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STRONG & RESILIENT NATIONAL PUBLIC HEALTH SYSTEMS (PERFORMANCE AUDIT)

– Linked to SDG 3.d

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July 2024

Disclaimer Note

The audit was conducted in accordance with the International Standards of Supreme Audit Institutions (ISSAIs). The review was confined to ascertain government efforts to build and strengthen the health system's capacities for early warning, risk reduction, and management of public health risks building on emerging lessons learnt from recent public health events. The audit was based on the audit objectives and criteria determined in the audit plan and programme prepared by the Royal Audit Authority and the findings are based on the information and data made available by the Ministry of Health and relevant agencies.

This is also to certify that the auditors during the audit had neither yielded to pressure nor dispensed any favour or resorted to any unethical means that would be considered as a violation of the Royal Audit Authority's Oath of Good Conduct, Ethics, and Secrecy.

རྒྱལ་གཞུང་རྩིས་ཞིབ་དབང་འཛིན།
ROYAL AUDIT AUTHORITY
Bhutan Integrity House
Reporting on Economy, Efficiency & Effectiveness in the use of Public Resources

RAA/DPCA/PAD (PA SDG 3.d)/2022-2023/2434 **Date: 12 July 2024**

The Secretary
Ministry of Health
Thimphu, Bhutan

Subject: Performance Audit Report on Strong and Resilient National Public Health System (linked to SDG target 3.d)

Dear Sir,

Enclosed herewith please find the **Performance Audit Report on Strong and Resilient National Public Health System (linked to SDG target 3.d)** covering the period from 2019 to 2021. The Royal Audit Authority (RAA) conducted the audit under the mandate bestowed by the Constitution of the Kingdom of Bhutan and the Audit Act of Bhutan 2018. The audit was conducted as per the International Standards of Supreme Audit Institutions on performance auditing (ISSAI 3000) and RAA's Performance Audit Guidelines 2019.

The overall objective of the assessment is to ascertain government efforts to build and strengthen the health system's capacities for early warning, risk reduction, and management of public health risks building on emerging lessons learned from recent public health events.

Specifically, the audit was conducted with the following audit objectives;

1. To what extent the government has put in place the legal and policy frameworks and institutional arrangements in taking forward the lessons to enhance capacities to forecast, prevent, and prepare for public health risks?
2. How is the government ensuring the required resources for strengthening the health system's capacities to forecast, prevent, and prepare for public health risks?
3. How does the government periodically monitor, evaluate, and report on its current capacities to forecast, prevent, and prepare for future public health risks?

The draft report was shared with the Ministry of Health (MoH), the Department of Local Governance and Disaster Management, and the Ministry of Finance (MoF) for factual confirmation and comments. Responses received have been concisely incorporated in the report and necessary changes have been made after verification.

The report contains shortcomings and deficiencies as well as recommendations aimed at improving the health system's resilience. The shortcomings and deficiencies observed by the RAA are summarised in the Executive Summary and detailed in Chapter Three and audit recommendations in Chapter Four of the report.

In line with the Audit Act of Bhutan 2018, the Ministry of Health and the Department of Local Governance and Disaster Management should submit responses to the Final Audit Report in the form of a Management Action Plan. The Management Action Plan should specify the action plans for implementation of the recommendations with a definite timeframe aimed to address the underlying causes of the findings. Further, as specified by Section 55 (16) of the Audit Act

of Bhutan 2018, the audited agencies concerned are required to submit a signed Accountability Statement for the implementation of the recommendations provided.

The RAA will follow up implementation of the recommendations based on the Management Action Plan and Accountability Statement. Failure to comply will result in taking appropriate actions, which may include suspending audit clearances to the official(s) accountable.

Therefore, the RAA would like to request the Ministry of Health and the Department of Local Governance and Disaster Management to submit a Management Action Plan for the implementation of recommendations with a definite timeframe on or before ***29 July 2024*** *along with the signed Accountability Statement (format attached in* ***Appendix I****). In the event of non-submission, the RAA shall invariably fix the overall supervisory accountability on the head of audited agencies in line with Section 55(17) of the Audit Act of Bhutan 2018.*

We take this opportunity to acknowledge the officials of MoH and other stakeholders for rendering necessary cooperation and support extended during the audit.

Yours sincerely,

(Tashi)
Auditor General
Royal Audit Authority

Copy to:

1. Hon'ble Minister, Ministry of Health, Thimphu, *for kind information*;
2. Director, Department of Public Health, Ministry of Health;
3. Director, Department of Health Services, Ministry of Health;
4. Head/Specialist, Royal Centre for Disease Control, Ministry of Health;
5. Director, Department of Local Governance and Disaster Management, Ministry of Home Affairs;
6. Assistant Auditor General, Policy and Planning Division, RAA.

P.O. Box: 191 | Kawangjangsa | Thimphu | Bhutan | Tel: +975-2-322111| Fax: +975-2-323491
Website: www.bhutanaudit.gov.bt | Email: info@bhutanaudit.gov.bt

TITLE SHEET

1.	Title of the Report	:	Performance Audit on Strong and Resilient National Public Health System- linked to SDG target 3.d
2.	AIN	:	TAD-2022-435
3.	Audited Entity	:	1. Ministry of Health; 2. Department of Local Governance & Disaster Management, Ministry of Home Affairs
4.	Audited Period	:	1 January 2019 to 31 December 2021
5.	Team Composition	:	Dawa Tshering, Sr. Audit Officer Sangay Tenzin, Sr. Program Officer Kinley Choden, Audit Officer
6.	Direct Supervisor	:	Sonam Delma, Assistant Auditor General
7.	Overall Supervisor	:	Dorji Wangchuk, Deputy Auditor General

ACRONYMS AND ABBREVIATIONS

AAR	:	After-Action Review
ADB	:	Asian Development Bank
AHB	:	Annual Health Bulletin
BAFRA	:	Bhutan Agriculture and Food Regulatory Authority
BCCI	:	Bhutan Chamber of Commerce and Industry
BMED	:	Bio-Medical Engineering Division
BoQ	:	Bill of Quantities
Cat DDO	:	Catastrophe Deferred Drawdown Option
CPF	:	Country Partnership Framework
DDM		Department of Disaster Management
DLGDM	:	Department of Local Governance and Disaster Management
DGRK	:	Druk Gyalpo Relief Kidu
DNB	:	Department of National Budget
DoI	:	Department of Immigration
DoL	:	Department of Livestock
DoMSHI	:	Department of Medical Supplies and Health Infrastructure
DRA	:	Drug Regulatory Authority
DRC	:	Department of Revenue and Custom
EBMSIS	:	Electronic Bhutan Medical Supplies Inventory System
EID	:	Employee Identification Number
EMR	:	Emergency Medical Responder
EMSD	:	Emergency Medical Services Division
EMTD	:	Essential Medicines and Technology Division
EoC	:	Emergency Operation Centres
GLOF	:	Glacial Lake Outburst Floods
GNHC	:	Gross National Happiness Commission
GRA	:	General Reserve Account
HCDD	:	Health Care and Diagnostic Division
HEDCP	:	Health Emergency and Disaster Contingency Plan
HEMC	:	Health Emergency Management Committee
HEOC	:	Health Emergency Operation Centre
HHC	:	Health Help Centre
IAR	:	Intra-Action Review
ICU	:	Intensive Care Unit
IDI	:	INTOSAI Development Initiatives
IHR	:	International Health Regulations
INTOSAI	:	International Organisation of Supreme Audit Institutions
ISSAIs	:	International Standards of Supreme Audit Institutions
JDWNRH	:	Jigme Dorji Wangchuck National Referral Hospital
JEE	:	Joint External Evaluation
LDC	:	Least Developed Countries

MFI	:	Multilateral Financial Institutions
MoFA	:	Ministry of Foreign Affairs & External Trade
MoF	:	Ministry of Finance
MoH	:	Ministry of Health
MoHA	:	Ministry of Home Affairs
MRRH	:	Mongar Regional Referral Hospital
MSDD	:	Medical Supplies and Distribution Division
MSPD	:	Medical Supplies and Procurement Division
NAPHS	:	National Action Plans for Health Security
NCAH	:	National Centre for Animal Health
NCHM	:	National Centre for Hydrology and Meteorology
NDMA	:	National Disaster Management Authority
NDRCC	:	National Disaster Response Coordination Committee
NEC	:	National Environment Commission
NEWARS	:	National Early Warning, Alert and Response Surveillance
NKRA	:	National Key Result Areas
NPRP	:	National Preparedness and Response Plan
PHC	:	Primary Health Centers
PHE	:	Public Health Emergencies
PoE	:	Points of Entry
PPE	:	Personal Protective Equipment
QI	:	Quality Inspections
RAA	:	Royal Audit Authority
RCDC	:	Royal Centre for Disease Control
RGOB	:	Royal Government of Bhutan
RIGSS	:	Royal Institute of Governance and Strategic Studies
SDF	:	SAARC Development Fund
SDGs	:	Sustainable Development Goals
SEARHEF	:	South-East Asia Regional Health Emergency Fund
SimEx	:	Simulation Exercise
SoP	:	Standard Operating Procedure
SPAR	:	State Party Annual Report
TAG	:	Technical Advisory Group
TAT	:	Turn Around Time
TTX	:	Tabletop Simulation Exercise
UHC	:	Universal Health Coverage
UNICEF	:	United Nations Children’s Fund
VNR	:	Voluntary National Review
WHO	:	World Health Organisations

Table of Content

EXECUTIVE SUMMARY

The Royal Audit Authority (RAA) conducted the audit under the mandate bestowed by Article 25.1 of the Constitution of the Kingdom of Bhutan and Sections 68 (b) and 69 of the Audit Act of Bhutan 2018. This audit was conducted following the International Standards of Supreme Audit Institutions on Performance Auditing (ISSAI 3000) and RAA's Performance Audit Guidelines 2019.

Bhutan, like any other country, is at a risk of disasters including those associated with infectious disease outbreaks, conflicts, and natural and other hazards. The health, economic, political, and societal consequences of these events can be devastating. While Bhutan has strengthened its capacities to reduce the health risks and consequences of emergencies through the implementation of multi-hazard disaster risk management, the International Health Regulation (2005), and health system strengthening, many communities remain highly vulnerable to a wide range of hazardous events.

The RAA conducted the Performance audit on a strong and resilient health system (linked to SDG 3.d) to ascertain government efforts to build and strengthen the health system's capacities to detect and respond to public health emergencies and the key strategies to better prepare for any future shocks such as the recent COVID-19 pandemic.

The audit with the following objectives:

* To what extent the government has put in place the legal and policy frameworks and institutional arrangements in taking forward the lessons to enhance capacities to forecast, prevent, and prepare for public health risks?
* How is the government ensuring the required resources for strengthening the health system's capacities to forecast, prevent, and prepare for public health risks?
* How does the government periodically monitor, evaluate, and report on its current capacities to forecast, prevent, and prepare for future public health risks?

The audit focused on public health system capacities to forecast, prevent, and prepare for public health emergencies caused by infectious diseases through the assessment of one specific indicator for SDG 3.d targets which is International Health Regulation (IHR) capacity and preparedness during public health emergencies. The importance of a common, efficient, coordinated multisectoral approach, the consideration of inequalities during health emergencies, and the risks of vulnerable sections being left behind are some of the issues that the RAA has focused on.

The audit assessed the implementation of recommendations of the Joint External Evaluation Report (WHO) and other available assessment reports to evaluate the implementation progress of the IHR program in the country. The audit covered the period from 1 January 2019 to 31 December 2021. The audit covered several agencies namely, the Ministry of Health, the erstwhile Department of Disaster Management, the Department of Livestock, the Ministry of Finance, the erstwhile Bhutan Agriculture and Food Regulatory Authority, Designated Point of Entries, Dzongkhags, Gewogs and Hospitals.

Some of the key audit findings are summarised below:

* The RAA noted that the Disaster Risk Management Strategy (DRMS) developed by the erstwhile Disaster Management Division (DDM) primarily focuses on preparedness and response mechanisms for geological and meteorological hazards like earthquakes, floods, glacial lake outburst floods, landslides, and forest fires but not biological hazards, including public health emergencies such as epidemics or pandemics.
* There are no connections between the Disaster Risk Management Strategy and the Strategy Plan for Emergency Medical Services of the Ministry of Health, and other subsequent international commitments like the International Health Regulation (IHR). This has affected the alignment of areas in strengthening early warning, public awareness, risk communication, resource mobilisation, and integrated resilience programs between the two agencies.
* The National COVID-19 Task Force (NC19TF) played a crucial role in shaping the overall preparedness and response to the COVID-19 pandemic and the task force was also successful in containing and managing the pandemic. However, the formation of the new governance structure indicated that there is room for improvement in the existing structure and ensure appropriateness in managing public health emergencies.
* Activities of strategic plans to enhance preparedness and response to public health emergencies were not fully implemented. The fragmentation of institutional structures and implementing apparatus without clear responsibilities and accountability have led to the non-implementation of strategic plans.
* There is a lack of financing strategy for disasters including health emergencies particularly when public health emergencies are of international concern (PHEICs). There is no proper funding mechanism in place to explore and expedite the funding process during public health emergencies resulting in mobilising through reprogramming activities and borrowings from developing partners.
* A significant gap was noted in healthcare workforce. As of 2020, there were shortages of 114 specialists, 129 general doctors, 363 clinical nurses, and other categories based on the approved strength of 12th FYP.
* The existing medical procurement and distribution systems may impede responding effectively during any public health emergencies because there is no urgent procurement plan or procedures in place.
* There is an absence of a single source of real-time surveillance information-sharing mechanisms instituted between the health and livestock sectors. This poses the risk of delayed response to address emerging, re-emerging, and high-impact zoonotic diseases at the human-animal-ecosystem interface.
* There is a lack of integrated information systems at different levels of hospitals. This will inhibit the tracking and referring of patients and also coordinating the continuum of care between primary health care and tertiary health care.
* There are various Emergency Information Reporting Systems used across the country to report and coordinate emergencies. This illustrates the fragmentation and proliferation of systems having similar purposes and objectives and also the lack of

resource-sharing and coordination mechanisms between agencies in developing systems.

Based on the review and issues discussed in the report, the RAA has provided eight recommendations requiring appropriate interventions of agencies and aimed at improving the operational efficiency of Health and Disaster Risk Management. These recommendations are:

* The Ministry of Health (MoH) and the Department of Local Governance and Disaster Management should foster collaboration using a multi-hazard approach;
* The Department of Local Governance and Disaster Management should revisit the disaster governance structure in the DM Act 2013;
* MoH and lead agencies should ensure leveraging appropriate funding strategies to strengthen preparedness mechanisms and develop financing strategies for disasters including health emergencies;
* MoH should institute a mechanism to expedite the implementation of the strategic plans;
* MoH should improve the information management system;
* The Department of Local Governance and Disaster Management, in collaboration with relevant agencies, should have an integrated national emergency information reporting system;
* MoH should assess health workforce gaps and develop strategies to address gaps in close consultation with the RCSC;
* MoH should streamline the procurement and distribution process to cater to public health emergencies; and
* MoH should ensure the preparedness of health infrastructure in times of public health emergency.

CHAPTER 1: ABOUT THE AUDIT

1.1. Mandate

The Royal Audit Authority (RAA) conducted the "Performance Audit of Strong and Resilient Public Health System (linked to SDG 3.d)" as mandated by Article 25.1 of the Constitution of the Kingdom of Bhutan to audit and report on the economy, efficiency and effectiveness in the use of public resources. Further, Chapter 5, Section 69 of the Audit Act of Bhutan 2018 stipulates that "the authority shall carry out performance, financial, compliance, special audit and any other form of audits that the Auditor General may consider appropriate".

1.2. Audit Standards

The audit was conducted following ISSAI 3000 and followed audit procedures as prescribed under the RAA's Performance Audit Guidelines 2019 to maintain uniformity and consistency of approaches in auditing.

1.3. Audit Objectives

The RAA conducted the audit with the following objectives:

* To what extent the government has put in place the legal and policy frameworks and institutional arrangements in taking forward the lessons to enhance capacities to forecast, prevent, and prepare for public health risks?
* How is the government ensuring the required resources for strengthening the health system's capacities to forecast, prevent, and prepare for public health risks?
* How does the government periodically monitor, evaluate, and report on its current capacities to forecast, prevent, and prepare for future public health risks?

1.4. Audit Scope

The audit focused on public health system capacities to forecast, prevent, and prepare for public health emergencies caused by infectious diseases through the assessment of one specific indicator for SDG 3.d targets which is International Health Regulation (IHR) capacity and preparedness during public health emergencies. The importance of an integrated approach, the consideration of inequalities during such a pandemic, and fears of vulnerable sections being left behind are some of the issues that the Supreme Audit Institutions (SAI) need to focus on. The audit also assessed the implementation status of the National Action Plan for Health Security (NAPHS) which was developed to achieve/address the recommendation of Joint External Evaluation (JEE). The audit covered the period from 2019 to 2021.

The stakeholders were identified based on the stakeholder analysis and risk assessment for the implementation of the audit objectives. The following key entities were selected; Policy and Planning Division, Ministry of Health (MoH), Department of Medical Services, Department of Medical Supplies and Health Infrastructure, Department of Public Health, Department of Disaster Management, Department of Livestock, Bhutan Agriculture and Food Regulatory Authority, Designated Point of Entries, Dzongkhags, Gewogs, Hospitals. The review was also carried out taking into consideration the recent COVID-19 pandemic.

1.5. Audit Approach Applied

The audit adopted a combination of result-based and system-based approaches. The result-oriented approach was applied to ensure the implementation of recommendations of the Joint External Evaluation for the assessment of International Health Regulation capacities. The system-based approach was applied to assess the activities, systems, and procedures designed or prepared in response to public health risks. In addition, the whole-of-government approach was also adopted to assess policy coherence, and multi-stakeholder engagement for collaboration and integration, and the principle of leaving no one behind was considered.

1.6. Limitation of Audit

The audit team could not visit most of the southern region due to travel restrictions. Access to information was limited since many health officials and other relevant agencies were engaged in the management of the COVID-19 pandemic.

1.7. Audit Methodology

The following methodologies were used for the audit:

Document Review: The examination of the relevant legislation, rules and regulations, and policies governing the activities of the health sector; horizontal and vertical coordination in practice, the FYP documents of the various agencies within the health sector; minutes of meetings conducted concerning public health emergencies (COVID-19 Taskforce), documents developed based on lessons learned from the recent pandemic.

Interviews and focus group discussion: Focus group discussion with the dzongkhag taskforce, hospital management, Health Help Centre, relevant MoH executives and officials.

Site visits: The audit visited the Ministry of Health, Mongar and Paro Dzongkhag Administrations, Jigme Dorji Wangchuck National Referral Hospital, Eastern Regional Referral Hospital, Mongar, Paro District Hospital, Phuentsholing Hospital, Point of Entries (Paro international airport and Ground crossing, Phuentsholing), Medical Supplies and Distribution Division, Phuentsholing.

CHAPTER 2: INTRODUCTION

2.1. Conceptualising and defining a resilient national public health system

The term "resilience" is commonly understood as the capacity to recover quickly from a shock. As per the available literature, the application of the concept of resilience in assessing health systems is relatively new and there is no uniformly accepted definition. In most definitions of health system resilience, the focus is given on minimising exposure to and preparedness for shocks and identifying measures that address potential system strains or stresses. In recent times, the definition of health system resilience has evolved and expanded to consider preparedness and the ability to absorb, adapt and transform to respond to sudden shocks. This means the focus is not only on maintaining the performance of core health system functions i.e., governance, financing, human resource, and service delivery but goes beyond that to include a health system's ability to transform and evolve, ideally improving its performance.

World Health Organisation (WHO) defines health system resilience as the "capacity of health actors, institutions, and populations to prevent, prepare for, absorb, adapt, respond, and recover (shown in Figure 1**)** when faced with a wide range of risks and shocks in a timely, effective, and efficient manner while maintaining essential functions and services and, informed by lessons from the experience, transform and improve, as necessary". Similarly, the World Bank identified five principles for building the resilience of health systems to better prepare them to respond to a wide range of shocks: 1) health care system's capacity to effectively manage routine demand, 2) managing demand, capacity, and readiness for shocks at individual health care facilities, 3) health care system's strategies to increase surge capacity and system-level coordination, 4) coordination with disaster response and civil protection agencies, and 5) ensuring critical infrastructure for health facilities.

