2025

PROVINCIAL HEALTH EMERGENCY PREPAREDNESS AND RESPONSE PLAN

KOSHI PROVINCE

निर्देशक

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.

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Mr. Gyan Bahadur Basnet
Director
Health Directorate Koshi Province

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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 its ecological diversity from the lowland terai to the hilly and mountainous regions. It is known for its diverse population, comprising various ethnic groups such as Brahmin, Chhetri, Tharu, Limbu, Rai, Tamang, and Sherpa, each with their own distinct languages, cultures, and traditions. The province is religiously pluralistic, with Hinduism being the predominant religion, followed by Buddhism, Islam, and Kirat.

It has a developing healthcare infrastructure, with several hospitals, primary health care centers, and clinics. Urban areas generally have better access to healthcare services compared to rural areas, 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 implications for population health, the continuity of essential services and socio-economic development. Climate change, rapid unplanned urbanization, open-border mobility with India specifically Bihar and West Bengal, and fragile infrastructure further exacerbate these risks. In this context, a coordinated, multisectoral, and evidence-based approach is essential to mitigate the impacts of public health emergencies and strengthen emergency preparedness and response capacities.

The Provincial 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 public health emergencies.

1.2 Purpose of the Plan

The purpose of this plan is to enhance the capacity of Koshi 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 Koshi 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 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 Koshi 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

Koshi Province lies in the easternmost part of Nepal, covering an area of 25,905 km² and encompassing 14 districts with Biratnagar as its capital. It is bordered to the north by the Tibet Autonomous Region of China, to the east by the Indian state of Sikkim and West Bengal, to the south by Bihar (India), and to the west by Bagmati and Madhesh Provinces. The province spans a wide range of terrain 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.

According to the 2021 National Population and Housing Census, Koshi Province is home to approximately 4.96 million people, yielding a population density of about person 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 such as 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, the oldest industrial city in Nepal, is home to jute mills, textile factories, and pharmaceutical industries. Major border points like Kakarbhitta and Jogbani play key roles in trade with India. Remittances from migrant workers and a growing hydropower sector, especially along rivers like the SaptaKoshi, are also important to the province's economy.

The Saptakoshi River is the most significant water system in the province, formed by the confluence of seven rivers: Arun, Tamor, Sun Koshi, Dudh Koshi, Tama Koshi, Bhote Koshi, and Indrawati. These rivers join at Trivenighat near Chatara in Sunsari district. This massive water system poses a risk of regular flooding in lowland areas during the monsoon. Other major rivers include the Arun (originating in Tibet and flowing through Sankhuwasabha), Tamor (from Taplejung), Mai Khola (from Ilam), and Kankai, Mechi, Birring, Mawa Khola (from Jhapa), Ratuwamai, Bhakhraha, Lohandra, Chisang, Khadam (Gachhiya), Budi Khola, Kesariya, Singhiya, among others. These rivers contribute to seasonal flooding, especially in the terai region.

Transport and communication infrastructure has improved significantly. The East–West (Mahendra) Highway passes through Sunsari, Morang, and Jhapa in the Terai. Mid-hill roads connect districts like Panchthar, Tehrathum, Bhojpur, Khotang, and Okhaldhunga. The Madan Bhandari Highway connects the northern parts of Jhapa, Morang, Sunsari, and central Udayapur, while the Tamor Corridor links Dhankuta, Panchthar, and Taplejung. The Hulaki Marga serves the southern areas of Sunsari, Morang, and Jhapa. Several north-south routes connect the terai to

the hills such as Mechi highway, which links Jhapa, Ilam, Panchthar and Taplejung districts; Koshi highway which links Morang, Sunsar, Dhankuta and Sankhuwasabha districts; Sagarmatha highway which links Udayapur, Okhaldhunga and Solukhumbu districts. Feeder roads and midhill routes connect towns like Dhankuta and Okhaldhunga. Airports in Biratnagar, Bhadrapur (Jhapa), Tumlingtar (Sankhuwasabha), Bhojpur, Ilam, Suketar (Taplejung) and Phaplu, Syangboche and Lukla airports in Solukhumbu, provide domestic flights and support emergency airlifting. Mobile and internet coverage has expanded across the province, though it remains inconsistent in high altitude and remote areas.

