate to Incident Command and Unified Command.

- Describe the delegation of authority process, implementing authorities, management by objectives, and preparedness plans and objectives.
- Identify ICS organizational components, the Command Staff, the General Staff, and ICS tools.
- Describe different types of briefings and meetings.
- Explain flexibility within the standard ICS organizational structure.
- Explain transfer of command briefings and procedures.
- Use ICS to manage an incident or event.

Primary Audience: The intended audience(s) are response personnel at the supervisory level who are involved with emergency planning, response, or recovery efforts.

Prerequisites: IS-100.c An Introduction to the Incident Command System (ICS 100).

Course Length: 4 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-200.c

N. IS-700.B: An Introduction to the National Incident Management System

Course Overview: This course provides an overview of the National Incident Management System (NIMS). The National Incident Management System defines the comprehensive approach guiding the whole community - all levels of government, nongovernmental organizations (NGO), and the private sector - to work together seamlessly to prevent, protect against, mitigate, respond to, and recover from the effects of incidents. The course provides learners with a basic understanding of NIMS concepts, principles, and components.

Course Objectives:

- Describe and identify the key concepts, principles, scope, and applicability underlying NIMS.
- Describe activities and methods for managing resources.
- Describe the NIMS Management Characteristics.

- Identify and describe Incident Command System (ICS) organizational structures.
- Explain Emergency Operations Centre (EOC) functions, common models for staff organization, and activation levels.
- Explain the interconnectivity within the NIMS Management and Coordination structures: ICS, EOC, Joint Information System (JIS), and Multiagency Coordination Groups (MAC Groups).
- Identify and describe the characteristics of communications and information systems, effective communication, incident information, and communication standards and formats.

Primary Audience: The course is intended for a wide audience of personnel which includes government executives, private-sector and nongovernmental organization (NGO) leaders, and emergency management practitioners, senior elected and appointed leaders, such as Federal department or agency heads, State Governors, mayors, tribal leaders, and city or county officials and other individuals with emergency management responsibilities including prevention, protection, response, recovery and mitigation.

Prerequisites: none

Course Length: 3.5 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-700.b

O. IS-800.D: National Response Framework, An Introduction

Course Overview: The goal of the IS-0800.d, National Response Framework, is to provide guidance for the whole community. Within this broad audience, the National Response Framework focuses especially on those who are involved in delivering and applying the response core capabilities, including:

- Private sector partners
- Non-governmental organizations (NGOs)
- Government officials
- Community leaders

- Emergency management practitioners
- First responders

Course Objectives:

- Describe the purpose, scope, organization, and underlying doctrine of the National Response Framework.
- Describe the roles and responsibilities of response partners.
- Describe core capabilities for response and actions required to deliver those capabilities.
- Describe coordinating structures and operational planning used to support emergency response.
- Describe how the stabilization of the seven Community Lifelines reduces threats to public health and safety, or economic security.

Primary Audience: The National Response Framework is intended to provide guidance for the whole community. Within this broad audience, the National Response Framework focuses especially on those who are involved in delivering and applying the response core capabilities, including:

- Private sector partners
- Non-governmental organizations (NGOs)
- Government officials
- Community leaders
- Emergency management practitioners
- First responders

Prerequisites: Recommended: IS-0700, An Introduction to the National Incident Management System

Course Length: 3 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-800.d

P. IS-2200: Basic Emergency Operations Center Functions

Course Overview: The Basic Emergency Operations Center Functions course is designed to introduce the role, design, and function of the Emergency Operations Center (EOC) and the supportive relationship as a NIMS Command and Coordination component of the Multiagency Coordination System.

Course Objectives:

- Describe the role EOCs play in overall multiagency coordination.
- Describe the processes and procedures for activating the EOC.
- Describe the factors involved in staffing and organizing the EOC.
- Describe factors for effective EOCs.
- Identify considerations for deactivating the EOC within the context of Recovery.
- Given a scenario-based incident, utilize key EOC concepts to successfully complete the scenario.

Primary Audience: This online course is designed for a Emergency Operations Centre and is aimed at health emergency and disaster preparedness and response professionals, policymakers and partners seeking to implement and sustain Health Emergency Operations

Prerequisites: N/A

Course Length: 4 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-2200

Q. IS-120.C: An Introduction to Exercises

Course Overview: This course introduces the basics of emergency management exercises. It also builds a foundation for subsequent exercise courses, which provide the specifics of the Homeland Security Exercise and Evaluation Program (HSEEP).

Course Objectives:

- Develop a baseline knowledge of exercise fundamentals.
- Identify the tasks necessary to complete each phase of the exercise process.
- Define how exercises complete the preparedness process.
- Identify the role of exercises in validating capabilities.
- Identify phases of exercise evaluation and the improvement planning process.

Primary Audience: Emergency management and homeland security professionals who require an introduction to exercises. EM, PIO, Fire, EMS, PH, LE, PW, VOAD, Private Industry.

Prerequisites: None

Course Length: 3 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-120.c&lang=en

R. IS-137.A: Introduction to Community Emergency Response Teams (CERTs)

Course Overview: This Independent Study (IS) course is an introduction to the Community Emergency Response Team (CERT) program for those interested in learning about the CERT program for their own knowledge or as a pre-requisite for completing the CERT Basic classroom training that may be available in your community.

Course Objectives:

- Define and describe CERT program.
- Identify ways a CERT helps national resilience.
- Identify ways CERT members can help their community.
- List CERT member roles and responsibilities.

- Identify benefits of being a CERT member.
- List components of the CERT training program.

Primary Audience: Prospective CERT members

Prerequisites: None

Course Length: 2 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-317.a&lang=en

S. IS-130.A: How to be an Exercise Evaluator

Course Overview: This Independent Study course is a new offering that introduces the basics of emergency management exercise evaluation and improvement planning. It also provides the foundation for exercise evaluation concepts and practices as identified in the Homeland Security Exercise and Evaluation Program.

Course Objectives:

- Define roles and responsibilities of an exercise evaluator
- Discover the tools necessary to support the exercise evaluator for a successful exercise evaluation
- Identify the necessary tasks in conducting an exercise evaluation
- Recognize methods of analyzing exercise data.

Primary Audience: Emergency management and homeland security professionals who require an introduction to exercises. EM, PIO, Fire, EMS, PH, LE, PW, VOAD, Private Industry.

Prerequisites: IS-120.c, An Introduction to Exercises

Course Length: 2.75 hours

Cost: Free

Certification: A record of achievement certificate is awarded on completion

URL: https://training.fema.gov/is/courseoverview.aspx?code=IS-130.a&lang=en

Annexure XIII: Assessment Tool for EOC/PHEOC

Type A EOC/PHEOC Assessment Tool

(Source: WHO 2015)

Name of Assessor:	Date of Assessment:
Name of EOC/PHEOC:	
Location of EOC/PHEOC:	

Component and items	Response	Mode of Verification	Remarks
Institutional, Policy and Legal Framework			
Is there administrative sanction for the EOC/PHEOC inter alia specifying the objectives?	Y/N	Copy of sanction letter/order	
Is there Policy Group in place to provide policy guidance to EOC/ PHEOC?	Y/N	Copy of notification/ order	
Is there a Steering Committee of EOC/ PHEOC stakeholders established for planning and development of EOC/ PHEOC?	Y/N	Copy of notification/ order	
Is there any collaboration mechanism between the Ministry of Health, NDMA, Other Ministries/ Department, Civil Societies and Development Partners	Y/N	MoU, Notification/ Orders	
Is there nodal person from different stakeholder identified?	Y/N	Orders, Contact List	

Component and items	Response	Mode of Verification	Remarks
Is there any meeting held between different stakeholder for planning, coordination, and review	Y/N	Minutes of Meeting, Agenda, List of Participants	
Is there any action taken or follow up in continuation with stakeholders meeting? Whether EOC/PHEOC is aware about any of the following regulations promulgated by respective Government?	Y/N	Action taken report	
Epidemic Diseases Act (EDA) – 1897	Y/N	Details – duration and context	
National Disaster Management Act (NDMA) – 2005	Y/N	Details – duration and context	
Any state/Local bodies specific regulation	Y/N	Details – duration and context	
Planning processes and plans			
Whether strategic risk assessment has been conducted?	Y/N	Report	
If yes, has mapping of emergency resources being done?	Y/N	Report	
Whether all hazards (infectious diseases, food and water safety threats, chemical and radiological) national public health emergency management plan, addressing priority risks developed and approved?	Y/N	Copy of approved plan	Please capture the area specific hazard plan and if any gap observed may be recorded

Component and items	Response	Mode of Verification	Remarks
Whether emergency response plan for the health sector in place?	Y/N	Copy of approved plan	
Is there a COVID – 19 strategic plans developed?	Y/N	Copy of plan	
Whether roles and responsibilities for MoH and other response agencies, sectors, and jurisdiction at various levels in the response organization, including private sector and NGOs?	Y/N	Cross check with plans	
Whether response plans describe scaled levels of response with resource requirements for each level and procedures for acquiring additional resources?	Y/N	Copy of SOPs	
Whether response plans provide SOPs for administrative, financial decision making and coordinating for law enforcement?	Y/N	Copies of SOPs for specific provisions	
Microbiologist/Lab Personnel	Y/N		
Clinician – Physician/Paediatrician	Y/N		
Entomologist (In case of VBDs)	Y/N		
Veterinary Consultant (in case of Zoonotic infection)	Y/N		
Communication Expert (risk communication, media management)	Y/N		

Component and items	Response	Mode of Verification	Remarks
Implementation of EOC/PHEOC			
Whether a clear operational structure based on the IMS and comprising: I. Management II. Operations III. Planning IV. Logistics V. Finance and Administration functions is in place?	Y/N	Copy of SOP	
Incident Manager	Y/N		
RRT	Y/N		
Facility in-charge	Y/N		
Key person for IT	Y/N		
Support staff	Y/N		
Whether incident manager, Rapid Response Team (RRT), facility in-charge, key person for IT and support staff are trained?	Y/N	Proof of participation	
Incident Manager	Y/N		
RRT	Y/N		
Facility in-charge	Y/N		
Key person for IT	Y/N		
Support staff	Y/N		
What is the constitution of RRT?			
Epidemiologist	Y/N		

Component and items	Response	Mode of Verification	Remarks
Microbiologist/Lab Personnel	Y/N		
Clinician – Physician/Paediatrician	Y/N		
Entomologist (In case of VBDs)	Y/N		
Veterinary Consultant (in case of Zoonotic infection)	Y/N		
Communication Expert (risk communication, media management)	Y/N		
Whether EOC/PHEOC has the capability to generate public alerts, media scanning and conduct web surveillance?	Y/N	Number of alerts generated and responded in last one year	
Number of rumours verified and corrected in last one year	Compare with the reported outbreak through IDSP network and outbreak averted		
Whether EOC/PHEOC is IHR – 2005 compliant in term of surveillance, detection, reporting and IHR Focal Point?	Y/N	SOPs, Training for IHR, POEs and its functionality – screening and quarantine	

Component and items	Response	Mode of Verification	Remarks
Whether availability and management of logistics supply (PPEs, rapid diagnostics and laboratory supplies, drugs, halogen tablets, insecticides etc) for emergency response?	Y/N	Inventory Management	
Whether EOC/PHEOC has the capability to provide logistical and operational support for team(s) and protect the health and safety of deployed teams?	Y/N	Review of records	
Whether administrative policy has been formulated to support emergency contracting, hiring, procurement and management of available resources?	Y/N	Copy of administrative order	
Whether the EOC/PHEOC plan/ handbook for staff includes:	Y/N	Review of available records	
A concept of operations	A concept of operations		
• Map of the EOC/PHEOC workstations, rooms, and inventories of equipment • Routine staffing requirements • Standard operating procedures • Forms and templates for data collection, reporting, briefing etc. • Documentation and records management processes • Role descriptions and job aids for EOC/PHEOC functional positions			

Component and items	Response	Mode of Verification	Remarks
• Response levels and thresholds • Activation, scaling, deactivation thresholds and procedures • Contact information for key officials and EOC/PHEOC personnel • Notification and communication protocols with host agency, response organizations and partner agencies			
Whether procedures in place for credentialing and permitting access for health professionals from other jurisdictions to operate in-country?	Y/N	MoHFW/MEA/ MHA	
Whether the EOC/PHEOC has a Business Continuity Plan (Continuity of Operations Plan) which includes:	Y/N		
Priority functions that need to be maintained	Priority functions that need to be maintained		
• Key personnel that are needed to implement the plan Alternative/ backup EOC/PHEOC site(s) and relocation plans Records and data management procedures			
• Processes for maintaining critical external communications			
• Activation, notification, and deactivation procedures			
• Adequate fund allocation			

Component and items	Response	Mode of Verification	Remarks
Whether the EOC/PHEOC has IEC strategy and plan?	Y/N	IEC Plan	
Physical Infrastructure			
Whether EOC/PHEOC building is safe, approachable, earthquake resistance and has adequate space for all expected EOC/PHEOC functions?	Y/N	Certificates/ documents	
Whether there is any plan to convert any facility in EOC/PHEOC, if need be?	Y/N	Review of records	
Whether the EOC/PHEOC has • sufficient potable water supply and adequate water to address sanitary requirements • structural maintenance, janitorial and waste removal services toilet and sanitary facilities scaled for the expected occupancy approved quantity of first aid supplies • an approved fire suppression system and/or equipment a staff evacuation plan • security measures to control access • a backup site that can be activated if the primary site becomes untenable	Y/N	Review of records	
Information and Communication Technology (ICT) Infrastructure			
Whether the EOC/PHEOC has sufficient computer workstations with necessary application software loaded and tested?	Y/N	Review/ Observation	

Component and items	Response	Mode of Verification	Remarks
Whether the EOC/PHEOC servers and backups, with needed applications are maintained and routinely tested?	Y/N	Review/ Observation	
Whether the EOC/PHEOC has sufficient tested telephonic and/ or interoperable radio communications for every workstation and meeting space, with spares?	Y/N	Review/ Observation	
Whether there is tested web or video conferencing equipment in a private meeting space?	Y/N	Review/ Observation	
Whether there are sufficient printers, copiers, fax machines and scanners are maintained and functional?	Y/N	Review/ Observation	
Whether there is sufficient quantity of electricity including backup capacity (generator and fuel, UPS for critical data storage and processing)?	Y/N	Review/ Observation	
Whether the facility has an HVAC system sufficient to maintain comfort for occupants and keep IT equipment cool?	Y/N	Review/ Observation	
Information System and Data Standards			
Whether EOC/PHEOC has the capability to receive, analyse, display, report and share reports of reportable and unusual diseases and health conditions from: • Public and private sector healthcare providers and facilities • State/Districts offices and units • Veterinary and animal health sources	Y/N	Verification through IDSP	