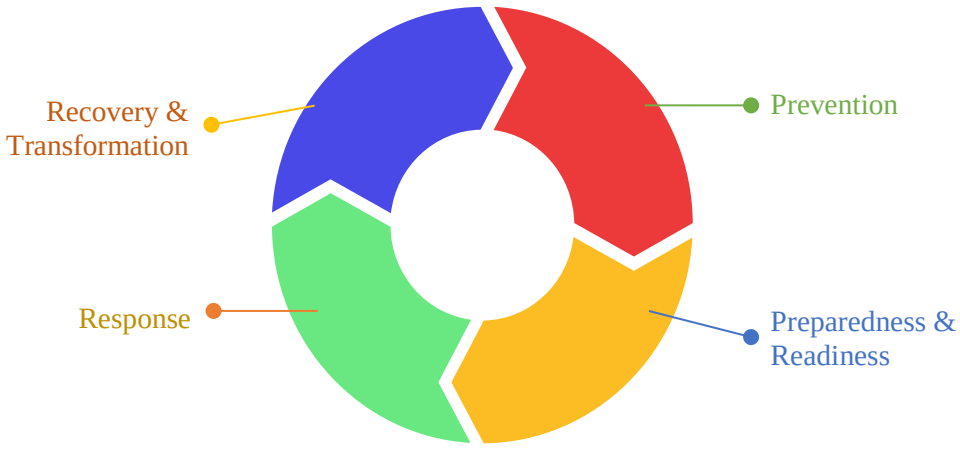


Figure 1: Health System Resilience Process

The definition and the salient elements of health system resilience highlighted above have been adopted for this audit as the basis of the review of emergency preparedness, focusing on elements such as governance, resources, and capacities. The ability to detect and respond to public health emergencies and the key strategies to better prepare for any future public health emergency will be assessed taking into consideration the shocks such as the recent COVID-19 pandemic.

2.2. Health Emergency Preparedness

Public health is constantly threatened by a wide range of hazards. Despite preventive measures, health emergencies of different types and scales can occur at any time, anywhere and anybody can be affected. When we are prepared, responses are timely and more effective and can limit the human, economic and societal consequences.

Therefore, the health system must be adequately prepared and maintained at all levels to respond to any health emergencies. Emergency preparedness is a continuous process in which action, funding, partnerships, and political commitment at all levels must be sustained.

It relies on all stakeholders working together effectively to plan, invest in and implement priority actions. A common, efficient, coordinated multisectoral approach, comprising all-hazard and hazard-specific measures, is needed to ensure preparedness for all types of emergencies. Emergency preparedness is addressed by a range of global frameworks and initiatives related to health, emergencies, and disasters. This includes:

* The Sustainable Development Goals (SDG 3.d),
* The International Health Regulations (IHR 2005),
* The Sendai Framework for Disaster Risk Reduction 2015-2030,
* The Pandemic Influenza Preparedness (PIP) Framework,
* The World Organisation for Animal Health (OIE) Performance of Veterinary Services (PVS Pathway),
* The Global Health Security Agenda (GHSA),
* Universal Health Coverage (UHC) 2030.

These are complemented by regional and national strategies; action plans that address preparedness and disaster risk management.

2.3. The policy framework of Health System and Emergency Preparedness

Article 9, section 21 of the Constitution of the Kingdom of Bhutan mandates the State to provide free basic public health care both in traditional and modern medicines. This has led to further expand the principles of primary health care to achieve universal health coverage through improved and equitable access to quality healthcare service.

Health care is delivered through a three-tiered delivery system comprising primary-level care at the Basic Health Units (BHU), secondary-level care at district hospitals, and tertiary-level care at the regional and national referral hospitals. Health care is predominantly publicly financed and has evolved and grown considerably in the past five and a half decades. The development has been possible due to sustained and appropriate investments in the health system which is mainly driven by the primary health care approach.

Bhutan's emergency preparedness is governed by the Disaster Management Act of Bhutan, 2013 (DM Act) and related strategic policies and plans. In line with the DM Act, the Health Emergency and Disaster Contingency Plans (HEDCP) were developed. The plan ensures the health sector's preparedness and response to emergencies not only in an effective and timely manner but also provides for a coherent and well-coordinated approach. Under this plan, the Health Emergency Operation Centre (HEOC) is linked with the National Emergency Operation Centre (NEOC), the Dzongkhag Emergency Operation Centre (DEOC) and all the

hospitals and health facilities update data regularly and coordinate disaster and emergency response with clearly defined roles and responsibilities of agencies in the health sectors before, during and after the health emergency and disaster with health system preparedness and disaster governance framework in place.

Further, the implementation of SDG 3.d indicators such as the International Health Regulation and emergency preparedness would strengthen the national capacity for surveillance and control, including travel and transport. The capacity would enhance prevention, alert, and response capabilities to international public health emergencies.

Considering the COVID-19 pandemic, Bhutan's emergency preparedness is illustrated in chronological order to understand the level of preparedness measures undertaken. Some of the key events are highlighted in Table 1.

Table 1: Key events in the initial public health response to COVID-19 are highlighted

Date	Event
2020	
January 11 to 17	Surveillance started at Paro International Airport; media monitoring & in-flight announcement in Druk Air & Bhutan Airlines; advocacy by Risk Communication Team; cautionary notification to public and health centres.
January 29	1st press conference by MoH was held; the NDMA meeting was convened and chaired by the Hon'ble Prime Minister; 3rd coordination meeting on the country situation update was also held; and screening started at the ground crossing area (Phuentsholing, Samtse & Gelephu).
January 30 to 31	Declaration of PHEIC by 2nd Emergency Committee; alerted Health Help Centre (112) staff for the calls with symptoms of COVID-19. DoMSHI, MoH appointed focal point for emergency procurement; HEOC Activated; WHO country office stocked the PPE at Delhi, ready to be airlifted in the event of a COVID-19 outbreak.
February 2 to 3	Conducted sensitisation on the National Preparedness and Response for COVID-19 (All health workers at PoEs); First Technical Advisory Group meeting convened.
February 4 to 6	HEMC debriefing chaired by Hon'ble Health minister; 2nd Press conference was held; Daily situation report on screening at PoEs collected; Quarantine notification was sent out to the check-in counters for embarking passengers to Bhutan; Issued Advisory Note to all dzongkhags on the COVID-19 protocols.
February 7	MoHCA conducted an emergency Border District Coordinating Meeting with the bordering Districts of West Bengal and Assam to postpone the cross-border activities that require mass gatherings; dzongkhags distributed the posters on safety protocols in Schools and Monastic Bodies; MoH established a single source for sharing information on COVID-19; MoH recommended to postpone any mass gathering through BBS and other social media handles.
February 10 to 17	COVID Focal Person JDWNRH conducted training of identified staff and update on case management to clinicians; instructed Dzongkhags and Drungkhags to screen the travellers at entry points; stepped up surveillance in the border areas; instructed MSDD to distribute additional supplies for COVID-19 to Samtse hospital and Phuentsholing hospital; health secretary issued instruction on how to use PPEs; MoH called for nomination of members for Health Emergency Management Committee from DDM, RBP and DoL; ToT for preparedness and response to COVID-19 covering all the health professionals across the country.

Date	Event
February 21 to 28	Reagents were made available to test about 600 samples received from WHO; Reconfirmation test AFRIMS; Thailand's results were negative (21 suspected samples); WHO declared the Global level "Very High".
March 1 to 8	Live panel discussion on BBS (Hon'ble Health Minister & Head RCDC); 2nd NDMA meeting chaired by HPM; DMS submitted a proposal for COVID-19 Emergency Fund to PPD, MoH for onward submission to WHO Country Office. 2nd Special Meeting of the Committee of Secretaries was held to decide the coordination, decision-making & communication, border management, management of situation within the country etc.
March 13	10th NDMA Meeting instruction: Activation of the National Disaster Response Coordination Committee (NDRCC) with effect from 13 March 2020. The MoH will manage overall coordination of COVID-19 preparedness and response activities. MoH was responsible for the health-related activities only and all other preparedness and response activities will be taken up by the ministries, armed forces, and relevant agencies; Cabinet approved SOP for the provision of community services for violation of quarantine rules.
March 16 to 30	Pooling the Biomedical Engineers of BMED and JDWNRH for managing hospital equipment for COVID-19. MoH issued the protocol for disinfection and decontamination of vehicles and designated quarantine facilities, and disposal of waste; Submitted Fund Proposal to PPD for onward submission to Direct Financial Cooperation (DFC)
May 25	WHO country office released Nu 8,570,520 to carry out COVID preparedness and response activities. MoH issued a protocol for foreigners entering Bhutan.
June 26	MoH conducted a simulation exercise in Gelephu, Samtse, and Dagana/Lhamoizingkha.
Source: DMS and HEMC, MoH	

Initiatives under the guidance of National Leadership

Across the world, the COVID-19 pandemic has caused immense social and economic difficulties and the loss of precious lives. Such a situation is unprecedented in recent human history, and like other countries, Bhutan was also affected. However, Bhutan was fortunate to have been able to keep the potentially devastating health, social and economic impacts of the pandemic to a minimum.

This would not have been possible without the guidance of His Majesty the King, who has been at the forefront of combating the pandemic. A range of response initiatives were embarked upon based on the guidance of His Majesty The King to ensure a coordinated national effort in fighting the pandemic. Some of the initiatives included the following:

* Bhutan's preparedness and response to the COVID-19 pandemic started with the closure of all the land borders and securing high-risk areas. Throughout the pandemic, His Majesty personally oversaw preparations, gathered detailed feedback on the ground, ensured preparedness, and motivated all the frontline workers.

* As the rest of the world was struggling in the pandemic, based on His Majesty's expectations, the government set out a remarkable set of principles: ***Strive to prevent any deaths from COVID-19. Prioritise lives over livelihoods. Envision and plan for the worst-case scenario. Overprepare, don't underprepare. Don't worry about the costs. Honor Bhutan's identity of a Nation as a Family.*** These principles would inform every subsequent policy discussion and decision, every official messaging campaign and every undertaking. In early 2022, as the highly contagious Omicron variant exploded in Bhutan, triggering a seemingly endless series of lockdowns and mass testing, these guiding principles were tested and they prevailed.

* Often on foot, the frequency of Royal visits to high-risk areas of COVID-19 has intensified. With His Majesty spending more time at the frontlines and away from the Royal Family, frontline workers continued to draw inspiration and were motivated to remain resilient in the face of prolonged difficulties. People from all walks of life have also been inspired to come together and offer support in cash and in kind, and to serve in various forms and capacities in the fight against the pandemic.

> June 2021 article in India's Economic Times.
>
> *"In recent weeks, the king of Bhutan walked for five days on a trail passing through elevations up to 4,343 m (14,250 ft) to thank primary health workers in remote areas."*

* Upon the Royal command, a National Resilience Fund of Nu. 30 billion was set up to provide economic relief to those whose livelihoods have been affected by the pandemic. The *Druk Gyalpo Relief Kidu (DGRK)*, which has been supported by this fund, has provided: income support to individuals; and support for interest payment to loan account holders.

* With the onset of the COVID-19 pandemic, *De-Suups* have been providing voluntary services as frontline workers *(The De-Suung "Guardian of Peace" Programme was instituted by HM over a decade ago).* Services range from assisting security forces in patrolling border areas, to assisting with coordination efforts for public services, delivery of essential items during lockdowns, and facilitating the enforcement of COVID-19 protocols in public places, among other essential tasks.

* Senior citizens throughout the country were provided vitamin supplements to boost immunity. Essentials and medicines were delivered to people undergoing retreats (as a spiritual practice) in secluded places. Those homeless in the capital city Thimphu were provided food, shelter and clothing.

* Stranded Bhutanese from about 50 countries across the world were repatriated home. An apartment was purchased in New York to provide support to those infected by the virus in the United States. The Royal Guest House in Mongar was converted into a COVID-19 hospital for Eastern Bhutan, with instructions to develop it as a mother-and-child hospital for the eastern region once the pandemic is over.

Bhutan's response to the pandemic has been to ensure the wellbeing of the entire population as its top priority, while also ensuring that the most vulnerable sections of society are protected—as they could otherwise have easily fallen through the cracks.

An important lesson and inspiration here is if it weren't for the Royal Vision, initiatives and principles, the existing institutional arrangement, systems and structures would have not guaranteed the success that Bhutan attained in fighting the pandemic.

CHAPTER 3: AUDIT FINDINGS

Shortcomings and deficiencies

The RAA reviewed the governance framework, policies strategies, and guidelines to ensure an integrated, inclusive, comprehensive, and multisectoral approach to health system resilience during public health emergencies. The audit findings are categorised into ***governance framework, financial mechanism, procurement and logistics, health capacities and health infrastructure.*** The shortcomings and deficiencies requiring further improvements to enhance public health system resilience are discussed below:

3.1. Governance in Disaster and Public Health Emergencies

Bhutan's emergency and disaster management is governed by the Disaster Management (DM) Act of Bhutan, 2013. As per the DM Act, the National Disaster Management Authority (NDMA) is the highest decision-making body regarding any disaster management in the country. The erstwhile Department of Disaster Management (DDM) serves as the secretariat / executive arm of the NDMA and functions as the national nodal coordinating agency for disaster management as illustrated. Bhutan's preparedness and response to any disasters are stated to be initiated with the activation of the NDMA in accordance with the classification of disaster.

Depending on the severity of the disaster, the National Emergency Operating Centre (NEOC) would be activated within 24 hours. Subsequently, the implementation of the Disaster Response and Coordination Process (DRCP) at the National and Dzongkhag levels will also be activated through an Executive Order from the government.

To synthesise the policy drivers, disaster risk management (DRM), emerging issues, challenges and lessons learned from the response and management of past disasters in the country, the DDM developed a Disaster Risk Management Strategy (DRMS) to enhance disaster management in the country. It requires all health facilities to institute an appropriate system to deal with any public health emergencies and disease outbreaks. Aligning with the 12 FYP, the Ministry of Health (MoH) developed the Strategy Plan for Emergency Medical Services 2018-2023 to enhance its emergency management capabilities and improve overall emergency medical care services and prepare the health capacities in responding and managing any emerging infectious diseases in the country.

As stipulated in the DM Act, the MoH developed the Health Emergency and Disaster Contingency Plan (HEDCP) to guide and ensure that the health sector's preparedness and response to emergencies are not only effective and timely but also coherent and well-coordinated.

Similarly, the Bhutan One Health Strategy Plan (BOHSP) 2018-2023 was also developed in consultation with the Department of Livestock to enhance the collaboration amongst relevant stakeholders to prevent and control high-impact infectious diseases of zoonotic origin in the country.

In addition, the Royal Government of Bhutan, as a signatory to the International Health Regulations 2005 (IHR), is also required to implement the IHR through a multi-sectoral approach by liaising and collaborating with relevant national and international agencies. The MoH is responsible for fulfilling the IHR 2005 requirements. While reviewing the above governance structures and strategies related to preparedness for public health emergencies and disaster management taking into consideration the recent outbreak of novel coronavirus, the RAA identified certain areas which needed further improvement as discussed below:

3.1.1. Multi-hazard approach aligning the resources and structures

a) According to the Disaster Management (DM) Act, a "disaster" refers to any natural or man-made event that causes environmental damage, increased mortality, illness, or injury, and disrupts livelihoods, affecting either individuals or an entire area. The National Health Policy also emphasises that health facilities should establish appropriate systems to handle emergencies, disasters, epidemics, and outbreaks.

b) As required by DM Act, the relevant agencies need to prepare strategies covering the plan for responding to any emergencies that apply to the respective agencies. Similarly, the MoH is entrusted with the responsibility to prepare strategies related to health emergencies and accordingly plan its activities. The sector's strategies should then be linked to the overall policy strategy of the DDM to achieve the holistic vision of a multi-hazard approach in the governance of disaster management.

c) However, the RAA noted that the Disaster Risk Management Strategy (DRMS) developed by the DDM primarily focuses on preparedness and response mechanisms for geological and meteorological hazards like earthquakes, floods, glacial lake outburst floods, landslides, and forest fires. There is no mention of biological hazards, including public health emergencies such as epidemics or pandemics, in both the national disaster strategy and integrated resilience programs because there is ambiguity in the definition of hazards, that cause disaster, in the DM Act itself.

d) Additionally, upon the review of the DRMS and the Strategy Plan for emergency medical services of the Emergency Medical Service Division (EMSD), the RAA noted that there are no connections between the two documents and the other subsequent international commitments like the International Health Regulation (IHR). As a result, there is a limited role of the health sector in the DRMS activities, while DDM's involvement in implementing EMSD's strategy plan is also lacking. Ultimately this affects aligning areas in strengthening early warning, public awareness, risk communication, resource mobilisation, and integrated resilience programs between the two agencies.

e) The same issue was also reported in Bhutan's simulation exercise report of DDM and the Direct Financial Cooperation report (DFC) of EMSD indicating limited inter-sectoral coordination and a lack of clear participation mechanisms and integration between the two agencies.

f) Furthermore, the HEDCP stipulates that the Incident Command System should be followed as per the governance framework during emergencies. Nevertheless, the simulation exercise to check the applicability of the National Disaster Response Coordination Committee (NDRCC) along with HEDCP, hospital contingency plans, and Dzongkhag disaster contingency plans was not carried out. This exercise would assure proper planning and coordination among the relevant agencies with clear roles to be performed during or after any public health emergencies. The absence of such exercise was evident when a new structure (National Covid-19 Taskforce) and new lead agencies such as Frontline Operations, Logistics (Cabinet Secretary), Public Service Secretary (GNHC), Media and Communication (PMO office) were created during the COVID-19 Pandemic.

g) The above issues clearly show that there is a limited whole-of-government approach amongst the agencies and national lead agency (DDM) while preparing national disaster plans and policies. The DRMS and National Disaster Contingency Plan should be the overarching strategy framework of disaster management and the respective lead agencies' (hazard-wise) including MoH, civil societies, and security authorities should synchronise their strategies and plans to enhance coordination and communication in strengthening preparedness and response mechanism for any disasters in the country.

h) The lack of an integrated approach at the planning level could limit the abilities of responding agencies to address future disaster and public health emergencies because disintegrated approaches create confusion and inculcate a culture of diffusion of responsibility.

3.1.2. Disaster and Health Emergency Management Framework

The DM Act stipulates the NDMA as the highest decision-making body for any disaster management in the country **(**Figure 2**)**. In addition, the NDRCC **(**Figure 3**)** has been formed to support the onsite Incident Management Team (IMT), especially during type III disasters. The

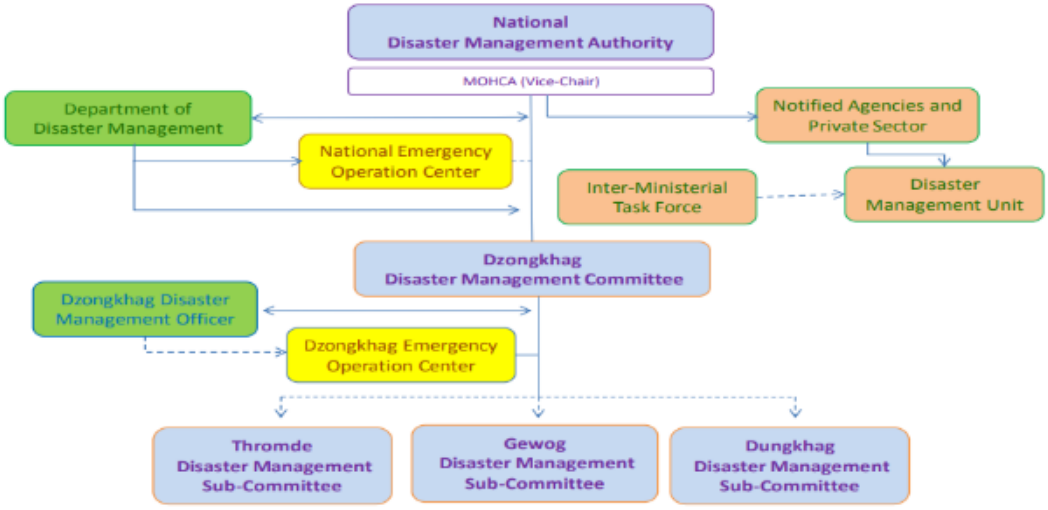


Figure 2: Disaster Management Governance Framework

NDRCC constitutes members from NDMA with additional members from relevant sectors and both the governing structures are supposed to be functioning from the NEOC set up at the DDM office (Figure 3).

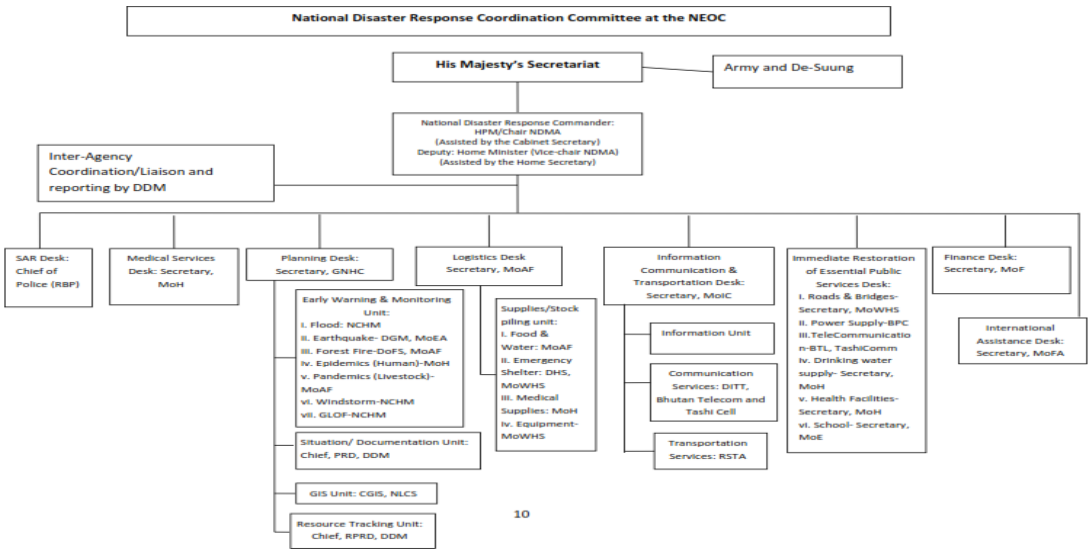


Figure 3: NDRCC, DDM

For the MoH, the highest decision body is the Health Emergency Management Committee (HEMC) for any health emergency including emergencies arising from disasters. The HEMC is responsible for the command, control, and coordination during preparedness, response and recovery operations. The disaster management structures had been established to have systematic, coordinated, and effective management of disasters of varying magnitude.

