HEALTH EMERGENCY AND DISASTER CONTINGENCY PLAN

Ministry of Health
Royal Government of Bhutan
Thimphu

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HEALTH EMERGENCY AND DISASTER CONTINGENCY PLAN

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Health Emergencies Programme
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Foreword

In recent years, the world has witnessed an alarming increase in the frequency and severity of health emergencies and natural disasters. These events, ranging from natural disasters to disease outbreaks, pose significant challenges to public health systems and underscore the critical need for comprehensive mitigation, preparedness, and response strategies. In this context, the Ministry of Health's Health Emergency and Disaster Contingency Plan (HEDCP) is a vital instrument for ensuring the health and well-being of our nation.

The HEDCP is a comprehensive framework designed to enhance our mitigation, preparedness, response, and recovery efforts in the face of such adversities. It underscores our commitment to safeguarding public health and in ensuring the resilience of our health system including the healthcare infrastructure. By integrating disaster risk reduction principles and health emergency management, this plan aims to ensure the prompt and efficient delivery of medical services during an emergency or disaster.

The contingency plan has been revised in collaboration with various sectors, including health, disaster management, civil society, and the international community. Their invaluable contributions have ensured that the plan is robust, inclusive, and reflective of the realities on the ground. It incorporates lessons from past emergencies and aligns with national policies, regional frameworks, and global standards.

As we progress, this plan must remain a living document, adaptable to emerging threats and evolving circumstances. Continuous training, simulation exercises at all levels, and regular reviews will be essential to maintain its relevance and effectiveness. Moreover, community engagement and empowerment are key to ensuring our strategies are well-received and supported at all levels.

I extend my gratitude to all those who have contributed to the revision and development of this HEDCP. Together, we can build a safer, healthier, and more resilient Bhutan. Let us commit to its implementation with unwavering dedication and a shared vision for a secure future.

(Pemba Wangchuk)
Secretary
Ministry of Health

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2. Kinga Jamphel, Director, Department of Health Services/ HLC Sub-Committee Member
3. Chimmi Dorji, Head, RCDC / HLC Sub-Committee Member
4. Ugyen Tshering, Sr. Programme Officer, HEP, CDD, DoPH

Abbreviations

AMR	Antimicrobial Resistance
BFDA	Bhutan Food and Drug Authority
BGLI	Bhutan Glacial Lake Inventory
CDD	Communicable Disease Division
CEID	Centre for Emerging Infectious Diseases
CPO	Chief Programme Officer
CSO	Civil Society Organization
DCS	Department of Clinical Services
DDMC	Dzongkhag Disaster Management Committee
DHS	Department of Health Services
DLGDM	Department of Local Governance and Disaster Management
DM	Disaster Management
DMCP	Disaster Management and Contingency Plan
DMP	Department of Medical Products
DoPH	Department of Public Health
DOTS	Directly Observed Treatment Short Course
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EMT	Emergency Medicine Team
FDEC	Food Drug and Environment Centre
GBV	Gender-Based Violence
GLOF	Glacial Lake Outburst Flood
HEP	Health Emergencies Programme

HCAI	HealthCare Associated Infection
HHC	Health Help Center
HPAI	Highly Pathogenic Avian Influenza
HPRCD	Health Promotion and Risk Communication Division
ICS	Incident Command System
ICTS	Information and Communication Technology Services
IHR	International Health Regulations 2005
JDWNRH	Jigme Dorji Wangchuck National Referral Hospital
KGUMSB	Khesar Gyalpo University of Medical Sciences of Bhutan
MCM	Mass Casualty Management
MDR-TB	Multi-Drug-Resistant Tuberculosis
MISP	Minimum Initial Service Package
MoAL	Ministry of Agriculture and Livestock
MoHA	Ministry of Home Affairs
NAP	National Adaptation Plan
NCAH	National Centre for Animal Health
NCHM	National Centre for Hydrology and Meteorology
NCDD	Non-Communicable Disease Division
NEWARS	National Early Warning, Alert and Response Surveillance
NGO	Non-Governmental Organization
NHRRT	National Health Rapid Response Team
NMS	National Medical Services
PHC	Primary Health Care

PHCs	Primary Health Centers
PHEIC	Public Health Emergency of International Concern
HEP	Health Emergencies Programme
PHL	Public Health Laboratory
RCDC	Royal Center for Disease Control
RBP	Royal Bhutan Police
RRT	Rapid Response Team
SRH	Sexual and Reproductive Health
STAR	Strategic Toolkit for Assessing Risks
TAG	Technical Advisory Group
UHC	Universal Health Coverage
VDCP	Vector-borne Disease Control Program
VPDP	Vaccine Preventable Disease Program
WHA	World Health Assembly

Executive Summary

The Health Emergency and Disaster Contingency Plan (HEDCP) 2024 is a comprehensive framework designed to enhance the mitigation, preparedness, response, and recovery capabilities of our health systems in the face of health emergencies and natural disasters. Recognizing the increasing frequency and complexity of health emergencies, ranging from natural disasters to pandemics, this plan establishes a coordinated approach that prioritizes the protection of public health, the preservation of healthcare infrastructure, and the efficient allocation of resources.

The HEDCP aims to equip health authorities, emergency response teams, and community stakeholders with clear guidelines and protocols to effectively manage health crises. Key components of the plan include risk assessment and management, incident command structures, communication strategies, resource mobilization, and training programmes for healthcare personnel. By fostering collaboration between local, regional, and national agencies, the plan seeks to create a resilient healthcare system capable of swiftly adapting to emerging threats.

The key objective of this plan is to strengthen the health system's capacity to anticipate, prepare for, and mitigate the impacts of health emergencies and disasters at all levels. In addition, the HEDCP seeks to establish a clear, effective response mechanism to manage health emergencies and natural disasters, and to establish a clear line of coordination and a communication mechanism for response.

The successful implementation of the HEDCP is contingent upon continuous evaluation and improvement of existing protocols, and the establishment of effective coordination with the relevant stakeholders, which can safeguard public health and minimize the impact of disasters on communities.

In conclusion, the HEDCP serves as a vital tool for ensuring the health and safety of populations during health emergencies. It lays the groundwork for a unified response strategy, ultimately leading to better health outcomes and enhanced community resilience in uncertainty.

This document should be reviewed every five years, or more frequently as needed, to serve as a framework for health emergency and disaster preparedness and response efforts in the health sector.

CHAPTER 1: INTRODUCTION

1.1 Background

Bhutan is a mountainous nation that occupies 38,394 km2 and lies between China to the north and India to the east, south, and west. Because of its mountainous terrain, Bhutan is prone to natural disasters and has specific vulnerabilities to pandemics. The country lies in a seismically active zone, and the vulnerability of hospitals and health infrastructure is a significant concern.

Numerous disasters have occurred in the past due to geophysical conditions, biological hazards, and climate change. Hazard events include earthquakes, flash floods, landslides, fires, windstorms, pandemics, epidemics, and disease outbreaks.

The 2009 Narang earthquake and the 2011 Sikkim earthquake caused fatalities and injuries, and damaged health facilities. The disproportionately high damage in these modestly sized events demonstrates the country's earthquake risk. Health facilities are also at risk of damage from landslides, fires, high winds, and floods. In 2016 and 2017, Haa and Lhamoizingkha Primary Health Centers (PHCs) were damaged by fire, disrupting health services.

The recent COVID-19 pandemic has had distinct but severe social and economic effects on several demographic groups, reversing human progress and leaving the populace and the government open to future threats and multifaceted uncertainty.

Bhutan's health system heavily depends on emergency preparedness, as the country is exposed to natural hazards and pandemics. According to the present scenario, Bhutan is situated in the continuum between the alert and inter-pandemic phases. Although domestic poultry

are still at risk of contracting avian influenza (H5N1), there hasn't been any evidence of a growing trend toward human transmission thus far (NIPPRP, 2020). Prioritizing and using the nation's limited resources necessitates adopting risk-based techniques, even if a key focus has been enhancing health emergency preparedness and response through an all-hazard approach. The need to improve the nation's capability for health emergency preparedness and response has also been highlighted by the recent COVID-19 pandemic health emergency.

1.2 Country Health Profile

The primary objective of the nation's health system is to achieve Universal Health Coverage (UHC) guided by unique philosophy of Gross National Happiness, and the Primary Health Care (PHC) principles. A three-tiered structure of basic, secondary, and tertiary care is used to offer the healthcare service. Traditional and allopathic medicine services are integrated and delivered under one roof. The health services is being predominantly financed by the government and the healthcare is free at the point of care for all.

Ministry of Health (MoH) plays a central role in overseeing policymaking, formulating health policies, setting national health priorities, and implementing programs. MoH also coordinate the delivery of health services across the country. At the grassroots level, PHCs and outreach clinics provide essential care, preventive services, and health education. District hospitals cater to more complex cases and refer patients to regional or national hospitals if necessary. The national referral hospital, Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) in Thimphu, handle specialized care and advanced medical procedures.

1.3 Purpose

This plan serves as a reference document for the health sector and relevant stakeholders to implement mitigation, preparedness, response, and recovery activities, and to guide the health sector to communicate and coordinate effectively during health emergencies and natural disasters.

1.4 Objectives

The objectives of the HEDCP are to ensure the effectiveness, promptness, coherence, and coordination of the health sector's emergency preparedness and response. This plan's procedures and organizational structures provide the basis of an all-hazards response framework. The specific objectives of the plan are to:

- Enhance organizational preparedness in terms of health emergencies, natural disasters and pandemics.
- Define the functions, roles, and responsibilities of each key stakeholder.
- Ensure the prompt and efficient delivery of health services during a health emergency or natural disaster.
- Establish emergency response management procedures and coordination mechanisms in the health sector at all levels.

1.5 Legal Framework and Health Emergencies

The Constitution of the Kingdom of Bhutan 2008 provides a broad framework allowing the government to take necessary measures to address situations during public emergencies or calamities.

The Disaster Management (DM) Act 2013 establishes a legal framework for managing disaster in the country. The Act mandates agencies notified by NDMA to prepare, implement, review, and update disaster management and contingency plans and mandates

the MoH to manage emergency medical services during a disaster. The National Health Policy 2011 mandates all health facilities institute an appropriate system of care to deal with emergencies, disasters, epidemics, and outbreaks.

The International Health Regulations (2005) mandates every member state to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade. The fifty-eighth World Health Assembly (WHA) urged WHO to increase its role in risk reduction and emergency preparedness in the health sector.

The seventy-seventh WHA urged member states to ensure efforts to strengthen health emergency preparedness and response for disasters resulting from natural hazards by incorporating technical standards, best practices, clear incident management systems, and regularly evaluated and updated plans. Also, it recommended member states to strengthen risk-informed operational response, coordination, management, and mental health and psychosocial supports across all stages of emergencies.

1.6 Methodology

To review and update the HEDCP, several consultation meetings were held with the relevant health sector officials to obtain their feedback on the HEDCP 2016 and their roles and responsibilities, including the action plan for their sector.

The HEDCP 2016 plan was reviewed in chapters to analyze its strengths and weaknesses. Literature reviews of national and international policies, frameworks, reports, and guidelines were conducted to align with and incorporate the lessons learned from COVID-19 pandemic into the revised plan.

A half-day meeting with the health sector's executives was organized to present draft HEDCP 2024 and to get their feedbacks.

CHAPTER 2:
HAZARD PROFILE AND HEALTH IMPACT

The hazard profile was based on a national report mapping Bhutan's risk profile in WHO's Strategic Toolkit for Assessing Risks (STAR). Sixteen different hazards were prioritized based on their occurrence, frequency, impacts, likelihood of occurrence in the future, and their impact on health and socio-economics (MoH, 2024).

