2025

# PROVINCIAL HEALTH EMERGENCY PREPAREDNESS AND RESPONSE PLAN

## KOSHI PROVINCE

# Acknowledgement

It is with a strong sense of duty and commitment that I present this Provincial Health Emergency Preparedness and Response Plan (HEPRP) for Koshi Province. Developed following the workshop held in Koshi Province from 2082/03/07 to 2082/03/09, this plan represents an important milestone in strengthening the province's capacity to prevent, detect, and respond effectively to public health emergencies.

Koshi Province faces a wide range of risks due to its diverse geography, population dynamics, and cross-border movement. Seasonal and climate-related hazards continue to challenge our system while recurring outbreaks of infectious diseases require sustained vigilance. The identification and prioritization of major hazards, along with assessment of their likelihood and impact, have enabled the development of a provincial risk profile and seasonal risk calendar, which guide this plan.

This plan has been formulated through coordination among stakeholders from health and non-health sectors, including federal, provincial, and district-level agencies, in alignment with existing acts and regulations. It clearly defines the roles and responsibilities of provincial structures, including Rapid Response Committees, Rapid Response Teams, hospitals, laboratories, and local governments. Core components such as surveillance, rapid risk assessment, logistics readiness, surge capacity, and risk communication have been integrated to ensure coordinated response.

I sincerely appreciate all individuals and institutions who contributed their expertise and dedication to the development of this plan. I also acknowledge the World Health Organization for its technical support and The Pandemic Fund for its financial assistance.

I am confident that this Provincial HEPRP will serve as a practical framework for strengthening preparedness and response across Koshi Province, improving coordination and ensuring timely action during public health emergencies.

……

Health Secretary
Ministry of Health
Koshi Province

# Acknowledgement

It is with great responsibility and commitment that I present this *Provincial Health Emergency Preparedness and Response Plan (HEPRP)* for Koshi Province. Building on the foundations laid during the workshop conducted in Koshi Province from 2082/03/07 to 2082/03/09, this plan marks an important step in strengthening our province's capacity to anticipate, prepare for, and respond to the wide range of public health emergencies we face every year.

Koshi Province is marked by diverse geography and rapidly evolving health risks, ranging from floods, landslides, fires, and heatwaves to outbreaks of infectious diseases such as dengue, cholera, influenza, AMR-related threats, and zoonoses. The identification and prioritization of major hazards, along with the assessment of their likelihood and impact, have contributed significantly to establishing a provincial risk profile and a seasonal risk calendar, which together form the foundation for developing this emergency preparedness and response plan.

This plan has been developed through extensive collaboration with the stakeholders of health and non-health sectors, including the representatives from federal, provincial, and district level agencies, based on respective acts and regulations. It clearly outlines roles and responsibilities for provincial systems, including the Rapid Response Committees, Rapid Response Teams, hospitals, laboratories, and local governments, such as surveillance, rapid risk assessment, logistics readiness, and risk communication.

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, guiding framework for future preparedness and response efforts across Koshi Province through strengthening early warning systems, enhancing surge capacity, and improving coordination mechanisms.

.....

Mr. Gyan Bahadur Basnet
Director
Health Directorate Koshi Province

निर्देशक

# List of Abbreviations

| | |
|---|---|
| **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 |

# Contents

# 1.Introduction

## 1.1 Background

Koshi Province, located in the eastern region of Nepal, is characterized by significant ecological and geographical diversity ranging from the low land Terai to the hilly and mountainous regions. This geographical variation combined with population dispersion and different access to services, has important implication for public health services and emergence response.

The province has a developing healthcare system comprising provincial, district and PHC centers. Urban areas generally have better access to healthcare services compared to rural areas while urban and semi urban have better assess to HC , which often face challenges in terms of availability and quality of medical care.

The province is exposed to a wide spectrum of natural and human-induced hazards. These include floods, landslides, earthquakes, disease outbreaks, and road traffic injuries. The Koshi River and its tributaries pose recurring flood risks, particularly during the monsoon season, often leading to displacement and disruption of essential services.

Public health emergencies, regardless of their cause, have significant consequences for population health, health system function and socio-economic development. Emerging risk such as climate change, rapid unplanned urbanization, high population mobility across the open boarder with Bihar and West Bengal, and fragile infrastructure further exacerbate particularly the frequency and impact of health emergencies in province.

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

## 1.2 Purpose of the Plan

The purpose of this plan is to strength enhance the capacity of health sectors in Koshi province to mitigate, prepare, detect, respond and recover from public health emergencies through timely and coordinated multisectoral action. It provides a structured framework to guide health emergency preparedness and response across provincial, districts and local level.

## 1.3 Objectives

- To identify and prioritize potential public health emergencies relevant to Koshi Province.
- To assess and prioritize the health impacts of disasters in Koshi Province to inform preparedness and response planning.

- To define roles, responsibilities, and coordination mechanisms among the entities at the provincial, district, and local levels.
- To strengthen multisectoral collaboration, coordination, and dissemination of information among health sectors.
- Establish a unified online platform for emergency-related information sharing among multi sectors (health, security, local government, humanitarian partners, and other relevant stakeholders).
- To strengthen health systems capacities for emergency preparedness and response, including surveillance, early readiness warning, rapid risk assessment, risk communication and community engagement, logistics, and human resource mobilization.
- To ensure effective implementation of preparedness, response, and early recovery activities through a Phased All-Hazard Approach (PAHA)
- To ensure rapid mobilization and transparent utilization of financial resources for emergency preparedness and response.
- To establish monitoring, evaluation, simulation exercises, and after-action review mechanisms for continuous improvement of emergency preparedness and response capacities.

## 1.4 Scope

This plan covers all hazards with potential public health impacts in Koshi Province and applies an all-hazard approach to health emergency preparedness and response. It outlines procedures for mitigation, preparedness, response, and recovery at the provincial level. The plan is designed to complement and align with federal and local emergency plans, ensuring smooth coordination across all three tiers of government.

## 1.5 Guiding Principles

- **Risk** reduction**:** Emphasizes minimizing risks and vulnerabilities before the occurrence of a public health emergency through prevention and preparedness planning.
- **All-hazard approach:** Recognizes and prepares for a broad spectrum of emergencies, including natural, biological, and technological events, through surveillance and early warning systems.
- **Whole-of-society engagement:** Encourages coordinated, inclusive, and collaborative action across sectors, agencies, and communities to ensure a unified response.
- **Equity and inclusion:** Prioritizes the needs and protection of vulnerable and marginalized populations to ensure that mitigation, preparedness, response, and recovery efforts are inclusive and leave no one behind.
- **Evidence-based action:** Uses surveillance data, risk assessments, scientific evidence, and lessons learned from past emergencies to guide decision-making.
- **Transparency and accountability:** Promotes clear communication, regular public information sharing, and accountable use of resources.

- **Resilience-building:** Strengthens the capacity of the health system and communities to anticipate, withstand, adapt to, and recover from health emergencies.

# 2. Context

## 2.1 Provincial Information

### 2.1.1 Demographic and geographic situation

Koshi Province lies in the easternmost part of Nepal, covering an area of 25,905 km² and encompassing 14 districts, with Biratnagar as the provincial capital. It is bordered to the north by the Tibet Autonomous Region of China, to the east by the Indian states of Sikkim and West Bengal, to the south by Bihar (India), and to the west by Bagmati and Madhesh Provinces. The province encompasses a wide range of ecological zones, extending from the high Himalayas, including the world's highest peak, Mt. Everest (8,848 m), to the mid-hills and fertile Terai plains along the India–Nepal border. This geographic diversity has important implications for population distribution, access to health services, and emergency response operations.

According to the 2021 National Population and Housing Census, Koshi Province has a population of approximately 4.96 million people. The population density is approximately 192 persons per square kilometer. The population is ethnically and culturally diverse.

Economically, the province benefits from a mix of agriculture, industry, cross-border trade, tourism, and remittances. The Terai region produces major crops, including rice, maize, jute, and sugarcane. The mid-hills are known for Ilam's tea gardens and cardamom cultivation, while high mountain areas support limited yak herding and alpine horticulture. Biratnagar, one of Nepal's major industrial hubs, hosts industries such as jute mills, textile factories, and pharmaceutical manufacturing units. Major border points, including Kakarbhitta and Jogbani, facilitate significant cross-border trade with India. Remittances from migrant workers and a growing hydropower sector, especially along rivers such as the Sapta Koshi, are also important contributors to the provincial economy.