However, during the pandemic, this was not the situation. Instead, with the magnitude and complexity involved in preparedness and response to COVID-19, a need for instituting the National COVID-19 Task Force (NC19TF) was recognised. Member of NC19TF constituted

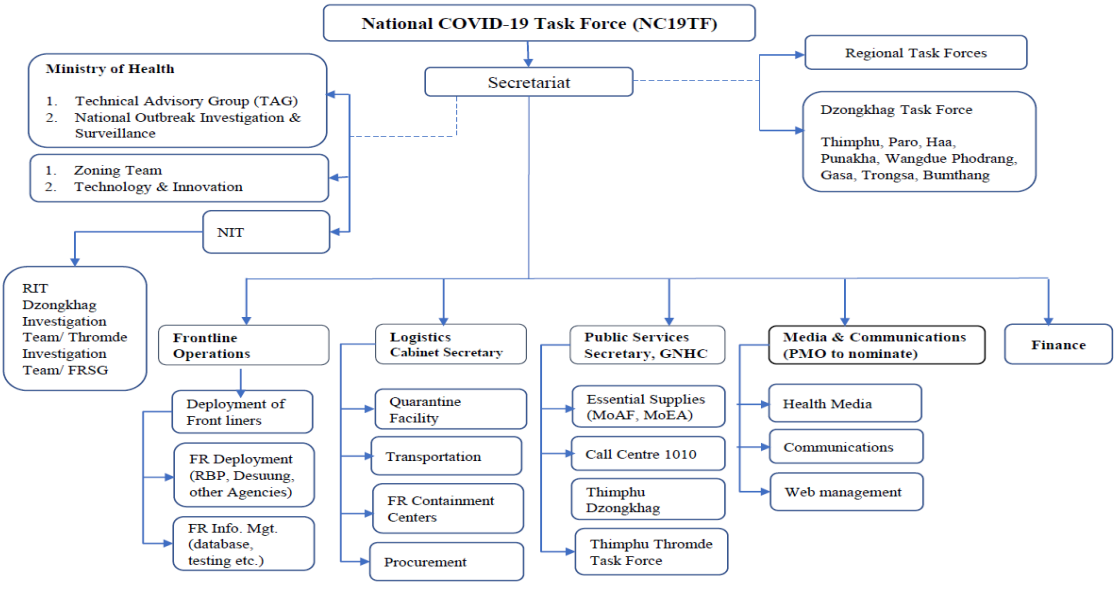


Figure 4: Structure of NC19TF

by Hon'ble Prime Minister, Health Minister, Chief of Police, and Chief Operation Officer and Royal Bhutan Army. Similarly, at the district level, Dzongkhag Disaster Management Committees (DDMC) had to be reinforced with Regional Task Forces (Southern COVID-19 Task Force, Eastern COVID-19 Task Force and Punakha-Wangdue COVID-19 Task Force) as reflected in Figure 4**.**

The NC19TF played a crucial role in shaping the overall preparedness and response to the COVID-19 pandemic and the task force was successful in containing and managing the pandemic. However, the formation of the new governance structure indicated that there is room for improvement in the existing structure and ensure appropriateness in managing public health emergencies.

3.1.3. DDM's mandate during disaster management including public health emergencies

According to Sections 59 and 60 of DDM Act 2023, DDM shall serve as the secretariat and executive arm of the National Disaster Management Authority and also function as the National Coordinating Agency for disaster management. The Department is also responsible to (not limited to the following):

i. Lay down disaster management strategic policy framework;

ii. Ensure that agencies mainstream disaster risk reduction into their development plans, policies, programs, and projects;

iii. Prepare the National Plan in coordination with relevant agencies ensuring the implementation of Disaster Management and Contingency Plan and disaster management activities at all levels;

iv. Formulate national standards, guidelines, and standard operating procedures for disaster management;

v. Develop and implement public education, awareness and capacity building programme on disaster management;

vi. Ensure the implementation of Disaster Management and Contingency Plan and disaster management activities at all levels; and

vii. Facilitate and coordinate the setting up of critical disaster management facilities; and

viii. Perform any other functions as may be prescribed under the DM Act and as directed by the NDMA.

Additionally, as per Section 61 and 62 of DM Act 2013, *upon declaration of a disaster, the Head of the Department of Disaster Management shall assume the role of Operation Coordinator under the supervision and direction of the Chairperson of the National Disaster Management Authority and shall designate and direct the concerned agency to operationalise effective response and relief operations*.

Upon review of the functions of DDM, the RAA noted that the 10th NDMA meeting held on 13 March 2020 decided and declared the MoH to take the lead role in managing the COVID-19 pandemic. Other ministries, armed forces, and relevant agencies were asked to support the MoH in other preparedness and response activities. This decision conforms with the DM Act *(section 12 stipulates that the NDMA may direct any agency including the private sector on*

disaster management). Accordingly, MoH also updated the *National Preparedness and Response Plan for the Outbreak of COVID-19.*

However, the role of DDM was mostly engaged in organising NDMA meetings, receiving and presenting meeting agendas, recording the minutes of the meetings, and delivering the directives of NDMA instead of functioning as the National Coordinating Agency during the recent COVID-19 pandemic. Without DDM (lead agency) taking its role and pushing for coordination and collaboration during public health emergencies of a huge magnitude (COVID-19), MoH was initially overwhelmed with other non-clinical works such as logistic arrangement, procurement, and exploring funds for COVID-19 responses.

During the pandemic, it was noted that the DDM has also conducted reviews of the lockdown mechanism upon the instruction of NDMA. However, from the 10th NDMA meeting held on 13 March 2020 till the National COVID-19 Task Force (NC19TF) meeting held on 11 August 2020 ***(Gap of 5 months)***, there were no records of any consultations done at the national level with DDM.

3.1.4. Strategic plans for public health emergency preparedness

i. National Action Plan for Health Security:

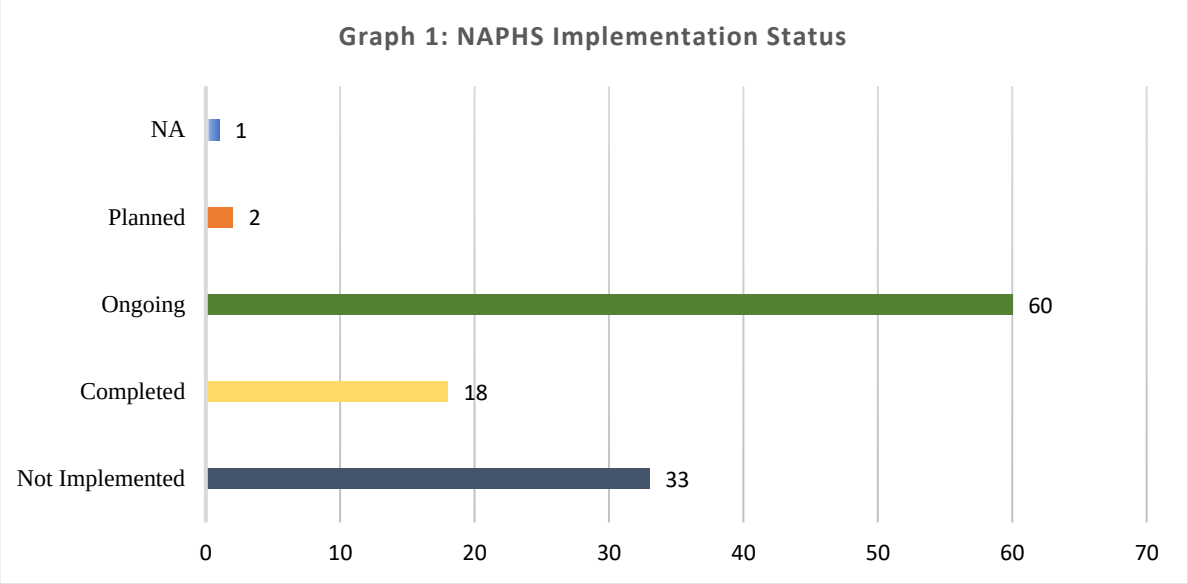
Bhutan voluntarily conducted a Joint External Evaluation (JEE) in 2017 to assess its core capacities to prevent, detect, and respond to public health threats under the International Health Regulation (IHR) 2005. During the JEE mission, Bhutan's capacities were evaluated into 19 technical areas through a peer-to-peer, collaborative process that brought Bhutanese subject matter experts together with members of the JEE team in a week of collaborative discussion and field visits.

The report provided 63 priority actions/recommendations to strengthen health security and to form the basis of the National Action Plan for Health Security (NAPHS) for Bhutan. These recommendations were prioritised for implementation across the five-year period of the NAPHS. The Department of Medical Services, MoH was responsible for overseeing the implementation of the NAPHS in partnership with other relevant sectors. It was envisioned that the NAPHS would provide a framework for the coordination of efforts to continue to strengthen Bhutan's capacities to prevent, prepare, detect, and respond to public health emergencies.

The MoH, in collaboration with agencies such as the erstwhile Bhutan Agriculture and Food Regulatory Authority (BAFRA), National Centre for Animal Health (NCAH), and Royal Centre for Disease Control (RCDC), developed the NAPHS based on the recommendations provided in the JEE report. The RAA noted the following lapses upon the review of the implementation of the plan:

- The formulated action plan was neither approved by the Ministry nor received endorsement from the Government. The document indicated a financial outlay of USD 7.2 million (Nu. 509 million) for the plan implementation for the period of five years (2019–2023). It was anticipated that the budget support would be either from the government or developmental partners. However, no records of proposals or communication for sourcing the funding support for the plan implementation were noted.

* The plan stated that activities would be included in the sectoral annual performance agreement for possible government funding. Nevertheless, it was observed that except for MoH, other relevant agencies, identified for the implementation of the plan, have not included or linked the planned activities in their sectoral APA for the last three years. To achieve/address the recommendations of the JEE report, 114 activities were identified in the draft NAPHS of which only 18 were implemented as illustrated in Graph 1**.**



Source: IHR Program, MoH

* From the list of activities, 38 activities were given high priority while designing the plan. However, there were no records showing the implementation progress of the activities. The progress status/updates were gathered through focus group discussions, national focal person, emails and consultation with the relevant agencies.

* Three years (2019-2022) have already elapsed and with a year left for the implementation, there are several planned activities that are still ongoing and some are yet to be implemented. With the current rate of progress, the completion of these planned activities remains questionable.

* The plan provides that the lead implementing agencies should report on the status of the plan implementation to the IHR program half yearly and deliberate the issues for successful implementation of the plan. However, the RAA could not find any evidence showing records of the progress and any deliberation convened related to the plan. This shows that there is no monitoring and follow-up mechanism for the implementation of activities other than State Party Self-Assessment (IHR requirement) for national IHR Focal Point to keep track of the recommendations provided. Further, changes in the IHR focal persons in the lead agencies were not properly communicated to the national IHR focal making it difficult to track the progress.

ii. Bhutan One Health Strategic Plan:

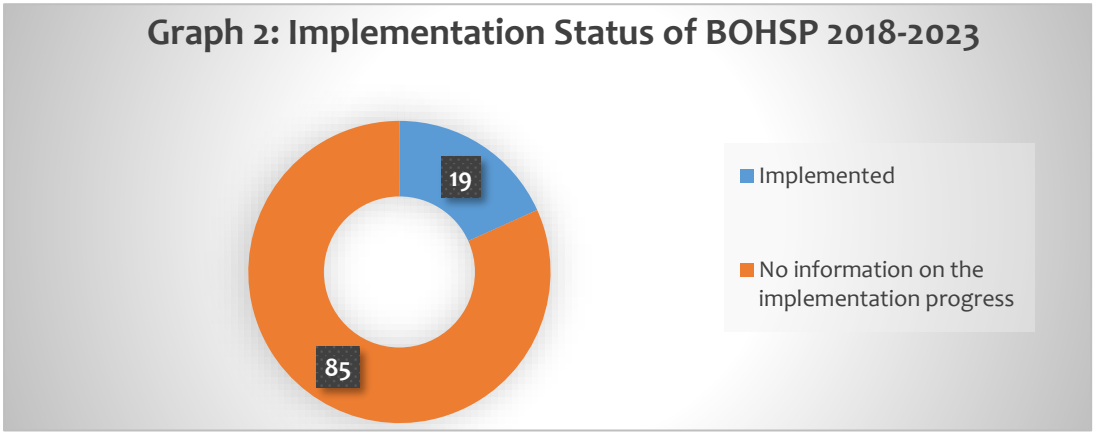
The Bhutan One Health Strategic Plan (BOHSP) 2018-2023 was developed collaboratively between the MoH and the erstwhile Ministry of Agriculture & Forest (MoAF) with a similar objective. The plan would provide a collaborative platform to engage joint initiatives mechanism/concept to operationalise and implement activities towards preparedness and prevention, early warning, and control of emerging, re-emerging, and high-impact zoonotic diseases at the human-animal–ecosystem interface. The BOHSP 2018-2023 focuses on seven main strategies.

i. Establish institutional setup and networking amongst relevant stakeholders;
ii. Strengthen Disease surveillance systems and information-sharing mechanisms on prioritised zoonotic, foodborne diseases and AMR;
iii. Strengthen joint disease outbreak preparedness, and response on prioritised zoonotic, foodborne diseases and AMR;
iv. Build institutional capacity including human resources in relevant stakeholders;
v. Conduct collaborative research on prioritised zoonotic, foodborne diseases and AMR;
vi. Strengthen communication and advocacy on the One Health initiative to prevent and control zoonotic and foodborne diseases; and
vii. Establish surveillance of wildlife and environment and information-sharing mechanisms among relevant stakeholders.

For the sustainable implementation of One Health activities, the One Health Secretariat (OHS) was also established. It was expected that relevant stakeholders would individually and collectively explore funding support from RGoB, and other international and non-governmental agencies while the major portion of the total budget cost to be met through donor agencies.

While reviewing the implementation of BOHSP, the RAA noted that there is a lack of monitoring and evaluation mechanism instituted to track the progress of the implementation of the overall activities listed in the BOHSP although a monitoring and evaluation framework was developed in the strategy. This is because, as required, the OHS does not have full-time officials assigned from MoH and MoAF. Currently, the OHS is managed by the relevant programs from agencies on a rotational basis. Apart from OHS responsibilities, the concerned officials were also engaged in the regular activities of their respective agencies. This has hindered the timely monitoring and evaluation of the implementation of One Health activities and resulted in non-achievement of the overall objective of the One Health approach.

As depicted in Graph 2**,** out of 104 activities planned under BOHSP 2018-2023, only 19 activities were implemented under the institutional setup and networking amongst relevant stakeholders.



Source: OHS, MoH

The implementation of BOHSP activities was further affected due to the pandemic as the program funds were mostly diverted to COVID-19 preparedness and response activities. Developing plans and strategies without instituting proper monitoring mechanisms to track implementation progress could result in the non-achievement of the desired outcomes and derailment from desired intent or objective of the plans.

The RAA also noted similarities in some activities under both plans showing the possibility of overlapping, especially engaging in joint initiatives mechanism/concept to operationalise and implement activities towards preparedness and prevention, surveillance and early warning.

The fragmentation of institutional structures and implementing apparatus without clear responsibilities and accountability have apparently led to the non-achievement in implementation of the NAPHS and BOHSP after a lapse of 4 years. Lack of periodic monitoring and review by the national IHR focal and ownership by the lead agencies, and limited funding mechanisms had also impeded the implementation of the plans. This will ultimately inhibit strengthening the health system's preparedness to respond to any public health emergency in the country.

3.1.5. Reporting of SDG 3.d target and indicators

The 12th FYP consists of 17 National Key Result Areas (NKRAs). The Sustainable Development Goals (SDG) targets and indicators are closely integrated into the national plans and programmes to realise the achievement of SDG targets by 2030. *For instance*, NKRA 14 *'Healthy and Caring Society'* is aligned with SDG 3 *'Ensure healthy lives and promote well-being for all at all ages.* NKRA 14 aims to create a healthier nation by providing free, equitable, and quality healthcare to every Bhutanese. Quality healthcare services include preventive, curative, and rehabilitative services to ensure every person, child or adult gets the resources needed to live a long and healthy life. NKRA 14 is directly linked to the second GNH domain 'Health' and indirectly linked to all other eight domains.

Further, SDG 3 is underpinned by 13 targets and 28 indicators to measure progress. The SDG target 3.d is to *'strengthen capacities for early warning, risk reduction and management of national and global health risks.* The SDG target 3.d has two indicators;

* Indicator 3.d1: *International Health Regulation (IHR) capacity and health emergency preparedness.* The purpose and scope of these Regulations are 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.

* Indicator 3.d2: *Percentage of bloodstream infections due to selected antimicrobial-resistant (AMR) organisms.* AMR is an emerging global threat and risk to public health worldwide. Antibiotics, antivirals, antiparasitic agents and antifungals are increasingly ineffective owing to resistance developed through their excessive or inappropriate use, with serious consequences for human and animal health (terrestrial and aquatic), and plant health, and negative impacts on food production, environment, and the global economy

The MoH is identified as the lead agency for the implementation of NKRA 14 including other NKRA 8 *(Food and Nutrition Security)* and NKRA 15 *(Sustainable Human Settlements)* with a capital outlay of Nu.3,580 million.

The programmes are linked to respective activities with each indicative financial outlay, multi-year programme matrix, and programme monitoring matrix with collaborating partners. Some activities under the Medical Service Programme are aligned to the SDG 3.d indicators as shown in Table 2**.**

Table 2: Programme activities linked to SDG 3.d indicator

Medical Service Programme		
Activities	**Indicative Outlay (Nu. Million)**	**Remarks**
Strengthen emergency medical services and IHR	40.00	Procurement of HEOC equipment, institutionalise EMT, vulnerability assessment of health facilities, mock drills, contingency plans, clinical emergency training.
Programme Monitoring Matrix		
Result (AKRAs)	**Indicators**	**12th FYP Target (2018-2023)**
Disaster Resilience Enhanced	Number of health facilities with operational health emergency contingency plan	233 (25 hospitals: 24 BHU I & BHU II)
	International Health Regulation (IHR) core capacity index	60%
Collaborating partners		
Agency/Local Governments /CSOs/Private Sectors	**Type of Collaboration Required (Specific intervention)**	
MoHCA (DDM), MoAF (DoL, BAFRA)	Coordination support in disaster management and implement IHR 2005 mandate	
	Monitoring of Food Quality Inspection, Antimicrobial Resistance, One Health mandates, and IHR 2005 mandates	
Source: 12th FYP Document		

The SDG reporting framework entailed the national review report, global reviews, regional reviews, and thematic reviews (shown in Figure 5**).** The national reporting should be the most significant level of the SDG review process, given national ownership of the 2030 Agenda and its core principle of *leaving no one behind*. The High-level Political Forum (HLPF) on Sustainable Development is the agreed platform for the global review. The HLPF takes a holistic view of the implementation of the 2030 Agenda including progress, achievements and challenges faced by developed and developing countries.

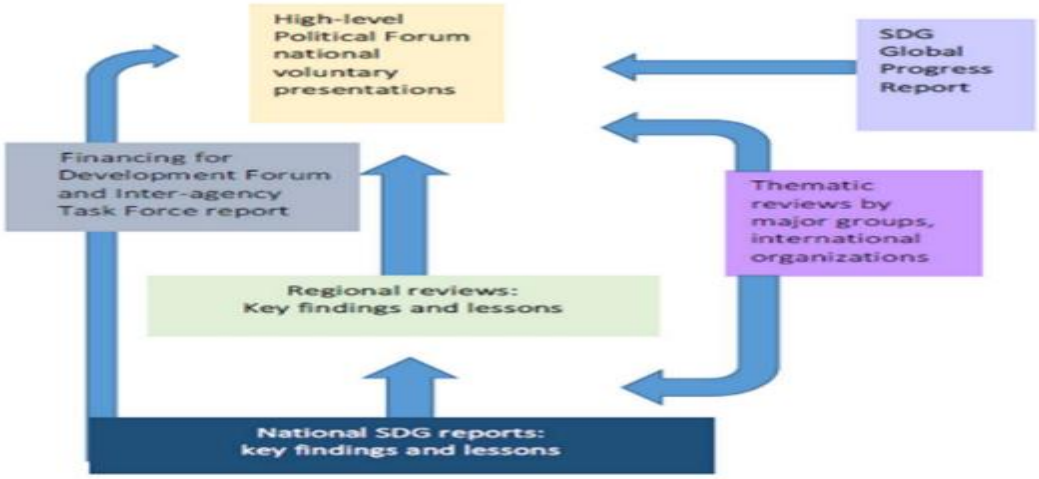


Figure 5: The framework for SDG follow-up links national, global and regional reviews

The regional review provides a link between the national and global levels and can boost regional cooperation and shared accountability for common challenges and opportunities. They can promote a coordinated, coherent approach that spans the SDGs as well as other development goals formulated at the national, regional, and global levels.