Component and items	Response	Mode of Verification	Remarks
• Points of entry • NGOs • Other national governments and international agencies • Other arms and branches of government and Community based sources			
Whether the EOC/PHEOC is linked to a national surveillance information structure for monitoring and responding to priority risks?	Y/N	Verification through IDSP	
Whether the EOC/PHEOC has the capability to: • receive and share public health laboratory data related to outbreaks and events • receive, produce and share integrated disease surveillance program (IDSP) containing epidemiological findings and laboratory results at individual and aggregated levels • provide data analytic support for other events of public health interest (e.g. mass gatherings) • produce geospatial information such as maps and other visualizations from common operational datasets	Y/N		

Component and items	Response	Mode of Verification	Remarks
• ascertain the status and report key externalvpartner/resource information such as hospital bed availability, treatment centres, laboratories etc. • monitor the status and needs of deployed field teams and other responder personnel including assisting international support and NGOs • display contextual operational information such as population distribution, administrative and political boundaries, transportation infrastructure, hydrology and elevations			
Training and Exercise			
Whether the EOC/PHEOC has a dedicated training program based on a training needs assessment for incident management personnel that addresses staff roles during response operations; utilization of communications and data processing equipment and software; and hazard-specific response knowledge?	Y/N	Review of records	
Whether the EOC/PHEOC has a comprehensive, progressive exercise program for all staff and partners, national and NGO agencies and produces evaluation reports that identify corrective actions required?	Y/N	Review of records	

Component and items	Response	Mode of Verification	Remarks
Monitoring and Evaluation			
Whether the EOC/PHEOC training and exercise programs are primary components of a performance monitoring and evaluation system focused on continuous improvement of public health emergency management capability and effectiveness?	Y/N	Review of records	
Costing, Funding and Sustainability			
Whether the EOC/PHEOC plan includes an itemized schedule of costs?	Y/N	Review of records	
Whether there is funding plan and funding mechanism to support the EOC/PHEOC?	Y/N	Review of records	
Whether funds are available to develop and sustain the EOC/PHEOC?	Y/N	Review of records	

Key Informant Interview (KII)
Incident Manager

RRT members
Facility in-charge
Information Manager
Focused Group Discussion (FGD) with stakeholders

Type B EOC/PHEOC Assessment Tool

I. Identification Data		
1	Name of the state	
2	Location of the EOC/PHEOC	
3	Date of Assessment (DDMMYYYY)	
4	Type of Assessment	Internal/ External
5	Name of Assessors (mention designation and organization of assessor, in case of more than one assessor please mention the details for all)	
6	Name and designation of the Officer who provided information and documents for assessment and since when has been on the post?	

II. Assessment of state multisectoral multi-hazard emergency preparedness plan			
Sl No.	**Action Taken**	**Observation**	**Comments**
1	Has a strategic risk assessment been conducted? Define strategic risk assessment as identification of disaster-prone areas, vulnerable areas, and susceptible population for epidemic prone diseases	Yes/No	If yes, mention when assessment was done?
2	If yes, has a mapping of emergency resources been done? Define emergency resources	Yes/No	If yes, mention date of mapping

Sl No.	Action Taken	Observation	Comments
3	Has a mapping of internal and external public health response stakeholders at the state level and its connection with the national response framework been done? Internal means from with- in Health Department and external means other than Health Department	Yes/No	If yes, mention date of mapping
4	Has a response stakeholder engagement plan with defined public health stakeholder responsibilities been developed for the state?	Yes/No	If yes, mention when plan was developed?
5	Are the multisector health systems incorporated in the states emergency preparedness and response plan?	Yes /No	If yes, mention when plan was developed?
6	Is there a COVID-19 strategic response plan developed for the state? (This section can be modified as per current relevant health emergency)	Yes/No/NA	If yes, mention when plan was developed?
8	Has the critical state-level public health systems and programs been mapped to the state-level EOC/PHEOC?	Yes/No	If yes, mention date of mapping?
9	Are there response plans within the public health systems like through IDSP/IHIP network or Epidemic Cell?	Yes / No	If yes, mention when plan was developed?
10	If yes, do the response plans within the public health systems include emergency operational and workforce components?	Yes / No	If yes, mention when plan was developed?

Sl No.	Action Taken	Observation	Comments
11	Has a risk communication strategy been developed for the state?	Yes/No	If yes, mention when plan was developed?
12	Risk communication material for COVID-19 developed for the state in local language? (This section can be modified as per current relevant health emergency)	Yes/No	If yes, mention when plan was developed?
13	Has the risk communication strategy plan been tested?	Yes/No	If yes, mention date of testing?
14	Has the risk communication strategy plan been implemented?	Yes/No	If yes, mention the date/ duration of most recent implementation?
15	Has the state developed any public health program information sharing guidelines/ policy?	Yes/No	If yes, mention when guidelines/policy was developed?
16	Has the emergency preparedness and response plan been developed? (it would be for all hazard, and specific response plan has been already asked in S.N.5)	Yes/No	If yes, mention when plan was developed?
17	Has the emergency preparedness and response plan been tested?	Yes/No	If yes, mention date of testing?
18	Has the emergency preparedness and response plan been implemented?	Yes/No	If yes, mention the date/ duration of most recent implementation
19	Whether the emergency recovery planning incorporated into the overall response plan?	Yes/No	If yes, please review the emergency preparedness and response plan
20	Has the emergency recovery plan been tested?	Yes/No	If yes, mention date of testing

III. Assessment of EOC/PHEOC				
1. List the available manpower at EOC/PHEOC for emergency response at the state:				
Sl No.	**Manpower**	**Observation**	**If designated, kindly mention the name and designation**	**Comments**
i	Incident Manager (or equivalent)	Designated/ Not Designated		
ii	Facility Manager (or equivalent)	Designated/ Not Designated		
iii	Public communications officer (or equivalent)	Designated/ Not Designated		
iv	Key person for Planning (or equivalent)	Designated/ Not Designated		
v	Key person for Operation (or equivalent)	Designated/ Not Designated		
vi	Key person for logistics (or equivalent)	Designated/ Not Designated		
vii	Key person for admin and finance (or equivalent)	Designated/ Not Designated		
viii	Key person for IT(or equivalent)	Designated/ Not Designated		
ix	Support staff	Designated/ Not Designated		
x	Any other staff designated for EOC/PHEOC	Designated/ Not Designated		

2. List the available plans for the state at EOC/PHEOC

Sl No.	Type of plan/procedure	Observation	Comments
i	EOC/PHEOC plan/handbook for staff	Available/Not Available	If available, mention the date when it was revised
ii	Event/hazard specific response and management plan	Available/Not Available	If available, mention the events/hazards for which plan has been developed
iii	Incident action plan	Available/Not Available	If available, mention the date when it was revised
iv	Any other plan, if any	Available/Not Available	If available, please specify the plan

3. Assessment of implementation of EOC/PHEOC

Sl No.	Activity	Observation	Comments
i	Whether a clear operational structure based on the Incident Management System (IMS) comprising of management, operations, planning, logistics, and finance/ administration is in place?	Yes/No	If yes, look for organogram
ii	Whether EOC/PHEOC has the capability to generate public alerts, media scanning and conduct web surveillance?	Yes/No	If yes, look for: • Number of alerts generated and responded during last quarter/year? • Number of rumors verified during last quarter/year?

Sl No.	Activity	Observation	Comments
iii	Whether EOC/PHEOC is IHR-2005 compliant in term of surveillance, detection, reporting and focal point?	Yes/No	
iv	Whether the mechanism for logistics supply (PPEs, rapid diagnostics and laboratory supplies, drugs, halogen tablets, insecticides etc) for emergency response available?	Yes/No	If yes, look for availability of stock and supply as per need
v	Whether administrative policy has been formulated to support emergency contracting, hiring, procurement and management of available resources?	Yes/No	If yes, look for policy document
vi	Whether the EOC/PHEOC has communication strategy and plan?	Yes/No	If available, mention the date when it was revised
vii	Whether the EOC/PHEOC has communication strategy and plan have been tested?	Yes/No	If available, mention the date when it was tested
viii	Whether the EOC/PHEOC has communication strategy and plan have been implemented?	Yes/No	If available, mention the most recent date/duration when it was implemented
ix	Is the EOC/PHEOC building safe, approachable, earthquake resistant and have adequate space for all expected EOC/PHEOC functions?	Yes/No	If yes, look for relevant certification or permission
x	Does the EOC/PHEOC have sufficient computer workstations with necessary software loaded and tested?	Yes/No	Cross match with the number of staff (including surge staff) with number of available workstations

Sl No.	Activity	Observation	Comments
xi	Does the EOC/PHEOC have the capability to receive, analyse, display, report and share reports of reportable and unusual diseases and health conditions from the following sources: (Tick all applicable options)	• Public sector healthcare providers and facilities • Private sector healthcare providers and facilities • Animal healthcare sector providers and facilities • Points of Entry (PoE) • NGOs and Civil Society • Other National and International agencies • Community based sources	Please look for data flow and/or information sharing platform and mechanism
xii	Is the EOC/PHEOC linked to a national surveillance information structure for monitoring and responding to priority health risks?	Yes/No	Please look for data flow and/or information sharing platform and mechanism
xii	Is there a funding plan/ mechanism to support the EOC/ PHEOC?	Yes/No	If yes, look for relevant document such as PIP

IV. Assessment of capacity of state Rapid Response Team (RRT)	
1.	**List the available manpower for state Rapid Response Teams (RRT) (Please note that there is chances of having a single person having multiple responsibility as per resource available and need. But there must be clarity about designated roles and responsibilities):**

S. No.	Manpower	No. of personnel available	No. of persons who underwent relevant training
i	Rapid Response Team Manager (or equivalent) The EOC Manager may also play the role of the RRT Manager		
ii	Epidemiologist / Surveillance Expert		
iii	Case Management / Infection Prevention and Control		
iv	Microbiologist/Laboratory Personnel		
v	Clinician (Physician/ Paediatricians)		
vi	Veterinary Consultant		
vii	Medical Entomologist		
viii	Communication/Social Mobilization Expert		
ix	Logistics Coordinator		
x	Any other (list based on common emergencies faced in the state)		

2.	**List the available standard operating procedures for the state Rapid Response Teams (RRTs):**

S. No.	Type of plan/procedure	Observation	Comments
i	RRT recruitment and onboarding standard operating procedures	Available/Not Available	If available, look for relevant document
ii	RRT Roster and Training Standard Operating Procedures to ensure RRT is "ready"	Available/Not Available	If available, look for relevant document
iii	Pre-deployment standard operating procedures including briefing, just-in-time training, and equipment	Available/Not Available	If available, look for relevant document
iv	Deployment standard operating procedures including communication, reporting and team evolution	Available/Not Available	If available, look for relevant document
v	Post-deployment standard operating procedures including demobilization criteria, and debrief	Available/Not Available	If available, look for relevant document
vi	Guidelines/Standard operating procedures for Community Emergency Management (CEMT) Community Emergency Response Team (CERT)	Available/Not Available	If available, look for relevant document
vii	If CEMT/CERT Guidelines/ SoP available, whether it has been shared to districts for implementation?	Yes/No	If yes, please look into date of sharing with covering letter from state to districts
viii	Any other plan, if any	Yes/No	If yes, please specify the details

3.	Assessment of Implementation of Rapid Response Teams

S No.	Activity	Observation	Comments
i	Have human resources including an RRT manager been identified to support the RRT in peacetime and response at the state level?	Yes/No	If yes, look for relevant document
ii	Is there a state level Rapid Response Team roster?	Yes/No	If yes, look for available roster
iii	If yes, is the state level rapid response team roster kept up to date with yearly contact information and training updates?	Yes/No/NA	If yes, look for completeness of roster and last date of revision of the roster
iv	If yes, is the state level roster connected to the national Rapid Response Team roster?	Yes/No/NA	If yes, look for relevant document
v	Have key roles and skillset been delineated for State-level RRTs?	Yes/No	If yes, look for ToRs in relevant document
vi	Has candidate screening (for potential RRT members in case of surge) been established?	Yes/No	If yes, look for relevant document

S No.	Activity	Observation	Comments
vii	Is there a funding plan, mechanism or budget for preparedness and response operations at the state level? This may include salary, per diem, training programs, travel, equipment, vaccinations, database maintenance, etc	Yes/No	If yes, look for relevant document such as PIP
viii	Have resources been identified and procured to ensure RRT safety, health and wellbeing?	Yes/No	If yes, look for relevant document
x	Has a training curriculum been developed for RRTs? Tick all that apply	• Orientation (reporting mechanisms, reporting actors, maintaining readiness, keeping contact information up to date) • Epidemiology and surveillance • Case / Clinical Management • Infection Prevention and Control • Personal Protective Equipment • Laboratory • Risk Communication	If yes, look for relevant training manuals/ materials

S No.	Activity	Observation	Comments
		• Social Mobilization and Community Engagement • Safety and Security • Logistics • Any other (Please specify)	
xi	Have RRT Just-In-Time training and resources been identified and compiled into a resource library for common state public health emergencies?	Yes/No	If yes, look for resource library
xii	Have criteria for Rapid Response Team activation been developed?	Yes/No	If yes, look for relevant document
xiii	Have standardized Rapid Response Team reporting mechanisms including mission reports and Situation Reports been developed?	Yes/No	If yes, look for relevant document
xiv	Is there a process for improvement planning such as debriefing with the RRT?	Yes/No	If yes, look for relevant document

V. Supportive supervision and quality control

Whether internal assessment had been conducted by the state EOC/PHEOC?