The SaptaKoshi River, formed by the confluence of seven rivers—Arun, Tamor, Sun Koshi, Dudh Koshi, Tama Koshi, Bhote Koshi, and Indrawati—constitutes the most significant river system in the province. These rivers converge near Trivenighat, close to Chatara in Sunsari District, and contribute to recurrent flooding in lowland areas during the monsoon season. Other major rivers, including the Arun, Tamor, Mai Khola, Kankai, Mechi, Birring, Mawa Khola, Ratuwamai, Bhakhraha, Lohandra, Chisang, Khadam (Gachhiya), Budi Khola, Kesariya, and Singhiya, further contribute to seasonal flooding, particularly in the Terai region.

Transport and communication infrastructure have improved significantly but remain uneven across geographic zones. The East–West (Mahendra) Highway passes through Sunsari, Morang, and Jhapa districts. Several north–south corridors connect the Terai to the hills and mountains, including the Mechi Highway, Koshi Highway, and Sagarmatha Highway. Multiple domestic

airports—including Biratnagar, Bhadrapur, Tumlingtar, Bhojpur, Ilam, Suketar, Phaplu, Syangboche, and Lukla—play a critical role in emergency medical evacuation and logistics support, particularly in remote and high-altitude areas.

## Koshi Administrative map

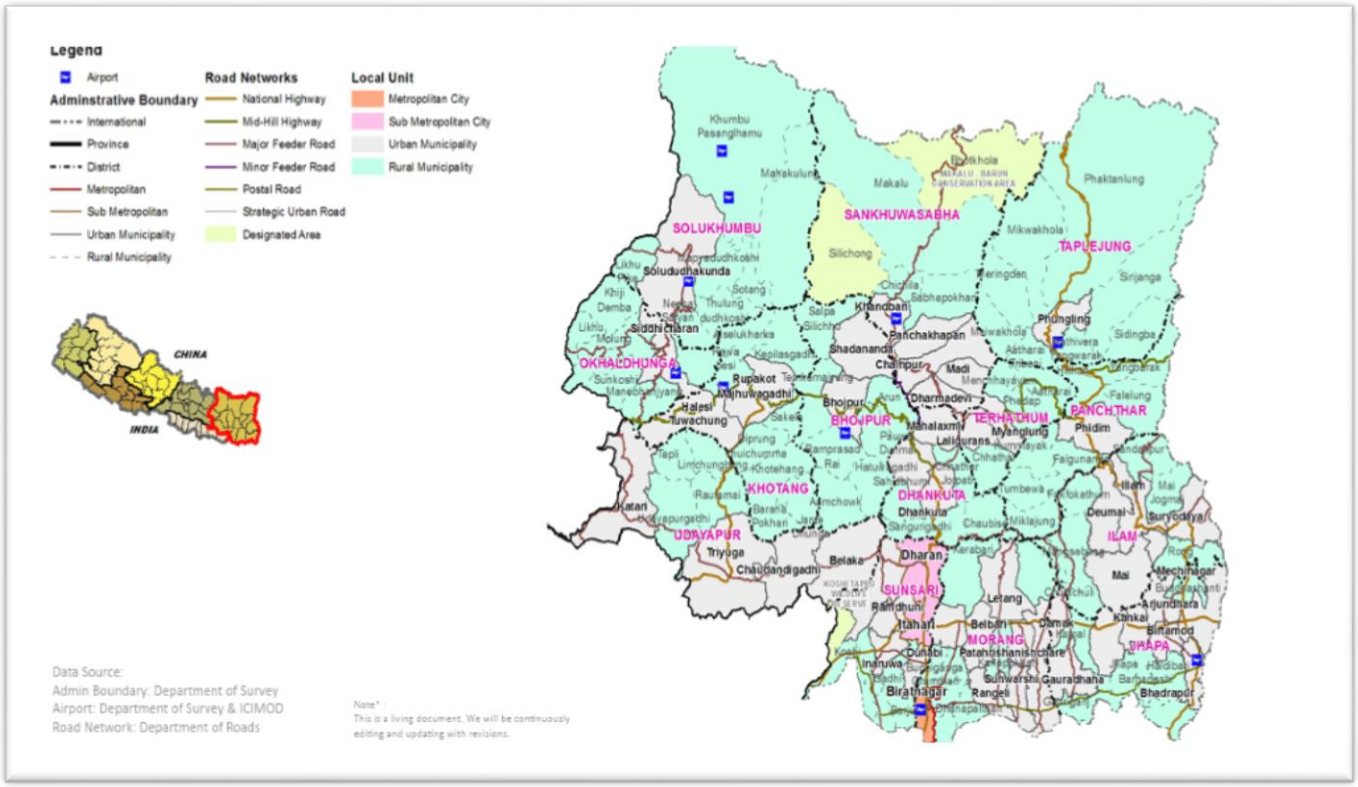



**Figure 1: Administrative Map of Koshi Province Depicting Provincial and District Boundaries, Local Government Units.**

### 2.1.2 Historical disaster profile

Koshi Province has faced repeated public health crises and natural disasters over the past decade. Major public health events include dengue, cholera, Japanese encephalitis, scrub typhus, kala-azar, COVID-19, waterborne diseases, influenza-like illnesses (ILI), avian influenza (bird flu), snakebite incidents in the Terai region, as well as dog bites and animal attacks. Seasonal spikes in acute respiratory infections and diarrheal diseases are frequently observed.

Monsoon-related floods and landslides, particularly in Sunsari, Morang, and Udayapur, have caused fatalities, displacement, and health service disruptions. The 2017 flood emergency and

the ongoing earthquake risk due to proximity to seismic zones further highlight systemic vulnerabilities.

Other emergencies include road traffic accidents (RTAs) along the East–West Highway and feeder roads, as well as industrial hazards in urban areas like Biratnagar, placing an additional burden on trauma care and emergency services. These challenges underscore the urgent need for strengthened emergency preparedness, cross-sectoral coordination, and resilient health systems to mitigate both recurring endemic and emerging threats.

**Table 1. Summary of key hazards in Koshi Province from 2015 - 2025**

| Hazard | Year of Occurrence | Location (District/municipality/ward) | Affected Sector |
|---|---|---|---|
| COVID-19 | 2020 - Present | All districts | All sectors |
| Flood | Annually | All districts | All sectors |
| Acute Gastroenteritis (AGE) | Annually | All 14 districts | Health |
| Landslide | Annually | Hilly and Himalayan Region, especially in Taplejung, Panchthar, Ilam, Dhankuta, Tehrathum, Sankhuwasabha, Bhojpur, Khotang, Okhaldhunga and Udayapur | All sectors |
| Dengue | Annually | All 14 Districts | Health |
| Scrub Typhus | Annually | All districts, especially in Bhojpur, Sankhuwasabha, Khotang, and Dhankuta | Health |
| Kala-azar | Annually | All districts, especially in Okhaldhunga, Khotang, and Bhojpur | Health |
| Snakebite | Annually | Terai Region | Health, Veterinary |
| Dog bite | Annually | Terai Region | Health, Veterinary |
| Influenza-like illnesses (ILI) | Annually | Taplejung, Solukhumbu | Health |
| Chicken pox | 2025 | Solukhumbu | Health |
| Bird Flu | Frequently | Sunsari, Morang, Jhapa | Health, Veterinary |
| Waterborne Disease | Annually | All 14 districts, especially in Sunsari, Morang, Jhapa, Ilam and Udaypur | Health |
| Measles | 2023 | Sunsari, Jhapa | Health |
| Animal Attack | Regularly | Jhapa, Morang, Sunsari | Health, Wildlife |
| Road Traffic Accidents (RTA) | Regularly | All 14 districts | Health, Infrastructure, Economic |
| Earthquake | 2015 | Hilly Districts | All sectors |

