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The Kingdom of Bhutan Health System Review

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Preface

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system, and of reform and policy initiatives in progress or under development in a specific country. Each profile is produced by country experts in collaboration with two international editors. To facilitate comparisons between countries, the profiles are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a profile.

A HiT profile seeks to provide relevant information to support policy-makers and analysis in the development of health systems. This can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services, and the role of the main actors in health systems;
- to describe the institutional framework, process, content and implementation of health-care reform programmes;
- to highlight challenges and areas that require more in-depth analysis;
- to provide a tool for the dissemination of information on health systems and the exchange of experiences between policy-makers and analysts in different countries implementing reform strategies; and
- to assist other researchers in more in-depth comparative health policy analysis.

Compiling the profiles poses a number of methodological issues. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services is based on a number of different sources, including the World Health Organization (WHO), national statistical offices, the Organisation for Economic Co-operation and Development (OECD) health data, the International Monetary Fund (IMF), the World Bank, and any other sources considered useful by the

authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate series.

The HiT profiles can be used to inform policy-makers about the experiences in other countries that may be relevant to their own national situation. They can also be used to inform comparative analyses of health systems. This series is an ongoing initiative, and the material will be updated at regular intervals.

Comments and suggestions for further development and improvement of the HiT series are most welcome and can be sent to the apobservatory@who.int. HiT profiles and HiT summaries for countries in Asia Pacific are available on the Observatory's website at http://www.wpro.who.int/asia_pacific_observatory/en/.

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List of abbreviations

ACLS	advanced cardiac life support
ACO	assistant clinical officer
ADB	Asian Development Bank
AFR	adolescent fertility rate
AIDS	acquired immunodeficiency syndrome
ALD	alcoholic liver disease
AMR	antimicrobial resistance
ANC	antenatal care
APA	Annual Performance Agreement
ARI	acute respiratory infection
BAFRA	Bhutan Agriculture Food Regulatory Authority
BHMIS	Bhutan Health Management Information System
BHTF	Bhutan Health Trust Fund
BHU	basic health unit
BHU-I	basic health unit grade I
BHU-II	basic health unit grade II
BHW	basic health worker
BLS	basic life support
BMAT	Bhutan Medical Assistance Team
BMHC	Bhutan Medical and Health Council
BNCA	Bhutan Narcotics Control Agency
BoQ	bill of quantity
BOR	bed occupancy rate
BRCS	Bhutan Red Cross Society
CADS	Computer Aided Dispatch System
CAM	complementary and alternative medicine
CBR	community-based rehabilitation
CBSS	community-based support system
CDD	Communicable Diseases Division

CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CHU	community health unit
CIN	citizen identification number
CME	continuing medical education
CQI	continuous quality improvement
CRC	Convention on the Rights of the Child
CRPD	Convention on the Rights of the People with Disabilities
CRVS	Civil Registration and Vital Statistics
CSO	civil society organization
CT	computed tomography
CVD	cardiovascular disease
DALY	disability-adjusted life year
DCT	Druk Chirwang Tshogpa
DDM	Department of Disaster Management
DDMC	Dzongkhag Disaster Management Committee
DEOC	Dzongkhag Emergency Operation Centre
DHIS	District Health Information System
DHMS	Department of Hydro-met Services
DIGBY	an electronic inventory and stock management software
DKP	Druk Kuenyam Party
DKRA	District Key Result Area
DNT	Druk Nyamrup Tshogpa
DoMS	Department of Medical Services
DoMSHI	Department of Medical Supplies and Health Infrastructure
DoPH	Department of Public Health
DoTMS	Department of Traditional Medicine Services
DPRP	Disability Prevention and Rehabilitation Programme
DPT	Druk Phuensum Tshogpa
DRA	Drug Regulatory Authority
DRM-H	Disaster Risk Management for Health
DVED	Drugs, Vaccines and Equipment Division
EBS	event-based surveillance

ECG	electrocardiogram
EEG	electroencephalogram
EmONC	emergency obstretic and neonatal care
EMSD	Emergency Medical Services Division
EMT	emergency medical technician
EMTC	Emergency Medical and Trauma Centre
EMTD	Essential Medicines and Technology Division
ENT	ear, nose and throat
ePIS	electronic Patient Information System
ESBL	extended spectrum beta-lactamase
FAO	Food and Agriculture Organization
FCTC	Framework Convention on Tobacco Control
FDI	foreign direct investment
FoNPH	Faculty of Nursing and Public Health
FYP	five-year plan
GDI	gender development index
GDP	gross domestic product
GGE	general government expenditure
GGHE	general government health expenditure
GII	gender inequality index
GLOF	glacial lake outburst flood
GNHC	Gross National Happiness Commission
GNI	gross national income
GNP	gross national product
HA	health assistant
HAI	hospital-acquired infection
HAMT	Hospital Administration and Management Transformation
HCDD	Health Care and Diagnostic Division
HDI	human development index
HEDCP	Health Emergency and Disaster Contingency Plan
HEMC	Health Emergency Management Committee
HEOC	Health Emergency Operation Centre
HFA	Hyogo Framework for Action 2005–2015

HHC	Health Help Centre
HIA	health impact assessment
HiAP	Health in All Policies
HIS	Health Information System
HISC	health information and service centre
HiT	health system in transition
HIU	health information unit
HIV	human immunodeficiency virus
HPD	Health Promotion Division
HPV	human papillomavirus
HRH	human resources for health
HTA	health technology assessment
HVO	Health Volunteer Overseas
IBS	indicator-based surveillance
ICU	intensive care unit
ICT	information and communication technology
IDD	iodine deficiency disorder
IHR	International Health Regulations
ILI	influenza-like illness
ILO	International Labour Organization
IMF	International Monetary Fund
IMR	infant mortality rate
IMTF	Interministerial Task Force
IMTRAT	Indian Military Training Team
IT	information technology
JDWNRH	Jigme Dorji Wangchuck National Referral Hospital
JICA	Japan International Cooperation Agency
KGUMSB	Khesar Gyalpo University of Medical Sciences of Bhutan
KPI	key performance indicator
LAN	local area network
LIS	Laboratory Information System
LMIC	lower middle-income country
LSRDP	Lifestyle-related Diseases Control Programme
MBBS	Bachelor of Medicine and Bachelor of Surgery

MBO	mutual benefit organization
MCH	maternal and child health
MDGs	Millennium Development Goals
MDR-TB	multidrug-resistant tuberculosis
MERS	Middle East Respiratory Syndrome
mhGAP	WHO mental health Gap Action Programme
MMR	maternal mortality ratio
MoE	Ministry of Education
MoEA	Ministry of Economic Affairs
MoF	Ministry of Finance
MoH	Ministry of Health
MoHCA	Ministry of Home and Cultural Affairs
MoLHR	Ministry of Labour and Human Resources
MPI	multidimensional poverty index
MRI	magnetic resonance imaging
MRSA	methicillin-resistant Staphylococcus aureus
MSDD	Medical Store and Distribution Division
MSPD	Medical Supplies Procurement Division
MSTF	Multisectoral Task Force
NACP	National HIV/AIDS/STI Control Programme
NCD	noncommunicable disease
NCDD	Noncommunicable Diseases Division
NCWC	National Commission for Women and Children
NDMA	National Disaster Management Authority
NEMF	National Essential Medicines Formulary
NEML	National Essential Medicines List
NEOC	National Emergency Operation Centre
NEWARSIS	National Early Warning, Alert and Response Surveillance Information System
NGO	nongovernmental organization
NHAC	National HIV/AIDS Commission
NICU	neonatal intensive care unit
NIPPP	National Influenza Pandemic Preparedness and Response Plan
NKRA	National Key Result Area

NLCP	National Leprosy Control Programme
NNDS	National Notifiable Diseases Surveillance
NTCP	National Tuberculosis Control Programme
NTMH	National Traditional Medicine Hospital
Nu	Ngultrum
OECD	Organisation for Economic Cooperation and Development
OOP	out-of-pocket (payment/expenditure)
OPD	outpatient department
OPV	oral polio vaccine
ORC	outreach clinic
PBO	public benefit organization
PDP	People's Democratic Party
PEN	WHO Package of Essential Noncommunicable Disease Interventions
PHC	primary health-care centre
PHCB	Population and Housing Census of Bhutan
PHED	Public Health Engineering Division
PLWHIV	people living with HIV
PNC	postnatal care
PPD	Policy and Planning Division
Pvt.HE	private health expenditure
QASD	Quality Assurance and Standardization Division
RBHSL	Royal Bhutan Helicopter Service Limited
RCDC	Royal Centre for Disease Control
RCSC	Royal Civil Service Commission
RENEW	Respect, Encourage, Nurture and Empower Women
RGoB	Royal Government of Bhutan
RICB	Royal Insurance Corporation of Bhutan
RIHS	Royal Institute of Health Sciences
RRH	regional referral hospital
SAARC	South Asian Association for Regional Cooperation
SAICM	Strategic Approach to International Chemical Management

SARI	severe acute respiratory infection
SCS	special consultation service
SDGs	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction 2015
SKRA	Sectoral Key Result Area
SOP	standard operating procedure
STEPS	WHO STEPwise approach to surveillance
STGs	standard treatment guidelines
STI	sexually transmitted infection
TB	tuberculosis
TBiSS	Tuberculosis information Surveillance System
TGHE	total government health expenditure
THE	total health expenditure
TICA	Thailand International Cooperation Agency
TMH	Traditional Medicine Hospital
U5MR	under-5 mortality rate
UHC	universal health coverage
UN	United Nations
UNDAF	United Nations Development Assistance Framework
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VCT	voluntary counselling and testing
VDCP	Vector-borne Disease Control Programme
VHW	village health worker
VIA	visual inspection using acetic acid
VPDP	Vaccine Preventable Disease Programme
WDI	World Development Indicator
WGI	Worldwide Governance Indicator
WHO	World Health Organization
ZDCP	Zoonotic Disease Control Programme

List of glossary

Dasho	term of respect
Dasho Dzongdag	District Governor
Doma	a chewing product, a carcinogen
Druk Gyalpo	the King
Drungtsho	traditional medicine physician/doctor
Dzongkha	national language of Bhutan
Dzongkhag	district
Dzongkhag Yargay Tshogdu	District Development Assembly
Gewog	block/sub-district
Gewog Yargay Tshogchung	Block Development Committee
Gung Tong (goongtong)	empty house
Gyalyong Tshogde	National Council
Kasho	Royal edict
Kidu	Royal Welfare Programme
Lhotsampas	an ethnic group
Lodoe Tshogde	Royal Advisory Council
Ngalops	an ethnic group
Rimdo	prayer
Sharchops	an ethnic group
Thormde	municipality
Tshogdu	National Assembly

Abstract

The predominantly public financed and managed health system in Bhutan has evolved and grown remarkably in the past five and a half decades. Health services are available through a three-tier structure, i.e. primary, secondary and tertiary levels. Traditional and allopathic medicine services are integrated and delivered under one roof. Village health workers play an important role as a bridge between health services and the community to promote health. Programmes are in place to address the public health challenges facing the country.

Health services are free as enshrined in the Constitution of Bhutan. Therefore, government revenue is the predominant source of health financing. In 2014, the total health expenditure (THE) was 3.6% of the gross domestic product (GDP).

Despite the difficult geographical terrain and dispersed population settlements, access to health services has improved remarkably. Bhutan is among the top global performers in gains in life expectancy in the past 40 years. The targets of MDGs 4 and 5 have been achieved and since 2010, immunization levels have been maintained over 95%.

However, the country faces a triple burden of health challenges. While communicable diseases remain a substantial burden, noncommunicable diseases (NCDs) are increasing. A few other emerging, challenging issues are crime, substance dependence and suicide/other mental health problems.

Health equity requires attention as disparities exist in access to and utilization of health services as well as in health outcomes between urban and rural areas, income levels, districts and between western, central and eastern regions. Variations in efficiency levels among different districts and health facilities highlight the potential for improvement in overall efficiency.

Though there is good evidence of intersectoral action, it needs to be fostered further to close the existing equity gaps and achieve the Sustainable Development Goals (SDGs).

Executive summary

Bhutan is situated in the eastern Himalayas with a total area of 36 394 sq. km and a population of 774 830.

The country is in the medium human development category and is ranked the 13th most peaceful country. Great strides have been made in economic development as well. The GDP per capita has increased from USD 560 in 1990 to USD 2655 in 2015 while the poverty headcount ratio stood at 2.2% ($1.90 a day) and 12% (national poverty lines) in 2012.

The governance principles of Bhutan are articulated in the 2008 Constitution. All legislative powers rest with the Parliament, which consists of three institutions: the Druk Gyalpo (the King), the National Council and the National Assembly. Hereditary monarchs have successfully maintained peace, stability and security of the country. Bhutan's fourth King, Jigme Singye Wangchuck, envisioned the concept of Gross National Happiness, the country's development philosophy.

During the past five and a half decades, the predominantly public financed and managed health system has evolved and grown remarkably. Health policies have evolved from an initial emphasis on expanding coverage to recent measures on strengthening quality of care and improved equity.

Health services in the country are available through a three-tier structure: (i) basic health units (BHUs), sub-posts and outreach clinics (ORCs) at the primary level; (ii) district or general hospitals at the secondary level; and (iii) regional and national referral hospitals at the tertiary level. Traditional and allopathic medicine services are fully integrated and delivered under one roof. At the grassroots level, village health workers (VHWs) play a key role in health promotion and act as a bridge between health services and the community.

At present, there are three referral hospitals, 28 district hospitals including one indigenous hospital at Thimphu, 23 BHUs grade I (BHU-Is), 184 BHUs grade II (BHU-IIs), 28 sub-posts, 562 ORCs and 54 indigenous units. The number of health facilities per 10 000 population has reached

3.5. Each health facility is equipped as per a standard equipment list, which is specific to the category of that facility. As of 2015, 769 items of common medical equipment were supplied to the hospitals in the country. Major equipment such as that for computed tomography (CT) scan and magnetic resonance imaging (MRI) are available only in the national referral hospital.

Since its inception in the 1960s, health services have focused more on primary health-care and preventive aspects. Public health services are well established, with a Department of Public Health (DoPH) in the Ministry of Health (MoH) overseeing the various programmes being implemented through the health facilities. Programmes are in place to address the country's public health concerns in communicable as well as noncommunicable diseases (NCDs) and other areas such as water, sanitation and environment.

Health services are free as enshrined in the Constitution. Section 21 of Article 9 states: "The State shall provide free access to basic public health services in both modern and traditional medicines." Comprehensive services are provided to citizens through various levels of care including treatment aboard, if a particular service is not available in the country. However, there are few exclusions from the free public health system such as private cabins at the government hospitals, cosmetic surgical and dental care, and cost for obtaining a medical certificate (such as for employment and other applications). In line with the national health policy, the engagement of the private sector in health-care delivery is limited to pharmaceutical retail shops and selective diagnostic centres.

Patient pathways are clearly defined. Primary/ambulatory care is provided through various public health facilities such as satellite clinics, ORCs, BHUs, district/general hospitals. In addition, referral hospitals including the national referral hospital also provide primary care services. Primary care service is supported by secondary and tertiary care services through referral or self-referral. Health information and ambulance service can be obtained from the Health Help Centre (HHC).

Traditional medicines also play an important role in primary care. The number of patients seeking traditional medicine services has increased steadily over the years. The top three conditions treated by traditional medicines in 2015 were gastritis, neurological disorders and arthritis.

The MoH is the central authority responsible for the development of health policy and for all other stewardship functions, as well as for organizing and provision of quality and comprehensive health-care services, including health promotion, disease prevention, curative and rehabilitative services. The MoH also focuses on providing technical support to the districts in planning, administration and provision of services to the people, as well as on developing standards in relation to human resources for health (HRH), medical supplies and infrastructure development. In line with the decentralization policy of the Royal Government of Bhutan (RGoB), health administration and management has been devolved to districts over the past few decades. District health offices undertake the deployment of HRH in their respective districts.

Like other sectors in the country, health sector development is guided by five-year plans (FYPs) under the four pillars of Gross National Happiness. In realizing the objectives of an FYP, due attention is paid to intersectorality. Relevant ministries, nongovernmental organizations (NGOs), civil society organizations (CSOs) and International Organizations play pivotal roles in contributing to national and international goals and targets.

Practice of medical and health professionals and standards of medical education and training programmes in the country are regulated by the Bhutan Medical and Health Council (BMHC) as empowered by the Medical and Health Council Act 2002 of Bhutan. The Disciplinary Proceedings for Medical Malpractice and Negligence Regulations 2009 lays down the procedures to be followed for complaints and investigation mechanism and disciplinary proceedings against all registered medical and health professionals in Bhutan.

The Drug Regulatory Authority (DRA) safeguards the human and animal health against harm resulting from spurious quality of medical products. Similarly, the Essential Medicine and Technology Division (EMTD) regulates the quality of equipment, diagnostics and medical devices. All capital investments for both procurement and construction are guided by the Procurement Rules and Regulations of the Ministry of Finance (MoF). The Bhutan Narcotics Control Agency (BNCA), Bhutan InfoComm and Media Authority, Consumer Protection Act of Bhutan 2012, Food Act of Bhutan 2005, and Road Safety and Transport Authority. are some of the

other Acts and lead agencies in place to regulate various determinants of health.

In 2014, the total health expenditure (THE) was 3.6% of GDP. Out-of-pocket (OOP) expenditure on health was reduced from 33% of THE in 1995 to 11% in 2010, which increased slightly to 12% in 2014. Government revenue is the predominant source of health financing followed by households and external aid. External sources had played a significant role in financing health in the country, supporting almost 30% of THE in 1996. However, the share of external sources has decreased by almost fivefold in 2014 as compared to 1996. An innovative financing mechanism, the Bhutan Health Trust Fund (BHTF), contributed 5.14% of THE in 2014 as compared to 0.042% in 2010. The share contributed by the BHTF is expected to increase further with phasing out of traditional donors, which support procurement of vaccines in the country.

The general government health expenditure (GGHE) as a proportion of the general government expenditure (GGE) has fluctuated between 8% and 12%. The expenditure on curative services has dominated the total health spending, above 70% of THE for the fiscal year 2012–2013. The expenditure on preventive care is minimal (2%). The cost for referring patients abroad appears to be one of the major cost drivers for curative services (4–5% of THE).

A line item budgeting based on historical trends is applied for budget allocation, and all employees under the public health system are either full-time salaried employees or contract employees who are hired for a certain period of time. While full-time employees are not required to renew their employment status, contract employees need to renew their contract from time to time. In addition to their normal salary, health professionals are also paid a professional allowance 35–40% of their salary.

The Bhutan health management information system (BHMIS) has improved rapidly over the years from hand-written data collection/compilation in 1984 to a web-based District Hospital Information System (DHIS2) at present. DHIS2 enables each district health office to generate information using various data elements. At the national level, the aggregate data are used to track indicators for monitoring progress of various programmes. Based on this information, an *Annual Health Bulletin* is published by the Health Information and Management System Unit

of the MoH. A separate information mechanism is in place for disease outbreaks and health emergencies including disasters.

The MoH also has come a long way in terms of leveraging information and communication technology (ICT) as an enabler in improving health-care services to its citizens. In 2006, a web-based telemedicine system was developed and introduced in 10 district hospitals. Currently, there are 24 telemedicine sites in the country; this facility will be expanded to all the hospitals in the near future. A tele-consultation set-up has been developed with institutes in the Region as part of the South Asian Association for Regional Cooperation (SAARC) telemedicine project. The MoH is currently working on development and introduction of an electronic Patient Information System (ePIS) in the country. The ePIS will be initially piloted in few health facilities and eventually introduced in all health facilities. The HHC is another ICT-enabled initiative for delivering round the clock (24x7) services in emergency response and as a health helpline. The HHC can also monitor all the ambulances in the country through a vehicle-tracking system and deploy ambulances at the right site at the time of emergency.

In terms of inpatient care, district/general hospitals and referral hospitals play a major role with BHUs also having some observational beds. Although there is a good network of secondary care facilities, there is a need to improve the range of services, for both equitable access to health care and to reduce the strain on referral hospitals, especially Jigme Dorji Wangchuk National Referral Hospital (JDWNRH). At the tertiary level, there is also a need to increase the range of services and specialized care. Specialized care in mental health, which is currently limited to JDWNRH, needs to be expanded to the primary level. Other areas that need to be addressed are rehabilitation, long-term care and family care.

The Department of Medical Supplies and Health Infrastructure (DoMSHI) manages the procurement and distribution of all medicines and medical supplies for the MoH. Rational prescribing is observed which may be due to the regular updating and implementation of the National Essential Medicines List (NEML), availability and application of Standard Treatment Guidelines (STGs), having formularies and the absence of a private sector. Stock-outs and expiry of medicines have also been prevented through an effective supply chain management system.

A national Health Emergency and Disaster Contingency Plan (HEDCP) has been developed to respond to public health emergencies and disease

outbreaks. The Emergency Medical Services Division (EMSD) assumes the key role of coordination during emergencies and disasters. A Health Emergency Operation Centre (HEOC) is established to ensure effective communication and coordination for emergency response and disaster management.

The RGoB has prioritized the issues concerning human resources and their deployment. From just one doctor in 1954, the number has increased to 251 doctors in 2015. Similarly, from just one Drungtsho in 1953, the number has grown to 47. Though the health workforce numbers have steadily increased, shortages still remain stark. While the HRH Master Plan (2013–2023) estimates a staff requirement of more than 10 000, at present their strength is only just over 4000 including the administrative staff. Among the different fields, the gap needs to be most urgently bridged for specialists, as demands for generalists are gradually met. In 2017, the number of doctors and nurses per 10 000 population is 3.3 and 14.1, respectively.

The start of a health school, which evolved to an Institute of Health Sciences, contributed to the development of need-based HRH and increased self-reliance. With the establishment and functioning of Khesar Gyalpo University of Medical Sciences of Bhutan (KGUMSB), the country is poised to be self-sufficient in all categories of human resources in both allopathic and traditional medicine and public health. KGUMSB offers pre-service and in-service training programmes, including continuing medical education programmes (CMEs). However, it is anticipated that the university will not be able to offer MBBS courses in the immediate future. Hence, Bhutan will have to continue to rely on universities and institutes in the Region for undergraduate medical education.

Bhutan is a signatory to the Alma-Ata Declaration on Primary Health Care (1978). Since then, a series of reforms have been introduced in the areas of governance and delivery of health services, institutional development and financing, and investment in health development primarily focused on the public health approach. Major governance reforms have been decentralization and transition to democracy. The development of a health policy, promulgation of acts/regulations and establishment of regulatory bodies have positively impacted the health system development. Civil society is beginning to play an important role in expanding the health services in their areas of advantage.

The health of the Bhutanese has improved tremendously since the introduction of planned socioeconomic development. Life expectancy has increased to 69.5 years in 2014 from a mere 32.4 years in 1960. The targets of MDGs 4 and 5 have been achieved. Leprosy and iodine deficiency disorders have been eliminated and malaria is targeted to be eliminated soon. Universal childhood immunization was achieved in 1990 and immunization levels have been maintained over 95% since 2010. Increasing trends of NCDs including cancers contribute to increasing referrals out of the country. For the past six years, cancers, heart disease and kidney diseases are top three conditions requiring referrals. The government bears all the associated costs including air travel, which is around 5% of THE.

Population health outcomes, as outlined earlier, have significantly improved. Bhutan is among the top global performers in life expectancy gains in the past 40 years.

The outlook for financial protection also stands positive with largely progressive health financing framework and minimal burden posed by health expenditure on household livelihood as measured by the level of household OOP payment.

Despite the difficult geographical terrain and dispersed population settlements, access to health services has remarkably improved with higher utilization of primary level care and more rural residents expressing satisfaction with services. Monitoring of quality and safety in health services, however, needs significant push. Similarly, variations in efficiency levels among different districts and health facilities highlight the potential for improvement in efficiency.

Health equity requires major attention. Disparities exist in access to and utilization of health services as well as in health outcomes between urban and rural areas, income levels, districts and between western, central and eastern regions. Disparities are particularly glaring in areas such as poverty, deprivation and less educated, which require a multisectoral response prompting intersectoral policy interventions across ministries.

Overall, despite outstanding achievements in health systems performance and health outcomes, the country faces multiple burden of health challenges. While communicable diseases remain a substantial burden, NCDs are increasing. A few other emerging, challenging issues are crime, substance dependence and suicide/other mental health

problems. Bhutan is also prone to natural disasters and hazards such as earthquake, landslides, floods and outbursts of supraglacial lakes.

Another challenge facing the country is the question: To what extent should the private sector be involved or allowed to participate in the delivery of health services? While the MoH is developing a policy to open the health sector to private investment, free basic public health services need to be ensured as mandated by the Constitution. Another aspect of private investment is that while private participation may bring in competition, particularly in the diagnostic and curative sectors and strengthen the health system, care should be taken so that there is no competition for the scarce HRH currently available in the public sector.

Since all health facilities in the country are open to anyone seeking service irrespective of their place of stay or from where the care-seeker comes, health services face the problem of overcrowding in some facilities such as JDWNRH. Though there is a functioning referral system, there is no mechanism in place to discourage self-referrals, which causes congestion and hampers the quality of service delivery at tertiary facilities. A gate-keeping mechanism is needed to promote efficient use of resources by levels of health facilities.

An area that needs focus is to build capacity to generate evidence as well as translate evidence into policy and practice. This is particularly relevant for the national referral hospital where information on important aspects of various services is difficult to obtain, e.g. OPD cases, patient referrals to hospitals outside Bhutan.