(please look into quarterly internal assessment report by the state for last 3 quarters)

Whether external assessment had been conducted by the any agency (NCDC, MoHFW, CDC,WHO) in last one year? (please look into assessment report)

Number of assessments in last year:

Quarter	Yes/No	if yes, Date of Assessment	Name and Designation of Assessor	Action Taken Report
Quarter 1				
Quarter 2				
Quarter 3				

Name of the assessor, designation and organization	Yes/No	if yes, Date of Assessment	Action Taken Report

Is there any, District/Field EOC/PHEOC under state EOC/PHEOC? Yes/No

If yes, how many District have EOC/PHEOC (please mention the name of Districts where EOC/PHEOC located):

Do you have quarterly internal assessment report by the district level of EOC/ PHEOC (please look into quarterly internal assessment report by the District for last 3 quarters and mention the details of each district level EOC/PHEOC)

Is there any, District/Field EOC/PHEOC under state EOC/PHEOC? Yes/No **If yes, how many District have EOC/PHEOC (please mention the name of Districts where EOC/PHEOC located):** **Do you have quarterly internal assessment report by the district level of EOC/ PHEOC (please look into quarterly internal assessment report by the District for last 3 quarters and mention the details of each district level EOC/PHEOC)**
Name of District:

Quarter	Yes/No	if yes, Date of Assessment	Aame and Designation of Assessor	Action Taken Report
Quarter 1				
Quarter 2				
Quarter 3				

VI. Interviews with State EOC/PHEOC Officials and Staff

1.	Incident Manager or equivalent
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

2.	Facility Manager or equivalent
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:
3.	Public communications officer or equivalent
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

4.	Key person for Planning (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:
5.	Key person for Operation (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

6.	Key person for logistics (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:
7.	Key person for admin and finance (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

8.	Key person for IT(or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

VII.	**Interviews with State EOC/PHEOC Officials and Staff**	**Yes/No**
VIII.	**If yes, please mention the details**	
IX.	**Major decisions was taken after sharing the major finding to address the gap (which needs to be followed up)**	**Yes/No**
X.	**If no, please mention the reason**	

Type C EOC/PHEOC Assessment Tool

I. Identification Data		
1.	Name of the District	
2.	Name of the state	
3.	Date of Assessment (DDMMYYYY)	
4.	Type of Assessment	Internal (District Official) / External (National/State/Other)
5.	Name of Assessors (mention designation and organization of assessor, in case of more than one assessor please mention the details for all)	
6.	Name and designation of the Officer who provided information and documents for assessment and since when has been on the post?	

II. Assessment of District multisectoral multi-hazard emergency preparedness plan			
S. No.	**Action Taken**	**Observation**	**Comments**
1.	Has a strategic risk assessment been conducted?	Yes/No	If yes, mention when assessment was done?
2.	If yes, has a mapping of emergency resources been done?	Yes/No	If yes, mention date of mapping
3.	Has a mapping of internal and external public health response stakeholders at the district level and its connection with the national and District-level response framework been done?	Yes/No	If yes, mention date of mapping

S. No.	Action Taken	Observation	Comments
4.	Is there a COVID-19 strategic response plan developed for the district? (This section can be modified as per current relevant health emergency)	Yes/No/NA	If yes, mention when plan was developed?
5.	Has a response stakeholder engagement plan with defined public health stakeholder responsibilities been developed for the district?	Yes /No	If yes, mention when plan was developed?
6.	Has the critical District-level public health systems and programs been mapped to the district-level EOC/ PHEOC?	Yes/No	If yes, mention date of mapping?
7.	Are there response plans within the public health systems?	Yes / No	If yes, mention when plan was developed?
8.	If yes, do the response plans within the public health systems include emergency operational and workforce components?	Yes / No/NA	Please look into response plan to cross check
9.	Has a risk communication strategy been developed for the district?	Yes/No	If yes, mention when plan was developed?
10.	Has the District developed any public health program information sharing guidelines/policy?	Yes/No	If yes, mention when guidelines/ policy was developed?
11.	Has the emergency preparedness and response plan been developed?	Yes/No	If yes, mention when plan was developed?
12.	Are the multisector health systems incorporated in the district's emergency preparedness and response plan?	Yes / No	Please look into district's emergency preparedness and response plan

S. No.	Action Taken	Observation	Comments
13.	Has the emergency preparedness and response plan been tested?	Yes/No	If yes, mention date of testing?
14.	Has the emergency preparedness and response plan been implemented?	Yes/No	If yes, mention date/duration of most recent implementation?
15.	How is the emergency recovery planning incorporated into the overall response plan?	Yes/No	If yes, mention when plan was developed?
16.	Has the emergency recovery plan been tested?	Yes/No	If yes, mention date of testing

III. Assessment of EOC/PHEOC

1. List the available manpower at EOC/PHEOC for emergency response at the district

S. No.	Manpower	Observation	If designated, kindly mention the name and designation	Comments
i	Incident Manager (or equivalent)	Designated/ Not Designated		
ii	Facility Manager (or equivalent)	Designated/ Not Designated		
iii	Public communications officer (or equivalent)	Designated/ Not Designated		
iv	Key person for Planning (or equivalent)	Designated/ Not Designated		

S. No.	Manpower	Observation	If designated, kindly mention the name and designation	Comments
v	Key person for Operation (or equivalent)	Designated/ Not Designated		
vi	Key person for logistics (or equivalent)	Designated/ Not Designated		
vii	Key person for admin and finance (or equivalent)	Designated/ Not Designated		
viii	Key person for IT (or equivalent)	Designated/ Not Designated		
ix	Support staff	Designated/ Not Designated		
x	Any other staff designated for EOC/ PHEOC	Designated/ Not Designated		

2. List the available plans for the District at EOC/PHEOC

S. No.	Type of plan/ procedure	Observation	Comments
i	EOC/PHEOC plan/ handbook for staff	Available/Not Available	If available, mention the date when it was revised
ii	Event/hazard specific response and management plan	Available/Not Available	If available, mention the events/ hazards for which plan has been developed

S. No.	Type of plan/ procedure	Observation	Comments
iii	Incident action plan	Available/Not Available	If available, mention the date when it was revised
iv	Any other plan, if any	Available/Not Available	If available, please specify the plan

3. Assessment of implementation of EOC/PHEOC

S. No.	Activity	Observation	Comments
i	Whether a clear operational structure based on the Incident Management System (IMS) comprising of management, operations, planning, logistics, and finance/administration is in place?	Yes/No	If available, mention the date when it was revised
ii	Whether EOC/PHEOC has the capability to generate public alerts, media scanning and conduct web surveillance?	Yes/No	If yes, look for number of alerts generated and responded during last quarter/year? Number of rumors verified during last quarter/year?
iii	Whether EOC/PHEOC is IHR-2005 compliant in term of surveillance, detection, reporting and focal point?	Yes/No	

S. No.	Activity	Observation	Comments
Iv	Whether the mechanism for logistics supply (PPEs, rapid diagnostics and laboratory supplies, drugs, halogen tablets, insecticides etc) for emergency response available?	Yes/No	If yes, look for availability of stock and supply as per need
V	Whether administrative policy has been formulated to support emergency contracting, hiring, procurement and management of available resources?	Yes/No	If yes, look for policy document
Vi	Whether the EOC/PHEOC has communication strategy and plan?	Yes/No	If available, mention the date when it was revised
Vii	Whether the EOC/PHEOC has communication strategy and plan have been tested?	Yes/No	If available, mention the date when it was tested
Viii	Whether the EOC/PHEOC has communication strategy and plan have been implemented?	Yes/No	If available, mention the most recent date/duration when it was implemented
Ix	Is the EOC/PHEOC building safe, approachable, earthquake resistant and have adequate space for all expected EOC/PHEOC functions?	Yes/No	If yes, look for relevant certification or permission.

S. No.	Activity	Observation	Comments
X	Does the EOC/PHEOC have sufficient computer workstations with necessary software loaded and tested?	Yes/No	Cross match with the number of staff (including surge staff) with number of available workstations
xi	Does the EOC/PHEOC have the capability to receive, analyze, display, report and share reports of reportable and unusual diseases and health conditions from the following sources: (Tick all applicable options)	• Public sector healthcare providers and facilities • Private sector healthcare providers and facilities • Animal healthcare sector providers and facilities • Points of Entry (PoE) • NGOs and Civil Society • Other National and International agencies • Community based sources	Please look for data flow and/or information sharing platform and mechanism

S. No.	Activity	Observation	Comments
Xii	Is the EOC/PHEOC linked to a National/ State surveillance information structure for monitoring and responding to priority health risks?	Yes/No	Please look for data flow and/or information sharing platform and mechanism
xiii	Is there a funding plan/ mechanism to support the EOC/PHEOC?	Yes/No	If yes, look for relevant document such as PIP

IV. Assessment of Capacity of District Rapid Response Team (RRT)

1. List the available manpower for state Rapid Response Teams (RRT)
(Please note that there is chances of having a single person having multiple responsibility as per resource available and need. But there must be clarity about designated roles and responsibilities):

S. No.	Manpower	No. of personnel available	No. of persons who underwent training under IDSP
i	Rapid Response Team Manager (or equivalent)	Designated/ Not Designated	
ii	Epidemiologist / Surveillance Expert	Designated/ Not Designated	
iii	Case Management / Infection Prevention and Control	Designated/ Not Designated	
iv	Microbiologist/Laboratory Personnel	Designated/ Not Designated	

S. No.	Manpower	No. of personnel available	No. of persons who underwent training under IDSP
v	Clinician (Physician/Paediatrician)	Designated/ Not Designated	
vi	Veterinary Consultant	Designated/ Not Designated	
vii	Medical Entomologist	Designated/ Not Designated	
viii	Communication/Social Mobilization Expert	Designated/ Not Designated	
ix	Logistics Coordinator	Designated/ Not Designated	
x	Any other (list based on common emergencies faced in the state)	Designated/ Not Designated	

2. List the available standard operating procedures for the District Rapid Response Teams:

S. No.	Type of plan/procedure	Observation	Comments
i	RRT recruitment and onboarding standard operating procedures	Present/Absent	If available, look for relevant document
ii	RRT Roster and Training Standard Operating Procedures to ensure RRT is "ready"	Present/Absent	If available, look for relevant document
iii	Pre-deployment standard operating procedures including briefing, just-in-time training, and equipment	Present/Absent	If available, look for relevant document

S. No.	Type of plan/procedure	Observation	Comments
iv	Deployment standard operating procedures including communication, reporting and team evolution	Present/Absent	If available, look for relevant document
v	Post-deployment standard operating procedures including demobilization criteria, and debrief	Present/Absent	If available, look for relevant document
vi	Guidelines/Standard operating procedures for Community Emergency Management (CEMT) Community Emergency Response Team (CERT)	Available/Not Available	
vii	If CEMT/CERT Guidelines/SoP available, whether it has been implemented in recent past?	Yes/No	If yes, please look into number of CEMT/ CERT in place, training status of members of CEMT/CERT and other implementation indicators
viii	Any other plan, if any	Yes/No	If yes, please specify the details

3. Assessment of Implementation of District Rapid Response Teams

Sl No.	Activity	Observation	Comments
i	Have human resources including an RRT manager been identified to support the RRT in peacetime and response at the district level?	Yes/No	If yes, look for relevant document
ii	Is there a district level Rapid Response Team roster?	Yes/No	If yes, look for available roster

Sl No.	Activity	Observation	Comments
iii	If yes, is the district level rapid response team roster kept up to date with yearly contact information and training updates?	Yes/No/NA	If yes, look for completeness of roster and last date of revision of the roster
iv	If yes, is the district level roster connected to the National and state Rapid Response Team roster?	Yes/No	If yes, look for relevant document
v	Have key roles and skillset been delineated for district-level RRTs?	Yes/No	If yes, look for ToRs in relevant document
vi	Has candidate screening (for potential RRT members in case of surge) been established?	Yes/No	If yes, look for relevant document
vii	Is there a funding plan, mechanism or budget for preparedness and response operations at the district level? This may include salary, per diem, training programs, travel, equipment, vaccinations, database maintenance, etc	Yes/No	If yes, look for relevant document such as PIP
viii	Have resources been identified and procured to ensure RRT safety, health and wellbeing?	Yes/No	If yes, look for relevant document

IV. Assessment of capacity of District Rapid Response Team (RRT)

1.	Incident Manager or equivalent
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:
2.	Facility Manager or equivalent
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

3.	Public communications officer or equivalent
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:
4.	Key person for Planning (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

5.	Key person for Operation (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:
6.	Key person for logistics (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

7.	Key person for admin and finance (or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:
8.	Key person for IT(or equivalent)
	Name of officer/staff: Phone No.: Email id: Issues faced: Suggestions:

Annexure XIV: Role and Responsibilities of Departments/Stakeholders in India

(Source: NDMP 2019)

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
1.	Communication	**Lead Agencies:** MCOM, DOT **Support Agencies:** MoR, MOCI, MoD, Telecom Providers	• Detailed plans for fail safe communication with all the early warning agencies (such as IMD, CWC, etc.) and Control Rooms (Central/ State) for getting accurate information at regular intervals. • Restoration of emergency communication in disaster affected areas. • Emergency response teams to be in place with detailed technical plans to restore communication after the occurrence of a disaster. • Provide a dedicated radio frequency for disaster communications.	**Lead Agencies:** IPRD **Support Agencies:** State/UT, SDMA, RD, DMD[$], SEOC, DDMA, all other relevant Depts.	• Failsafe communication plan is prepared with all early warning agencies. • The logistic section of the state level IRT coordinates with central agencies to provide effective communication support to the field level IRTs for response. • State and district EOCs are equipped with satellite phones/VHF/ HF as a backup to the landline. • All communication equipment, especially the satellite phones, are in good working condition 24x7 on all days through regular testing.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			• Mobile communication units fitted with V-SAT terminals, VHF repeaters, reserve WT VHF Sets, portable mobile towers, etc. • Contingency plans including pre-disaster contracts with suppliers – government and private– for easy availability of resources at the time of emergency. • Operational plan for establishing temporary telecommunication facilities in the affected areas jointly with the State Government. • Secure, failsafe communication network among Central, State and other Control Rooms for exchanging reliable and authentic information about the affected areas, and resource mobilization. • Prepare, update and maintain a State wise list of HAM Operators		• Plans for communication including telephone and HAM is prepared for smooth coordination with the field level IRTs. • Establish protocols and responsibilities for coordinating with central agencies and various service providers. • Prepare, update and maintain a District wise list of HAM Operators • who could be contacted and deployed at the site of emergency. • Have binding agreements with telecom service providers to restore damaged facilities and set up temporary facilities on emergency basis. • Safety of the people who engage with the Museums / Cultural Heritage