2.1 Geo-physical and Meteorological Hazards

The geophysical and meteorological hazards group included earthquakes, glacial lake outburst floods (GLOFs), forest fires, structural fires, floods, landslides, and windstorms.

2.1.1 Earthquakes

Bhutan has experienced significant earthquakes, including a notable event in 1714 and, more recently, in 2009 and 2011 that caused widespread damage in Bhutan. The 2009 earthquake claimed 12 lives and damaged about 45 PHCs (DLDDM, 2009), and the 2011 earthquake damaged 22 health facilities (DLGDM, 2011).

2.1.2 Glacial Lake Outburst Floods (GLOFs)

According to the Bhutan Glacial Lake Inventory 2021, Bhutan is known to have experienced 21 glacial lake outburst floods (GLOFs) in the past. The most recent GLOF events are the 2015 Lemthang Tsho and 1994 Luggye Tsho GLOFs. The 1994 GLOF caused massive damages downstream in the Punakha-Wangdue valleys and claimed 21 lives.

According to a study conducted by the National Centre for Hydrology and Meteorology (NCHM), there are 567 glacial lakes, of which 17 are identified as potentially dangerous for GLOFs (NCHM, 2021). Settlements, including health facilities, located downstream of these potential lakes face significant risks of GLOF.

2.1.3 Flash Floods

One of the most recent flood disasters was the 2009 Cyclone Aila precipitated floods, which affected the whole of Bhutan, taking 13 lives and causing losses of more than Nu. 700 million. The 2016 floods affected mostly the southern region and caused losses of more than Nu 555 million.

On August 10, 2024, a severe flash flood occurred in Dechencholing and Dangrina area following the continued rainfall. The flash flood caused widespread damage, destroying homes and infrastructure, burying streets under debris, and tragically resulting in one fatality. Many families residing in Dechencholing Town and the Royal Body Guards (RBG) campus were severely affected.

Most flash floods occur during the monsoon season, disrupting access to health and other essential services.

2.1.4 Fires (structural and forest)

Another significant hazard in Bhutan is fire, which impacts the forest and human settlements. In 2016 and 2017, Haa and Lhamoizingkha's PHC, respectively, were damaged by fire, which impacted health services delivery. The risk of fires in hospitals is high compared to other infrastructure due to the presence of numerous flammable materials and equipment.

Another fire hazard is forest fires. Bhutan experiences frequent forest fires during the dry season between November and April. The health facilities surrounded by the forest are vulnerable to fire spreading from the forest.

2.1.5 Landslides

In Bhutan's rough mountainous terrain, landslides constitute a constant natural threat. Events like seasonal rainfall, earthquakes, and flooding are strongly associated with landslide incidents. Landslides cause several highway blocks during the annual monsoon and impede access to health facilities.

2.1.6 Windstorm

In recent years, windstorm hazards have increased in frequency and severity in Bhutan. Given the construction typology used in traditional Bhutanese structures, data on historical windstorm damages show that traditional large roof overhangs make the buildings more vulnerable. In 2011, and 2013 many of Bhutan's districts were impacted by windstorms, which affected 21 and 8 health facilities, respectively, impacting the service delivery.

2.2 Biological and Technological Hazards

According to the STAR Report 2024, three groups of biological and technological hazard threats were identified. The first group included risks associated with vector-borne and zoonotic diseases. Under this category, four risks were ranked in order of priority: dengue, rabies, emerging infectious disease (disease X), and avian influenza.

The second group includes the diseases occurring through airborne, respiratory, and water-borne diseases, and a total of four diseases were chosen under this group: seasonal influenza, COVID-19, cholera/acute diarrheal disease, and multidrug-resistant tuberculosis (MDR-TB).

The third group includes food poisoning, antimicrobial resistance (AMR), and chemical poisoning.

2.2.1 Dengue

Bhutan has experienced periodic outbreaks of dengue fever, particularly during the monsoon season when mosquito populations are high. The outbreaks have occurred in various districts across the country during the monsoon months from June to September. It was found that dengue is likely or very likely to occur and mapped to have moderate to severe impacts.

Bhutan experienced its largest and first nation-wide dengue epidemic in 2019. With total 5935 cases in six districts, dengue in 2019 were greater than the total number of cases in all the previous years.

2.2.2 Rabies

Rabies is another significant health concern in Bhutan, though it is not as widespread as dengue fever. Outbreaks mostly happen in the southern regions. Rabies is linked to the movement of stray animals across borders and the presence of unvaccinated and unsterilized dogs. It was mapped that it will likely occur with minor to moderate impacts.

2.2.3 Emerging Infectious Disease (Disease X)

Disease X refers to a hypothetical, unknown pathogen that could cause a future pandemic, encouraging proactive planning and preparation for such emerging infectious diseases. Emerging infectious diseases like Disease X are often zoonotic, meaning they originate from animals and spill over into human populations. In Bhutan, proactive measures for managing potential outbreaks of emerging infectious diseases include surveillance of wildlife and livestock, enhancing public health infrastructure, and promoting cross-border cooperation.

2.2.4 Avian Influenza

As of 2019, 13 distinct highly pathogenic avian influenza (HPAI) episodes have occurred since the first H5N1-caused epidemic in Bhutan in 2010.

The global outbreak of avian influenza, particularly the H5N1 strain since 2003, has raised concerns due to its widespread impact on wild birds and poultry, which can cause severe illness in birds and has the potential to mutate and spread to humans. Bhutan's intimate interactions with animals make it still susceptible to HPAI, which carries a high risk of spreading to people. It was mapped that avian influenza is likely or very likely to occur and mapped to have moderate to severe impacts.

2.2.5 Seasonal Influenza

Seasonal influenza remains a significant public health concern in Bhutan, similar to many other countries. Bhutan has experienced several outbreaks of seasonal influenza over the years. It was found that seasonal influenza is likely or very likely to occur and mapped to have moderate to severe impacts.

2.2.6 COVID-19

A novel viral condition known as COVID-19 is brought on by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was initially discovered on December 31, 2019, after an epidemic of mysterious viral pneumonia in Wuhan, Hubei Province, China. The epidemic spread rapidly worldwide, prompting the WHO to declare a Public Health Emergency of International Concern (PHEIC) on January 30, 2020, and a pandemic on March 1, 2020.

Bhutan’s response to COVID-19 has been noted for its effectiveness, particularly given the country’s limited resources. Bhutan’s response

to the pandemic remains exemplary, with the strong leadership effort of His Majesty the King supported by the Government's effort to implement proactive public health safety measures. Extensive testing, contact tracing, and a successful vaccination campaign have kept the nation safe.

2.2.7 Cholera/Acute Diarrheal Disease

Bhutan has faced several outbreaks of cholera and acute diarrheal disease, posing significant public health concerns. Cholera, an acute intestinal infection caused by the ingestion of Vibrio cholera bacteria, spreads rapidly in environments with inadequate sanitation and water infrastructure. Cholera/acute diarrheal disease is likely or very likely to occur and mapped to have moderate to severe impacts.

2.2.8 Multidrug-resistant tuberculosis (MDR-TB)

Multidrug-resistant tuberculosis (MDR-TB) is a significant public health challenge in Bhutan. Despite the country's efforts in TB control, the incidence of MDR-TB remains high, with alarming rates reported among both new and previously treated cases. Bhutan adopted the Directly Observed Treatment Short Course (DOTS) strategy in 1997, which has helped reduce the overall prevalence of TB. However, the 2014 drug resistance survey showed that 10.1% of new TB cases and 37.2% of previously treated cases were MDR-TB, much higher than global averages. The MDR-TB hazard is mapped as a moderate risk level occurrence.

2.2.9 Food Poisoning

Food poisoning incidents in Bhutan have been a significant concern in recent years, and several foodborne illness outbreaks across the country were observed. From 2012 to 2020, the Royal Centre for Disease Control (RCDC) has reported more than 60 cases of foodborne illness. The food poisoning hazard is mapped as a low-risk level occurrence with minor to moderate impacts.

2.2.10 Antimicrobial resistance (AMR)

AMR poses an increasing concern to Bhutan due to the high degree of resistance to widely used antimicrobials in the nation.

Bhutan has recognized the problem of AMR for many years and has taken initiatives to combat it, including a national action plan from 2018 to 2022. AMR hazard is mapped as a moderate risk level occurrence with minor to moderate impacts.

2.2.11 Chemical Poisoning

Chemical poisoning in Bhutan can occur from various sources, including industrial accidents, agricultural activities, and accidental or intentional releases of toxic substances. One key area of concern is the use of chemical fertilizers in agriculture, and the rise in industrial activities has increased the potential for chemical spills and accidental releases of hazardous substances. The chemical poisoning hazard is mapped as a moderate risk occurrence with minor to moderate impacts.

Tables 1 and 2 summarize all hazards impacting the health sector (MoH, 2024).

Table 1: Geophysical and meteorological hazards risk analysis

Geophysical and Meteorological Hazards	Likelihood	Impact	Public Health Risk
Earthquake	Very likely	Critical	• Deaths and injuries • Displaced people • Unavailability of clean water and proper sanitation • Malnutrition • Disruption of essential services • Psycho-social problems / mental issues • Health infrastructure damage including lifeline utilities • Affected health workers and family • Disease outbreaks • Sexual violence • Communication cutoff
Flood	Very likely	Severe	• Deaths and injuries • Malnutrition • Unavailability of clean water and proper sanitation • Psycho-social problems / mental issues • Inaccessibility of public health facilities • Health infrastructure damage including lifeline utilities • Disease outbreaks • Displaced

Geophysical and Meteorological Hazards	Likelihood	Impact	Public Health Risk
Landslide	Very likely	Moderate	• Deaths and injuries • Malnutrition • Unavailability of clean water and sanitation • Disruption of essential services • Inaccessibility of medical facilities • Psycho-social problems / mental issues • Health infrastructure damage including lifeline utilities • Disease outbreaks • Displaced people
Glacial Lake Outburst Flood (GLOF)	Likely	Severe	• Deaths and injuries • Health infrastructure damage including lifeline utilities • Transportation infrastructure damage • Psycho-social problems/ mental issues • Inaccessibility of medical facilities
Forest/ Wildfires	Very likely	Moderate	• Deaths and injuries • Disabilities • Psycho-social problems/ mental issues • Health infrastructure damage including lifeline utilities

Geophysical and Meteorological Hazards	Likelihood	Impact	Public Health Risk
Windstorm	Very likely	Moderate	• Deaths and injuries • Health infrastructure damage including lifeline utilities

Table 2: Biological and technological hazards risk analysis

Biological and Technological Hazards	Likelihood	Impact	Public Health Risk
Dengue	Very likely	Moderate	• Death and injuries • Psycho-social problems/mental issues • Environmental degradation • Social and economic disruption
Rabies	Likely	Moderate	
Disease X	Unlikely	Critical	
Avian influenza	Likely	Severe	
Seasonal influenza	Very likely	Moderate	
COVID-19	Very likely	Moderate	
Cholera/Acute diarrheal disease	Very likely	Moderate	
MDR-TB	Likely	Severe	
Food poisoning	Likely	Minor	
AMR	Likely	Moderate	
Chemical poisoning	Likely	Moderate	

CHAPTER 3: HEALTH EMERGENCY MANAGEMENT STRUCTURE

3.1 Disaster Management Structure

Figure 1 shows Bhutan's disaster management organizational structure. As per the DM Act 2013, at the national level, the National Disaster Management Authority (NDMA) is the highest decision-making body in disaster management in Bhutan. The Honorable Prime Minister is the chairperson and Home Minister is the vice chairperson; other members are from all relevant ministries and agencies. The Secretary of the Ministry of Health is a member of NDMA. At the Dzongkhag level, each Dzongkhag has its Dzongkhag Disaster Management Committee (DDMC) chaired by the Dzongdag.