To sustain free health services, there is a need to explore diversification of financing sources as well as mechanisms to reduce cost pressures. As the BHTF is becoming more and more important in light of declining international assistance and soaring health-care costs, ways and means need to be constantly explored to build the corpus of capital fund and for its appropriate investment to maximize returns. Furthermore, there is a need to define what is the meaning of "provision of free access to basic public health services in both modern and traditional medicines" in view of the finite health resources and fiscal pressure posed by rapid technological advancement including costly diagnostics, medicines and other medical products. Various mechanisms for further development of tertiary level of care require to be explored. If foreign direct investment (FDI) is to be considered, as recommended by the 2010 Economic

Development Policy, a careful policy needs to be formulated on FDI for tertiary care.

There is good evidence of intersectoral action for health that has been undertaken. This needs to be further fostered to build on the gains achieved so far and deal with the emerging challenges. This is particularly required while looking forward to achieve the Sustainable Development Goals (SDGs).

1 Introduction

Chapter summary

Bhutan is situated in the eastern Himalayas with a total area of 36 394 sq. km and has a population of 774 830.

The country is in the medium human development index (HDI) category and is ranked the 13th most peaceful country in the world. Great strides have been made in economic development. The gross domestic product (GDP) per capita increased from USD 560 in 1990 to USD 2656 in 2015. In 2012, the poverty headcount ratio was 2.2% (at USD 1.90 a day) and 12% (at national poverty lines).

The Constitution articulates the principles on which the country is governed. All legislative powers rest with the Parliament, which consists of three institutions: the King, the National Council and the National Assembly. Hereditary monarchs have successfully maintained peace, stability and security of the country. Bhutan's fourth King, Jigme Singye Wangchuck, envisioned the concept of Gross National Happiness, the country's development philosophy.

Over the past five and a half decades, there has been a tremendous improvement in the health of the people. In 2015, life expectancy at birth was at 69.5 years compared to 32.4 in 1960. Millennium Development Goals (MDGs) 4 and 5 have been achieved. Health services are free as enshrined in the Constitution: "The State shall provide free access to basic public health services in both modern and traditional medicines."

Despite these achievements, the country faces an evolving burden of health challenges. During 1990–2010, the leading cause of disability-adjusted life years (DALYs) changed from communicable and maternal, neonatal and nutritional causes to non-communicable diseases (NCDs) and injuries. There are also a few inter-related emerging issues such as crime, substance dependence and suicide/other mental health problems.

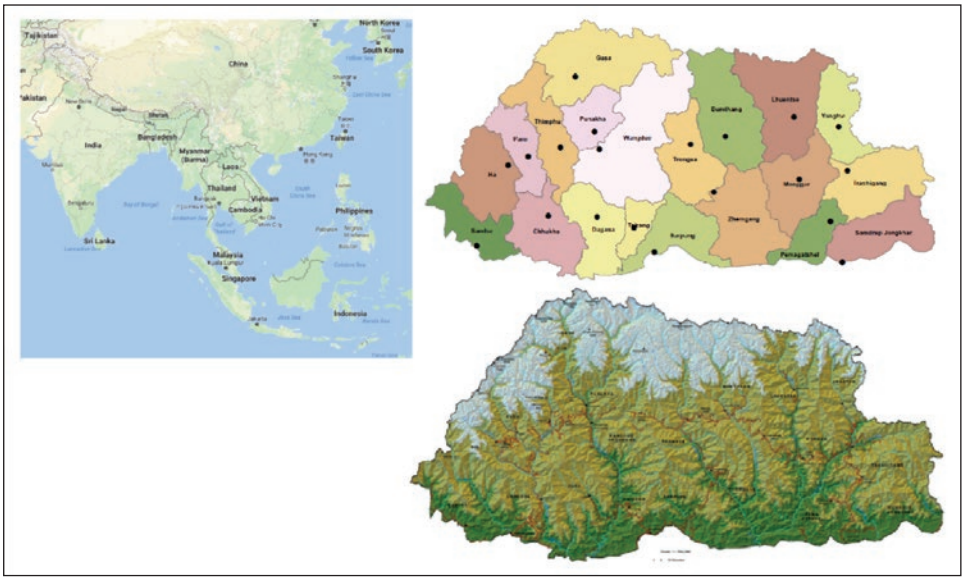
Since Bhutan is situated in one of the most seismically active global zones (zone 4 or 5), it is also prone to earthquakes and various other natural

disasters and hazards such as landslides, floods and supra-glacial lakes outbursts.

1.1 Geography and sociodemography

The Kingdom of Bhutan (Bhutan) is nestled in the eastern part of the Himalayas with China (Tibet) in the north and India in the south, east and west. It has a total area of 36 394 sq. km with an east-west dimension (longest) stretching around 300 km and 170 km at its maximum north-south dimension (National Statistics Bureau, Royal Government of Bhutan, 2015). The landscape ranges from subtropical in the south to alpine/arctic in the north. The terrain in most parts is rugged posing substantial challenges in communication and thereby access to services, including health. Over 70% of the country is covered by forests. Bhutan is one of the ten important global biodiversity hotspots because of its rich flora and fauna. Fed by glaciers and snow-covered peaks, four major rivers flow from north to south. Elevations range from 160 metres in the south to over 7000 metres above sea level in the north. Therefore, the climate varies from subtropical in the lowlands to temperate in the midlands and cold/harsh in the highlands. The western region has broader and more fertile valleys than the central and eastern regions.

Figure 1.1 Administrative and physical map of Bhutan and its location in South-East Asia



Sources: National Land Commission of Bhutan, 2016 – administrative and geographical map; Google maps – South-East Asia map

The most recent Population and Housing Census of Bhutan (PHCB) 2005, enumerated a resident population of 634 982 comprising 52.5% males and 47.5% females. The population density is steadily increasing and is 20.3 per sq. km at present with 61.4% of the population in rural settings. The percentage of older people is increasing, with an age dependency ratio of 47%. The age dependency ratio is higher in rural areas where a higher proportion of older people live in comparison to urban areas (National Statistics Bureau, Royal Government of Bhutan, 2012).

Table 1.1 Trends in population/demographic indicators, selected years

	1960	1970	1980	1990	2000	2010	2015
Total population ^	224 108	291 457	412 561	535 505	564 187	720 246	774 830
Population, female (% of total) ^	49.2	49.2	47.9	48.2	48.6	46.4	46.3
Population aged 0–14 years (% of total) ^	41.4	42.5	42.7	43.6	40.6	30.1	26.9
Population aged 65 years and above (% of total) ^	2.3	2.4	2.5	3.0	3.8	4.5	5.1
Population aged 80 years and above (% of total) *	0.2	0.2	0.2	0.3	0.5	0.7	1.0
Population growth (average) *	2.3	3.2	3.0	1.2	2.8	1.7	1.3
Population density (people per sq. km) ^	4.8	6.2	8.8	11.5	14.2	18.9	20.3
Fertility rate, total (births per woman) *	6.7	6.7	6.6	5.6	3.6	2.3	2.0 °
Birth rate, crude (per 1000 people) *	50.3	48.6	44.3	37.9	27.6	19.9	17.7 °
Death rate, crude (per 1000 people) *	31.3	26.3	18.9	13.4	8.8	6.4	6.2 °
Age dependency ratio (population 0–14 and 65+ : population 15–64 years) *	77.7	81.2	82.5	87.1	79.9	52.9	46.9
Distribution of population (% rural) ^	96.4	93.9	89.9	83.6	74.6	65.2	61.4

Sources: * = World Bank, 2016, ^ = World Bank, 2017a, ° = 2014 values

Ethnically, the population is composed of Sharchops, Ngalops and Lhotsampas, though data are not available on the size of each group. A majority of Sharchops and Ngalops are Buddhists, whereas most of Lhotsampas are Hindus. Bhutan's national language is Dzongkha but

there are many regional and local dialects. English is the medium of instruction in schools and modern institutions; it is also used widely by the people. Bhutanese language and literature, arts and crafts, drama, music, ceremonies and events, architecture, textiles, and basic social and cultural values draw their essence from Buddhism. But cultural differences within the nation are considerable, with each ethic group making its own distinctive contribution. There are differences in folklore, myths, legends, dance, poetry and crafts that together enrich the nation's culture. Preservation of this rich cultural heritage is one of the four pillars of the Bhutan's developmental philosophy of Gross National Happiness.

In terms of educational attainment of the population aged 6 years and above, 55% (National Statistics Bureau, Royal Government of Bhutan, 2012) never attended any institution. The national literacy rate in 2005 (Office of the Census Commissioner, Royal Government of Bhutan, 2005) was 59.5% (69.1% among men and 48.7% among women). The literacy rate in 2012 has increased to 63% (72% among men and 55% among women) (National Statistics Bureau, Royal Government of Bhutan, 2012), with 79.2% of the literate population living in urban and 55.9% in rural areas. The Constitution provides (Article 9, section 16) that "The State shall provide free education to all children of school-going age up to tenth standard and ensure that technical and professional education is made generally available and that higher education is equally accessible to all on the basis of merit"; consequently, the literacy rate is expected to go up rapidly.

Table 1.2 Literacy rate by area (urban or rural) and by gender (%), 2012

Area	Overall literacy rate			Youth literacy rate			Adult literacy rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Urban	86.7	72.0	79.2	95.4	88.7	91.6	84.1	65.3	74.5
Rural	65.0	47.1	55.9	88.2	78.7	83.4	58.0	36.5	46.9
Bhutan	71.6	54.7	63.0	90.4	82.2	86.1	66.0	45.2	55.3

Source: National Statistics Bureau, Royal Government of Bhutan, 2012

In 2005, of the two household types prevalent in the country, 45.9% were nuclear and 54.1% extended; and 36% of urban and 33% of rural households had four to five members. The proportion of households

headed by a male was 71.8% while that by a female was 28.2% (Office of the Census Commissioner, Royal Government of Bhutan, 2005).

Migration within the country is a significant issue. There were a total of 111 770 life-time migrants[1] who have moved from rural to urban areas, whereas 19 992 have moved from urban to rural areas as per the PHCB 2005. Among the dzongkhags, Thimphu has received the highest number (54 685) of life-time migrants followed by Chukha (25 951) and Sarpang (17 997). The Labour Force Survey 2015 shows that the highest proportion (37.4%) migrated for family reasons; followed by 21.4% for employment, 19.7% for education and training, 12.7% for job transfer, 4.4% for marriage-related reasons, 2.2% for resettlement, and 2.2% for health reason. In 2015, 23.8% of the estimated population moved from rural to urban areas whereas 25.1% of the estimated population moved from urban to rural areas (Labour Market Information and Research Division, Department of Employment, Ministry of Labour and Human Resources, Royal Government of Bhutan, 2015).

Bhutan is in the medium HDI category with an index of 0.605 in 2015, a rise from 0.573 in 2010 indicating an average annual increase of 1.38%. With the HDI value of 0.572 for women and 0.638 for men, the gender development index (GDI) is 0.897 and the gender inequality index (GII) is 0.457. In 2016, Bhutan was ranked the 13th most peaceful country in the world out of 163 countries (10th edition of the Global Peace Index).

In terms of happiness, Bhutan is ranked 84th out of 157 countries with a score of 5.196 (7.526 maximum; 2.905 minimum); (Sachs J et al., 2016) and ranked number one for equality of wellbeing (smallest gap between rich and poor). Bhutan conducts the national happiness survey every five years. The Gross National Happiness Survey 2015 shows that on the scale of zero to one measurement, happiness of Bhutan's people has increased from 0.743 in 2010 to 0.756 in 2015, an overall increase of 1.8%. In the survey, 91.2% of people reported experiencing happiness, and 43.4% of people said that they are extensively or deeply happy. Increases in Gross National Happiness were driven by improved living standards and service delivery, better health, and participation in cultural festivals.

1 *Life-time migrant* – a person whose area of residence on the date of census differs from the area of birth is defined as a life-time migrant. The migrants are defined as people who were enumerated in a place different from the place where they were born.

1.2 Economic context

Guided by the overarching philosophy of Gross National Happiness, great strides have been made in economic development in Bhutan, particularly during the last four five-year plan (FYP) periods. The GDP per capita has increased from USD 560 to USD 2656 and the GDP per capita at purchasing power parity has increased from USD 1508 in 1990 to USD 8370 in 2015. Agricultural-added value as percentage of GDP reduced by 26.2 percentage points between 1980 and 2015, whereas the industrial-added value increased by 31.5 percentage points (World Bank, 2016).

However, the economy is aid-dependent, import-driven and highly vulnerable. It lacks diversification and is predominantly driven by the hydropower sector, which has limited potential for the creation of productive jobs to absorb a growing and an increasingly educated labour force. Bhutan's currency, Ngultrum (Nu), is pegged on a par with Indian Rupees. Shortage of Indian Rupees led to a crisis in 2012, which was mainly attributed to macroeconomic imbalances. Excessive monetary growth, inflation differentials between India and Bhutan, and terms of trade imbalances were key factors in the Bhutanese liquidity crisis.

An economic development policy aiming to achieve a minimum economic growth rate of 9% annually is in place. The policy sets the agenda and direction for major economic reforms including the restructuring of the macroeconomic base which will include hydropower, service industry especially tourism and health, organic farming, and informational and technology-enabled knowledge society. In terms of health, the policy highlights the inherent comparative advantage of the health sector to draw on the potential to promote the country as an all-round "wellness" destination and identified niche areas such as high-end luxury medical facilities, traditional medicine, spiritual healing, etc. Further, selective services in the health sector shall be opened to private investment and practices. However, the participation of the private sector or foreign companies and individuals in the health sector should not under any circumstance lead to privatization of the public health services.

In terms of employment, the unemployment rate never exceeded 4.0% be it in the International Labour Organization (ILO)/World Bank estimates or national estimates. The ILO estimate for 2014 was 2.6%. Although the current national estimate is 2.5%, youth unemployment has increased from 9.4% to 10.7%, which equals to 4504 youth, mostly living in urban areas (Labour Market Information and Research Division,

Table 1.3 Macroeconomic indicators, selected years

	1980	1990	2000	2010	2015
GDP (current LCU in millions)	1066.2	5249.2	19 735.8	72 497.0	132 021.3
GDP, PPP (constant 2011 international $ in millions)	ND	1 249.3	2 029.2	4 671.2	6 090.9
GDP per capita (current USD)	329	560	778	2 201	2 656
GDP per capita, PPP (current international $)	ND	1 508	2 851	6 354	8 370
GDP growth (annual %)	ND	10.9	6.9	11.7	6.5
General government final consumption expenditure (% of GDP)	22.9	14.9	21.9	20.0	17.8
Cash surplus/deficit (% of GDP)	ND	-5.8	-2.4	0.5[x]	ND
Tax revenue (% of GDP)	ND	4.4	10.0	9.2[x]	13.3[1]
Central government debt, total (% of GDP)	ND	51.2	39.1	56.8[x]	90.7[1]
Industry, value added (% of GDP)	11.7	24.9	36.0	44.6	43.2
Agriculture, value added (% of GDP)	43.6	35.3	27.4	17.5	17.4
Services, etc., value added (% of GDP)	44.6	39.9	36.6	37.9	39.3
Labor force, total	ND	194 868	223 525	359 928	404 127[1]
Unemployment, total (% of total labour force) (modelled ILO estimate)	ND	3.0▪	1.7	3.3	2.8
Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)	ND	ND	35.2^	8.0*	2.2°
Poverty headcount ratio at national poverty lines (% of population)	ND	ND	ND	23.2*	12.0°
GINI index (World Bank estimate)	ND	ND	46.8^	38.1*	38.8°
Real interest rate (%)	ND	8.8	13.4	7.6	9.7
Official exchange rate (LCU per USD, period average)	7.9	17.5	44.9	45.7	64.2

Note: ND: not determined; GDP: gross domestic product; LCU: Local Currency Unit; PPP: purchasing power parity; ILO: International Labour Organization
Source: World Bank, 2016, ▪ = 1991, ^ = 2003, * = 2007, x = 2009, ° = 2012, 1 = 2014

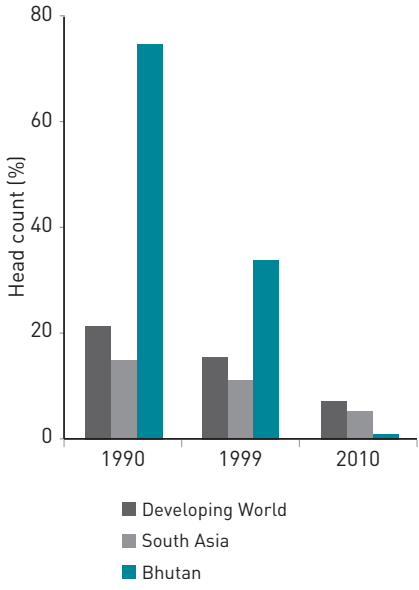
Department of Employment, Ministry of Labour and Human Resources, Royal Government of Bhutan, 2015). However, government supported self-employment in cottage and small-scale industries has successfully created over 5018 jobs in total in 2015–2016 alone (Tshering Tobgay Prime Miniter, Royal Government of Bhutan, 2016).

Distribution of income among individuals/households in the country is a concern as shown by the estimated GINI index of 38.81 in 2012. Though it is a good achievement from the GINI index of 46.78 in 2003, it is still high compared to other South Asian countries (www.quandl.com/collections/

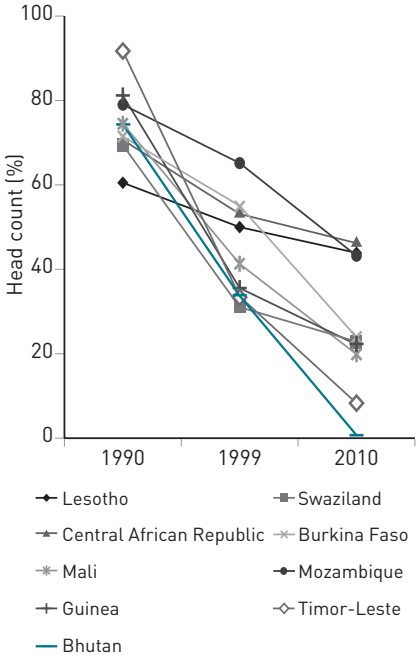
demography/gini-index-by-country). As per the Bhutan Poverty Assessment Report 2014 (National Statistics Bureau, Royal Government of Bhutan and World Bank, 2014), poverty is localized to certain districts and in rural areas. However, the efforts of the Royal Government of Bhutan (RGoB) in poverty reduction are paying off as is shown by poverty headcount ratios of 2.2% (at USD 1.90 a day) and 12% (at national poverty lines) in 2012 compared to 8.0% and 23.2%, respectively, in 2007; although reduction has been uneven across the districts. Bhutan's poverty reduction record is unique (National Statistics Bureau, Royal Government of Bhutan and World Bank, 2014). As per the report, "using the internationally comparable USD 1.25 per day poverty line, Bhutan stands out for the pace of its poverty reduction compared to other South Asian countries and the select cohort of countries with similar initial poverty levels in 1990" (Figure 1.2).

Figure 1.2 Poverty reduction in Bhutan, South Asia and developing world, 1990–2010

1.2 (A) Bhutan outpaces the South Asia Region in poverty Reduction



1.2 (B) Bhutan poverty reduction leads countries with similar 1990 poverty levels



Note: 2011 PPP and USD 1.25 per day poverty line are used.
Source: World Bank, 2017b

Given the limitations of consumption poverty measures in capturing overall deprivation, the government has also been estimating a more holistic measure called the multidimensional poverty index (MPI) comprising the dimensions of health, education and standard of living to enable specific interventions from the 10th FYP. In 2012, 12.7% of the country's population was MPI-poor – not different from the 12% headcount ratio for consumption poverty but only 3.2% of the population was both consumption and MPI-poor at the same time (National Statistics Bureau, Royal Government of Bhutan and World Bank, 2014). "Education deprivation was the highest in all three dimensions, with 2.5% of the population deprived in both forms of the education indicators (schooling of household members and child attendance), and 27% deprived in at least one. By comparison, less than one percent of the total population was deprived in both health indicators (food security and child mortality) and 15% was deprived in at least one. These deprivations were deepest among the income-poor, where 23% of the population was deprived in at least one indicator. Further, a higher incidence of child mortality was observed among income-poor households (at 15% of the population) compared to food shortage (9%). While none of the consumption-poor households were deprived in all health and education indicators, nearly 8% of them (i.e. 0.9% of the total population) were deprived in at least one health and one education indicator.

A major contributing factor for poverty reduction was the Royal Welfare ("Kidu") Programme whereby many landless households were granted land permanently. Further, the main drivers of prosperity in rural Bhutan appear to be increasing commercialization of agriculture, an expanding rural road network and beneficial spillovers from hydroelectric projects (National Statistics Bureau, Royal Government of Bhutan and World Bank, 2014).

The fiscal outlook in the forthcoming 12th FYP (2018–2023) is brighter compared to that of the 11th FYP (2013–2018). The projected revenue in the 12th FYP is Nu 305.6 billion as against Nu 198.1 billion in the 11th FYP – an increase of about 54%. The revenue will increase as three mega hydropower projects are planned to be commissioned during the plan period. The overall fiscal balance is anticipated to show a surplus of 0.05% of GDP in the 12th FYP (Gross National Happiness Commission, Royal Government of Bhutan, 2016).

1.3 Political context

The political system of Bhutan has evolved over time. It has developed from a fragmented regional rule by local chieftains, lords and clans into a Democratic Constitutional Monarchy with a democratically elected parliament and government. The principles based on which the country will be governed, the powers and responsibilities of various authorities and the fundamental rights and duties of its people are clearly articulated in a written Constitution (Gross National Happiness Commission, Royal Government of Bhutan, 2013). After the initial move to establish a scheme of systematic governance of the country by Zhabdrung Nawang Namgyal in 1616, the development of such a system began when Gongsar Ugyen Wangchuck was unanimously enthroned as the first King of Bhutan in 1907. The subsequent hereditary monarchs strived to maintain peace and stability and ensure wellbeing of their subjects and security of the country. Jigme Dorji Wangchuck, the third King, instituted the National Assembly (Tshogdu) in 1953 where every Gewog (block) was represented through an elected member. The establishment of the Royal Advisory Council (Lodoe Tshogde), who advised the King and Council of Ministers, in 1963 was another important initiative of the third King. Sustainability, decentralization and democratization were the foremost priorities of King Jigme Singye Wangchuck, the fourth King. Towards this His Majesty established the institutions of Dzongkhag Yargay Tshogdu (District Development Assembly) in 1981 and Gewog Yargay Tshogchung (Block Development Committee) in 1991. In 1998, the fourth King devolved the power to the Council of Ministers headed by a Prime Minister. Bhutan had its first national elections in 2008 after democracy was introduced through a Constitution that was initiated and enacted by the fourth King. The King is the head of State and the Prime Minister the head of the Executive. The Judiciary is headed by the Chief Justice. All legislative powers rest with the Parliament, which consists of three institutions: the King, the National Council and the National Assembly. The National Council (Gyalyong Tsogde) consists of 25 apolitical members representing the 20 districts and five eminent persons. King Jigme Singye Wangchuck abdicated in 2008 to make way for Crown Prince Jigme Khesar Namgyel Wangchuck to become the fifth monarch and oversee the new era of Constitutional Democratic Monarchy (National Portal of Bhutan/www.bhutan.gov.bt).

In the 2008 general elections, only two political parties, Druk Phuensum Tshogpa (DPT) and People's Democratic Party (PDP), participated but for the 2013 elections three more political parties (Druk Nyamrup Tshogpa

– DNT, Druk Chirwang Tshogpa – DCT and Druk Kuenyam Party – DKP) were in the fray. In 2008, DPT formed the first democratic government by winning 45 of the 47 seats. But in the 2013 elections, PDP got the mandate by winning 32 of the 47 seats. The vote share of the different parties in the preliminary round of the 2013 general elections was: DPT 44.52%; PDP 32.53%; DNT 17.03%; and DCT 5.90%. DKP was disqualified from participating. In the final round of the elections between DPT and PDP, the vote share was 45.12% and 54.87%, respectively (Election commission of Bhutan, 2015). Though there were no major policy shifts including health that the two most popular parties proposed, implementation modalities differed in some areas. A direct impact of the current government's win on health issues is the introduction of a helicopter service, which is enhancing airlifting of patients from difficult areas and different parts of the country.

Administratively, the country is divided into 20 dzongkhags (districts) composed of 205 gewogs (blocks), and four thromdes (municipalities). The health sector is also administered along these lines with increasing decentralization of responsibilities. The districts are grouped into western, central and eastern regions often for service coverage, e.g. referral hospitals. People's participation in decision-making is ensured through established systems such as the Gewog Tsogde, Dzongkhag Tsogdu and Thromde Tsogde.

Given the long religious history of the country, the Monastic Body continues to play an important role in the spiritual and cultural lives of the people apart from being the sole arbiter on religious matters. The Monastic Body comprises the Central Monastic Body and the District Monastic Bodies headed by His Holiness the Je Khenpo (spiritual leader) at the Centre and by the Lam Netens in the dzongkhags (National Statistics Bureau, Royal Government of Bhutan, 2015). The Je Khenpo, Lopens, Lam Netens and the monks have the potential to play crucial roles in advocating healthy behaviours in the community. In fact, the Je Khenpo has been advocating on issues such as salt iodization, ill-effects of tobacco use and HIV prevention. A Religion and Health Project has also been initiated.

The concept of Gross National Happiness envisioned by His Majesty the fourth King in the late 1980s defines Bhutan's development objective as a definitive improvement in the happiness and satisfaction of the people rather than mere growth of gross national product (GNP). The country

believes that, for the holistic development of the individual and society, it is essential that development achieves a sustainable balance between the economic, social, emotional, spiritual and cultural needs of the people. Though health sector policies and programmes are formulated and implemented in line with the Gross National Happiness concept, a national health policy has also been formulated through a consultative process and approved in 2011 to provide a clear written guidance for health sector development.

In terms of governance, Bhutan has been fortunate to have a stable political system under the benign and the enlightened leadership of the Kings. Control of corruption is a priority and the country is ranked on 80th percentile as per the Worldwide Governance Indicators (WGIs)[2]. Other governance indicators have improved over the past 10 years including the regulatory quality, which was 28th percentile in 2015 (World Bank, 2017c).