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			who could be contacted and deployed at the site of emergency when all other modes of communication fail.		sites and Precincts.
2.	Cultural Heritage Sites, their Precincts[4] and Museums [5] - Protection and Preservation	**Lead Agency:** MoCU **Support Agencies:** MHUA, MTOU, MoLJ	• Facilitate the development of comprehensive plan for emergency response including evacuation, immediate response protocols and procedures, etc. • Mobilizing specialised support. • Assist in cataloguing and documenting damages.	**Lead Agency:** ARHD **Support Agencies:** SDMA, DMD[$], DDMA, SEOC, SDRF, F&ES, ULBs, PRIs, CUD, TOD, SPWD	• Comprehensive plan including evacuation, immediate response protocols and procedures, etc. considering the specific challenges presented by the site/precinct. • Creating an emergency team that includes the management, administrators and staff of the site or precinct as well as representatives from local stakeholders. • Identification of evacuation routes, spaces that may act as temporary refuge areas, and displaying these routes and spaces in a clear

[4]National DM Guidelines for Cultural Heritage Sites, Museums and Precincts

[5]National DM Guidelines for Museums

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
					manner as signage, maps, printed literature, etc., for wide distribution. • Identification of various kinds of emergency supplies and equipment and their storage for ease of access should be undertaken/
3.	Data Collection and Management	**Lead Agencies:** MHA, NDMA	• Maintain proper records of all the essential services needed for rescue, response and relief phases, both by the State Governments and by the Central Ministries/ Departments • Establish a sound reporting mechanism to meet the information needs of both Central and State Governments about the disaster response	**Lead Agencies:** DMD[$] **Support Agencies:** State/UT, RD, SEOC, SDMA, DDMA, Bureau of Economics and Statistics, all other relevant Departments	• Representative of SDMA works with the planning section at state level for making of Incident Action Plan (IAP) and dissemination of information. • Creation of a cell at the District level (preferably as part of DEOC) and place dedicated resources to collect/ update data on all essential services (as per the template given in the IRS guidelines) which will help during the response phase for effective reporting and compilation.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
4.	Disposal of Animal Carcasses	**Lead Agencies:** MAFW, MAHDF **Support Agencies:** MHA, MoHFW	• Provide clarity when required in following the national guidelines and international norms. • Facilitate the support from various national laboratories and institutions relevant for recording evidence and compiling data on the dead such as forensic, generic studies, etc. • If necessary, assist the state government to contain any public health challenges beyond the capabilities of the state administration.	**Lead Agencies:** AHD **Support Agencies:** State/UT, SDMA, RD, DMD[$], SEOC, DDMA, AGD, Police, all other relevant Depts.	• Adopt SOP in SDMP and DDMP as per National Guidelines[6] and implement it properly. • Activate the Animal Carcass Management Group in the IRS as per national guidelines. • Equip and train the staff in carcass removal/ disposal at pre-identified sites to ensure that no other health hazard is created both for the staff as well as the public. • Use of recommended safety kits and personal protection by the staff deployed in carcass disposal so that they are not infected. • Take measures for dispersal of financial relief as per norms

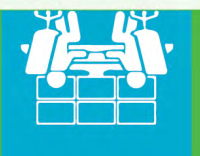
[6]National Guidelines – Management of the Dead in the Aftermath of Disasters, 2010

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
5.	Drinking Water/ Dewatering Pumps/ Sanitation Facilities	**Lead Agencies:** MDWS, MFPI **Support Agencies:** MoJS, MoRD, MoHFW, MCAFPD	• Promote strict compliance with minimum standards of relief as per Section 12 of DM Act 2005. • Assist the respective state government in providing disaster-affected areas with clean drinking water and to prevent the spread of water borne diseases. • Assist affected state to address the public health needs to prevent and mitigate a sudden outbreak of epidemic, water and food contamination as well as other public health-related problems in the aftermath of a disaster. • Arrangements with vehicle manufactures for vehicle mounted RO Systems with integrated power source and pouch facility with a condition that system should be in place	**Lead Agency:** WSD **Support Agencies:** State/UT, SDMA, RD, DMD[$], SEOC, DDMA, HFWD, CDEF, all other relevant Depts.	• Ensure strict compliance with minimum standards of relief as per Section 12 of DM Act 2005. • Provide disaster-affected areas with clean drinking water and to prevent the spread of water borne diseases. • Provide emergency water supplies when there is scarcity of potable water. • Respond to the public health needs to prevent and mitigate a sudden outbreak of epidemic, water and food contamination as well as other public health-related problems in the aftermath of a disaster. • Department of Water Resources and Drinking Water and Sanitation works with the logistic section of the state level IRT to provide effective services to the field level IRTs.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			usually within 6 hours of placing order. • Easy availability of chlorine tablets to the State Government on demand. • Arrangements with companies for providing vehicle mounted heavy duty dewatering pumps with a condition to make them available usually within 12 hours of request. • Facilitate the quick availability of hygienic portable toilets through pre-disaster agreements/ contracts with suppliers. • Facilitate the quick availability of packaged drinking water through pre-contracts with suppliers. • As per request from State/UT, assist in organizing emergency water supplies when there is scarcity of potable water.		• Necessary arrangements are made for supplying drinking water through tankers. • Arrangements with vehicle manufactures for vehicle mounted RO Systems with integrated power source and pouch facility with a condition that system should be in place usually within 6 hours of placing order. • Arrangements with companies for providing vehicle mounted heavy duty dewatering pumps with a condition to make them available usually within 6 hours of request. • Availability of hygienic portable toilets and bleaching powder through pre-disaster agreements/contracts with suppliers.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
6.	Early Warning, Maps, Satellite Data, Information Dissemination	****Lead Agencies:** See Table below for different disasters notified by GoI **Support Agencies:** Ministries and agencies as described in the relevant NDMA guideline	• Issue forecasts, alerts, warnings. • Provide early warnings (where possible) to reduce loss of life and property. • Disseminating warnings and information to all Central Ministries/ Departments/ Agencies and State Government. • Use of satellite imageries and other scientific methods for risk assessment and forecasting.	**Lead Agency:** DMD$ **Support Agencies:** State/UT, SDMA, RD, SEOC, DDMA, all other relevant Departments.	• To disseminate early warning signals to the district administration, local authorities, and the public at large in the areas likely to be affected affected by a disaster so as to reduce loss of life and property. • Dissemination of warnings and information up to the last mile. • Ensure appropriate compilation/analysis of received data. • Use of satellite imageries and other scientific methods for risk assessment and forecasting.
7.	Evacuation of People and Animals	**Lead Agency:** MHA **Support Agencies:** MoD, CAPF, MRTH, MoR, MoCI,	On request, support the affected state government in evacuation of people and animals from areas likely to be affected by major disasters.	**Lead Agency:** DMD$ **Support Agencies:** State/UT, SDMA, SDRF, RD, SEOC,	• Quick assessment of evacuation needs such as the number of people and animals to be evacuated and mode of evacuation. • Special attention to evacuation of PWD.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
		ministries/ depts. with hazard-specific responsibilities, NDRF, CDEF	**Special Situations:** • Evacuation of large numbers of people from far flung areas and islands (e.g., Andaman and Nicobar Islands, Lakshadweep Islands, etc. in cases of cyclone). • Evacuation of visitors/pilgrims stranded in remote Himalayan regions because of inclement weather, landslides, flash floods and avalanches. • Evacuation of fishermen from the high seas in case of a cyclone.	F&ES, DDMA, CDEF, all other relevant Departments.	• Mobilize transport and resources for evacuation. • Identify and prepare sites for temporary relocation of affected people and animals. • Identify requirements of resources for evacuation such as helicopters, aircrafts, high speed boats and ships to be provided to the affected State Government • Request for central resources, if needed • Coordinate with central agencies to mobilise required resources. • Monitor the situation. • Earmark resources/ units/ battalions of SDRF for quick deployment. • Prepare handbook/manuals



ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
					and SOP for evacuation for people and animals. • Undertake review and revise DMPs and SOPs after each major incident. • Prepare evacuation plan considering local conditions and periodically update it. • Undertake mock/simulation drills. • Prepare operational checklists. • Prepare list of agencies/ organizations who could assist in evacuation. • Web-based resource inventory and its regular updates.
8.	Fodder for Livestock in Scarcity-hit Areas	**Lead Agencies:** MAFW, MAHDF	• When required, mobilize fodder and cattle feed to meet shortages, as in drought or scarcity conditions.	**Lead Agency:** AHD **Support Agencies:**	• Mobilize fodder and cattle feed to meet shortages, as in drought or scarcity conditions. • Transport fodder from storage

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
		Support Agencies: MRTH, MoR	• Facilitate transport of fodder from storage facilities or distant areas to the scarcity-hit areas. • Enlist PSUs and private agencies for providing fodder and other support.	State/UT, SDMA, RD, DMD$, SEOC, DDMA, EFD, AGD, Animal Welfare Organizations	facilities or collection centres to the scarcity-hit areas. • Organize fodder resources and mobilisation centres. • Organize collection centres for fodder and cattle feed. • Enlist PSUs and private agencies for providing fodder and other support.
9.	Food and Essential Supplies	**Lead Agencies:** MCAFPD, MFPI	**Facilitate the following:** • Availability of adequate and appropriate food supplies to the disaster-affected areas • Food grains • Ready-to-eat/ pre-cooked food/ meals. • Transport with essential supplies at strategic location.	**Lead Agency:** FCSD **Support Agencies:** State/UT, SDMA, RD, DMD$, SEOC, DDMA, CDEF, all other relevant Depts.	• Dept. of Food and Civil Supply works with the logistic section of the state level IRT to provide effective services to the field level IRTs for response. • MOU with suppliers to provide food grains, ready-to-eat/ pre- cooked food/ meals, family packs of essential food provisions. • Agreements/MoUs with organisations, trusts, and firms for setting up community

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
					kitchens in the affected areas. • Depending upon the requirement, coordinate with the relevant Central Ministry to make sure that the supplies reach the site on time. • Deploy a dedicated team at the local level to receive the supplies, maintain log (manual or computerized), and distribute them at required locations. • Ensure food storage facilities have sufficient stocks and are located in relatively risk-free locations. • Supply of provisions to meet the needs of infants/ small children. • Counselling for lactating mothers. • Logistic section of the state

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
10.	Fuel	**Lead Agency:** MPNG **Support Agencies:** MoD, MoR, MRTH, MOCI	• Petrol pumps are functional and adequate petrol, oil and diesel are available to the Government for relief, rescue and general public. • Adequate supply of petrol, diesel, kerosene, and LPG Gas in the affected areas in close coordination with the State Government for general public as well as emergency responders/equipment. • Quick mobilization of fuel in hilly areas to avoid delays caused by complex supply chain to such areas.	**Lead Agency:** FCSD **Support Agencies:** State/UT, SDMA, RD, DMD[$], SEOC, DDMA, all other relevant Depts.	level IRT to coordinate with the relevant departments/ agencies to provide effective services (Ground Support Unit) to the field level IRTs for response. • Assess and make the requirement of fuel clear with the Central Ministry and coordinate the delivery of fuel through local arrangements. • Ensure sufficient availability of tankers/ other vehicles for local transportation through the relevant Department. • Establish mechanism for stocking the fuel at strategic locations with relevant agencies
11.	Housing and Temporary Shelters	**Lead Agencies:** MHUA, MORD	• Ensure strict compliance with minimum standards of relief as per Section 12 of DM Act 2005	**Lead Agency:** UDD	• Ensure strict compliance with minimum standards of relief as per Section 12 of DM Act 2005. • The logistic section of the state

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			• Assist the respective state government in the task of providing temporary, safe, hygienic and secure living spaces to meet the needs of people in disaster-affected areas. • Providing shelters/ tents to the affected population. • Setting up of relief camps and catering to the needs of the responders. • Prior and long-term tie-up with prefab shelter manufacturers/ suppliers, and tent manufacturers to provide shelters at the site usually within 24 hours of placement of orders. • Establish regional logistic facilities (covering 5 major regions in the country) that are well-coordinated with the corresponding NDRF regional unit to maintain stocks of temporary shelters, tents and	**Support Agencies:** State/UT, SDMA, RD, DMD$, SEOC, DDMA, all other relevant Departments.	level IRT must coordinate with Railways to provide effective services to the field level IRTs for response. • Alternate places for establishment of facilities as mentioned in the IRS guidelines such as relief camp, base, camp etc. are identified in advance and included in the local DM Plan. • Identify shelter suppliers for supply of tents/ shelters up to the village level and have MoUs for supply at short notice (usually less than 24 hours) as per requirement. • Stockpile tents, tarpaulins and temporary shelter material in regional warehouses/ stores/ ERCs. • Depending upon the requirement, coordinate with the relevant Central Ministry to

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			other non-food resources.		make sure that the tents/ shelters reach the site on time. • Deploy a dedicated team at the local level to receive the tents/ shelters. • Maintain logs (manual or computerized) of all material movements and details of distribution to required locations.
12.	Livestock and Other Animals: Veterinary Care, Rehabilitation and Ensuring Safety	**Lead Agencies:** MAFW, MAHDF **Support Agencies:** MRTH, MoR	• Support the setting up of livestock camps/ shelters for animals in distress due to disasters, including drought. • Support for care of animals in the camps/ shelters. • Assist State/UT in the proper management, and running of livestock camps/ shelters. • Assist in proper rehabilitation of animals. • Supplement the needs of State/	**Lead Agency:** AHD **Support Agencies:** State/UT, SDMA, RD, DMD[$], SEOC, DDMA, EFD, AGD, Animal Welfare Organizations	• Include provisions for evacuation, safety, and rehabilitation of animals in SDMP. • Set up of livestock camps/ shelters for animals in distress due to disasters, including drought. • Organize proper care of animals in the camps/ shelters. • Ensure proper management and running of livestock camps/shelters.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			UT to provide veterinary care to disaster-affected livestock, including drought-hit areas.		• Proper rehabilitation of animals. • Provide veterinary care to disaster-affected livestock, including in drought-hit areas.
13.	Management of the Dead	**Lead Agencies:** MHA, NDMA, NDRF **Support Agencies:** MoD, CAPF, MoHFW,	• Provide guidance and support depending on the type of disaster and challenges[7] faced by the State Government. • Provide clarity when required in following the recommended international practices as prescribed in relevant NDMA guidelines and international norms such as those of the IRC. • Facilitate the support from various national laboratories and institutions relevant for recording evidence and compiling data on the dead such as forensic, DNA studies, etc.		• Adopt SOP in SDMP and DDMP as per NDMA guidelines[8] and implement it properly. • Establishing Dead Body Management Group in the IRS at state and district levels as per national guidelines. • Deploy trained squads for detection and recovery of the survivors and the dead as early as possible after the event. • The recovery team will use basic personal protective kit and follow adequate precautions.

