2025

PROVINCIAL HEALTH EMERGENCY PREPAREDNESS AND RESPONSE PLAN

MADHESH PROVINCE

Madhesh Province Government
Ministry of Health and Population
Health Directorate

Acknowledgement

The Provincial Health Emergency Preparedness and Response Plan (PHEPRP) for Madhesh Province represents a significant milestone in strengthening the province's capacity to prevent, detect, and respond to public health emergencies. Building on lessons learned from past events, particularly the COVID-19 pandemic, the plan provides a comprehensive framework to enhance multisectoral coordination, risk communication, surveillance, laboratory systems, logistics, and overall emergency response capacities at both provincial and local levels. It marks an essential step toward ensuring that Madhesh Province is better equipped to anticipate, prepare for, and respond to the wide range of public health threats encountered each year.

Madhesh Province is geographically and ecologically diverse, experiencing recurring seasonal hazards and disasters such as floods, landslides, epidemics and climate-induced events. These recurrent emergencies continue to challenge the health system's resilience and require robust preparedness measures. The systematic identification and prioritization of major hazards combined with an assessment of their likelihood and potential impact have informed the province's risk profile and seasonal risk calendar, which together form the foundation for the development of this preparedness and response plan.

The PHEPRP has been developed through extensive collaboration with stakeholders across both health and non-health sectors and is grounded in existing provincial and national acts, regulations and frameworks. It clearly defines the roles and responsibilities of key components of the provincial health emergency architecture, including the Rapid Response Committee, Rapid Response Teams, hospitals, laboratories, and other essential entities.

I extend my sincere gratitude to all who contributed to the preparation and development of this plan. Your collective efforts reflect a shared commitment to safeguarding the health and well-being of our population. I would also like to express appreciation to the World Health Organization for its technical assistance and to The Pandemic Fund for its financial support, without which this plan would not have been possible.

I am confident that this plan will serve as a practical and guiding framework for strengthening preparedness and response capacities across Madhesh Province. By enhancing early warning systems, strengthening surge capacity and improving coordination mechanisms, this plan will support a more resilient and responsive provincial health system in the years to come.

Saroj Chandra Neupane
Director

निर्देशक

मधेश प्रदेश सरकार
स्वास्थ्य तथा जनसंख्या मन्त्रालय
स्वास्थ्य निर्देशनालय

List of Abbreviations

DHM	Department of Hydrology and Meteorology
DRRMA	Disaster Risk Reduction and Management Act
EDCD	Epidemiology and Disease Control Division
EMT	Emergency Medical Team
EMTOC	Emergency Medical Team Operational Committee
EWARS	Early warning and reporting system
FETP	Field Epidemiology Training Programme
HEOC	Health Emergency Operations Center
HEDMU	Health Emergency and Disaster Management Unit
HOPE	Hospital Preparedness for Emergencies
ICS	Incident Command System
IHR	International Health Regulations
LDCRP	Local Disaster and Climate Resilience Planning
MoHP	Ministry of Health and Population
NPHL	National Public Health Laboratory
PAHA	Phased All-Hazard Approach
PHD	Provincial Health Directorate
PHEOC	Provincial Health Emergency Operation Center
PHLMC	Provincial Health Logistic Management Center
PHTC	Provincial Health Training Center
PPHL	Provincial Public Health Laboratories
RCCE	Risk Communication and Community Engagement
RRC	Rapid Response Committee
RRT	Rapid Response Team
STAR	Strategic Toolkit for Assessing Risks
WHO	World Health Organization

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1. Introduction

1.1 Background

Madhesh Province, one of the seven provinces of Nepal, is geographically diverse with distinct fertile plains, along with dense population, and significant agricultural productivity. However, the province remains highly vulnerable to a range of natural and human-induced hazards, such as floods, drought, heat wave, cold wave, disease outbreaks, road traffic accidents, water shortage, wildfire, tornado, thunderstorm, and including landslides in some hilly areas. Some emergencies emerge rapidly and are short-lived, while others develop slowly and cause prolonged disruptions to healthcare delivery, the health system, and broader social and economic structures.

Public health emergencies, regardless of their origin, often result in increased morbidity and mortality, disruption of essential health and social services, displacement of populations, and economic setbacks. With increasing frequency and severity of climate-related and other complex emergencies, the need for a coordinated and structured approach to health emergency preparedness and response is becoming more critical.

The Provincial Health Emergency Preparedness and Response Plan for Madhesh Province has been developed as a strategic and operational tool to enhance the province's readiness and resilience to public health emergencies.

1.2 Purpose of the Plan

The purpose of this plan is to enhance the capacity of Madhesh province to mitigate, prepare, detect, respond and recover from public health emergencies through timely and coordinated multisectoral action. It provides a structured framework for health emergency preparedness and response.

1.3 Objectives

- To identify and prioritize potential public health emergencies and health impacts of disasters relevant to Madhesh Province.
- To define clear roles, responsibilities, and coordination mechanisms among all stakeholders at provincial, districts, and local levels.
- To strengthen multisectoral collaboration, coordination and dissemination of information.
- To develop a unified online platform for emergency related information sharing among multi sectors (health, security, local government, humanitarian partners, civil society and other relevant stakeholders).

- To strengthen health systems for emergency response including surveillance, early warning, risk assessment, risk communication and community engagement, logistics and human resource mobilization.
- To ensure effective implementation of preparedness and response activities through a Phased All-Hazard Approach (PAHA).

1.4 Scope

This plan covers all hazards with potential public health impacts in Madhesh Province. It outlines procedures for mitigation, preparedness, response, and recovery at the provincial level. The plan is designed to complement federal and local emergency plans and aims to ensure smooth coordination among all three tiers of government

1.5 Guiding Principles

- **Risk reduction:** Focus on minimizing the risk and vulnerability before a health emergency occurs.
- **All-hazard approach**: Recognizes and prepares for a broad spectrum of emergencies including natural, biological, and technological events through early warning systems.
- **Whole-of-society engagement**: Encourages coordinated and inclusive action across sectors, agencies, and communities to ensure a unified response.
- **Equity and inclusion**: Prioritizes the protection of vulnerable and marginalized populations to ensure no one is left behind in mitigation, preparedness, response and recovery efforts.
- **Evidence-based action**: Use surveillance data, risk assessments, and scientific evidence to guide decision-making.
- **Transparency and accountability**: Promotes regular public updates, clear communication and tracking of resources used
- **Resilience-building**: Strengthens the capacity of the health system and communities to anticipate, withstand and recover from health emergencies.

2. Context

2.1 Provincial Information

2.1.1 Demographic and geographic situation

Madhesh Province, established Nepal's Constitution on September 20, 2015, is the country's smallest province, covering an area of 9,661 square kilometers with a population of approximately six- million. It holds the highest population density in the nation, with people per square kilometer. Geographically, it is situated in the central Terai region, the southern part of Nepal, bordered by the Sapta-Koshi river (Koshi province) to the east, Chitwan National Park to the west, Bagmati Province and koshi province to the north, and the state of Bihar, India to the south. The capital city of Madhesh Province is Janakpurdham, known for its religious and cultural significance. The province is administratively divided into 59 Rural Municipalities, 73 Municipalities, 3 Sub-Metropolitan Cities, and 1 Metropolitan City.

Madhesh Province is often characterized as flat plains of Terai, Bhabar, and Chure in the north, with an international border with India to the south. It consists of eight districts from east to west: Saptari, Siraha, Dhanusha, Mahottari, Sarlahi, Rauthat, Bara, and Parsa respectively. The main rivers in the region include SaptaKoshi, Bagmati, Kamala,charnath,jalad, Lakhandai, Balan, Bakaiya, and Ratu Bighi. The province is home to the country's largest industrial estate and customs point, Birgunj, contributing significantly to the nation's customs revenue. There are many religious gatherings in this province, such as Chhath, Biwah Panchmi, Gadhi Mela, Shiva Ratri, and many more. It also experiences significant cross-border movement due to its open border with India.

Madhesh Province is a major producer of agro-products, serving as a key source for food commodities. The economy is predominantly agrarian, with a significant portion of the population engaged in farming. However, poverty eradication remains a significant challenge for the province. The lack of economic opportunities outside subsistence sectors has led to a substantial outflow of the young population, negatively impacting the labor-dependent economy. The agriculture sector faces challenges such as a shortage of labor and a sharp increase in wages. Deforestation in the Chure and Bhabar regions has led to increased river siltation, diminishing water recharge rates, and consequently, low storage of groundwater across all districts in the province. This ecological depletion poses additional challenges to sustainable development and environmental conservation in Madhesh Province.

Climatically, Madhesh Province experiences a tropical to subtropical climate, with distinct seasonal variations. Summers, lasting from March to June, are extremely hot and dry, with temperatures often soaring above 40°C, particularly in May and June, leading to frequent

heatwaves that severely affect public health and agriculture. The monsoon season extends from June to September and brings heavy rainfall, with average annual precipitation ranging between 1,000 to 2,500 mm. While the rains are crucial for agriculture, they also result in recurring floods, river overflows, and waterlogging in several low-lying areas, especially in districts such as Saptari, Siraha, and Rautahat. The post-monsoon season (October to November) offers a short window of mild and pleasant weather before transitioning into the winter season, which lasts from November to February. Winters are cool with temperatures dropping to around 8°C or lower in some areas, accompanied by fog, cold waves, and poor visibility, which affect transportation and health, particularly among vulnerable populations like the elderly, children and physically disabled.

These hazards pose significant risks to livelihoods, infrastructure, food security, and health services. Given its flat terrain, dense population, and growing urbanization along major highways like the Mahendra Highway, Madhesh Province faces unique challenges in climate resilience, disaster preparedness, and sustainable development planning.