Bhutan's health development is assisted by bilateral, multilateral and nongovernmental organizations (NGOs) and funds. Bhutan is a member of the South Asian Association for Regional Cooperation (SAARC), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), United Nations (UN), WHO, International Monetary Fund (IMF), World Bank, Food and Agriculture Organization (FAO), United Nations Educational, Scientific and Cultural Organization (UNESCO), Asian Development Bank (ADB), South Asian Sports Federation and Olympic Council, and has established diplomatic relations with many countries in the world. Bhutan has ratified the Convention of the Rights of the Child (CRC), Framework Convention of Tobacco Control (FCTC), Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and signed the SAARC Convention on the Narcotic Drugs and Psychotropic Substance and the World Summit Declaration and Plan of Action for Child's Survival, Protection and Development. Bhutan also has embraced International Health Regulations (IHR) 2005. Bhutan currently is in the process of accession to the World Trade Organization (WTO). Bhutan has enacted its own Tobacco Control Act following the FCTC, and reports on CRC and CEDAW have been submitted. Bhutan is a signatory to Convention on the Rights of the People with Disabilities (CRPD).

2 Percentile rank among all countries; it ranges from 0 which is the poorest governance performance to 100 which is the highest performance rank. It ranks the estimate governance score which ranges from approximately -2.5 (the weak) to 2.5 (the strong) governance performance.

1.4 Health status

The health of the Bhutanese has improved rapidly with the start of the planned socioeconomic development in the 1960s. In a matter of five decades the life expectancy has increased to 69.5 years in 2015, from 32.4 years in 1960 (World Bank, 2016). Bhutan saw the last case of poliomyelitis in 1986 and was officially declared polio-free in 2014. Universal Childhood Immunization was achieved in 1991 and leprosy was declared to be not a major public health problem in 1997. People enjoy almost 100% access to improved water sources. While goitre was a common feature in the past, it is a rarity now as iodine deficiency was eliminated in 2003. All these gains have been possible due to appropriate investments in health infrastructure, human resource development and leadership.

Adult mortality rates, both male and female, have also declined substantially over the decades and currently the rate is 209.7 for males and 216.4 for females. Though the male adult mortality rate is better than the average rate of 222.9 of lower middle-income countries (LMICs), female adult mortality rate is worse than the LMIC average of 155.1.

Table 1.4 Mortality and health indicators

	1960	1970	1980	1990	2000	2010	2014
Life expectancy at birth, total (years)	32.4	36.9	45.0	52.5	60.7	67.9	69.5
Life expectancy at birth, female (years)	32.7	36.9	44.8	52.3	60.7	68.2	69.7
Life expectancy at birth (male)	32.0	37.0	45.1	52.6	60.6	67.6	69.2
Mortality rate, adult (15–60 years), female (per 1000 female adults)	583.1	553.1	475.9	393.4	300.7	231.4	216.4
Mortality rate, adult (15–60 years), male (per 1000 male adults)	602.1	542.4	453.8	372.4	288.9	223.5	209.7

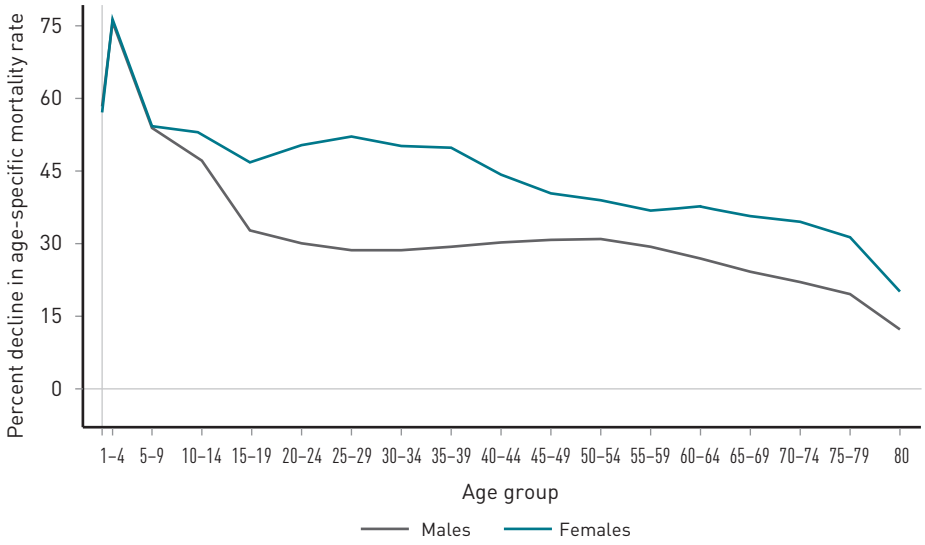
Source: World Bank, 2016

Bhutan has developed a unique health system – an integrated traditional and allopathic medicine system delivered through a primary/secondary health-care approach, the details of which are described in Chapters 4 and 5. This approach has not compromised the curative and rehabilitative aspects of the health care but has improved preventative services. Since the beginning of formal health-care system, every Bhutanese has received free health care. The provision of free health care is now enshrined in the Constitution (Article 9, section 21), which states: "The State shall provide free access to basic public health services in both modern and traditional medicines." This provision includes, when needed, being referred outside the country at the State's expense.

Bhutan has always been in the forefront of dealing with existing and emerging/re-emerging public health problems. Like the National Sexual and Transmitted Infections/Acquired Immune Deficiency Syndrome (STI/AIDS) Programme, many programmes started in response to an initial public health threat. The Essential Medicines Programme became very successful. The Health Trust Fund, operating under a Royal Charter, is an initiative towards ensuring sustainability of health services. The Fund has made a good start in cost-sharing of some essential components of health services such as immunization and supply of medicines.

The all-cause mortality rate has also declined drastically by 2010 compared to the 1990 levels. Greatest reductions in the all-cause mortality rates were evident in the younger age groups, particularly in females aged 1–4 years, a reduction of 77% (Figure 1.3). On burden of mortality, when measured by the number of years of life lost, the top five causes of loss in 2010 were lower respiratory infection, preterm birth complications, poisonings, neonatal encephalopathy and ischaemic heart diseases (Institute for Health Metrics and Evaluation, 2017).

Figure 1.3 Per cent decline in age-specific mortality rate by sex, between 1990 and 2010

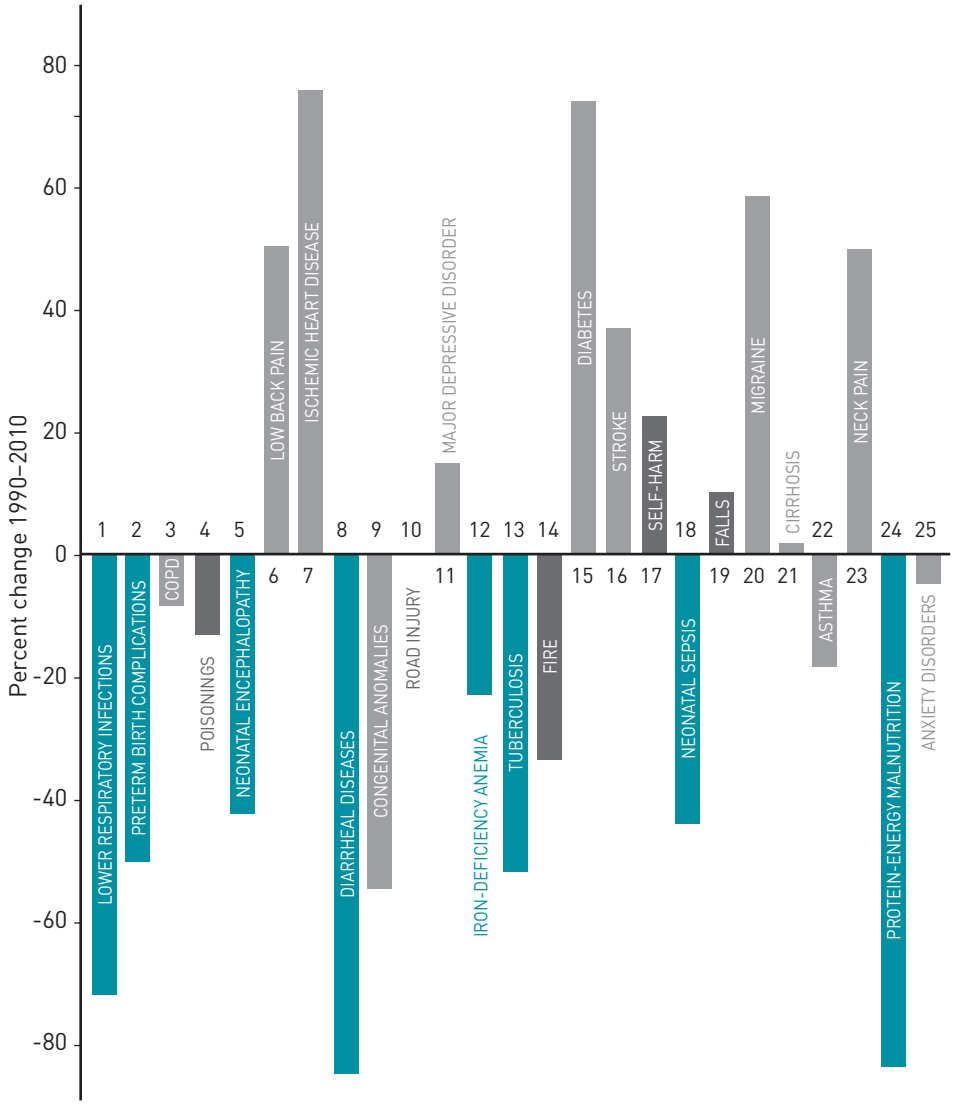


Source: Institute for Health Metrics and Evaluation, 2017

The top three causes of DALYs in 2010 were lower respiratory infections, preterm birth complications, and chronic obstructive airway diseases. Figure 1.4 highlights the leading cause of DALYs and percentage change from 1990 to 2010 and shows that NCDs and injuries are generally on the

rise whereas communicable diseases, maternal, neonatal, and nutritional causes are on the decline. Of the 25 most important causes of DALYs, diarrhoeal diseases and protein–energy malnutrition showed the largest decrease, i.e. falling by 85% each from 1990 to 2010.

Figure 1.4 Top 25 leading causes of DALYs and per cent change; between 1990 and 2010



Note: Blue colour refers to diseases in the group of communicable, maternal, neonatal, and nutritional, light gray denotes NCDs and dark gray denotes injuries
Source: Institute for Health Metrics and Evaluation, 2017

In 2015, about 110 000 patients (new as well as old cases) sought traditional medicine services, and traditional medicine facilities provided about 84 000 therapeutic services such as gold/silver needle, cauterization and localized steaming (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016). In 2015, the national referral hospital, Jigme Dorji Wangchuck National Referral Hospital (JDWNRH), surpassed 524 000 outpatient cases and 16 486 hospitalized patients.

The most common morbidities that are seen in the country are diarrhoea, skin infections, pneumonia and hypertension (Table 1.5).

Table 1.5 Trends in selected morbidity indicators, 2011–2015

Indicators	Year				
	2011	2012	2013	2014	2015
Alcohol liver diseases incidence (per 10 000 population)	29	29	36	42	41
Cancer incidence (per 10 000 population)	14	12	13	13	13
Conjunctivitis incidence (per 10 000 population)	487	529	564	567	395
Diabetes incidence (per 10 000 population)	53	57	80	134	154
Diarrhoea incidence (per 10 000 under-5 children)	2257	2366	1927	2244	2004
Hypertension incidence (per 10 000 population)	325	375	409	469	458
Intestinal worms incidence (per 10 000 under-5 children)	186	133	129	118	96
Malaria incidence (per 10 000 population at risk)	5	2	1	1	2
Pneumonia incidence (per 10 000 under-5 children)	974	1204	1060	1138	905
Skin infection incidence (per 10 000 population)	1463	1444	1316	1335	1218
STD/STI incidence (per 10 000 population)	12	41	59	72	92
Tuberculosis prevalence rate (per 10 000 population)	15	16	15	15	13
Depression incidence (per 10 000 population)	7	8	9	8	9

Source: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016

Winding roads, speeding, reckless driving, increased traffic and driver intoxication have been identified as factors contributing to road traffic accidents, which is a developing phenomenon. However, Royal Bhutan Police reported a decline in the actual numbers of accidents (1094 in 2013, 791 in 2014 and 715 in 2015) over the years. Further, with 13–15 road traffic deaths per 100 000 population, Bhutan was well below the regional average of 18.5 in 2010.

The leading risk factors accounting for the most disease burden are dietary risks, high blood pressure and household air pollution from solid fuels (Institute for Health Metrics and Evaluation, 2017). A STEPS survey carried out in 2014 estimated that 13.5% of the adult Bhutanese population (18–69 years) had three or more of the modifiable NCD risk factors. Salt consumption is very high, almost double the WHO recommended limit. Alcohol intake is also very high, with 42.4% of the population being current drinkers while 22.4% binge drink. Although the incidence of smoking is low (7.4%), the use of smokeless tobacco is very high at 19.7%. Consumption of fruits and vegetables is low, and almost half of the adult Bhutanese population (aged 18–69 years) do not engage in vigorous physical activity. Increasing availability and consumption of processed food and unhealthy dietary practices are becoming an issue. More than one in 10 adults (11.1%) always or often ate processed foods high in salt content. A third of the adult population (aged 18–69 years) has high blood pressure but does not take medication. Therefore, the survey concluded that NCD risk factors are highly prevalent among Bhutanese adults. The proportion of respondents in the age group 40–69 years with a 10-year cardiovascular disease (CVD) risk of ≥30% was found to be 1.8% (men 1.5%, women 2.2%). Another unique risk factor in Bhutan is the habit of chewing doma (areca nut, lime and betel leaf), which is quite prevalent (60%) among the population.

Under the Tobacco Control Act of 2010, cultivation, production and sale of tobacco and tobacco products is banned in Bhutan. Although consumption is not illegal, it is largely banned in public places. The Act also mandates provision and promotion of tobacco cessation counselling and treatment by the government.

Bhutan relies on imports for 34% of its cereal needs, despite agriculture accounting for 55% of the livelihood of the country's population. Around 80% of the imports are currently from India. Due to the rugged Himalayan landscape, many communities are remotely located, thereby exacerbating food insecurity due to vulnerable transport infrastructure.

Deaths of infants and children under-5 decreased significantly in the past few decades. In 2015, the infant mortality rate (IMR) has decreased to 28.3 per 1000 live births from 93.3 in 1990, and the under-5 mortality rate (U5MR) to 34.4 per 1000 live births from 133.7 in 1990. Bhutan in fact has achieved all the health-related MDG targets (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016).

Table 1.6 Maternal, child and adolescent health indicators, selected years

	1960	1970	1980	1990	2000	2010	2015
Adolescent fertility rate (births per 1000 women 15–19 years)	109.7	109.7	108.8	105.9	78.9	36.3	20.1
Mortality rate, neonatal (per 1000 live births)	ND	ND	ND	44	32.7	22.2	18.3
Mortality rate, infant (per 1000 live births)	ND	181.2	134.3	93.3	59.0	34.1	27.2
Mortality rate, under-5 (per 1000 live births)	ND	271.5	199.8	133.7	79.6	42.3	32.9
Maternal mortality ratio (per 100 000 live births)	ND	ND	ND	945	423	204	148
Measles immunization (%)	ND	ND	21	93	78	95	97
% Stunting	ND	ND	ND	60.9^	47.7^	33.6*–34.9^	21.2**
% Underweight	ND	ND	ND	34.0^	14.1^	10.4^–12.9*	9.0**

* National Statistics Bureau, Royal Government of Bhutan, 2011, ^ Zangmo et al. 2012 (datasets from National Nutrition Surveys 1986–1988, 1999 and 2008), ** Ministry of Health, Royal Government of Bhutan, 2015c

Sources: World Bank, 2016 unless otherwise specified

Substantial reduction in the maternal mortality ratio (MMR) has occurred over the years. The National Health Survey estimated the MMR at 86 per 100 000 live births in 2012 compared to 777 in 1984. However, the World Bank estimated Bhutan MMR at 148 per 100 000 live births in 2015 compared to 945 in 1990.

The World Development Indicators (WDI) adolescent fertility rate (AFR) in 2015 was 20.1 births per 1000 adolescent women (15–19 years old) while national reports reflect an AFR of 28 births in 2012 per 1000 adolescent women. The above rates, despite a slight discrepancy, are far better than the average AFR of LMICs at 46.7. The rapid reduction of the AFR from 120 in 1994 to the above levels could be attributed to increasing literacy, poverty alleviation, urbanization and availability of contraceptives. In a logistic regression analysis of the socioeconomic and demographic factors affecting young women's pregnancy carried out for the monograph on "Sexual and Reproductive Health of Adolescents and Youth in Bhutan" (National Statistics Bureau, Royal Government of Bhutan, 2015), variables such as a rural location, poor background of the household where a young woman lived, low education of a woman, the circumstance where a young woman was divorced/widowed/separated,

a large age difference between the age of a woman and her male partner, and a woman having less power in decisions on her sexual and reproductive health, correlated positively with an early age pregnancy. The positive coefficient of the woman's power in health decisions is surprising, as women who have more power in health decisions seem to have a higher rate of pregnancies among the women aged 20–24 years. Determinants such as access to media distance to a health facility and the education of a husband or male partner did not have an effect on an early age pregnancy.

As per the National Nutrition Survey 2015, prevalence of stunting, wasting and underweight were 21.2%, 4.3% and 9.0%, respectively, indicating a moderate public health problem in nutrition. The WHO classification cut-off for a moderate public health problem is 20% for stunting and 10% for underweight, and 5% for wasting (Ministry of Health, Royal Government of Bhutan, 2015c).

In the area of water and sanitation, as per the 2015 Update and MDG assessment on progress on sanitation and drinking water, 100% of the population use improved water source and 50% of the 2015 population has gained access to it since 1990, meeting the MDG target. In the area of sanitation, Bhutan has made good progress as 50% of the population uses improved facilities and another 28% shared facilities. By 2015, 37% of the population has gained access to improved sanitation facilities compared to 1990. Dental caries and the disease of the teeth and gums are one of the most common oral problems. For example in 2015, health facilities had 55 036 cases of dental caries and 22 457 cases of the disease of the teeth and gums. Diet, oral hygiene and lack of fluoride are considered to be the factors responsible. In a national survey among 6–12-year-old students in 2016, 58.4% of urban students and 62.6% of rural students were found to have gum problems. In 2008, Ngedup S. et al. found caries prevalence of 58% among 12-year-old schoolchildren in Thimphu.

Immunization as a programme was launched with six antigens (DTP, OPV, measles, BCG) in 1979. Since then, the schedule has been updated to keep abreast of the developments in immunization and newer vaccines becoming available. Hepatitis B vaccine for infants was introduced in 1996 and rubella vaccine with measles in 2006. Pentavalent vaccine was introduced during 2009–2011 and IPV (inactivated polio vaccine) in 2015. The switch from tOPV to bOPV was made in 2016. Immunization coverage has remained high over the years because of political commitment

and the health delivery system. Since 2000, the coverage has been maintained at over 90% and was 94.4% in 2015 (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016), one of the highest in the South-East Asia Region (Ministry of Health, Royal Government of Bhutan, 2014). HPV vaccine has also been introduced for teenage girls from 2010. Though the birth cohort is projected to go down to 12 818 by 2020, sustaining the supply of vaccines, including the expensive HPV vaccines, is an issue given that Bhutan will be an upper middle-income country by 2020 assuming the annual 9% GDP growth rate target is achieved.

In terms of health challenges, Bhutan, like other countries in the Region is also undergoing an epidemiological transition. While communicable diseases such as respiratory and skin infections and diarrhoeal diseases remain a substantial burden to the people and the health system, NCDs are increasing rapidly. Conditions such as hypertension, CVDs and diabetes are on the rise. Further, although rapid socioeconomic growth and development has made life relatively easier for the citizens, there is emergence of a few issues such as crime, substance dependence and suicide/other mental health problems in the younger population. A monograph on the socioeconomic theme of "Crime and Mental Health Issues among Young Bhutanese People" found that more than 5% of young people reported use of one or more drugs to get high once in their lifetime. Although the drug dependence problem in the country may be smaller than that in other countries, the rate of its increase is worrisome. In fact, arrests associated with drug dependence are one of the highest in the country. The Gross National Happiness Survey 2010 found that suicidal ideation in the past 12 months was 3.4% and the increasing numbers of suicides are causing big concerns to the government. Accordingly, a three-year action plan (July 2015–June 2018) for suicide prevention has been adopted.

Outbreaks such as peripheral neuropathy, which occurred among soldiers, monks and students between 1998 and 2012, pose substantial challenges to the health system. The majority of these outbreaks, including the last seven, were reported among boarding schoolchildren. In fact, two children died in a higher secondary school in east Bhutan and 34 more were admitted at a nearby district hospital in December 2011. The deaths were reported to be caused by beriberi. A study on the prevalence of thiamine and cobalamin deficiency among boarding schoolchildren found a high prevalence of thiamine (50.58–91.8%) and

cobalamin (64.7%) deficiency in areas with outbreaks of peripheral neuropathy (Ministry of Health, Royal Government of Bhutan, 2017c). However, multisectoral mechanisms are being instituted to prevent the recurrence of such outbreaks.

1.5 Natural and human-induced disasters

Bhutan's location, mountainous landscape and precipitation, particularly in the monsoon season, make the country vulnerable to numerous natural disasters.

Flash floods and landslides, particularly during the monsoon season, are common. In 2004, flash floods affected six eastern districts, claiming nine lives, and damaging around 1500 households. Again, in 2009 flash floods caused 13 deaths. Bhutan experienced one of the worst monsoons in the recorded history in 2016, with rains affecting 18 of 20 districts. Flooding and landslides damaged vital infrastructure, caused much economic loss and cost the lives of several individuals, particularly in the southern districts of Sarpang, Chukha, Tsirang and Samtse. Many highways, including the vital Thimphu–Phuentsholing–India highway, became inaccessible and power-line disruptions cut off electricity from some areas.

Despite an abundance of water in the rainy season, the country faces seasonal and local water shortages in the dry season. These seasonal droughts increase the risk of fires, affecting both human settlements and the forest. In 2014, a forest fire in the Trashigang district destroyed 22 houses, damaged water supply schemes, irrigation channels and agricultural crops. To balance diverse water needs relating to, among others, drinking water, agricultural production and hydropower generation, and with competition for water only expected to increase due to global climate change, Bhutan has adopted a National Integrated Water Resources Management Plan in 2016.

Snow-, hail- and windstorms are common in the winter months. A 2014 windstorm in the Samtse district damaged the roofs of many houses, including that of Samtse hospital.

Formation of supra-glacial lakes has become a common phenomenon in Bhutan over the past decades because of the accelerated retreat of glaciers (3–6 metres per year) with rising levels of global temperature. Glacial lake outburst floods (GLOFs) have occurred regularly in the past,

most often in the Pho Chu sub-basin. On 7 October 1994, a partial breach of the Lugge Tsho resulted in a flood that claimed 22 human lives and caused massive damage to over 1700 acres of agricultural land, houses and other infrastructure. In a 2006 review of Bhutan's 2674 glacial lakes, 25 were identified as prone to GLOFs in the near future. Future threats are expected to be concentrated in the Chamkar Chu basin, Mangde Chu basin, Kuri Chu basin, Mo Chu basin, and Pho Chu basin. Measures are being taken to reduce the risk of catastrophic GLOFs; these include artificially lowering the level of the Thorthormi Glacier Lake, setting up end-to-end automatic early warning systems, raising awareness and designating potential red zone and evacuation areas, particularly in the Punatsangchu river basin, which spans five districts.

Located on the boundary of the Indian and Eurasian tectonic plates, Bhutan is situated in one of the most seismically active global zones (zone 4 or 5 as per the Indian Seismic Codes). Over the past century, Bhutan has experienced 10 major seismic events (M >5.5 on the Richter magnitude [M] scale), with an average of M 6.7, causing major structural damage to government and private buildings. Two recent moderate earthquakes (M 6.1 on 21 September 2009 and M 6.8 on 18 September 2011) caused a total of 13 deaths, damaged around 7000 homes and produced losses amounting to Nu 3700 million, including about Nu 600 million worth of damages to 54 health facilities. Following these incidents, the Government of Bhutan developed a National Action Plan for Earthquake Safety of Health Facilities in 2013. A seismic vulnerability assessment of the national referral hospital (JDWNRH) was carried out in 2012.

Although air quality is generally classified as good in the Kingdom, developments in the capital require ongoing attention. With levels of particulate matter of less than 10 microns diameter (PM10) of 73 $\mu g/m^3$ and estimated levels of particulate matter of less than 2.5 microns in diameter (PM2.5) of 43 on average in Thimphu, the city currently exceeds WHO air quality standards (PM10 < 20, PM2.5 < 10). This is subject to strong seasonal variation, with highest levels of particulate matter in winter, and a gradual decline towards the summer. Increasing construction activities, industrial plants without modern emission controls, land clearing from forest fires, wood burning in stoves in winter and brown haze from the south are matters of concern. Expansion of air quality surveillance to other major cities in the country will contribute to better evidence for policy.

2 Governance

Chapter summary

This chapter provides the structure of the health system in Bhutan. It describes the emergence of modern medicines, which is currently integrated with the traditional medicine services. The provision of health services to the Bhutanese population involves the government, NGOs, private sector and development partners. However, as per section 21 of Article 9 of the Constitution, the government is mandated to provide "...free access to basic public health services in both modern and traditional medicines". Therefore, the government health sector plays a dominant role over other players in providing health services to the people.