[7] NDMA Guidelines – Management of the Dead in the Aftermath of Disasters, 2010

[8] NDMA Guidelines, ibid

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			• If necessary, assist the state government to contain any public health challenges beyond the capabilities of the state administration		• Follow the protocols for the identification of the dead, recording evidence, transport and burial (i.e., disposal as per norms) • Follow protocols to maintain the dignity of the dead in all possible ways. • If required, establish temporary mortuaries with adequate facilities where it is possible. • In special cases, appropriate arrangements and relevant protocol must be followed for victims in certain types of disaster keeping in view the safety of survivors and emergency workers. • Inform the affected community by giving wide publicity to the procedure for the management of the dead. • Take urgent steps for release of

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
					ex-gratia payment. • Ensure to the extent possible ethical management of the dead, along with respect for religious and cultural sensitivities. • Deal with the psychological impacts as per the national guidelines on psycho-social support[9]. • Ensure due documentation such as inventory record of the dead, dead body identification and all relevant information as given in the national guidelines.
14.	Media Relations	**Lead Agencies:** MoIB, MHA, NDMA	• •Collect, process and disseminate information about an actual or potential disaster situation to all stakeholders so as to facilitate response and relief operations; update	**Lead Agency:** IPRD **Support Agencies:**	• Dept. of Information and Public Relations works with the Command staff as Information and media officer of the state level IRT to provide effective services.

[9] National Guidelines – Psycho-Social Support and Mental Health Services in Disasters, 2009

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
		Support Agencies: MCOM, MoST, MoES, MoJS, MoEFCC, ministries/ departments with hazard-specific responsibilities	information on disaster and disaster victims; maintain contacts with mass media; inform public regarding the impact of disaster and the measures taken for the welfare of the affected people. • Ethical guidelines for disaster coverage by media as per accepted global standards respecting dignity and privacy of the affected communities and individuals and work with media to adopt the guidelines through self-regulation as well as oversight by relevant regulatory institutions. • Mechanisms for broadcasting warnings, do's and don'ts etc. to media and public before (if applicable), during and after the disasters • Proper schedule for media briefing (once/ twice/thrice	State/UT, SDMA, RD, DMD[$], SEOC, DDMA	• Ethical guidelines for coverage of disasters are prepared and shared with all media agencies. • Plan is prepared for providing/ broadcasting warnings, do's and don'ts etc. to media and ensure its dissemination.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			daily depending on the severity of the disaster) and designate a nodal officer for interacting with media on behalf of the Government.		
15.	Medical Care	**Lead Agency:** MoHFW **Support Agencies:** MoD, CAPF, MoR	• Assess medical emergency needs (if central assistance is required) • Medical assistance to the affected state in response to its request for post-disaster emergency medical care. • Mobile Field Hospitals similar to the military field units that has trauma-care for the disaster-affected and serve as a temporary substitute for the collapsed local general medical and surgical facilities in the disaster zone. • Gradual improvement of the field hospital to conform to global standards.	**Lead Agency:** HFWD **Support Agencies:** State/UT, SDMA, RD, DMD[$], SEOC, SDRF, F&ES, DDMA, CEDF, all other relevant departments	• Assess medical emergency needs in coordination with central agencies as per situation. • Health and Family Welfare Dept. works with the logistic section of the state level IRT to provide effective services (Medical Unit) to the field level IRTs for response. • District wise repository of hospitals (both Government and Private), availability of beds, doctors, paramedics and other trained staff available along with other infrastructure details and update it on a regular basis.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			• Mobile medical care units with OT facility, power sources, dedicated trained staff of doctors, and paramedics who could be immediately summoned at the time of emergency. • Mobile medical support units stocked with medicines usually needed such as those for BP, diabetics, heart problems, common ailments, etc. as well as provisions such as: bleaching powder, chlorine tablets; nutritional supplements catering to specialized groups such as lactating mothers, elders, and children below 6 years of age. • Timely technical support to the State Governments for restoration of damaged hospitals as well as infrastructure. • Ensure strict compliance with minimum standards of relief as per Section 12 of DM Act 2005.		• Include the hospital wise information in the DM Plans at local levels. • Tie-up with the companies for easy availability of common medicines during emergency situations. • Hygienic conditions are prevalent at all times in various facilities established as well as hospitals to curb the spread of diseases. • Establishment of sound protocols for coordination between state's health Dept. and the central agencies. • Ensure strict compliance with minimum standards of relief as per Section 12 of DM Act 2005. • Plan for surge capacity in all the major hospitals in the state • Develop specialized facilities to

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			• Develop specialized facilities to handle chemical, biological, radiological and nuclear emergencies. • Strengthening of emergency departments in all hospitals under the central administration. • Mobilise Psycho-Social Support and Mental Health Services (PSSMHS) professionals, para-professionals and trained community level workers. • Assist state government in providing PSSMHS.		handle chemical, biological, radiological and nuclear emergencies. • Strengthening of emergency departments of all major hospitals in the state. • Deploy PSSMHS professionals, para-professionals and trained community level workers. • Identify those requiring immediate PSSMHS and organise PSSMHS.
16.	Power	**Lead Agency:** MPWR **Support Agencies:** MNRE, MPNG, Power generating/ distribution	• Assistance to the respective state government in repairing power infrastructure; restore power supply in the disaster-affected areas; help power companies in establishing emergency power supply Arrangements of alternate sources of power such as generator sets, solar lanterns, portable tower lights, etc. until	**Lead Agencies:** SEB, DISCOM	• Electricity Board and Power Distribution Companies work with the logistic section of the state level IRT to provide effective services to the field level IRTs for response. • Pre-disaster arrangements for quick restoration of power supply with alternate

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
		companies	resumption of normal power supply. • Arrangements with suppliers for emergency supplies usually within 24 hours of placement of order • Technical support to the State Government for restoration of power supply as well as infrastructure on request.	**Support Agencies:** State/UT, SDMA, RD, DMD$, SEOC, DDMA	mechanisms to critical facilities usually within 6 to 12 hours of placement of order • Pre-disaster agreements with central and neighbouring state governments for technical support in restoration of power supply and infrastructure. • Mobile power supply units or other arrangements with power generation companies for quick deployment at the site during emergency.
17.	Public Health	**Lead Agency:** MoHFW **Support Agencies:** MoD, CAPF, MoR	• Assess public health (if central assistance is required) • Helping to implement public health IRS. • Respond to biological emergencies. • Operating epidemiological surveillance systems.	**Lead Agency:** HFWD **Support Agencies:** State/UT, SDMA, RD, DMD$, SEOC, SDRF, F&ES, DDMA, CEDF, all other	• Activating Public Health IRS. • Assess public health needs in coordination with central agencies as per situation. • Coordinate with central agencies in case of biological emergencies • Coordinate with central agencies for epidemiological

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			• Providing laboratory support. • Managing information systems. • Providing risk communication. • Support public health logistics (drugs and vaccines), non-pharmaceutical interventions. • Support immunization, disinfection, vaccination and vector control measures.	relevant departments	surveillance • Manage public health logistics. • (drugs and vaccines), non-pharmaceutical interventions. • Carry out immunisation, disinfection, vaccination and vector control measures
18.	Relief Employment	**Lead Agencies:** MoRD, MoPR, MHA **Support Agencies:** MLBE, MoJS, MDWS, MAFW	• Provide projects to employ people seeking work in drought affected areas as a relief measure. • Provide financial support for such schemes.	**Lead Agencies:** COR **Support Agencies:** State/UT, AGD, DRD, DMD[$], SDMA, DDMA	• Provide opportunities for unskilled work in public works for people seeking work in drought affected areas as a relief measure. • Ensure quick and prompt payment of wages. • Carry out health check-up of those seeking work. • Draw from various funds

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
					including Disaster Response Fund to implement the employment schemes.
19.	Relief Logistics and Supply Chain Management	**Lead Agencies:** MHA, ministries with hazard-specific responsibilities **Support Agencies:** MoD, MoR, MRTH, MoCI, MCAFPD, MFPI, MAFW	• Provide necessary support to the disaster-affected state government for organizing logistics for the availability of relief and emergency supplies of food, medical, and non-food materials. • Support for emergency supply of food and in some cases drinking water; first aid kits; temporary shelters, relief supplies. • Make a rapid assessment of emergency relief needs in consultation with the affected state government. • Establish a mobilization. centre at the airport/railway station for the movement of relief supplies. • Deploy special transportation for the movement of relief supplies.	**Lead Agency:** DMD[$] **Support Agencies:** State/UT, SDMA, RD, SEOC, DDMA, all other relevant	• Establish a mobilisation centre at the airport/railway station for the movement of relief supplies within the state. • Deploy special transportation for the movement of relief supplies within the state. • Make arrangements to receive and distribute relief and emergency supplies received from different parts of the country. • Coordinate transportation (air, rail, road, water) with Central ministries/ departments/ agencies. • Arrange alternative means of transportation to reach relief supplies to the affected locations if normal transport

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			• Coordinate transportation of material from different parts of the country, and coordinate and provide relief supplies from neighbouring states. • Coordinate transportation (air, rail, road, water) for other Central ministries/departments/ agencies. • Locate, procure and issue resources to Central agencies involved in disaster response, and supply to the affected state • Adopt alternative means of transportation to reach relief supplies to the affected state/ district.		cannot reach.
20.	Search and Rescue of People and Animals	**Lead Agencies:** MHA, NDRF		**Lead Agencies:** DMD$	• Various positions of IRTs (State, District, Sub-division and Tehsil) are trained and activated for response at their respective administrative jurisdiction.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
		Support Agencies: MoD, CAPF, MoHFW, MHA, MRTH, MoCI, MoR, ministries/ departments with hazard-specific responsibilities, CDEF		**Support Agencies:** State/UT, SDMA, RD, SEOC, SDRF, F&ES, DDMA, CDEF, all other relevant Depts.	• SDRF teams are trained, equipped and ready to move at a short notice to the affected areas. • Strategic stationing of state-of-the-art equipment for search, rescue and response with dedicated trained manpower. • MoU is in place with suppliers for blankets, tarpaulins, tents, boats, inflatable lights, torches, ropes, etc. with a condition that they will be supplied quickly at short notice (usually within 24 hours). • Nodal officer selected for coordination is in regular touch with MHA/NDMA for additional requirements (including help from other Central Ministries). • Deploy Quick Response Teams (QRT). • Deploy Quick Medical

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
					Response Teams (QMRT).
21.	Transportation	**Lead Agencies:** MRTH, MoR, MoCI **Support Agencies:** MHA, MoD, NHAI, MoSH, NDRF, MoHFW	• Adequately address the post-disaster transportation needs to ensure that the emergency response and recovery efforts are carried out in a timely manner; restore the public transport; resumption of the movement of essential goods. • Pool heavy duty earth moving machineries, tree cutters, fork lifters and other required equipment either at strategic locations or centralized. • Quick deployment of resources and equipment for quick repairs/ restoration of roads and highways for movement of rescue and relief teams with their supplies. • Operational plans are in place to transport heavy machinery (like dewatering pumps, boats, etc.) through road in close	**Lead Agency:** TRAD Support **Agencies:** State/UT, SDMA, RD, DMD[$], SEOC, DDMA, EFD, SPWD, Airport Officer, all other relevant Depts.	• Department of Transport works with the logistic section of the state level IRT to provide effective services (Ground Support Unit) to the field level IRTs for response. • Requirement of transport for the transportation of relief material, responders are arranged. • Need of the transport of various activated section of the IRT as per Incident Action Plan is fulfilled. • Indian Railway works with the logistic section of the state level IRT to provide effective services (Ground Support Unit). • Restoration of railway tracks and functioning of railway at the earliest.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			coordination with the relevant Ministries. • Operational plans are in place for quick restoration of train services, providing additional railway wagons, containers and passenger coaches for movement of relief supplies/ rescue equipment and personnel and shifting affected population to safer places/ shifting stranded passengers in consultation with State Government. • Availability of diesel locos and drivers in disaster-affected areas where power is disrupted/ shut as a preventive measure; maintain a live roster of such emergency support systems which can be mobilized at very short notice by periodic review of readiness. • Establishment of emergency services group within the railways having staff with		• Coordinate with central govt. for transportation of relief materials. • Within and near Airports: AAI works with the logistic section of the state level IRT to provide effective services (Ground Support Unit) and also provide Nodal Officer for coordination of the relief operations. • Restoration of Airport at the earliest involving specialised response force of the central government. • Coordination with state and district administration to provide air support. • Cater to the needs of transporting affected people if required.

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			experience of working in disaster situations. • Contingency plan is in place to deploy rail coaches as makeshift shelters if required. • Activation of railway hospitals/ mobile rail ambulances to shift/ treat injured patients in consultation with the Health Ministry. • Easy availability of heavy equipment available with the Railways for search and rescue. • Plan is in place for quick restoration of airport runway and restoration of air traffic for facilitation of transport of relief teams/ supply/ equipment, stranded passengers, etc. • Control room gets activated for smooth coordination in receiving and dispatching resources and equipment in close coordination		

ESF No.	ESF	Centre	Responsibility – Centre	Sate	Responsibility – State
			with the State Government. • Availability of trained manpower for making night landing during emergencies • Availability of Air Ambulances at strategic locations with trained manpower and equipment in close coordination with the Health Department.		

(*) The emergency functions are listed alphabetically and do not imply any sequence or order of priority. Many of these are executed concurrently and not sequentially.