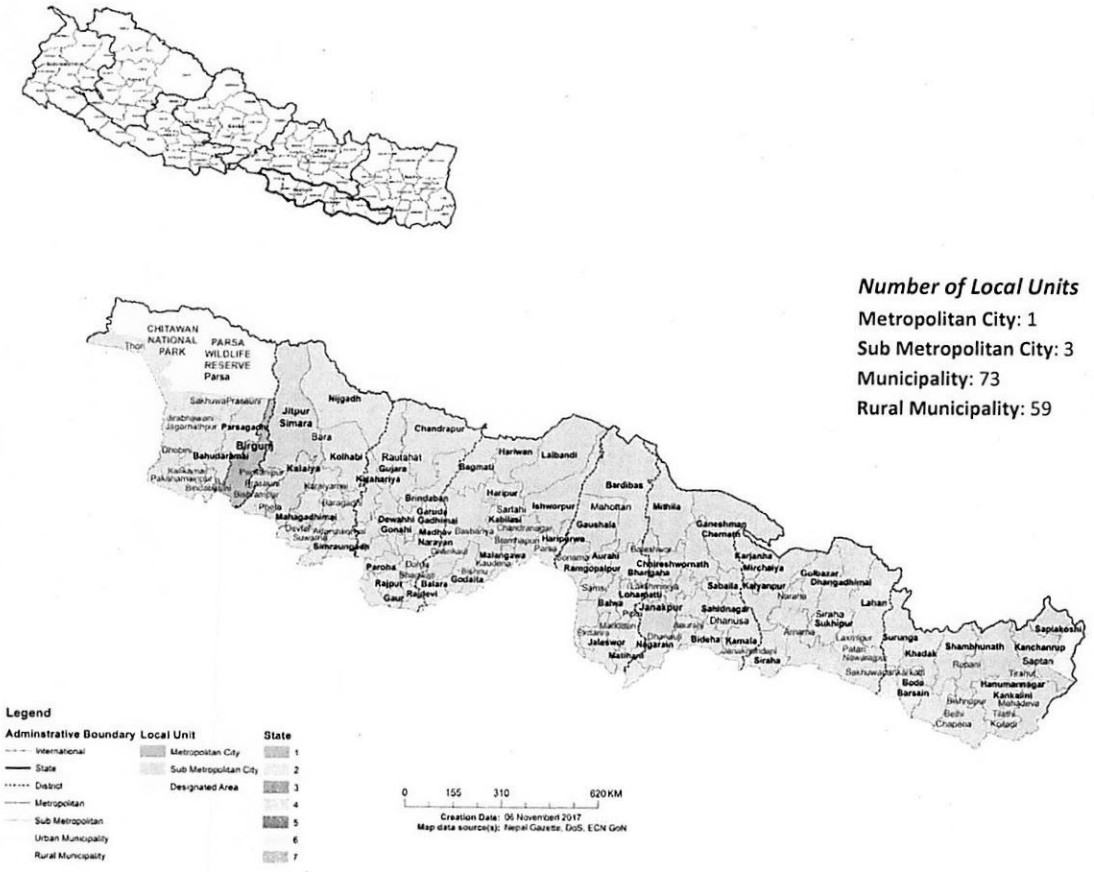

Figure 1. Map of Madhesh Province showing administrative regions

Table 1. Number of households, population by sex, average household size, sex ratio, population density and annual population growth rate, NPHC 2021

Area	Number of households	Population			Average household size	Sex ratio	Population density	Population in NPHC 2011	Annual growth rate* (%)
		Total	Male	Female					
Madhesh	1156715	6114600	3065751	3048849	5.29	100.55	633	5404145	1.19
Saptari	146854	706255	351368	354887	4.81	99.00	518	639284	0.96
Siraha	148571	739953	363724	376229	4.98	96.68	623	637328	1.43
Dhanusa	177143	867747	429893	437854	4.90	98.18	735	754777	1.31
Mahottari	137902	706994	349159	357835	5.13	97.58	706	627580	1.14
Sarlahi	164893	862470	435131	427339	5.23	101.82	685	769729	1.09
Rautahat	137032	813573	408403	405170	5.94	100.80	723	686722	1.63
Bara	131240	763137	389787	373350	5.81	104.40	641	687708	1.00
Parsa	113080	654471	338286	316185	5.79	106.99	484	601017	0.82

Source: National Population and Housing Census 2021

2.1.2 Historical Emergency Data

Over the past 10 years, Madhesh Province has faced a variety of public health emergencies and natural disasters. Notable health-related events have included outbreaks of dengue, seasonal influenza, cholera, heat wave, and COVID-19. In addition, the province has experienced localized food- and water-borne disease outbreaks.

Natural disasters such as floods, drought, earthquake, severe winter, and road traffic accidents have been frequent, affecting multiple districts. These events have often resulted in casualties, infrastructure damage, and disruption of health services.

This historical context underlines the importance of strengthening health emergency preparedness and response systems to address both endemic and emerging threats in a timely and effective manner.

Table 2. Summary of Key hazards in Madhesh province from 2015-2025

Hazard	Year of Occurrence	Location	Affected Sector
Earthquake	2015	Epi center Gorkha	All sector
Floods	2017	Madhesh Province	All sector
Bara Tornado	2019	Pheta Rural Municipality	All sector
Monsoon floods	2020	Madhesh Province	All sector
Covid-19	2020 to 2022	Madhesh Province	All sector
Cholera outbreak	2021	Saptari	Health sector
Floods Lalbakaiya	2023	Rautahat	All sector
Floods Bagmati river	2024	Balara Sarlahi	All sector
Cholera outbreak	2024	Rautahat Rajpur	Health sector
Malaria outbreak	2024	Balara, Sarlahi	Health sector

Dengue Outbreak	2017	Bardibas Municipality	Health sector
Cholera Outbreak	2015	Rautahat, Chandranigahpur	Health Sector

2.2 Health System Organization

2.2.1 Structural organization of the health system

Table 3. Health System Structures in the Province

Provincial Health Structures	• Ministry of Health and Population • Province Health Directorate • Province Public Health Laboratory • Province Health Logistic Management Center • Province Health Training Center
District Health Offices	• Health Office, Saptari, Rajbiraj • Health Office, Siraha, Siraha • Health Office, Dhanusha, Jankapurdham • Health Office, Mahottari, Jaleshwar • Health Office, Sarlahi, Malangwa • Health Office, Rautahat, Gaur • Health Office, Bara, Kalaiya • Health Office, Parsa, Birgunj
Ayurveda Hospitals	• Province Ayurveda and Alternative Medicine Hospital, Saptari, Rajbiraj • Province Ayurveda and Alternative Medicine Hospital, Siraha, Siraha • Province Ayurveda and Alternative Medicine Hospital, Dhanusha, Janakpurdham • Province Ayurveda and Alternative Medicine Hospital, Mahottari • Province Ayurveda and Alternative Medicine Hospital, Sarlahi, Malangwa • Province Ayurveda and Alternative Medicine Hospital, Rautahat, Chandrapur • Province Ayurveda and Alternative Medicine Hospital, Bara, Kalaiya • Province Ayurveda and Alternative Medicine Hospital, Parsa, Birgunj
Major Hospitals	• Gajendra Narayan Singh Hospital, Saptari, Rajbiraj • Madhesh Institute of Health Science (MIHS), Janakpur, Dhanusha • Narayani Hospital, Birgunj, Parsa • Province Hospital Bhardaha, Saptari • Province Hospital Siraha, Siraha

	• Province Hospital Lahan, Siraha • Janaki Medical College, Dhanusha • Province Hospital Malangwa, Sarlahi • Bardibas Hospital, Mahottari • Province Hospital Jaleshwor, Mahottari • Chandranigaphur Hospital Chadrapur, Rautahat • Province Hospital Gaur, Rautahat • Province Hospital Kalaiya, Bara • Province Hospital Pokhariya, Parsa • National Medical College and Teaching Hospital, Birgunj

Table 4. Type of health facilities in the province

Type of Health facility	No. of Health facility
Academy and Teaching Hospitals (300+ beds)	3
Super Specialty Hospitals (50+ beds)	0
Specialized Hospitals (100 beds and above)	2
General Hospitals (25-50 beds; 100-300 beds)	General Hospital (25-50 Beds): 50 General Hospital (100-300 Beds): 13
Public Hospitals	20
Basic Hospitals (5- 15 Beds)	23
Basic Health Service Centre (BHSC)	1222
Primary Healthcare Centre (PHCC)	32
Health Post (HPs)	740
Non-public facilities	182
Other type of health facilities (Polyclinic, Diagnostic centers clinics, dialysis center, Eye center, etc.)	133

Source: Annual Report 2080/81

**4 health desks are functioning*
- Inaurwa, Birgunj
- Gaur, Rautahat
- Malibara/Birtamode, Mahottari
- Madar, Siraha

2.2.2 Functions of health system organization structures during emergencies

Ministry of Health and Population (MoHP)

The Ministry of Health and Population is the central authority for policy formulation, regulation, coordination, and oversight of public health in the province. It ensures effective preparedness, response, and recovery from public health emergencies while strengthening the overall health system. The formulation, implementation and regulation of provincial policies, laws, standards and plans relating to public health emergencies.

Major tasks of the Ministry of Health and Population

1. Validation and approval of the action plan for the development and management of concerned authorities engaged in public health emergencies,
2. Appropriate distribution and mobilization, including record management of health manpower, to bring effectiveness in health services during emergency across the province.
3. Approval of health-related disaster and pandemic preparedness and response pans designed by concern authorities.
4. Ensure effective logistic and financial support at the time of public health emergencies.
5. Management and Regulation of Records of Educational, Professional and Professional Associations at the Provincial Level in Health Care,
6. Assessing, monitoring and regulating the quality of health services in the province,
7. Management of the procurement and supply of sensitive drugs and other health materials,
8. Institutional management of health accounting systems, management of information flow systems, health care studies and research at the provincial level.
9. Provincial Buffer Stock Management of Medicines and Pharmaceuticals for Health Emergencies
10. Establishing, implementing and enforcing health care standards
11. Formulation of laws and plans, implementation and regulation on population migration in case of public health emergencies.
12. Integrated information system be established, and regular media briefing be monitored through District Administrative Office, HO, province level hospital in the district.