The Ministry of Health (MoH) is responsible for policy formulation, health planning, policy implementation, monitoring and supervision of services related to preventive, promotive, curative and rehabilitative services both in traditional and modern medicines. It also provides technical guidance to the district health management and ensures continued availability of medical and non-medical supplies and human resources.

There are five departments under the MoH: Department of Public Health (DoPH), Department of Medical Services (DoMS), Department of Medical Supplies and Health Infrastructure (DoMSHI), Department of Traditional Medicine Services (DoTMS) and the Directorate Services. The Human Resource Division under the Secretariat is responsible for the supply of human resources through selection and recruitment processes.

In line with the decentralization policy of the RGoB, health administration and management has been devolved to districts over the past few decades. Consequently, district-level health service planning and management are decentralized to district health management teams that function within the framework of the local government. Thus, the district health office deploys human resources for health (HRH) in the districts whereas district hospitals and basic health units (BHUs) are managed directly by the district health authority. Similarly, allocation of

financial resources has continually been expanded for local government units: from a centralized allocation during the early 1960s to a ratio 70:30 for the Central and local governments in the 11th FYP. The government has already indicated further shifting of resources to the local government with a ratio of 50:50 in the 12th FYP although there are concerns whether local governments have the adequate absorptive capacity.

The public sector has three referral hospitals, 28 hospitals, 23 BHUs grade I (BHU-Is), 184 BHUs grade II (BHU-IIs) (including satellite clinics), 28 sub-posts, 54 indigenous units and 494 outreach clinics (ORCs) (with sheds). In 2014, JDWNRH was granted autonomy and the hospital has the authority to decide on its administrative matters.

With regard to private sector provision of health, in the Economic Development Policy formulated in 2010, the government encouraged establishment of high-end hospitals in the private sector to provide high-end health care for which the public hospitals did not have the capacity. However, this has not realized so far and patients who cannot be managed by national referral hospitals are referred to hospitals in India. In 2014, the government allowed other initiatives such as establishment of selective diagnostic centres by private firms. This initiative aims to decongest overcrowding of patients in public hospitals and to improve provision of quality health care in the public health centres. Currently, there are 14 selective diagnostic health centres in certain major towns in the country.

This chapter also discusses health sector planning which is guided by the overall 11th FYP development with the four pillars of Gross National Happiness. To realize the objectives of the 11th FYP, the aspect of intersectorality has been emphasized. Various key players including different ministries, NGOs, civil society organizations (CSOs) and international organizations play pivotal roles in fulfilling national and international goals and targets.

Finally, regulation of HRH, infrastructure development, medical supplies, third-party providers, complaint procedures, patients' rights and choices and the impact of IHR are also discussed in this chapter.

2.1 Overview of the health system

Traditional healing methods predominantly existed in Bhutan until the 1960s. With the establishment of modern health-care system, both the traditional and modern medicines are integrated and delivered at various levels of health centres in the country.

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 (Royal Government of Bhutan, 2008). Guided by the Constitution, the National Health Policy, approved by the Cabinet in 2011, prioritizes the realization of universal health coverage (UHC) on the principles of primary health care (Ministry of Health, Royal Government of Bhutan, 2011). It provides fundamental and essential guidance on health system, disease control, medical care and partnership in health, and guides the government in achieving national and international health goals within the spirit of social justice and equity.

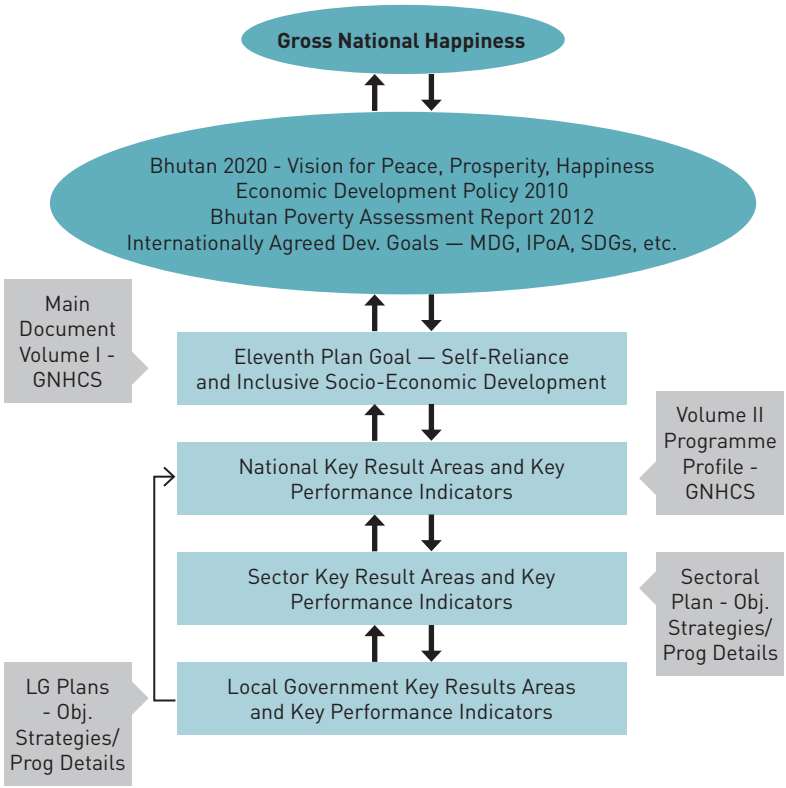
Health policy objectives are executed through health sector strategic (5-year) and operational (annual) plans. The national five-year plan, provided by the Gross National Happiness Commission (GNHC), guides the drafting of health sector strategic plans and emphasizes an intersectoral planning approach through multistakeholder participation. The Ministry signs Annual Performance Agreement (APA) indicators with the Prime Minister, which are geared towards realizing the goals of 11th FYP.

Human resources including specialists, doctors, nurses, health assistants (HAs) and allied health workers are deployed based on the HRH Master Plan (2013–2023). The HRH targets for the current 11th FYP are: to realize 100% of districts with three medical officers each, a nurse-to-bed ratio of 1:6, 100% of BHU-IIs with three health workers each, 100% BHU-IIs with one female health worker each (Gross National Happiness Commission, Royal Government of Bhutan, 2013). Although this HRH Master Plan provides an overarching guidance on the deployment of human health workforce, the district health management has the authority to rationally deploy human resources particularly, HAs and nurses in the districts based on the catchment population and evolving needs. There is a mutual understanding between the MoH and the Royal Bhutan Army on sharing the human resources based upon their needs.

Health services are delivered through a well-functioning three-tiered health system structured in a hierarchy, ascending from sub-posts and

ORCs to BHU-Is and BHU-IIs at the primary level, district hospitals at the secondary level and the national and regional referral hospitals (RRHs) at the tertiary level. The health system is further connected to the community through village health worker (VHW) services at the grassroots level. Finally, patients who require life-saving medical services that are not available in Bhutan are referred abroad. Quality aspects of health services are also regulated in terms of human resource, medicines and equipment as described later in this chapter.

Figure 2.1 National planning framework



Note: Local government units include district and sub-districts. Hence, local government Key Result Areas and Key Performance Indicators can be further delineated to district and sub-district levels.

Source: Gross National Happiness Commission, Royal Government of Bhutan, 2016

Under the decentralized structure, the MoH is responsible for providing technical support to the local government including district-level health management on planning, budgeting and implementation. The district health management team is responsible for delivering health-care services in the district; it responds to local needs through

multistakeholder engagement and community participation. The team follows the guidelines and procedures issued by the GNHC and the MoH.

District hospitals, BHU-Is and BHU-II are directly managed by the district administration. The sub-posts and ORCs, which are the offshoots of BHUs, are supervised by HAs with essential supplies.

JDWNRH became autonomous in 2014. It has17 departments, their heads are selected from among the specialists in the departments. New human resources are deployed in consultation with the MoH. However, the hospital management is responsible for the procurement of medical and non-medical supplies as well as hospital maintenance.

The eastern RRH in Mongar and the central RRH in Gelephu and sub-district hospitals including Gidakom Hospital, Deothang Hospital and Phuntsholing General Hospital are under the administrative supervision of the MoH. This allows the Ministry, among its other functions, to deploy human resources and medical supplies. This mode of administration has been very crucial for effective management of referral hospitals as there is a need to strengthen their human and administrative capacity.

The private sector in health has a limited role in Bhutan. There is no private hospital in the country; only a few big cities have a few selective diagnostic centres. The Royal Bhutan Army run their hospitals and dispensaries located at the Headquarter and other locations in the country. Health services at these facilities are offered free of charge to any Bhutanese citizen who chooses to seek their services. Similarly, some hospitals and dispensaries are run by IMTRAT (Indian Military Training Team), Dantak (Indian Border Road Organization), and hydropower projects. Primarily, they provide free health services to their employees although the general public also has access to their services. Traditional healers provide their services at an individual level or in informal settings.

The Essential Medicines and Technology Division (EMTD) of the MoH performs health technology assessment (HTA). Since the establishment of EMTD in 2012, HTA experts have evaluated 22 proposals. Evaluation of a proposal includes assessment of technical properties, clinical effectiveness including safety and efficacy, cost-effectiveness and feasibility, as well as impact on social, legal, ethical and political arena.

The Quality Assurance and Standardization Division (QASD) under the MoH is mandated to standardize, monitor and regulate the quality of health care including accreditation of hospitals whereas the Bhutan Medical and Health Council (BMHC) regulates health professionals' practice and medical education.

The Bhutan Health Management Information System (BHMIS) is used to collect aggregate data on disease morbidity and mortality from all health facilities in the country. This system has evolved over the years from handwritten notes in the 1980s to a web-based District Health Information System (DHIS2), which plays a crucial role in policy formulation, decision-making and programmatic interventions. However, different e-health solutions have been independently developed for specific programmes. The variation in standards of different e-health solutions has inhibited the development of a common interface among them (see details in section 2.7).

As per the National Health Policy, the Ministry considers multisectoral partnerships and international collaboration as key approaches towards achieving the goals of the health sector.

2.2 Historical background

Before the introduction of modern medicine, healing methods were rooted in religion and culture. These methods were propagated by prominent spiritual leaders such as Guru Rinpochhe in the 8th century and Zhabdrung Ngawang Namgyal in the 17th century. This led to the spread of *gSowa Rigpa,* which is still practised as traditional medicine in the country (Dorji T et al., 2012). The introduction of a formal modern health-care system dates back to the 1920s with the establishment of the first dispensary in the western district of Haa followed by a hospital in Langjophakha under Thimphu district in 1954. More organized health institutions were established after the initiation of the FYPs in the 1960s.

After Bhutan became a signatory to international goals including the Alma-Ata Declaration in 1978, the country began to focus on primary health care. With intersectoral and international partnerships and the government's strong political commitment to health, remarkable achievements in health including the MDGs have been made. In addition, a traditional medicine system has been established in parallel with the modern health system. Traditional health care is delivered at the

Traditional Medicine Hospital (TMH) in Thimphu and by traditional medicine units in district hospitals and BHUs.

2.3 Health-care organization

2.3.1 Health services provided by the MoH

The MoH is the central authority responsible for providing preventive, promotive, curative and rehabilitative services in the country, which aim to improve the quality of care to the people through:

- formulation of policies, strategies, standards and guidelines;
- provision of technical support for implementation of the programme activities;
- supervision and monitoring of the implementation of health services at all levels; and
- mobilization of financial resources.

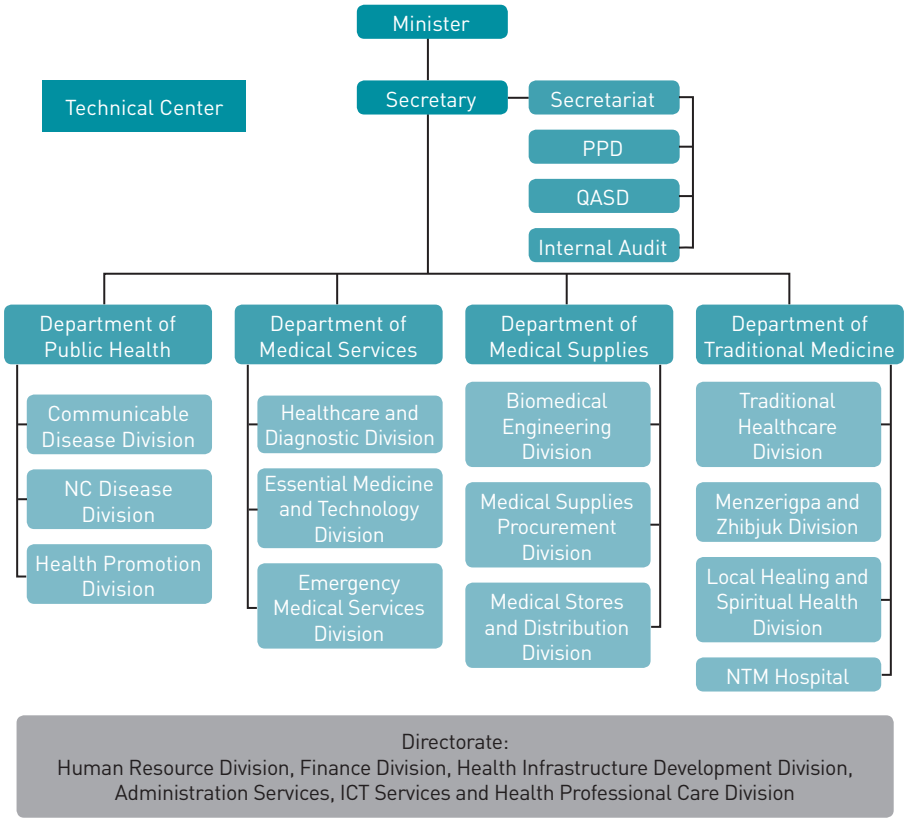
To fulfil these aims, the Ministry has five departments: DoPH, DoMS, DoMSHI, DoTMS and Directorate Services (Table 2.1). These departments have three to four divisions (Figure 2.2) and are managed by Directors/ Chief Programme Officers under a Director General or Director. The Secretary is the head of the bureaucracy and the Health Minister is the elected head of the Ministry.

Table 2.1 Roles and responsibilities of the Secretary and five departments in the Ministry of Health, Bhutan

Department	Roles and responsibilities
Secretary	Consists of a secretariat, Policy and Planning Division, Quality Assurance and Standardization Division, and internal audit
Directorate services	Effective administration and financial services, and carry out other related work based on the delegated roles and responsibilities under the overall supervision of the Secretary
Medical services	Ensure provision of curative services in the country; also directly manage referral and general hospitals
Public health	Provide health-care services for promotion of healthy living and prevention of diseases
Traditional medicine services	Provide services in the area of traditional medicine including production and dispensing of traditional medicines
Medical supplies and health infrastructure	Procurement and distribution of medicines and non-medical equipment to all the health centres as per the annual requirement by health centres and maintenance of equipment; also involved in planning, designing, supervision and monitoring of construction of larger health infrastructures

Source: Ministry of Health, Royal Government of Bhutan, 2017a, synthesized by the authors

Figure 2.2 Organogram of the Ministry of Health, Bhutan



Notes: PPD: Policy and Planning Division; QASD: Quality Assurance and Standardization Division
Source: Ministry of Health, Royal Government of Bhutan, 2017b

At the regional level, RRHs serve as a link between the district hospitals and the national referral hospitals. RRHs treat patients referred from the districts under their jurisdiction, and further refer them to the national referral hospitals as needed. A hospital superintendant is the head of an RRH, and they report directly to the Director General of the DoMS at the MoH as well as the district governor.

The district health administration is placed under the jurisdiction of the district administration headed by a Dzongdag. The district health supervisory officer, working under the overall district administration within the structure of the local government, heads each district health administration. S/he is responsible for district health sector planning, monitoring and evaluation of both strategic and operational plans, and supervises service delivery by district hospitals and BHUs. The district health supervisory officer works in close collaboration with all sector

heads, the district medical officers, heads of BHU-Is and BHU-IIs, and elected community leaders. The district health supervisory officer also reports to the MoH.

Apart from the public health system, the armed forces have their own hospitals under their administration. There is a mutual understanding between the MoH and the Royal Bhutan Army for sharing human resources, if required.

2.3.2 Private health-care provision

The private health sector's role in the provision of health services is a recent phenomenon in Bhutan. There are a few private diagnostic centres but no private hospital at present. Private traditional healers provide services at an individual level. Few cities have private diagnostic centres, which are supervised by certified health professionals including medical doctors, technicians and technologists. These centres provide only selective services such as X-ray, ultrasound, endoscopy and blood tests based on prescription/advice provided by medical doctors in public hospitals but are not allowed to prescribe or dispense medicines. In towns near the national borders, the establishment of selective diagnostic centres is aimed to provide diagnostic services for screening required for migrant labourers seeking employment in Bhutan; thus reducing the workload of public hospitals. The general public can also use these centres for diagnostic services. At present, there are 14 private diagnostic centres in major urban towns and cities in the country.

2.4 Decentralization and centralization

Decentralization involves the transfer of authority and responsibilities from a central authority to local governments. Additionally, it includes sharing of public functions and responsibilities with the private or corporate sectors. Broadly, decentralization may be political, administrative, economic or market and fiscal in nature.

The beginning of Bhutan's decentralization process dates back to 1953 with the institution of the National Assembly followed by the establishment of district development committees in 1981 and block development committees in 1991. A foremost step was witnessed during the reign of His Majesty the fourth King Jigme Singye Wangchuk when executive powers were fully devolved to the Council of Ministers in 1998. This process culminated in the introduction of parliamentary democracy and adoption of the Constitution in 2008.

Article 22, section 1 of the Constitution of the Kingdom of Bhutan emphasizes that power and authority should be decentralized and devolved to elected local governments to facilitate the direct participation of the people in the development and management of their own social, economic and environmental wellbeing (Gross National Happiness Commission, Royal Government of Bhutan, 2008).

The devolution of administrative and financial powers and functions from the Central to local governments has been the principal focus for long-term vision of achieving national goals of self-reliance and sustainable development within the framework of Gross National Happiness. This is evident from the Constitution which entitles local governments with adequate financial resources to ensure the establishment of self-sustaining units (Gross National Happiness Commission, Royal Government of Bhutan, 2008).

The Department of Revenue and Customs under the Ministry of Finance (MoF) is responsible for collection of government revenues; revenue is collected for land, properties, business and personal income, and consumption of goods and services. As per the financial powers and functions of local governments, they have the authority to incur expenditure for maintenance of infrastructure from the retained local taxes (Royal Government of Bhutan, 2009a). The Department of National Budget under the MoF is responsible for the preparation of a multi-year rolling budget and forecast of Central and local governments' expenditures. The MoF also sets the ceiling for budget preparation by the Central agencies and the local governments (Ministry of Finance, Royal Government of Bhutan, 2016a).

Of the overall budget envelope for a five-year planning period in the country, the resource allocation ratio between the Central and local governments is 70:30, guided by the division of responsibilities among the national government (Central agencies/sectors) and local governments (districts, blocks and city A grade). The division of responsibilities is guided by the Constitution and the Local Government Act 2009, which aims to ensure that the people, through various levels of government, have control over the development and management of their own social, economic and environmental wellbeing. The resource allocation employs the "principle of subsidiarity", which considers the linkage among responsibilities, financial transfers and revenues.

The 30% of the resources allocated to local governments is in turn shared in the ratio of 60:40 between a district and its blocks (Gross National

Happiness Commission, Royal Government of Bhutan, 2012). For the districts under a local government, the formula shown in Table 2.2 is considered. Financial flows from the Central and local government levels are described in section 3.2.

Table 2.2 Weightage for resource allocation formula

S. no.	Criteria	Formula (%)
1	Population	35
2	Multidimensional poverty	45
3	Area	10
4	Transportation cost index	10

Note: the formula is applied to the allocation from the Central to a local government.
Source: Gross National Happiness Commission, Royal Government of Bhutan, 2013

The criteria for resource allocation include population, area, multidimensional poverty and transport cost index. Under the decentralized structure, local governments carry out planning, budgeting and evaluation of programmes. In addition, local governments have the authority to make rules and regulations consistent with the laws enacted by the Parliament of Bhutan (Ministry of Finance, Royal Government of Bhutan, 2009).

2.4.1 Organizational structure of the local government

A local government includes district, block and municipal committees headed by elected leaders. The population varies among districts with lowest of 3766 (Gasa district) to the highest of 59 630 (Trashigang district). Among four municipalities, Thimphu has the highest population at 128 000 and Samdrup Jongkhar has the lowest at 49 447 (www.nsb.gov.bt).

The local government has the following role (Royal Government of Bhutan, 2009a):

1. To provide a democratic and accountable government for local communities;
2. To ensure the provision of services to communities in a sustainable manner;
3. To encourage the involvement of communities and community organizations in matters of local governance; and
4. To discharge any other responsibilities as may be prescribed by law made by the Parliament.

2.4.2 Decentralization in health

In accordance with the guidelines for decentralization, powers and functions of the health system have been devolved from the Central authority to local peripheries. The MoH focuses mainly on providing technical support to the district health offices, while they in turn focus on implementing national policies and programmes as well as monitoring and evaluating the programmes at the district level.

Under the decentralized structure, construction of BHUs, sub-posts and ORCs is planned, budgeted and executed by the district health administration following guidelines issued by the MoH (Table 2.3) as well as other agencies such as the MoF and local government offices. However, since most of the districts do not have technical capacity for planning, designing and construction of hospitals, these activities are supported by the DoMSHI.

Table 2.3 Guidelines for construction of health infrastructure showing the weightage criteria for infrastructure development

Criteria	BHU-II (%)	BHU-I and hospital (%)
Catchment population	30	30
Distance to the nearest facility at the same of higher level	25	30
Poverty rate in that gewog/dzongkhag	10	10
Available land area for construction	15	15
Location of the proposed location	5	5
Number of female population in the age group of 15–49 years	10	10
Presence of other sectoral facilities (Renewable Natural Resources, school)	5	NA
Total	**100**	**100**

Source: Ministry of Health, Royal Government of Bhutan, 2013a

Construction of rural water supply and sanitation schemes is also carried out by the local government administration; however, capacity building of local engineers for identification of the source and designing of the water supply schemes is supported by the MoH.

Another important area of devolution has been the human resource deployment in the districts. While supply of health professionals to respective districts is guided by the needs assessment carried out by the human resource division of the Ministry, district administrations have

the authority to deploy from the existing pool of health workers across health centres located under their jurisdiction. The district health office is directly accountable to the district administration under the Ministry of Home and Cultural Affairs (MoHCA). In parallel, they are also accountable to the MoH for reporting progress of health status.

Finally, Bhutan follows a system of central procurement and distribution of medical supplies. The DoMSHI of the MoH is responsible for the procurement and supply of medicines, medical equipment and non-consumables for all health centres in the country. The central procurement and distribution policy is practised to ensure cost-effective supply of quality medicines and technologies. However, given the small demand, there are only a few bidders interested in replying to procurement requests, resulting in high costs. In addition, the lack of capacity in procurement know-how, storage of medicine and non-medicinal supplies, and high transportation costs are some of the challenges facing the health system.

2.5 Policy and planning

2.5.1 Policy formulation

The Cabinet of Bhutan revised the protocol for formulation of policies of the RGoB in 2015. In line with the new directives, the formulation or revision of policies requires the proponents (Cabinet, Ministries/Agencies and the GNHC) to submit draft policies or concept notes through the Ministry's Policy and Planning Division (PPD) to the GNHC Secretariat for review. The GNHC Secretariat submits the concept notes to the Cabinet for approval. The Cabinet approves/rejects the concept notes and forwards its comments to the proponent and the GNHC Secretariat. Proponents desiring to formulate or revise policies can do so after the approval of concept note by the Cabinet. Only policies approved by the GNHC Secretariat are forwarded for Cabinet's approval (Royal Government of Bhutan, 2015b). The process of policy formation includes face-to-face consultation with civil society on the relevance of the policy and by inviting public opinion via the Ministry's website.

2.5.2 General government planning process

Bhutan's national planning process is based on five-year development plans initiated in 1961. The overall goal is to achieve self-reliance and inclusive green socioeconomic development. In realizing this goal, the 11th FYP has taken into consideration the four key national challenges,

namely poverty reduction, self-reliance, youth unemployment and demographic planning.

Based on the 11th FYP, a result-oriented planning approach with National Key Result Areas (NKRAs), Sectoral Key Result Areas (SKRAs) and District Key Result Areas (DKRAs) is identified (Figure 2.1). After development of NKRAs, all Ministries are required to develop their SKRAs guided by the GNHC. In the 11th FYP, 16 NKRAs such as sustained economic growth, poverty reduction, improving public services and achieving MDG+ goals have been identified with two to three Key Performance Indicators (KPIs) for each area. The country is at the final year of the 11th FYP (2013–2018) and the consultation phase for preparation of the 12th FYP has been initiated. As in the past plans, the approach to the development of next FYP is guided by the four pillars of Gross National Happiness: (i) promotion of equitable and sustainable socioeconomic development; (ii) preservation and promotion of cultural values; (iii) conservation of natural environment; and (iv) enhancing good governance.

2.5.3 Health sector plan

National level

Health sector planning is based on the national five-year planning cycle, led by the GNHC, and it is integrated within the national FYP. The national FYP has two parts: central plans and local government plans. The current health sector plan is reflected in Chapter five of the central plans of the 11th FYP (2013–2018) document. The plan aims to achieve UHC by providing improved and equitable access to quality health-care services to the people.

Guided by the GNHC, the PPD under the MoH is responsible for coordination and drafting of the health sector plan. It begins with the assessment of the current and future situations followed by delineation of objectives, strategies and programmes. In line with these, SKRAs are agreed upon, KPIs are developed and targets against them are set, and progress in implementation against key results areas is tracked through the APA. SKRAs and KPIs are initially developed at the programme level. They are then discussed at the departmental level and finally at the Ministry level before submission to the GNHC for approval.