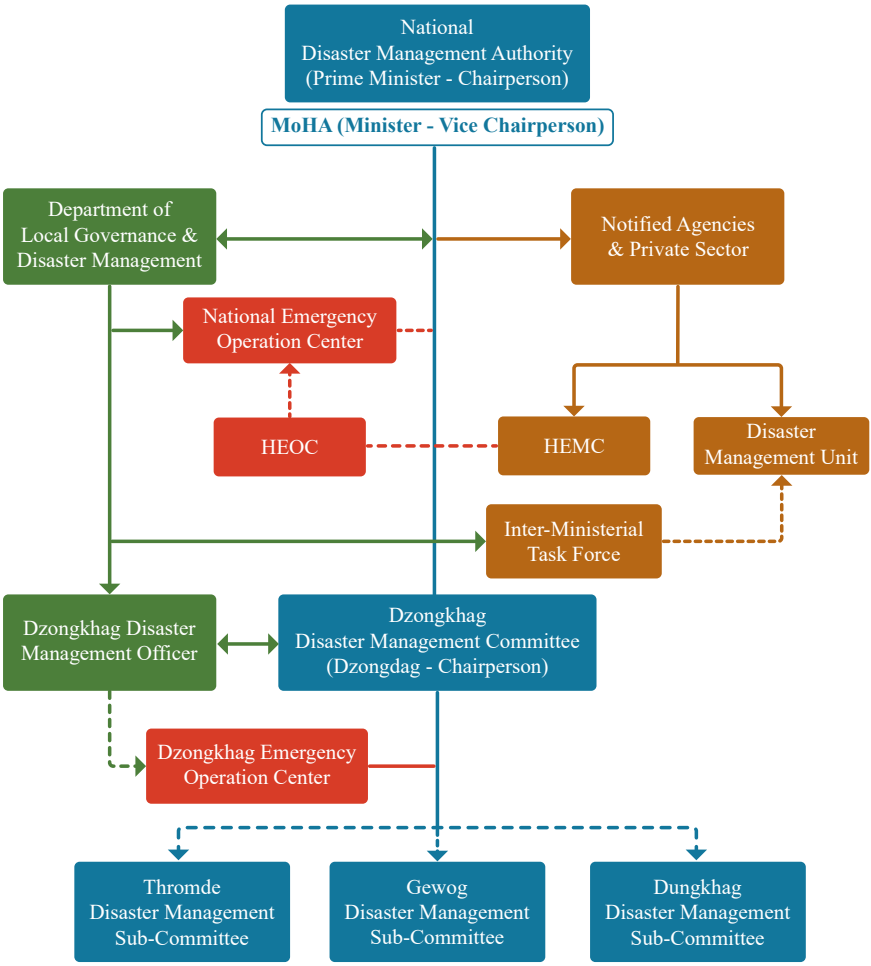

Figure 1: Disaster Management Organizational Structure

3.1.1 National Disaster Management Authority Composition and Roles

The Honorable Prime Minister chairs the NDMA as the highest decision-making body for any disasters in the country. As per the DM Act 2013, secretaries of all ministries are also members of NDMA.

The main functions of NDMA are:

i. Approve all disaster management-related plans, policies, national standards, and guidelines.

ii. Direct, approve, and establish disaster risk management (DRM) institutional structure and capacities.

iii. Recommend and allocate financial resources for recovery and reconstruction.

iv. Direct agencies to mainstream DRR into their development plans, policies, programs, and projects.

v. Build relationships with international partners and develop mechanisms for international cooperation.

3.1.2 National Task Force for Health Emergencies Composition and Roles

During the COVID-19 pandemic, the National COVID-19 Task Force (NC19TF) was established as the highest decision-making body for all matters related to COVID-19 management.

In September 2024, the NC19TF was succeeded by the National Drug Task Force (NDTF), which is being chaired by the Honorable Prime Minister (HPM) and includes the Health Minister, the Secretary of the Ministry of Education and Skills Development (MoESD), the Chief Operations Officer (COO) of the Royal Bhutan Army (RBA), the Chief of Royal Bhutan Police (RBP), and a Deputy Chamberlain (Zimpon Wogma) as members.

This NDTF serves as the National Task Force for Health Emergencies for addressing any public health emergencies.

3.1.3 Health Emergency Management Committee Composition and Roles

The Health Emergency Management Committee (HEMC) is the highest decision-making body in the health sector for any health emergency and natural disaster. It shall be chaired by the Health Minister and vice-chaired by the Secretary of MoH. The HEMC functions from the Health Emergency Operation Center (HEOC) during the emergencies and coordinates with the National Emergency Operation Center (NEOC) as shown in Figures 1 & 4. The DoPH shall serves as the secretariat to HEMC.

The HEMC committee composition is:

1. Hon'ble Minister, MoH, Chairperson
2. Secretary, Vice Chairperson
3. President, NMS[1]
4. Director General/Director, DHS
5. Director General/Director, DoPH, Member secretary
6. Director General/Director, DCS, NMS
7. Director General/Director, DMP, NMS
8. Director General/Director, BFDA
9. Executive, Pema Center
10. President, KGUMSB
11. Head, RCDC
12. Head, Bhutan Red Cross Society
13. Chief, Policy and Planning Division, MoH
14. Co-opt members from the relevant agencies shall be considered as and when required.

1 Subject to change as per the new health transformation

The responsibilities of HEMC are:

a. Preparedness Phase

- Approve and endorse plans, policies, guidelines, and standard operating procedures (SOPs) on health emergencies as per the recommendation/s of the Technical Advisory Group (TAG).
- Coordinate with the Department of Local Governance & Disaster Management (DLGDM) on emergency management preparedness.
- Develop and review pandemic preparedness and response plans, incorporating lessons.
- Ensure the availability of adequate financial resources for essential medical supplies, equipment, and pharmaceuticals for strategic stockpiling.
- Strengthen disease surveillance and early warning systems, including integration with regional and global networks.
- Ensure the adequacy, timeliness, and relevance of communication activities that are in place.
- Ensure that relevant staff and stakeholders are appropriately trained
- Ensure the conduct of regular simulation exercises and drills to test the effectiveness of the emergency preparedness and response plan.
- Ensure alignment with international best practices and WHO guidelines.
- Identify the key stakeholders for effective implementation of the HEDCP
- Conduct regular risk assessments and update the HEDCP.
- Ensure functionality of the HEOC.

b. Response Phase

- Advise and update the NDMA/NTF on the emergency.
- Activate HEOC and coordinate with NEOC.
- Direct relevant departments within MoH, Dzongkhag hospitals, and regional hospitals to respond to health emergencies.
- Activate the Rapid Response Team or Emergency Medical Team in the affected area.
- Direct the MoH for resource mobilizations and allocations.
- Coordinate with the DLGDM to mobilize resources (technical & financial support) from national and international partners.
- Issue executive orders for enforcement of response activities.
- Deactivate HEOC and conduct debriefing.
- Ensure continuity of essential health services.

c. Recovery Phase

The recovery phase of a health emergency requires a structured and coordinated approach to restore health services, address the needs of affected populations, and build resilience for future emergencies. A dedicated committee with clearly defined roles and responsibilities is essential for ensuring effective recovery and long-term health improvements.

- Direct and ensure thorough assessments of the health impacts, infrastructure damages, and needs of affected populations.
- Direct to develop a comprehensive recovery plan that includes short-term and long-term health system restoration and improvement strategies.
- Facilitate coordination among various governmental agencies, Non-Governmental Organizations (NGOs), and international partners involved in the recovery process.

- Ensure equitable medical supplies, equipment, and human resources distribution to the most affected areas.
- Oversee the repair and reconstruction of damaged healthcare facilities and infrastructure.
- Ensure the continuity of essential healthcare services.
- Ensure the provision of mental health and psychosocial support services.
- Implement vaccination campaigns to prevent the spread of infectious diseases.
- Report to NDMA on the recovery progress

3.1.4 Dzongkhag/Thromde Disaster Management Committee Composition and Roles

The DM Act 2013 mandates every Dzongkhag and Thromde to constitute a Disaster Management Committee (DMC). The Dzongkhag and Thromde DMCs were established by the national-level DRM institutional framework, with the Dzongkhag or Thrompon as the ex-officio chairperson. Under the direction of the NDMA, the DDMC or the Thromde DMC is in charge of organizing and supervising all disaster management operations within the Dzongkhag or Thromde under their jurisdiction. Depending on the nature of the disaster, DDMC members can be co-opted.

The committee ensures that local Disaster Management and Contingency Plan (DMCP) are drafted and implemented, that local disaster management capacity is built, that critical disaster management facilities are established and managed, that disaster management is mainstreamed into local plans and programs, and that regular reports are sent to DLGDM. The hospital disaster contingency plans in every Dzongkhag are prepared in line with the HEDCP and Dzongkhag disaster contingency plans.

The sector or agencies notified by NDMA establish a Disaster Management Unit to mainstream DRR into sector plans and programs and prepare, implement, review, and update their DMCP.

3.1.5 Technical Advisory Group (TAG) Composition and Roles

The Technical Advisory Group (TAG) is the multidisciplinary group of technical experts which shall be responsible to provide technical assistance and advisory to HEMC before, during, and after health emergencies.

Chair will be selected among the TAG members based on the seniority and their technical competency relevant to the event.

The team composition of the TAG for health emergencies and natural disasters is as follows:

1. Infectious Disease Specialist, JDWNRH
2. Internal Medicine Specialist, JDWNRH
3. Microbiologist, JDWNRH
4. Epidemiologist, KGUMSB
5. Epidemiologist, Department of Livestock, MoAL
6. Epidemiologist/ Public Health Specialist, DoPH
7. Emergency Physician, ED, JDWNRH
8. Chief, CDD, DoPH (Lead Secretariat)
9. Chief, NCDD, DoPH
10. Chief, CEID, RCDC
11. Chief, FDEC, RCDC
12. Disaster Management Specialist, Representative from DLGDM

13. Other members may be co-opted in accordance with the nature of hazards.

The roles of the TAG for health emergencies and disasters are:

- Provide technical guidance to the HEMC for health emergency management.
- Develop, review, and update on disease outbreaks, epidemics, or pandemic situations (national and global), and natural disaster emergencies.
- Review and recommend the requirement of emergency equipment, medicines, and supplies for health emergency management.
- Conduct risk assessment and management of the event.
- Review and recommend health emergency and disaster plans, guidelines, and SOPs.
- Conduct any other technical task assigned by the HEMC.

3.1.6 National Health Rapid Response Team (NHRRT) and Roles

Health Rapid Response Teams (RRTs) are more specialized teams that focus on early detection, investigation, and control of public health emergencies or pandemic, particularly infectious disease outbreaks. They are responsible for identifying and investigating outbreaks, collecting and analyzing data, implementing public health measures, and coordinating the response efforts of various agencies and organizations.

The Bhutan National Pandemic Preparedness and Response Plan (NIPPRP) covers detailed information on pandemic preparedness and response.

RRT will be of two levels with National Health Rapid Response Team (NHRRT) at National level and District Health Rapid Response Teams (DHRRT) at District level. NHRRT and DHRRTs shall work closely together to ensure a coordinated and effective response to public health emergencies. The NHRRT can act as a surge capacity, providing a reserve force that can be deployed to areas with high disease burden or when DHRRT are overwhelmed or facing challenges in their response efforts.

The team composition of the NHRRT is as follows:

1. Epidemiologist, Surveillance Unit, RCDC- Lead
2. Microbiologist/Virologist, RCDC
3. Epidemiologist, DOL
4. Public Health Expert, MoH
5. Laboratory Officer, RCDC
6. Laboratory Officer, JDWNRH
7. Programme Officer, HEP, CDD
8. CPO/Communication & Media Officer, HPRCD
9. Relevant Specialist/, JDWNRH
10. Other member may be co-opted in accordance with the nature of the hazards.