# 2.2 Health System Structure and Governance

## 2.2.1 Structural organization of the health system

**Table 2 Health system structures in the province**

| | |
|---|---|
| **Divisonal Health structures** | • Ministry of Health<br>• Province Health Directorate<br>• Province Public Health Laboratory<br>• Province Health Logistic Management Center<br>• Province Health Training Center<br>• Province Health Emergency Operation Centre |
| **Province Health Offices** | • Health Office Jhapa<br>• Health Office Morang<br>• Health Office Sunsari<br>• Health Office Taplejung<br>• Health Office Panchthar<br>• Health Office Bhojpur<br>• Health Office Illam<br>• Health Office Shankhuwashabha<br>• Health Office Terathum<br>• Health Office Dhankuta<br>• Health Office Udaypur<br>• Health Office Solukhumbu<br>• Health Office Okhaldhunga<br>• Health Office Khotang |
| **Province Ayurved Offices** | • District Ayurved Center Jhapa<br>• District Ayurved Center Morang<br>• District Ayurved Center Sunsari<br>• District Ayurved Center Taplejung<br>• District Ayurved Center Panchthar<br>• District Ayurved Center Bhojpur<br>• District Ayurved Center Illam<br>• District Ayurved Center Shankhuwashaba<br>• District Ayurved Center Terathum<br>• District Ayurved Center Dhankuta<br>• District Ayurved Center Udaypur<br>• District Ayurved Center Solukhumbu<br>• District Ayurved Center Okhaldhunga<br>• District Ayurved Center Khotang |
| **Major Hospitals** | • Koshi Hospital<br>• BPKIHS<br>• Katari Hospital<br>• Ilam Hospital<br>• Province Hospital Bhadrapur<br>• District Hospital Sunsari<br>• District Hospital Dhankuta |

| | |
|---|---|
| | • District Hospital Tehrathum<br>• District Hospital Sankhuwasabha<br>• District Hospital Bhojpur<br>• District Hospital Khotang<br>• District Hospital Solukhumbu<br>• District Hospital Okhaldhunga<br>• District Hospital Udaypur<br>• Madan Bhandari Hospital and Trauma Unit Center, Urlabari<br>• Sailaja Acharya Hospital<br>• Nobel Medical College Teaching Hospital<br>• Birat Medical College Teaching Hospital<br>• B&C Medical College Teaching Hospital<br>• Damak Hospital<br>• Rangeli Hospital<br>• Chatara hospital |

**Table 3 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) | 1 |
| Specialized Hospitals (100 beds and above) | 5 |
| General Hospitals (25-50 beds; 100-300 beds) | General Hospital (25-50 Beds): 39<br>General Hospital (100-300 Beds): 7 |
| Public Hospitals (all types) | 56 |
| Basic Hospitals (5- 15 Beds) | 92 |
| Basic Health Service Centre (BHSCs) | 1385 |
| Primary Healthcare Centre (PHCCs) | 33 |
| Health Post (HPs) | 629 |

Source: Annual report 2080/81

### 2.2.2 Functions of health system organizational structures during emergencies

**Ministry of Health (MOH)**

The Ministry of Health 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.

***Major tasks of the Ministry of Health***

- The formulation, implementation, and regulation of provincial policies, laws, standards, and plans relating to public health emergencies.
- Validation and approval of the action plan for the development and management of authorities engaged in public health emergencies.
- Appropriate distribution, mobilization, and record management of health manpower to maintain effectiveness in health services during emergencies.
- Approval of health-related disaster and pandemic preparedness and response plans designed by concerned authorities.
- Ensure effective logistics and financial support at the time of public health emergencies.
- Management and regulation of records of educational and professional associations in healthcare at the provincial level.
- Assessing, monitoring, and regulating the quality of health services in the province.
- Manage procurement and supply of essential drugs and other health materials.
- Information flow systems, health care studies, and research at the provincial level; oversee the health accounting system.
- Manage provincial buffer stock of medicines and pharmaceuticals for health emergencies.
- Establishing, implementing, and enforcing health care standards.
- Formulation and regulation of laws and plans related to population migration in case of public health emergencies.

**Provincial Health Directorate**

The Health Directorate, Dhankuta, is the major technical and administrative unit of health in the province. It ensures the delivery of promotive, preventive, and curative health services through provincial health institutions.

***Major tasks of health directorate***

1. Ensure effective delivery and implementation of promotive, preventive, and curative health services through different health institutions.
2. Determine the manpower requirements for health institutions in the province.
3. Ensure effective implementation of public health programs.
4. Manage the immediate response to natural disasters and epidemics in the province at all levels.
5. Coordinate with external development partners for effective resource and service delivery.
6. Ensure the supply of drugs, equipment, instruments, and other materials to health institutions in the province.
7. Monitor and supervise health institutions across the province.
8. Systematically maintain, update, and publish data, reports, and information regarding health services 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**: Forecast, procure, store, and distribute 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 district health offices in replenishment and emergency logistics coordination.

**The Provincial Health Training Center (PHTC)**

PHTC builds the capacity of health workers for effective emergency response. Its key roles include:

- **Capacity Building:** Designs and provides training on emergency response, infection prevention and control (IPC), surveillance, case management, and disaster risk reduction.
- **Simulation Exercises:** Organizes mock drills and tabletop exercises in collaboration with the Provincial Health Emergency Operations Center (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.

**District Health Offices**

Located in each of the 14 districts of Koshi Province, serves as 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 stakeholders**: Collaborates with municipalities and rural municipalities, provincial, federal governments, NGOs, INGOs, multisector partners, 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 (PHEOC), located in Biratnagar, serves as the primary coordinating body for emergency preparedness and response in Koshi Province. Its core responsibilities are structured across three phases:

Pre-Emergency:

- Planning: Maintain updated emergency preparedness plans and surge capacity frameworks, conduct risk assessments, and monitor early warning signs.
- Orientation and Training: Support simulations, tabletop exercises, and training for health personnel.
- Resource Mapping: Map human and material resources in hospitals every four months to ensure readiness.

During Emergencies

- Command Centre for Health Response: Serve as the central command-and-control hub to enable timely information sharing, coordination, and decision-making.
- Coordination and Communication: Liaise with stakeholders, HEOCs, hub-satellite hospitals, and local governments.
- Resource Mobilization: Dispatch ambulances, deploy Rapid Response Teams (RRTs) and Emergency Medical Teams (EMTs), and manage resources in real time.
- Situation Reporting: Collect, analyze, and disseminate situational updates to support decision-making.
- Risk Communication: Communicate risks and guidance to the public and stakeholders.

Post-Emergency

- Recording and Reporting: Document actions, responses, and outcomes for accountability.
- Study, Analysis, and Recommendations: Conduct studies and provide recommendations to improve preparedness.
- Restoration of Functions: Support the restoration of routine health services and overall health system recovery after the emergency

## 2.3 Public Health Risk profile

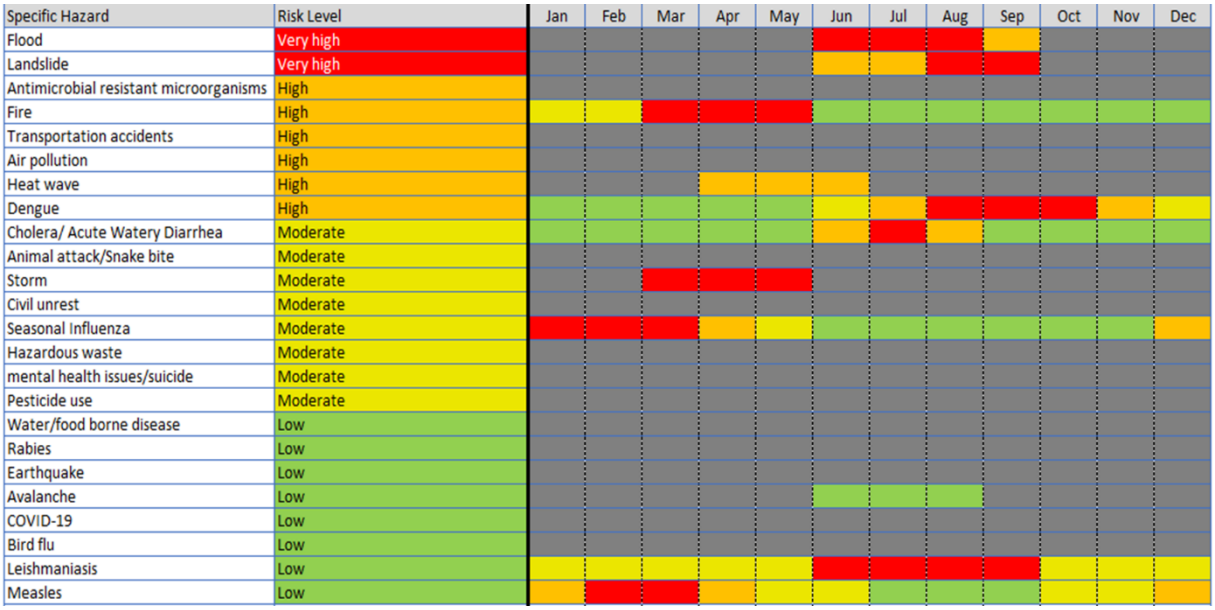
### 2.3.1 Provincial health emergency risk assessment