Provincial Health Directorate

Health Directorate, Dhanusha is the major technical and administrative unit of health in the province. Health Directorate ensures proper delivery of promotive, preventive and curative health services through different health institutions in the province.

Major tasks of Provincial health directorate

1. Provincial Health Directorate ensures proper delivery and effective implementation of promotive, preventive and curative health services through different health institutions in the province.
2. To determine requirement of manpower for health institutions in the province.
3. To ensure effective implementation of public health programs in the province.

4. To manage the immediate solution of problems arising from natural disasters and epidemics in the province at different levels.
5. To foster coordination with external development partners for effective delivery of resources and health services in the province.
6. To ensure supply of drugs, equipment, instruments and other materials at different health institutions in the province.
7. To monitor and supervise health institutions in the province.
8. To systematically maintain data, statements and information regarding health services, update and publish them as required.

Provincial Health Logistic Management Center (PHLMC)

PHLMC ensures the timely availability of essential supplies and logistics during health emergencies. Its functions are:

- **Logistics and Supply Chain Management**: Forecasts, procures, stores, and distributes emergency medical supplies, PPE, and medicines.
- **Cold Chain Maintenance**: Supports cold chain systems for vaccines and temperature-sensitive commodities.
- **Inventory Control**: Maintains updated stock records and ensures readiness of emergency supplies.
- **Support to Facilities**: Assists hospitals and local health offices in replenishment and emergency logistics coordination.

Provincial Health Training Center (PHTC)

PHTC builds the capacity of health workers to respond effectively during emergencies. Its key roles are:

- **Capacity Building**: Designs and provides training on emergency response, IPC, surveillance, case management, and disaster risk reduction.
- **Simulation Exercises**: Organizes mock drills and tabletop exercises in collaboration with the PHEOC.
- **Curriculum Development**: Develops training materials aligned with national and provincial standards.
- **Training Database Management**: Tracks trained personnel and maintains a roster of emergency responders.

Health Offices

Located in each of the 8 districts of Madhesh Province, these offices are the frontline implementers of emergency response. Their roles include:

- **Local Surveillance and Response**: Detect, report, and respond to outbreaks in coordination with local governments.
- **Risk Communication and Community Engagement (RCCE)**: Lead community awareness and mobilization campaigns.
- **Coordination with Local Governments**: Work closely with municipalities and rural municipalities, local, provincial, federal governments, NGOs, INGOs, multisector, private sector to implement emergency plans.
- **Health Facility Supervision**: Monitor readiness of public and private health facilities and assist in emergency referral and transport.

Provincial Health Emergency Operations Center (PHEOC)

The Provincial Health Emergency Operations Center, in Madhesh, serves as the primary body coordinating for health emergency preparedness and response. Its core responsibilities include:

Pre-emergency:

- Planning: Maintaining updated emergency preparedness plans and surge capacity frameworks, risk assessment, monitoring early warning signs
- Orientation and Training: Supporting simulations, training
- Resource Mapping: Mapping of resources (human and material) in the hospitals every 4 months through a template.

During emergency:

- Command Centre for health response: Functioning as the command-and-control hub during emergencies for timely information sharing, coordination, and decision-making.
- Coordination and communication with related stakeholders, HEOC, Hub-satellite hospitals, Local governments.
- Resource Mobilization, ambulance dispatch, mobilization of RRT, EMT, real-time incident management
- Situation reports
- Risk Communication

Post emergency:

- Recording and Reporting
- Study, analysis and Recommendation
- Restoration of Functions

2.3 Public Health Risk Profile

2.3.1 Provincial Health Emergency Risk Assessment

Risk assessment is a systematic process used to determine the nature and magnitude of risks by analyzing potential hazards and evaluating existing vulnerabilities that, when combined, could harm populations, disrupt services, damage infrastructure and livelihoods, and degrade the environment. This process involves identifying and characterizing the hazard, estimating the level of exposure, and analyzing disparities in vulnerability and coping capacity across the affected population.

In Madhesh province, an all-hazard risk assessment was conducted in December 2024 using the World Health Organization (WHO) Strategic Tool for Assessing Risks (STAR). The assessment brought together multi-sectoral stakeholders at the provincial level and involved the evaluation of 25 hazards across biological, natural, technological, and societal domains. The STAR methodology enabled a structured comparison of risks by scoring each hazard based on likelihood, impact on health, economy, an essential services, as well as existing preparedness and response capacities. The outcomes of this assessment serve as a critical input to prioritize preparedness actions, allocate resources, and guide decision making for risk reduction across all sectors of the provincial health emergency management system.

Table 5. List of hazards, risk level and seasonal calendar

Specific Hazard	Risk Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flood	Very high												
Antimicrobial resistant microorganisms	Very high												
Fire	High												
Transportation accidents	High												
Cold wave/Severe winter	High												
Medical/municipal waste	High												
Dengue	High												
Japanese encephalitis	High												
Suicide/mental health issues	High												
Pesticide residue	High												
Cholera/ Acute Watery Diarrhea	High												
Food/water borne disease	High												
Substance abuse	Moderate												
Drowning	Moderate												
Air pollution	Moderate												
Heat wave	Moderate												
Drought	Moderate												
Measles	Moderate												
COVID-19/Influenza	Moderate												
Sound pollution	Moderate												
Malaria	Moderate												
Windstorm	Moderate												
snakebite	Moderate												
Civil unrest	Low												
Rabies	Very low												

2.3.2 Priority hazards or scenarios identified for contingency planning

The following priority hazards have been identified for contingency planning, categorized by type and geographic areas where they are most prevalent or likely to occur.

Table 6. Priority hazards in the province

S.N.	Hazards	Prone Areas
1.	Disaster related hazards	Flood: Mahottari, Dhanusha, Rautahat, Siraha, Saptari, Fire: All 8 districts RTA: Dhanusha (Janakpur) Cold wave: all 8 districts Heat wave: all 8 districts Drought: all 8 districts Windstorm: all 8 districts
2.	Vector borne	Dengue: All 8 districts Japanese encephalitis: Parsa, Mahottari Malaria: (ward level Microstratification of malaria)
3.	Food/ waterborne diseases	Cholera: all 8 districts
4.	Respiratory illness	COVID-19: all 8 districts Influenza: all 8 districts Measles: all 8 districts
5.	Rabies	All 8 districts

3. Existing legal frameworks and arrangements for emergencies

The Constitution of Nepal, 2015

- Article 35 guarantees the right to basic health services from the state, no one shall be deprived of emergency health services.
- Article 51 (g,9) to make advance warning, preparedness, rescue, relief, and rehabilitation in order to mitigate risks from natural disaster.
- Schedules 7 (17), 8 (20) and 9 (9) lists disaster preparedness and management responsibilities to all levels of government: federal, provincial, and local.

Disaster Risk Reduction and Management Act, 2074 (DRRMA)

The DRRMA was enacted in 2074 to consolidate and modernize Nepal's disaster risk reduction and management laws. Its goal is to protect lives and property, preserve natural and cultural heritage, and safeguard infrastructure from both natural and human-induced disasters through coordinated and effective action.

- Chapter 6, Section 13(a): Provides for a Provincial Disaster Management Council, chaired by the Chief Minister, to guide provincial disaster risk reduction policy.
- Section 14: Establishes the Provincial Disaster Management Executive Committee, chaired by the Minister for Internal Affairs, responsible for disaster coordination at the provincial level.
- Chapter 7, Section 17: Local Disaster Management Committee: Every local level shall establish a local disaster management committee consisting of such members, not exceeding fifteen, chaired by the chairperson of village body or mayor of the municipality.
- Chapter 9, Section 23: Mandates the establishment of provincial disaster management fund to support preparedness, response, relief and recovery activities within the province.
- Province disaster management act 2075, Chapter 2, Section3: Provide disaster management committee chaired by Chief Minister.
    - Chapter 3, Section 6 of the act: states on the establishment of Disaster Management Fund.

Public Health Service Act, 2075

Under section 48 (Emergency Health Service and Management):

- There shall be a rapid response team and emergency physician's group as prescribed in order to extend health service immediately during emergency circumstances.
- The province is mandated to develop and enforce an emergency health plan in alignment with federal standards and directives.
- The Provincial Government may declare a public health emergency if a disaster affects more than one local level within the province and if the public health disaster occurs in more than one province, the Government of Nepal may declare state of public health emergency as prescribed.

Chapter 6, section 49 (Prevention, information and treatment of infectious disease):

- The government has officially gazetted a list of 52 infectious diseases and their outbreak management.

Infectious Disease Act, 2020

Under the Infectious Disease Act, 2020 (1964), act 28 under the power to make special provisions states Government of Nepal may designate official and confer necessary powers to such official to make necessary arrangements in order to root out or prevent any infectious disease that has been developed or spread or is likely to spread on the human beings.

One Health Strategy, 2076

The One Health Strategy, 2076 promotes multisectoral coordination and collaboration among relevant sectors. It emphasizes effective information exchange and mobilization of financial resources to address public health risks. The strategy aims to establish standardized risk assessment processes and ensure continuous surveillance. It also focuses on the timely detection, prevention, and control of health threats. Overall, it strengthens preparedness and response capacities through an integrated and collaborative approach.

National Health Sector Strategic Plan (2079/80 – 2087/88)

Under Strategic Objective 1 of the National Health Sector Strategic Plan (2079/80 – 2087/88) which aims to enhance the efficiency and responsiveness of the health system, Outcome 1.6 focuses on ensuring that public health emergencies are managed effectively through improved preparedness and response mechanisms.