The thematic review at national, global, or regional levels can shed light on specific implementation challenges, such as institutional, technology and financing gaps that are common across countries.

Bhutan, as a member of the United Nations, presented its second Voluntary National Review Report to the 2021 United Nations High-Level Political Forum (UN HLPF). The second national review has been undertaken to accord high importance to the conduct of timely assessments and to facilitate the effective implementation of the SDGs. The report was structured around the theme of transformational processes that build on past achievements and draw lessons from the COVID-19 pandemic—as Bhutan works to "build back better" while also moving ahead towards LDC graduation, achieving the SDGs and Gross National Happiness (GNH).

Annually, the Gross National Happiness Commission (GNHC) presents the Annual Report for every financial year. It highlights the Mid-Term Review report of the national plan encapsulating the progress of the National key result areas (NKRAs) and Sustainable Development Goals as well. For that matter, the government had integrated its GNH indicators and the Five-Year Plan's key result areas in addition to SDGs in a one-stop dashboard called ***DEWA.*** DEWA is an integrated platform to monitor and track the progress of GNH, Sustainable Development Goals (SDGs) and the Five-Year Plans to ensure transparency and adherence to the commitments for the achievement of the 2030 agenda for Sustainable Development.

In addition, Bhutan also reports to the relevant developing partners on the implementation of specific SDGs. *For instance,* MoH reports to the country and regional office of the World Health Organisation (WHO) on the progress of universal health coverage and health-related

SDGs. The report highlights 2030 projections for 22 health-related SDG indicators using nationally reported data and estimates.

MoH also reports on SDG implementation in the Annual Health Bulletin (AHB). It is one of the important annual publications of the MoH that presents health information for the preceding calendar year compiled through its Health Management Information System. It also contains updates on the status of the key health indicators including health-related SDGs indicators and the national plans indicators. Apart from SDG 3, MoH reports on the implementation of SDG *6 – Ensure availability and sustainable management of water and sanitation for all.*

The review of the reporting mechanism on the progress of SDG 3.d indicator showed some deficiencies, which are highlighted below:

- The Voluntary National Review (VNR) Report and Annual Report presented by the GNHC provide only updates on the selected targets and indicators and lack comprehensive implementation status of the SDGs. *For instance,* the VNR report has covered nine (9) out of the 17 SDGs in depth under the thematic section and the remaining 8 SDGs are provided in summaries. Of these 9 SDGs, only selected indicators were reported. Further, the references of the report highlighted that the SDG 3.d target and indicator were relevant but not adopted in the report.

- The integrated platform *DEWA* does not provide status on the SDG 3.d target and indicators. It was also noted that the data input of DEWA for SDG 3 is linked to the Annual Health Bulletin of MoH and Annual Health Bulletin reports. AHB reports the 12 targets and 26 indicators under SDG 3 except the 3.d target and two indicators under the target.

- Notwithstanding the above limitation, the report from the country and regional offices of WHO on the progress of universal health coverage and health-related SDGs highlighted 22 health-related SDG indicators using nationally reported data and estimates. The report provides updates on the SDG 3.d indicators under the heading 'Health security; IHR compliance'. These indicators are linked with the IHR Monitoring Framework, Global Health Observatory (GHO) data and WHO. The data is updated/linked from the State Party Annual Report (SPAR) which is the evaluation of 13 core capacities under the IHR.

Although the government has its prerogative to report SDG implementation, there should be equal reporting opportunities for those unreported SDG targets and indicators. The lack of uniformity in the reporting of SDG implementation would undermine the credibility of the reporting instrument indicating a lack of a whole-of-government approach towards monitoring and reporting on the implementation of the 3.d and related targets under SDG 3. Further, it would be difficult to ascertain or comment on the overall achievement of SDG 3.d target and indicators.

3.2. Financial Mechanism for Disaster and Health Emergency

The health system's resilience reflects the ability to provide continued service delivery in the event of extraordinary shocks presented by major disease outbreaks, conflicts, or natural disasters. To ensure continuity of service delivery during emergencies, a robust financial mechanism with adequate financial resources for emergency preparedness and contingency funding for response is critical.

Section 81 of the DM Act 2013 and Section 66 of the Public Finance Act (PFA) 2007 stipulate that in times of any emergency or disaster, the NDMA shall recommend the Ministry of Finance (MoF) to authorise the use of public funds to defray expenditure incurred for response and relief operations. Following section 82, a separate budget head *'the budget for National Disaster Management activities'* is required with adequate budgetary allocation.

The sources of funds for disaster response and relief operations, according to PFA 2007 should be from the General Reserve (GR) maintained with MoF. To facilitate efficient, effective, and timely response during disaster/emergencies, the DDM and the Department of National Budget (DNB), MoF should mobilise the funds as per the *Operational Guideline for Disaster Financing, 2017*. The guideline aims to facilitate agencies in accessing financing from a separate budget (GR for Disaster Relief) and provides three types of financing arrangements, which are:

- Financing for Response and Relief Activities,
- Financing for Immediate Restoration of Essential Public Infrastructure and Service Centres, and
- Financing for Recovery and Reconstruction Activities.

The budget provisioned under the GR is earmarked for activities implemented upon fulfilment of established criteria and formalities during the fiscal year by transferring the budget to the Budgetary Bodies through technical adjustments. The GR is for disaster and related unforeseen expenditures. Under the GR Account, there is a separate budget allocated for the Disaster Contingency/Disaster Relief Fund. Upon the review of the financial mechanism for health emergencies, the RAA noted the following:

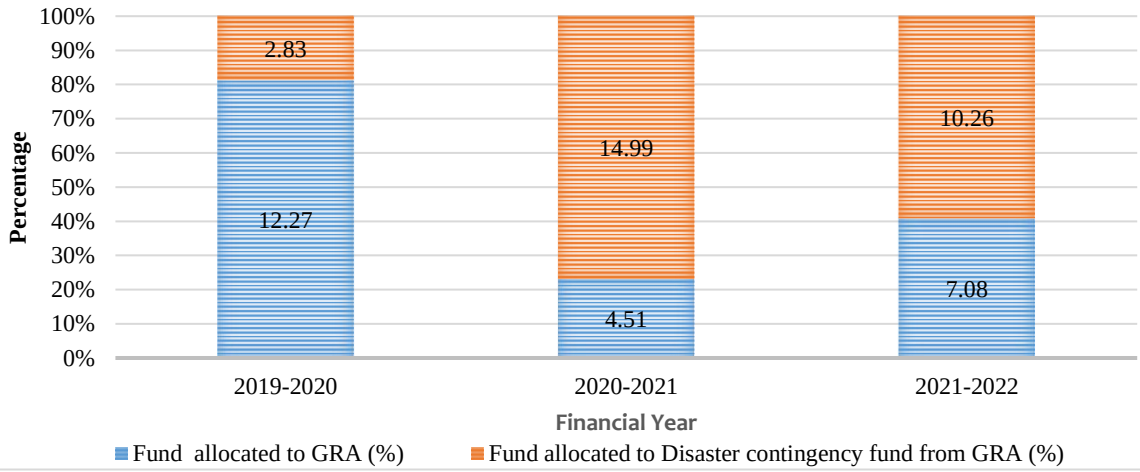
3.2.1 Budget allocation for disaster and health contingency funds

A total budget of Nu. 9185.459 million has been allocated to the MoH from the financial year 2019 to 2022 for the implementation of programs and activities. The annual national budget report shows an increasing trend in MoH and Disaster Contingency Fund under the GR Account as detailed in Table 3**.**

On average 0.6% of the budget is being allocated to the GR Account from the total budget outlay. The allocation of the budget for the Disaster Contingency is based on the historical expenditures incurred on disaster-related activities. However, there is no thumb rule or defined amount to be allocated for the disaster or emergencies. Nevertheless, for the financial year 2020-22, additional Nu. 3,358.11 million was allocated to the COVID-19 preparedness and response program as presented in Figure 6.

Table 3: Details of Disaster Relief Fund						
Financial Year	Estimated Budget outlay in FY (Nu. In million) **(A)**	MoH allocation (Nu. in million	Total General Reserve Fund (Nu. In million) **(B)**	Disaster Contingency Fund (Nu. In million) **(C)**	COVID Response (Nu. In million)	Remarks
2019-2020	64,826.725	2,304.784	7,953.528	225.000		
2020-2021	73,989.881	3,549.940	3,336.000	500.000	1,358.117	
2021-2022	80,483.150	3,330.735	5,700.480	585.000	2,000.000	
Total	**219,299.756**	**9,185.459**		**1,310.00**	**3,358.117**	
Source: Annual Budget Reports						

FIGURE 6: FUND ALLOCATION TO DISASTER CONTINGENCY FUND



As per the *Operational Guideline for Disaster Financing, 2017*, for any disaster event, the fund mobilisation from the MoF and the DDM in collaboration with the lead agencies (hazard-wise) should prepare the contingency plan and accordingly seek budget approval. *For instance*, the budget requirement for health emergency response should be applied by DDM in collaboration with MoH. According to the Health Emergency and Disaster Contingency Plan (HEDCP), the Department of Medical Services or relevant department in the MoH needs to prepare a budgetary plan and seek the necessary approval from Health Emergency Management Committees (HEMC) for fund mobilisation from the government for health emergencies.

For COVID-19, the Government has adopted mechanisms to explore the funds as detailed below.

a) Reprogramming the activities and additional fund assistance

The GR fund is allocated for the implementation of ad-hoc activities including disaster relief. The allocated disaster fund maintained/earmarked so far proved insufficient for strong preparedness and response to public health emergencies. Since there was an insufficient budget

to fund the COVID-19-related expenditure, the Government has mobilised funds by re-prioritising the planned programmes and activities from the 12th FYP amounting to Nu. 5,832.184 million and additional fund assistance of Nu. 480 million from the bilateral and multilateral programmes

b) The borrowings and grants from the Multilateral Financial Institutions

The Government has availed fast-track concessional financing from Multilateral Financial Institutions (MFIs) such as the World Bank (IDA), the Asian Development Bank (ADB) and the SAARC Development Fund (SDF) based on the Country Partnership Framework (CPF) or in the form of project-tied or program borrowing for socio-economic development for financing the COVID-19-related expenditure. As per the Public Debt Policy 2016, the borrowings are resorted to, only after grant financing is exhausted.

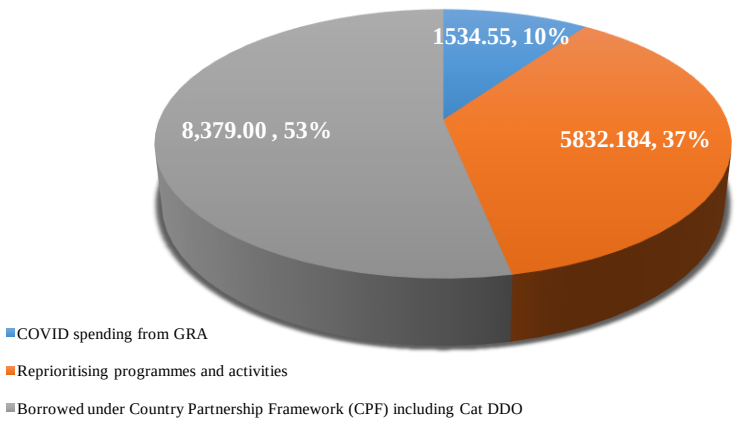
On 3 March 2020, the World Bank Group announced $12 billion in immediate support for COVID-19 country response through fast-track financing for developing countries. Under the COVID-19 fast-track facility, Investment Project Financing (IPF) of USD 5.00 million was signed for the emergency response and health system preparedness project on 27 April 2020 which is being implemented by the MoH.

Similarly, on 18 April 2020, the ADB announced an initial package of USD 6.5 billion to address the immediate needs of the member countries to cope with the health and economic impacts of the COVID-19 pandemic. Subsequently, ADB committed a concessional program-based lending of USD 20 million under the Countercyclical Support Facility using the COVID-19 pandemic response option (CPRO) for the COVID-19 Active Response and Expenditure Support (CARES) program.

Any ad-hoc financing requests outside the CPF result in uncertainty of financing approval. The average Turn Around Time (TAT) for processing loans takes around 1 year, however, for emergencies, the average TAT is 2 and 3 months for ADB and World Bank respectively.

In response to the COVID-19 pandemic, a total of Nu.8,379 million was borrowed from international development partners**.** A total of USD 14.8 million in funds was explored through the Catastrophe Deferred Drawdown Option (CAT DDO) through bilateral discussions and communications as highlighted in Figure 7.

Figure 7: Resource Mobilization for COVID-19 Response (Nu in Millions)



The CAT DDO is a contingent loan that countries subscribe to in advance to be financially prepared in the event of a disaster or health emergency, which can be immediately disbursed. The CAT DDO is part of the country's disaster risk finance strategy.

The external concessional financing from ADB and World Bank (IDA) will remain the government's preferred financing source for the near future since financing from these institutions is cost-effective and long-term. The high concessional terms (low fixed interest rate, long grace period, and long repayment period) of loans from these sources help mitigate refinancing risks and interest rate risks.

The cost and risk characteristics of potential funding sources are briefly stated in Table 4**.**

Table 4: Financing Source and interest rates

Funding Source	Financing Terms	Benefits and Potential Risks
World Bank (IDA Regular)	Maturity Period: 40 years Grace Period: 10 years Interest Rate: 0.75% (Service charge) Semi-annually	**Benefit:** highly concessional, lower financing cost, receive technical assistance with the financing **Risk:** exchange rate risks since financing is in foreign currency
Asian Development Bank (OCR)	Maturity Period: 32 years Grace Period: 8 years Interest Rate: 1% during the grace period, 1.5% after the grace period Semi-annually	**Benefit:** highly concessional, lower financing cost, receive technical assistance with the financing **Risk:** exchange rate risks since financing is in foreign currency
SDF (SAARC Development Fund)	Maturity Period: 10 years Grace Period: 2 years Interest Rate: floating rate Semi-annually	**Benefit:** highly concessional, lower financing cost, receive technical assistance with the financing **Risk:** exchange rate risks since financing is in foreign currency
Source: Medium-term debt strategy, DMEA, MoF		

The loan interest is not charged for the loan taken from the World Bank but is required semi-annually to pay the service charge of 0.75%. For ADB, for the grace period, the interest charged is 1% and after the grace period, the interest charged is 1.5% which needs to be paid semi-annually. Likewise, the interest on loans taken from SDF is at a floating rate and needs to be paid semi-annually.

3.2.2. Financing mechanism for public health emergency

The current funds management of health emergency management in the government noted ambiguous policy directives on emergency funding.

The RAA noted that managing the funds through the GR Account was found to be inadequate due to limited reserves and may not be applicable to respond to public health emergencies of international concern (PHEIC). The current disaster contingency fund under the GRA is applicable for a disaster of a small magnitude. As noted in the earlier section, apart from the WHO and the MoH, there is a limited source of funds for the implementation of the IHR core capacities from the allied agencies.

The National Health Policy states that *the Royal Government of Bhutan shall secure an adequate budget for health care services to continue providing universal coverage to the Bhutanese citizens and ensure protection against catastrophic expenditure and impoverishment and shall continue to explore alternative strategic options for efficient, affordable and sustainable financing of health care services.*

Further, the HEDCP stipulates that the NDMA in coordination with the MoF should provide the emergency fund and the allocation of funds would be implemented using the **Operational Guideline for Disaster Financing, 2017**. However, the guideline lacks a financing strategy in place to activate or expedite the funding process especially when health emergencies are of international concern (PHEICs). *For instance*, MoH and MoF were able to explore funds only when development partners (ADB and World Bank) had declared the availability of funds for the COVID-19 response.

Additionally, while developing HEDCP, adequate discussion and consultation with the MoF and DDM on fund allocation using the Operational Guideline for Disaster Financing for health emergencies were not deliberated. During the 10th NDMA meeting, the MoH mentioned that the agency has not accorded a separate budget for health emergencies. Thus, it can be construed that the current Operational Guideline and mechanisms are not framed to operationalise emergencies such as COVID-19 or similar pandemics or epidemics in the future.

Nevertheless, during the pandemic, Executive Order No.C2/2020/473 dated 12 March 2020 was issued to formulate a Standard Operating Procedure (SOP) for the budget & release of funds for COVID-19. Although MoF has developed the SOP, it does not include a specific turn-around time (TAT) to expedite the mobilisation of funds to the agency concerned for implementing activities related to response and relief for COVID-19. There is also a lack of uniform procedures for application. *For instance*, quarantine and related services for other Dzongkhags should be submitted directly to the MoF, whereas the Cabinet Secretariat would defray all expenses relating to quarantine and related services under Thimphu Dzongkhag.

A lack of proper financial mechanisms in place to expedite and mobilise financial resources for public health emergencies would result in delays in responding effectively to health emergencies of national or international concern.

3.3. Procurement and Logistics in Health Emergency

Effective public health procurement and logistics management systems are essential elements of health resilience. A strong logistics and supply chain management ensures that the right quality product, in the right quantities and right condition, is delivered from a point of origin to a point of consumption (WHO). These systems are crucial to delivering routine essential health services and mitigating the direct consequences of any public health crisis such as disease outbreaks.

In addition, efficient logistics mechanisms and essential supplies for health are key to responding to the emergency as well as providing routine uninterrupted essential health services during any emergencies. The review of mechanisms, instituted for procurement and logistics during public health emergencies considering the recent COVID-19 pandemic, noted positive achievements as well as areas for improvement in the current procurement system to respond to any public health emergencies in the future.

The RAA noted that soon after the report of the first case of COVID-19 in China, Bhutan started preparing the response to the pandemic by putting guidelines and standard operating procedures in place and building the national capacity in critical care and services for any eventualities. A summary of national preparedness and response measures for emergency supplies dispatched to health facilities on 31 January 2020 is shown in Table 5 below.

Table 5: Supply status and summary of emergency supplies dispatched to Health facilities on 31.01.2020				
SN	**Name of item**	**Quantity**	**Name of hospital**	
1	Oxygen flow meter	5	JDWNRH	
2	N95 mask	1300	JDWNRH	
3	Face mask disposable	1000	Paro Hospital	
4	N95 mask	500	Paro Hospital	
5	Chlorine	100	Paro Hospital	
6	IV Cannula 20,25	1000	Paro Hospital	
7	IV drip set	500	Paro Hospital	
9	4 beds, 2 D-type oxygen cylinders and 2 ventilators from Wangdue Phodrang Hospital		JDWNRH	
10	2 oxygen flow meters and 2 electric suction machines moved from Punakha Hospital		JDWNRH	
Source: MoH report 31 January 2022				

Remarks: *MoH getting 2 thermal sensors to place in the Points of Entry at ground crossing before 5th of February, 2020.*

MoH placed orders for equipment, infection control consumables and PPE worth Nu. 18.68 million

3.3.1. Procedure for emergency procurement

The National Health Policy, 2012 envisages that the Hospitals and BHUs should develop contingency plans including measures to procure and deploy emergency related products underpinned by equity principles. Further, the DM Act 2013 stipulates that where exigencies of the disaster situation demand, the NDMA upon approval from the MoF may, to ensure the direct and least time-consuming method to procure goods and services, except specific supply of goods and service from the standard procurement procedure specified in the Procurement Rules and Regulations.

However, it was observed that despite having a policy and legal provisions in place, a separate emergency procurement plan and procedures were not developed and endorsed to operationalise during emergencies. Moreover, the need to streamline procurement systems to provide flexibility for users and implement fast-track procurement in urgent situations has also been highlighted as one important recommendation by WHO's Joint External Evaluation (JEE), 2017.

The MoH initially relied on the existing procurement framework to initiate the procurement of medical supplies needed urgently to respond to the COVID-19 pandemic.

The Medical Supplies and Procurement Division (MSPD) under the Department of Medical Supplies and Health Infrastructure (DoMSHI), MoH, have administered the emergency procurement of Personal Protective Equipment (PPE) and other medical supplies needed to prepare and respond to the COVID-19 pandemic. The procurement of essential medical goods was initiated following the normal procurement system as there are no clear procedures or plans in place to initiate emergency procurements of goods and services.

The normal procurement process prevented the government from obtaining the medical supplies in time to respond quickly to the public health crisis. Moreover, due to the disruption of the global supply chain, the national suppliers faced difficulty in acquiring the required medical items. Shortage of essential medical items in the region has also been reported. Given this situation, to expedite the procurement process, the MoH resorted to the method of directly

purchasing the medical items through Bhutan Embassies and Consulate Offices in Thailand (Bangkok), India (Delhi and Kolkata), and Bangladesh (Dhaka). The MoH also appointed a focal person in the Ministry to coordinate the procurement of all supplies related to COVID-19 in close coordination with MSPD. Table 6 highlights the available emergency stock balance at the Medical Supplies and Distribution Division (MSDD), Phuntsholing as of 24 June 2022.