Koshi Administrative map

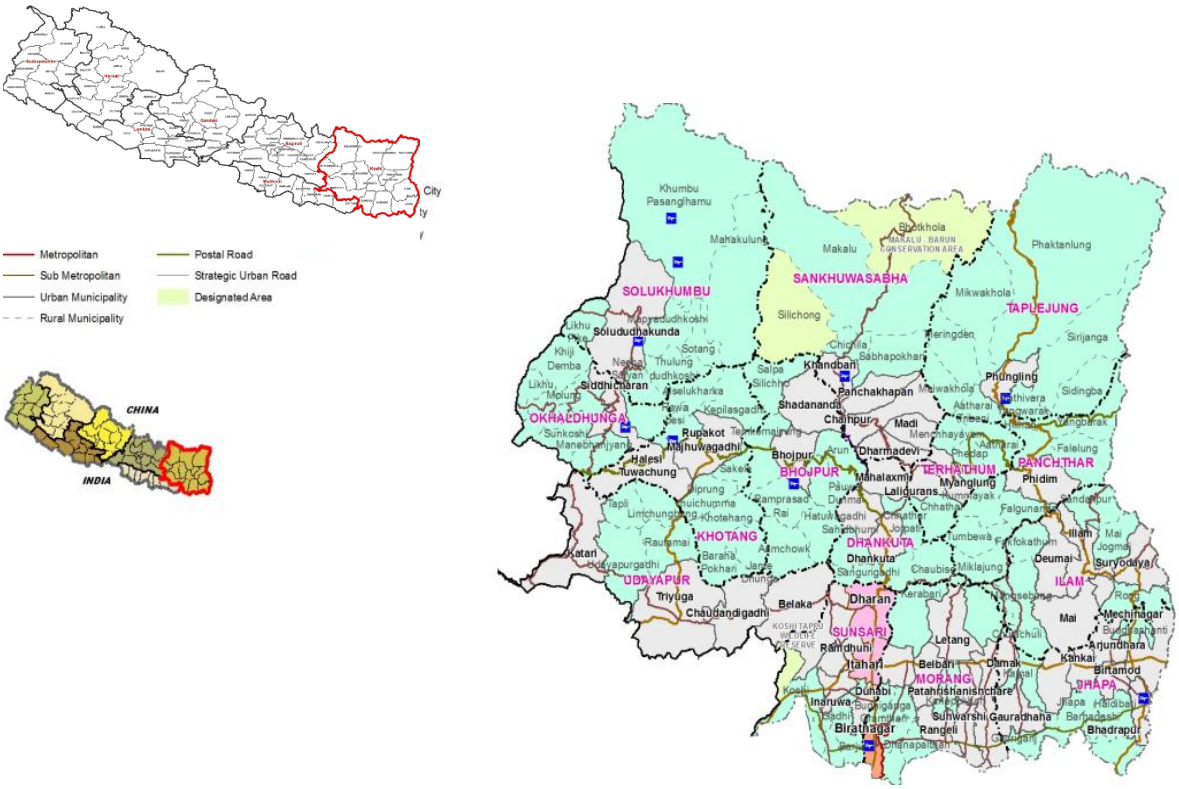


Figure 1 Map of Koshi Province showing administrative regions

2.1.2 Historical Emergency Data

Koshi Province has faced repeated public health crises and natural disasters over the past decade. The province has experienced outbreaks of dengue, cholera, Japanese encephalitis, scrub typhus, kala-azar, and COVID-19, waterborne disease, influenza-like illnesses (ILI), avian influenza (bird flu) snakebite incidents in terai region, as well as dog bites and animal attacks. Seasonal spikes in acute respiratory infections and diarrheal diseases have been common.