Risk assessment is a systematic process used to determine the nature and magnitude of potential risks by analyzing hazards and evaluating existing vulnerabilities. Combined, these factors can harm populations, disrupt services, damage infrastructure and livelihoods, and degrade the environment. The process involves identifying and characterizing hazards, estimating levels of exposure, and analyzing disparities in vulnerability and coping capacity across the affected population.

In Koshi Province, an all-hazard risk assessment was conducted in June 2024 using the WHO Strategic Toolkit for Assessing Risk (STAR). The assessment engaged multi-sectoral stakeholders

at the provincial level and evaluated 24 hazards across biological, natural, technological, and societal domains. The STAR methodology provides a structured framework for comparing risks by scoring each hazard based on likelihood, impact on health, economy, and essential services, as well as existing preparedness and response capacities. The results of this assessment serve as a critical input for provincial health emergency management, guiding decision-making for risk reduction and resource allocation across all sectors.

**Table 4 List of hazards, risk level and seasonal calendar**




## 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 by geographic areas where they are most prevalent or likely to occur.

**Table 5 Priority hazards in the province**

| S.N. | Hazards | Prone Areas |
|---|---|---|
| 1. | Disaster related hazards | Flood: Sunsari, Morang, Jhapa<br>Landslide: Taplejung, Panchthar, Ilam, Dhankuta, Tehrathum, Sankhuwasabha, Bhojpur, Khotang, Okhaldhunga and Udayapur<br>Avalanche: Solukhumbu, Tehrathum, Taplejung, Sankhuwasabha<br>Fire: Sunsari, Morang, Jhapa, Udaypur<br>Storm: Sunsari, Morang, Jhapa, Udaypur |
| 2. | Water and Food borne Diseases | Cholera: Sunsari, Morang, Jhapa |
| 3. | Vector Borne Disease | Dengue: All districts<br>Leishmaniasis: Sunsari, Morang, Jhapa, Okhaldhunga<br>Scrub typhus; Bhojpur, Sankhuwasabha, Khotang, and Dhankuta |

| | | |
|---|---|---|
| 4. | Respiratory viral infections | Seasonal Influenza/ COVID-19: All districts<br>Bird flu: Sunsari, Morang, Jhapa<br>Measles: Sunsari, Morang, Jhapa |
| 5. | Rabies | All districts |

# 3. Existing legal frameworks and arrangements for emergencies

**The Constitution of Nepal, 2015**

- Article 35 guarantees the right to free basic health services.
- Article 51 (g) includes disaster preparedness and response under state policies.
- Schedules 7, 8 and 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, the DRMMA to consolidate and modernize Nepal's disaster risk reduction and management frameworks. 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 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 9, Section 23: Mandates the establishment of provincial disaster management fund to support preparedness, response, relief and recovery activities within the province.

**Public Health Service Act, 2075**

Under section 48 (Emergency Health Service and Management):

- Empowers the province to develop and enforce an Emergency Health Plan in alignment with federal standards and directives.
- Authorizes the provincial government to declare a public health emergency if a disaster affects more than one local level within the province.

**Infectious Disease Act, 2020**

Under the Infectious Disease Act, 2020 (1964), the Government of Nepal may designate officials and confer the necessary powers to prevent, control, or eliminate infectious diseases that have developed or are likely to develop.

**One Health Strategy, 2076**

The One Health Strategy, 2076 promotes multisectoral coordination and collaboration among relevant sectors. It emphasizes effective information exchange, mobilization of financial resources, standardized risk assessment processes, and continuous surveillance. The strategy 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 Operations Centers (HEOCs), 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 aim to reduce the risks of monsoon-related hazards such as floods, landslides, and disease outbreaks, particularly in the southern plains and hilly districts of Koshi province, through implementing 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 for 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. The plan was developed through consultations across Koshi province and draws on recent experiences to guide the 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 are a legally binding agreement among 196 countries, including all WHO member states, aimed at preventing, protecting against, controlling, and responding s the international spread of disease. They require countries to develop minimum core public health capacities at all levels, including subnational levels such as provinces, to ensure that provinces can detect, assess, report, and respond to public health risks and emergencies of international concern.

### 2. Sendai Framework for Disaster Risk Reduction

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 emphasizes 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 expected to integrate disaster risk reduction into health emergency planning and coordination efforts.

# 4. Existing routine & emergency coordination mechanisms

**PHEOC-Koshi Province**

The Provincial Health Emergency Operations Centre (PHEOC) 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 have been operationalized in all seven provinces to serve as a command, coordination, and information management hub, with roles aligned and complementary to the national HEOC.

The PHEOC acts as an information and coordination hub, facilitating both horizontal and vertical coordination within the health sector and with other sectoral EOCs.

Its core functions include:

- Collection, analysis, and dissemination of surveillance and event-based information,
- Coordination with the province's hub-and-satellite hospital network to ensure timely referral, capacity management, resource mobilization, and effective health emergency response,
- Communication of preparedness and response measures.

**Hub and Satellite hospital network – Koshi Province**

The Provincial Health Emergency Operations Center (HEOC) in Koshi coordinates closely with a network of four hub hospitals and 52 satellite hospitals across the province to strengthen disaster preparedness and emergency response. This network ensures timely coordination, communication, and resource mobilization during all phases of emergencies, particularly at the provincial and district levels

Four hub hospitals in the province and 52 of their corresponding satellite hospitals:

1. Illam Hospital- Coordination with satellite hospitals of Taplejung, Panchthar and Illam Districts
2. Katari Hospital- Coordination with satellite hospitals of Okhaldhunga, Khotang, Solukhumbu and Udaypur Districts
3. BPKIHS- Coordination with satellite hospitals of Sunsari, Dhankuta, Sankhuwasabha, Bhojpur and Terathum Districts
4. Koshi Hospital- Coordination with satellite hospitals of Morang and Jhapa District

**Coordination of RRCs and RRTs in the Province**

The coordination and mobilization of Rapid Response Committees (RRCs) and Rapid Response Teams (RRTs) follows the National RRT and EMT Mobilization Guideline, 2079, which provides

standardized procedures for activation, team composition, roles, and inter-level coordination. In accordance with the Disaster Risk Reduction and Management Act, 2074, the provincial-level Rapid Response Committee (RRC) serves as the primary coordinating body for outbreak and emergency response, ensuring alignment with district and local-level RRCs. The Provincial Health Emergency Operations Center (PHEOC) plays a central role in facilitating the activation, deployment, coordination, and monitoring of RRTs and EMTs in close collaboration with the Provincial Health Directorate, hub hospitals, laboratories, and partner agencies.

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-level response, including initial assessment, implementation of control measures, and reporting to provincial authorities. In the absence of district-level RRCs, local RRTs may be supported directly by the provincial RRT or PHEOC, depending on the scale and urgency of the event. Vertical coordination between provincial and local levels ensures timely information flow, decision-making, and mobilization of emergency response.