The 11th FYP has 13 SKRAs for health including strengthening HRH, prevention and control of communicable and NCDs, strengthening and

integration of traditional medical services with allopathic medicine, health resilience to climate changes and disasters, and prudent financing of health services – with one to five KPIs for each area.

District level

The district health plan is guided by the overall goals of the national health sector plan. The DKRAs are based on the health SKRAs but adapted to be responsive to local needs. KPIs are developed to measure the progress of the plan. Health sector interventions at the district level are formulated and endorsed by the district development committee. As in the Ministry, the district health management team signs an APA with the Dzongdag (District Governor) to track annual progress in implementing the district health plan. The 11th FYP lays emphasis on reducing poverty, improving social indicators (such as MMR and under-5 mortality), improving service delivery, enhancing capacity of local governments and strengthening the democratic process.

2.5.4 Role of development partners in policy and planning

External assistance plays an important role in health policy formulation and service delivery. Bhutan receives both financial and technical support from various development partners including governments of India, Japan and Norway, World Bank, WHO, United Nations Children's Fund (UNICEF), Japan International Cooperation Agency (JICA), United Nations Population Fund (UNFPA), Thailand International Cooperation Agency (TICA), ADB and Global Fund and others.

Engagement of these partners assists the country in aligning national policies and plans with international goals including the Sustainable Development Goals (SDGs).

The GNHC Secretariat is the designated grant coordinating agency of the government, and in close collaboration with the MoF and respective line ministers it manages external support coming into the country. The Development Cooperation Division of the GNHC Secretariat coordinates all activities of development partners. Involvement of development partners is based on the national priorities set out in the national FYPs. Once the next FYP is drafted and finalized by the government, the GNHC Secretariat in collaboration with the Ministry of Foreign Affairs conducts a round table meeting for the development partners. During the round table meeting, the FYP is presented and shared with the development partners and accordingly they express their commitment on the basis of their

interests and priorities to support different programmes and projects of the plan. The implementation and monitoring of donor support projects and programmes are executed as per the Project Execution Manual 2014 of the GNHC.

Additionally, the bilateral and multilateral policy dialogues between the government and external agencies help to identify and set national and international priorities, which lead to planning and strategy development. The development partners conduct reviews including Joint Sector Reviews coordinated by the GNHC. Such reviews form the basis for national counterparts to set priorities and policies that will guide interventions in the future.

2.6 Intersectorality

The RGoB recognizes intersectorality as an important mechanism to bring about improved and equitable socioeconomic development in the country. While the health sector is mandated to provide free basic health-care services, the responsibility for public health lies beyond the health sector considering that the social determinants are outside the scope of the health system. To this effect, the health policy seeks to address these issues through multisectoral partnerships and collaboration, which include investment in disease prevention and promotion by other sectors (Ministry of Health, Royal Government of Bhutan, 2011). Similarly, the Ministry's stewardship in promoting "Health in All Policies" (HiAP), which calls for all other sectors to consider inclusion of health components in their policies and strategic plans, implies the need for multisectoral efforts to improve health of all individuals. This initiative gears towards calling other sectors to play a supportive role in the implementation of health policies and creating a supportive environment in the promotion of health programmes (Ministry of Health, Royal Government of Bhutan, 2015b).

Based on the National Health Policy and National Health Promotion Strategic Plan (2015–2023), which was approved by the Cabinet in January 2016, the MoH is required to conduct health impact assessment (HIA) of mega projects including foreign direct investment (FDI) in the country before they are commissioned (Ministry of Health, Royal Government of Bhutan, 2016c). As of March 2017, HIA was piloted in one industrial estate by the MoH in collaboration with Ministry of Economic Affairs (MoEA), GNHC, National Environment Commission and the district and sub-district administration. In the future, HIAs will be done for all major hydropower projects at the commissioning stage.

Key partners/sectors and areas of collaboration and partnerships

The MoH's collaborating partners include the following agencies/ sectors in various areas: the Ministry of Education (MoE) through the Comprehensive School Health Programme to address issues around preventive health of schoolchildren; the Bhutan Narcotics Control Agency (BNCA) and the MoEA on the harmful use of alcohol and suicide prevention measures (Royal Government of Bhutan, 2015a, c); the Ministry of Labour and Human Resources (MoLHR) in occupational health and safety; the National Environment Commission and the Ministry of Agricultural and Forests in climate change adaptations, reduction of health hazards from chemicals and one health approach (Bhutan One Health Strategic Plan 2017–2021) as well as implementation of the National Influenza Pandemic Preparedness and Response Plan. The National Guideline for Management of Rabies, Guideline for Preparedness, Surveillance and Control of Anthrax in Humans and Animals, and Disease Outbreak Investigation and Control Manual assigns shared responsibilities to health and agriculture sectors.

In addition, the MoH partners closely with the following sectors:

- MoEA for implementing integrated surveillance for monitoring climate-sensitive diseases;
- MoEA, Ministry of Foreign Affairs, MoE, Ministry of Information and Communication, CSOs, NGOs, Monastic Bodies and Bhutan Agriculture Food Regulatory Authority (BAFRA) for implementation of the Nutrition Security Policy of Bhutan 2014;
- Road Safety and Transport Authority, Royal Bhutan Police and Thimphu City Corporation in the implementation of Decade of Action for Road Safety;
- BNCA in fulfilling the obligations and ensure effective control of tobacco and tobacco-related products;
- Central Monastic Body through the Religion and Health Programme to improve the health of the Monk Bodies;
- MoE, Youth Development Fund and BNCA to improve the physical and mental health of adolescents;
- Lhaksam, an NGO formed by people living with HIV (PLWHIV) to sentisize on HIV prevention and control in the community;
- Ability Bhutan Society, Disabled People Association of Bhutan, and Draktso Vocational Institute for providing services for people with disabilities;

- Civil Aviation Authority, Department of Revenue and Customs, Immigration and Airlines authority to fulfil IHR requirement at point of entry both at land and air crossing;
- HRH planning and development is done closely in collaboration between the MoH, the Royal Civil Service Commission (RCSC) and the Department of Higher Education in the MoE.

Role of GNHC in promoting multisectoral coordination

The GNHC as a national planning agency of the government has a mandate to coordinate and collaborate with all sectors, agencies and local governments in preparation of their plans, programmes and policies at the national level. In doing so, the national objectives and key result areas are identified through stakeholder consultations. These objectives and key results areas have to be achieved by contribution from each and every sector and agency of the country at different levels including NGOs. Thus, the GNHC ensures promotion of multisectoral coordination and collaboration through policies and implementation of FYPs.

Multisectoral approach to achieving SDGs

In preparation of the 12th FYP, the GNHC Secretariat has developed the guideline for drafting the 12th FYP, which was approved by the government in December 2016. During the preparation phase, the GNHC Secretariat consulted extensively with all stakeholders including all line ministries, agencies, local governments and NGOs and development partners. In the process, the National Plan Objectives and NKRAs for the next FYP were finalized.

The Objectives and NKRAs are derived from the Royal Addresses, Constitution, Vision 2020, Strategy for Gross National Happiness, results of the Gross National Happiness Survey 2015, 11th FYP mid-term review, stakeholders consultations, international and regional goals. In this context, international goals are the SDGs. Thus, SDGs are mainstreamed into the 12th FYP objectives and NKRAs. Accordingly, all relevant stakeholders will incorporate relevant targets and indicators in their plans and programmes when they start preparing their 12th FYP (Gross National Happiness Commission, Royal Government of Bhutan, 2016).

2.7 Health information management

2.7.1 Health information systems

Bhutanese Health Information Unit under the MoH was established in 1984. The platform for collection and compilation of disease morbidity and mortality data from all health facilities has evolved over the years: from a hand-written data collection and compilation in 1984 and stand-alone electronic Microsoft Access in 2003 to the current web-based DHIS2. Introduced in 2014, DHIS2 has three fundamental building blocks: the data elements, organizational units and periods. It has been implemented in all the 20 district health offices, all hospitals as well as those BHU-Is which have internet connectivity. This web-based information system is used as a channel to enter the Annual Household Data by district health offices collected from various health centres in the country. The annual household data are available for all the districts except the two municipalities of Thimphu and Phuentsholing. The district health office also enters the monthly morbidity, mortality and public health activity reports in the web-based information system. All the district health officers and data assistants are trained to enter as well as analyse data in their districts. The data are collected monthly by a dedicated officer in the BHMIS Unit. S/he ensures that the data entered by the district health offices are complete and reported in a timely manner. To ensure quality of data, validations are maintained so that any outliers are alerted and actions promptly taken. Districts use unique login and passwords to enter data. They could access the data of all health centres in their jurisdiction and use this information to make their annual work plans.

At the national level, the aggregate data are used to track indicators for various public health programmes. In addition, these datasets are used to generate information that can be used by programmes for developing interventions. As part of generating information at the national level, the *Annual Health Bulletin* is published by the Health Management Information System Unit. Online and printed copies are distributed to district health offices, hospitals and BHUs and other stakeholders. The information provided in the Bulletin is used as the key reference for health sector planning and reviews, and helps programmes and district health officers to understand the burden as well as gaps in their services to come up with effective interventions.

There are additional databases that do not have an interface with DHIS2. These include the Hospital Information System managed by the

national referral hospital; Logistic Management and Information System (LMIS); Laboratory Information System (LIS); Tuberculosis Information System (TBIS); National Early Warning, Alert and Response Surveillance Information System (NEWARSIS); and the currently piloted Electronic Patient Information System (ePIS).

2.7.2 Information management system for emergencies

A separate information mechanism is instituted for disease outbreaks and health emergencies including disasters. Given that response to large-scale emergencies involves multiple sectors and NGOs, the health system has in place a contingency plan where information flow is coordinated with the Department of Disaster Management (DDM) under the MoHCA. However, for disease outbreaks that require health system response, a team comprising clinicians, laboratory officials and district health officers are dispatched to the affected place for investigation and interventions. The team shares their findings with the MoH and relevant agencies to prevent similar events in the future.

District teams consisting of a district health officer, a medical officer and an HA manage small-scale outbreaks and notify the Ministry. For outbreaks of greater magnitudes, posing serious threat to public health, the investigation is coordinated and carried out by the MoH, with the team comprising officials from the Royal Centre for Disease Control (RCDC) and officials from the DoPH and DoMS. For zoonotic diseases of public health concern, which require attention from other agencies, relevant representatives are also called in until the outbreak is contained. A majority of the district health officers in the 20 districts have a Bachelor's degree in Public Health and therefore are capable of investigating and managing local disease outbreaks.

2.8 Regulation

A bill passed by the Parliament comes into force upon the assent of the Druk Gyalpo, His Majesty the King (Gross National Happiness Commission, Royal Government of Bhutan, 2008). All bills and Acts passed by the Parliament with the assent of His Majesty the King become law and relevant ministries and organizations are identified in the Act to be the custodian of that Act. They are responsible for making the regulations for proper implementation of the Act. Regulations are implemented through appointment of boards or committees as defined in

the provisions of the Act. Any rules and regulations at the local level are required to be consistent with the law passed by the Parliament.

The National Health Policy (Ministry of Health, Royal Government of Bhutan, 2011) is a health policy instrument that mandates the health system to institute a comprehensive regulatory system for all health-care facilities and services in the country to regulate the quality, safety, equity and efficiency of health services. Regulatory frameworks and the National Strategic Plan (Ministry of Health, Royal Government of Bhutan, 2011) have been developed to fulfil this policy requirement.

2.8.1 Regulation and governance of third-party payers

Currently, there are few third-party payers in the country such as the Royal Insurance Corporation of Bhutan (RICB) for basic health care and travel/accident, and the MoH reimbursement system for civil servants of medical expenses incurred outside of the country.

The final draft of the Economic Development Policy 2016 requires the Royal Government to facilitate the development of a health insurance market to address and support the increasing costs of public health care. The MoH is responsible for formulation of technical guidelines for the health insurance products by 2017 in order to ensure that end-users get appropriate benefits from their insurance (Royal Government of Bhutan, 2016). In addition, the National Health Policy states that health-care services shall be provided to non-Bhutanese on a payment basis.

The RICB has several health insurance schemes, which cover basic hospitalization, pre- and post-hospitalization expenses, day-care expenses, road ambulance service and transportation benefit for Bhutanese citizens travelling to India. This scheme is voluntary in nature.

As per the 2016 guideline for patient referral outside Bhutan, "for a Bhutanese national travelling in India, emergency medical treatment may be reimbursed upon verification of disease condition by the National Referral Committee" (Ministry of Health, Royal Government of Bhutan, 2016c).

The Bhutan Civil Service rules 2012 state that "A civil servant shall be covered by medical insurance while on training. In the event of an emergency where the candidate is not covered by a medical insurance scheme, medical expenditure shall be borne by the Ministry of Health on

production of original receipts" (Royal Civil Service Commission, Royal Government of Bhutan, 2012).

2.8.2 Regulation and governance for human resources

The Medical and Health Council Act 2002 of the Kingdom of Bhutan empowers the BMHC to regulate the practice of medical and health professionals and medical education and training programmes in Bhutan (Ministry of Health and Education, Royal Government of Bhutan, 2002). For medical and health professionals graduating from foreign institutes, the BMHC ensures that the candidates fulfil the entry criteria, duration of training and also that their institute is recognized by the host council. For in-country institutes, the BMHC regulates the requirement of institutes based on standards for physical facility, duration of training, faculty, teaching curriculum, entry criteria for enrolment, and availability of teaching hospitals. The University of Medical Sciences Act 2012 stipulates that all medical and health education and training programmes in the country shall be accredited and certified based on the Medical and Health Council Act of Bhutan (Ministry of Health and Education, Royal Government of Bhutan, 2002). The National Health Policy emphasizes that the recruitment, deployment, training and termination of health professionals are consistent with the relevant Acts and Regulations of the country.

To ensure competence of health workers, the BMHC undertakes screening/examination, either oral, written or both to assess the academic qualification of candidates before registering them with the council. In addition, mechanisms are being developed to conduct competency examinations for laboratory and radiodiagnostic technicians by the QASD.

Registration and planning of human resources

All national and foreign medical and health professionals including traditional Bhutanese medicine practitioners who wish to practise their profession in the country are required to register with the BMHC after fulfilling the criteria as prescribed in the Bhutan Medical and Health Council Regulation 2005 (Bhutan Medical and Health Council, Royal Government of Bhutan, 2005). All health professionals (including practitioners of traditional medicine) are further required to renew their registration every five years with the fulfilment of required credits on continuing medical education (CME).

Human resource planning is done according to the HRH Master Plan, which is based on epidemiology of disease burden, evolution of technology and short-term and long-term requirements. Training for nurses and paramedical professionals, traditional medicine physicians, technicians, and postgraduate medical training in few selected specialties are conducted within the country. Bhutan still depends on other countries for undergraduate medical training, major postgraduate and super-specialty training.

2.8.3 Regulation and governance of pharmaceuticals, medical devices and aids

According to the National Drug Policy 2007, the Drug Regulatory Authority (DRA) , an autonomous agency, develops and implements most of the legislation and regulations on pharmaceuticals to ensure the quality, safety and efficacy of drugs and the accuracy of product information. The National Drug Committee reviews and revises the National Essential Medicines List (NEML) periodically to maintain standards and promote rational use of medicines (Ministry of Health, Royal Government of Bhutan, 2007).

For medical devices, the Health Technology Assessment Panel shall allow introduction of any new health technologies only after assessment and evaluation of their safety, efficacy, quality, indication and cost-effectiveness (Ministry of Health, Royal Government of Bhutan, 2011).

The EMTD of the MoH regulates the quality of equipment and non-medicines. They work closely with the Biomedical Engineering Division, which is responsible for developing technical specifications for the procurement process. Regarding regulation of products, the Bhutan Medicine Act 2003 states: "All medicinal products, manufactured, sold, distributed and imported/exported from Bhutan shall be registered under the provisions of this Act. Firms are required to obtain import or export authorization from the Drug Regulatory Authority before importing the products" (Royal Government of Bhutan, 2003).

2.8.4 Health technology assessment

There is no separate organization for HTA. Currently, the ETMD under the MoH is responsible for HTA. So far, nine proposals in 2012, five proposals in 2013, two proposals in 2014, two proposals in 2015, and four proposals in 2016 have been assessed for economic evaluation.

The HTA guideline (Ministry of Health, Royal Government of Bhutan, 2013b) lays down the process and procedures for conducting HTA. It also has the membership criteria and their terms of reference along with proposal application format and role of the EMTD. The 2013 edition did not sufficiently capture the membership composition nor did it have the prioritization criteria for proposals, which have now been revised and will be finalized in 2017.

While conducting an HTA, the expert panel considers the following parameters: technical properties, clinical effectiveness including safety, efficacy, cost-effectiveness and feasibility as well as social, legal, ethical and political impact.

Although equipped with a strong mandate to conduct HTA of any new medicines, the EMTD is challenged with capacity limitations to offer services and interventions that can inform policy decision. All the existing staff members are new and no one has hands-on experience in conducting cost-effective analysis using economic evaluations. Capacity of the staff is being strengthened by collaboration with experts from other countries such as Thailand. Currently, there are three staff members (a health economist, a laboratory technologist and a bio-informatics). There is a need to augment this with staff with research background and a medical technologist.

In order to build capacity, institutional linkages and networking through membership have been developed with HTAi, HTAsiaLink and ISPOR and with HiTAP.

2.8.5 Regulation of capital investment

All capital investments for both procurement and construction are guided by the Procurement Rules and Regulations of the MoF; these will:

a. ensure the transparency of government procurement through the application of standard procurement procedures;
b. achieve uniformity of the procurement procedures of government agencies;
c. achieve economies of scale and efficiency in the procurement of goods, works and services; and
d. ensure fair and equal access to suppliers, consultants and contractors for supply of goods, services or work (Ministry of Finance, Royal Government of Bhutan, 2009).

In the health sector, the private sector and FDI shall be allowed to provide high-end and specialized medical diagnostic and treatment centres. The Foreign Direct Investment Policy 2010, Schedule II (health) mentions and allows FDI in the following areas: specialized medical services, specialized dental services, specialized medical laboratory services, specialized diagnostic imaging services, and specialized traditional medical services.

2.8.6 Regulation on determinants of health

The cultivation, sale, manufacture, supply and distribution of tobacco products are regulated by the BNCA, an independent government agency, as per the Tobacco Control Act of Bhutan 2010 and Tobacco Control (amendment) Act of Bhutan 2014. All tobacco products imported for personal consumption are inspected and allowed as per the requirements of the Act (Royal Government of Bhutan, 2010, 2014). The MoH and relevant agencies such as the BNCA sensitize the public on health issues associated with tobacco products through mass media campaigns and observation of World No-Tobacco Day. In addition, the tobacco control office is required to implement effective measures to promote tobacco cessation and adequate treatment for tobacco dependence through the tobacco cessation clinic at the national referral hospital in Thimphu. Other agencies such as the Bhutan InfoComm and Media Authority regulate advertisements related to promotion of alcohol, tobacco, drugs and other intoxicating materials including advertisements on milk formulas and processed foods for children (Bhutan InfoComm and Media Authority, Royal Government of Bhutan, 2010). Similarly, consumers' health and safety are protected from goods and services through the Consumer Protection Act of Bhutan 2012 (Royal Government of Bhutan, 2012).

The negative impact on health from consumption of food is regulated as per the Food Act of Bhutan 2005 by facilitating and regulating import, export and trade of food items. To ensure that this is implemented properly, the department responsible for public health is also a member of the National Food Quality and Safety Commission established under this Act.

The Road Safety and Transport Authority, as empowered by the Road Safety and Transport Act 1999, is required to provide a safe and efficient road system to protect the health of the public from road traffic and other transport-related accidents.

The municipal corporations and local governments regulate the implementation of waste generation, segregation, reuse and cycling, and proper disposal to sustain human health (Royal Government of Bhutan, 2009b). Similarly, the MoH is required to guide the local government (dzongkhag, dungkhag and gewog administration) on proper waste management including human waste in rural areas. The Sales Tax, Customs and Excise Act of the Kingdom of Bhutan 2000 prohibits the import of narcotics and psychotropic drugs and substances. The Pesticide Act of Bhutan 2000 ensures that pesticides are controlled through integrated pesticide management to minimize the deleterious effect of pesticides on human beings (Ministry of Agriculture, Royal Government of Bhutan, 2000).

The RGoB has endorsed the National Policy and Strategic Framework To Reduce Harmful Use of Alcohol (2015–2020) and its goals are aligned with the voluntary global targets of reducing harmful use of alcohol by 5% through a multisectoral approach by reducing affordability, availability and accessibility of alcohol. The strategies outlined in the policy document are yet to be implemented across all sectors.

Similarly, the Multisectoral Action Plan for Prevention and Control of Noncommunicable Diseases in Bhutan has been endorsed by the RGoB. This action plan is also developed to ensure a multisectoral approach to reduce the incidence of NCDs in the country.

International Health Regulations (IHR)

Bhutan has completed a legislation assessment for the purpose of documentation of enabling laws to implement IHR. As per the report by the IHR programme in the DoPH, Bhutan was not able to implement the IHR core capacities planned for 2009–2012 and was granted an extension till 2014. An assessment of the IHR core capacities done in 2016 shows that areas that need improvement are chemical events, surveillance, points of entry and food safety.

Presently, the government has assigned two points of entry (POE) for the implementation of IHR 2005, namely the International Airport at Paro and one land crossing. However, Bhutan does not have a contingency plan to manage and respond to a public health event at a land crossing, although there is an airport contingency plan.

Table 2.4 Monitoring progress of IHR core capacity and potential hazards in Bhutan, 2011–2016

S. No.	Core capacity %	2010	2011	2013	2014	2015	2016
1	Legislation	25	50	60	80	80	80
2	Coordination	71	66	35	89	94	100
3	Surveillance	47	60	26	53	67	70
4	Response	52	71	76	82	85	100
5	Preparedness	7	40	42	48	71	81
6	Risk communication	40	71	30	50	70	80
7	Human resource	16	75	71	71	100	100
8	Laboratory	28	30	47	77	77	86
9	Point of entry	43	74	27	48	68	75
10	Zoonotic events	7	66	69	92	100	100
11	Food safety events	40	41	45	50	55	73
12	Chemical events	0	0	6	17	28	33

Source: Monitoring progress in the implementation on IHR core capacities in State Parties, 2015

2.9 Patient empowerment

2.9.1 Patient information

The Health Promotion Division is required to improve health literacy and develop the necessary skills of the people for informed choice by providing information, communication and education on health-related issues. This is done through regular advocacy in the media, life skills curriculum in schools and institutions, and through health education campaigns. The QASD under the MoH monitors the safety and satisfaction of patients and service providers in both public and private health-care services. The division has implemented the 5S continuous quality improvement (CQI) programme and Hospital Administration and Management Transformation (HAMT) in all hospitals in the country. They have implemented the Hospital National Health Care Standards in three hospitals on a pilot basis and have plans to start clinical audit. The EMTD has developed an NEML and the national essential medicines formulary to ensure patient safety and efficacy of medicines.

Multisectoral Task force and high-level advocacy through Royal Patronage

Under the Royal Patronage of Her Majesty the Gyalyum Sangay Choden Wangchuck, the MSTF was initiated in 1997 in all 20 districts to improve coordination for advocacy and increase awareness among the general population on prevention of HIV and STIs. The MSTF with

key functionaries from multiple ministries including health, finance, trade, agriculture, education, as well as religious bodies, police, local governments, academics, civil society and NGOs represents a high-level political commitment on public health issues.

Over the past decade, MSTFs in respective dzongkhags have played a vital role in enhancing the level of knowledge on HIV/AIDS. Today, the MSTFs are key stakeholders with the MoH in implementing HIV/AIDS activities in the dzongkhags.

The success of MSTFs and the way they function at the community level with members from many sectors including the private sector from the districts, it was envisioned to be a good idea to advocate and create awareness on various public health issues at the districts level, and hence the MSTF/community-based support system (CBSS) was formed.

2.9.2 Patient choice

Health care in Bhutan is provided free of charge. Mandatory social health insurance for private workers is not introduced as yet. But in larger hospitals there are off-hour clinics where patients have the right to consult the provider of their choice or get an investigation done by paying the provider. Patients also have the right to get admitted into private cabins. This is only to ensure privacy but there is no difference in provision of medical services as compared to general patients. Few private diagnostic facilities offer services in bigger cities on payment. The same services are provided in the public health facilities but patients have to wait longer to avail these services.

With the integrated health system of allopathic and traditional medicine, it is the choice of a patient to avail the services of either system. It has been observed that elderly people and patients with chronic illness prefer the traditional Bhutanese medicine services.

2.9.3 Patient rights

Patient rights are considered very important in the delivery of health-care services. All health-care providers are required to respect the dignity of the individual at all times, including the need for informed consent as per the international practice and national laws including the Bhutan Medical and Health Council Act (Ministry of Health and Education, Royal Government of Bhutan, 2002). The QASD plans to implement the patient's rights charter soon.

The National Health Policy states that the MoH shall address the health services for special needs, vulnerable/risk groups (such as the elderly, physically and mentally challenged persons, alcoholics, drug addicts, adolescents, out-of-school population groups, etc.) and hard-to-reach populations (such as nomadic population groups). The policy further states that the RGoB shall promote facilities and services that are disability-friendly.

Procedures for complaints (mediation, claims)

The Bhutan Medical and Health Council Regulation 2005 (Bhutan Medical and Health Council, Royal Government of Bhutan, 2005) states that "Any person who is injured by any act by a medical or health professional contrary to the professionally approved practice shall have the rights to bring accusation against such professional by filing a complaint with the Council" (Ministry of Health and Education, Royal Government of Bhutan, 2002).