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 continuing 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, and industrial hazards in areas like Biratnagar, further burdening trauma care systems. These challenges underscore the urgent need for strengthened emergency preparedness, cross-sectoral coordination, and resilient health systems to mitigate both 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 Organization

2.2.1 Structural organization of the health system

Table 2 Health system structures in the province

Provincial health structures	• Minstry of Health • Provincial Health Directorate • Provincial Public Health Laboratory • Provincial Health Logistic Management Center • Provincial Health Training Center • Provincial Health Emergency Operation Centre
District Health Offices	• Health Office Jhapa • Health Office Morang • Health Office Sunsari • Health Office Taplejung • Health Office Panchthar • Health Office Bhojpur • Health Office Illam • Health Office Shankhuwashabha • Health Office Terathum • Health Office Dhankuta • Health Office Udaypur • Health Office Solukhumbu • Health Office Okhaldhunga • Health Office Khotang
District Ayurved Offices	• District Ayurved Center Jhapa • District Ayurved Center Morang • District Ayurved Center Sunsari • District Ayurved Center Taplejung • District Ayurved Center Panchthar • District Ayurved Center Bhojpur • District Ayurved Center Illam • District Ayurved Center Shankhuwashaba • District Ayurved Center Terathum • District Ayurved Center Dhankuta • District Ayurved Center Udaypur • District Ayurved Center Solukhumbu • District Ayurved Center Okhaldhunga • District Ayurved Center Khotang
Major Hospitals	• Koshi Hospital • BPKIHS

	• Katari Hospital • Ilam Hospital • Provincial Hospital Bhadrapur • District Hospital Sunsari • District Hospital Dhankuta • District Hospital Tehrathum • District Hospital Sankhuwasabha • District Hospital Bhojpur • District Hospital Khotang • District Hospital Solukhumbu • District Hospital Okhaldhunga • District Hospital Udaypur • Madan Bhandari Hospital and Trauma Unit Center, Urlabari • Sailaja Acharya Hospital • Nobel Medical College Teaching Hospital • Birat Medical College Teaching Hospital • B&C Medical College Teaching Hospital • Damak Hospital • Rangeli Hospital • 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 General Hospital (100-300 Beds): 7
Public Hospitals	56
Basic Hospitals (5- 15 Beds)	92
Basic Health Service Centre (BHSC)	1385
Primary Healthcare Centre (PHCC)	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

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

Provincial Health Directorate

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

Major tasks of health directorate

1. 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.

District Health Offices

Located in each of the 14 districts of Koshi 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 stakeholders**: 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 Biratnagar, serves as the primary body coordinating for 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

During emergencies:

- 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

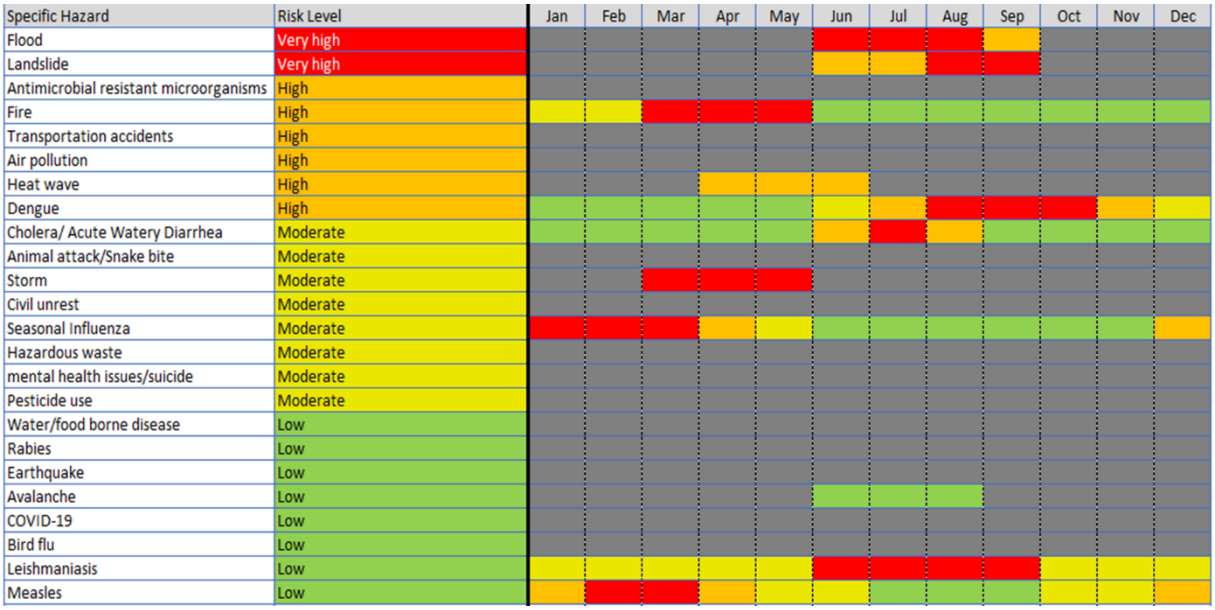
2.3.1 Provincial health emergency risk assessment