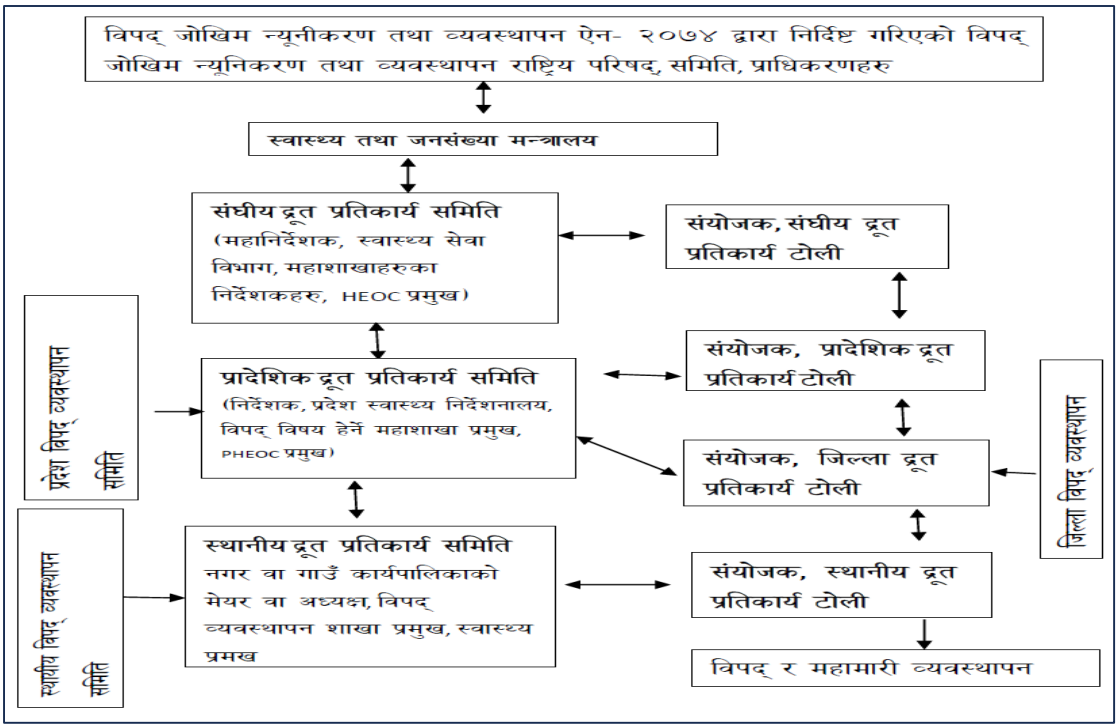



**Figure 2 Structure of Rapid Response Committee and rapid response team**

### Coordination for deployment of EMTs

The EMT Deployment Framework outlines a structured process for the deployment of Emergency Medical Teams (EMTs) during disasters. Upon the occurrence of a disaster or major public health emergency, alerts may come from hub hospitals, satellite networks, or the Provincial Health Emergency Operations Center (PHEOC). The PHEOC initiates a rapid health needs and risk assessment in collaboration with the provincial RRT to determine the requirement for EMT support. If EMT support is required, the Health Emergency and Disaster Management Unit (HEDMU) and the Emergency Medical Team Operational Committee (EMTOC) oversee the deployment process.

If EMT support is not needed, response activities continue under local and provincial coordination. After 48 hours, a reassessment is conducted to review the continued need for EMTs. If required, EMTs are deployed through coordination between HEDMU and EMTOC. After seven days, the need for further deployment is evaluated again, and EMTs may be redeployed or demobilized accordingly. Throughout the deployment, daily reporting and coordination with disaster management authorities are maintained. This process ensures timely, need-based EMT deployment and efficient coordination between local and provincial health authorities.

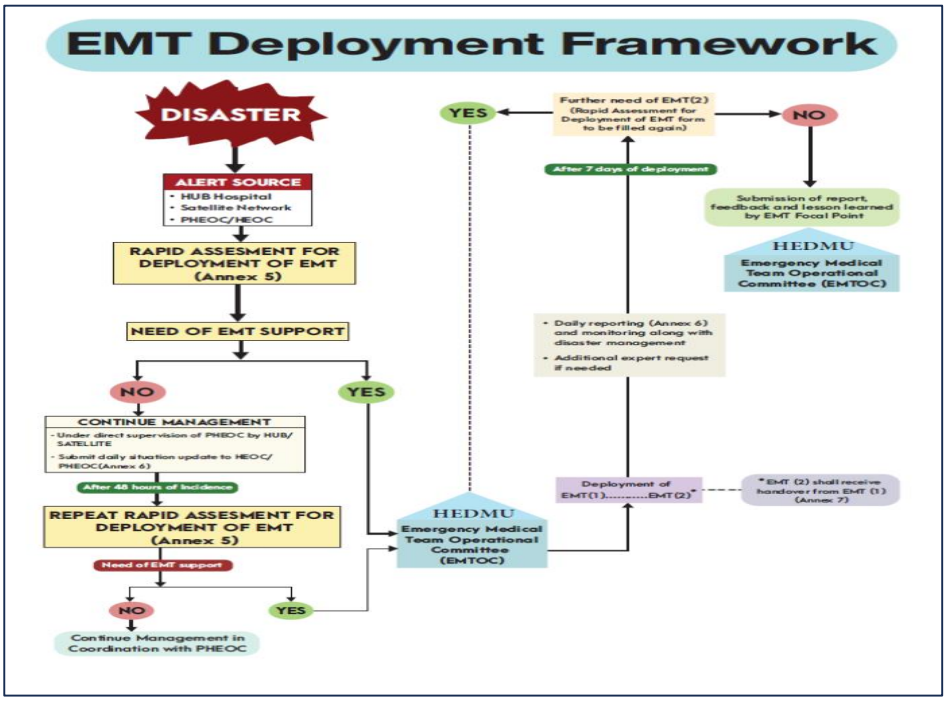



**Figure 3 EMT deployment framework**

**Coordination mechanisms for Sample transportation and laboratory Diagnosis.**

During acute public health events, coordination of sample collection, transportation, and laboratory diagnosis is guided by national guidelines to ensure timely, accurate, and quality-assured laboratory services. Samples are collected at the local level or health facilities and prioritized for testing at nearby hospital-based laboratories whenever available. If diagnostic testing is not available locally, samples are systematically referred to Provincial Public Health Laboratories (PPHLs) or the National Public Health Laboratory (NPHL), following established cold chain and referral protocols.

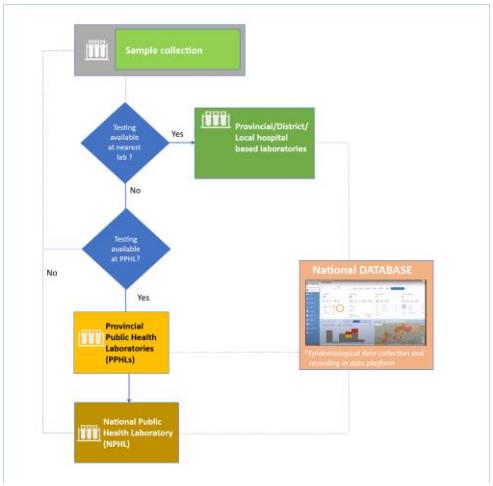



**Figure 4 Sample transportation mechanism**

**Coordination mechanisms for RCCE**

Effective coordination mechanisms for Risk Communication and Community Engagement (RCCE) are essential to ensure that timely, accurate, and culturally appropriate information reaches all levels of society. RCCE follows a structured, multilevel framework that extends from national experts and federal RCCE coordinators to provincial, district, and local RCCE contact persons, and further to ward-level volunteers. This framework enables seamless information exchange, aligning scientific guidance with community needs through specialized roles in media management, 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.