In line with Outputs 1.6.1 and 1.6.2, provinces are expected to play a key role in strengthening preparedness and ensuring timely response to public health emergencies by contributing to risk-

informed multi-sectoral planning, enhancing coordination with federal and local levels, supporting hospital and emergency preparedness, strengthening Provincial Health Emergency Operation Centers, building capacities of Rapid Response Teams (RRTs) and Emergency Medical Teams (EMTs), and facilitating integrated surveillance and continuity of essential services during crises.

Monsoon preparedness and response plan

The Monsoon Preparedness and Response Plan aims to reduce the risks of monsoon-related hazards such as floods, landslides, and disease outbreaks in Madhesh province through early warning systems, risk mapping, and preparedness measures such as pre-positioning of health supplies and deployment of response teams. The plan outlines coordination mechanisms among provincial, district, and local levels to ensure timely evacuation, health service continuity, and multisectoral action during emergencies.

The plan aligns with the Disaster Risk Reduction and Management Act (2017) and the Local Disaster and Climate Resilience Planning (LDCRP) Framework (2021), integrating health sector actions into broader local disaster plans. It was developed based on consultations across Madhesh province and draws on recent experiences to guide roles and responsibilities of health institutions, support agencies, and stakeholders in preparedness, response, and recovery during monsoon emergencies.

Global Guidance

1. International Health Regulations (IHR) 2005

The International Health Regulations (IHR) (2005) is a legally binding agreement among 196 countries, including all WHO member states, that aims to prevent, protect against, control, and respond to the international spread of disease. It requires countries to develop minimum core public health capacities at all levels including subnational levels such as provinces to detect, assess, report, and respond to public health risks and emergencies of international concern.

2. Sendai Framework for Disaster Risk Reduction 2015 - 2030

The Sendai Framework is a global strategy for reducing disaster risks and losses across natural, biological, and technological hazards. It promotes a multi-hazard, multisectoral approach and recognizes the importance of decentralized action, assigning responsibilities to all levels of government, including provincial and local authorities, for risk assessment, preparedness, response, and resilience building. Provincial governments are therefore expected to integrate disaster risk reduction into their health emergency planning and coordination efforts.

4. Existing routine & emergency coordination mechanisms

PHEOC Madhesh Province

The Provincial Health Emergency Operations Centre is responsible for coordinating preparedness and response to disasters and public health emergencies across all three tiers of government and with relevant stakeholders. Established in line with federal restructuring, PHEOCs were set up in all seven provinces to serve as command centers and coordination hubs, functioning with roles aligned and complementary to the national HEOC.

PHEOC acts as an information hub, facilitating horizontal coordination within the health sector and with other sectoral EOCs. It collects and analyzes data, ensuring interventions within legal frameworks, and disseminates decisions and guidance to concerned agencies and partners. A key role of the PHEOC is coordination with the province's hub and satellite hospital network to enable timely, efficient, and effective health emergency response.

Hub and Satellite hospital network – Madhesh Province

The Provincial HEOC in Madhesh coordinates closely with a network of three hub hospitals and its satellite hospitals across the province to strengthen disaster preparedness and emergency response across the province. This network ensures timely coordination, communication, and resource mobilization during all phases of emergencies, particularly at the provincial and district levels.

Three hub hospitals in the province and its satellite hospitals:

1. Gajendra Narayan Singh Hospital – Coordinates with satellite hospitals of Saptari and Siraha Districts.
2. Madhesh Institute of Health Sciences, Janakpur Hospital- Coordinates with satellite hospitals of Mahottari, Dhanusha and Sarlahi Districts.
3. Narayani Hospital- Coordinates with Satellite hospitals of Parsa, Bara and Rautahat Districts.

Coordination of RRCs and RRTs in the Province

The coordination of Rapid Response Committees (RRCs) and Rapid Response Teams follows the National RRT and EMT Mobilization Guideline, 2079, which outlines standardized procedures for activation, team composition, roles, and inter-level coordination. In line with the structure outlined in the Disaster Risk Reduction and Management Act, 2074, the provincial-level Rapid Response Committee serves as the key coordinating body for outbreak and emergency response. Chaired by the Director of the Provincial Health Directorate and supported by the Provincial

Health Emergency Operation Center (PHEOC), the Provincial RRC provides oversight, mobilizes resources, and ensures coordination with federal-level structures. The Provincial RRT, under the guidance of the RRC, is activated for risk assessment, rapid deployment, and technical support in affected areas.

At the local level, municipalities (Nagarpalika or Gaunpalika) form their own RRCs, led by the Mayor or Chairperson, and coordinate closely with the local health unit. Local RRTs are responsible for immediate field response and reporting, and they work in alignment with provincial guidance. While there are no RRCs at the district level in this plan, local RRTs may be supported directly by the provincial RRT or PHEOC, depending on the scale and urgency of the event. Coordination is maintained vertically between the provincial and local levels, ensuring timely information flow, decision-making, and response mobilization.

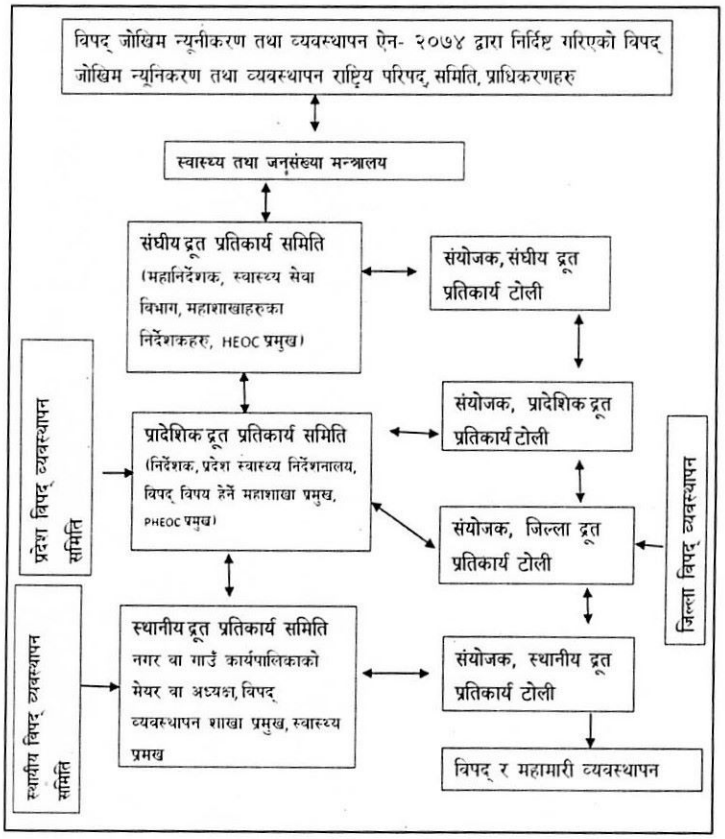

Figure 2 Structure of Rapid response committee and rapid response team

Coordination for deployment of EMTs

The EMT Deployment Framework outlines a structured coordination process for the deployment of Emergency Medical Teams during disasters. Upon the occurrence of a disaster, alerts may come from hub hospitals, satellite networks, or the Provincial Health Emergency Operation Center. A rapid assessment is conducted to determine the need for EMT support. If no support is required, local management continues under the coordination of PHEOC, with ongoing updates to higher authorities. If EMT support is needed, the Health Emergency and Disaster Management Unit (HEDMU) and Emergency Medical Team Operational Committee (EMTOC) oversee the deployment process. After 48 hours, a reassessment is done to review the continued need for EMTs. If needed, EMTs are deployed through coordination between HEDMU and EMTOC. After 7 days, the need for further deployment is evaluated again, and EMTs may be re-deployed or demobilized accordingly. Daily reporting and coordination with disaster management authorities are maintained throughout the deployment. The process ensures timely, need-based EMT deployment and efficient coordination between local and central health authorities.

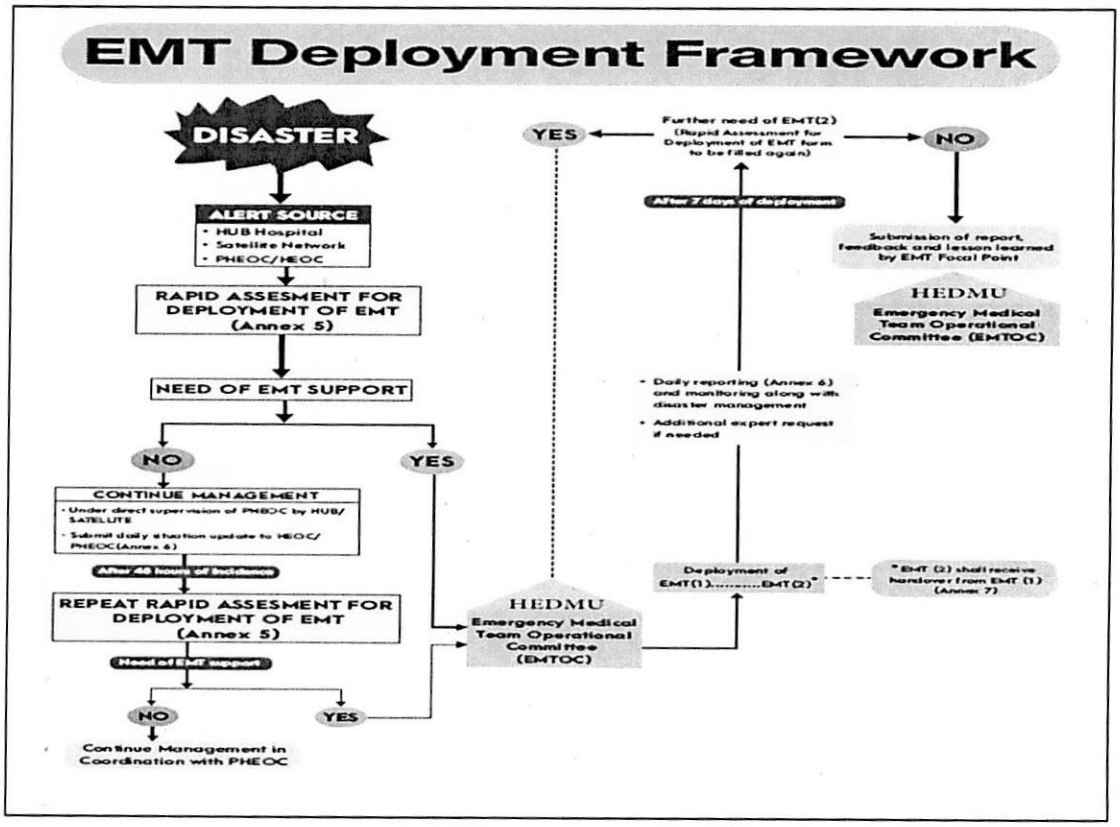

Figure 3 EMT deployment framework

Coordination mechanisms for Sample transportation and laboratory Diagnosis.