The roles of the NHRRT for biological hazard or pandemics are:

- To review, verify, and advise the disease investigation and control measures implemented by DHRRT.
- If requested/needed, support DHRRT in conducting a detailed field investigation of the outbreak including confirmation of the outbreak.
- Carry out rapid needs assessments in collaboration with DHRRT at the site.

- Recommend/Provide additional resources for rapid response including supplies and medicines.
- Evaluate health information and assess potential public health risks for the community.
- Make a detailed investigation report with recommendations for follow-up by the concerned authorities.
- Provide risk communication - Develop and disseminate relevant risk communication materials, and conduct awareness campaigns.
- Provide regular updates to HEMC/higher authority on health emergency assessment and investigation in the field.

3.1.6 Emergency Medical Team (EMT) and Roles

During the times of natural disasters and mass casualties, a team of multidisciplinary healthcare professionals known as Emergency Medical Teams (EMTs) shall provide immediate medical care and support in emergency situations. EMTs prioritize the immediate stabilization and treatment of patients, providing essential medical care on-site or during transportation to healthcare facilities.

There will be EMTs at both the national and district levels. This team should be self-sufficient and trained, adhering to minimal requirements and categorization established by WHO and other partners. The team composition, SOPs, and roles of EMTs could be framed to link to this plan.

The team composition of national EMTs (NEMTs) for natural disasters are:

1. Emergency Physician, JDWNRH/ Regional Referral Hospital
2. Surgeon, JDWNRH / Regional Referral Hospital
3. Pediatrician, JDWNRH / Regional Referral Hospital

4. Ortho surgeon, JDWNRH/ Regional Referral Hospital
5. Emergency Nurses, JDWRNH/ Regional Referral Hospital
6. Critical care Nurses, JDWRNH/ Regional Referral Hospital
7. Pharmacist, JDWNRH/ Regional Referral Hospital
8. Ortho Technician, JDWNRH/ Regional Referral Hospital
9. Paramedic (EMRO/EMR), JDWNRH/ Regional Referral Hospital
10. Administrative/Logistic Officer, DCS

Co-opt members be considered depending on the type of emergency, as and when required.

CHAPTER 4: HEALTH EMERGENCY MITIGATION, PREPAREDNESS, AND RESPONSE

Health emergency mitigation, preparedness, and response are critical components of public health to protect communities from the adverse effects of natural disasters, outbreaks, and pandemics. These events can cause significant health, economic, and social disruptions. Effective mitigation, preparedness, and response strategies help to mitigate the impact, reduce morbidity and mortality, and promote rapid recovery and resilience.

Coordinated efforts with stakeholders are necessary to anticipate, manage, and mitigate the effects of natural disasters, disease outbreaks, and pandemics.

4.1 Mitigation

Mitigation aims to reduce the impact of disastrous events on the healthcare system, ensure that essential services remain functional during emergencies, and allow for a quicker recovery and continuation of services in the aftermath of disasters. This includes assessing structural and non-structural vulnerability, climate resilience, and the capacity of healthcare workers in emergency response. Assessment results help the MoH in preparedness, resource allocation, capacity building, and retrofitting.

4.1.1 Structural & Non-Structural Vulnerability Assessment

Hospitals will play a crucial role after any disastrous event, and it is important to evaluate all hospitals' existing disaster safety and readiness to remain functional. Some of the hospital functionality assessments already conducted includes the initial seismic vulnerability assessment of JDWNRH in 2012 and Trashigang and

Trashi Yangtse district hospital in 2013, carried out by GeoHazards International with support from the WHO Regional Office for Southeast Asia (SEARO). Similar seismic vulnerability assessment was also conducted for Mongar Regional Referral Hospital in 2018. It is crucial to continue to conduct vulnerability assessments for all major hospital infrastructure.

4.1.2 Capacity Assessment

The capacity assessment of the health sector in Bhutan will aim to evaluate the current readiness and capability of healthcare institutions, personnel, and infrastructure to respond to health emergencies and disasters. The capacity assessment is critical for identifying strengths, gaps, and areas for improvement, ensuring that the HEDCP is robust and effective.

Assessments should be carried out:

- to ensure there are fewer disparities in infrastructure quality and capacity across regions and that rural areas experience fewer challenges, such as limited medical supplies, inadequate infrastructure, and difficulty accessing remote locations during emergencies.
- to reduce variability in the preparedness planning for regional hospitals, Dzongkhag hospitals, and PHCs, and to ensure that all facilities have updated, standardized hospital emergency and disaster contingency plans that are tested by regular drills and can remain functional after disastrous events.
- to understand the shortages of specialized medical staff, particularly with skills in emergency medicine and disaster response across regions.
- to conduct Training Needs Assessment and estimate the need for continuous professional development programs focusing on disaster preparedness, response, and recovery to ensure that

all healthcare workers are well-versed in emergency response protocols.

- to understand the adequacy of the current stockpiles of essential medical supplies and equipment for anticipated large-scale emergencies. It is also important to assess the supply chain for timely procurement and distribution of supplies during emergencies.
- to assess the need for modernizing medical equipment and integrating technology in healthcare facilities at various levels to ensure better diagnostic and treatment capabilities in emergencies.
- to assess the need to enhance communication systems across all levels of healthcare and emergency management, including real-time data-sharing platforms.

4.1.3 Climate Resilient Health Systems

According to WHO, to provide high-quality healthcare and safeguard the health and well-being of both the current and future generations, climate-resilient and low-carbon health systems must be able to anticipate, respond to, cope with, recover from, and adapt to shocks and stress related to climate change while minimizing greenhouse gas emissions and other detrimental environmental effects.

The following approaches will help to anticipate, respond to, cope with, recover from, and adapt to climate change-related shocks and stress:

- Minimize greenhouse gas emissions and other detrimental environmental effects in the construction of healthcare facilities.
- The health system must comply with the National Adaptation Plan (NAP) framework that mandates a low-emission development strategy.
- Improve health infrastructure and equipment to adapt to climate change impacts.

- Conduct a baseline assessment of carbon emissions in the health system.
- Assess direct emissions (operations), indirect emissions (products), and supply chain emissions (transportation) in health facilities.
- Help health sector professionals understand the impact of climate change.
- Empower communities to effectively prepare for climate impacts on health sectors.

4.2 Preparedness

Preparedness is a proactive process that enables governments, communities, and individuals to respond rapidly to health emergencies and cope with them effectively. Preparedness increases the community's ability to respond effectively to hazard impacts and to recover quickly from the long-term effects. Preparedness includes the following activities:

4.2.1 Mapping of Vulnerable Groups

The social vulnerability of the health sector in Bhutan can be understood by examining various factors including economic conditions, geographic challenges, education levels, and social and cultural barriers that impact the population's ability to access and receive quality healthcare services.

Health emergencies, especially during times of pandemic and natural disasters, can have severe impacts on vulnerable groups including access to nutrition (MoH, 2021): the elderly, infants, children, pregnant women, breastfeeding mothers, individuals with physical and sensory disabilities, and those living in poverty. These populations frequently have fewer resources and cannot react to and bounce back from disaster events.

Access to health and other essential services needs to be enhanced during emergencies to address the health impacts on vulnerable populations. Local authorities can help list and assess vulnerable group needs in their communities. The MoH can collaborate with local NGOs or Civil Society Organizations (CSOs) to identify vulnerable groups and work on psychosocial support mechanisms with the Pema Center to develop SOPs and guidelines for mental health and psychosocial support.

Another important initiative will be establishing community networks as part of the Ministry's outreach. Engaging local community members, such as religious leaders, health workers, teachers, and volunteers, in these networks can provide peer support and social integration for survivors.

4.2.2 Surveillance and Early Warning Systems

Collaborative surveillance and early warning systems are critical components of health emergency preparedness and response. They help in the timely detection, monitoring, and management of potential health threats, including natural disasters, outbreaks, and pandemics. The RCDC provides early warnings for disease outbreaks, Bhutan Food and Drug Authority (BFDA) carries out food safety and medicinal products surveillance, and DLGM and NCHM provide natural disaster monitoring and warning.

An effective disease surveillance system monitors data quality, automates data validation, and relies on reliable data from the community, primary care settings, hospitals, public health laboratories, environmental monitoring systems, and animal health data to comprehensively inform public health decision-making.

a. Royal Centre for Disease Control

The RCDC is a central hub for outbreak investigations and national disease surveillance. The RCDC uses the National Early Warning Alert and Response Surveillance (NEWARS) system for surveillance and reporting mechanisms for infectious illnesses or syndromes of public health concern and seeks to identify and notify possible dangers to effectively and efficiently limit an infectious disease epidemic. The RCDC upon confirmation of outbreaks and pandemics shares the information with the HEOC and HEMC for public announcement of health emergencies.

b. Bhutan Food and Drug Authority

The BFDA is empowered by the Food Act of Bhutan 2005 and the Medicines Act of Bhutan 2003 to ensure the quality, safety of food, safety and effectiveness of medical products. The BFDA is also mandated to implement plant and animal biosecurity measures to protect biodiversity, the environment, and the agricultural system from pests, diseases, and invasive species.

The BFDA should reinforce surveillance measures of medicinal products to prevent forgery and counterfeiting during emergencies and strengthen the implementation of food safety measures to prevent foodborne disease in close collaboration with other regulatory bodies for emergency preparedness.

c. Department of Geology and Mines

The Geohazard Division under the Department of Geology and Mines (DGM), under the Ministry of Energy and Natural Resources, is responsible for setting up the national seismic monitoring system to improve understanding of earthquake processes and impacts. Further, they monitor the aftershocks after a large earthquake and share information with relevant agencies, including the MoH,

for immediate relief/response preparation. Also, they support in preparing seismic hazard & risk maps for the country.

d. National Center for Hydrology and Meteorology

The National Center for Hydrology and Meteorology (NCHM) is a nodal agency responsible for generating information and delivering products and services on weather, climate, cryosphere, and water resources in Bhutan. In extreme occurrences, such as Glacial Lake Outburst Floods (GLOF) and weather events, NCHM provides early warnings and alarms and shares them with relevant agencies, including the MoH and the public.

4.2.3 Disease Prevention

Disease prevention involves strategies and measures aimed at reducing the risk of developing diseases, controlling their spread, and minimizing their impact on individuals and communities. Communicable and non-communicable diseases can be prevented and reduced through immunization programs, public health education and screening, and early detection, which can reduce the pressure on health facilities during emergencies. The National Policy and Strategy Framework on Prevention and Control of Non-Communicable Disease (NCD) takes a holistic approach of primary prevention and treatment.

a. Immunization and Vaccines

Immunization is one of the most effective interventions against preventing infectious diseases. Bhutan has achieved high vaccination coverage through its Expanded Programme on Immunization (EPI) achieving in preventing and controlling Vaccine Preventable diseases (VPD).

Bhutan has led an exemplary vaccination campaign during COVID-19 thanks to its experience conducting prior national immunization campaigns, the development of a National Vaccine Deployment Plan (NVDP), and an allocation framework based on a multisectoral approach to prioritize the most vulnerable groups.

To sustain high immunization coverage and to handle the change in need surrounding immunization services, the MoH should continue to follow the EPI manual for health staff, 2022.

4.2.4 Infection Prevention and Control

Infection control is one of the key components of clinical care in all healthcare settings. Healthcare workers must understand evidence-based infection control practices and adopt standard precautions to protect themselves, patients, and families from healthcare-associated infections (HCAIs) as per the National Guideline on Infection Control and Medical Waste Management 2012. However, there is still room to enforce the surveillance of hospital-acquired HCAIs through continuous training of staff and communities, investigation and management of outbreaks, strict reprocessing of reusable devices and housekeeping, enhancement of Water, Sanitation, and Hygiene (WASH) services, waste management, and dead body management.