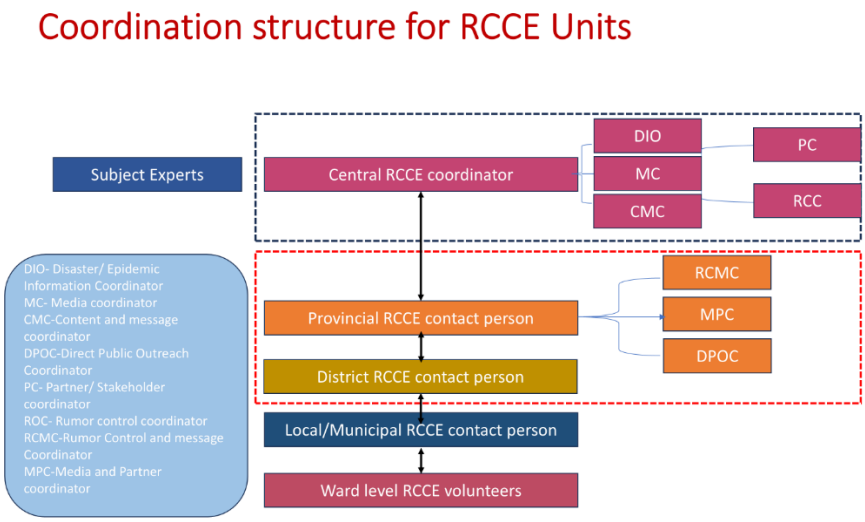



**Figure 5 Coordination structure of RCCE units**

### Coordination with humanitarian and development partner of health sector

The National Disaster Response Framework adopts the cluster approach for coordination with partners. In addition, the National Guidance for Coordination among Humanitarian Health Partners, developed by the Ministry of Health and Population (MoHP), provides a structured framework to improve preparedness and response to disasters and public health emergencies using the cluster approach. At the provincial level, coordination is maintained with clusters such as Health, WASH, Nutrition, and Emergency Shelter to ensure an integrated and timely response. These clusters facilitate efficient resource mobilization and service delivery during emergencies and are led by organizations including WHO, UNICEF, and other national and international partners.

**Table 6 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 preparedness and response. Depending on the type and severity of an emergency, a diverse range of professionals may be required, including frontline clinical responders, public health professionals, support staff, and technical experts. These personnel are drawn from both government and non-government sectors, including trained emergency response professionals, health facility staff, and humanitarian partners. Effective management of human resources ensures the timely deployment of trained personnel, continuity of essential services, and a coordinated surge response during public health emergencies.

**Mapping of Human Resources**

To ensure operational readiness during health emergencies, the following human resources are considered relevant for the implementation of this plan. These personnel may be mobilized at local, provincial, and federal levels, depending on the requirements of the response team and the scale of the emergency.

The Provincial Health Directorate, in coordination with the PHEOC, shall maintain an updated inventory of available human resources, including their locations, skills, and deployment readiness, to ensure rapid and effective mobilization during health emergencies.

**Table 7 List of Human resources**

| S.N. | List of Human Resources |
|---|---|
| 1 | General Practitioner |
| 2 | Orthopedic Surgeon |
| 3 | General Surgeon |
| 4 | General Physician |
| 5 | Anesthesiologist |
| 6 | Medical Officer |
| 7 | Public Health Officer |
| 8 | Nursing Staff |
| 9 | Paramedics |
| 10 | Attendant |

| | |
|---|---|
| 11 | Ambulance Driver |
| 12 | Mortuary Van Personnel |
| 13 | Trained Manpower |
| 14 | Private Sector Actors |

### 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 8 List of training programs**

| 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 |

### Rapid Response Teams (RRTs)

Rapid Response Teams (RRTs) consist of trained, multidisciplinary human resources mobilized during health emergencies. As per the National Rapid Response Team and Emergency Medical Team Deployment Guideline (2022), Rapid Response Committees (RRCs) at various levels coordinate the activation and deployment of RRTs to ensure a timely, structured, and effective response across all tiers of government. The guideline provides specific Terms of Reference (ToR) for each respective committee and team. Compliance with this guideline enhances the efficiency and effectiveness of emergency response by providing a structured approach to managing and coordinating efforts during crises and disasters.

RRTs are responsible for rapid risk assessment, outbreak investigation, emergency management, and response coordination. They are typically deployed within 24–48 hours of notification and operate at provincial, district, and local levels. The teams usually 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, and 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 an emergency, the continuum of care is maintained through coordinated actions following the established structures at each response level:

**Table 9 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 (RRT) | 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 (EMT) | During large-scale emergencies | Strengthen overwhelmed facilities, support surge operations |

## 5.2 Logistics

Logistics resources are essential for health emergency preparedness and response and include physical infrastructure, medical and non-medical supplies, transportation, communication

equipment, and emergency stockpiles. These resources are strategically managed and distributed across provincial health logistics management centers and hospitals (Annex 2).

An effective logistics structure combines centralized provincial coordination for forecasting, procurement, and storage with decentralized distribution at district and facility levels. Logistics tracking is maintained through updated inventories of stock levels, expiration dates, and locations, supported by digital management systems where available. Integration of logistics tracking with PHEOC operations and RRT/EMT mobilization ensures the timely deployment of resources, continuity of essential services, and efficient response during health emergencies.

### 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

Koshi 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).

During public health emergencies, samples collected at local health facilities are prioritized for testing at nearby hospital laboratories whenever available. If diagnostic testing is not available locally, samples are systematically referred to the PPHL or the National Public Health Laboratory (NPHL), following established cold chain and referral protocols to ensure quality and integrity. This structured sample referral system ensures rapid, accurate, and quality-assured laboratory results to support evidence-based decision-making during health emergencies.

## 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. The Province Disaster Management Regulation 2077 (Clause 11) outlines provisions for fund utilization in coordination with the Ministry of Health and the Office of the Chief Minister and Council of Ministers.

Key financial provisions include:

- Operationalization of the Health Emergency and Hospital Strengthening Fund
- Budget allocations to the Province Health Logistics Management Center for medicines and emergency supplies
- Funding for Rapid Response Teams (RRTs) and Emergency Medical Teams (EMTs) through the Provincial Health Office

## 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 the identification of any infectious, natural, technological, and societal hazards and to activate an effective health emergency response.

## 6.1 Early warning Systems

Surveillance and early warning systems 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 the Epidemiology and Disease Control Division (EDCD) at the federal level and implemented at the provincial level by the Provincial Health Directorate (PHD).

- **EWARS sentinel sites** (18 in total) are established in government and selected private 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 scanning, SORMAS, and inputs from partner organizations.

**National or International Reference Laboratories for Priority Pathogens**

The Provincial Public Health Laboratory (PPHL) in Biratnagar is the key testing facility in Koshi. It supports diagnostic services for outbreak-prone diseases and coordinates with the National Public Health Laboratory (NPHL) in Kathmandu for confirmatory testing and referral of 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.

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 Provincial Health Emergency Operations Center (PHEOC) and the Provincial Health Directorate 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 (RRTs) 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.