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 Koshi Province, an all-hazard risk assessment was conducted in June 2024 using the WHO Strategic Toolkit for Assessing Risk (STAR). The assessment brought together multi-sectoral stakeholders at the provincial level and involved the evaluation of 24 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, and 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 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 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 Landslide: Taplejung, Panchthar, Ilam, Dhankuta, Tehrathum, Sankhuwasabha, Bhojpur, Khotang, Okhaldhunga and Udayapur Avalanche: Solukhumbu, Tehrathum, Taplejung, Sankhuwasabha Fire: Sunsari, Morang, Jhapa, Udaypur Storm: Sunsari, Morang, Jhapa, Udaypur
2.	Water and Food borne Diseases	Cholera: especially in Sunsari, Morang, Jhapa
3.	Vector Borne Disease	Dengue: All districts Leishmaniasis: Sunsari, Morang, Jhapa, Okhaldhunga Scrub typhus; Bhojpur, Sankhuwasabha, Khotang, and Dhankuta
4.	Respiratory viral infections	Seasonal Influenza/ COVID-19: All districts Bird flu: Sunsari, Morang, Jhapa 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 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 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):

- 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.

Infectious Disease Act, 2020

Under the Infectious Disease Act, 2020 (1964), 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.

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 (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 aims 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 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 Koshi 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

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-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 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 – Koshi Province

The Provincial 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 across the province. 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 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 of Rapid Response Committees (RRCs) and Rapid Response Teams (RRTs) 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 (RRC) 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.