Table 6: Emergency Stock balance at MSDD as of 24/06/2022

SN	Item	Medical stock (in Number)	SN	Item	Medical stock (in Number)
1	Apron, Plastic, Disposable:	5,291,	25	Gown, Non-sterile, Medium	20,930
2	Coverall, Disposable, Large:	2,509	26	Gown, Non-sterile, Small	750
3	Coverall, Disposable, Medium	14,250	27	Gown, non-sterile large	784
4	Face mask, Surgical	222,900	28	Gown, Sterile, Large	1,032
5	Dust Mask	3,050	29	Gown, Sterile, Medium	1,387
6	N95 mask (MAKRITE)	1,035,	30	Shoe cover, Disposal	4,900
7	FFP2 Mask: 800		31	Shoe cover, knee length	15,750
8	Face mask, N95 3M	1500	32	Surgical cap, Disposable	16,000
9	P2 Masks (RES514P2)	50	33	Gumboots, medium	1,075
10	K95(white & green)3D	4,940	34	Gumboots, large	138
11	Medical respirator mask	10,100	35	Gloves sterile 7.5	1,200
12	Face shield	7,076	36	Plastic gown M	1,240
13	N95 mask (1860)	7,000	37	Plastic gown L	120
14	Glove, Utility, Large	600	38	Nitrile gloves Medium	201,500
15	Glove, Utility, Medium	543	39	Gumboot size 42	700
16	Glove, Utility, Small	750	40	Gumboot size 44	1,500
17	Gloves, Non-sterile, Large	58,050	41	Hand disinfectant solution (500mL)	29,577
18	Gloves non-sterile small	15,000	42	Chlorine powder (≥ 30% active chlorine) (500g)	284
19	Gloves, Non-sterile, Medium	44,450	43	Glutaraldehyde solution (5L)	2,302
20	Goggles	846	44	Bio-hazard bag (Red 20 kg)	10,800
21	Gloves sterile,6.5	69,300	45	Glycerine (450mL)	2,627
22	Thermometer forehead	4,217.00			
23	Spirit	1,400			

Source: ***MSDD, DOMSHI, MoH***

The quantification and forecasting of emergency commodities such as masks, gloves, rapid testing kits, test reagents and PPE were done by the focal point in consultation with the National COVID-19 Task Force. The funds for emergency procurement were transferred directly to the respective accounts of the Embassies and Consulate Offices and have requested to procure and ship the consignments to Thimphu. The direct procurement initiated through the Embassies and Consulate Offices allowed them to carry out a cost comparative analysis for the required medical items and choose the supplies at the best affordable price. During the audit period, the medical supplies worth Nu 4.459 million, have been procured directly in coordination with Embassies and Consulate Offices in the region.

The MoH has promptly undertaken this agile procurement procedure in response to urgent needs and it was noted that the initiative was a success because of the efficient collaboration from the MoH, His Majesty's Secretariat, and the Ministry of Foreign Affairs. However, such initiatives may not be sustainable in the future without a proper emergency procurement plan in place.

The suggested emergency procurement framework is presented in (**box 1**) to share some of the good practices in the world.

Box 1:

Globally, the COVID-19 pandemic brought to the fore the applicability of generalised procurement rules and regulations for procuring health products during emergencies and prompted an accelerated procurement process. As per a recent paper by the Organisation for Economic Cooperation and Development (OECD), the pandemic has forced many countries globally to rethink their risk management strategies in terms of procurement and supply chain during emergencies and highlighted the need to put measures in place that can be activated in the event of a crisis.

Some countries have started developing an **emergency framework agreement** for use during emergencies and some have modified their existing procurement procedures to fast-track procurement during emergencies. The emergency framework agreement includes a listing of emergency goods & services, identifying potential suppliers, and signing an agreement with the manufacturers or distributors. Such a framework agreement will enable the government in placing purchasing orders of the required items as per the agreement during an emergency. Such frameworks have been developed as a part of disaster risk management plans.

Similarly, considering that the normal procurement system is not applicable for procuring medical supplies during emergencies, it is important to design clear plans and procedures to initiate urgent procurement during any public health emergency as part of a disaster risk management plan as spelt out in the DM Act.

The adoption of the Simplified Procurement Rules and Regulation, 2021 would expedite the procurement during emergencies. However, as discussed earlier, it is *more important to identify and create a reliable portfolio of suppliers/providers to be activated in case of emergencies and draw flexible contracts with them.* This strategy has worked in countries where it is implemented and has supported the government's efforts in securing urgent medical items on time.

The MoH, in their response, stated that in order to fast track the procurement, the government issued directives for repeat orders from the FY 2019-2020 rates without having to call tenders. Further, the ministry mentioned that the Ministry of Finance has initiated and adopted simplified Procurement Rules and Regulations (SPRR 2020, 2021) under COVID-19 situation. They also stated that MSPD was able to procure most of the medical supplies through repeat orders although prices for medical supplies particularly, PPEs, handheld thermometers and ventilators increased drastically. They further explained that it was not the procurement process but rather global shortage and ban imposed by exporting countries that made it challenging to get these supplies on time.

While noting the responses from the MoH, the RAA feels that the current practices may not be adequate for any urgent procurement in case of future health emergencies of national or international concern if proper procurement plans and procedures for urgent procurement are not developed and defined.

3.3.2. The distribution process of medical supplies

The medical supplies in the country are procured centrally by MSPD and MSDD distributes to various health facilities including hospitals across the country based on the annual indentation. Given the complexity of the procurement and supply chain management of medical supplies, multiple agencies are involved through horizontal and vertical coordination in the process whose responsibilities are summarised in Table 7.

Table 7: Roles of Agencies in the Procurement of Medical Supplies

Functions	Responsible agency
Maintenance of a standard list of drugs, non-drugs, and biomedical equipment	Essential Medicine and Technology Division (EMTD), DMS
Annual Indentation	Respective Health Facilities
Indentation verification at Dzongkhag Level.	Dzongkhag Health Officers through consultative meetings with respective health facilities.
Indentation verification at Ministry Level.	Health Care and Diagnostic Division (HCDD), DMS in consultation with the experts from JDWNRH.
Tendering and Contract Management	Medical Supplies Procurement Division (MSPD), DoMSHI
Receiving, Storing and Distribution to various health facilities including arrangements for quality inspection	Medical Stores and Distribution Division (MSDD), DoMSHI
Quality inspection of drug and non-drug items	Respective experts from JDWNRH and nearby hospitals
Quality inspection of Biomedical Equipment	Biomedical Engineering Division (BMED), DoMSHI
Payment to suppliers	Finance Division, DoS, MoH
Utilisation of supplies	Respective Health Facilities (Pharmacists are responsible for the storage of medical supplies in respective health facilities while Biomedical Engineers are responsible to oversee the functioning of equipment installed in their health facilities)

Source: MoH and RAA compilation (medical procurement and distribution system)

The existing procurement cycle is illustrated in Figure 8 which shows that the existing procurement and distribution system takes almost a year for the health facilities to receive medical stock after submitting the annual indentation making it very lengthy and time-consuming process.

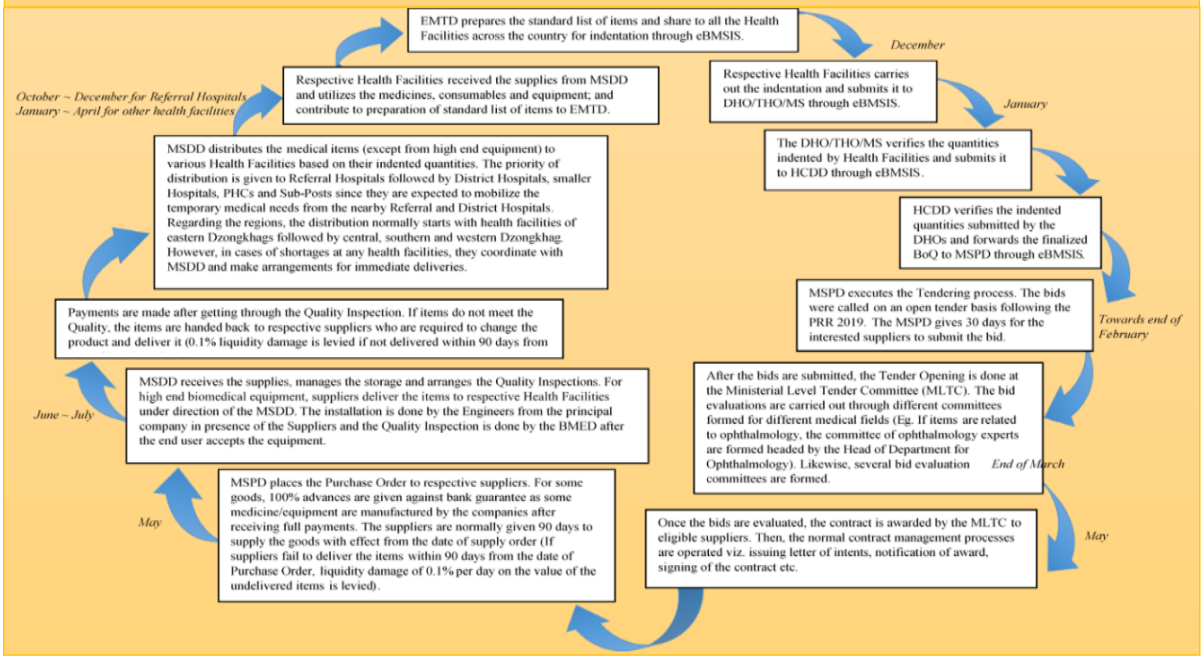
The MSDD, as a central medical store in the country, receives all the medical stocks from the suppliers as per the specifications and arranges the quality inspection (QI). Once the QI is completed, the medical stocks are distributed to the respective health facilities as per their indentations.

For the high-end medical devices, the suppliers deliver directly to the health facilities. At the health facilities, the QI, installation, and test checks of the equipment are done together with the Bio-Medical Engineering Division (BMED) and health officials in the presence of the principal suppliers. This new arrangement is instituted to ascertain whether the specification

and functionality of the devices are adhered to and to fix accountability if defective devices are supplied.

Usually, between *October and December*, MSDD starts the distribution to Referral hospitals followed by district hospitals and PHCs. The distribution to the remaining other health facilities starts in *January and ends in April of the subsequent year*. In cases of shortages of stocks in any health facility, there is an option to plan for immediate deliveries. The distribution of health facilities starts from eastern dzongkhags followed by central, southern, and western dzongkhags.

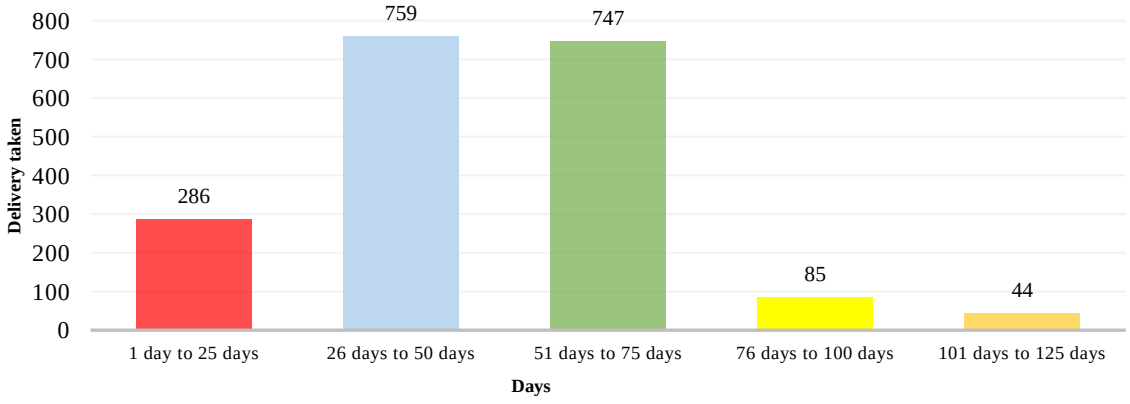
Figure 8: Existing Medical Procurement and Distribution Cycle



The RAA reviewed the distribution process of medical supplies from MSDD to various health facilities across the country by analysing 1921 medical items extracted randomly from the Electronic Bhutan Medical Supplies Inventory System (eBMSIS).

From the analysis, it was noted that on average, it takes around 47 days to reach the supplies to the respective health facilities from the date of receipt at MSDD as summarised in Figure 9.

Figure 9: Days Taken To Deliver Medical Stock To Health Facilities



For instance, a batch of Vitamin B Complex received at MSDD on 8 June 2021 was delivered to Gasa PHC only on 12 September 2021 taking around 125 days. Such a long delivery period has occurred mainly due to the distribution plan, which starts with health facilities of eastern Dzongkhags followed by central, southern, and western Dzongkhags and also because of delays in conducting QIs (discussed in 3.3.3). Moreover, during 2021 when the country was responding to the COVID-19 outbreak, a series of lockdowns and movement restrictions further lengthened the delivery periods.

In addition, the RAA noted that the standard duration of 90 days has been provided for the delivery of medical supplies by the suppliers after placing purchase orders. The eBMSIS record shows that out of 1965 medical items delivered in 2021, 993 (51%) items were delivered after 90 days from the date of the purchase order as shown in Table 8**,** which is further aggravating delays in delivering of supplies to the hospitals and PHCs.

Table 8: No. of Days Taken to Deliver Medical Stock to MSDD by Suppliers

No. of days between the date of Purchase Order and date of good received at MSDD (Purchase data from the year 2020 and 2021)	Number of Instances observed (Frequency)	Statistics
Less than 30 days	0	Mean = 96
Between 30 days to 59 days	82	
Between 60 days to 90 days	890	
Above 90 days	993	
Total instances analysed	**1965**	

Timely and efficient delivery of medical supplies to healthcare providers during emergencies is imperative to ensuring the provision of timely healthcare facilities. Such delayed deliveries would inhibit public health emergency response efforts, resulting not only in slow and inadequate response to emergencies but also pose serious risks to the lives of infected individuals.

MoH, in their response, stated that the situation where medical supplies need to be delivered in the most cost-efficient manner is not captured while calculating the delays. Distributions are arranged taking into account several factors such as transportation cost, stock available at the concerned health facilities, option to mobilise, size of the hospital, population among others.

MoH also responded that the annual supplies are normally delivered within the month of October till April of the subsequent year and Quality Inspection starts immediately after the receipt of the annual supplies. They stated the distribution time between referral hospitals, district hospitals and Public Health facilities differ based on the work plan and shortages at Referral hospitals and district hospitals since critical cases are mostly handled at these hospitals.

To improve the distribution process, MSDD has initiated direct deliveries of heavy and high-end medical equipment to health facilities from FY 2021-22. Medical gas has been lifted directly from the manufacturing plant based at Pasakha from FY 2022-23 which normally consumes a major chunk of delivery time for loading, unloading, occupies spaces at MSDD and distorts the annual distribution plan.

They explained that the MSDD is facing acute shortage of manpower to handle the medical supplies as at present the division has only five technical staff to manage the supply of medicines and non-drugs equipment. In cases of shortages of stocks in any health facility, the ministry stated that there is an option to first mobilise from the hospitals and other health facilities. If the mobilisation is not possible, immediate deliveries are made from the buffer stock. The mobilisation is done through social media platforms such as WeChat, telegram groups comprising store managers of districts, officials of MSDD, JDWNRH, MSPD and HCDD. Through this mobilisation, the health centres are also able to utilise the short shelf life medicines and thus minimise wastage due to expiry. However, challenges faced for mobilisation are limited transportation facilities available as the health centre has to wait for the MSDD vehicles. In addition, due to several lockdowns, movement of vehicles was restricted.

The RAA acknowledges the challenges faced by the MSDD in supplying and distributing medical items to hospitals and health centres due to movement restrictions of COVID-19 protocols. However, the RAA is of the view that there are problems in the procurement cycle and distribution system causing delays in the delivery of medical supplies and such delays will impede effective response to public health emergencies.

3.3.3. Quality Inspection (QI) Process in the distribution of medical supplies

Quality Inspection (QI) is the mechanism instituted to ensure compliance with the operational specifications, requirements or internal prerequisites. The Quality Assurance and Standard Division (QASD), MoH is responsible for ensuring quality assurance of medical supplies before distribution to the health centres.

The QI is done in consultation and coordination with stakeholders and specialists following the Guidelines on Quality Inspection of Medical Supplies 2010. During the field visit to MSDD, the audit team observed that the QI team is constituted by pooling relevant technical experts from JDWNRH, other hospitals, the Bio-medical Engineering Services Division (BESD), and other relevant departments/divisions based on the technicality of supplies and deputed to MSDD, Drugs, Vaccines and Equipment Division (DVED) or the installation site by QASD, whenever deemed necessary.

As per the guidelines, MSPD, upon receipt of consignment or intimation from MSDD, shall inform QASD within **five** working days along with the details of the consignment. Accordingly, the QI should be carried out within **ten** working days upon the receipt of the information from MSPD and other procurement agencies. In reality, MSDD has been coordinating with nearby hospitals and BMED for QI. This change in the arrangement was instituted by the MoH to enhance QI services and reduce the administrative process. However, the guidelines were not amended in accordance with the change in arrangement.

On a sample test of drugs, consumables and equipment for the FY 2020-2021 and 2021-2022, it was noted that there were delays in QI processes ranging from 11 up to 125 days which is in deviation from the guideline**.** On average, it has taken around 35 days to complete the QI process and this has further delayed the distribution of medical goods to the respective health facilities. At times, the QI process has taken up to 291 days. It was noted that delays in the last two consecutive years were due to COVID-19 restrictions. Further, getting relevant officials

from hospitals on board for QI has also contributed to such delays especially when hospitals are overwhelmed with additional work and can not deploy any officials to MSDD for QIs.

Considering the above issues, it can be deduced that the existing medical procurement process and distribution system may inhibit effective response during any public health crisis. In the times of public health emergencies, timely procurement and efficient distribution of PPEs and testing kits, equipment, and devices for intensive care is crucial. Therefore, there is a need to draw a clear plan and procedure on how emergency medical supplies will be distributed to the health centres during emergencies as it is evident that the current distribution plan used for distributing routine medical supplies may not ensure timely access to medical supplies.

MoH responded that the QI for drugs are conducted by the Pharmacist/Pharmacy Technician. For non-drugs consumables and devices, QIs are conducted by the end users /Head of Department from the respective departments. They also stated that the Drug Regulatory Authority conducts only regulatory inspection and not QI for the medical products.

The RAA, while noting the response, reiterates that the delays in conducting timely QI are aggravating the delivery of medical supplies to health centres located away from the medical stores. This, in turn, will affect timely access to medical supplies in the event of health emergencies. QI teams can be changed based on situations so long the process of conducting QI does not impact the delivery of services.

3.3.4. Buffer Stock for Emergency

Donations of medicines and technologies should conform to the specifications and standards of the Ministry of Health and be authorised by the erstwhile Drug Regulatory Authority. The importance of maintaining access to medical supplies by ensuring the availability of adequate emergency stocks and equipment at all levels of health facilities at all times is reflected in the Strategic Plan for Emergency Medical Services. In this line, the MoH intends to maintain a 30% buffer stock of essential drugs, 10% buffer stock of vital drugs and 10% buffer stock of essential consumables at MSDD (central warehouse/medical store), Phuentsholing to use during emergencies as mentioned in the Health Emergency and Disaster Contingency Plan 2016.

As per the contingency plan, acknowledging that MSDD may not be able to cater supplies instantly to different regions where required in the event of any disaster, the MoH has planned to set up three additional buffer stores at Paro, Gelephu, and Mongar to maintain a buffer stock of medical supplies. These three areas were identified considering transport feasibility and locations to distribute medical supplies to health centres across different regions in the country.

Recognising the criticality of maintaining buffer stock/safety stock and providing a safety net against an unanticipated delay in procurement, transport and during unusually high demands due to a public health crisis, a plan was devised. However, the plan has not been materialised to date. Upon review of stock records maintained in eBMSIS, an inspection of the storage areas, and confirmation with the officials of the Health Care and Diagnostic Division (HCDD), Department of Medical Services (DMS), the RAA noted the following:

i. Maintenance of buffer stock at identified hospitals

Buffer stock is maintained to meet the requirements of the hospital in the time of an emergency like an unexpected epidemic situation or increased patient influx. It is also used as contingency stock for routine operation of the health centres during unforeseen or delays of products from the supplier's end.

Although additional three strategically located buffer stores were identified in the contingency plan, the buffer stock of medicines is maintained only at MSDD in Phuentsholing. Inadequacy of storage infrastructures, lack of designated vehicles at the hospitals for transporting the medicines, and a lack of budgetary provisions for managing the buffer stocks were some of the reasons for not maintaining the buffer stock of medicines in the three locations.