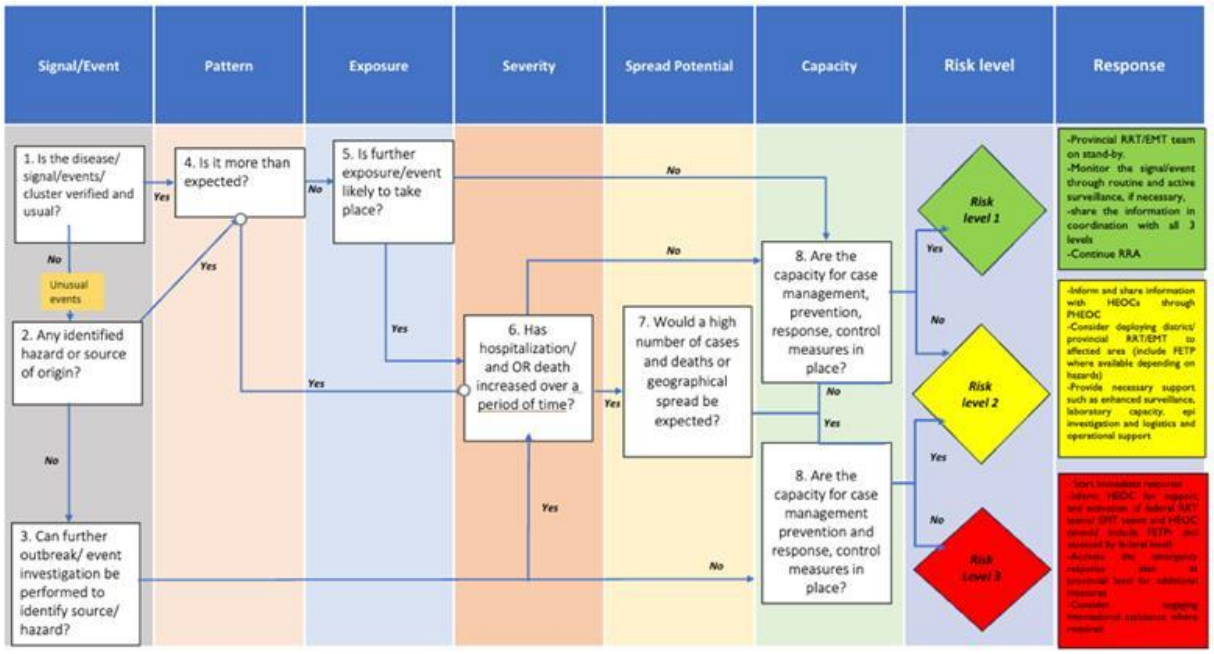



**Figure 6 Algorithm for rapid risk assessment**

## 6.4 Risk Communication and Community Engagement (RCCE) Strategy

The province will follow the national RCCE strategy to raise community awareness and conduct evidence-based social mobilization, community engagement, and public education that support desired social and behavioral change and effective communication management. In the event of a public health emergency, the RCCE system is rapidly activated through the established health emergency response structure. During emergencies, 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, achieving health security, and building resilient communities and health systems. Appropriate dissemination of prevention-related interventions addressing disaster-induced health problems will be carried out at every stage of the disaster response cycle.

**Main objective**

The RCCE strategy aims to contribute to provincial multi-hazard preparedness and response activities by fostering community engagement in the prevention, control, and reduction of the burden of frequent health hazards identified in Koshi Province.

**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 (FCHVs) 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 provincial level, a Provincial RCCE Unit operates under the Provincial Health Directorate. This unit includes an RCCE contact person responsible for coordination with the federal team and assigned 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 (PHEOC) 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 10 Response action at different levels of emergency response**

| S.N. | Level | Responsibility | Response |
|---|---|---|---|
| 1 | One | • Response from Local RRT and local level health facilities<br>• District RRT, hospital and PHEOC on alert | • Notification to district RRT, which should notify to PHEOC<br>• Verification of signals/events<br>• Facilitation for diagnosis and management<br>• Others as per RRT guidelines |

| | | | |
|---|---|---|---|
| **2** | **Two** | • Response from district RRT and hospital<br>• Provincial RRT and PHEOC on alert | • Notification to PHEOC<br>• Hospitals should response as per HDPRP<br>• RRT should response as per RRT guidelines<br>• PHEOC should monitor, be alert and response if required. |
| **3** | **Three** | • Response from all level RRT, hospitals<br>• PHEOC activated<br>• HEOC on alert | • Hospitals should response as per HDPRP<br>• RRT should response as per RRT guidelines<br>• Notification to HEOC<br>• ICS activation |
| **4** | **Four** | • Response from HEOC | • All RRT activation<br>• Support from federal level |

## 7.1 Incident Command System

The Incident Command System (ICS) is used to coordinate responses to public health emergencies. ICS is a standardized emergency coordination mechanism that provides a common organizational model applicable to all hazards and types of emergencies.

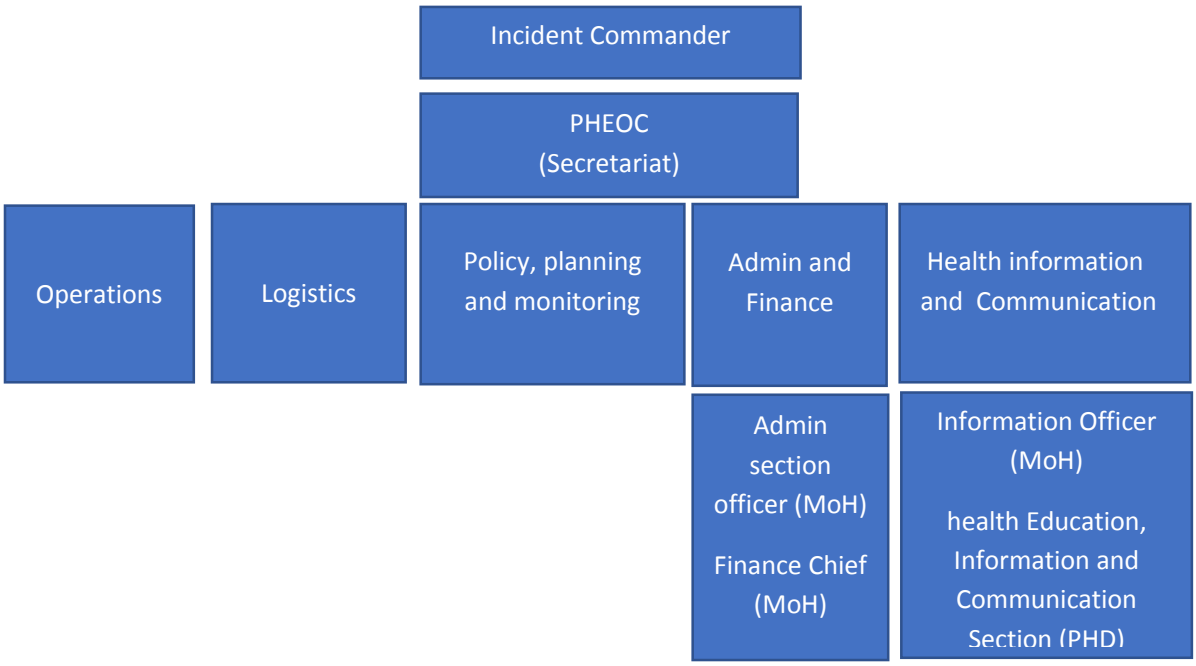



**Figure 7 Provincial Incident Command System**

Under leadership of Secretary, Ministry of Health, Koshi Province, the ICS for health sector response will be formed. Decisions of the Incident commander during ICS activation is considered as the final. The PHEOC will function as the secretariat of the ICS. Under leaderships of Incident

commander, following pillar shall be formed for coordinated and timely implementation of the response activities.

**Roles and Responsibilities:**

| Operations | Planning | Logistics | Finance/Admin | Health Information Management |
|---|---|---|---|---|
| Coordinating and supporting all operating division for implementation of the incident action plans. | Situational analysis, coordination and development of incident action plans | Coordination for 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** | First day | Multi-cluster coordination meeting | | ICS team |
| | | Ensure the safety of health care workers and mapping of health workers in affected areas | | ICS team |
| | | Logistics/identification and maximum utilization of local resources | | ICS team |
| | | Digital mapping of EDPs | | ICS team |
| | | Immediate Deployment of RRT | | ICS team/Operation Pillar |

| | | | | |
|---|---|---|---|---|
| | | Mobilization of Ambulances and mortuary van | | ICS team/Operations Pillar |
| | | Real time Situation report (daily or weekly as per requirement) Dispatch Center | | ICS team |
| | | Continuous surveillance system | | ICS team |
| | | Cross sectoral coordination<br>Risk communication and community engagement | | ICS team |
| **2** | Second day /third day | Review of the first day | | Health Cluster Coordination meeting |
| | | Further risk assessment | | |
| | | Refer to higher center | | ICS team |
| | | Continuation of logistics and HR assessments as per supply and demand | | ICS team |
| | | Arrangement of surge team | | ICS team |
| | | Coordination with key stakeholders | | ICS team |
| | | Request for emergency funds | | ICS team |
| | | Start telemedicine service, Essential services, nutrition, WASH | | ICS team |
| | | Continuous surveillance system | | ICS team |
| | | Debrief | | ICS team |
| **3** | First Week | Arrangement of rapid diagnostic kits | | ICS team |
| | | Situation updated to donors and concerned stakeholders | | ICS team |
| | | Recommend for global donor alert if required | | ICS team |
| | | Review/Report | | ICS team |

| | | | | |
|---|---|---|---|---|
| **4** | Second Week/Third | Community rehabilitation PTSD counselling | | ICS team |

# 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 (ICS). These entities assess epidemiological data, health service continuity, and residual 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 district Health Offices and the respective Palika (local government authorities), ensuring the continuity of routine public health functions.