4.2.5 Nutrition in Emergencies

During emergencies, there is an increased risk of malnutrition due to disruptions in food systems, limited access to nutritious foods, and the heightened nutritional needs of vulnerable groups such as children, pregnant and lactating women, and the elderly. Guidance from the latest version of the 'Guide to Nutrition in Emergency Situation for Bhutan' should be used to ensure that appropriate and quality packages of nutrition interventions are delivered to prevent deterioration of the nutrition status during future emergencies.

4.2.6 Medical Waste Management

Not all medical wastes are hazardous, as Figure 2 shows. About 85% is general, non-hazardous waste, and the remaining 15% is considered hazardous materials that may be infectious, toxic, or radioactive (WHO, 2018), which require particular handling since it have the potential to transmit infection, cause injury, and cause environmental pollution.

The MoH oversees the country's medical waste management. The MoH should strictly monitor the implementation of the National Guidelines on Infection Control and Medical Waste Management 2012 during health emergencies.

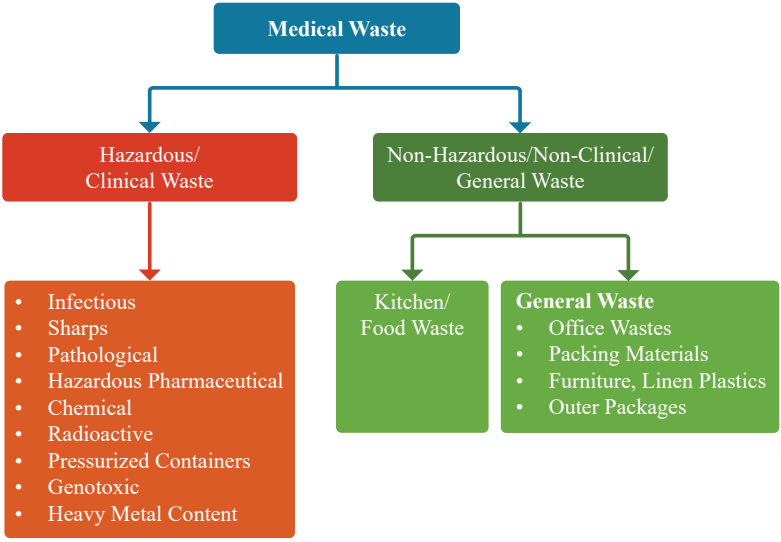

Figure 2: Categorization of medical waste (Source: MoH, 2012)

4.2.7 Protection of Health Workers and Patients

Health workers face a variety of occupational risks, including biological, chemical, physical, and psychosocial hazards during a health emergency. To protect the health and safety of the health workers and patients during health emergencies, develop standards and norms, and provide training to health professionals on infection and prevention and control measures and Personal Protective Equipment (PPE) use.

4.2.8 Emergency Medical Supplies Stockpile

The supply chain in Bhutan usually gets disrupted during public health emergencies due to transportation movement restrictions, highway blocks, and the closure of surface entry points.

Currently, MOH maintains 30% of buffer stock for vital drugs, 20% for essential medicines, and 10% for necessary supplies. A stockpile will serve as a strategic reserve to supplement the supplies held by health authorities when immediate needs exceed capacity. Developing a stockpile of essential medicines, vaccines, personal protective equipment, and other necessary medical supplies for responding to health emergencies is recommended. The medical warehouse can be built in the three strategic locations in Paro, Gelephu, and Samdrup Jongkhar, as identified by MoH.

The stockpile may be developed based on the following considerations:

- Identify essential items to stockpile based on risk assessments and expert advice, considering factors like potential disease threats and demand surges during natural disasters.
- Determine appropriate stockpile quantities to meet the anticipated levels of demand, factoring in the size of the population and the potential impact of emergencies.

- Implement effective stockpile management practices to minimize waste, such as stockpile rotation, temperature monitoring, and detailed inventory tracking.
- Ensure that the stockpile locations have multiple access routes, ensuring supplies can be rapidly and reliably delivered to affected areas during emergencies.
- Assess the disaster resilience of these medical stores and strengthen/retrofit as required.

4.2.9 Field Hospitals

To enhance the healthcare system's surge capacity during emergencies, temporary field hospitals should be established attached to major hospitals in the country. These field hospitals would serve as rapidly deployable healthcare facilities to provide additional inpatient and medical/surgical care when the hospital facilities are overwhelmed or inaccessible.

Important points to be considered for establishing field hospitals are:

- Identify safe and suitable evacuation center locations adjacent to major hospitals, such as the JDWNRH, where field hospitals can be set up quickly.
- Procure and pre-position field hospital equipment and supplies, including tents, containers, medical equipment, and basic amenities like sanitation facilities, ensuring fire resistance of the tents.
- The design of the field hospital will depend on the level of services expected to be carried out in it. It is essential to ensure that these are designed according to international standards for the level of care they will provide, such as outpatient emergency care, inpatient intensive care, or surgical services including the safety and security of staff and patients.

- Identify and train hospital staff on the setup and operation of field hospitals to ensure they can be deployed efficiently during emergencies.
- Conduct regular drills and exercises to test the responsiveness and coordination of field hospital deployment with other emergency response plans.
- Develop protocols for integrating field hospitals into the overall hospital operations.

4.2.10 Mock Drill and Simulations

Mock drills and simulations are essential tools for preparing healthcare systems and communities for health emergencies. They provide a controlled environment to practice response procedures, identify gaps in preparedness, and improve coordination among various stakeholders. The MoH, in collaboration with DLGDM and relevant stakeholders, should conduct regular drills and simulations to test and refine the HEDCP and bolster the coordination mechanism between NEOC and HEOC.

It is also essential to periodically review and revise plans such as the NIPPRP, update checklists to assess and evaluate pandemic preparedness, and conduct regular exercises to test the plans using pandemic scenarios. Develop pandemic business continuity plans at all levels of health facilities to ensure the continuation of essential health services.

The HEP, DoPH should also monitor that all hospitals develop contingency plans and conduct regular mock drills and simulations as per the guidelines for conducting emergency and disaster simulations and drills in health facilities.

4.2.11 Capacity Building

Capacity building here refers to various training and public education measures designed to equip organizations, staff, first responders, volunteers, and at-risk community members with the knowledge and skills to prepare and respond effectively to health emergencies.

The capacity of the community to deal with the effects of health emergencies can be improved by training first responders or volunteers in first aid. First responders should be trained in providing pre-hospital care in medical emergencies, in topics including trauma, gender-based violence, sexual and reproductive health, field epidemiology, and hospital preparedness for emergencies (HOPE), risk communication and community engagement among others. First responders should include RBP, Desuups, firefighters, RRT, and EMTs. All relevant institutions should enhance their readiness to prepare, respond, and recover from emergencies by continuously building the capacity of their personnel based on the results of capacity need assessments.

a. Gender-Based Violence

Gender-Based Violence (GBV) is any harmful act that is perpetrated against a person's will, and that is based on socially ascribed (gender) differences between males and females.

GBV is addressed and managed by multiple agencies and organizations, both governmental and non-governmental, working together to prevent, respond to the provide support for survivors of GBV during health emergencies and natural disasters.

Although disasters do not discriminate, girls and women are often the most affected groups due to existing gender inequities and a lack of access to resources exacerbated by displacement during and after

disasters. Factors such as overcrowded and unsafe shelters, lack of privacy, insufficient essential care services, and diminished law enforcement during crises further heighten their vulnerability.

The MoH is involved in providing medical care and support to survivors of GBV, whereas other sectors are involved in counseling, legal aid, shelters, protecting the rights of women and children, and conducting empowerment programs. There should be clear SOPs developed between different sectors on GBV during emergencies.

b. Sexual and Reproductive Health and Rights

Sexuality and reproduction are fundamental determinants of health and are recognized as human rights. Achieving good sexual and reproductive health (SRH) means attaining complete physical, mental, and social well-being concerning the reproductive system. The health sector aims to provide the Minimum Initial Service Package (MISP) for SRH during emergencies and post-disaster situations, and there has been notable progress in integrating these services into primary health care. However, disparities still exist at regional and Dzongkhag levels, highlighting the need for continued efforts. SRH services should be prioritized as lifesaving measures to be implemented immediately following any humanitarian crisis.

Strengthening the institutional capacity of midwives and nurses in SRH is crucial for influencing communities and promoting better health outcomes during emergencies. Midwives and nurses are often the first points of contact for women and girls in need of SRH services, particularly in remote or underserved areas. By investing in their training and skills development, it can be ensured that these frontline health workers are equipped to provide high-quality, culturally sensitive, and gender-responsive SRH services, even during crises.

c. Field Epidemiology Training Programme

The WHO and the South-East Asia Regional Office prioritize enhancing the field epidemiology workforce to strengthen the capacity to respond to health emergencies. Training Rapid Response Teams (RRTs) through the Field Epidemiology Training Programme (FETP) and providing them with the skills and knowledge necessary for outbreak detection, risk assessment, and community engagement will enhance the country's capacity to respond effectively to public health emergencies.

d. Hospital Preparedness for Emergencies (HOPE)

HOPE is a course designed to enhance the capacity of healthcare facilities to effectively respond to public health emergencies and disasters. It emphasizes the development of robust emergency response plans, resource allocation strategies, and staff training to ensure continuity of care during crises. For Emergency Medical Teams (EMTs), HOPE training strengthens coordination, improves surge capacity, and ensures the integration of EMTs into hospital emergency and disaster plans, enabling efficient deployment and resource utilization during emergencies. This synergy enhances patient outcomes and the overall healthcare response.

4.3 Response

Health emergency responses involve the immediate actions taken during and after a health emergency to protect and save lives, reduce health impacts, and restore essential health services.

The response mechanism includes disaster types, declaration of disasters, rapid assessment of the emergency, and nutrition in emergencies.

4.3.1 Activation of HEOC

The Health Emergency Operation Center (HEOC) will be activated based on the following criteria:

- Declaration of disease outbreak or epidemic by HEMC upon confirmation by the RCDC and DoPH
- Declaration of public health emergency of international concern (PHEIC)/Pandemic by the WHO
- Type II & III Disaster as declared by National Disaster Management Authority (NDMA)

Depending on the nature of the event such as a disease outbreak, pandemic, natural disaster, or mass casualty incident (MCI), the appropriate team will be activated. RRTs will respond to disease outbreaks and pandemics, while EMTs will be deployed for natural disasters and mass casualty events.

In a Type III disaster, the National Disaster Response Coordination Committee (NDRCC) and HEMC will be convened, and both the NEOC and HEOC will be activated. NDMA/NDRCC assumes the key responsibility for disaster response operations for Type III disasters.

4.3.2 Rapid Health Assessment

To provide a timely, adequate response to affected communities, the health sector and especially the rapid response team at national and Dzongkhag levels should coordinate and conduct a rapid assessment of health status, damage, and basic needs during and in the immediate aftermath of an event within 24 hours. The assessment should be conducted by RRT/EMT utilizing standardized methods and forms (Annex I), to gather data and information.

This evidence-based data will inform the decision-making process, allow continual plan readjustment, and assist in evaluating the effectiveness of the response and recovery.

4.3.3 Medical Outpost

A medical outpost for health emergencies is a temporary or semi-permanent facility established in a designated area within a workplace or event in response to acute health crises, such as natural disasters, mass casualties, or other emergencies. The medical outposts are designed to provide first aid services and medical assistance to affected populations. It should include medical supplies, equipment, tents/tarpaulin sheets, and trained personnel who can respond to various medical situations. It should be able to set up within 24 hours of the event. The MoH should develop an SOP on the medical outpost set up with the relevant sectors such as the Bhutan Red Cross Society.

4.3.4 Mass Casualty Management

The WHO defines Mass Casualty Incidents (MCI) as disasters and major incidents characterized by quantity, severity, and diversity of patients that can rapidly overwhelm the ability of local medical resources to deliver comprehensive and definitive medical care.