($) DMD-Disaster Management Department: The state government department acting as the nodal department for disaster management, which is not the same in every State/UT

Table: Nodal Ministry for Management/ Mitigation of Different Disasters		
S. No.	**Disaster**	**Nodal Ministry/ Department**
1.	Accident- Air (Civil Aviation)	Ministry of Civil Aviation (MoCA)
2.	Accidents- Rail	Ministry of Railways (MoR)
3.	Accidents- Road	Ministry of Road Transport and Highways (MRTH)
4.	Avalanche	Ministry of Defence (MoD)- Border Road Organization (BRO)
5.	Biological Emergencies	Ministry of Health and Family Welfare (MoHFW)
6.	Cold Wave	Ministry of Agriculture and Farmers Welfare (MAFW)
7.	Cyclone	Ministry of Earth Sciences (MoES)
8.	Drought	Ministry of Agriculture and Farmers' Welfare (MAFW)
9.	Earthquake	Ministry of Earth Sciences (MoES)
10.	Flood	Ministry of Jal Shakti (MoJS)
11.	Floods- Urban	Ministry of Housing and Urban Affairs (MHUA)
12.	Forest Fire	Ministry of Environment, Forests, and Climate Change (MEFCC)
13.	Frost	Ministry of Agriculture and Farmers Welfare (MAFW)
14.	Hailstorm	Ministry of Earth Sciences (MoES)
15.	Industrial and Chemical	Ministry of Environment, Forests, and Climate Change (MEFCC)
16.	Landslides	Ministry of Mines (MoM)
17.	Nuclear and Radiological	Department of Atomic Energy (DAE)
18.	Oil Spills	Ministry of Defence (MoD)- Indian Coast Guard (ICG)
19.	Pest Attack	Ministry of Agriculture and Farmers Welfare (MAFW)
20.	Tsunami	Ministry of Earth Sciences (MoES)

Source: NDMP, 2019

**Table: Central Agencies Designated for Natural Hazard-Specific Early Warnings			
S. No.	**Hazard**	**Ministry**	**Agency**
1.	Avalanches	Ministry of Defence (MoD)	Snow and Avalanche Study Establishment (SASE)
2.	Cold Wave	Ministry of Earth Sciences (MoES)	India Meteorological Department (IMD)
3.	Cyclone	Ministry of Earth Sciences (MoES)	India Meteorological Department (IMD) Regional Specialized Meteorological Centre (RSMC) Tropical Cyclone Warning Centres (TCWC) for Different Regions
4.	Drought	Ministry of Agriculture and Farmers Welfare	Central Drought Relief Commissioner (CDRC) and Crop Weather Watch Group (CWWG)
5.	Earthquake	Ministry of Earth Sciences (MoES)	India Meteorological Department (IMD)
6.	Epidemics	Ministry of Health and Family Welfare (MoHFW)	Ministry of Health and Family Welfare (MoHFW)
7.	Floods	Ministry of Jal Shakti (MoJS)	Central Water Commission (CWC)
8.	Heat Wave	Ministry of Earth Sciences (MoES)	India Meteorological Department (IMD)
9.	Landslides	Ministry of Mines (MoM)	Geological Survey of India (GSI)
10.	Tsunami	Ministry of Earth Sciences (MoES)	India National Centre for Oceanic Information Services (INCOIS)

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ADDENDUM

ADDENDUM

1 Background

This addendum addresses the alignment between the *Emergency Operations Centre / Public Health Emergency Operations Centre Development Package (EOC/PHEOC DP)* published in 2024 by the National Institute of Disaster Management (NIDM), Government of India (GoI) (NIDM, 2024) with the recently published *Guidelines for Establishment and Operation of Emergency Operations Centre (EOC)* by the National Disaster Management Authority (NDMA), GoI, published in October 2024 (NDMA, 2024). It is pertinent to highlight that the NDMA document published in 2024 focused on disaster management. While the EOC/PHEOC DP was published online after October 2024, it was finalised before the release of the NDMA Guidelines. Consequently, certain key sections covered in the NDMA Guidelines could not be included in the EOC/PHEOC DP and are summarised as follows:

a. The NDMA Guidelines comprehensively outline the roles, responsibilities, and functions of different sections, including the Planning Section (Section 6.1), Operations Section (Section 6.2), Logistics Section (Section 6.3), Administration Section (Section 6.4), and the Head of the EOC (Section 6.5). These sections include specialised branches such as the Transportation, Resources, Services, Medical, and Finance Branches, ensuring a structured approach to EOC operations. A Section/ Desk Management has been proposed in an Activated EOC.

b. Additionally, the NDMA Guidelines provide Annexures and Formats, including standardised templates for First Information Reports (FIRs), Situation Reports, and resource inventory management.

c. Another critical aspect covered in the NDMA Guidelines but not in the EOC/PHEOC DP is the establishment and operational framework of Mobile Command Centres and Backup EOCs, which are crucial for ensuring continuity of operations during large-scale emergencies.

d. The role and setup of the Incident Command Post (ICP) in coordination with EOCs is another significant component discussed in the NDMA Guidelines but not addressed in the EOC/PHEOC-DP.

e. Furthermore, the NDMA Guidelines emphasise the importance of Backup EOCs, detailing how these facilities can serve as alternate coordination centres if the primary EOC is compromised.

f. Lastly, the financial arrangements for establishing and functioning EOCs, including funding mechanisms, resource allocation, and sustainability planning, are well-articulated in the NDMA Guidelines but not covered in the EOC/PHEOC DP. These elements play a crucial role in ensuring EOCs' long-term viability and operational efficiency.

Recognising the importance of these additional elements, the second edition of the EOC/PHEOC-DP will integrate these critical aspects to ensure alignment with the Guidelines for Establishment and Operation of EOC by NDMA. This will enhance the applicability of the EOC/PHEOC-DP by providing a more comprehensive and standardised approach using guidance from the NDMA document. It may take time to prepare the second edition of the EOC/PHEOC-DP; hence, in this addendum, all these elements have been compiled. The comprehensive details may be seen in the document (NDMA 2024).

2 Sections/ Desk Management in an Activated EOC

a. All the primary functions in the EOC will be distributed among different sections/ desks to ensure accountability, proper information, assimilation and record keeping (**Figure 1**). In these guidelines, the structure proposed for EOC organisation during emergencies is that of an IRS-based structure for the following reasons:

- As the IRS structure is notified, the nominated officials know their responsibilities during an emergency.
- Also, by operating in the context of the notified IRS structure, there will be unanimity in the duties of the nominated officials, hence reducing replication of efforts.

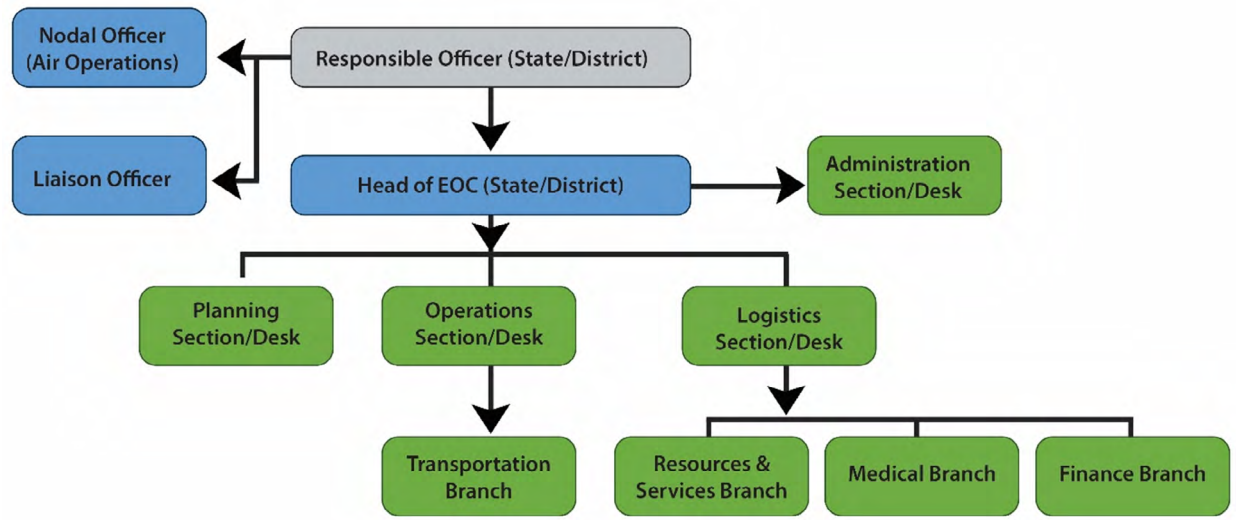


Figure 1: Sections/Desks in an Activated EOC

b. The sections/desks will be staffed by officials (as per the IRS structure of the state/ district) representing/ coordinating all concerned line departments with authority to quickly mobilise their resources, including the Emergency Support Function (ESF) teams and Incident Response Teams (IRTs) (NDMA 2010). This will also facilitate easy coordination and reporting both vertically and laterally. **Table 1** provides a brief overview of EOC Section desks and their functions.

Table 1: EOC Section desks and their functions

EOC SECTIONS/ DESKS		
	PLANNING	1. Formulation of Emergency Response Objectives 2. Preparation and updation of IAP 3. Preparation & implementation of IDP 4. Ensuring ready availability of all the relevant Data and Information 5. Monitoring 6. Reporting
	OPERATIONS	1. Operationalising Response Support 2. Procurement Listing
	➤ TRANSPORTATION BRANCH	1. Preparation of Transportation Plan 2. Organizing transportation for affected people & resources. 3. Maintaining an adequate supply of necessary transportation means and equipment 4. Ensuring receipt, safe storage and movement of relief supplies and materials. 5. Records of receipt, storage, movement and onsite disbursal of all relief materials. 6. Coordinating with private transport associations & heavy equipment owners. 7. Directing supplies distributed by donors on the ground.
	LOGISTICS	1. Planning & providing logistic support to all incident response efforts. 2. Review of all the concerned logistic plans. 3. Assessing the requirement of additional resources. 4. Updating the RO, IC and head of EOC on financial issues. 5. Provisional request for sanction of the Imprest Fund. 6. Logistic support for the IDP. 7. Documentation and payment. 8. Cost analysis of the total response activities.
	➤ RESOURCES & SERVICES BRANCH	1. Assessing search and rescue requirements as per information from the control rooms and initiating response by forwarding such information to the Operations Section. 2. Resourcing material/services and assisting the operations section, wherever necessary for relief operations. 3. Ensuring ready availability of adequate material resources at the disposal of the IC and OIC, at all times. 4. Coordinating with respective departments for the restoration of damaged infrastructure 5. Coordinating with respective departments for the construction of facilities. 6. Coordinating with NGOs & private partners for support and community participation. 7. Reporting and documenting the procurement and disbursement of the relief material received from all sources.
	➤ MEDICAL BRANCH	1. Organizing immediate response in the form of mobile medical teams comprising doctors, specialists, nurses and other support staff, from within the state (and outside if the need be). 2. Coordinating with adjoining districts for uninterrupted sourcing of medical relief items. 3. Providing post-disaster clinical care, mental health care, medical rehabilitation, and follow-up.
	➤ FINANCE BRANCH	1. Interdepartmental/intradepartmental coordination of budgets, requisitions & payments. 2. Preparation of the financial closing report of the incident 3. Issuing alerts and warnings from the EOC. 4. Ensuring all emergency time EOC functions are carried out smoothly without any hindrance. 5. Incident Closure Report 6. Receiving and recording all incoming distress calls and complaints
	ADMINISTRATION	1. Record keeping of inter- & intra-departmental messages. 2. Aiding the dissemination of Information. 3. Administration. 4. EOC Help-line Operations.

(Source: NDMA, 2024)

c. The EOC shall comprise functional sections at the state level; at the district level, the sections can be reduced to functional desks (**Figure 2**). The personnel strength of each section/desk shall depend on the scale of the incident and the state/district's administrative capabilities.

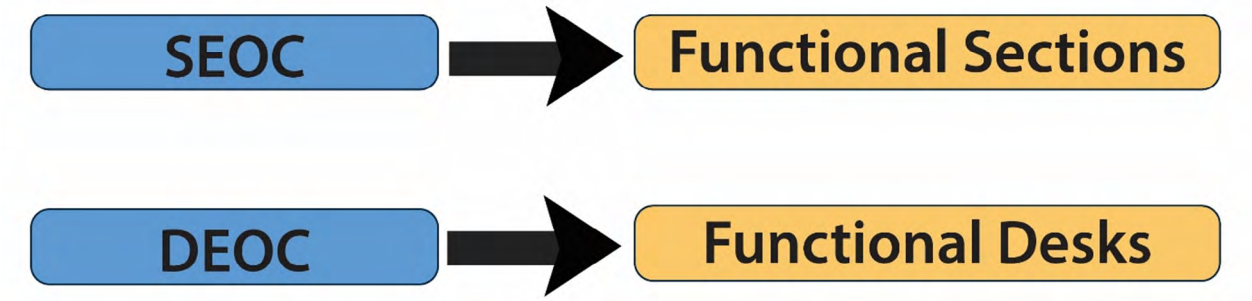


Figure 2: EOC Functional Sections and Desks at State and District Levels

2.1. Responsibilities & Functions of Planning Section/ Desk

The planning section is responsible for collecting, evaluating and displaying incident information, formulating Emergency Response Objectives (ERO), and preparing the Incident Action Plan (IAP), Demobilisation Plan and other necessary incident-related documentation. The following are the functions of the planning section:

- After thoroughly assessing the situation based on available incident information, the planning section will formulate the Emergency Response Objectives and prepare the IAP. The RO/IC will approve the ERO and IAP, which will be prepared in consultation with the Head of EOC, HRA, and other sections. The EROs and IAP shall be revised/ updated as the situation unfolds.
- Ensure that decisions taken and directions issued in case of sudden disasters before the activation of the planning section are incorporated in the IAP.
- Determine the need for any specialised resources for the incident management.
- Provide periodic projections on incident potential and report any significant changes in the incident status to the RO/ IC and Head of EOC.
- Preparation and implementation of Incident Demobilisation Plan.

a. **Ensuring the availability of all the relevant Data and Information about:**

- All the planning information, including the SDMP, DDMPs, DMPs of various line departments, etc.
- Disaster-specific data and SOPS.
- Geographical maps, GIS, and other IT support are needed to analyse the on-ground situation.

- Disaster site maps and indications on how other areas may be affected, etc.
- Information regarding approach, alternate routes, water sources, the layout of essential services that may be affected, etc.
- All other necessary contingency plans and data.
- Important telephone numbers, database on available resources, list of key persons, etc.
- Sourcing relevant data/ information as required by the EOC.

b. **Monitoring**

- Monitor and review various media reports regarding the incident that may facilitate incident planning.
- Monitoring and coordination for weather/disaster site conditions and disaster warnings through various channels, e.g. official websites as in Table 2.
- News Channels: TV and Radio.
- Social media.