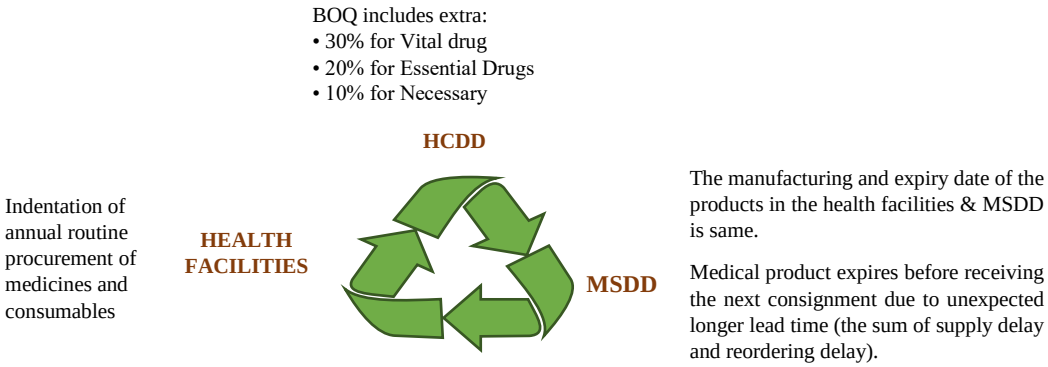
Further, the buffer stocks are maintained only for medicines and there is no practice of maintaining buffer stock for consumables and equipment although 10% buffer stock of essential consumables is required to be maintained as per the Health Contingency Plan. It was also observed that the actual quantity of buffer stocks for essential medicines is also not fixed at 30% in actual practice as the stock percentage is determined based on a rough estimation of stock in hand and future procurement needs.

MoH responded that under the contingency plan, the ministry has identified Paro Hospital to cater for western region, CRRH, Gelephu for the central region and MRRH, Mongar for the eastern region. Based on the plan, LMD, DMP had submitted the budget proposal during the FY 2020-21 for construction of a regional store at S/jonkhar to cater the buffer stock for the eastern region during the FY 2020-21. However, due to COVID-19 pandemic, the initial budget allocation of 2 million to carry out the feasibility study had been retained by erstwhile GNHC and could not proceed with the construction activity. LMD, during the FY 2022-23, proposed a budget for construction of oxygen shed and 3 million had been approved. This shed will be fully utilised for storage of bulky medical products as well as medical gases.

ii. Procurement process for buffer stock

The current buffer stock management process is illustrated in Figure 10**.**

Figure 10: Buffer stock management process



The medicines are under the VEN (Vital, Essential, and Necessary) category. In the procurement of any medicines and consumable items, an additional 30% of vital drugs, 20% for essential drugs and 10% for necessary are added for maintaining buffer stock.

While reviewing the buffer stock, the RAA noted that currently, MSDD does not maintain stocks with different expiry dates to distribute to the health centres, which may potentially affect the availability of essential medical supplies during emergencies as the stocks may run out at the same time. This issue of unavailability of stocks due to the expiry of medical supplies before receiving the new stocks has been reported by the hospitals where RAA visited. Lengthy procurement and distribution cycles for indentations were some of the causes of the unavailability of stock. Moreover, it was also noted that the buffer stocks are not segregated from the routine annual stocks and there is no separate store to maintain the buffer stocks.

RAA also noted that maintaining a dynamic buffer or safety stock is challenging because storing surplus stock will increase inventory costs leading to wastages as medical supplies like drugs have short shelf life. On the other hand, unavailability of stock of medical supplies will impact emergency response.

iii. Periodic stock review of medical stocks

In order to ensure that buffer stocks are used before their expiry dates, it is critical to carry out periodic inventory reviews of the stock maintained at buffer stores. However, the RAA noted that such reviews were not conducted periodically. *For instance,* Paro Hospital received a batch of medicine from MSDD in December 2021 containing two packets of Gentamicin Injection I.P. 2ml details of which are provided in Table 9 and Figure 11**.**

Table 9: Gentamicin Injection I.P. 2ml Received on Same Date with Different Shelf Life

#	Medicine Name	Mfg. Date (a)	Exp. Date (b)	Actual Shelf Life (a-b)	Received at Paro (c)	Shelf Life at Paro (c-b)	Source of supply
1	Gentamicin Injection I.P. 2ml	Aug 2021	July 2023	1 year and 11 months	Dec 2021	1 year and 7 months	From the current year purchase
2	Gentamicin Injection I.P. 2ml	April 2020	March 2022	1 year and 11 months	Dec 2021	3 months	From the buffer stock

Source: Paro Hospital and RAA compilation

As shown in Table 9, the shelf life of one out of two packets of the injection is just three months and is already nearing expiry when the stocks were received at the hospital. While verifying the records at MSDD, it was confirmed that the stock, due for expiry in the next three months, was purchased in the previous year and stored for a year as buffer stock.

From the above instance, it can be construed that the buffer stock at MSDD is not being rotated on a first-in, first-out (FIFO) basis. This has resulted in older medicines being kept in the buffer stock for a longer period of time and leading to shorter shelf life by the time they reach hospitals and health care centres.

Further, the RAA noted instances where some hospitals received either expired medicines or nearing expiration dates from MSDD. A few of such instances are cited below:

a) Paro Hospital has received 28 items of medicines from MSDD issued on 14 September 2021 as an annual distribution. Out of 28 items received, six items have a shelf life of less than 12 months. Figure 12 shows the amount of expired medical supplies at Paro Hospital segregated for disposal. It was also found that 67 drugs were out of stock at Paro Hospital starting November 2020 as per the data generated from the eBMSIS on 1 October 2022. The new stock of drugs is normally received between October and December by the Referral Hospitals and between January and April by the rest of the health facilities.

Figure 11: Gentamicin injection I.P. 2ml received on the same date with different shelf life

Figure 12: Expired Medical Items at Paro Hospital

b) Yadhi PHC, Mongar received 1000 tablets of Folic Acid from MSDD on 20 January 2021. During RAA's visit, it was found that these tablets had expired. It was also observed that one of the vital injections, adrenaline is out of stock at the PHC and has not received any new stock as can be seen in Figure 13.1 & 13.2.

Figure 13.1: Example of Expired Medicines and Empty Shelfs in PHCs

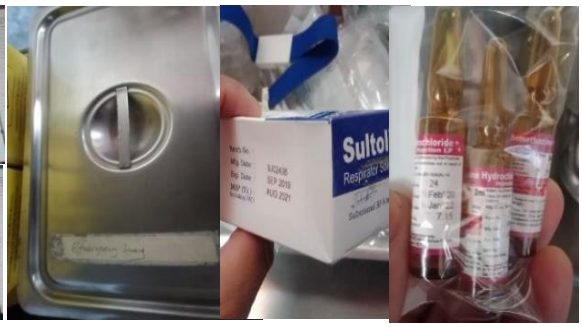


Figure 13.2: Example of Emergency Medic Kit Containing Expired Medicines

a) Similar issues were also found in Ngatsang PHC where the Emergency Medic Kit contains expired Respirator Solution and Promethazine Hydrochloride Injection nearing the expiration date.

If such practices exist, storing medicines with less shelf life as buffer stock and not periodically monitoring the stock would not only undermine the intent of maintaining buffer stock and its usefulness during any emergencies but also cause a huge cost to the government coffer due to expired medical items.

iv. Storage capacity to store medical supplies

Stores are an integral part of the medical procurement and distribution system. As per the WHO guidelines for the storage of essential medicines and other health commodities, having proper storage of health commodities is vital for protecting and ensuring the quality of the product. The RAA visited the MSDD in Phuentsholing, the medical store of JDWNRH in Thimphu, ERRH in Mongar, Phuentsholing Hospital, Paro Hospital and Gyalposhing General Hospital and a few PHCs. While visiting these stores, a few deficiencies were noted as discussed below:

a) There is a shortage of space to store critical medical supplies. Huge piles of medical supplies and equipment were stacked in the open space outside the store exposing them

to direct sunlight, rain, wind, and dust. Some boxes and containers were opened spilling the medicines all over the floor as presented in Figure 14**.** Such practices would also impinge in implementing evacuation if any major disasters like earthquakes. In addition, there is a high possibility of medicines and consumables getting spoiled wasting huge government resources. The MoH has also received a donation of essential medical supplies to respond to the COVID-19 pandemic and this has put extra pressure on MSDD Phuentsholing to store these items before distributing them to the health centres.

b) Considering the climatic condition of Phuentsholing, the store is also not adequately equipped with instruments and mechanisms to control the temperature and humidity except for electrical fans and air conditioners to minimise the temperature inside the storerooms. There is a freezer to store heat-sensitive medicines/injections (which need to be stored below 10℃) but without adequate storage capacity.

Figure 14: Stock of medical supplies at MSDD, Phuentsholing

c) The central store does not have a disaster contingency plan in place. With huge quantities of medical stocks, there is a possible risk of impeding the medical supply chain should there be a disaster in the store.

The past five-year plans and programs of the health sector show limited prioritisation of the health supply chain including setting up of proper storage sites for medical supplies.

Figure 15 shows how medical items are inappropriately kept in open spaces. After being exposed to sun, wind and dust, the effectiveness and utility of the medical products are questionable.

Figure 15: medical supplies stacked in an open space exposing to direct sunlight, rain, dust etc.

MoH, in their response, stated that the plan could not materialise to date due to non-availability of budget. The concerned division had proposed budget for the construction in the past two consecutive fiscal years and also during the COVID-19, a team comprising experts from JDWNRH, DMS and HIDD had worked on the drawings for the two warehouses in central and eastern regions.

MoH stated that as for the pictures of improper storing of huge quantities of medical supplies, Bhutan received huge quantities of donated medical supplies from several countries and international organisations during COVID 19 which were required to be stored at the warehouse (MSDD). Due to restrictions in vehicle movements, distribution of medical supplies was restricted and mostly confined to COVID 19 related medical supplies. This has resulted in piling up of huge quantities of medical supplies in the warehouse. Similarly, during COVID-19, only limited people were permitted to work in containment mode. Therefore, a small number of the workforce was not in a position to efficiently handle huge quantities of medical supplies in the warehouse.

While acknowledging the challenges faced to maintain proper storage of medical supplies during the pandemic because of shortage of spaces, the RAA is of the view that if such practices continue post pandemic, there is a risk of medical items getting damaged and deterioration of quality of medicines due to improper storage.

3.4 Health Capacities for Emergency Preparedness

To mount an effective and efficient response to public health emergencies in the country, the WHO states that the health system must be capable of assessing the risks and capacities to determine priorities for emergency preparedness. A proactive surveillance and laboratory system, including at the points of entry are needed for early detection and warnings and also to provide information for decision-making during public health events and emergencies. Access to diagnostic services during emergencies and essential health and emergency services are also crucial. In addition, information management and risk communications are critical during public health emergencies. Most importantly, timely assessment of existing plans and capacities to identify gaps and areas for further development is necessary to accelerate emergency preparedness.

The RAA has considered the above-mentioned parameters to assess capacities to prepare and respond to health emergencies. It was noted that an enhanced and effective surveillance system is one of the key factors that contributed to Bhutan's successful response to the COVID-19 pandemic. As strengthened surveillance and the national laboratory system are one of the core capacities of IHR, Bhutan has prioritised and made significant progress in these areas. Bhutan has been able to implement all necessary interventions related to surveillance that was emphasised by the WHO in response to the current COVID-19 pandemic such as a comprehensive screening system at all Points of Entry (PoE) both by air and land; started a comprehensive three weeks long facility quarantine system for anyone coming into the country with regular screening and testing.

Furthermore, extensive contact tracings were carried out by establishing the National Outbreak Investigation and Surveillance Team (NOIST). Phone calls, as well as an ICT-enabled platform namely the Druk Trace App, were used for contact tracing. Maintaining a robust database of primary and secondary contacts and timely monitoring and testing were carried out on a regular basis. Along with sensitive surveillance, a well-established national laboratory system at the Royal Centre for Disease Control (RCDC) with trained human resources and essential diagnostic facilities contributed immensely to providing timely testing services. The RAA noted the following:

3.4.1. Surveillance mechanism between the human-animal ecosystem

An effective surveillance system is essential in both animal and human ecosystems for detecting infectious disease outbreaks before they spread and cost lives. It serves as an important tool for early warning of impending outbreaks that could become public health emergencies. In Bhutan, some of the surveillance mechanism includes a national early warning alert and response surveillance system (NEWARS) for human health. NEWARS was introduced in 2014 as the national surveillance and response system for various priority diseases or syndromes of public health concern for early detection and efficient response. The system includes both indicator and event-based surveillance.

As required by the IHR 2005, NEWARS also defines the procedures for reporting any disease or events of international concern to WHO through the National IHR focal Point that may constitute a Public Health Emergency of International Concern (PHEIC).

There is also separate laboratory-based sentinel surveillance for influenza-like illness (ILI)/severe acute respiratory illness (SARI), measles, rubella, diarrhoea, and acute undifferentiated illness (AUFI).

For animal health, the Veterinary Information System (VIS) and the event-based information system serve as surveillance systems. The surveillance information then is shared via SMS, and on the respective websites of MoH and DoL, MoAF. In both the human and animal sectors, health professionals are trained in the detection, surveillance, and response to public health events.

However, the RAA noted that there is an absence of a single source of real-time surveillance information-sharing mechanisms instituted between the health and livestock sectors. While data and reports are shared amongst relevant agencies, there are still standalone systems that need to be integrated, for timely reporting and immediate response. It was also highlighted in

the JEE (IHR) the need to integrate both surveillance systems to curtail underreporting and ensure the timeliness and acceptability of the surveillance system.

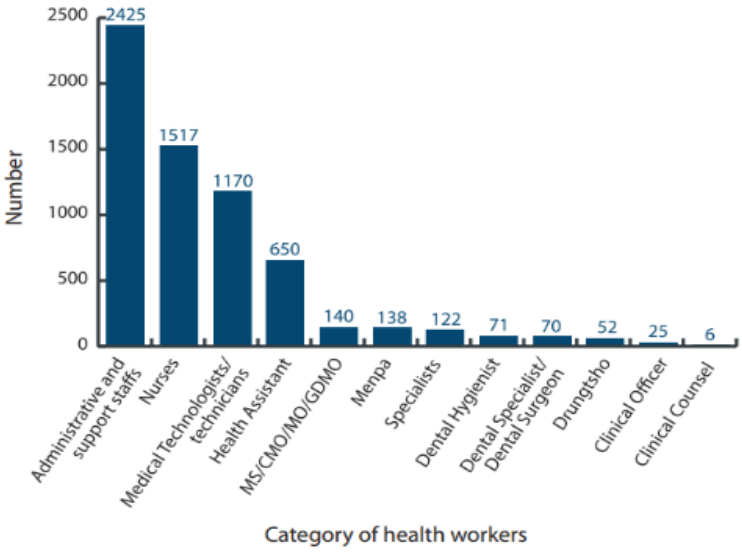
To enhance the surveillance and coordination approach between human and animal health, a strategic framework and action plan called the Bhutan One Health Strategy plan was developed. The One Health approach is particularly important for complex HPAI and similar zoonoses that require a combination of animal and public health sector surveillance, including communication strategies to reduce the public health threat more effectively. It was learnt that the integration of surveillance systems could not be implemented due to the pandemic.

The absence of an integrated real-time surveillance system will result in delayed response to address emerging, re-emerging, and high-impact zoonotic diseases at the human-animal-ecosystem interface.

3.4.2. Management of the health workforce

The Annual Health Bulletin 2021 showed that there were 6,386 health workforces available in the year 2020, an increase of around eight percent from that of 2019 as shown in Figure 16**.** Apart from administrative and support staff, the major proportion of the health workforce was comprised of nurses (1,517), followed by medical technologists and technicians (1,170), and health assistants (650). The number of doctors per 1000 population has slightly increased from 0.43 in 2019 to 0.46 in 2020. However, it is still lower than the WHO standard that recommends one doctor per 1000 population. The number of nurses has increased by 8% from the previous year, resulting in an impressive nurse-to-bed ratio of 1:1.06 in 2020.

Figure 16: Category of health workers



The RAA noted the following shortcomings with regard to the health workforce:

According to the HRD, MoH, the National level Assessment of Health workforce was not conducted. However, the HR records showed RCSC's approved HR standard 2018-2023 for MoH, existing workforce, gaps and the recruitment during pandemic provided in **Appendix II.** The summary of the workforce shows the existing strength of human resources of 4,715 against approved the strength of 6,401, with a gap of 1,686 as of 2020. In addition, MoH has conducted mapping (Figure 17) of the health workforce and recruited 198 number of workforce *(regular and contract)* during the COVID-19 pandemic. The review of the HR data of MoH revealed gaps in the category of clinical nurses, medical specialists, GDMO etc. as reproduced in Table 10.

As per the health record, the MoH has only one intensivist and one microbiologist and has no epidemiologist in the health sector. Some of the health facilities are running short of medical specialists despite having the demand for their service. *For instance*, the OT of Paro Hospital could not be utilised because they do not have a surgeon. Similarly, the maternity ward was managed without a gynaecologist and thus requiring them to refer complicated cases to JDWNRH.

Figure 17: MoH Mapping of dzongkhag-wise human health resource categorised by region

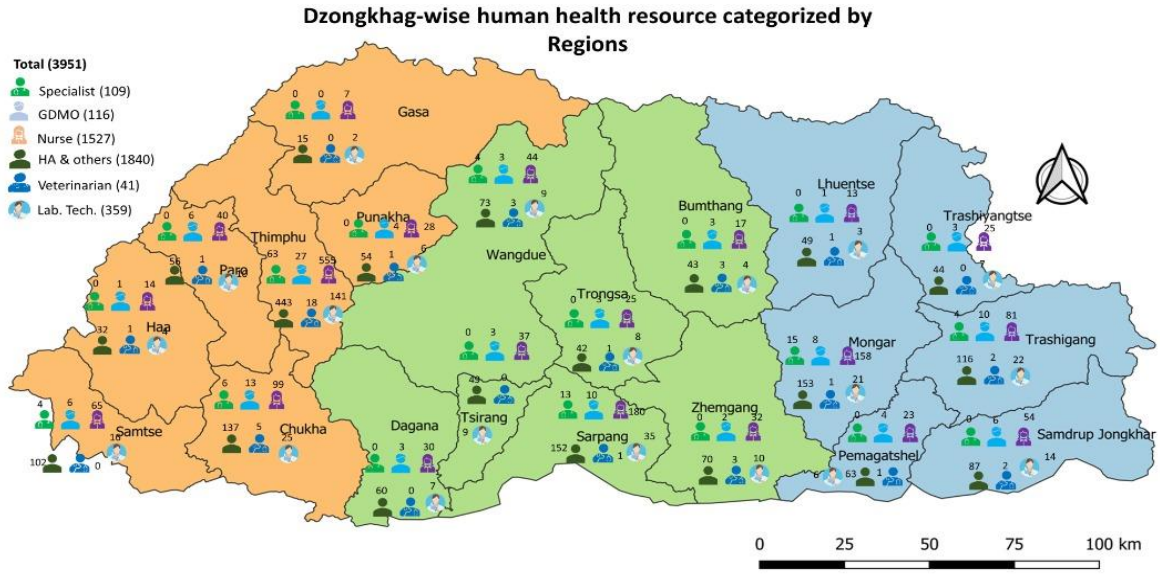


Table 10: HR Status of Ministry of Health									
SN	**Category**	**Approved (standard)**	**Existing**			**Gap**	**Recruited in 2020 for COVID-19**		
			Regular	**Contract**	**Tot.**		**Regular**	**Contract**	**Tot.**
1	Medical Specialist	236	88	34	122	114	0	6	6
2	MS/CMO/MO/GDMO	268	139		139	129	25	0	25
3	Clinical Nurse	579	89	127	216	363	8	1	9
4	Menpa	284	132	0	132	152	0	0	0
5	VTI Technician	335	209	2	211	124	0	0	0
Source: HRD, MoH									

The health policy stipulates the development and provision of standardised and institutionalised emergency medical training programs including emergency leadership training courses for health workers and first responders. However, there are no standardised, and institutionalised emergency medical training programs within the MoH to continuously develop the capacity for emergency responses.

Though the training on health emergencies was provided during the outbreak of the COVID-19 pandemic, the MoH has not recognised the importance of continuous capacity development of the existing staff as there is neither any such program in place nor such requirements mentioned in any of its plans and strategies. As a result, there is a risk of running short of expertise when a new form of disease outbreak occurs in the country.

Despite being specified in the National Health Policy 2012, there is an acute shortage of trained Emergency Medical Responders (EMR) who are supposed to play a critical role in extending pre-hospital medical services. At present, on average one EMR is rendering services for three ambulances. Irrespective of the number of ambulances, there is one assistant EMR deployed in the Dzongkhag hospital **(**shown in Table 11**).** During mass casualties and critically ill or injured patient evacuation, other additional health personnel are deployed to cover the shortages.

Table 11: Summary of EMR in health facilities

Health Facilities (Nos)	Ambulance (Nos)	EMR (Nos)
233 (Hospitals & PHCs)	126	44

Source: ***EMS, MoH***

3.4.3. Management of Risk Communication

Risk Communication refers to the real-time exchange of information, advice and opinions between experts or officials and people who face a threat (hazard) to their survival, health or economic or social well-being (WHO). The fundamental goal of risk communication is to provide timely, relevant, and accurate information in clear and understandable terms, targeted to the people at risk before, during and after public health emergencies (PHE) and disasters. The sources of information for the risk communication should be credible and trustworthy to generate confidence in the public and alleviate fears. In addition, the HEDCP expects risk communication to play a key role in responding to public health emergencies and disasters and emphasises establishing an effective risk communication system and process within the MoH. A Risk Communication Guideline for the Health Sector was developed in 2019 by EMSD.