Mass Casualty Management (MCM) is a critical component of the national emergency system; it should be developed based on prior hazard and vulnerability analysis, capacity, and risk assessment. To be successful, an MCM system requires coordination and collaboration from various organizations and stakeholders, from local to national and even international, depending on the magnitude of the event. It is based on pre-established procedures, multi-sectoral preparation and response, and tested coordination. The critical component of mass casualty management includes surge capacity, ambulance services, and dead body management.

Some specific actions of an MCM system should be:

i. Field organization after confirmation of initial warning
ii. Establishment of field command post nearest to the emergency site
iii. Management of victims by applying principles of medical and non-medical triage, color tagging, and life-saving procedures
iv. Establishment of Advance Medical Post (AMP) which includes:
    - Medical Evacuation Centre (MEC)
    - Dispatching of the patients
    - Network of receiving hospitals
    - Transportation of injured/ill patients
v. Principles of color tagging during triage procedures
vi. De-escalation
vii. Recovery phase and evaluation

The existence of emergency care and trauma care centers is critical to provide an effective initial response to MCM and vital for the continuity of care for daily emergencies and mass casualty incidents, which increase not only through direct effects of the event but also via disruption of essential healthcare services.

The MoH should develop an SOP for the MCM at the national and Dzongkhag level. The MCM should be integrated into medical, paramedical, and nursing undergraduate and postgraduate training programs to ensure that health workers are trained for mass casualties early in their education.

Human resource deployment during emergencies is critical for a swift and effective response. To ensure efficient deployment, a separate SOP should be developed.

a. Medical Surge Capacity

Surge capacity in healthcare is the ability to assess and treat a much higher number of patients—more than the regular operational capacity. Surge requirements may include in-depth lab work or epidemiological investigations in addition to direct patient treatment (Barbera et al., 2007).

To enhance emergency response, the MoH has organized 20 districts into three regional hubs: Western, Eastern, and Central as shown in Figure 3. These hubs will function as follows:

i. Serve as surge capacity centers for their respective regions.

ii. The National Referral Hospital and Regional Referral Hospitals will act as primary hubs for medical emergency response.

iii. Health facilities in the Dzongkhags will cluster under each hub.

iv. Each hub will maintain a team of trained health workers, field hospitals, and a stockpile of medical supplies, enabling the rapid deployment of personnel from district facilities to disaster sites within each cluster.

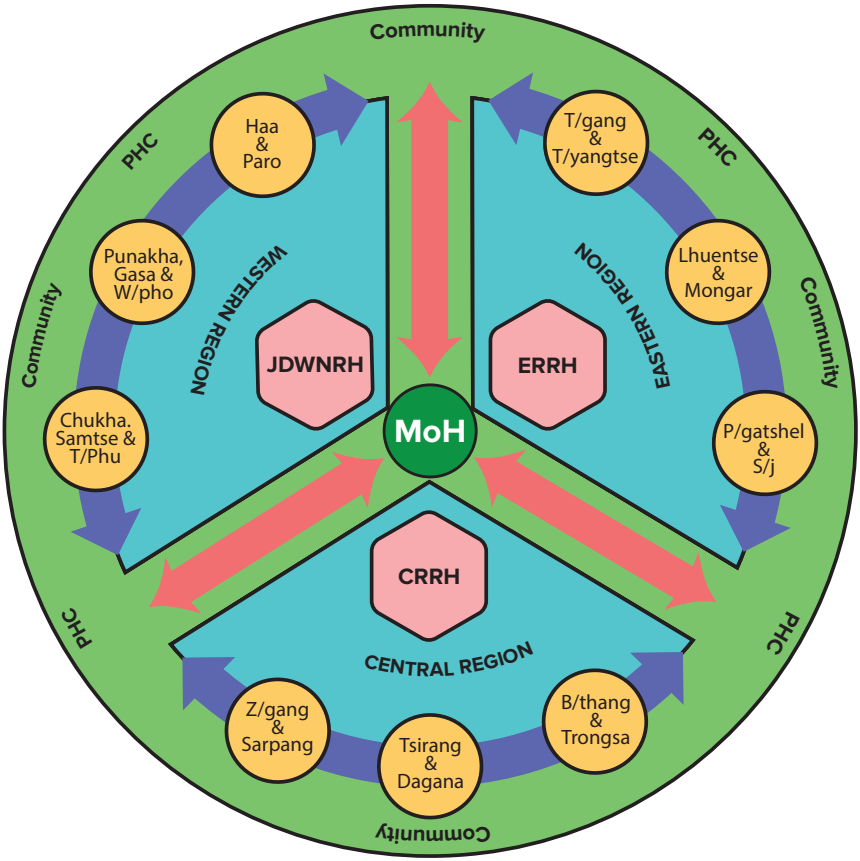

Figure 3: Mechanism of Medical Surge System (Source: HEDCP, 2016)

b. Ambulance Services

The ambulance services main responsibility is to offer emergency medical services on time, increasing the accessibility of healthcare services. The Health Help Center (HHC) arranges aeromedical and land ambulance services to be deployed to various levels of healthcare institutions in Bhutan through toll-free number 112 as guided by the Ambulance Services Guidelines.

The demand for land ambulances is increasing with the improvement of road networks, exerting pressure on the limited resources for the procurement and maintenance of ambulances. It is important to assess the current ambulance capacity and identify gaps to enhance access to emergency care in all districts. Conducting regular drills and simulation exercises to test the responsiveness and coordination of ambulance services including aeromedical services with other emergency responders is also recommended.

c. Dead Body Management

In the aftermath of mass casualty events such as infectious disease outbreaks, ethical, political, and sociocultural concerns might arise. Specific action plans should be implemented, and liaisons with agencies at all levels responsible for the management of the dead bodies, the collection, and management of information about the dead bodies, and the sharing of accurate information with families and communities about their identification should be established. The MoH should work closely with local stakeholders such as volunteers, forensic experts, and NGO/CSO representatives to ensure that culturally appropriate funeral and burial practices are followed accordingly.

Establish clear SOPs for the dignified and proper handling of dead bodies during emergencies and disasters. These SOPs should align with international guidelines and best practices and build on the SOPs developed during COVID-19 for managing people deceased of infectious diseases.

During the COVID-19 pandemic, the Bhutan Red Cross Society (BRCS) has constituted multidisciplinary teams at community levels for immediate intervention. To ensure the continuity and effectiveness of this collaborative approach, MOH and BRCS must formalize these partnerships through Memorandums of Understanding (MOUs),

establishing clear roles, responsibilities, and communication channels. These formal partnerships will enable MOH and BRCS to mobilize resources rapidly, coordinate response efforts, and provide timely assistance to communities. Similar approach can be also done with Dratshang Lhentshog and other relevant partner.

4.3.5 Risk Communication

Risk communication is a critical component of health emergency response, focusing on the timely and effective exchange of information and advice among authorities, experts, and the public. It is important to have the proper information dissemination to the public through proper channels such as websites, emails, social media, hotlines, text messages, and others.

The sources of information for the risk communication should be credible and trustworthy to generate the confidence of the public. Therefore, direct sources of information may preferably be media spokespersons of local government authorities, and health focal points as shown in Table 3.

The Health Emergencies Program (HEP) in collaboration with the HPRCD, DoPH should take a lead role in collecting, verifying, and disseminating information before communicating to the public following the protocol set in the Risk Communication Guideline for the Health Sector 2019.

Table 3: Possible sources of information in times of public health emergencies

Sl#	Agencies	Source of information
1	Ministry of Health	HPRCD, DoPH, media, and risk communication focal person
		Relevant official, HEP, DoPH
		Royal Centre for Disease Control
		Bhutan Food and Drug Authority
		Dzongkhag Health Officials
2	Ministry of Home Affairs	Department of Local Governance and Disaster Management Immigration
3	Royal Bhutan Police	Traffic, Fire
4	Ministry of Agriculture and Livestock	Outbreak in animals
5	Ministry of Infrastructure and Transport	Road, construction

CHAPTER 5:
COORDINATION, IMPLEMENTATION AND MONITORING

5.1 Coordination and Communication Mechanism

The importance of continuous coordination and communication during a health emergency response cannot be overstated. Effective coordination is crucial for ensuring a timely, efficient, and comprehensive response that can save lives and minimize the impact of the crisis.

During a health emergency, multiple agencies, organizations, and stakeholders need to work together seamlessly to address the various aspects of the response. This includes coordinating disease surveillance and early warning systems, mobilizing medical resources

and personnel, establishing treatment and isolation facilities, disseminating public health information, and managing the logistics of supplies and transportation. Without strong coordination and clear communication, these elements can become fragmented, leading to gaps, duplication of efforts, and a communication breakdown, which leads to delayed response, suboptimal resource allocation, and a failure to serve all affected populations appropriately.

At the national level, chaired by the Honorable Prime Minister, the NDMA is the highest decision-making body on disaster management. The NDRCC is also chaired by the Prime Minister to ensure effective coordination and response during an emergency.

At the national level, the NDRCC functions from the National Emergency Operation Center (NEOC) in Thimphu. The NEOC serves as the central hub for disaster response operations, ensuring effective communication, coordination, and resource management during emergencies.

At the MoH level, HEMC functions from the HEOC during emergencies, which serves as a specialized hub for managing health emergencies and public health crises. The HEOC coordinates with the NEOC to respond to health-related incidents, ensuring effective coordination, communication, and mobilizing resources to mitigate the impacts on public health. The DoPH as a secretariat to HEOC, is responsible for coordination and communication between HEOC and NEOC.

a. National Emergency Operation Centre

NEOC is the national central hub for effective disaster coordination, communication, and resource management during emergencies. The NDRCC functions from the NEOC using the revised NDRCC structure of six desks: operation desk, planning desk, logistics desk,

essential services restoration desk, finance desk, and international assistance desk.

b. Health Emergency Operation Centre

The HEOC is a central command, control, and coordination center for the effective administration of emergency preparedness and disaster management in any health emergency. The HEOC will be managed and operated by the Department of Public Health under the directives of HEMC.

The HEOC will be activated based on the nature of the event such as a disease outbreak, pandemic, natural disaster, or MCI as described in section 4.3.1. The team composition of the HEOC Secretariat is as follows:

1. CPO, CDD – Team Lead
2. All POs under HEP, CDD
3. PO, VPDP, CDD
4. PO, VDCP, CDD
5. ICT Associate, ICTS
6. Co-opt members from the relevant department/agencies shall be considered as and when required.

Terms of Reference for the HEOC Secretariat are as follows:
Preparedness phase

- Ensure that HEOC is equipped and functional at all times.
- Develop/review HEOC operational plan
- Facilitate the conduct of simulations and mock drills on different types of disasters and health emergencies.
- Facilitate other relevant programs to develop guidelines and SOPs for emergencies.

- Ensure that health facilities develop emergency and disaster contingency plans.
- Maintain the hazard/risk maps.

Response phase

- Organize and arrange the HEMC meetings.
- Record, maintain, and circulate minutes of meetings.
- Communicate response plans with other stakeholders.
- Coordinate and facilitate the capacity building of health workers in emergency and disaster management.
- Receive early warning information from RCDC and Dzongkhag.
- Liaise (point of contact) with any other relevant sector.
- Facilitate the conduct of research on health emergency management in close collaboration with academia.
- Integrate information and prepare regular situation reports to HEMC/HEOC.

5.1.1 NEOC and HEOC Coordination

To ensure a better response to health emergencies, coordination and communication between the NEOC and HEOC, coordination should be enhanced as shown in Figure 4.