During acute public health events, coordination for sample collection and transportation is guided by the national guideline to ensure timely and accurate laboratory diagnosis. Samples are collected at the local level and prioritized for testing at nearby hospital-based laboratories. If local testing is unavailable, samples are systematically referred to Provincial Public Health Laboratories (PPHLs) or the National Public Health Laboratory (NPHL), with all results integrated into the national database for surveillance and response.

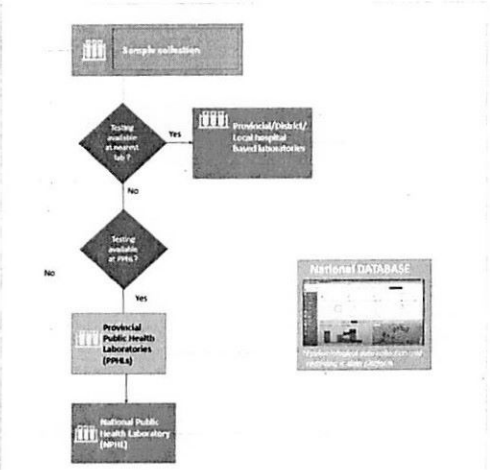

Figure 4 Sample transportation mechanism

Coordination mechanisms for RCCE

Effective coordination mechanisms for Risk Communication and Community Engagement (RCCE) are essential for ensuring timely, accurate, and culturally appropriate information reaches all levels of society. The RCCE system involves a structured hierarchy from national experts to federal RCCE coordinators, provincial, district and local level RCCE contact persons, and down to ward-level volunteers. This interconnected framework enables seamless information exchange, aligning scientific guidance with community needs through various specialized roles such as media, stakeholder engagement, and content coordination. By fostering collaboration across sectors and administrative levels, RCCE helps build public trust, counter misinformation, and promote informed participation during crises.

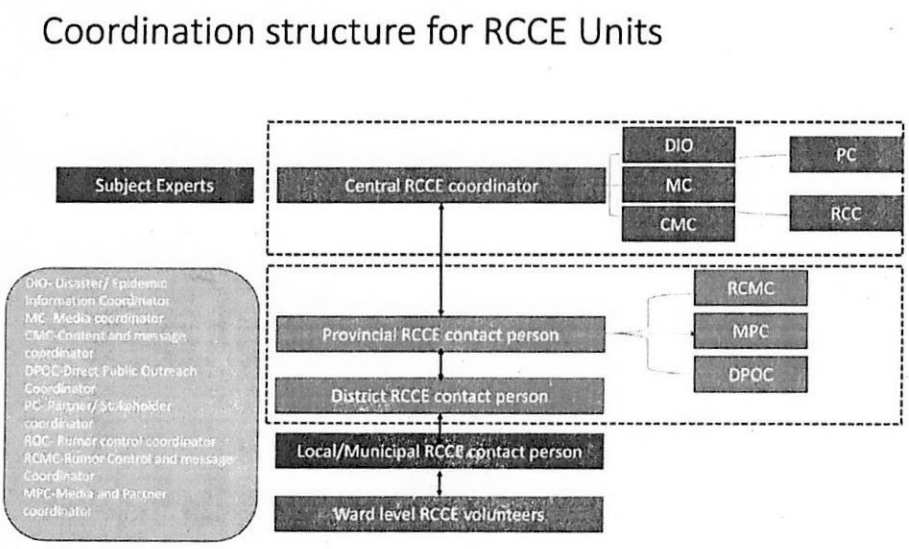

Figure 5 Coordination structure of RCCE units

Coordination with humanitarian and development partner of health sector

National Disaster Response Framework defines the cluster approach for coordination with partners. Additionally, there is a National Guidance for coordination among humanitarian health partners develop by MoHP to improve and response to disaster and public health emergencies following cluster approach. At the provincial level, coordination with clusters such as Health, WASH, Nutrition, and Emergency Shelter ensures an integrated and timely response to health emergencies and disasters. These clusters, led by respective government ministries and supported by humanitarian partners like WHO, UNICEF, and others, facilitate efficient resource mobilization and service delivery.

Table 7 Cluster approach coordination with partners

विषयगत क्षेत्र (Name of the Clusters)	सरकारी निकाय	सहयोगी निकाय
स्वास्थ्य (Health)	स्वास्थ्य तथा जनसंख्या मन्त्रालय	WHO
खानेपानी, सरसफाई तथा स्वास्थ्य प्रवर्द्धन (WASH)	खानेपानी मन्त्रालय	UNICEF
आपत्कालीन आश्रयस्थल (Emergency Shelter)	शहरी विकास मन्त्रालय	IFRC/UN HABITAT
खाद्य सुरक्षा (Food Security)	कृषि तथा पशुपंक्षी विकास मन्त्रालय	WFP/FAO
पोषण (Nutrition)	स्वास्थ्य तथा जनसंख्या मन्त्रालय	UNICEF
शिविर समन्वय तथा शिविर व्यवस्थापन (CCCM)	शहरी विकास मन्त्रालय	IOM
संरक्षण (Protection)	महिला, बालबालिका तथा ज्येष्ठ नागरिक मन्त्रालय	UNHCR/UNICEF/UNFPA
शीघ्र पुनर्लाभ (Early Recovery)	सङ्घीय मामिला तथा सामान्य प्रशासन मन्त्रालय	UNDP
शिक्षा (Education)	शिक्षा, विज्ञान तथा प्रविधि मन्त्रालय	UNICEF/SC
बन्दोबस्ती (Logistics)	गृह मन्त्रालय	WFP
आपत्कालीन सञ्चार (Emergency Communication)	सञ्चार तथा सूचना प्रविधि मन्त्रालय	WFP

5. Health emergency resources

Health emergency resources are categorized into three key components: human, logistics, and financial. These resources are critical to the effective implementation of this plan, as they directly influence the province's ability to prepare for, respond to, and recover from health emergencies. Strengthening these components ensures timely deployment of trained personnel, availability of essential supplies, and the mobilization of financial means to manage emergencies efficiently.

5.1 Human resources

Human resources form the backbone of any health emergency response. Depending on the type and scale of emergency, a diverse range of professionals may be required, from frontline clinical responders and public health professionals to support staff and technical experts. These professionals are drawn from both government and non-government sectors, including trained emergency response professionals, health facility staff, and humanitarian partners.

Mapping of Human Resources

To ensure operational readiness during health emergencies, the following human resources are considered relevant for the implementation of this plan:

Table 8. List of human resources

S.N.	List of Human Resources
1	Health secretary
2	Hospital Director
3	Hospital Spoke person
4	MDGP
5	Internal Medicine
6	General Surgeon
7	Orthopedic Surgeon
8	Pediatrician
9	Anesthesiologist
10	Radiologist
11	Medical Officer
12	Lab personnels
13	ENT surgeon
14	Dental surgeon
15	Matron
16	Nursing and paramedics
17	Security personnel
18	Office boy
19	Public Health Officer
20	Logistics Personnel

21	Finance personnel
22	Ambulance Driver
23	Mortuary boy

Training Mapping for Plan Implementation

Training programs are vital to ensure personnel are equipped with the appropriate knowledge and skills, The following key trainings have been identified:

Table 9. List of Training Programme

S. N	Training
1	Basic Emergency Care
2	Primary Trauma Care
3	Advanced Life Support
4	Basic Life Support
5	Rapid Response Team Training
6	Field Epidemiology Training Programme (FETP)
7	Hospital Preparedness for Emergencies (HOPE)
8	ICU Management
9	Operation Theatre Technique Management
10	Ambulance Dispatcher Training
11	Basic fire extinguisher
12	Community First Health Responder Training
13	Pre-Hospital care Training
14	Ambulance Dispatcher Training

Rapid Response Teams (RRTs)

Rapid Response Teams (RRTs) consist of trained human resources mobilized during health emergencies. As per the 2022 guideline on Rapid Response Team and Emergency Medical Team deployment, Rapid Response Committees (RRCs) at various levels coordinate with RRTs to ensure a timely, structured, and effective response across all tiers of government. The guideline includes specific terms of references (ToR) for each respective committees and team. Compliance with the guideline will improve the efficiency and effectiveness of emergency response by providing a structured approach to managing and coordinating efforts during crises and disasters.

RRTs are multidisciplinary and multi-sectoral teams that provide technical support in risk assessment, outbreak investigation, emergency management, and response coordination. RRTs are deployed within 24–48 hours of notification and operate at the provincial, district, and local levels. These teams typically include medical officers, nurses, public health experts, and logistics personnel, who also support shelter, food, and medical aid distribution.