The "Disciplinary Proceedings for Medical Malpractice and Negligence Regulations 2009" lays down the procedures to be followed for complaint and investigation mechanism and disciplinary proceedings against all registered medical and health professionals in Bhutan with respect to allegations of medical negligence or malpractice or professional incompetency to practice medicine. An investigation committee, a disciplinary committee and a health committee are to be formed to decide the outcome of a complaint. The committee members are appointed by the council on the basis of their relevance to the complaint.

The source of complaint can be from patient or patient's family or relatives; professional colleagues including head of institution, department, or unit; members of the public or the police – on conviction of medical or health professionals in courts of law. A complaint can be made against an individual treating practitioner/carer and should be addressed to the president of the council.

If convicted, action may be taken against the practitioner. This could include placing the practitioner on probation by postponing judgment; making the practitioner's registration "conditional"; suspending the practitioner's registration for a period not exceeding one year, in the first instance; erasing the practitioner's name from the register or referring the practitioner to the health committee.

Between 2006 and 2016, 12 cases were investigated by the BMHC. These cases were mainly on issues of medical negligence, illegal practice and professional misconduct. In some cases the professionals were reprimanded, their registration was made conditional or temporarily suspended.

2.9.5 Public participation

Public participation in health-related mechanisms/activities mainly involves the engagement of local people at the community level. Commonly, communities contribute in-kind or labour for construction of small health infrastructures. Donation boxes are kept in most of the hospitals and BHUs, where well-wishers can donate cash. The rapport between local communities and health professionals is so strong as this can be seen that the communities do not want health professionals moving out of their community.

3 Financing

Chapter summary

As enshrined in the Constitution of the Kingdom of Bhutan (Article 9, section 21), the State shall "provide free access to basic public health services in both modern and traditional medicines", all residents in the country can access public health services free of cost. In practice, comprehensive health services are provided to all citizens, based on the service standards set for different levels of care including treatment aboard if an intervention is not available in the country. However, there are some exclusions from the free public health system such as private cabins at the government hospitals, cosmetic (high-end) dental care, cost for obtaining medical certificate and medicines not listed in the NEML. Guided by the National Health Policy, engagement of the private sector in delivery of health services is limited to pharmaceutical retail shops, selective diagnostic centres and high-end hospitals in the near future.

The total health expenditure (THE) as percentage of GDP saw an increase to 6.9% in 2000 compared to 4.0% in 1995, but decreased to 3.6% in 2014. However, there has been an increase in the budget allocation in terms of absolute figures over the five-year planned period from Nu 3.1 million in the 1st FYP (1961–1966) to 13 952.96 million in the 11th FYP. Out-of-pocket (OOP) expenditure on health was reduced from 33% of THE in 1995 to 11% in 2010, increasing slightly to 12% in 2014.

General government revenue is the predominant source of health financing followed by households and external aid. External sources had played a significant role in financing health in the country, supporting almost 30% of THE in 1996. However, over the past few years, the share of external sources decreased and stood at 6% in 2014. An initiative of the Bhutan Health Trust Fund (BHTF) contributed 5.14% of THE in 2014 as compared to 0.042% in 2010. The share of contribution from the BHTF is expected to increase further with the phase-out of traditional donors who have been supporting the procurement of vaccines in the country. A health contribution of 1% of basic pay is deducted from the salaried

employees of the government and the corporate sector. However, till 2014–2015, the health contributions were not specifically earmarked for health care. Starting July 2014, a health contribution has been earmarked to the BHTF.

The general government health expenditure (GGHE) as proportion of the general government expenditure (GGE) has fluctuated between 8% and 12%. Expenditure on curative services has dominated THE, spending above 70% in the fiscal year 2012–2013. A very minimal expenditure on preventive care (2%) has been observed. However, it is noteworthy that though health facilities deliver both curative and preventive care, the expenditure at these facilities is being recorded under curative care. The expense for referring patients abroad appears to be one of the major cost drivers for curative services (4–5% of THE). A line item budgeting based on historical trends is being used to pay for services, and all employees under the public health system are either full-time salaried employees or contract employees who are hired for a specific time period. In addition to their normal salary, health professionals are also paid a professional allowance, which is 35–40% higher than what is paid to those at the same level in other sectors.

3.1 Health expenditure

As illustrated in Table 3.1, THE as a proportion to GDP had increased from 4.0% in 1995 to 6.9% in 2000 but fell to 3.6% in 2014. The GGHE as percentage of GDP has remained between 3% and 5% since 1995. The government predominantly finances the health expenditure in Bhutan. In 1995, the total government health expenditure (TGHE) including grants from development partners accounted for 67% of THE and increased to 88% till 2010, with a fall to 73% in 2014. This fall could be attributed to the recent withdrawal of major donors who have been supporting the health sector, corresponding to the change in Bhutan's economic development status to LMIC (see more details in section 3.6.1). Looking at the overall health budget allocation and spending by the government, health has held a prominent place in Bhutan. The GGHE as percentage of GGE has seen an increase to 12% in 2005 with a slight decline to 11% in 2010 and 8% in 2014. Between 2005 and 2011, the RGoB made major investments in the expansion of health infrastructure across the country. However, after 2010, investment in health sector declined while the government invested more towards other sectors such as roads, bridges, power supply, etc., which benefited the health sector by improving access to health services. This resulted in the declining trend of GGHE as percentage of GGE during

2005 and 2014, as well as fluctuations in GGHE as percentage of THE. The MoH and the dzongkhag health sector always received a fair share in the country's FYP budgets between 2% and 8% of the total outlay since the first plan in 1961–1966 until the current 11th FYP in 2013–2018 (Table 3.2). Although the government predominantly finances health expenditure in Bhutan, a small share of the private health expenditure (Pvt.HE) is also noted. The Pvt.HE fluctuated around 12–33% of THE. (This fluctuation is explained in detail under section 3.4.) The OOP is the major component of Pvt.HE.

Table 3.1 Trends in health expenditure in Bhutan

Indicator	1995	2000	2005	2010	2014
Total health expenditure (THE) as % of gross domestic product (GDP)	4.0	6.9	5.3	5.2	3.6
General government health expenditure (GGHE) as % of THE	67	77	79	88	73
Private health expenditure (Pvt.HE) as % of THE	33	23	21	12	27
GGHE as % of general government expenditure (GGE)	7	12	12	11	8
Out-of-pocket (OOP) expenditure as % of THE	33	23	21	11	25 (12*)
OOP expenditure as % of Pvt.HE	100	100	98	95	94
THE per capita in USD	24	54	66	114	89
THE per capita in Int$ (purchasing power parity)	85	197	214	329	281
GGHE per capita in USD	16	41	52	100	65
GGHE per capita in Int$ (purchasing power parity)	57	152	169	289	206
GGHE as % of GDP	3	5	4	5	3
Private insurance as % of Pvt.HE				1	1
Prevention and public health services as % of THE			7	7	

Note: * According to the Global Health Expenditure Database, in 2014 the OOP expenditure was 25% of THE. However, the Bhutan National Health Account team realized that 25% was inclusive of transportation cost at about 50% of OOP. A simple estimation of the OOP expenditure without transportation cost would be 12% of THE. In this report, the authors and the editors decided to put the OOP expenditure at 12% of THE in 2014 to be consistent with previous OOP expenditures (1995–2010).

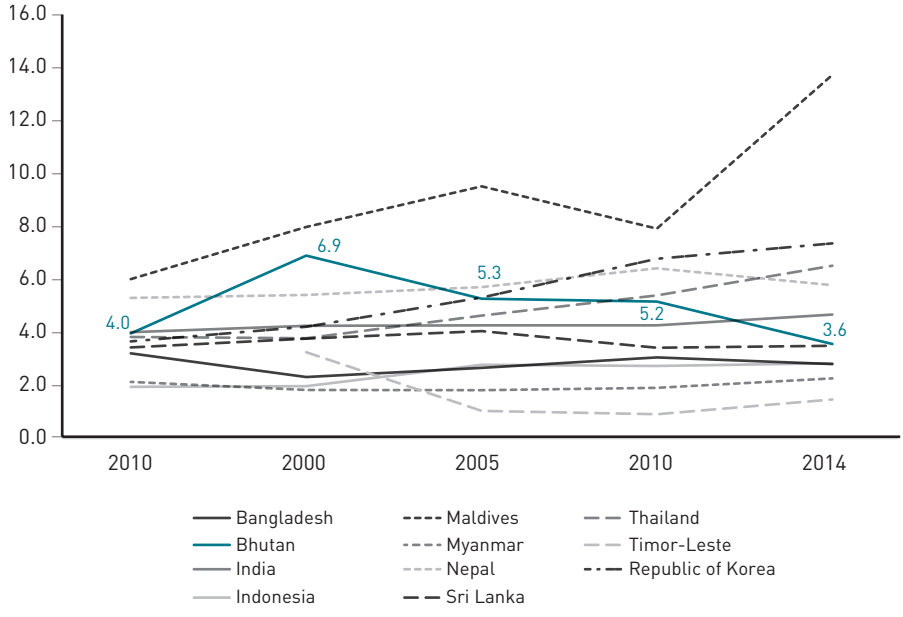
Source: World Health Organization, 2017a

Table 3.2 Five-year plan allocation of budget to the Ministry of Health and the dzongkhag health sector

Plan	Plan period	Budget allocated to the Ministry of Health and the dzongkhag health sector (Nu million)	Composition of outlay (%)
1	1961–1966	3.10	2.9
2	1966–1971	16.70	8.3
3	1971–1976	38.10	8.0
4	1976–1981	54.60	4.9
5	1981–1987	205.60	4.4
6	1987–1992	339.10	4.2
7	1992–1997	1 035.51	6.6
8	1997–2002	2 904.11	7.3
9	2002–2008	4 505.83	6.4
10	2008–2013	10 809.73	7.3
11	2013–2018	13 952.96	6.5

Sources: Gross National Happiness Commission, Royal Government of Bhutan, 1961, 1966, 1971, 1976, 1981, 1987, 1992, 1997, 2002, 2008, 2013 compiled from various five-year plan documents

Figure 3.1 Total health expenditure as a share (%) of GDP in Bhutan and countries of the South-East Asia Region

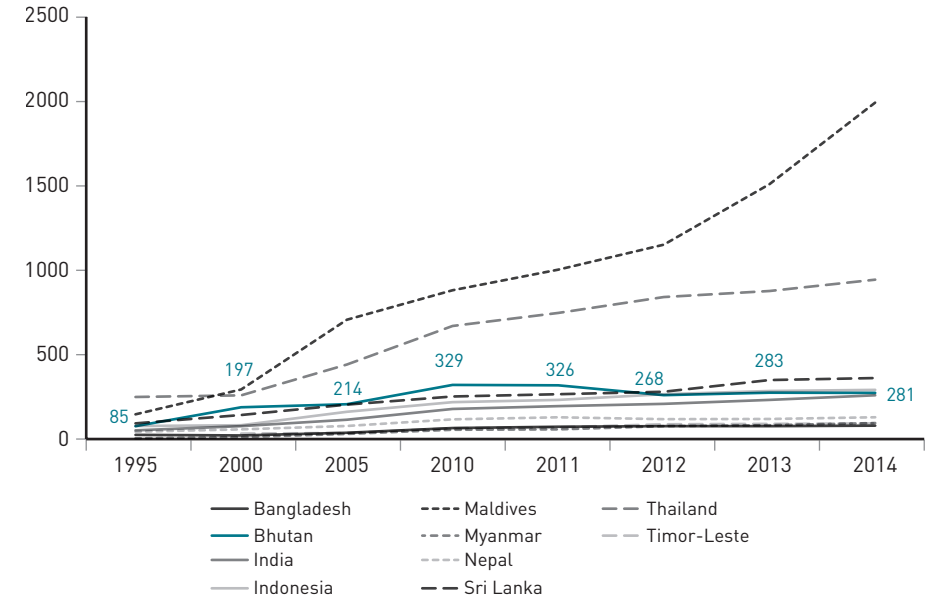


Source: World Health Organization, 2017a

Figure 3.1 presents a comparison of THE as percentage of GDP among the 10 Member States of the WHO South-East Asia Region during the period 1995–2014. Unfortunately, data for Democratic People's Republic of Korea is not available in the Global Health Expenditure Database. The graph shows downward trend of Bhutan's total health expenditure from 6.9% of GDP in 2000 to 3.6% in 2014, whereas the other countries in the Region had a various trend in THE as proportion to GDP.

Figure 3.2 indicates that Member States in the South-East Asia Region retained a rising trend in health expenditure in USD purchasing power parity per capita between 1995 and 2012. Maldives and Thailand have maintained high growth rates and other countries including Bhutan have had lower growth rates. Health expenditure per capita for Bhutan increased to USD 281 in 2014 as compared to USD 85 in 1995.

Figure 3.2 Health expenditure in USD purchasing power parity per capita in the countries of the South-East Asia Region, latest available year



Source: World Health Organization, 2017a

During 1995–2014, Bhutan had high ratios of government health expenditure as a share of THE, around 67–88%, compared to the countries in the WHO South-East Asia Region.

As shown in Table 3.3, Bhutan's THE was dominated by curative services, spending about 70% of THE (inpatient care 16.66%, outpatient care 33.27%, laboratory services 0.19%, transportation 13.32% and medicines 6.98% in 2012–2013). The transportation cost was large due to the geographical terrain of Bhutan.

Figure 3.3 indicates that the expenditure for referral abroad of patients who cannot be treated within the country amounts to over 5% of TGHE. Between 2010 and 2015, the expenditure for referral abroad has increased by 51.3% due to the increase in the number of patients (Table 3.4) by 37% and an increase in per capita expenditure of around 13.33%. However, data on disease and cost of treatment aboard for individual cases are not available. It is suggested that data for each treatment aboard should be systematically and comprehensively recorded in terms of patient's background, disease, procedures, cost of treatment, transportation and per diem as well as other necessary details. This very useful evidence would inform policy decisions in particular to guide decisions on cost-effectiveness of establishing services within the country or continue purchasing from abroad.

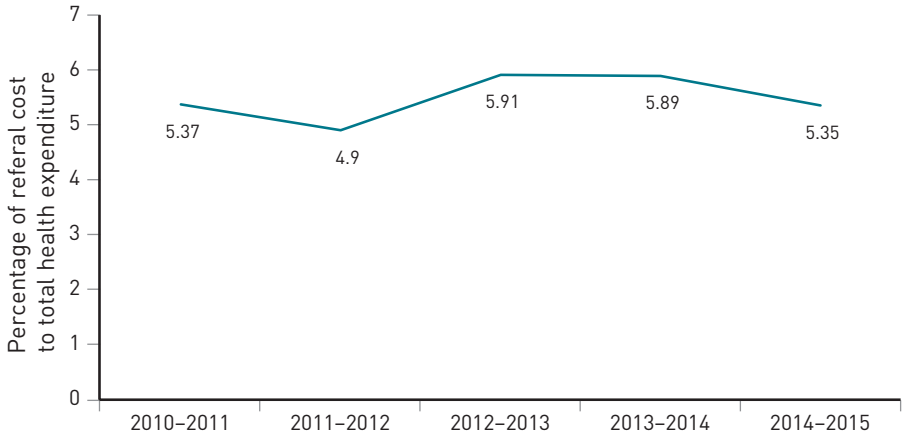
The expenditure on preventive care was small, only around 2% of THE during 2011–2013. However, it is important to note that though health facilities deliver both curative and preventive care, the expenditure at the health facilities is being recorded under curative care. At the same time, medicines and other medical goods ranged between 6% and 18% of THE.

Table 3.3 Proportion of health expenditure by function

Functional classification	2011–2012 % of THE	2012–2013 % of THE
Inpatient curative care	21.41	16.66
Outpatient curative care	25.04	33.27
Laboratory and imaging services	0.10	0.19
Patient transportation	17.88	13.32
Medicines and other medical goods	18.24	6.98
Preventive care	1.94	2.12
Governance, financing administration	5.08	12.62
Other health-care services	10.31	14.84
Total	**100**	**100**

Source: Ministry of Health, Royal Government of Bhutan, 2013c

Figure 3.3 Referral abroad expenditure as percentage of total health expenditure



Sources: Department of Public Accounts, Ministry of Finance, Royal Government of Bhutan, 2011, 2012, 2013, 2014, 2015

Table 3.4 Details on referral abroad

Treatment aboard	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015
Total expenditure in million Nu	122.00	144.72	174.45	175.11	184.58
No. of patients	976	1036	957	1165	1126
Million Nu per patient	0.13	0.14	0.18	0.15	0.16

Source: Referral Section, JDWNRH

3.2 Sources of revenue and financial flow

The sources of revenue to finance health are government revenue, external aid, households, the BHTF and private insurance (Table 3.5). The government health spending is primarily funded from government's own revenue from domestic sources plus transfers distributed by the foreign origin (development partner's funds) through the government and supplemented by a small part of the yield from the BHTF. Additionally, health-related revenues are collected in the form of user fees for health services (details under section 3.4.1) and a pay-roll health contribution is levied on employees working in formal sectors. However, user fees and health contributions are remitted to the MoF and neither of these revenues were earmarked for the health sector till 2014. Under the initiative of the MoH, starting July 2014, health contribution has been earmarked to the BHTF. Voluntary health insurance schemes and enterprise financing schemes are funded from premiums collected from

employers and employees in the organized sector and from revenues of big corporations.

Table 3.5 shows that the government is the predominant source for health expenditure followed by OOP and external sources. Given that substantial share of overall health-care expenditure is borne by the government, share of households' OOP has remained between 11% and 25%. Voluntary private health insurance is at a nascent stage, and has played a minimal role, about 1% of THE. Social health insurance as an alternative source of health financing has not yet been explored in Bhutan. However, considering the small base of the formal sector, introduction of Social Health Insurance (SHI) as a source of financing does not look feasible.

Table 3.5 Health-care spending by source of fund as percentage of total health expenditure

Sources of fund	2000	2005	2010	2014
General government health expenditure (GGHE) excluding external sources	56	68	77	67
External sources	21	11	11	6
Out-of-pocket (OOP) expenditure	23	21	11	25 (12*)
Voluntary health insurance			1	1
Total (%)	**100**	**100**	**100**	**100**
THE per capita in USD	54	66	114	89

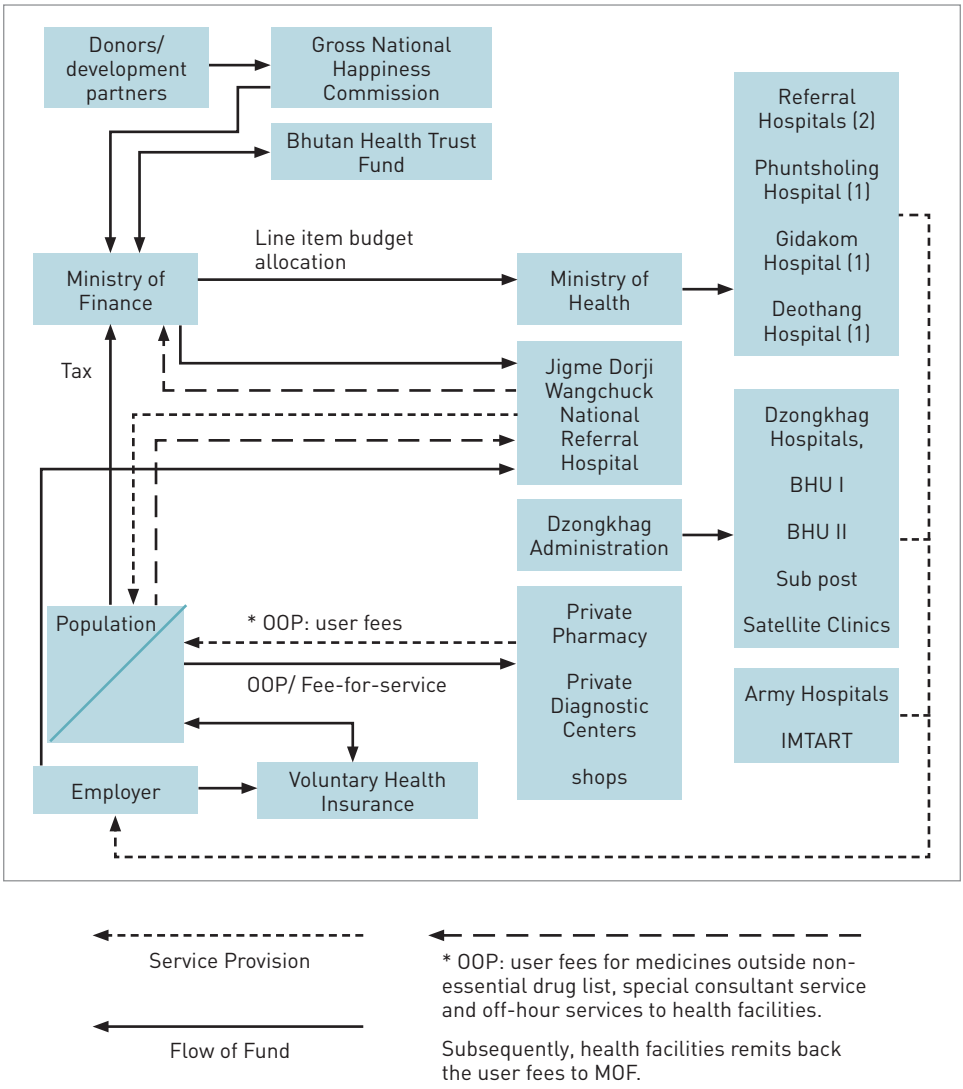
Source: World Health Organization, 2017a

Figure 3.4 External resources on health as percentage of total health expenditure

Source: World Health Organization, 2017a

Share of external sources as % of THE has seen a decreasing trend in the past 20 years (Figure 3.4). Development partners have reduced their assistance to the health sector by almost fivefold in 2014 as compared to 1996.

Figure 3.5 Flow of funds to the providers through different channels



Source: developed by the authors

Figure 3.5 illustrates the flow of funds from the MoF, individuals, development partners including the BHTF to the service providers. For the public health centres, the flow of funds from the MoF is made

through the financial intermediaries, the MoH and local government administration. A majority of the service providers are owned by the MoH and most of the purchasing of health services at present is done by the MoF through line item budgets, based on historical trends and realities. Voluntary private health insurance firms usually reimburse the patients and generally do not deal directly with the service providers. Households also pay directly for availing services from a private pharmacy, diagnostic centres and services during the special consultation service (SCS) from JDWNRH. The BHTF is considered as a donor, which releases funds through the MoF to the MoH.

3.3 Overview of the public financing schemes

3.3.1 Coverage

Breadth

The provision of free health care is enshrined in section 21 of Article 9 of the Constitution, which states: "The State shall provide free access to basic public health services in both modern and traditional medicines." Currently, all citizens of Bhutan are provided free health-care services. At present, free health-care services also extend to all non-nationals residing or visiting the country.

In the context of free health services in the country, voluntary health insurance is at a nascent stage, with only about 1% of the population covered by the scheme. Memberships to such schemes are purely voluntary and the premiums are paid by the households and employers of the formal sector to their employees (refer section 3.5 for more details). It can be safely assumed that Bhutan achieves 100% population health coverage.

Scope and depth

The public health system provides comprehensive health services with few lists available on a paid basis such as cosmetic surgery, dental cosmetic services, cabin charges at public hospitals and medicines not listed in the NEML. Ambulance services are being provided only to patients who require emergency care and to those with medical conditions that do not allow them to travel in public or private transport. Additionally, Bhutanese patients who cannot be treated in the country are referred outside the country through the referral abroad programme supported by the government. The referral abroad package covers all the expenses incurred for treatment, travel and a minimal subsistence allowance of Nu150 (less than 3 USD) per day for the patient and an attendant.

User charges are levied for the private cabin if a patient chooses not to stay in the general ward. User fees (co-payment) is also charged for cosmetic dental care, medical certificate and related examinations and for the purchase of medicines not listed in the NEML. The MoH has instituted a requirement to conduct an HTA for any new service or technology that is proposed to be introduced in the public health system. Private participation in terms of delivery of health services has been limited to retail pharmacies and selective diagnostic centres. However, to offer choice, SCS (an off-hour service) has been initiated at few public health facilities. This off-hour service enables people to visit the health facility at their convenience, after the government office hours, to avail health-care services by paying consultation fees. The medicines and diagnostic tests prescribed during the off-hour service can be availed free of charge.

A three-dimensional assessment of UHC in Bhutan reveals high population coverage at nearly 100%, significant level of financial protection with OOP at 25% of THE, and availability and accessibility of care (Sharma et al., 2014).

3.3.2 Collection

The main source of domestic funding has been RGoB's revenues (tax and non-tax) supplemented by the yield from the BHTF. Some health-related revenues are collected in the form of limited user fees for health services and a pay-roll health contribution is levied on employees in the public and corporate sectors. Both user fees and health contributions are remitted to the MoF and neither of these revenues were earmarked for the health sector till the fiscal year 2013–2014. Starting with the fiscal year 2014–2015, the government has earmarked the health contribution to the BHTF. User fees contributed about 0.3% to the government revenue and over 2% of the health budget, and health contribution contributed 0.6% to the government revenue and over 5% of the health budget for the fiscal year 2014–2015 (Table 3.8). The proportion of health expenditure met from the BHTF has seen a gradual increase from 0.042% in the fiscal year 2010–2011 to 5.14% in the fiscal year 2014–2015.

In 2013, the country's tax was 14.4% of GDP and the government revenue was 20.0% of GDP, which is higher than the average for LMICs (Table 3.6). Bhutan is heavily dependent on tax revenue, which contributed 73% to the total government revenue. The revenue from hydropower (both tax and non-tax) is a major contribution to the total revenue, accounting for more than 15% (Table 3.7).