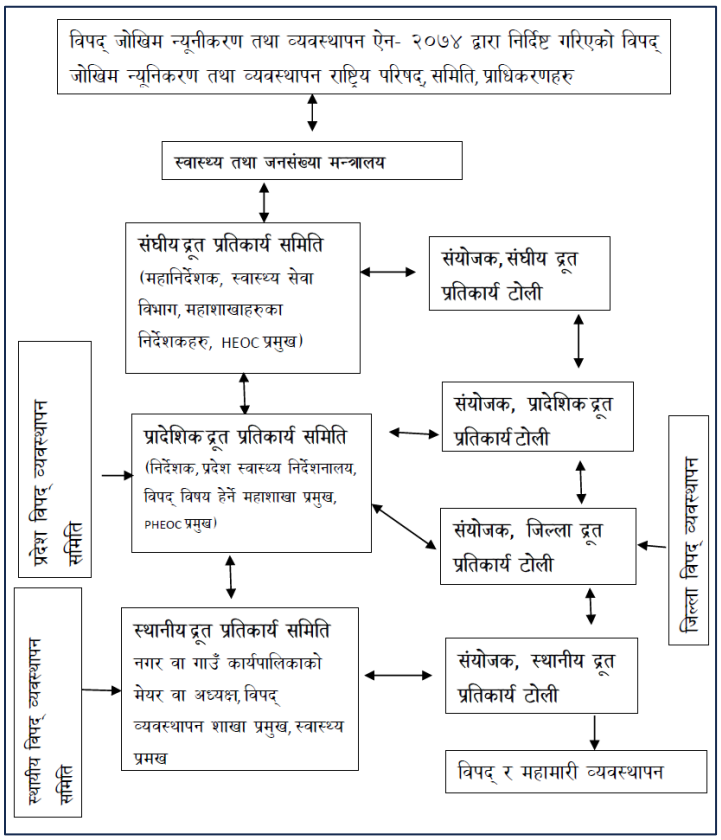


Figure 2 Structure of Rapid response committee and rapid response team

Coordination for deployment of EMTs

The EMT Deployment Framework outlines a structured coordination process for the deployment of Emergency Medical Teams (EMTs) during disasters. Upon the occurrence of a disaster, alerts may come from hub hospitals, satellite networks, or the Provincial Health Emergency Operation Center (PHEOC). 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.

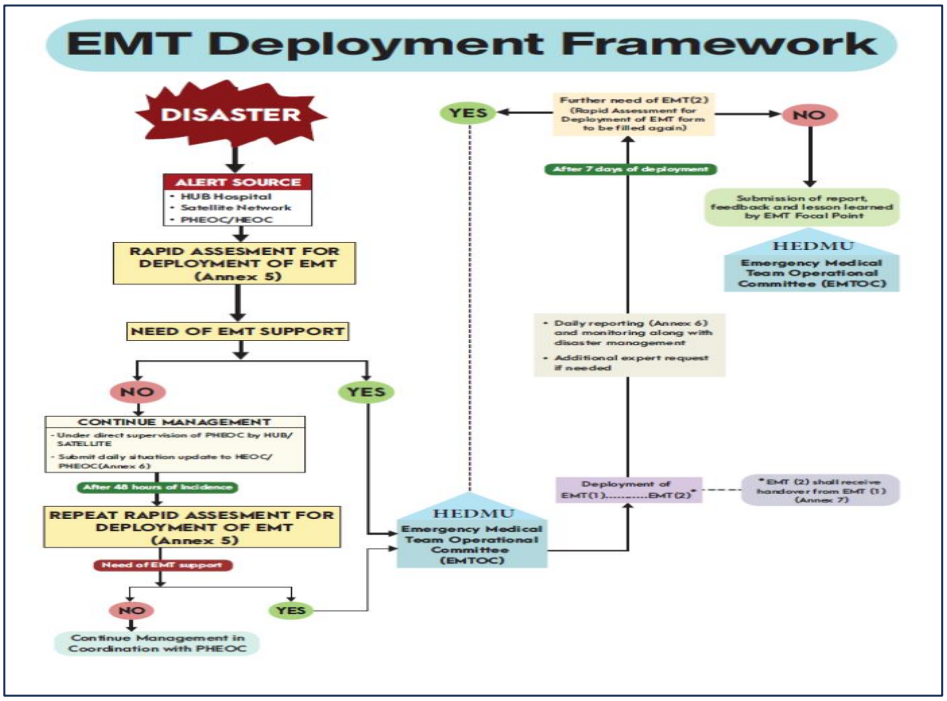


Figure 3 EMT deployment framework

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.

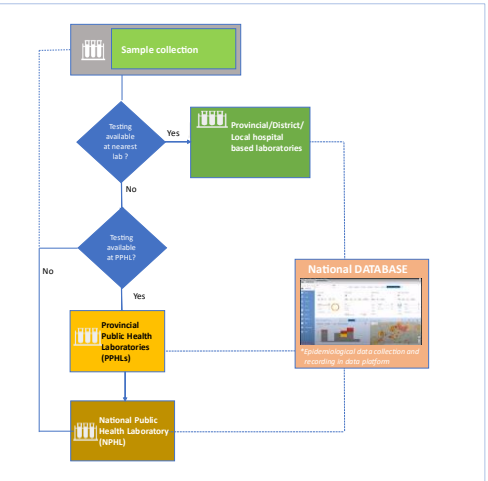


Figure 4 Sample transportation mechanism

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.