Emergency Medical Teams (EMTs)

Emergency Medical Team (EMT) are a group of health professionals including doctors, nurses, paramedics, support staff, logisticians, mobilized for clinical management of people affected by emergencies. They are deployed to support local health systems in managing sudden surges in patients, ensuring the delivery of life-saving interventions, and restoring essential health services in disaster-affected areas.

Role Mapping of Human Resources in Emergency Response

During the emergency, the continuum of care is maintained or provided through the following structures at each response level:

Table 10. Continuum of care at each response level

Response level	Who	When	How
Community-Level	Community First Responders	Initial emergency onset	First aid, notify dispatch, support outbreak detection
	Rapid Response Team	Upon outbreak notification	Field deployment, triage, lifesaving care, ambulance arrangement
	FETP/RRT	Post-outbreak notification	Diagnosis verification, outbreak confirmation and investigation
Pre-Hospital	Dispatchers	Upon receiving emergency calls	Coordinate ambulance and responders, guide communication
	BEMT	During patient transport	Stabilize patients, pre-hospital care, handover to facilities
	Trained Ambulance Drivers	During emergency transport	Safe and timely transfer, support EMTs, liaison
Hospital	Hospital Providers (BEC/HOPE)	On patient arrival/emergency	Triage, inpatient care, referral, resource management
Surge support	Emergency Medical Teams	During large-scale emergencies	Strengthen overwhelmed facilities, support surge operations

5.2 Logistics

Logistics resources essential for health emergency preparedness and response include physical infrastructure, medical and non-medical supplies, transportation, communication equipment, and emergency stockpiles. These are distributed across various levels from provincial health logistics management centers and hospitals (Annex2).

5.2.1. Physical resources

The physical resources include infrastructure, supplies and utilities needed by emergency response units like buildings, shelters, electric power, vehicles, fuels, medicines, telephones, internet, blood banks etc. provided by logistic units at the level of healthcare facilities and institutions.

5.2.2 Laboratory network

Madhesh Province is equipped with a Provincial Public Health Laboratory (PPHL) and an emergency mobile laboratory, supported by district hospital laboratories, private and academic institution labs, and specialized laboratories for food, water, and livestock testing. These networks are crucial for timely diagnosis, surveillance, and outbreak response (Annex 3).

5.3 Financial resources

Financial readiness for health emergencies is supported through dedicated emergency funds at the provincial level. These funds enable rapid mobilization of resources for early action and response.

Disaster management Act 2075 – provision for establishment of disaster management fund: which states that the fund can be utilized for the treatment of people affected by disaster.

Act formulated for managing the provincial emergency fund: this act states that the province government can use the fund to manage emergency work – which refers to natural and non-natural disasters such as earthquakes, floods, landslides, fires and epidemics, as well as other emergencies or special situations caused by unexpected events.

5.4 Health Partners

Health partners play a vital role in emergency preparedness and response. They contribute technical expertise, trained personnel, and logistical support during crises. These partners include UN agencies, international and national NGOs, and other development organizations that complement government efforts and strengthen multisectoral coordination during health emergencies (Annex 4).

6. Emergency Activation

There are various existing mechanisms and structures in the province for identification of any infectious, natural, technological and societal hazards and to activate an effective health emergency response.

6.1 Early Warning System

Surveillance and early warning system are in place to detect, assess, and respond to public health threats arising from infectious diseases, natural disasters (e.g., landslides, floods), technological incidents, and societal hazards. These systems include well-defined surveillance structures, communication pathways, feedback mechanisms, and the involvement of laboratories and intersectoral coordination at the provincial level.

Epidemiological Surveillance System

The province operates within the national early warning and reporting system (EWARS), which is led by Epidemiology and Disease Control Division (EDCD) at the federal level and implemented at the provincial level by the PHD.

- EWARS sentinel sites (14 in total) are established in government and selected hospitals across the province.
- Weekly indicator-based reporting is conducted for priority epidemic-prone diseases
- Event-based surveillance (EBS) is also conducted through informal reports from communities, media screening, and inputs from partner organizations.

National or International Reference laboratories for priority pathogens

The Provincial Public Health Laboratory in Janakpur is the key testing facility in Madhesh, it supports diagnostic services for outbreak-prone diseases and coordinates with the National Public Health Laboratory in Kathmandu for confirmatory testing and referral or samples for advanced diagnostics. The PPHL has an established mechanism for transportation of samples from periphery to district hospital and district hospital to PPHL and NPHL.

PPHL conducts basic microbiological, serological and molecular testing for outbreak prone diseases. For diseases requiring advanced testing (e.g., Influenza subtyping, Dengue serotyping), specimens are referred to NPHL or through NPHL to international reference laboratories in collaboration with WHO.

Multi-Hazard Early Warning Systems

The province is exposed to a range of hazards, including hydrometeorological, geological, and human induced events. Multi-hazard early warning systems are in place to ensure timely

dissemination of alerts and activation of health sector preparedness and response actions. These include:

- Meteorological alerts issued by the Department of Hydrology and Meteorology (DHM), shared through provincial and district authorities.
- Landslide and flood alerts generated by DHM's flood forecasting network. Forecasts are disseminated through multiple channels, including SMS alerts, DHM's official website (www.dhm.gov.np) and the DHM Flood Early Warning System portal (www.hydrology.gov.np).
- Coordination with the National Disaster Risk Reduction and Management Authority (NDRRMA) ensures a linkage between disaster alerts and health response triggers.
- Water quality testing to detect potential health risks, particularly during and after flood events or other water-related emergencies.
- Disaster informers including inputs from the Armed Police Force (APF), Nepal Red Cross Society, and other partners, to support early warning and situational awareness at the local level.
- Food inspection and quality testing of food is done by Department of Food Technology and Quality Control particularly during and after food-related outbreaks.
- Health Desk in point of entry is established to detect unusual health events.
- Also, vertical program surveillance systems like Malaria Disease Information System, VPD surveillance collects case-based data and conducts case investigations.
- The PHEOC receives these alerts and facilitates health sector preparedness and intersectoral coordination for timely response.

6.2 Alert, Verification and Investigation

Potential public health threats are detected through multiple sources, including community reports, health facility alerts, media monitoring, hotlines and informal observations by health workers. These signals are received and reviewed at the local, district, and provincial levels.

The PHEOC and the PHD lead the triaging process in coordination with district and local health authorities. Triaging is conducted through a digital platform, which allows real-time communication and documentation of signals.

Verified events trigger immediate field investigation and response led by provincial, district and local RRTs. In the case of zoonotic or environmental health threats, coordination is initiated with relevant sectors such as veterinary services, environment, or disaster management authorities.

6.3 Rapid Risk Assessments

Rapid risk assessments, conducted in emergencies, will involve a swift evaluation of potential hazards, alongside an assessment of population and infrastructure exposure, and a thorough understanding of the contextual vulnerabilities. This integrated analysis allows for the grading of

risk levels, enabling informed and timely decisions regarding resource allocation and response strategies.

Local Level: When a public health event is reported in the community, local Rapid Response Teams are deployed by the respective local rapid response committees based on the level of assessed risk. These committees are responsible for selecting team members in accordance with the identified hazards and for ensuring the availability of all necessary resources for effective deployment.

District Level: District-level RRTs are mobilized by the provincial rapid response committee when the magnitude of the event exceeds the response capacity of local-level teams or involves multiple local jurisdictions.

Provincial Level: Provincial-level RRTs are deployed when public health events impact multiple districts, and the scale of the events surpasses the district-level response capacity.

The provincial authority may request federal level support for technical assistance when the scale or complexity of a public health event exceeds the province's response capacity.

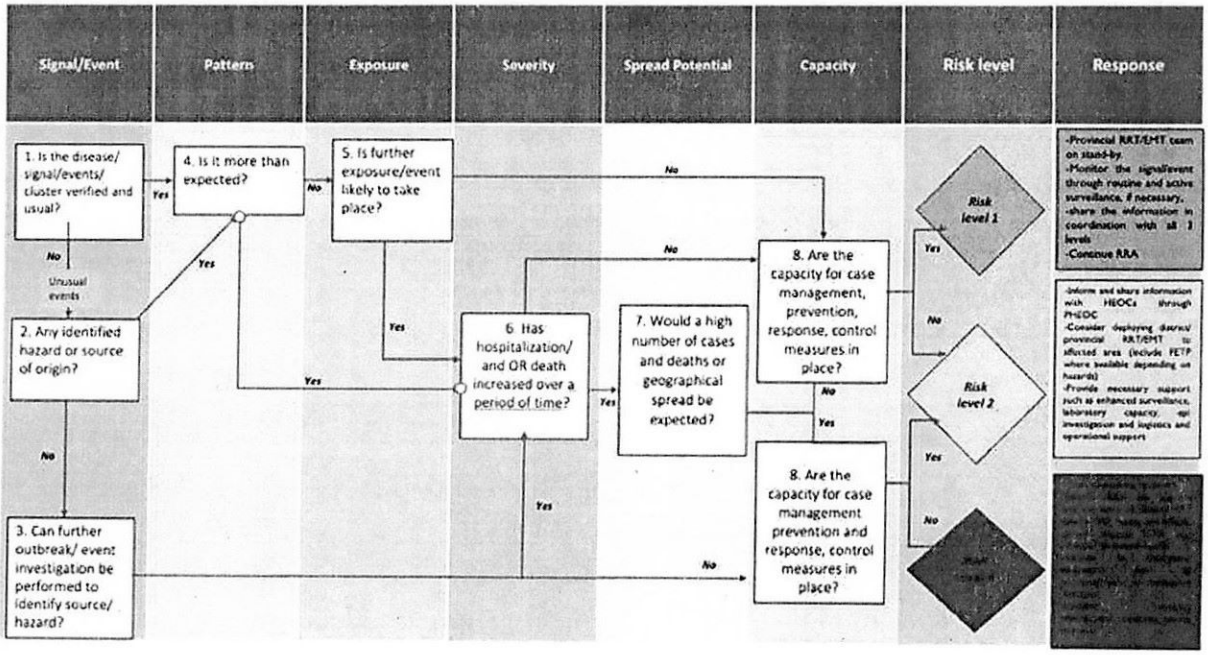

Figure 6. Rapid Risk Assessment Algorithm

6.4 Risk Communication and Community Engagement (RCCE) Strategy

The province will follow the national RCCE strategy to raise community awareness, conduct effective evidence-based social mobilization, community engagement and public education that support desired social and behavior change and communication management. In the event of a public health emergency, the RCCE system is rapidly activated through the established health emergency response structure. The focus shifts from routine coordination to an emergency posture, ensuring that risk communication and community engagement are integrated into real-time decision-making and response actions.