Table 3.6 Domestic resources of Bhutan compared to lower middle-income countries

Fiscal space, 2013	Lower middle-income countries	Bhutan
Tax as % GDP	11.4%	14.4%
Revenue, excluding grants (% of GDP)	14.8%	20.0 %

Source: World Bank, 2016

Table 3.7 Composition of revenue for fiscal year 2014–2015

Fiscal year 2014–2015	Million Nu	% of total revenue
Tax revenue	18 387.34	73
Non-tax revenue	6 753.70	27
Total revenue	25 141.04	100
Total revenue from hydropower, DGPCL[3] (tax and non-tax)	4 010.81	16

Note: DGPCL: Druk Green Power Corporation Limited
Source: Department of Revenue and Customs, Ministry of Finance, Royal Government of Bhutan, 2015

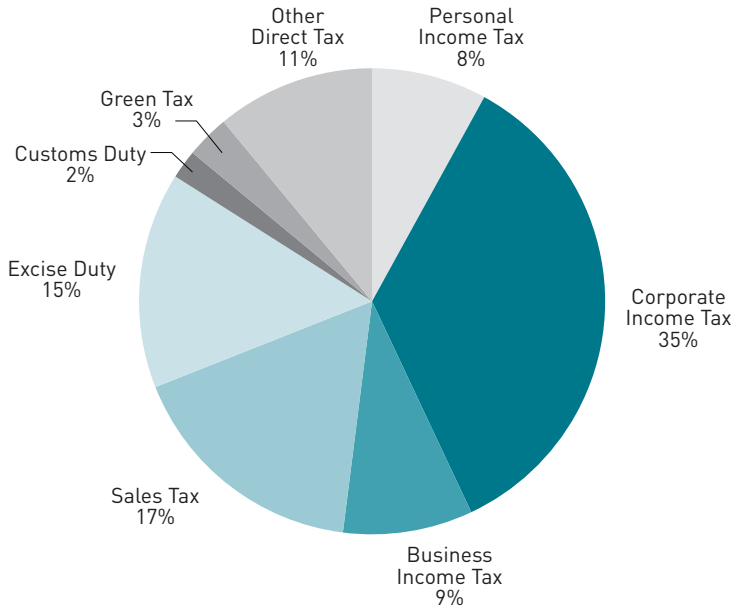
The MoF acts as the principal financing agent; it finances health through the annual collection of tax and non-tax revenue. There are eight Regional Revenue and Custom Offices under the MoF responsible for collecting tax. Tax in Bhutan is composed of direct and indirect tax. Direct taxes include the business income tax, corporate income tax, personal income tax, property transfer tax, and rural taxes such as the land and house tax and cattle tax. Indirect taxes include the Bhutan sales tax (10%), customs, excise and royalties on natural resources. Other sources of tax revenue include the motor vehicle tax, business and professional licenses. The corporate income tax constitutes the major share (35%) of the tax revenue of the government followed by the sales tax, 17% (Figure 3.6).

Hydropower companies contributed the most to corporate income tax followed by Druk Holding and Investment (Department of Revenue and Customs, Ministry of Finance, Royal Government of Bhutan, 2014). Progressive tax rates on personal income are applied as illustrated in Table 3.9. Currently, there is no earmarked tax for the health sector. Earmarking of sin tax from alcohol and tobacco to the health sector could be explored. The tax rate for import of alcohol and tobacco is 100% and the sales tax on beer, alcoholic drinks, aerated water (point of

3 Druk Green Power Corporation Limited (DGPCL) is a holding company of all hydropower plants in the country. DGPCL pays 35% as corporate income tax and the remaining is being paid to the government through Druk Holding & Investments Ltd, DHI (holding company for DGPCL) as dividend.

sale) constituted 2.9% of the total revenue (Department of Revenue and Customs, Ministry of Finance, Royal Government of Bhutan, 2014).

Figure 3.6 Composition of tax revenue for fiscal year 2014–2015



Source: Department of Revenue and Customs, Ministry of Finance, Royal Government of Bhutan, 2015

Table 3.8 Domestic sources of financing for the health sector

	Unit	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015
Overall sources						
RGoB net revenue	Million Nu	17 458.79	20 354.46	21 101.69	23 244.61	25 141.03
Government health budget	Million Nu	2 288.90	2 954.67	2 951.80	2 974.14	3 457.65
Government health budget share of RGoB net revenue	%	13.11	14.51	13.98	12.79	13.75
Health-related sources						
Health contribution	Million Nu	105.17	131.48	145.83	157.41	190.29
User fees	Million Nu	36.28	48.44	38.63	34.71	76.28
Bhutan Health Trust Fund	Million Nu	0.97	1.99	2.86	4.53	177.6
Share of health budget						
Health contribution	%	4.59	4.45	4.94	5.29	5.50
User fees	%	1.58	1.64	1.31	1.17	2.21
Bhutan Health Trust Fund	%	0.042	0.067	0.096	0.152	5.14

Sources: Bhutan Health Trust Fund, 2016;Department of Public Accounts, Ministry of Finance, Royal Government of Bhutan, 2011, 2012, 2013, 2014, 2015;Department of Revenue and Customs, Ministry of Finance, Royal Government of Bhutan, 2015

Table 3.9 Progressive personal income tax slab

Taxable income (in Nu)	Tax rate (%)
Not exceeding 100 000	Nil
100 000–250 000	10
250 000–500 000	15
500 000–1 000 000	20
Exceeding 1 000 000	25

Source: Department of Revenue and Customs, Ministry of Finance, Royal Government of Bhutan, 2017

3.3.3 Pooling of funds

The MoF acts as both the collecting and pooling organization. The MoF directly allocates resources to JDWNRH at the same time as allocating funds to the MoH for the referral hospitals and to dzongkhag administration for dzongkhag hospitals and other lower level health facilities. A line item budget for health facilities was estimated annually on the basis of historical trends. The annual budget is prepared through an established process of the MoF: the issue of budget call notification by January of each year, budget negotiation around March and finalization by May–June, and the financial year commences from July and ends at the following year in June.

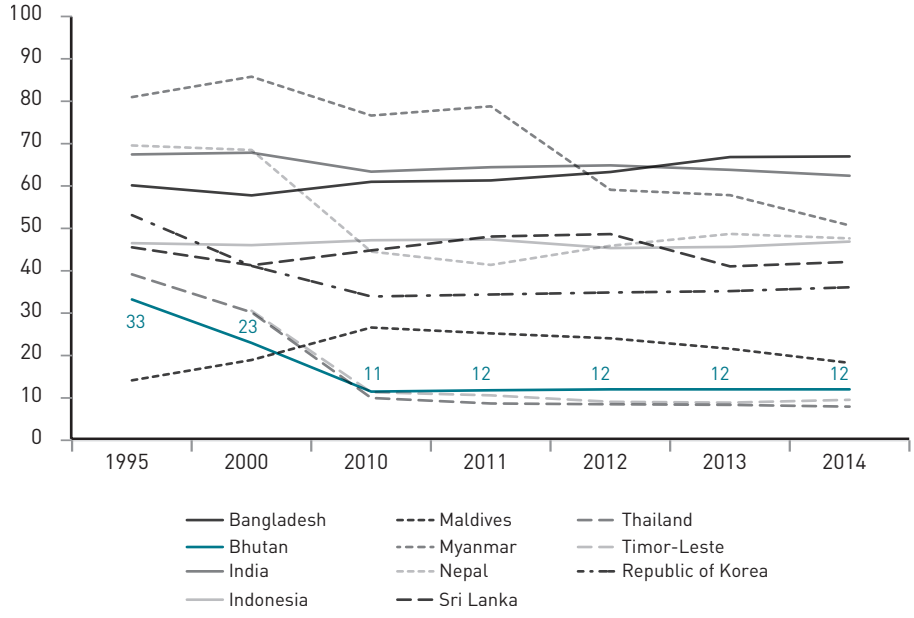
3.3.4 Purchasing and purchaser–provider relations

A majority of service providers are owned by the MoH and most of the purchasing of health services at present is done by the MoF through line item budgets, based on historical trends and realities. This involves paying salaries to the health professionals, administrative costs and capital and recurrent expenditures to health facilities. Purchase of medicines and equipment is done centrally by a separate body, the Medical Supplies and Procurement Division (MSPD), which is a part of the health service delivery system within the MoH. Health-care services are provided by the MoH through the national referral hospital at Thimphu, RRHs in Mongar and Gelephu, district hospitals, BHUs, satellite clinics and ORCs. The MoH as part of the central government provides health services through referral hospitals and few general hospitals, which are directly under its administration. In line with the decentralization policy, the local governments plan, manage and provide health services through district hospitals and BHUs. However, since the national referral hospital has been granted autonomy in 2014, the MoF directly allocates funds to JDWNRH, which independently manages the provision of health-care services. Delivery of services by these providers is determined and governed by the standards, guidelines and operating procedures developed by the MoH.

3.3.5 Out-of-pocket payment

Based on the Global Health Expenditure Database, OOP as percentage of THE declined from 1995 till 2010 but noted an increase by 1% in 2014 (Figure 3.7). OOP at 12% of THE in 2014 is lower than that of other countries of the South-East Asia Region (Figure 3.7). The major share of OOP was for curative services, outpatient care followed by inpatient care (Table 3.10). Other components of OOP could be in the form of user charges for availing non-essential services such as cosmetic dental services, private cabin services in public hospitals; medical certificate fees and related tests, procurement of medicines which are not listed in the NEML and which are self-prescribed from the private pharmacy shops; and expenditure for self-referral. Currently, students are granted a 50% exemption while availing cosmetic dental services. Individuals can also choose to avail health services during the off-hours for which a minimal user fee is charged for consultation and special diagnostic services (refer section 3.7.1 for details), while essential medicines and laboratory tests are provided free. In the late 1990s, user charges for advanced medical technology and diagnostic services were introduced on a limited scale starting with laparoscopic surgery, but user fees for

Figure 3.7 Out-of-pocket payment as percentage of total health expenditure



Source: World Health Organization, 2017a

such services are now abolished. User fees constituted about 0.3% of the government revenue and over 2% of the health budget (Table 3.8) for the fiscal year 2014–2015. However, user fees is not earmarked to health and instead transferred to the general government revenue treasury.

Table 3.10 Household expenditure on health by categories, 2012 in Nu '1000 (%)

Functional categories	Consultation fees	Medicines	Transport–inland and foreign	Traditional practitioners	Other expenditure	Overall expenditure
Outpatient expenditure	54 823 (6.86)	139 298 (17.44)	425 386 (53.25)	122 689 (15.36)	56 725 (7.10)	798 921 (100)
Inpatient expenditure	17 534 (15.97)	20 325 (18.51)	49 441 (45.04)	12 786 (11.65)	9 690 (8.83)	109 776 (100)
Expenditure on deliveries	209 (1.12)	1320 (7.09)	11 242 (60.38)	169 (0.91)	5 679 (30.50)	18 619 (100)
Overall household expenditure	72 566 (7.83)	160 943 (17.36)	486 069 (52.42)	135 644 (14.63)	72 095 (7.77)	927 316 (100)

Source: Ministry of Health, Royal Government of Bhutan, 2013c

It is of concern that a large proportion of household spending on health relates to transportation costs (about half of total OOP; Table 3.11). This can be attributed to the country's terrain, which affects access to health services. Transportation costs could also have been incurred in accessing specialized care. For instance, a patient from the eastern or central part of the country prescribed a CT scan has to travel to the national referral hospital as such services are available only there. Other reasons for high transportation costs could be due to bypassing of the nearest health centre to seek consultation at a higher level health facility or from the neighboring countries. However, due to the paucity of data, the expenditure incurred for transportation cannot be segregated as a system-driven expenditure since it cannot be determined whether it relates to the medical recommendation or expenditure incurred out of choice due to which it has not been included while determining THE.

According to the national health accounts, OOP does not include expenses incurred while praying for good health. However, the payment for rimdo or puja, a ritual practice based on Buddhist culture, is a unique case for Bhutan. According to the Bhutan Living Standards Survey 2012 (Table 3.11), more than half (56.5%) of THE related to health was paid for rimdo or puja. This is a significant expenditure related to health of Bhutanese which was not included in THE.

Table 3.11 Average expenditure related to health paid by those who were sick or injured (in Nu)

Expenditure item of payment	Amount (in Nu)	%
Hospital charges (consultation fees)	38.0	3.0
Purchase of medicines and health accessories	96.5	7.6
Transportation	295.6	23.4
Rimdo or Puja	710.0	56.1
Traditional practitioner (pow, pam, shaman, tsip, terda)	85.8	6.8
Other	38.9	3.1
Total	**1264.8**	**100.0**

Source: National Statistics Bureau, Royal Government of Bhutan, 2012

3.4 Voluntary health insurance

The RICB started private health insurance for treatment abroad. Membership to such schemes is purely voluntary and the premiums are paid by the households and employers of the formal sector to their employees. For the fiscal year 2012–2013, voluntary health insurance accounted for 0.31% of THE covering 1% of the total population of Bhutan. Table 3.12 indicates that over 10% of the total premium collected was contributed by the government (State-owned corporations), while the majority (over 86%) were contributed by employers of private companies to its employees. The share by individuals on the coverage accounted for about 3.5%. Treatment availed within Bhutan (user charges) accounted for the major share (72.54%) of the total claim followed by treatment in India, which accounted for 24.25% of the total claims. A majority

Table 3.12 Health insurance expenditure in Bhutan, 2012

1. Total premium (Nu)	11 445 806	(100%)
• State enterprise	1 162 252	(10.15%)
• Private companies	9 875 646	(86.28%)
• Individual	407 908	(3.56%)
2. Total enrolment	8447	
3. Average premium collected (Nu)	1355	
4. Number of claims	87	
5. Total claim amount (NU)	2 723 137	
5.1 Paid to outside India	87 769	(3.22%)
5.2 Paid to India	665 368	(24.43%)
5.3 Paid to Bhutan	1 970 000	(72.34%)

Source: Ministry of Health, Royal Government of Bhutan, 2013c

of the beneficiaries are monks of the Central Monastic Body. With an annual premium of Nu 800, the benefit of up to Nu 100 000 is covered. The package also covers the cost for cabin charges and transportation charges within and outside the country for up to Nu 100 000 (Royal Insurance Corporation of Bhutan Limited, 2015).

3.5 Other financing mechanisms

3.5.1 Parallel health systems

Besides the public health facilities, the Bhutanese can also avail services from the Army and IMTRAT hospitals financed by the RGoB and Government of India, respectively. Access to services provided by these health centres is not limited to armed personnel; all civilians are free to avail the services. These health facilities are integrated with the main health system, referring patients to public health facilities and using diagnostic facilities at public hospitals. Some doctors from the army hospitals serve in public hospitals to make up for the shortage of doctors.

3.5.2 External sources of funding

External aid has played an important role in financing health in the country. External aid constituted around 28% of THE in 1996 but has gradually seen a decreasing share of THE (Figure 3.6). Over the past few years, as the country shifted from the low-income to low and middle-income status, a majority of traditional donors, such as DANIDA and World Bank, have either withdrawn or are on the verge of withdrawing their aid. While the decreasing share of external aid to THE may be a positive indication that government has taken a predominant role in health and is moving towards sustaining the health expenditure, withdrawal of donors will also shift the burden to the government, which may be challenged with sustaining delivery of free health-care services in the country. Thus, having an elaborate transition preparedness assessment and plan will be a high priority for the health sector. There is also a need to develop in-house technical capacity and explore innovative financing options.

3.5.3 Other sources of funding

Enterprise financing scheme

Over the past few years, few State-owned corporations and autonomous agencies have been making payment through different modalities. Some of the agencies reimbursed directly to the employees while some paid their employees through voluntary insurance coverage. Some of the

agencies also have their own clinics, treating their own employees and their dependants. The share of expenditure by these agencies on THE constituted 0.44% for the fiscal year 2012–2013 (Ministry of Health, Royal Government of Bhutan, 2013c).

Innovative financing – Bhutan Health Trust Fund

Another innovation in the health financing area in the country was the establishment of the BHTF in 1998. The primary objective of the Fund is to ensure continued and timely supply of vaccines and essential medicines and to eliminate financing uncertainties for purchase of these crucial components of primary health-care services.

Box 3.1 Bhutan Health Trust Fund

The Bhutan Health Trust Fund (BHTF) was formally launched in 1998 as a financing instrument to provide primary health care to the Bhutanese people in a sustainable manner. Its primary purpose is to sustain primary health-care services including reproductive health through the assurance of continued and uninterrupted supply of critical vaccines, essential medicines, needles, syringes, cold chain equipment and other related medicines/equipment.

The Royal Charter, which came into effect in 2000, governs the management of the Trust Fund. The capitalization of the Fund is done through contributions from potential donor countries/organizations of private and public status, financial institutions as well as individuals with matching contributions from the Royal Government on the principle of one-to-one partnership.

The Charter also has a provision, whereby the board has the authority to change the themes of the programme activities, if required, as per the purposes specified in the Charter.

The aim of the BHTF is to achieve a target capitalization of USD 24 million. It has a capital of approximately USD 21 million with returns of 8.75–10% per annum (approximately USD 2 million). Health contributions at 1% of basic salary for salaried employees, which was initially remitted to the general government revenue, have been earmarked to the BHTF starting from the fiscal year 2015–2016. This accounted for 2.2 USD million. The 1% health contribution is initially remitted to the general government treasury, MoF. The MoF transfers the funds to the BHTF, which then releases them to the MoH.

The first operation of the Fund was approved by the Board in its second sitting and started funding in the fiscal year 2003–2004 for purchasing hepatitis B vaccines.

The BHTF in the past years, barring 2006–2007, 2007–2008 and 2009–2010, has been co-funding the procurement of pentavalent vaccine. Starting from fiscal years 2010–2015, the Trust Fund is financing the requirement of entire essential medicines.

Other major sources are voluntary contributions and annual fund raising events. The BHTF releases the funds for procurement of vaccines to the MoH through the MoF like any other development partner. (For details on areas of investment/support, please refer to Chapter 6.)

Sources: Bhutan Health Trust Fund, 2016; Royal Government of Bhutan, 2000

Health contribution

A health contribution of 1% of basic pay is deducted from the salaried employees of the government and corporate sectors. Table 3.13 shows that the collection from health contribution amounted to Nu 105 172 million in 2010–2011 with a gradual increase to Nu 190 287 million in 2014–2015 contributing 0.76% to the total government revenue. However, till 2014–2015, the health contributions were not specifically earmarked for health care. Starting July 2014, the health contribution has been earmarked to the BHTF.

Table 3.13 Trends of health contribution as percentage of net RGoB revenue, 2010–2014

Year	Amount (in million Nu)	As % of total annual RGoB revenue
2010–2011	105.172	0.6
2011–2012	131.481	0.65
2012–2013	145.834	0.69
2013–2014	157.41	0.68
2014–2015	190.287	0.76

Sources: Department of Revenue and Customs, Ministry of Finance, Royal Government of Bhutan, 2011, 2012, 2013, 2014, 2015

3.6 Payment mechanism

3.6.1 Paying for health services

Apart from a few private diagnostic centres and private pharmacy shops, health-care facilities are mostly owned by the MoH. These public health facilities are funded by the MoF by adopting a line item budget based on historical expenditure trends. This may not be the most efficient payment mechanism. Internationally, many developing countries apply a mix of provider payment methods for better strategic purchasing, which may need to be explored for the public financed health services in Bhutan while honouring the constitutional mandate of providing free access to basic public health services including traditional medicine services.

Table 3.14 summarizes how different health services are paid under the public health system, SCS and voluntary health insurance schemes. Voluntary health insurance schemes provide reimbursement for the services purchased by their clients. Households/individuals purchase health services during SCS (off-hour) by paying Nu 500 (USD 7 approx.) for each visit. Additional charges for diagnostic tests such as radiology

have to be paid over and above the consultation fee. However, laboratory tests and medicines listed in the NEML are provided free of charge.

The health facilities governed by the armed forces and IMTRAT employ their own staff and they get financial support by the respective agencies. The RGoB finances the Bhutan military hospitals and the Government of India finances the IMTRAT hospitals.

Table 3.14 Provider payment mechanisms by type of services

Type of services	Public health system (Ministry of Health)	Voluntary private health insurance	Direct payment
Outpatient care, primary and ambulatory care	Line item budget FFS for medical certificate	FFS	FFS in case of special consultation service (off-hour), and private diagnostic centres
Inpatient care	Line item budget Cabin charges not covered – FFS by household	FFS	
Dental care	Line item budget User fee for high-end cosmetic procedures such as dentures, root canal treatment, crowning, scaling	Cosmetic surgery not covered	FFS in case of special consultation service (off-hour)
Pharmacies	Line item budget	FFS	In case of special consultation (off-hour), patient is not required to pay for medicines. Medicines listed in the essential medicines list can be availed free of charge. User fee for medicines not listed in the essential medicines list and self-prescribed medicines bought from retail pharmacy shops.
Health promotion and preventive care	Line item budget	Not covered	
Referral abroad	FFS	FFS	

Note: FFS: fee-for-service
Source: developed by the authors

3.6.2 Paying for health workers

All health workers under the public health system are either full-time salaried employees or contract employees who are hired at a defined

salary structure for a specified period of time. Health professionals are also paid a supplementary professional allowance of 35–40% compared to professionals who are at the same level in other sectors. Dual practice is not allowed for these government employees. However, they can work at the off-hour clinics organized in public health facilities and are paid on the basis of fee for services collected from the patients. Such dual practice was allowed in 2012 starting with the national referral hospital. A monthly payment of Nu 12 000 (USD 185 approx.) per doctor was fixed for dual practice but since 2015, this fixed payment has been removed. Doctors are now paid 50% of the consultation charge of each patient with a maximum limit of 15 patients per day. The other categories of health professionals (such as nurses and technicians) are paid Nu 500 per day. The revenue generated through the off-hour services is transferred to the government treasury and the government then allocates a budget to the hospitals operating off-hour services to pay doctors and other health professionals.

Retaining health workers, particularly specialists, in Bhutan's public health system has been a major challenge for the MoH. In a recent assessment, unhappiness with the payment scale was indicated as the reason for specialists leaving the public health service before the retirement age. There is a need to revisit the payment scale while not contravening the civil service rules and regulations to keep the health workers motivated and to improve delivery of quality health-care services.

4 Physical and human resources

Chapter summary

The RGoB has continuously invested in developing infrastructure and HRH. The health delivery system in Bhutan is public dominant. At present, there are 31 hospitals including one TMH at Kawang Jangsa, Thimphu, 23 BHU-Is, 184 BHU-IIs, 28 sub-posts with 562 ORCs and 54 indigenous units. The DoMSHI is mandated with procurement and maintenance of the equipment and development of health infrastructure.

Constant efforts are made to improve the health information system, which comprises hospital information systems, laboratory information systems (LIS) and District Hospital Information System (DHIS2). The ePIS is presently being piloted in a few hospitals. However, there are some vertical reporting system within the health sector as obligated by donor requirement for specific programmes such as human immunodeficiency virus (HIV), tuberculosis (TB), malaria, acute respiratory infection (ARI) etc., which presents some extra burden on the health workers.

Ever since the first doctor and drungtsho started serving the country, the RGoB has constantly invested in developing HRH. From just one doctor in 1954, Bhutan had over 250 doctors in 2015. Similarly, from just one home-grown drungtsho in 1953, there are 47 at present. The health workforce has steadily increased over this period although shortages still exist. The HRH Master Plan (2013–2023) estimates the staff requirement of more than 10 000 persons whereas the current estimates stand at just over 4000 including the administrative staff. Among the different fields, the urgency is most felt for bridging the gap of specialists. The number of doctors and nurses per 10 000 population is 3.3 and 14.1, respectively.

In terms of medical education and training, the MoH increasingly relies on the Khesar Gyalpo University of Medical Sciences of Bhutan (KGUMSB), which is a government institute, for both pre-service and in-service programmes, including CMEs. However, the RGoB in the 12th FYP has plans to initiate MBBS courses at KGUMSB; until then, Bhutan will continue to rely on universities and institutes in the Region for the undergraduate medical education.

4.1 Physical resources

4.1.1 Capital stock investment

The physical infrastructure of the health system in Bhutan is organized in three tiers: primary, secondary and tertiary levels. Primary level infrastructures are BHUs, sub-posts and ORCs based at the block/village level. Secondary level infrastructures are the district and the other general hospitals based at the district headquarters and major towns. BHU-Is located in some districts can also be considered as secondary level infrastructures because their functions are similar to district hospitals. Some of the districts have only a BHU-I as their district hospital due to low workload and a small catchment population.

Tertiary level care is available at the RRHs located in the three regions and the national referral hospital in the capital. Traditional medicine also has a hospital at the national level and traditional medicine units exist in almost all district hospitals and some BHU-Is. In the capital, satellite clinics located in various parts of the city provide primary care services, similar to BHU-IIs, except for community outreach services. Apart from curative services, all health facilities including the national and regional hospitals provide public health services, maternal and child health (MCH) services, immunization and other preventive services. Details of each level are shown in Table 4.1 and the number and location of health facilities are given in Table 4.2. Staffing norms and service standards guide the staffing of facilities at different levels of care.

Table 4.1 shows that Trashigang and Mongar districts in the eastern region have the highest number of health facilities (87 and 86 each) followed by Samtse and Chukha districts in the western region. Zhemgang district with 54 followed by Dagana with 45 has the highest number of health facilities in the central region. Gasa and Haa districts in the western region do not have a public/district hospital but in Haa there is a hospital operated by IMTRAT.

In terms of number of hospitals, Chukha district has the highest with three hospitals while other districts have maximum of two hospitals only. Trashigang and Samdrup Jongkhar in the eastern region have the highest number of BHU-Is (5 and 3) and Mongar, Lhuentse and Trashigang, which is also in the eastern region, have the highest number of BHU-IIs. Trashigang and Mongar districts have the highest number of ORCs (56 and 53) followed by Samtse district with 48 ORCs.