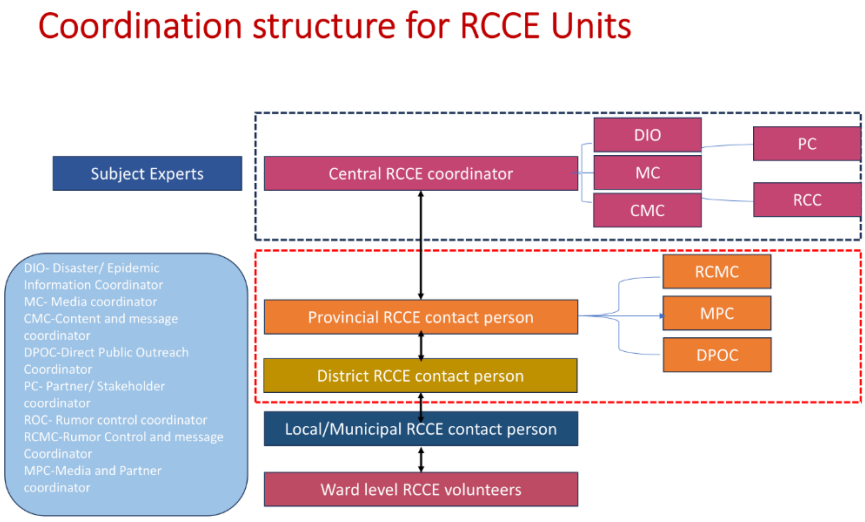


Figure 5 Coordination structure of RCCE units

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 developed 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 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 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 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 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, 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 the emergency, the continuum of care is maintained or provided through the following 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 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

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)

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 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.