Table 2: National Agencies for Monitoring, Coordination, and Dissemination of Weather, Disaster Conditions, and Warnings through official website

National Monitoring Agency	Hazards	Website link
India Meteorological Department (IMD)	Cyclones, Heat waves, Cold waves	*https://mausam.imd.gov.in/*
National Centre for Seismology	Earthquakes,	*https://seismo.gov.in/*
Central Water Commission (CWC)	Floods	*http://www.cwc.gov.in/*
Geological Survey of India (GSI)	Landslides	*https://www.gsi.gov.in/*
India National Centre for Oceanic Information Services (INCOIS)	Tsunami	*https://incois.gov.in/*
Central Drought Relief Commissioner (CDRC) Crop Weather Watch Group (CWWG)	Drought	*https://agriwelfare.gov.in/*

National Monitoring Agency	Hazards	Website link
Regional Specialised Meteorological Centre (RSMC) Tropical Cyclone Warning Centres (TCWC) for different regions	Cyclones	*https://rsmcnewdelhi.imd.gov.in/*
Defence Geo-Informatics Research Establishment (DGRE)	Snow & Avalanches	*https://www.drdo.gov.in/drdo/labs-and-establishments/defence-geoinformatics-research-establishment-dgre*

(Source: NDMA, 2024)

c. **Reporting**

- Receiving the First Information Report (FIR) from the DEOC.
- Regularly update the EOC concerning all relief operations and developments.
- Receive and document all information as required by the RO, IC or Head of EOC.
- Reporting to the RO, IC or Head of EOC on deployment and reinforcements of staff and resources.
- Identify follow-up actions and forward the information to the relevant EOC section or branch.
- Informing the subordinate levels about the changes, if any, in legal and official procedures, eligibility criteria concerning relief and compensation for loss of life, injuries, livestock, crop, houses, that are required to be adopted.

2.2. Responsibilities & Functions of Operations Section/ Desk

The Operations section/ desk will be responsible for operationalising response support (on-site), procurement listing and reporting. As the movement of relief supplies and resources needs constant coordination and tracking, a subsection for transportation will also function under the operations section for better management support. The following are the functions of the operations section/ desk:

a. **Operationalising Response Support**

- Monitoring field-level rescue and evacuation operations.
- Monitoring salvage operations.

- Supervising the organisation and distribution of relief supplies, including water and cooked food.
- Overseeing the disposal of the dead.
- Setting up and managing transit camps in accordance with the standards (NDMA 2016 & 2019b).
- Requisition of accommodation, transport and other necessary equipment for IRTs.
- Informing the District EOC (DEOC), Taluka EOC (TEOC), ESFs and IRTs about sanctions for various relief materials.
- Keeping the RO informed about the state of law and order.

b. **Procurement Listing**

Making a list of procurement items (per the requirements arising from the field), whether on purchase, hire or requisition, for relief supplies not available at the state/ district/ subdistrict levels and forwarding them to the Logistics Section for perusal.

2.2.1. Responsibilities and Functions of the Transportation Branch

The Transportation Branch will collect, move, and disburse all relief supplies and equipment on-site. In addition, it shall also oversee the movement of manpower as per directions from RO/ IC or the operations and services section (with approval from RO/ IC). The following are the functions of the transportation branch:

- Preparation of a Transportation Plan for reinforcement needs, including manpower and deployment of interdepartmental and inter-district resources, per information from subordinate EOCs/ control rooms.
- Organising transportation for the rescue party, evacuated people, medical teams and injured/sick people.
- Always maintain an adequate supply of necessary transportation means and equipment.
- Ensuring receipt, safe storage and movement of relief supplies and materials from airports, roads, railways or water transportation and supervising the associated formalities.
- Maintaining records of receipt, storage, movement and onsite disbursal of all relief materials and equipment.

- Coordinating with private transport associations for emergency requirements.
- Coordinating with private heavy equipment owners and operators for emergency requirements.
- Directing supplies distributed by NGOs and other organisations, including private donors, on the ground.

2.3. Responsibilities and Functions of the Logistics Section

The Logistics Section ensures the overall liaison and provides facilities, services, materials, equipment, and other resources supporting the incident response. It is subdivided into three subsections, i.e., the Resources & Services Branch, the Medical Branch, and the Finance Branch, to further the segregation of responsibilities. The following are the functions of the logistics section:

- Planning and providing logistic support to all incident response efforts, including developing a plan to meet the IAP's logistical requirements. The plan should be constantly updated to accommodate the anticipated logistical requirements.
- Constantly review the Communication Plan, Medical Plan and Traffic Plan to meet the changing requirements of the situation.
- Assessing the requirement of additional resources and initiating procurement.
- Keeping the RO, IC and head of EOC informed on related financial issues.
- Making a provisional request for sanction of the Imprest Fund, in case of requirement.
- Providing logistic support for the approved Incident Demobilisation Plan (IDP) and ensuring release of resources in conformity with the IDP.
- Ensuring proper documentation and payment of the hired/ requisitioned resources.
- The logistics section shall also prepare cost analysis of the total response activities and shall file the report in the incidence closure report.

2.3.1. Responsibilities and Functions of Resources & Services Branch

The Resources & Services branch will be responsible for liaising and coordinating rescue and relief operations and ensuring the availability of sufficient material resources

at disposal at all times during an emergency. The following are the functions of the resources & services branch:

a. Assessing resource requirements for search and rescue as per information from the control rooms and initiating response by forwarding such information to the Operations Section.
b. Resourcing material/services & assisting the operations section, wherever necessary, for the following:
    - Relief camps (in accordance with the standards laid down)
    - Cattle camps
    - Relief supplies to Relief Camps or Incident Command Post
    - Supplies of fodder and cattle feed to cattle camps
    - Supply of seeds, agricultural inputs and services
    - Law and order (e.g., prevent looting and theft)
    - Ensure the ready availability of adequate material resources at the disposal of the IC and OIC at all times.
    - Ensuring ready availability of adequate human resources and equipment/ tools at the disposal of the IC and OIC, at all times
    - Provide communication facilities, make a communication plan, and ensure all communication equipment works.
    - Coordinating with respective departments for the restoration of damaged infrastructure, like: roads, power, water, telephone, public buildings, bridges canals/dams/reservoirs & other structures of public utility
    - Coordinating with respective departments for the construction of facilities like:
        - Shelters with sanitation & recreation facilities
        - Temporary structures for storage
        - Educational facilities
        - Medical facilities
        - Postal facilities
        - Helipads

- Coordinating with NGOs & private partners for support and community participation through:
    - Identification and coordination of NGOs for relief activities.
    - Identification of NGOs to serve on committees, task forces and volunteers.
    - Assigning well-defined areas of operation for various private partners & NGOs.
    - Assigning specific response functions to specialized NGOs.
    - Reporting upon procurement and disbursement of relief materials received through government and non-government channels.
- Reporting and documenting the procurement and disbursement of the relief material received from all sources (NDMA 2016).

2.3.2. Responsibilities and Functions of Medical Branch

The Medical Branch will organise, coordinate, monitor and supervise all medical services and amenities during the emergency. The following are the functions of the health branch:

a. Organizing immediate response through mobile medical teams comprising doctors, specialists, nurses, and other support staff from within the state (and outside if necessary).
b. Coordinating with adjoining districts for uninterrupted sourcing of:
    - Medical relief for the injured, including medicines, equipment and personnel.
    - Number of ambulances required and hospitals where they could be sent (public and private).
    - Medical equipment and medicines required.
    - Special information required regarding treatment, e.g. pandemics/ epidemics, etc.
    - Blood.
c. Providing post-disaster clinical care, mental health care, medical rehabilitation, and follow-up.
d. Monitoring and providing specialized consultation in:
    - Treatment of injured and sick
    - Disposal of dead bodies

- Disposal of carcasses
- Preventive medicine
- Prevention and management of communicable diseases and epidemic prevention
- Reports on food, water supplies, sanitation and disposal of waste and coordinates the services of investigation laboratories for support services

e. Maintaining records of all medical services, equipment and personnel available and utilized during the situation.

f. Supervising maintenance of standards in:

- Transit and relief camps for living arrangements, cooking arrangements, sanitation, water supply, waste disposal, water stagnation, and health services.
- Storage of rations and other relief supplies.

2.3.3. Responsibilities and Functions of Finance Branch

The Finance Branch will be responsible for overall interdepartmental/ intradepartmental coordination of budgets, requisitions & payments to facilitate speedy procurement and proper accounting following financial procedures and rules. The following are the functions of the finance branch:

- Assessing the relief, search and rescue and cash compensation requirements.
- Coordinating financial matters for the establishment of relief camps.
- Maintenance of cash and disbursement receipts, issue of relief materials.
- Realisation of T.A. & D.A. of relief duty staff, daily wages, cash and credit vouchers.
- Realisation and recording of gratuitous payments and compensation paid, etc.
- Issuing of all cash and material receipts.
- Reimbursement of all expenses approved.
- Issue of cash vouchers for petrol and diesel.
- Prepare the financial closing report for the incident.
- Other miscellaneous financial matters about emergency management.

2.4. Responsibilities and Functions of the Administration Section/Desk

The Administration section/desk will facilitate interdepartmental/intradepartmental coordination, compile incident closing reports, and oversee general administration in the EOC. It shall also serve as a data bank for the response mechanism, i.e., it shall be responsible for the organisation, dissemination, and record keeping of all communications and data. The Head of EOC will supervise the section directly, and the EOC core staff will function under this section. It will also manage the EOC Help-line function. The following are the functions of the administration section/ desk:

a. Record Keeping of inter-departmental and intra-departmental messages

- Receive and send messages on behalf of the RO/ IC/ Head of EOC.
- Documenting and record keeping of all incoming and outgoing messages.
- Collect and process information received and forward it to the relevant section/ desk in the EOC.

b. Aiding the dissemination of information

- With the approval of RO/ IC, it shall brief/ regularly update the designated Information & Media officer to disseminate incident-related information to the media (TV, radio, print, and social) and community.
- It is advisable that the media centre for information sharing is not set up within the EOC to avoid unnecessary chaos or breach of security.
- It shall also document and maintain a record of all such information.

c. Administration

- Issuing alerts and warnings through various means of communications, e.g. bulk SMS, public announcements, hooter alarms and sirens, etc, from the EOC.
- The core staff of the EOC will function under this section unless directed otherwise.
- The administration will ensure the EOC's business continuity, i.e., all the EOC functions are carried out smoothly without any hindrance during emergency times. For example, the EOC should have an uninterrupted power supply, with all communication systems, equipment, and vehicles functioning properly. Additionally, the internet connectivity should be intact, and the EOC should be equipped with a sufficient supply of essential items, including food, water, stationery, and fuel.

- Note down the decisions taken and directions issued in case of sudden disasters when the IRT has not been activated and hand them over to the RO/ IC for incorporation in the IAP.
- Preparation of the duty schedule for the EOC section/ desk personnel. The duty schedule should be shared with all concerned people and displayed in the EOC.
- At the end of the emergency, the administration will collect all reports and records from the rest of the sections/ desks and compile the closing report of the incident.

d. EOC Help-Line operation

- Receiving incoming distress calls and complaints and forwarding the concern to the relevant section/ personnel.
- Maintaining a logbook to record all the information from the help-line numbers.

2.5. Role and Responsibilities of the Head of EOC

The head of the EOC is the nodal officer responsible for overall functioning and coordination in the EOC. As this is a permanent position, the head of EOC is expected to be the most aware of the situation, the affected region, the history of past emergencies, available resources and their requisition options, etc. Hence, they are a critical link between the RO/IC and the EOC sections/desks. The following are the responsibilities of the Head of EOC:

- Facilitating the overall functioning of the EOC and ensuring that all the sections work in tandem without conflict.
- Assist and advise the RO/ IC and contribute to formulating EROs, IAPS, and IDPS.
- Overseeing and advising in the preparation of other related plans, e.g. transportation plan, medical plan, communication plan, etc
- Ensuring that actions taken before the IRS is initiated are accounted for and included in the IAP.
- Ensure the ready availability of all documents (Maps, DMPs, SOPs, etc.) and databases from the EOC library.
- Ensuring business continuity and self-sustenance in the EOC for extended periods during an emergency.
- Coordinates logistics of VIP and visitor orientations and briefings.
- Perform any other duties assigned by the RO.

3 Backup EOC

It is always desirable that an alternate or Backup EOC is also established. The Backup EOC should be almost a mirror image of the primary EOC and serve as a backup to handle any eventuality, should the primary EOC be rendered non-operational due to any accident, disaster or other reason. The primary EOC may be established at the state's nodal agency, which is responsible for emergency management since it is the focal agency. The backup EOC may be at another location and be used during non-disaster times as a training centre for the main EOC operations. The Backup EOC should be equipped to perform the same basic capabilities as the primary EOC, but may not require the complete set of features. However, the following points must still be considered:

a. The Backup EOC should consider the same site selection criteria as the primary EOC. The Backup EOC should be capable of accommodating the same security levels as the primary EOC.
b. A separate Risk Analysis should be performed for the Backup EOC. This assessment will determine the level of protection required for this EOC, which may differ from the primary EOC location. The Risk Analysis should consider the alternate facility's different asset value and the likelihood of the alternate location being impacted by the same incident in determining the level of protection and acceptable level of risk for the alternate location.
c. The requirements for structural, building envelope, interior construction, mechanical systems, electrical systems, water sources, life safety, shock mounting, security, and communications distribution may be adjusted to reflect the threat severity level and functional capability as determined necessary for the Backup EOC.
d. The Backup EOC should be capable of performing the same communications functions as the primary EOC.

4 Mobile Command Centres

Mobile Command Centres are vehicles with prepackaged equipment that can be moved or relocated wherever required in response to an emergency incident. A mobile unit with monitoring and communication capabilities greatly enhances an EOC's ability to relocate without seriously degrading its coordination and control functions (**Figure 3**).

The Mobile Command Centre should have the following capabilities:

- It should be equipped with basic communications equipment, computers and video display systems to provide support similar to that of the primary EOC.
- It should be of sufficient size to accommodate the equipment and personnel.
- The equipment on the Mobile Command Centre should be interoperable with EOC systems in fixed facilities.
- The Mobile Command Centre should be maintained in readiness. It should be self-propelled or transportable without special equipment and capable of travelling over public roadways, including unimproved roadway surfaces.