An initial step towards this will be developing a coordination framework/plan for smooth coordination between the EOCs to

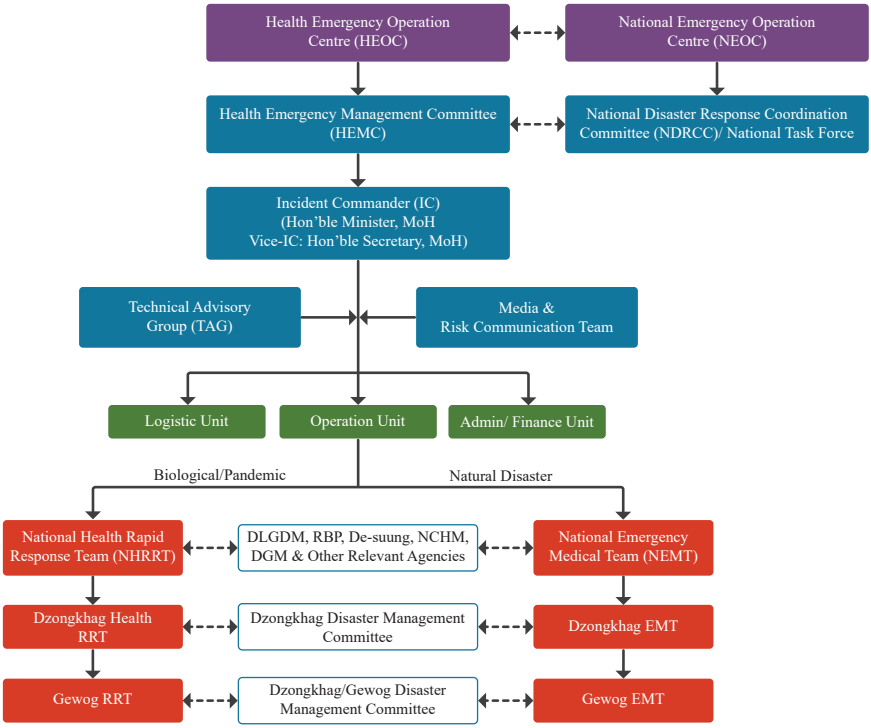

Figure 4: Coordination and Communication in Health Emergencies

share information during emergencies. A coordination framework would include:

- Establish robust, redundant communication channels between NEOC and HEOC, including dedicated hotlines, video conferencing, and shared data platforms.
- Develop/strengthen mechanisms for real-time exchange of situational updates, resource needs, and response actions between the two EOCs with standardized data formats and reporting protocols to facilitate seamless information flow.
- Clarify roles, responsibilities, and decision-making processes. Update definitions of the respective mandates, authorities, and

triggers for NEOC and HEOC activation during different types of emergencies.

- Include the NEOC and HEOC coordination framework in relevant policies and guidelines.
- Establish formal coordination platforms, such as joint steering committees or technical working groups between NEOC and HEOC.
- Allocate dedicated resources and budgets in DLGDM and MoH budgets to sustain the coordination mechanisms.

Collaborative Planning and Preparedness

- The coordination plan between HEOC and NEOC should align emergency protocols, resource inventories, and logistics arrangements.
- Conduct joint risk assessments and vulnerability analyses to inform coordinated preparedness efforts.
- Involve HEOC and NEOC in developing National and Dzongkhag-level disaster management and contingency plans.
- Review and revise/ develop standard operating procedures for coordinated decision-making, resource mobilization, and joint response planning.
- Conduct regular joint exercises and simulations between MoH, DLGDM, and relevant agencies to test coordination and communication mechanisms.

Capacity Building

- NEOC and HEOC staff receive cross-training on each other's functions and procedures, including joint training on incident command, emergency operations management, and multi-agency coordination.

- Facilitate staff exchanges and secondments between the two EOCs to foster mutual understanding.

5.1.2 HEMC Coordination Structure

The HEMC, chaired by the Minister of MoH as shown in Figure 4, is designated by the HEDCP as the top decision-making body for health emergencies. Its function is as per section 3.1.2 of this plan.

At the national level, the HEP under the Department of Public Health plays a key role in implementing and coordinating health emergency preparedness and response activities.

It is important to note that the structure and organization of the HEMC can be adjusted based on situational requirements. During the COVID-19 pandemic in Bhutan, the government implemented an Incident Command System (ICS) with three tiers: national, regional, and local. In this context, the National COVID-19 Task Force (NC19TF) replaced the HEMC as the primary decision-making body for COVID-19 management. Its comprehensive and coordinated approach has ensured efficient decision-making, resource allocation, and communication across various levels of agencies and the healthcare system. Given its success, the HEDCP 2024 proposes adopting this model to manage all future outbreaks, following the protocols prescribed in the Disease Outbreak Investigation and Control Manual and NIPPRP.

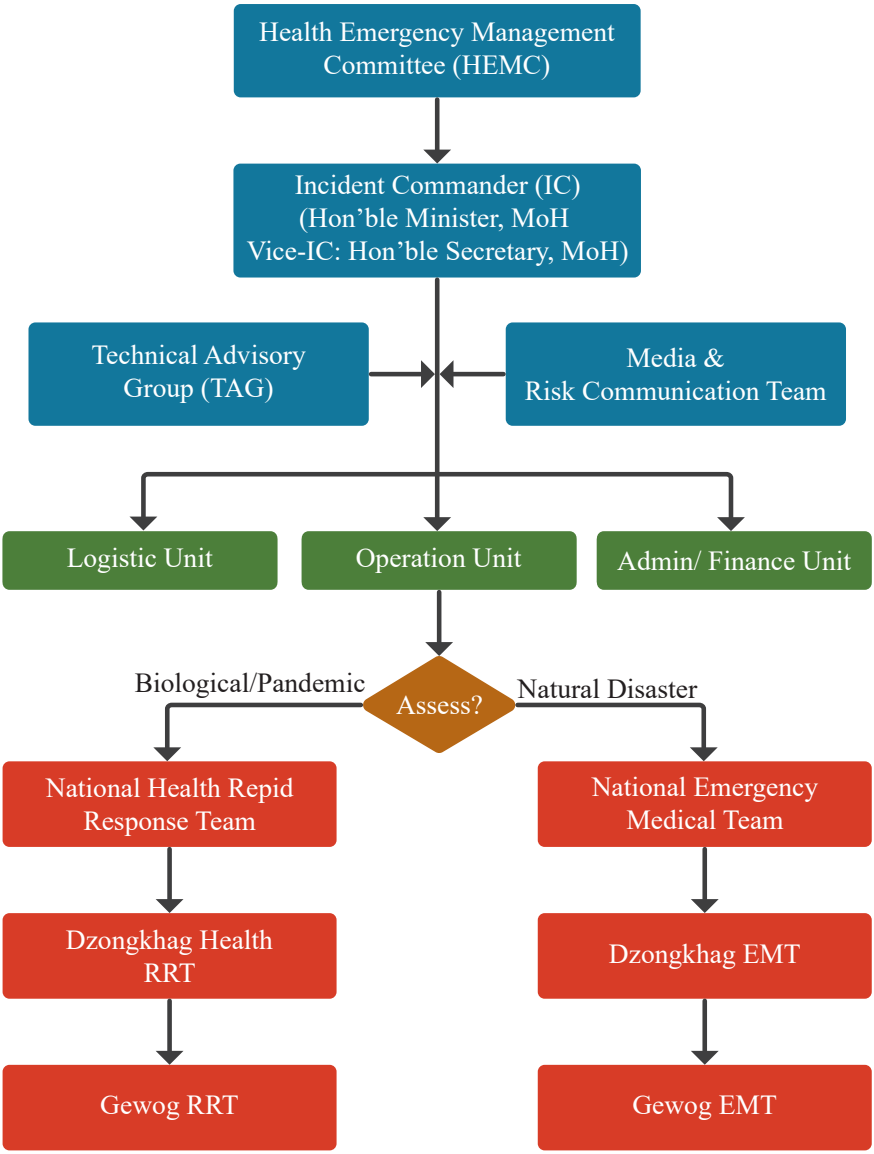

Figure 5: Health Emergency Management Committee Structure

5.2 Financing for Health Emergencies

As a member country of WHO, Bhutan can avail of the South-East Asia Regional Health Emergency Fund (SEARHEF) during health emergencies within 24 hours under the following conditions:

- A declaration of a state of emergency
- An official request for external assistance by the national government
- Appointment of a humanitarian coordinator for the emergency by the UN Secretary-General.

There is another financing mechanism established by WHO called the Contingency Fund for Emergencies (CFE) to provide rapid and flexible funding for health emergencies.

The NDMA and the Ministry of Finance also ensure adequate financial arrangements to respond to health emergencies and disasters, as empowered by the DM Act 2013. The national health policy ensures an adequate budget for health care services and protection against catastrophic expenditure.

The DM Act 2013 provides financial arrangements for response and relief expenditures, immediate restoration of essential public infrastructure and service centers, capacity building budget, and recovery and reconstruction of public infrastructures and assets. To facilitate efficient, effective, and timely response during disaster emergencies, three types of financing arrangements for disaster management activities are identified in the Operational Guidelines for Disaster Financing 2017 as follows in 5.2.1 to 5.2.3.

5.2.1 Financing for Response and Relief Activities

As stated in the Operational Guidelines for Disaster Financing 2017, agencies and the DDMCs are responsible for meeting the expenses from the approved annual budget for response and relief activities to manage emergencies. The Ministry of Finance reimburses only the accrued response and relief activity expenditures. Response and relief activities include providing food, shelter, and other essential relief items for the affected people in the communities and the responders as per the minimum standards set by the DLGDM.

5.2.2 Financing for Immediate Restoration of Essential Public Infrastructure and Service Centre

To maintain uninterrupted service delivery vital to the community, this category's operations will involve promptly repairing critical public infrastructure and service centers damaged by disasters. To qualify for financing, the essential public services and key infrastructure must be:

- Wholly owned and maintained by the government and not involved in profit-making activities.
- An integral and necessary part of the public infrastructure.
- Severely disrupts the normal functioning of the community.

Upon receipt of the request for funds, the Department of Planning, Budget, and Performance (DPBP) shall transfer the budget from the General Reserve for Disaster Relief to the respective agency.

5.2.3 Financing for Recovery and Reconstruction Activities

The agencies must conduct thorough damage assessments within their purview per the post-disaster assessment framework approved by the NDMA to recover and rebuild public assets and infrastructure.

The budget requirement for the recovery and reconstruction activities shall follow the normal planning and annual budgeting process.

5.2.4 Contingency Fund for Epidemics and Outbreaks

A contingency fund for epidemics and outbreaks will enhance national resilience, enabling the health sector to respond effectively without diverting resources from other critical areas. Investing in a contingency fund is more cost-effective than the potential economic fallout of uncontrolled outbreaks.

A dedicated Contingency Fund for rapid response should be established to address the need for financing to respond to epidemics and outbreaks, particularly situations like bird flu and rabies outbreaks in animals. The MoH should develop guidelines or SOPs on the establishment of the Contingency Fund and eligible expenditures.

5.2.5 Resource Mobilization Process

The Ministry mobilizes resources from nearby health facilities, assists affected districts, and establishes resource mobilization mechanisms with national, international, and non-governmental organizations. To maintain a comprehensive database of available resources, including medical supplies, equipment, personnel, and facilities, the MoH should develop inventory management and conduct periodic assessments to update the inventory and identify potential gaps.

The MoH should also establish pre-agreements with empaneled local and international suppliers for the rapid procurement of essential items during emergencies and ensure that the suppliers adhere to quality standards and can provide timely deliveries.