Providing timely information and engaging the community regarding various hazards is vital to protecting people's health from emergencies and disasters, attaining health security and building resilient communities and health systems. There will be proper dissemination of prevention related intervention on disaster induced health problems to the community people addressing each stage of the disaster response cycle.

Main objective

The RCCE strategy aims at contributing to the provincial multi-hazards preparedness and response activities by fostering community engagement in preventing, controlling, and curbing the burden of frequent health hazards identified in Madhesh.

Specific objective of provincial RCCE strategy/guideline

1. Strengthen the technical capacity of RCCE unit at the provincial level and sustain a well-coordinated, multisectoral team of RCCE implementing partners for preparedness and responses to emergency health hazards.
2. Guide and ensure development of evidence-based messages, communication materials and approaches for various participants groups to enable people at risk to make informed decisions to mitigate the effects of a threat.
3. Continuously inform, engage, and empower the public through timely and consistent provision of key messages and tools through appropriate channels such as local level health related (Female Community Health Volunteers) and non-health related organizations (Red Cross circle, Disaster Informers) on emergency health hazards.
4. Strengthen evidence based RCCE programming for all hazards through well-structured monitoring and evaluation system, information management, feedback collection and rumor tracking mechanisms.

At the province level, there is a provincial RCCE unit that will comprise of RCCE contact person under health directorate who will coordinate with federal teams and assign technical experts.

7. Activation of this Plan

Local RRTs should ideally verify the signals received through various sources (hospitals, labs, communities, news, media sources etc.) within 24 hours of detection. If they are unable to do so, the district/provincial level should reach out to the local RRTs and complete the verification within the next 48 hours as stated in "National Alert and Response Framework for Acute Public Health Events". Local, district, provincial, or federal RRTs will conduct rapid risk assessment, depending on the available resources and expertise and propose action to manage and minimize the negative consequences of serious public health events.

Health Emergency Levels

Depending upon the affected area and severity of the event, health emergency level can be graded as below:

- **Level 1 (Local):** A public health event occurring at one local level, causing minimal public health consequences, and/or manageable by local level using its own resources in collaboration with its partners.
- **Level 2 (District):** A public health event occurring in one district, that is causing minimal public health consequences, and/or manageable by district level using its own resources and its partners. The Provincial Health Emergency Operation Center will keep monitoring the evolution of the incident and support immediately whenever required.
- **Level 3 (Province):** A public health event occurring in one or more districts or exceeding districts capacity for the level of response requiring resources from provincial level and partners. The PHEOC is fully activated immediately. PHEOC regularly communicates with HEOC updating the situation and support required. Federal level/HEOC will keep monitoring the situation and support if required. Regular communication and sharing of updates with provincial level is done in all levels of emergency.
- **Level 4 (Beyond province):** A public health event occurring in one or more districts/ entire province is affected, and province is unable to manage the public health event and requires support from federal level.

Table 11. Response action at different levels of emergency response

S.N.	Level	Responsibility	Response
1	One	• Response from Local RRT and local level health facilities • District RRT, hospital and PHEOC on alert	• Notification to district RRT, which should notify to PHEOC • Verification of signals/events • Facilitation for diagnosis and management • Others as per RRT guidelines
2	Two	• Response from district RRT and hospital • Provincial RRT and PHEOC on alert	• Notification to PHEOC • Hospital should response as per HDPRP • RRT should response as per RRT guidelines • PHEOC should monitor, be alert and response if required.
3	Three	• Response from all level RRT, hospitals • PHEOC activated • HEOC on alert	• Hospitals should response as per HDPRP • RRT should response as per RRT guidelines • Notification to HEOC • ICS activation
4	Four	• Response from HEOC	• All RRT activation • Support from federal level

7.1 Incident Command System

The Incident Command System (ICS) is used for coordination of response to public health emergencies. The ICS is an internally recognized standard emergency coordination mechanism that provides a common organizational model for all hazards and emergencies.

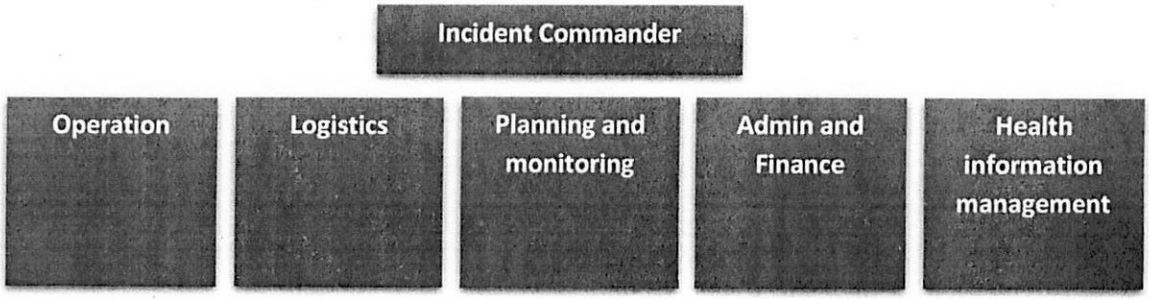

Figure 7. Provincial Incident Command System

Under leadership of Secretary, Ministry of Health and Population, Madhesh Province, the ICS for health sector response will be formed. Decisions of the Incident commander while activation of ICS is considered as the final decision. The PHEOC will function as the secretariat of the ICS. Under leadership of Incident commander, following pillar shall be formed for coordinated and timely implementation of the response activities.

Roles and Responsibilities:

Operations	Planning & monitoring	Logistics	Admin/finance	Health Information Management
Technical and field operations coordination.	Situational analysis, phase wise planning and coordination.	Coordination, management and procurement (essential equipment, materials, medicines, testing kits), storage and distribution of essential medical commodities.	Coordination for tracking incident costs, forecasts, and payment to responders, service provider and claims as per the need, deployment of human resources.	Data collection, analysis, interpretation and dissemination of report.

Emergency Response Framework

S. No	Time Frame	Activity	Responsible Authority	
			ICS not activated	ICS Activated / Emergency declared
1	Within 24 hours	Verify the event, Situation analysis, and Coordination with the rescue team, local RRT team mobilization	RRT/RRC/ Ambulance team/ Nepal police/APF, Nepal Army	
2	Day 1 or Day 2	Information collection and dissemination, Continuation of rescue (daily situation update) Supply of available logistic- RDT kit, medicine, etc.	Local government/HO/PHD/PHLMC	
3	Day 3	RRC meeting (Local and provincial). Start surveillance activities, control activities – ppl living in groups- chances of spread of communicable diseases, require proper management of waste, and re-assessment	Partner organization, PHLMC, PPHL, PHEOC, Security agencies, DAO, DCC	

		Resource management- Surge team, RDT Kit, Medicine, Logistics and tools. Request for additional fund.		
4	**Day 4-10**	Mitigation activities, continue coordination with relevant partners, continue of surveillance activities, Situation update to concerned authorities for further support.	PHD, HO, PHEOC, health facilities at local level	
5	**Day 11 and onwards**	Assurance of no further casualties following Deactivation of emergency response system by PRRC in coordination with ICS.		

8. Deactivation and Post Emergency Response

The decision to deactivate the emergency response involves a systematic review of the ongoing situation, led by the Provincial Rapid Response Committee (PRRC) in coordination with the Incident Command System. These entities assess epidemiological data, health service continuity, and remaining risks to determine the appropriate timing and scope of deactivation. A key priority during this phase is to ensure the continuation of public health surveillance. Active case finding, event-based surveillance, and laboratory confirmation must be sustained to detect any resurgence or late-onset health impacts related to the emergency. As part of the deactivation process, there is a progressive handover of responsibilities to the Health Office at the district level and the respective Palika (local government authorities).

8.1 After Action Review

The International Health Regulations (IHR,2005) require countries to develop core public health capacities to prevent, detect and respond to public health events. After action review helps to assess actions taken in response to a public health emergency as a means of identifying best practices, gaps, and lessons learnt to take corrective actions to improve future response. It is highly recommended to conduct the AAR immediately after the declaration of the end of the public health event and up to three months after the event.