Figure 3: Mobile Command Centre from outside and inside

5 Incident Command Post (ICP)

The Incident Command Post (ICP) is the physical location of the tactical-level, on-scene incident command and management. It can be located with other incident facilities like the Incident Base. For the initial location of the ICP, the nature of the incident, whether it is growing or moving, and whether the ICP location will be suitable in size and safe for the expected duration of the incident should be considered. Larger and more complex incidents will require a larger ICP.

The ICP can be in a vehicle/ trailer (like a mobile command centre) or a tent. However, it should have adequate space to accommodate equipment and personnel, lighting, effective communication systems, and other such facilities so that it can function effectively.

General guidelines for establishing the ICP (NDMA, 2019b):

a. Position away from the general noise and confusion associated with the incident;

b. Position outside the present and potential hazard zone;

c. Position within view of the incident, when appropriate;

d. Have the ability to expand as the incident grows;

e. Have the ability to provide security and to control access to the ICP as necessary;

f. Should have a distinctive banner or sign to identify the location.

6 Workflow for Officials at EOC

The following is a flow chart depicting the general workflow for EOC officials during emergencies. The EOCs shall adapt this flow chart to their mechanisms (**Figure 4**).

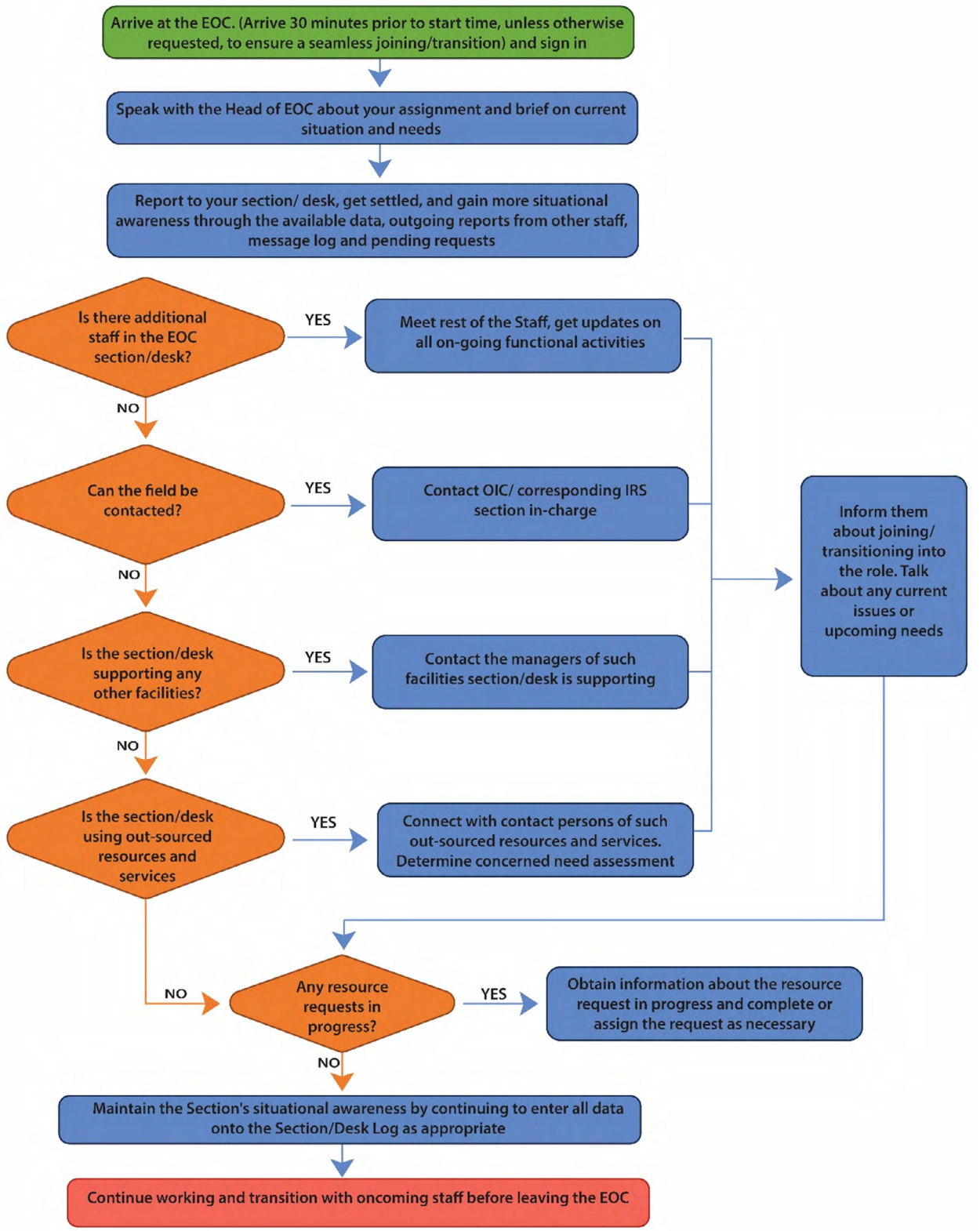


Figure 4: General workflow for Officials in EOC

7 List of Documents to be Maintained in the EOCs

S. No	Documents
1.	MAPS I. Political Map of the jurisdiction II. Physical Map of the jurisdiction III. Topographical Map of the jurisdiction IV. Maps of Disaster-Prone Areas in the jurisdiction V. Demographic Map of the jurisdiction VI. Any other relevant thematic maps
2.	SOPs I. SOP of the EOC II. SOP for EWS III. SOP for declaration of emergency IV. SOP for mobile command centres V. SOP for functional continuity of EOCs during emergency (must include list of items needed for self-sustained operations in the EOC for 03 to 07 days as per the case-specific requirements)
3.	PLANS I. National Disaster Management Plan 2016 & 2019 II. Disaster Management Plan of the State III. Disaster Management Plan of the District IV. Disaster/ Crisis Management Plans of various line departments

S. No	Documents
4.	DATA I. HVRA profile of the Jurisdiction II. Records of past disasters III. Demographic data of the jurisdiction IV. Climate data of the jurisdiction V. Land-use planning data of the jurisdiction VI. Infrastructural data of the jurisdiction VII. Resource inventories

8 Sample Emergency Support Function (ESF) Plan

ESF	Purpose & Scope	Primary Agency	Support Agency
ESF # 1 Transportation	Transportation provides support by assisting governmental entities, voluntary organizations, nongovernmental organizations, and the private sector in the management of transportation systems and infrastructure during response to actual or potential incidents.	State Transport Department, Road Transport Corporation, Railways, Directorate of Shipping	Private operators, Armed Forces, Private Airlines & Shipping/ Ferry operators
ESF # 2 Communications	Communications supports the restoration of communication infrastructure, coordinates communications support to response efforts, facilitates the delivery of information to emergency management officials, decision makers and ssists in the stabilisation and re-establishment of systems and applications during incidents.	State Telecom Department	Police Wireless Department, Private Telecom Service providers, MTNL, BSNL, HAM & Community Radio Operators, Armed Forces
ESF# 3 Public Works	Public Works and Engineering coordinates and organizes the resources of the Government to facilitate the delivery of multiple core capabilities in the disaster impact zone.	State PWD	State Electricity Department, Water Supply & Irrigation Department, State Road Development Corporation, NHAI

ESF	Purpose & Scope	Primary Agency	Support Agency
ESF #4 Fire Services	Fire Services Department provides Govt support for detecting and suppressing fires resulting from, or occurring coincidentally with, an all-hazard incident requiring a coordinated response for assistance.	State Fire & Rescue Services Department	SDRF, Central Agencies, Armed Forces, PSUs, Industry
ESF #5 Information Management	Collection, analysis, processing, and dissemination of information about a potential or actual incident	EOCs, Police (Wireless & ERSS) Control Rooms of State & Central Agencies & line Departments	Armed Forces, Industry, Ports & Airports, State IT & Communication Department
ESF #6 Mass Care & Emergency Assistance	Temporary Housing, Emergency Assistance and Human Services coordinates and provides life-sustaining resources, essential services to people in impact zone, relief camps & shelters	Revenue Department, Local Bodies, PRI, Police	NGOs, Community & Self-help Groups, HG&CD, NCC & NSS
ESF # 7 Logistics, Food & Civil Supplies	Logistics integrates whole community logistics incident planning and support for timely and efficient delivery of supplies, equipment, services, and facilities. It also facilitates comprehensive logistics planning, technical assistance, training, education, exercise, incident response, and sustainment	State Food & Civil Supplies Department, Revenue Department	PWD, Electricity Department, Department of Agriculture, Animal Husbandry, NGOs, Private contract Suppliers

ESF	Purpose & Scope	Primary Agency	Support Agency
ESF #8 Public Health and Medical Services	It provides the mechanism for assistance to supplement local resources in response to a disaster, emergency, or incident that may lead to a public health, medical, or human service emergency, including those that have international implications.	State Medical and Health Services Department	Armed Forces, Private Hospitals & Institutions and service providers
ESF #9 Search and Rescue (SAR)	It deploys govt. SAR resources to provide lifesaving assistance during actual or potential disaster incidents.	State Fire & Rescue Services, State Disaster Response Force, EOCs	Police, Armed Forces, NDRF, CAPFs & other Central Agencies, NCC & NSS, Aapada Mitras
ESF #10 Oil and Hazardous Materials Response	It provides Govt support in response to an actual or potential discharge, spill and/or release of oil or hazardous or noxious substances and materials when it happens.	Fire Services, State Pollution Control Board, DISH, Dept of Industries/ Factories & Boilers, District & Local Administration	Armed Forces, Private contractors & waste management service providers, Central agencies & institutions

ESF	Purpose & Scope	Primary Agency	Support Agency
ESF #11 Energy	It provides support to entities by coordinating government and the private sector capabilities, services, technical assistance, and engineering expertise during disasters and incidents that require a coordinated response. The term "energy" includes producing, storing, refining, transporting, generating, transmitting, conserving, building, distributing, maintaining, and controlling energy systems and system components. It includes power & fuel supply, distribution network.	State Power Corporations, Electricity Department	Private power generation and distribution companies, Oil & Gas marketing companies
ESF #12 Public Safety and Security	Law & order assistance to people, Govt., organizations overwhelmed by the results of an actual or anticipated natural/ manmade disaster	State Police	Civil Defence & Home Guards, NGOs, NCC, NSS, CAPFs
ESF # 13 Emergency Shelter & Housing	Temporary shelter to affected people in relief camps, shelters, community halls etc.	Revenue Department. Local Governing Bodies, Education Department, Department of Social & Family Welfare, Child Development	NGOs, Self-help & community groups, private Institutions and welfare organisations

ESF	Purpose & Scope	Primary Agency	Support Agency
ESF #14 Critical Infrastructure	It supports the coordination of cross-sector operations of essential and utility services, including stabilisation of key supply chains and community lifelines, among infrastructure regulators, operators and businesses.	State and Central Govt entities, PSUs, essential services & public utility providers in public & private sectors.	Central Agencies, Armed Forces, CAPFs
ESF # 15 Water Supply & Sanitation	Provision of water supply to the affected population & relief camps, shelters, etc. Sanitation & waste removal & disposal services	Local Governing Bodies, PWD, Water Supply Department	Private contractors & service providers
ESF # 16 NGOs & Volunteer Support	Mobilisation of NGOs, volunteers and facilitating relief material, services & donations, support to disaster response & relief operations	State Social Welfare Department, Local Governing Bodies, District & Local Administration	Revenue, Education, Public Affairs Department, NGOs

(Source: NDMA, 2024)

9 Format - First Information Report

(To be sent to SEOC, Director DM, without delay during the early hours of disaster occurrence, based on whatever information is available) (NDMA, 2024)

To

Officer-in-Charge State EOC

Director, State Disaster Management

Incident Details

1. Nature of incidence
2. Date & time of occurrence
3. Location & area of impact
4. Number of fatalities, injuries, missing, and trapped
5. Disruption/impact to community lifelines and critical supply chains (Transport, Road, Rail & Air connectivity, Power, Communications, Food, Water & Sanitation, Safety & Security, Health & Medical)
6. Description of "At-Risk Population"
7. Description of first response actions and resources available on-site
8. Damage to property
9. Impact on critical infrastructure
10. Impact on hazardous material (HAZMAT) facilities, lingering or potential hazards
11. Lifesaving and life-sustaining needs, including the need for mass care, emergency assistance, medical aid & temporary shelter, search & rescue teams
12. Any other relevant information

Officer-in-Charge District EOC/Incident Commander

Copy to: District Responsible Officer (District Collector)

10 Format of Situation Report

(To be filled in by the Village/Block Officer)

Name of the Taluk/Tehsil: Date of Report: DD/MM/YYYY

S. No	Damages	Quantum of Damage/ Nos		Action Taken
1.	Loss of Human Lives	Men		
		Women		
		Children		
2.	No. of Injured	Men		
		Women		
		Children		
3.	Housing Damage			
	Fully Damaged	Pucca		
		Kutcha		
	Partially Damaged	Pucca		
		Kutcha		
	Severely Damaged	Pucca		
		Kutcha		
4.	Damaged / Destroyed Huts			
5.	Areas Impacted			
6.	No. of People evacuated / to be Evacuated			
7.	No. of Relief Camps opened			
8.	No. of Food Packets served / Distributed			
9.	Damage of Trees			
10.	Damage of Electric Poles / Lines			

S. No	Damages	Quantum of Damage/ Nos		Action Taken
11.	Damage to Roads			
12.	Damage to other infrastructure e.g. Channels / Tanks / Bunds/ Embankments			
13.	Damage to Drinking Water Supply			
14.	Damage to Govt. Buildings			
15.	Crop Damage (if applicable)			
16.	Loss of Live Stocks (including mulch animals, goats, horses, poultry etc.)			
17.	No. of Livelihood peripherals damaged			

(Source: NDMA, 2024)

(Signature)

Name:

Designation:

11 Format for Resources Inventory

S. No.	Men/Material/equipment/ Services Description/specification	Qty in Nos	Qty in Wt./ Vol.	Availability Locatio
	Manpower			
	Services			
	Material & Stores			
	Equipment			
	Specialised Response Teams			

(Source: NDMA, 2024)

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