For COVID-19, the Health Promotion Division (HPD) including the Policy and Planning Division (PPD) and Emergency Medical Services Division (EMSD) under the MoH has taken a lead role in collecting, verifying, and disseminating information before communicating the risk. Some of the findings of the risk communication are given below:

i. There was a mismatch in the lead program for risk communication as per the guidelines and in the actual implementation, whereby the Health Promotion Division (HPD) along with support from other officials from the MoH was at the forefront of risk communication works during the pandemic. However, the roles of HPD programs only specify creating awareness and sensitisation on HIV/AIDS/STI and other non-communicable and communicable diseases indicating inadequate institutional set-up in the management of risk communication, especially for health emergencies/disasters.

ii. The guidelines were intended to partner with agencies like the DDM, emergency response services (Fire, Police, SAR), and other stakeholders in risk communication. However, such collaboration was hardly observed. The possibility of collaboration with

the information desk headed by the MoIC under the National Disaster Response Coordination Committee (NDRCC) of DDM, would have supplemented in supporting and enhancing the media and risk communication during Public Health Emergency (Information Unit: responsible for public information management and interfacing with the public and media or with other agencies with incident-related information requirements).

As of the date of audit, there are 10 people working under the HPD, MoH. During the pandemic, MoH has engaged private individuals with good knowledge and experience in developing content materials such as the development of quality animations or videos with celebrities thereby boosting reach, consumption, and coverage of communication. Although the guideline does not have such a mechanism specified, in the COVID-19 emergency, the collaboration with private firms and individuals as well as the dissemination of information through social media apparently worked well. Nevertheless, without clear roles identified and responsibilities delineated for risk communication, there would be impediments in providing timely, relevant, and accurate information during and after public health emergencies (PHE) and disasters.

3.4.4. Hospital information system

Hospital Information System (HIS) can be defined as massive, integrated systems that support the comprehensive information requirements of hospitals, including patient, clinical, ancillary, and financial management. It is one of the key tools that enhance the resilience of a health system. It also enables improved patient care, patient safety, efficiency, and reduced costs. HIS provides easy access to critical information, thereby enabling management to make better, informed, and timely decisions.

One of the activities under the National eHealth Strategy and Action Plan is to develop an ePatient Information System (ePIS), which was, however, not developed at the time of the audit.

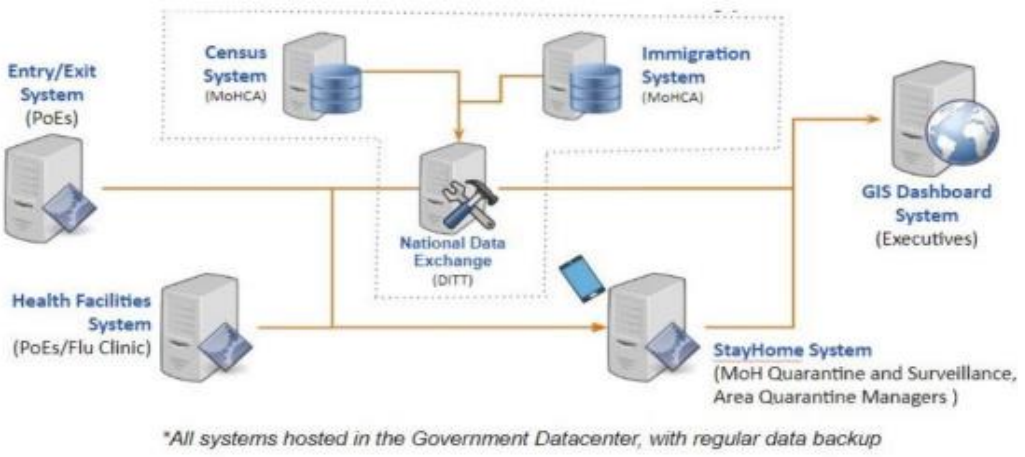
The RAA noted that even though hospitals have established medical record units, the unit does not maintain comprehensive records of patients. *For instance*, in JDWNRH, the medical record unit only maintains in-patient/ward patients etc. Outpatient Department (OPD) records are maintained with the Personal Relation Unit under the hospital administration. Other information such as Echo, Ultrasound, MRI etc. records is with respective departments and divisions. Therefore, the information is disintegrated even at the hospital level.

The lack of an integrated patient information system will inhibit the tracking and referring of patients and also coordinating the continuum of care between primary health care and tertiary health care. Thus, having an integrated health information system has become paramount to providing quality and sustainable healthcare services.

3.4.5. National Emergency Information Reporting System

The recent pandemic has allowed countries around the world to leverage ICT to combat the pandemic. The government has developed the **IT COVID-19 Monitoring System** to efficiently and systematically manage the COVID-19 situation in the country. Through the national government data hub, the systems are integrated to feed data into the GIS dashboard as shown in Figure 18**.**

Figure 18: IT COVID-19 Monitoring System



In addition, another system called **Security and Economy Preparedness System (SEP)** was instituted in six eastern dzongkhags by the Eastern COVID-19 Taskforce (EC19TF). The system is established to provide a single platform to coordinate any emergency. The system acts as a comprehensive and evidence-based contingency plan development and action framework, helping with the assignment of sub-teams and creating a database in creating a *'single source of truth'* and minimising complexities to respond, recover, prevent, mitigate, and prepare for all emergencies. All the information including the health records (surveillance and laboratory tests) was shared with the SEP.

An Executive Order was issued by the government on 25 August 2020 directed to adopt the upgraded version of the SEP system to all the Incident Commands and Regional COVID taskforces to collect and report information. The SEP system shall be enhanced into a national information reporting system to be maintained for posterity. The order was to ensure an efficient and systematic management of the COVID-19 pandemic, adopt a standard reporting mechanism across the country and avoid information asymmetries across dzongkhags and ensure accurate and timely availability of the information for decision-making.

The Executive order was intended to establish a standard reporting mechanism across the country, to avoid information asymmetries across dzongkhags and ensure accurate and timely availability of the information for decision-making. The SEP system is still being used by the Eastern COVID-19 Task Force covering all eastern dzongkhags. For the other regional COVID-19 Task Force and dzongkhags coordination, information was shared through the **Health Facilities System** and other media platforms such as **Google Sheets, WhatsApp and emails.** Therefore, the SEP system as a national information reporting system could not be realised. For the eastern dzongkhags, the report generated from the IT COVID-19 monitoring system is used as input data for the SEP system, thereby creating an additional layer to the existing reporting mechanism.

It was also noted that before the pandemic, with financial support from the World Bank, the DDM had already developed the Disaster Management Information System (DMIS), which has similar features to the SEP System, at a cost of Nu. 2.430 million. However, the system was not used for the purpose which it was developed. The DDM as per the Disaster Risk Management Strategy envisaged reviewing and incorporating pre-disaster data through the Bhutan Disaster Assessment (BDA) tools, consolidating with existing database and

information management and providing timely reports to the NDMA for Disaster Risk Management (DRM) related policy decisions.

The various information management system across the country illustrates the fragmentation and proliferation of systems having similar purposes and objectives. This clearly shows that there is a limited resource-sharing and coordination mechanism between agencies in developing systems.

The DLGDM responded that currently the department utilises DMIS to collect and report on the emergency situation during disasters and it serves as a valuable database and reporting tool for effective crisis management. However, the DMIS is encountering interface issues as it lacks GIS capabilities and closed system within the DMIS components. This limitation hampers the system's ability to perform analysis, customisation, and configuration. To address this challenge, the department will undertake a revamping and enhancement of the DMIS. The objective should be to make it more robust and capable of seamless operation across all sectors and local governments. By incorporating GIS capabilities into the DMIS, it will enable spatial analysis, customisation of data, and configuration based on specific requirements. The Department stated this improvement will significantly enhance the system's functionality and effectiveness in supporting disaster management activities.

While acknowledging the challenges in the DMIS, the fact is that there are various systems used for the same purpose and there is no practice of resource consolidation.

3.4.6. Essential health services during health emergency (COVID-19 Pandemic)

The resilience of a health system is measured in terms of its ability to ensure continuity of quality essential health services even during public health emergencies as stated by the WHO. The ability of the health system to tackle any ongoing disease outbreak while maintaining continued access to comprehensive care for everyone, including the most vulnerable is considered critical. Evidence indicates that even moderate disruptions to essential health services could lead to negative consequences on the health and well-being of the population. The pandemic is known to pose a significant risk of indirect morbidity and mortality from other preventable and treatable diseases, in addition to mortality and morbidity directly attributed to COVID-19 in many countries.

According to "Rapid assessment of continuity of essential health services during the COVID-19 Pandemic" conducted in the South-East Region from March to June 2020 by the WHO, 105 countries that responded revealed that all types of services were affected including but not limited to essential services for communicable diseases, non-communicable diseases, reproductive health, maternal, new-born, child and adolescent health, mental health, nutritional services, and emergency services.

The most common reasons reported for reducing essential services during COVID-19 were the closure of hospitals due to massive outbreaks in the hospital settings, cancellations of planned treatments, movement restrictions to access services, diversion of funds and human resources for COVID response, shortage of staff due to high rates of COVID infection among health care workers. Public reluctance to seek care out of fear of infection has also hampered routine services in many countries. In some countries, shortages of medicines, diagnostics and other technologies were reported as the main reasons for the disruption of essential services.

The review was conducted on the delivery of routine essential healthcare services during recent health emergencies (COVID-19). RAA acknowledge the prominent strategies implemented by MoH to maintain essential health services in the wake of the COVID-19 pandemic.

The MoH has accorded essential health services a priority during the current COVID-19 pandemic in the country. Concurrent with the national response needed to tackle the ongoing COVID-19 pandemic, MoH prioritised maintaining the continuity of essential health services. As a proactive measure to maintain access to safe and quality essential health services, MoH prepared the *"Contingency Plan to Ensure Provision of Essential Healthcare Services in the Worst-Case COVID-19 Pandemic Scenario".* The plan provides guidance to provide uninterrupted routine essential services such as mother and child health services including the extended program on immunisation, antenatal care, institutional deliveries and postnatal care, and treatment of chronic conditions such as cancer, hypertension, diabetes, tuberculosis, and HIV. MoH has designed and implemented the following interventions for providing uninterrupted routine essential health care during the COVID-19 lockdowns and to prevent COVID-19 transmission in the main hospital settings:

- To limit hospital visits, 54 Flu Clinics were set up away from the hospital premises to triage and screen/test people with COVID-19 and other influenza-like illnesses.
- Issued health messages for the public to come forward and get tested for COVID-19 at the flu clinics.
- Essential healthcare services were delivered through mobile clinics and telemedicine facilities and adopted explicit strategies to reach and protect vulnerable groups.
- Medicine refills for chronic diseases were facilitated by designated drop-in places in each zone so that patients could drop their prescriptions and get the medicines without the need to travel to health centres.
- Routine immunisations were given as per the schedule.
- All citizens including vulnerable populations were provided free COVID-19 vaccine including children above 5 years.
- Introduced outpatient department teleconsultations and provided emergency services to needy patients. Provision of testing in-patients and attendants for COVID-19 antigen and RT-PCR before admission in hospitals.
- To reduce the impact of travel restrictions to enter Thimphu where the national referral hospital is located, specialists were deployed to the Regional Referral Hospitals and selected district hospitals so that specialist services can be availed by people outside Thimphu
- Dialysis services were made available in five districts (Thimphu, Mongar, Phuentsholing, Gelephu, and Wangdue).
- Chemotherapy services were also made available for cancer patients by keeping details of each patient within and out of Thimphu and making necessary arrangements to get the services on time.

Even though MoH has instituted innovative interventions to maintain the continuity of essential health services during the COVID-19 pandemic, challenges were noted as given below.

i. The referral of critical patients from the district hospitals to the National Referral Hospital and admission of patients for emergency services during the COVID-19 pandemic has been reported as challenging. The implementation of appropriate triage procedures is important for maintaining safety in hospitals. However, strict screening and confirming the COVID-19 status of the patient as well as the attendant made the admission procedure complex and significantly increased the waiting time.

ii. The RAA could not ascertain the patient waiting time for availing admission in the hospital during the lockdown, since there were inconsistencies in the data provided *(refer the observation 3.4.4).* The medical record of the National Referral Hospital (JDWNRH) shows (refer to Table 12) a minimal impact in terms of in-patient admission in the hospital during the pandemic.

Table 12: Summary of Patient information from 2019-2021 period

	Hospitalisation/ward/Medical record			**OPD Patient Record**		
Month / Year	**2019**	**2020**	**2021**	**2020**	**2021**	**2022**
January	1544	1525	***814 (lockdown)***		***2,487 (Lockdown)***	28,389
February	1290	1372	***1115 (lockdown)***		***34,312 (lockdown)***	14,533
March	1419	1406	***1470 (lockdown)***	35,564	***45,916 (lockdown)***	21,092
April	1572	1228	1370	29,164	43,849	44,453
May	1567	1281	1388	35,914	52,671	55,079
June	1433	1391	1352	39,155	52,732	
July	1563	1473	1497	40,938	58,757	
August	1657	***1147 (lockdown)***	1566	***17,442 (lockdown)***	59,961	
September	1538	***1262 (lockdown)***	1410	***31,128 (lockdown)***	53,303	
October	1513	1475	1438	43,032	100,356	
November	1396	1489	1521	38,342	50,723	
December	1276	***1207 (lockdown)***	1397	30,436 (lockdown)	49,581	
Total	**17,768**	**16,256**	**16,338**	**341,115**	**604,648**	**163,546**

iii. During the lockdowns, in-patient/ward patients in the hospital could avail services like Elective Surgeries, CT/MRI and ultrasound, Endoscopy, and ECHO. However, non-critical OPD or appointment was availed when restrictions were lifted. Further, only emergency and urgent patient referrals were entertained but routine referral was hindered.

iv. Contrary to the data, the patient referrals from other dzongkhag to JDWNRH were affected due to COVID-19 restrictions, especially patients seeking admission to the hospital. Fulfilling the COVID-19 protocol was found to be lengthy, which could not be analysed in the absence of data.

v. Similarly, the outpatient department (OPD) services in JDWNRH were closed for almost 90 days (refer to Table 13**),** and medical services were made accessible through teleconsultations. The teleconsultation services were arranged to ensure undisrupted medical services. The department appointment numbers were provided. The assigned doctors made assessments of the patient's condition over the phone and based on the severity of the condition, the medical prescription was provided and directed to the pharmacy or emergency department. Medicines were delivered home or otherwise arranged through nearby satellite clinics. Help Centre (112) was used for emergencies.

Table 13: OPD patient

Month	Start Date	End Date	Days Affected
2020			
August	11/08/2020	31/08/2020	20
September	01/09/2020	05/09/2020	5
December	21/12/2020	31/12/2020	10
			35
2021			
January	17/01/2022	31/01/2022	15
February	01/02/2022	12/02/2022	12
	19/02/2022	28/02/2022	10
March	01/03/2022	19/03/2022	19
			56

Source: JDWNRH

3.5 Health Infrastructure

The DM Act stipulates that the MoH is to manage emergency medical services during disasters and establish emergency medical responses throughout the country. Moreover, the National Health Policy 2012 provides for the health facilities required to institute appropriate systems of care to deal with emergencies, disasters, epidemics, and outbreaks.

Accordingly, all the health facilities across the country have a portion of their premises earmarked for responding to emergencies. The National Standard for Emergency Department/Pre-hospital Care System is a coordinated response and emergency medical care, involving multiple stakeholders. The goal of emergency care is to rapidly dispatch, stabilise, treat, and transport victims to health facilities.

Some of the common findings observed during the field visits are discussed hereunder:

3.5.1. Spaces and facilities for pre-hospital services/emergency unit

The RAA noted that the emergency units face significant disadvantages due to limited space for carrying out emergency response functions, even on normal days. The pre-hospital care/emergency unit in the health facilities visited by the audit team (including the JDWNRH) lacks adequate space starting from the triage space to observation wards, ICUs, and OTs. Not only rooms within the emergency units are cramped with beds but also corridors are filled with beds to accommodate patients.

For instance (Figure 19), the emergency unit in Phuentsholing Hospital and the medical store share one access road (Pic. A). The corridors were filled with extra beds and it is also being used as the triage (Pic. B). The main hall was modified and utilised as a six-bed observation

ward (Pic. C). Two-bed ICU with only one emergency trolley (Pic. D). Small narrow room utilised as a Resuscitation Bay / Mini–Operation Theatre where the bed can be accessed only from one side (Pic. E). The emergency medicine store is very narrow wherein only one person can fit in at a time (Pic. F).

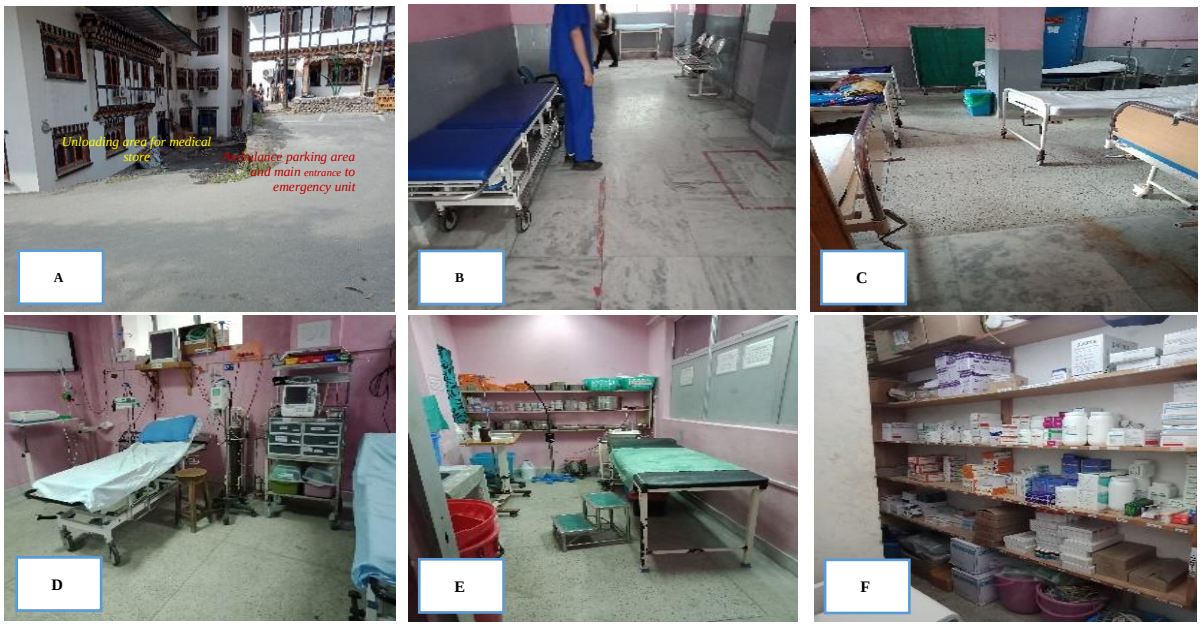


Figure 19: Emergency unit, Phuentsholing hospital

The RAA observed similar conditions at the Eastern Regional Referral Hospital in Mongar, as well as other General Hospitals visited, where inadequate triage facilities exist for effectively segregating and prioritising emergency patients.

Even PHEs are facing space constraints wherein crucial health services like laboratory facilities, vaccination units, management of infectious samples, and waste bins are all housed in the same room. **Figure 21** illustrates this, showing the coexistence of the dressing room and OPD desk in the same room, while the laboratory and vaccination room share the same space.

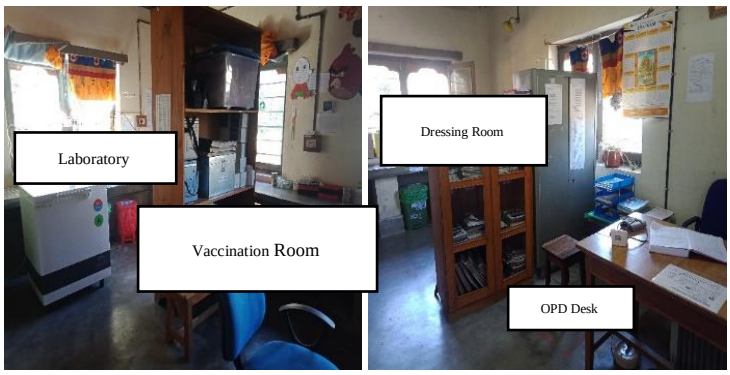


Figure 21: Random Photos of PHCs with limited space

Additionally, the following were noted:

i. Despite the space constraints faced by hospitals and PHCs, there is an absence of written hospital-specific contingency plans that outline strategies and protocols to effectively manage available spaces during health emergencies involving an influx of patients;

ii. There is lack of fire extinguishers, emergency exits and ramps for stretchers or wheelchair patients in the PHCs; and

iii. Although the National Health Policy 2012 stipulates that *all health infrastructure should be based on sustainable design and be user-friendly, thereby integrating the needs of persons with a disability, women, children and the elderly*, the infrastructure in the PHCs is not inclusive for differently-disabled persons.