Annex

Annex 1: Terms of reference for the provincial and district RRTs

Composition, Roles and responsibilities of the provincial Rapid Response Committee (RRC)

Provincial RRC member

(a) Director, Provincial Health Directorate - **Coordinator**

(b) Chief of the Division overseeing Disaster Management, Representative from the Provincial Council of Ministers' Office - **Member**

(c) Chief, Hospital Development and Medical Services Division, Ministry overseeing Health - **Member**

(d) Director of the Province Public Health Laboratory or a Technical Officer-level representative - **Member**

(e) Director of the Provincial Health Logistics Management Center or a Technical Officer-level representative - **Member**

(f) Chief of the Provincial or Infectious Disease Hospital located in the district where the Directorate is situated - **Member**

(g) Chief, Provincial Health Emergency Operations Center - **Member**

(h) Provincial Technical Expert, World Health Organization - **Member**

(i) Chief, Medical Services and Disease Control Section or the Epidemiology-related Section, Provincial Health Directorate - **Member Secretary**

Roles and Responsibilities of committees

- Coordinate with federal and local rapid response committees during all phases of disease outbreaks (preparedness, response, and post-outbreak) within the province. Facilitate inter-agency coordination.
- Establish and deploy provincial rapid response teams for disaster and outbreak management and investigation.
- Conduct regular meetings to analyze available data (e.g., surveillance system data) and assess the situation. Provide necessary directives.
- During disasters and outbreaks, adhere to orders from the Provincial Disaster Management Committee as specified by the Disaster Risk Reduction and Management Act-2074. Ensure multi-agency coordination and response across various levels.
- Develop and implement disaster and outbreak management plans, procedures, and emergency health plans.
- Document rapid response best practices and lessons learned.

- Identify and ensure the availability of personnel, supplies, and financial resources needed for rapid response team deployment.
- Monitor and supervise rapid response team activities and provide necessary feedback.
- Facilitate rapid risk assessments for disaster and outbreak management and disseminate necessary information.
- Evaluate and classify public health risks according to the framework for health emergency preparedness and disaster risk management planning and prioritization.
- Coordinate with relevant agencies to ensure the safety of rapid response team personnel.
- Coordinate with relevant focal agencies as needed to assess the situation and conduct risk assessments.
- Create and implement plans and procedures related to emergency health situations.
- To ensure the safety of all levels of the rapid response team.
- Identify and periodically update a list of relevant experts and stakeholders for disaster and outbreak management.
- Maintain rapid response team reports and submit them to the federal rapid response committee as required.
- Deploy rapid response teams immediately upon the order of the committee's coordinator when necessary for disaster or outbreak management.

Composition, Roles and responsibilities of the provincial and district RRT

Provincial RRT members (maximum 11 members)

- Family Physician (Provincial Hospital)-1
- Medical Officer- (Provincial Hospital) -1
- Public health Officer/ Public health inspector -1
- Health Assistant (HA)/ AHW/Senior AHW/ -1
- Senior Staff Nurse/ Senior Auxiliary nurse midwife -1
- Medical Lab Technician/ Lab technician/Lab assistant- 1
- Technical and academic experts/ Subject matter experts (SME)- Based on nature of outbreak
- The team can invite experts from multiple sectors based on nature of outbreak

District RRT members (maximum 11 members)

- Medical Officer- (related district hospital and federal hospital/ provincial hospital from affected districts) -1
- Public health Officer/ Public health inspector -1

- Health Assistant (HA)/ AHW/Senior AHW/ -1
- Staff Nurse/ Auxiliary nurse midwife -1
- Lab technician/Lab assistant- 1
- Medical recorder/Statistics officer/ data assistance
- Technical and academic experts/ Subject matter experts (SME)- Based on nature of outbreak
- The team can invite experts from multiple sectors based on nature of outbreak

Roles and Responsibilities of team (provincial and district teams)

- Implement action plans and directives from federal/provincial rapid response committees to investigate, manage, and control public health emergencies.
- Conduct investigations of public health emergencies, including confirming outbreaks, establishing case definitions, creating detailed case lists, identifying disease patterns and transmission modes, conducting contact tracing, collecting and sending laboratory samples, and performing epidemiological analysis.
- Implement disease control and prevention measures, such as infection prevention for healthcare workers and the public, prophylaxis, isolation and quarantine, case finding and contact tracing, environmental interventions, and public communication.
- Facilitate appropriate patient care and treatment, including hospital surge management, treatment protocol evaluation, problem identification, inter-institutional coordination, medication and equipment provision, staffing support, and patient referral system evaluation.
- Coordinate with local communities, government and non-government organizations, provincial health emergency operation centers, and media for resource mobilization and collaboration.
- Coordinate with local and higher-level health facilities for additional support.
- Provide regular reports to federal and provincial rapid response committees.
- Immediately notify the Epidemiology and Disease Control Division of any internationally notifiable or declared public health emergencies.
- Identify causes of public health emergencies and recommend preventive measures.
- Provide feedback to rapid response committees for preparedness and mitigation.
- Participate in reviews conducted by rapid response committees.

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Annex 2: List of Logistics

List of logistics	Location
Ambulance (A, B, C)	Every Local level
Vaccine Transport van	PHLMC
Vaccine Storage center	PHLMC
Stretchers/ Wheelchairs	Every health facility
Oxygen Plants	Federal and Provincial hospital
PPE	PHLMC, Health facility, Health Office
RDT Kits	PPHL, Health Office, Province Hospitals
Laboratory testing kits/reagents	PPHL, PHLMC

Centers/facilities	
Snake bite treatment centers	All federal & province hospital provide anti snake venom. In addition to that army camps – Choharwa, Bandipur, Dharapani, Mahendranagar, Bardibas also provide ASV.

Annex 3: Laboratory network

S. N	Name of Lab	Category (A/B/C/D)	Testing Capacity	Location	Available Services	Capacity in case of Emergency
1.	Provincial Public Health Laboratory	A	Fully automated laboratory	Janakpur	All laboratory tests	100-200
2.	Province Hospital Lab	C	Manual & Automation	7 districts	Routine & Specialized lab service	50 – 100
3.	Health Office Lab	C	Manual & Automation	8 districts	QA/QC of local level lab, outbreak investigation	
4.	Federal hospital lab	C	Manual & Automation	Rajbiraj & Birgunj	Routine & Specialized lab service	50 – 100
5.	Local level public health lab	C	Manual & Automation	135 local levels	Routine test, outbreak investigation	

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6.	Water quality lab		Manual	Janakpur (covers all 8 districts)	Mobile van service, QA/QC of water.	
7.	DFTQC lab – Janakpurdham; 4 division labs			Janakpur		

Annex 4: Health Partners Mapping

Organization name	Location	Area of work	Coverage area
WHO	Janakpur	Health Emergencies, IPD	8 districts
Red-cross	Janakpur	Health Services, WASH	8 districts
UNICEF	Janakpur	Nutrition, Maternal, Newborn, Child and Adolescent	8 districts
WFP	Janakpur	Nutrition and Food Security	8 districts
UNDP	Janakpur	HIV, TB, Malaria,	8 districts
Save the Children	Bardibas	TB program, Malaria Program, HIV Program	8 districts
UNFPA	Janakpur	Technical support for SRHR program, Gender equality, Adolescents and youth population dynamics	8 districts
FPAN	Janakpur	Family Planning and Safe Abortion	8 districts
ADRA Nepal	Janakpur	Reproductive Health/ Family planning, Post Partum family planning, non-communicable disease	Janakpur, Sarlahi, Rautahat
Wealth Hunger Life		Food security and Nutrition	Saptari, Siraha, Rautahat
AASMAN Nepal	Janakpur	Family Planning and Safe Abortion, Nutrition	Saptari, Siraha, Dhanuhsa, Mahottari, Sarlahi, Rautahat and Bara
NSI	Janakpur	Curative Service Support, Hospital Strengthning	8 districts

Annex 5: Terms of reference for the RCCE

Terms of reference of the Provincial RCCE Coordination Group:

- To review situation arising out of a public health event
- To review the risk communication plan regarding the concerned public health event.
- To issue directions to the concerned line ministries/ departments to roll out the RCCE plan
- To issue instructions to the districts to review their status through the District RCCE Committee
- To advise on activation of PHEOC (24X 7 control room at the provincial level)
- To post updated RC guidelines and FAQs on its website in coordination with the federal RCCE Coordination group and Technical Committee
- To coordinate with federal RCCE unit for feedback and other necessary technical supports.

Terms of reference of the RCMC:

- Monitor internal and external communication.
- Provide support in the quality of communication.
- Identify the source and medium of false information and rumours.
- Ensure that all rumours are addressed expeditiously with information.
- Coordinate with the coordinators of the concerned RCCE unit to
- prepare the collection reports of misinformation and rumours collected
- from various sources.
- Submit report to RCCE coordinator.

Terms of reference of the DPOC:

- Arrangement of mechanisms to assess the needs of the media and meet those needs.
- Develop media contact lists and keep a record of call logs.
- Prepare and distribute media advisory and press releases.
- Prepare and distribute materials such as fact sheets or B-rolls (background videos distributed to television stations, which sometimes include interviews or sound bites).
- Supervise media monitoring systems and reports as well as media websites to see if information in the media is true (such as analysis trends, interests or concerns and inaccurate or misleading information).
- Act as a member of the on-site team as a media liaison.

- Prepare a database of media houses (print, TV, radio, web, social media, etc.) and media persons and to identify the contact persons of the concerned media for the flow of information and message.

Terms of reference of the MPC:

- Actively participate in activating telephone information lines such as call centres and public email response systems (public email response systems).
- Act as a hearing point to collect rumours, misleading information and public interest.
- Coordinate the content and message with the CM coordinator to address these issues through the call center.
- Take active role in the development of public interest messages, information, pamphlets and other information materials to be disseminated, broadcast and distributed to the public.
- Operate and manage emergency response websites and webpages.
- Establish and maintain links with other emergency response websites.
- Prepare a report by analysing what information is available to the public and whether the information is correct (such as analysis trends, concerns and misleading information).
- Identify the communication related needs of the target group.
- Develop communication plans to reach the general readers / viewers listeners or those in crisis and stakeholders.
- Coordinate with the provincial, district and local RCCE units and partner to collect feedback from the community about the activities of the RCCE unit.
- Submit report to RCCE coordinator.

At the district level, the district's RCCE focal person will coordinate with the health coordinator through a provincial health office chief. The district level acts as a bridge between the provincial coordinator and the local level. The Focal person will be based in the District Public Health Emergency Centre.

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