5.3 Recovery Planning and Coordination

5.3.1 Assessment of Health Facilities

a. Immediate Post-Disaster Assessment

- Develop formats, digital tools, and multidisciplinary assessment teams for conducting rapid assessments to evaluate the immediate health impacts, infrastructure damage, and resource needs in the pre-disaster period.
- During the emergency period, deploy assessment teams, including health professionals, engineers, and logistics experts, to gather comprehensive data.
- Utilize digital tools and mobile applications for real-time data collection and analysis.

b. Comprehensive Health Impact Assessment

- Perform detailed health impact assessments focusing on the loss of infrastructure, loss of functionality of health services, disease outbreaks, and need for equipment, supplies, and human resources. The assessment teams will also analyze the impact on vulnerable groups, such as the elderly, children, and those with pre-existing medical conditions.
- Collaborate with local health facilities to collect data on patient influx, morbidity, and mortality rates.
- Assess the functionality of health systems and identify critical gaps in service delivery.

c. Continuous Monitoring and Evaluation

- Establish a monitoring and evaluation framework to track recovery progress and identify emerging needs.

5.3.2 Resource Allocation

a. Prioritization of Resources

- Prioritize resource allocation, including financial, material, and human resources, based on the severity of impacts and the most urgent needs identified in the assessments.
- Focus on vulnerable populations, including children, the elderly, and people with disabilities.
- Establish transparent and equitable mechanisms for distributing aid and support to the affected healthcare facilities and communities.

b. Coordination with Stakeholders

- Coordinate with the National Disaster Response Coordination Committee (NDRCC) and other relevant agencies to mobilize additional resources from national and international sources.
- Collaborate with national and international partners, including NGOs, UN agencies, and donor organizations, to pool resources.
- Utilize a resource tracking system to monitor the availability and distribution of supplies and services. Ensure transparent and accountable financial management practices, including regular audits and sharing reports with stakeholders.

5.3.3 Healthcare Service Restoration

a. Restoring Health Services

- Prioritize assessing, repairing, rehabilitating, or reconstructing damaged healthcare facilities and infrastructure.
- Reopen and restore the functionality of health facilities, starting with PHCs and emergency services. Ensure the availability of essential medicines, medical supplies, and equipment.

- Re-establish routine health services, including maternal and child health, immunizations, and chronic disease management.

b. Strengthening the Health Workforce

- Deploy RRT, EMT and surge capacity personnel to support overwhelmed health facilities.
- Provide training and support to health workers on post-disaster care, including trauma management and infectious disease control.
- Implement measures to ensure the well-being and safety of health workers, including mental health support and protective equipment.
- Equip more health facilities with the necessary technology and infrastructure to support telemedicine use in emergencies.

5.3.4 Infrastructure Repair and Reconstruction

a. Damage Assessment and Prioritization

- Conduct detailed assessments of damaged health infrastructure, including hospitals, PHCs, and public health laboratories, using assessment tools and teams mentioned in section 5.4.
- Prioritize repair, rehabilitation, retrofitting, or reconstruction efforts based on the extent of damage, criticality of the facility, and population needs with a phased reconstruction plan to restore prioritized health infrastructure.

b. Building Resilient Infrastructure

- Implement resilient building and assess location-based hazards to ensure all new health facilities withstand future disastrous events.
- Incorporate climate-resilient and environmentally sustainable designs in reconstruction efforts.

- Collaborate with the Ministry of Infrastructure and Transport (MoIT) team and construction experts to incorporate disaster-resilient design and construction standards to enhance the structural and non-structural resilience of the facilities to ensure continued functionality of healthcare facilities after disastrous events.

c. Funding and Partnerships

- Secure infrastructure repair and reconstruction funding from national budgets, regional partners, and international donors.
- Monitor and evaluate reconstruction projects to ensure timely completion and quality assurance.

5.3.5 Lessons Learned

a. After-Action Reviews (AAR)

- Conduct comprehensive after-action reviews (AARs) to evaluate the effectiveness of the response and recovery efforts.
- Document successes, challenges, and areas for improvement based on feedback from stakeholders and affected communities.
- Lessons learned should not be limited to disastrous events within the country. The HEMC should initiate a lesson-learning exercise for lessons from major disastrous events in other countries that would be relevant to Bhutan.
- Develop actionable recommendations to enhance future disaster preparedness and response.

b. Knowledge Sharing and Capacity Building

- Organize workshops, seminars, and training sessions to share lessons learned with health sector professionals and partners.
- Develop and disseminate case studies, best practice guidelines, and training materials.

- Foster a culture of continuous learning and improvement within the health sector.

c. Integration into policy and planning

- Integrate lessons learned into future revisions of the HEDCP and other contingency plans, policies, and protocols.
- Advocate for policy changes and resource allocation to address identified gaps and strengthen disaster resilience.
- Engage with policymakers, community leaders, and other stakeholders to ensure sustained commitment to disaster preparedness, mitigation, and recovery.

5.4 Monitoring and Evaluation

The HEDCP plan document is the key result of the planning process and is a living document whose activities should be implemented as a part of emergency preparedness. By implementing a monitoring and evaluation plan, regularly collecting stakeholder feedback, and continuously updating the HEDCP, MoH can ensure the plan remains relevant, effective, and responsive to the evolving needs and challenges in the health emergency and disaster management domain.

The HEP, DoPH will lead the monitoring plan in close coordination with the different sector leads and supporting agencies.

Tables 3 and 4 present a monitoring and evaluation plan for the next five years. This plan notes the responsible party, the supporting party, and the timeline for implementation.

Table 4: Monitoring and Evaluation Plan

Monitoring and Evaluation Plan										
Sl. #	**Key Activities**	**Indicators**	**Baseline**	**Target**	**Timeline**	**Responsible Agency**	**Supporting Agency**	**Frequency**	**Means of Verification**	**Assumptions**
1	Develop and update all-hazard hospital emergency contingency plan	Number of hospitals with updated emergency contingency plans	27 (2024)	54	2026	DCS	HEP, DoPH, MoH	-	Obtain copy	Availability of budget, time, and commitment
2	Conduct simulation and mock drill in hospitals	Number of hospitals conducting simulation drills	27 (2024)	54	2029	DCS	HEP, DoPH, MoH	Bi-annually	Obtain report	Availability of budget, time, and commitment
3	Develop guidelines and SOPs related to mass casualty and dead body management	Number of new/ revised guidelines and SOPs	0	4	2024-2025	DCS	HEP, DoPH, MoH	-	Obtain copy	Availability of budget, time, and commitment
4	Rapid response teams trained in the Field Epidemiology Training Program (FETP)	Number of health personnel trained on HOPE and FETP	32 (2024)	350 Health personnel	2029	HEP, DoPH, MoH	DCS	Annually	Obtain list	Availability of budget, time, and commitment
5	Emergency Medical Team (EMT) formed and trained	Emergency Medical Team (EMT) formed at both national and sub-national level	NA	NA	2026	DCS	HEP, DoPH, MoH	Annually	Obtain report	Availability of budget, time, and commitment
6	Conduct hospital vulnerability assessment	% of hospitals assessed with initial seismic vulnerability	4	All Major Hospitals (>40 bedded)	2029	DCS	HEP, DoPH, MoH	Annually	Obtain report	Availability of budget, time, and commitment

Monitoring and Evaluation Plan										
Sl. #	**Key Activities**	**Indicators**	**Baseline**	**Target**	**Timeline**	**Responsible Agency**	**Supporting Agency**	**Frequency**	**Means of Verification**	**Assumptions**
7	Community engagement and education programs	Number of community awareness and risk communication programs conducted	0	20	2029	HPRCD, DoPH	District Health Offices	Quarterly	Obtain reports, attendance lists	Availability of budget, time, and commitment
8	Develop mental health and psycho-social response capacity at all levels	Number of Psychological First Aid (PFA) and related training conducted	0	20	2029	Pema Center	MoH, CSOs, MoESD	Annually	Obtain report	Availability of budget, time, and commitment
9	Procurement of stockpiling of medical supplies based on the list developed and shared by the end users (prescribers)	% of health facilities with adequate stockpiles of essential supplies (95%)	95%	Sustain	2024-2025	DMP	DCS, MoF	Annually	Physical inspection, inventory records	Availability of budget, time, and commitment
10	Develop SOPs and guidelines for screening and management of mental health and psychosocial needs during emergencies	Number of SOPs for various mental health during emergencies developed	0	3	2024-2025	Pema Center	MoH, CSOs, MoESD	-	Obtain report	Availability of budget, time, and commitment
11	Convene Health Emergency Management Committee (HEMC) meeting	Number of HEMC convened	NA	NA	As and when required	HEP, DoPH, MoH	Relevant departments	As and when required	Obtain reports	Availability of budget, time, and commitment

Monitoring and Evaluation Plan										
Sl. #	Key Activities	Indicators	Baseline	Target	Timeline	Responsible Agency	Supporting Agency	Frequency	Means of Verification	Assumptions
12	Review and update National influneza pandemic preparedness and response plan (NIPPRP)	NIPPRP reviewed and updated	0	1	2025	HEP, DoPH, MoH	Relevant agencies	Annually	Obtain report	Availability of budget, time, and commitment
13	Develop SOP for deployment of HR during health emergency	SoP for deployment of HR during health emergency developed	NA	NA	2025	HEP, DoPH, MoH	HRD, MoH	Annually	Obtain report	Availability of budget, time, and commitment
14	Medical warehouses for medical supplies	Number of medical warehouse established	1	4	2029	DMP, MoH	Relevant agencies	Annually	Obtain report	Availability of budget, time, and commitment
15	Monitor the implementation of the national guidelines on infection control and medical waste management	All hospitals are monitored for the compliance to the national guideline	0	All hospitals	2025-2027	DCS	District Health Offices	Annually	Obtain report	Availability of budget, time, and commitment
15	Monitor the implementation of the national guidelines on infection control and medical waste management	All hospitals are monitored for the compliance to the national guideline	0	All hospitals	2025-2027	DCS	District Health Offices	Annually	Obtain report	Availability of budget, time, and commitment

5.5 Update and Review of HEDCP

The current HEDCP is set for a five-year (2024 – 2029) period. As per clause 79 of the DM Act 2013, the HEDCP shall be reviewed every five years.

The review will assess the plan's overall effectiveness, evaluate the implementation progress, and make substantial adjustments to strategies, policies, and procedures based on evolving best practices and the latest research.

By adhering to this structured review schedule, the HEDCP 2024 will remain a dynamic and effective tool in safeguarding public health and managing health emergencies and disasters in Bhutan.

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Annex: I Rapid Health Assessment Form

Sample: Rapid Health Emergency Assessment Form

Basic Information

Name and location of hospital:.....
Date of assessment:..... Name of assessor:.....
Type of healthcare facility: Hospital ☐ BHU ☐ ORC ☐ Other(specify).....

Situation Overview

Type of emergency: Natural disaster ☐ Outbreak or epidemic ☐ Pandemic ☐
Date of onset:..... Affected area(s):.....

Population Demographics

Estimated number of populations affected in the area:

Category	Children (0-5)	Children (6-17)	Adults (18-59)	Elderly (60+)	Pregnant Women	People with disabilities	Total
Death							
Injured							
Treated onsite							
Referral cases							
Admitted							
Missing							
Other							

Damage to Health Facilities

Describe the extent of the damage:.....
.....

Health Workforce Availability for Emergency Response

Staff	Number	Remarks
Doctors		
Nurses		
Other health personnel		

Status of Essential Drugs/Medicines

Describe the status of essential drugs/medicines.....
.....

Health Status and Needs

Main health issues: Injuries ☐ Infectious diseases ☐ Chronic diseases ☐ Mental health issues ☐ Other (specify).....

Nutritional status: .....

WASH: Access to clean water ☐ Sanitation facilities functional ☐ Hygiene practices and needs.....

Logistics and supply chain: No access to logistic supply ☐ Disruption in the supply chain route ☐

Recommendations and Action Plan

List immediate health priorities:.....

.....

Additional Comments

Any other relevant information.....

.....

Financial and Technical Support by