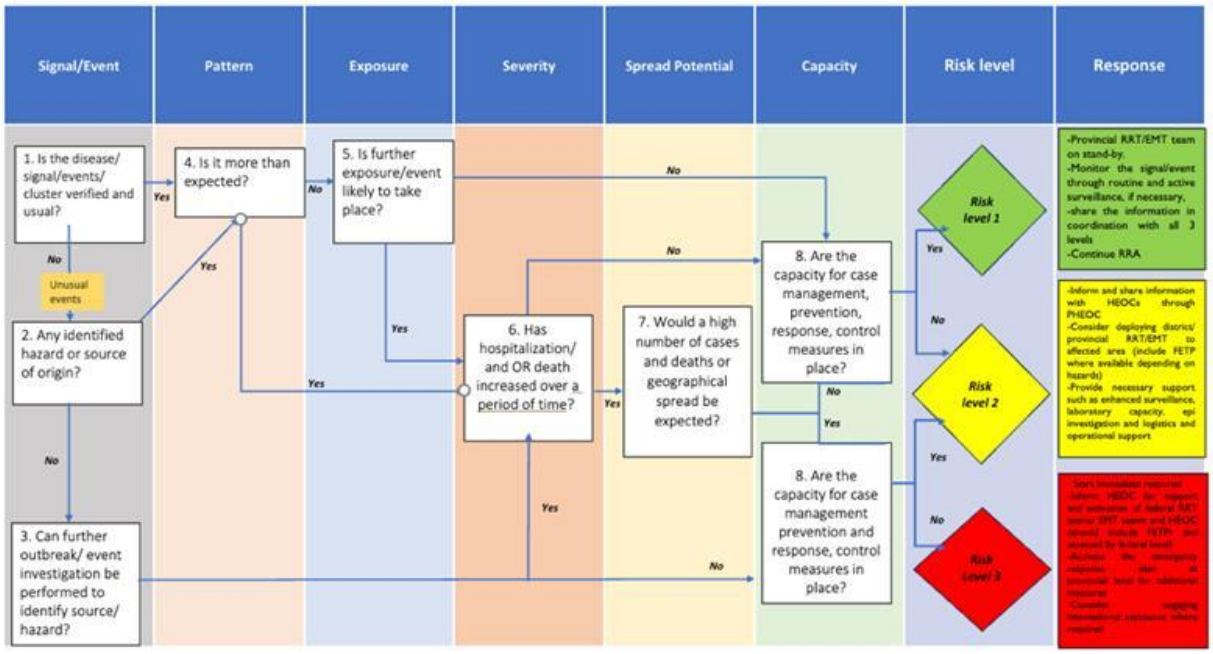


Figure 6 Algorithm for rapid risk assessment

6.4 Risk Communication and Community Engagement (RCCE) Strategy

The province will follow the national RCCE strategy to raise community awareness, 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 Koshi.

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 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 (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 • 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 • Hospitals 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.

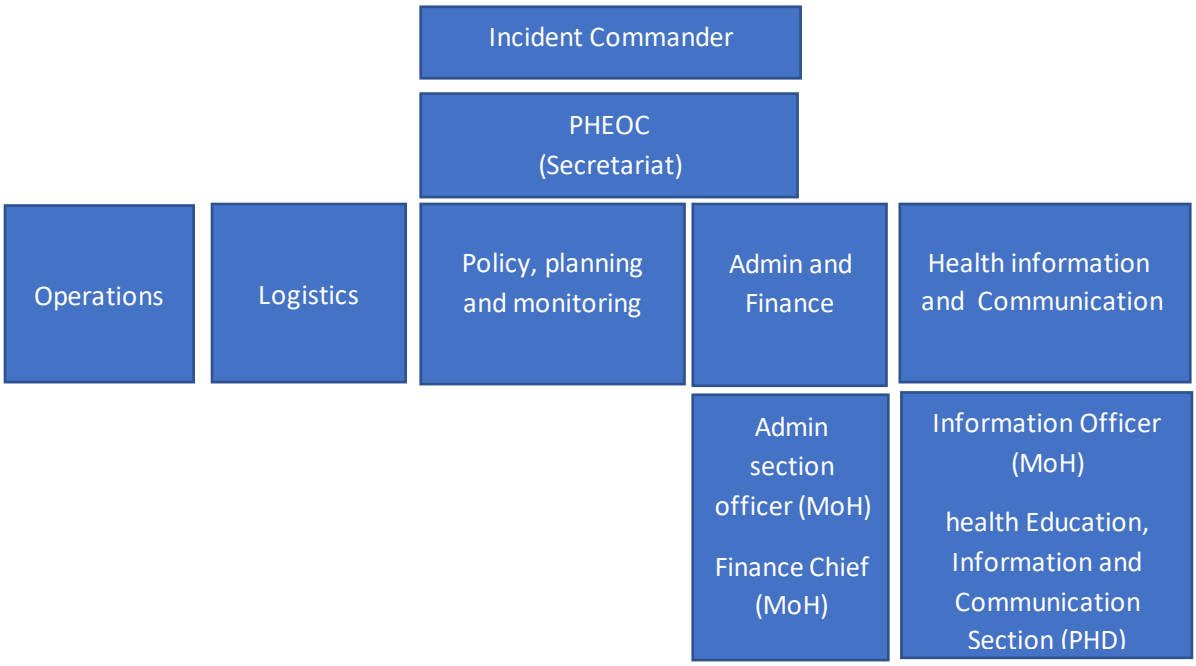


Figure 7 Provincial Incident Command System

Under leadership of Secretary, Ministry of Health, Koshi 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

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 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 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.

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 **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 Supported by NRCS (Nepal Red Cross society 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 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 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) Biratnagar (Rani) 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 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. Technical support and coordination with MOIAL, MOSD, PHD, District and local level government. Monitoring, supervision and reporting status of POES 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.