Furthermore, in response to the current pandemic, Bhutan was fortunate to receive donations from development partners. Donations like medical equipment and temporary sheds (tents, temporary houses with plywood, boards, CGI sheets etc.) were installed at the strategic locations including all referral and district hospitals. The temporary shed provided services like triaging, flu testing and screening for COVID-19. The MoH constructed additional infrastructure to facilitate health services and minimise the spread of diseases. There are around 54 temporary flu clinics constructed across the country (Figure 20)**.**

Figure 20: Flu clinic

This infrastructure has provided additional space, which immensely enhanced the services of the health system for responding to emergencies. It has also positively contributed to the detection and curtailment of the spread of infectious diseases in hospitals. With the decrease in infectious cases, most of these structures are non-operational. Most of the temporary sheds have been dismantled and removed. However, the MoH does not have a sustainable plan/way forward to ensure future usage of the infrastructure, if there is an emergency or disaster in the future.

Recognising such conditions during normal times, the RAA emphasises that the existing arrangements for pre-hospital care pose a significant risk, as they can strain the overall healthcare system during surges caused by health disasters or emergencies similar to the recent pandemic. The limited capacity to handle a large influx of patients during public health emergencies can also disrupt the continuity of regular health services, undermining the resilience of the national public health system.

3.5.2. Isolation wards and infection control rooms in Hospitals

The importance of establishing isolation wards with clinical management guidelines (Clinical Management Guideline for COVID-19) and standard operating procedures was emphasised in the Health Contingency Plan.

However, it was noted that most of the hospitals including some referral hospitals lack separate infection control rooms or rooms designated to manage infectious diseases. Such a need was also felt during the COVID-19 pandemic as emphasised in the Intra Action Report. Having a negative pressure room at the national level and the regional referral hospitals soon needs to be considered for a systematic and quality response.

Establishing suitable isolation wards for COVID-19 patients was challenging for the MoH during the recent public health emergency, as the health infrastructures are already grappling with the shortage of space. None of the health facilities in the country had premises identified for isolating infectious diseases like COVID-19. *For instance*, the isolation wards in Phuentsholing Hospital (isolation for patients with contagious respiratory diseases like tuberculosis) were located within unsuitable rooms in the attic without separate toilets as shown in Figure 22**.**

Figure 22: Phuentsholing Hospital isolation ward

Likewise, Paro Hospital did not have an isolation ward for isolating COVID-19 patients. A room with an alternative access door was later identified within the main hospital building as the isolation ward.

The Eastern Regional Referral Hospital (ERRH) Mongar, initially identified the isolation ward within the main hospital building. Later it was found not feasible as it could compromise the safety of health workers, in-patients, out-patients, and visitors given the infectious and contagious nature of COVID-19. It was also understood that all COVID-19-positive patients from eastern dzongkhags would be referred to the ERRH. Thereafter, the isolation ward in the hospital was discontinued and the hospital's management decided to explore appropriate infrastructure outside the hospital premises for conversion. Finding such infrastructure facilities in a suitable location was the major hindrance due to limited housing in the district.

The allocation of an isolation ward was completed when His Majesty the King graciously granted the Royal Palace to be turned into an isolation ward. Since then, the Royal Palace has served as an ICU and isolation facility for the eastern region treating 113 numbers of COVID-19-positive patients so far. Similarly, upon the command of His Majesty, hostels of the Royal Institute of Governance and Strategic Studies (RIGSS) and the guesthouse of Punatsangchhu Hydroelectric Project in Phuentsholing were also converted into isolation facilities. Construction of temporary sheds for citizens residing along the border and 400 beds of semi-permanent quarantine facilities were initiated.

Though there are isolation and ICU facilities, establishing facilities outside of hospital premises was difficult, as such requirements were never felt before the COVID-19 outbreak. The action plan for setting up isolation wards was deemed necessary (no plan in place initially), should the above temporary isolation facilities be reinstated. Therefore, in preparation for the new phase of COVID-19 management, and with the responsibility heavily shifting to clinical management, the government has established four (4) dedicated COVID-19 hospitals in addition to the existing hospitals with isolation beds at the national and regional levels.

3.5.3. Management of ambulances services

Ambulance service is one of the essential health services for the delivery of immediate medical services to a patient or an injured person resulting from an emergency or a disaster. It includes the evacuation of the patient from the incident site to the receiving health facilities. It is critical to saving the lives of patients in transit to and from the health facilities. The guideline underlines that health facilities are to be supported by appropriate communication facilities and Advanced Life Support (ALS) ambulances with a competent medical team.

For the timely delivery of pre-hospital care, the health help centre (HHC) with free-toll number 112 was established and has further improved the accessibility to tertiary and emergency services. There are 130 land ambulances and one helicopter that are currently centrally coordinated and deployed to the different levels of healthcare facilities. The HHC also monitors all the ambulances in the country through a vehicle-tracking system and deploys ambulances during times of emergency. The operation and management of the ambulance services are guided by the Ambulance Service Guideline 2018.

The land ambulances are required to be equipped with standard life support equipment and medicines as per the guidelines. The existing ambulances hardly meet these standards. The existing ambulances are equipped with Basic Life Support (BLS) features which are enough to provide minimum emergency response. The current fleet of ambulances is not fully equipped to operate rapid medical responses during major health disasters.

The lack of ALS ambulance facilities is due to an inadequacy in the budget of the MoH to procure advanced ambulances for the country. The five-year plan and the Strategy plan for emergency medical services do not reflect any program or activities to procure the ambulances. Most of the ambulances in the current fleet are donated by the developing partners.

Moreover, there is a frequent breakdown of ambulances and some health facilities are without ambulance services for quite some time. A case of Yadhi PHC is presented in **Box 2.**

Box 2

Ambulance under the Yadhi PHC render services to six (6) gewogs (Ngatshang, Shermuhung, Balam, Chaskhar, Throng and Dramtse). The ambulance (Nissan Patrol) was non-operational since September, 2020. The Mongar Dzongkhag Administration has surrendered the ambulance to the DMS, MoH and requested replacement. The MoH has provided the replacement ambulance (King Long) from Wangdue Hospital in August 2021.

However, the replaced ambulance was also not functioning and is sent for repair and maintenance. Now Radhi PHC is without ambulance for more than 4 months. Meanwhile ambulance service for these gewogs is managed from ERRH Mongar and Gyelposhing hospital. However, due to long distance, the delivery of health services is still challenging.

The breakdown of an ambulance is mainly attributed to long-distance farm roads with high gradients and difficulty in ferrying especially in summer. Furthermore, ambulances with low clearance are not feasible to travel on rough roads in rural areas and frequently require repair and maintenance impeding service delivery. The allotment criteria are inadequate for considering ambulances for various road types.

CHAPTER 4: RECOMMENDATIONS

Based on the audit findings, the RAA has developed the following recommendations to address areas where issues were identified and guide the MoH and relevant agencies to correct deficiencies and problems. It also highlights some areas for agencies to consider to enable preparedness and improve effectiveness in responding to health emergencies through desirable interventions intended to reinforce and generate further clarity on health and disaster governance.

The RAA expects that the accepted recommendations will be implemented to improve health emergency preparedness and enhance the resilient health system. These recommendations are discussed below:

4.1. The Ministry of Health (MoH) and the Department of Local Governance and Disaster Management should foster collaboration using a multi-hazard approach.

The RAA noted that the Disaster Risk Management Strategy (DRMS) of the erstwhile Department of Disaster Management focuses on preparedness and responses related to geological and meteorological hazards but not biological hazards such as pandemics and epidemics indicating a lack of a multi-hazard approach. Moreover, there is no connection between the DRMS and the Strategy Plan for emergency medical services of the Ministry of Health, and other subsequent international commitments like the International Health Regulation (IHR) resulting in limited role of each agency in aligning resources for strengthening early warning, public awareness, and education (risk communication), institutional framework, resource mobilisation and integrated resilience programs.

Thus, taking the lesson learned from the COVID-19 pandemic, it is important for the Ministry and the Department to collaborate and revisit the existing plans and strategise the national preparedness and response strategy for disasters including public health emergencies ensuring a multi-hazard approach. Regular assessment and evaluation of the effectiveness of coordination mechanisms between the two agencies should be carried out to perform after-action reviews of plans and strategies. Lessons learned exercises should also be performed to identify areas for improvement and strengthen the coordination process.

There is also a need to revisit the DM Act and assess whether the Act is comprehensive to cover all hazards including biological hazards.

4.2. The Department of Local Governance and Disaster Management should revisit the disaster governance structure in the DM Act 2013.

The RAA noted that the governance structure for disaster management defined in the DM Act did not function as envisioned in the Act because new structures and new lead agencies were created during the COVID-19 pandemic.

Thus, based on lessons learned from the COVID-19 pandemic, the Department should revisit the disaster governance structures defined in the DM Act 2013 and review whether these structures at the national as well as local government levels are relevant and adequate in soliciting robust coordination mechanisms with critical stakeholders to ensure effective disaster management or public health emergencies. Problems in governance structure will lead

to ambiguity in roles and coordination mechanisms, which, in turn, will lead to delays in implementing critical measures and strategies.

Additionally, the lead agencies while conducting the simulation exercises and tabletop exercises of any disaster and health emergencies should ensure the involvement of relevant agencies.

4.3. MoH and lead agencies should ensure leveraging appropriate funding strategies to strengthen preparedness mechanisms and develop financing strategies for disasters including health emergencies.

The RAA noted a lack of financing strategies or mechanism to activate or expedite the funding process especially if there is a health emergency of international concern. This will result in delays in responding effectively to public health emergencies.

Therefore, the MoH and the Department of Local Governance and Disaster Management, in consultation with the MoF, should develop financing strategies for disasters including health emergencies to ensure sustainable financing for preparedness and responses. Such a strategy would expedite financing in the aftermath of a major disaster and emergency similar to the COVID-19 pandemic in the future.

4.4. MoH should institute a mechanism to expedite the implementation of the strategic plans.

The RAA noted that most of the planned activities in Bhutan One Health Strategic Plan and National Action Plan for Health Security were not implemented. Moreover, there is no mechanism in place to periodically evaluate the achievements of the plans. In the absence of such a system, there are risks of not fulfilling the intents of such strategic plans and derailing from initially envisaged objectives.

Thus, the Ministry should institute proper mechanisms to track the status and to ensure the implementation of the planned activities. There is a need for greater coordination between the responsible agencies to facilitate the implementation of strategies to strengthen preparedness for public health emergencies.

4.5. MoH should improve the information management system.

i. The RAA noted disintegrated information at different levels of hospitals and this will hinder availing accurate, timely, and reliable hospital information systems between primary health care and higher-level hospital care.

   Thus, there is a need for an integrated and comprehensive information system that supports providing quality and sustainable healthcare services.

   The comprehensive hospital information can also be used as the surveillance mechanism to ensure real-time data sharing related to public health including health emergency services among the various relevant sectors.

ii. The RAA also noted a lack of an integrated real-time surveillance system between human and animal health and the absence of such a system will impede effective response to address emerging, re-emerging, and high-impact zoonotic diseases at the human-animal-ecosystem interface.

Therefore, there is a need to establish a single source of real-time surveillance information-sharing mechanisms instituted in the health and livestock sectors

4.6. The Department of Local Governance and Disaster Management, in collaboration with relevant agencies, should have an integrated national emergency information reporting system.

During the COVID-19 pandemic, various information systems were implemented by respective agencies to handle surveillance, health, and non-health-related services. These systems had more or less similar functions but operated independently, leading to fragmented information and there was no single source of real-time information-sharing mechanisms instituted between the sectors.

Thus, to streamline data collection systems and information flow management for future disaster and health emergencies, the Department should institute mechanisms to have a single integrated information system that supports real-time information sharing across all relevant sectors.

4.7. MoH should assess health workforce gaps and develop strategies to address gaps in close consultation with the RCSC.

The health sector is one where workforce cannot be compromised, given Bhutan's commitment to provide free health services to its citizens. However, the RAA noted a significant gap in healthcare workforce. As of 2020, the workforce falls short of requirements, with gaps of 114 specialists, 129 general doctors, 363 clinical nurses, and other categories based on the approved strength of 12th FYP.

These deficiencies pose a serious risk to health system resilience and commitment to delivering free healthcare services. Additionally, the shortage of specialists and Emergency Medical Responders could also impact the effectiveness of pre-hospital care and utilization of health facilities.

Thus, in order to enhance the resilience of the public health system and ensure continued provision of free healthcare services, it is crucial for the MoH to assess the current health workforce gaps and accordingly develop workforce strategies that prioritise the recruitment and continuous professional development of healthcare professionals in close consultation with the RCSC.

4.8. MoH should streamline the procurement and distribution process to cater to public health emergencies

1. The existing medical procurement system may not be suitable to respond effectively during any future public health crisis. Thus, the MoH should establish a clear emergency procurement plan or framework to fast-track procurement during emergencies.

2. Based on the lesson learned from the COVID-19 pandemic situation, the MoH should revisit the distribution plan and quality inspection (QI) process and guidelines to expedite the distribution process of medical and equipment supplies. To enhance the health

system's resilience, the MoH should draw up clear plans and procedures on how emergency medical supplies will be managed during emergencies as it is evident that the current distribution plan used for distributing routine medical supplies will not work during emergencies.

3. Procurement of medicines and medical supplies warrants a separate period for indentation and procurement. This would enable the medicines to have a different shelf life, and the medicines can then be distributed to the health centres with different expiry dates. Further, periodic review of buffer stocks should be carried out and the stock should be delivered on a first-in-first-out basis to ensure that medicines with shorter shelf lives are delivered first.

4. As stated in the Contingency Plan 2016, the buffer stocks should not sit in one central warehouse but should be distributed along other distribution networks and designated hospitals. The MoH should accordingly plan and identify strategically located hospitals where buffer stocks could be maintained for faster distribution of medical supplies during public health emergencies.

5. The MoH should also develop minimum guidelines/standards for storing medical supplies or arrange to implement the 'Guidelines for Storage of Essential Medicines and other health commodities' issued by the WHO. It is also critical to have periodic monitoring and supervision for the effective implementation of WHO best practices.

4.9. MoH should ensure the preparedness of health infrastructure in times of public health emergency.

MoH should develop a sustainable plan to ensure efficient usage of the available infrastructure or spaces in the hospitals and PHCs or other available public infrastructure in times of public health emergency in the future. Based on lessons learned from the COVID-19 pandemic, alternate infrastructure identified within or beyond the premises of health centres plays a critical role in addressing the emergency need and use.

Therefore, the practice of identifying and earmarking potential spaces and infrastructure would ensure preparedness to handle public health emergencies.

CHAPTER 5: CONCLUSION

The RAA conducted the performance audit to ascertain government efforts to build and strengthen the health system's capacities for early warning, risk reduction and management of public health risks, thereby building on emerging lessons learnt from recent public health events. This audit assessed whether the legal & policy frameworks and institutional arrangements are in place to take forward lessons learnt in enhancing capacities.

The RAA also sought to ensure that the required resources were mobilised to strengthen the health system. The audit also assessed whether the government periodically monitored, evaluated, and reported on its current capacities to forecast, prevent and prepare for future public health risks. The audit covered the period from January 2019 to December 2021.

The RAA noted that there is a lack of a multi-hazard approach in disaster management because the Disaster Risk Management Strategy (DRMS) of erstwhile DDM focuses on preparedness and responses related to geological and meteorological hazards but not biological hazards such as pandemics and epidemics. Further, there is no connection between the DRMS and the Strategy Plan for emergency medical services of the Ministry of Health, and other subsequent international commitments like the International Health Regulation (IHR). The governance structure defined in the DM Act 2013 did not function as envisioned in the Act since new structures and new lead agencies were created during the COVID-19 pandemic. There is a lack of financing strategy for disasters including health emergencies in place to avail financial support during emergencies.

The existing medical procurement and distribution system may not be suitable to respond effectively during any public health crisis. The RAA also noted improper storage of medicines and medical supplies at the central store mainly because of a shortage of storage spaces. There is disintegrated information maintained at different levels of hospitals impeding the sharing of timely and reliable information. There is an absence of a single source integrated real-time surveillance system between human and animal health. Further, the infrastructure at PHEs are not found to be convenient or inclusive for differently-abled persons.

Therefore, to consider consolidating efforts to address a range of issues confronting the health system's capacities for early warning, risk reduction and management of public health risks, the RAA provided nine recommendations. The RAA expects the MoH and the DLGDM to implement the accepted recommendations to build and strengthen the health system's capacities for public health emergencies.

APPENDICES

Appendix I:

AMANAGEMENT ACTION PLAN AND ACCOUNTABILITY STATEMENT

Performance Audit on Strong & Resilient National Public Health Systems – linked to SDG 3.d (AIN: TAD-2022-435)

Recom. No.	Audit Recommendation in brief	Action Plans (Action taken or to be taken)	Estimated Implementation Timeline		Direct Accountability			Supervisory Accountability		
			Start Date	End Date	Name & Design	CID & EID No.	Signature	Name & Design	CID & EID No.	Signature
4.1	The Ministry of Health (MoH) and the Department of Local Governance and Disaster Management should foster collaboration using a multi-hazard approach;									
4.2	The Department of Local Governance and Disaster Management should revisit the disaster governance structure in the DM Act 2013;									
4.3	MoH and lead agencies should ensure leveraging appropriate funding strategies to strengthen preparedness mechanisms and develop financing strategies for disasters including health emergencies;									
4.4	MoH should institute a mechanism to expedite the implementation of the strategic plans;									
4.5	MoH should improve the information management system;									
4.6	The Department of Local Governance and Disaster Management, in collaboration with relevant agencies, should have an integrated national emergency information reporting system;									
4.7	MoH should assess health workforce gaps and develop strategies to address gaps in close consultation with the RCSC.									
4.8	MoH should streamline the procurement and distribution process to cater to public health emergencies; and									
4.9	MoH should ensure the preparedness of health infrastructure in times of public health emergency.									

Appendix II MoH's existing workforce, gaps and the recruitment during pandemic

HR Status of Ministry of Health									
Sl. No	Category	Approved (standard)	Existing			Gap	Recruited in 2020 for COVID19		
			Regular	Contract	Total		Regular	Contract	Total
	Medical Specialist	236	88	34	122	114	0	6	6
1	MS/CMO/MO/GDMO	268	139		139	129	25	0	25
2	Health Assistant	663	620	28	648	15	0	27	27
3	Dental Surgeon	66	53	7	60	6	0	0	0
4	Dental Hygienist	102	71	0	71	31	0	0	0
5	Dental Technician	67	47	0	47	20	0	0	0
6	Laboratory Officer	87	55	5	60	27	0	0	0
7	Laboratory Asst./Technician	326	292	3	295	31	13	3	16
8	Optometrist/ Ophthalmic Tech.	94	63	1	64	30	0	0	0
9	Pharmacist	56	41	3	44	12	0	0	0
10	Pharmacy Technician	273	191	0	191	82	0	0	0
11	Physiotherapist/Occupational Therapist	44	28	6	34	10	0	0	0
12	Physiotherapy Technician	102	69	0	69	33	0	0	0
13	Radio Technologist	15	9	0	9	6	0	0	0
14	Radio Techn. (X-ray, USG, MRI, CT)	178	121	1	122	56	11	1	12
15	Clinical Nurse	579	89	127	216	363	8	1	9
16	Staff/Asst. Nurse	1334	1247	69	1316	18	69	3	72
17	Drungtsho	84	54	0	54	30	0	0	0
18	Menpa	284	132	0	132	152	0	0	0
19	DHO/ADHO	43	44	0	44		0	0	0

20	Nurse Anesthetist	37	30	1	31	6	0	0	0
21	OT Technologist/Technician	103	50	0	50	53	0	0	0
22	Ortho Technologist/Technician	49	26	0	26	23	0	0	0
23	Audiologist/Speech Therapist/ENT Technician	50	33	0	33	17	0	0	0
24	EMRO/EMR	115	7	20	27	88	0	20	20
25	Dietician/Nutritionist	34	25	2	27	7	0	0	0
26	Clinical Counselor	28	3	2	5	23	0	0	0
27	Admin. Officer	26	12	8	20	6	0	0	0
28	Admin/HR/Librarian/Research/Personal Assistant	90	81	9	90	0	0	0	0
29	Store Asst./Keeper	64	47	3	50	14	0	0	0
30	Medical Record Technician/Record Asst.	31	29	0	29	2	0	0	0
31	Therapy Aide	34	6	0	6	28	0	0	0
32	Dispatcher/Telephone Operator/Receptionist	260	131	42	173	87	0	0	0
33	VTI Technician	335	209	2	211	124	0	0	0
34	Procurement Officer	15	12	0	12	3	0	0	0
35	Program Officer	71	60	1	61	10	0	0	0
36	HR Officer	10	10	0	10	0	0	0	0
37	Planning Officer/Research Officer/Legal Officer	15	15	0	15	0	0	0	0
38	ICT Officer	8	4	1	5	3	0	0	0
39	ICT Technical Associate/Graphic Designer	12	7	1	8	4	0	0	0
40	Finance/Accounts Officer	11	6	0	6	5	0	0	0
41	Accounts Asst.	25	27	0	27		0	0	0
42	Engineer/Jr. Engineer/ Architect	77	54	2	56	21	0	0	0
	Grand Total	6401	4337	378	**4715**	**1686**	**126**	**72**	**198**

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