## 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. An after-action review (AAR) helps assess the actions taken during a public health emergency, identify best practices, gaps, and lessons learned, and implement corrective measures to improve future responses. It is highly recommended that the AAR be conducted immediately following the conclusion of a public health event and may continue for up to three months to ensure a comprehensive evaluation and documentation.

# 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.

# Annex 2: List of logistics

| List of logistics | Location |
|---|---|
| **Water Disinfectants (Bleaching powder, Chlorine solution)** | Federal Water Supply and Sewage management project (FWSSMP), Biratnagar |
| **Medicines, and other logistics, PPE, Testing kits, First Aid Box**<br>**Including vaccine for diseases with cold chain management** | Provincial Health logistics management center, District health offices, District hospitals, Local level, private hospitals, pharmacy and private clinics |
| **Stockpiling of essential medicine services** | All health facilities |
| **Blood Bank** | Provincial hospital, district hospital and private hospital and medical colleges<br>Supported by NRCS (Nepal Red Cross society<br>Walking blood donor |
| **Ambulances and mortuary vans including vehicles, air lift, Fire brigade and fuels** | District hospital, Private hospital, local level, NRCS and NGOs/INGOs<br>Fire brigade and rescue by local level |
| **Alternative care sites** | designated temporary vacant space or building used under a hospital's Incident Command System during public health emergencies or disasters, as part of the hospital's disaster preparedness and response plan, to provide essential and emergency health services. |
| **Electricity Back up (Generators, Solar battery, UPS)** | Back up supplies available at hospitals, private sectors, etc. |
| **Water supplies** | Tankers, Water supply project<br>Jar supplies by private sector including water bottle |
| **Personal supplies (Clothing, tents, Food, Shelter, life jackets, Mosquito nets, Hygiene kits)** | Nepal Red Cross society and local level, local clubs, District Administration Office |
| **Communication devices (Radio, Satellite phones)** | District Administration Office, PEOC, PHEOC, |

| Centres/facilities | Location |
|---|---|

| | |
|---|---|
| **Emergency Medical Warehouse** | Integrated Check Post (ICP), Rani, Biratnagar |
| **Snake bite treatment centers** | Army hospital Charali, Army hospital Itahari, NRCS Damak, Koshi hospital, Katari Hospital, BPKIHS, Private hospital (Nobel hospital), Birat medical college, Belbari ward no 3, Kachankawal |
| **Rapid Bioassay of Pesticide Residual effect for organo phosphate and organo chloride (Fruits and vegetables)** | Kakarbhitta (Quarantine center)<br>Biratnagar (Rani)<br>Food technology and quality control office, Biratnagar |

# 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 (including mobile lab facility) | A | Fully automated laboratory | Biratnagar | All laboratory tests | Molecular: 500/day; RDT: 1,000–15,000/day |
| 2 | Water quality testing laboratory (Emergency Response Mobile Van) | A | As per National drinking water standard 2079, testing as per demand | Itahari, Sunsari | Water quality testing | 15 tests/day; *E. coli* testing in emergencies |
| 3 | District hospital labs | A and B | All routine tests | All districts | All standard tests | Expandable upon demand |
| 4 | PHC Labs and Other Palika-level Labs | C and D | Basic diagnostics | various | Initial disease detection, sample collection | As per local surge need |
| 5 | Private Hospitals (lab) | | Varies by facility | various | Varies (usually comprehensive) | Potential for support during surge |
| 6 | Medical Colleges labs including BPKIHS | A | High-capacity tertiary care lab | | Teaching and reference lab services | Surge support possible |
| 7 | Directorate of livestock and fishery development lab | | | Biratnagar | Disease diagnosis and surveillance<br>Test feed quality, water | Zoonotic disease |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | sources and animal products like milk and meat | |
| 8 | Food and feed laboratory | Not categorized | Standard capacity | Biratnagar | Processed food and drinking water testing | Salmonella E. coli Coliform |

# Annex 4: Health Partners Mapping

| Organization name | Location | Area of work | Coverage area |
|---|---|---|---|
| **BNMT** | Morang | Ensure equitable access to quality health services- TB READY, ASCOT, EPI- (project-5 District) | Udayapur, Sunsari, Morang, Jhapa, Ilam |
| **NATA** | Morang | TB Control | |
| **FPAN** | Morang | Family Planning and RH | |
| **FAIRMED** | Morang | Neglected Tropical Diseases (Leprosy, LF, VL, Dengue and Chikungunya, Snakebite envenoming, trachoma, rabies, soil transmitted Helminthiasis, Scabies and other ectoparasites, Taeniasis/Cysticercosis), Maternal and Neonatal Health, Disability Prevention (NTDs caused disability), WASH, Health Emergency. | |
| **Karuna Foundation** | Sunsari/ Itahari | Prevention of avoidable childhood disability and rehabilitation of person with disability, Maternal and child health, Cervical Cancer screening and Management, WASH and Holistic Development | Ilam, Pachthar, Dhankuta, Morang and Sunsari |
| **Marie Stopes** | | Health (SRHR) | Dhankuta, Sunsari, Morang, Ilalm, Jhapa |
| **Marie Stopes Nepal** | Morang | Health (SRHR) | Dhankuta, Sunsari, Morang, Ilalm, Jhapa, Taplejung, Khotang, Bhojpur, Sankhuwasabha, Udaypur, Okhaldhunga and Terahthum |
| **NLR, Nepal** | Morang | Leprosy control & prevention; Disability prevention and management (I2C), Disabilities Inclusive development (DID), comprehensive WASH, Organizational strengthening, Inclusive development (ID) | Leprosy control program coverage - all districts of province 1 & province 7; DID and Model Village coverage - Selected |

| | | | |
|---|---|---|---|
| | | | urban/rural Municipalities of Province 1 & 7 |
| **Nick Simons Institute** | Kathmandu | Hospital Management (District), Rural Staff support | All 14 districts |
| **PHECT Nepal** | Morang | | |
| **PSI-Nepal** | Kathmandu | Family planning and Safe Abortion | Jhapa, Morang, Sunsari, Udayapur |
| **World Neighbors** | Morang | Sustainable Agriculture and Rural Livelihood, Community based Natural resources management, community and reproductive health, gender equity, local capacity building | Udaypur |
| **WHO- IPD, Biratnagar Field Office** | Morang/Biratnagar | Vaccine Preventable Disease Surveillance (Polio, Measles, Japanese Encephalitis and Neonatal Tetanus), Routine Immunization and SIAs (Supplementary immunization Activities) | Sunsari, Morang, Udayapur, Okhladhunga, Khotnag and Solukhumbhu |
| **WHO- IPD, Damak Filed Office** | Morang/Biratnagar | Vaccine Preventable Disease Surveillance (Polio, Measles, Japanese Encephalitis and Neonatal Tetanus), Routine Immunization and SIAs (Supplementary immunization Activities) | Jhapa, Illam, Panchataar, Taplejung, Dhankuta, Bhokpur, Terathum and Sankhuwashabha |
| **WHO-Health System** | Morang/Biratnagar | Support to MoSD for evidence-based health system, policy and planning. | MoSD |
| **WHO - PHEOC** | Morang/Biratnagar | Support in different areas of health sector preparedness and response readiness such as hub and satellite hospitals network coordination, prepositioning and replenishment of emergency medical logistics, risk assessment, human resources management, training and facilitation, Outbreak investigation,-Epidemiological study and analysis etc.<br>Technical support and coordination with MOIAL, MOSD, PHD, District and local level government.<br>Monitoring, supervision and reporting status of POES<br>Overall data management(Recording, Reporting, Analysis)of health emergencies/disasters | 14 districts |
| **WHO-NCD** | Morang/Biratnagar | Support in NCD and Mental health | |
| **UNFPA** | Morang | GBV, Health | |
| **UNICEF** | Morang | | |

# 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 PHE
- 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 centers and public email response systems (public email response systems).
- Act as a hearing point to collect rumors, 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 analyzing 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.

World Health Organization
Nepal

The Pandemic Fund
FOR A RESILIENT WORLD