Table 4.1 Summary description of health facilities in Bhutan

Type of health facility	Geography	Staffing norm and pattern	Brief function
Outreach clinic (ORC)	1–3 hours walk or 10–30 minutes drive from the nearest BHUs or hospitals	Monthly visit by one or two health staff	Provides outreach services on a monthly basis, e.g. immunization, ANC, PNC, environmental health and health education.
Sub-post	3–4 hours walk or 1–2 hours drive from the nearest BHUs/hospitals	1 health assistant	Provides promotion of health, prevention of disease, early diagnosis of disease and rehabilitation services.
BHU-II	Ranges from 3 hours to 3 days walk and 1–5 hours drive from the hospitals/BHU-I	Two–three staff preferable with one female staff	Provides promotion of health, prevention of disease, early diagnosis of disease and rehabilitation. They conduct ANC, PNC, normal delivery, immunization and provide family planning services besides health education. BHUIIs usually have only five beds.
BHU-I	Located at a district headquarters or a township or an area having about 3000 to 5000 people	A doctor, dentist, nurses and few other technicians	Inpatient services in addition to other primary health-care services; normally 10 beds.
District hospital I /II, general hospital	Located at district headquarters or if general hospital serving a population of about 10 000	Doctors, nurses, dentist, drungtsho and other technicians including ophthalmology, laboratory, etc.	Inpatient and emergency medicines in addition to other primary health-care services. Hospital-I has 20–40 beds and hospital-II has 40–60 beds. Hospital-II has EmOC in the Emergency Medical and Trauma Centre.
Regional referral hospital	Located centrally in a region	Doctors, specialists, nurses and other technicians	Tertiary levels of care and centre for training of health professionals in addition to other public health services. Both the RRHs in the eastern and central regions are with 150 beds.
National referral hospital	Located at the capital	Doctors, specialists, super-specialists, nurses and other categories of health staff	Tertiary care and teaching hospital. Carries out public health services through community clinic and satellite clinics located in different areas. At present, this hospital has 360 beds.
National Traditional medicine	Located at the capital	Drungtshos, sMenpas	Outpatient care services only
Traditional medicine units	Located in the BHU-I and district and regional hospitals	Drungtshos, sMenpas	Outpatient care services
Private pharmacy	Located in the urban cities	Competent pharmacy technician/ pharmacist	Over-the-counter service
Private diagnostic centre	Located in the big cities such as Thimphu and Phunthosling	Run by competent health professionals such as physicians and technicians (laboratory and radiology services)	Laboratory and radiology services

Source: compiled by the authors

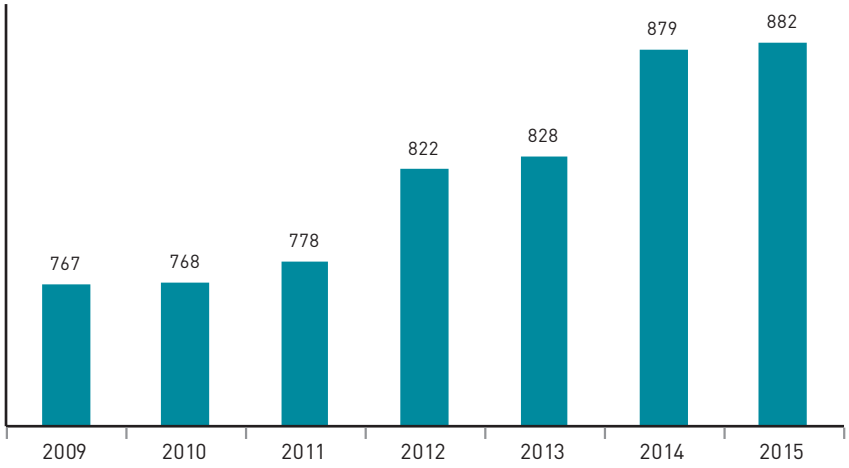
Table 4.2 Distribution of public health facilities/beds by region/dzongkhag, 2015

Dzongkhags (districts)	Hospital		BHU-I		BHU-II	Sub-post	Outreach clinic		Traditional medicine unit	Total facilities	Total beds
	No.	Beds	No.	Beds			With shed	No shed			
Trashigang	3	60	5	50	14	4	55	1	5	87	110
Samdrup Jongkhar	2	60	3	30	7	0	28	4	5	49	90
Lhuentse	1	20	0	0	14	0	31	1	2	49	20
Trashiyangtse	1	20	1	10	7	2	21	2	2	36	30
Pemagatshel	1	20	1	10	11	7	34	5	4	63	30
Mongar	1	150	1	10	22	5	53	0	4	86	160
Total, Eastern Region	**9**	**330**	**11**	**110**	**75**	**18**	**222**	**13**	**22**	**370**	**440**
Bumthang	1	40	0	0	5	0	12	0	3	21	40
Dagana	1	20	2	20	7	0	30	2	3	45	40
Tsirang	1	20	0	0	7	0	14	5	1	28	20
Trongsa	1	20	0	0	6	3	21	0	3	34	20
Sarpang	1	150	2	10	11	1	12	1	2	30	160
Zhemgang	1	40	2	20	11	2	30	4	4	54	60
Total, Central Region	**6**	**290**	**6**	**50**	**47**	**6**	**119**	**12**	**16**	**212**	**340**
Paro	1	40	0	0	3	0	17	5	1	27	40
Samtse	2	60	1	10	13	0	45	4	3	68	70
Punakha	1	40	0	0	7	1	11	0	1	21	40
Thimphu*	5	410	1	10	12	0	5	13	2	38	420
Gasa	0	0	1	10	3	0	5	1	1	11	10
Chukha	3	90	2	20	12	1	38	6	4	66	110
Haa*	1	0	1	10	4	0	8	9	1	24	10
Wangdue Phodrang*	2	40	1	10	8	2	24	5	3	45	50
Total, Western Region	**15**	**680**	**7**	**70**	**62**	**4**	**153**	**43**	**16**	**300**	**750**
Grand Total	**30**	**1300**	**24**	**230**	**184**	**28**	**494**	**68**	**54**	**882**	**1530**

Notes: Bed strength for Thimphu Dzongkhag is excluding National Traditional Medicine Hospital, Royal Bhutan Army and IMTRAT hospitals.
Bed strength for IMTRAT Hospital in Haa Dzongkhag not included.
Bed strength for Royal Bhutan Army Hospital in Wangdue Phodrang Dzongkhag not included.

Sources: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016 and Health Care and Diagnostic Division, Department of Medical Supply

Figure 4.1 Total number of public health facilities in Bhutan during 2009–2015



Note: Public health facilities are referred to hospital, BHU-I, BHU-II, sub-post, ORC and traditional medicine unit.
Sources: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2010, 2011, 2012, 2013, 2014, 2015, 2016

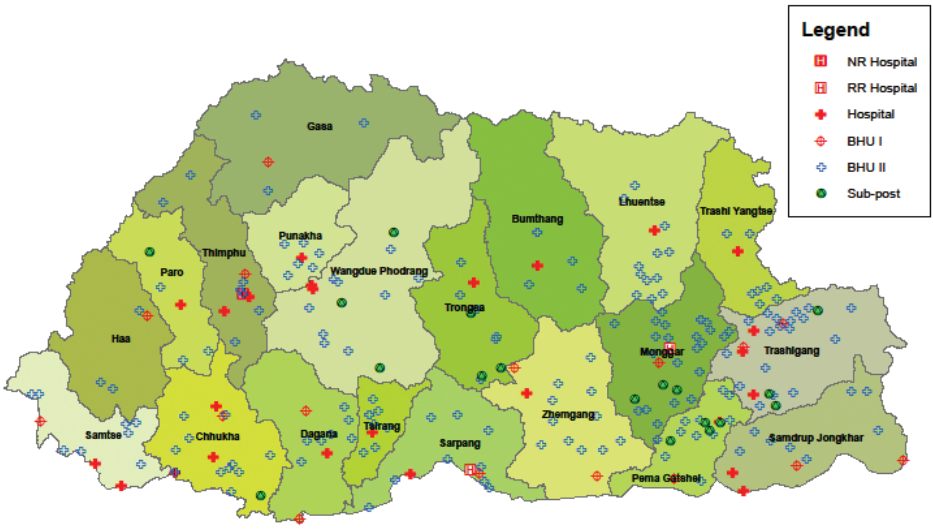
Specialized services are provided in the three RRHs (eastern, central and western). JDWNRH is also the western RRH. Other selected hospitals provide very little specialized services due to either shortage of specialized health professionals or lack of proper infrastructure.

Development of health infrastructure in Bhutan began in 1956 with the completion of a 20-bed hospital in Thimphu; later a 10-bed hospital was constructed in Samtse (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2008). In 1961, there were only two hospitals (Thimphu and Samtse) and 11 dispensaries. Many hospitals that exist today had been upgraded from these dispensaries. By 2015, health facilities had increased manifold with a total of 882 public health facilities with 1530 beds.

During the current plan (11th FYP 2013–2018), five hospitals (Damphu, Wangdue [Bajo], Samtse, Dewathang and Gelephu) are being reconstructed. Gelephu, the central regional hospital, will be upgraded to a 150-bed hospital while the others with 20 beds will be upgraded to 40 beds. A 20-bed hospital is being constructed in Haa district.

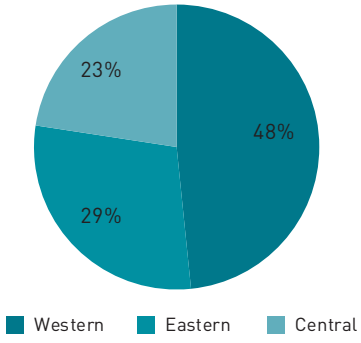
In terms of geographical distribution, 48% of the hospitals are located in the western region, 29% in the eastern region and 23% in the central region as of 2015. The majority of hospitals (45%) in existence today were constructed during the 1970s and 1980s. Fewer hospitals were constructed during the past two decades. However, the construction of other facilities particularly BHU-IIs covered a wider range of population in the country. Figure 4.2 shows the distribution of health facilities in Bhutan.

Figure 4.2 Distribution of health facilities in Bhutan, 2016



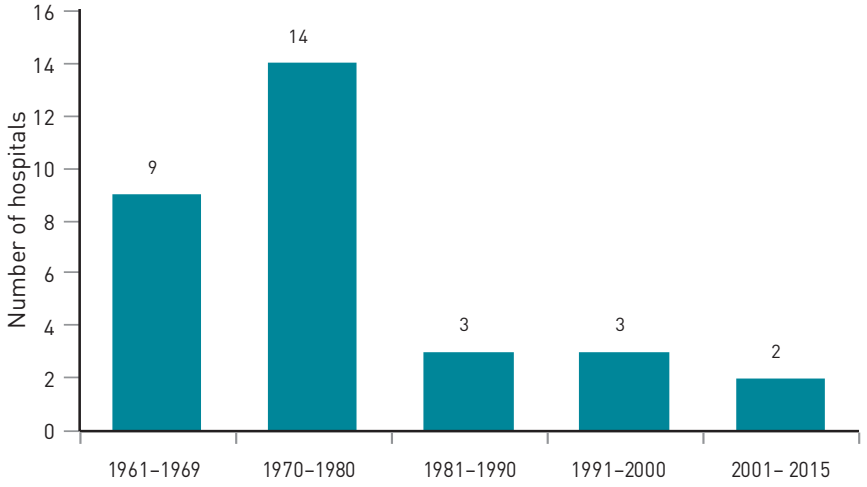
Source: BHMIS Unit, Ministry of Health, 2016

Figure 4.3 Distribution of hospitals by region



Source: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016

Figure 4.4 Number of hospitals established in Bhutan



Source: Annual Health Bulletin of various years

4.1.2 Investment funding

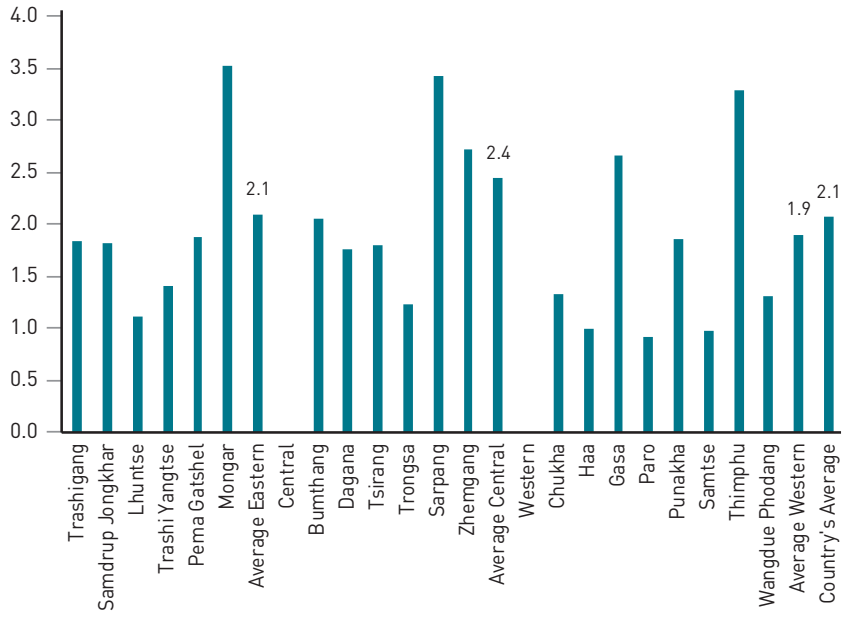
As stated above, most hospitals in Bhutan are public hospitals, with the government responsible for investment in buildings, equipment and supplies. The overarching goal of health services is to deliver quality services and increase access to all citizens including hard-to-reach nomadic, migratory and peri-urban communities. During the 11th FYP, funds for construction of new and maintenance of current health facilities are managed from the budget distributed in a ratio of 30:70 between districts and the Central level. For a new construction, a proposal is submitted through dzongkhag tshogdu to the MoH. The request for construction of new health facilities comes from the community, their proposal is reviewed by the block-level committee called gewog tshogde and gewog administrative officer who further submits the proposal to the district committee called the dzongkhag tshogdu for approval. The proposal is then submitted to the MoH for technical clearance and approval based on criteria such as population, distances from the nearest health facilities and the number of children under five years in the catchment area. If found appropriate, the MoH conveys their technical concurrence to the concerned dzongkhag with a copy to the GNHC to be included in the plan of the dzongkhag. The MoF allocates funds based on the priority of the proposals. The allocation of funds to a gewog is based on the gewog plan submitted through the gewog tshogde, which is further deliberated in dzongkhag tshogdu.

Availability of public health facilities has significantly increased for the people in the country, particularly for those living in difficult geographical areas. Since the 9th FYP (2002–2007), availability of primary/secondary health services to the unreached population has become a priority. Bhutan has invested in the expansion of well-furnished primary health facilities with adequate human resources to provide equitable access to every citizen, prioritizing on those who reside in the most hard-to-reach areas owing to the scattered population settlements and rugged terrain.

4.1.3 Infrastructure

The total number of hospital beds has increased from 739 in 1987 to 1078 in 2008 and 1530 in 2015, representing an increase from 1.6 hospital beds per 1000 population in 2008 to 2.0 per 1000 population in 2015. The number of hospital beds and the ratio of hospital beds per 1000 population by dzongkhag and region in the country are shown in Figure 4.5.

Figure 4.5 Hospital beds per 1000 population by dzongkha and region, 2015



Source: BHMIS and National Statistics Bureau population report, 2016

Mongar and Sarpang districts have more number of beds as the eastern and central RRHs are located in Mongar and Gelephu, respectively. Thimphu district has the maximum number of beds as JDWNRH with

350 beds is the western regional hospital as well as the national referral hospital.

Compared to the other countries in the South-East Asia Region, the ratio of hospital beds in Bhutan stood at 1.8 beds per 1000 population in 2012, similar to 2.1 in Thailand, whereas the minimum in the Region was 0.6 in Bangladesh and the maximum was 13.2 in the Democratic People's Republic of Korea (Table 4.3).

Table 4.3 Ratio of hospital beds per 1000 population compared to the other countries of the South-East Asia Region

Countries of the South-East Asia Region	Data in	Hospital beds per 1000 population
Bangladesh	2011	0.6
India	2011	0.7
Indonesia	2012	0.9
Bhutan	2012	1.8
Thailand	2010	2.1
Sri Lanka	2012	3.6
Maldives	2009	4.3
Nepal	2006	5.0
Timor-Leste	2010	5.9
Korea, Democratic People's Republic	2012	13.2
Myanmar	2006	0.6

Source: World Bank, 2016 (data available in different years)

Hospital admissions of patients in 2015 were highest in the western region (62% of the total 73 825 admissions in 2015; details in Chapters 5 and 7), probably due to JDWNRH. The minimum number of admissions was in the central region (13%) since it has a smaller catchment area (covering only five districts) whereas the eastern and western regions have six and nine districts, respectively. The average hospital occupancy rates in 2015 for district hospitals, RRHs and JDWNRH were 56%, 65% and 77%, respectively, whereas the average length of stay for all district and referral hospitals was around 5–6 days per admission. Currently, it is observed that public health facilities in some areas are underutilized while some larger hospitals face a problem of bed shortage during the peak season (details in Chapter 7). Therefore, apart from monitoring hospital occupancy rates and length of stay, additional disaggregation by geographical areas as well as information on population's health-seeking behaviour are needed for planning the type and location of health services.

4.1.4 Medical equipment

Medical equipment is categorized by price. As of 2015, a total of 769 pieces of common medical equipment were supplied to the hospitals in the country – 51% of the pieces valued over Nu 500 000 and rest between Nu 50 000 and 500 000. At present, only JDWNRH has major equipment, i.e. one magnetic resonance imaging (MRI) and one computed tomography (CT) scan system. There are plans to supply and install similar equipment in the eastern and central RRHs; establishing CT scan was indicated in the 11th FYP (2013–2018). Table 4.4 shows the details of supply of medical equipment by district.

Procurement of medical equipment is done as per the procurement rules and regulations (2009) of the MoF, RGoB. The procedures of the procurement process are as follows:

i. All health facilities submit their annual indents to their dzongkhags;
ii. The dzongkhags compile and submit the indents to the Health Care Diagnostic Division (HCDD), DoMS;
iii. The HCDD, DoMS compiles the entire annual indents by forming a team for Bill of Quantity (BoQ);
iv. The BoQ is reviewed by the DoMS for finalization;
v. The finalized BoQ is then submitted to the DoMSHI for procurement processes.

Once the DoMSHI orders the supplies, they are received at the Medial Supply Depot Phuntsholing (central warehouse) and distributed to health facilities after quality check by technical experts.

4.1.5 Health information technology

The penetration rate of mobile cellular service has increased from 0% in 2003 to 87% by the end of 2015, which is close to the average penetration rate of about 90.5% in LMICs (World Bank, 2016). Mobile phone coverage has contributed to improved access to health services, such as tracking of pregnant mothers for antenatal care (ANC) and postnatal care (PNC) services by primary health workers in Bhutan. It has facilitated telemedicine consultation among primary health-care workers and specialists. The internet penetration has increased from less than 1% in 2008 to about 62% by the end of 2015 (Bhutan InfoComm and Media Authority, Royal Government of Bhutan, 2015). Owing to the

Table 4.4 Distribution of medical equipment in MoH hospitals

District	Hospital	Hospitals' Bed Strength	Type of common medical equipment										Total by Hospital	Total by District
			Cost over over Nu 500 000						Cost over Nu 50 000 to 500 000					
			Ultra-sound machine	Radiant warmer	X-ray machine	Bio-chemistry analyser	Dental chair	Delivery beds	Defibril-lator	Ventila-tor	Auto-clave	Micro-scope		
Eastern														
1. Trashigang	1. Trashigang	40	3	4	2	1	1	2	2	0	8	2	**25**	**44**
	2. Riserboo	20	1	4	1	1	1	1	0	0	7	3	**19**	
2. Samdrup Jongkhar	3. Samdrup Jongkhar	20	1	6	1	1	1	1	1	0	9	5	**26**	**50**
	4. Deothang	40	1	7	1	2	1	2	1	1	6	2	**24**	
3. Lhuentse	5. Lhuentse	20	1	1	1	0	1	2	1	1	1	2	**11**	**11**
4. Trashiyangtse	6. Trashiyangtse	20	2	3	2	1	2	1	0	0	7	2	**20**	**20**
5. Pemagatshel	7. Pemagatshel	20	1	3	1	2	1	1	0	0	3	3	**15**	**15**
6. Mongar	8. Mongar Eastern RRH	150	3	9	4	2	2	2	8	10	15	13	**68**	**68**
Sub-Total	**8**	**330**	**13**	**37**	**13**	**10**	**10**	**12**	**13**	**12**	**56**	**32**	**208**	**208**
Central														
7. Bumthang	9. Bumthang	40	1	3	2	1	2	2	0	0	5	3	**19**	**19**
8. Dagana	10. Dagapela	20	1	3	2	1	1	2	0	0	8	1	**19**	**19**
9. Tsirang	11. Damphu	40	2	7	1	1	2	2	0	0	4	2	**21**	**21**
10. Trongsa	12. Trongsa	20	2	4	2	2	1	2	2	0	7	3	**25**	**25**
11. Sarpang	13. Gelephu Central RRH	150	3	9	4	2	2	3	3	2	11	13	**52**	**52**
12. Zhemgang	14. Yebelaptsa	40	2	4	2	1	1	2	1	0	6	2	**21**	**21**
Sub-Total	**6**	**310**	**11**	**30**	**13**	**8**	**9**	**13**	**6**	**2**	**41**	**24**	**157**	**157**
Western														
13. Chukha	15. Tsimalakha	20	1	3	1	2	1	1	1	0	8	1	**19**	**68**
	16. Gedu	20	1	4	1	1	1	2	1	1	5	2	**19**	
	17. Phuentsholing	60	1	6	1	1	2	2	3	0	8	6	**30**	
14. Haa	NA	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
15. Gasa	NA	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
16. Paro	18. Paro	40	2	6	1	1	2	2	3	0	7	4	**28**	**28**
17. Punakha	19. Punakha	40	1	7	2	3	2	2	2	0	4	4	**27**	**27**
18. Samtse	20. Samtse	40	1	6	1	1	2	2	2	0	8	4	**27**	**37**
	21. Gomtu	20	0	4	1	1	0	1	0	0	2	1	**10**	
19. Thimphu	22. JDWNRH	350	45	29	9	6	12	5	16	24	19	24	**189**	**200**
	23. Gidakom	60	0	2	1	0	1	1	0	0	4	2	**11**	
20. Wangdue Phodrang	24. Bajo	40	1	4	2	1	1	2	1	0	9	3	**24**	**24**
Sub-Total	**10**	**690**	**53**	**71**	**20**	**17**	**24**	**20**	**29**	**25**	**74**	**51**	**384**	**384**
Total in the country in hospitals only		**1330**	**77**	**138**	**46**	**35**	**43**	**45**	**48**	**39**	**171**	**107**	**749**	**749**

Note: Excluding one National Traditional Medicine Hospital and Royal Bhutan Army and IMTRAT Hospitals

Source: Administrative data maintained by Biomedical Engineering Division (BMED and JDWNRH-BMED and JDWNRH)

country's terrain, the information and communication technology (ICT) infrastructure and connectivity across the nation are being continuously improved. Except for the major hospitals, most district hospitals still do not have a proper setup for local area network (LAN); thus hindering the implementation of any systems that allow collaborative work, data collection and processing, and reporting.

The roll out of ICT projects in Bhutan has been such that there are islands of automation and pockets of standalone systems. There is a lack of interoperability due to constraints in data standardization and because systems run on different platforms, it leads to duplication in data collection.

Despite such challenges, the MoH has come a long way in leveraging ICT as an enabler to improve health-care services.

Some noticeable achievements are highlighted below:

- Implementation of a hospital information system at the country's main referral hospital, JDWNRH, which includes patient management, pharmacy, inventory, billing and clinical modules.
- Development of an indegenous public health surveillance system that collects information on disease outbreaks and epidemics.
- Implementation of the BHMIS to collect aggregated health data on morbidity and mortality, and for generating activity reports for evidence-based planning and decision-making.
- Implementation of DHIS2 was initiated in 2013 and by now it has been rolled out to all hospitals and BHU-Is. It will be rolled out to BHU-IIs upon the availability of internet connection.
- Roll out of the Computer Aided Dispatch System (CADS) that provides both emergency responses in sending out ambulances and logs telephone calls for medical advice in the Health Help Centre (HHC).

Telemedicine in Bhutan was initiated in November 2000 and piloted the tele-link between Mongar Eastern RRH and JDWNRH through WHO support to enable regional practitioners to hold consultations with specialists at the national level. In 2002, the Gelephu Central RRH was also included. Lhuentse and Trashiyangtse hospitals (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2008) were linked to telemedicine as part of the East Bhutan Tele-ECG Project under the Japanese Grant for Grassroots Project.

Similarly, in 2006, a web-based telemedicine system was developed in-house and was introduced in 10 district hospitals. During February–March 2008, a web-based system was introduced in four more hospitals and BHU-I sites, increasing the number of total tele-sites to 14 health facilities. In 2008, the tele-consultation setup between Bhutan and Chandigarh and between Bhutan and Lucknow in India was commissioned and established as part of the SAARC telemedicine project.

Although telemedicine has the potential to improve quality of care, it has not produced the results that were envisioned at the onset. Nonetheless, in view of the potential benefits, the Ministry has not given up on telemedicine and plans to establish a network between all the hospitals in the country within a few years.

Notwithstanding routine data collection through the BHMIS, there are numerous surveillances or vertical reporting systems adopted by the public health programmes to collect programme-oriented or disease-specific data such as TB, malaria, HIV/AIDS, ARI and noticeable outbreaks/diseases. This practice of various vertical-reporting formats has resulted in proliferation of forms and overload of the routine health service data collection for health facilities. Reviewing such vertical-reporting systems and harmonizing them with the BHMIS is deemed crucial in consolidating and making the BHMIS a more robust and effective system. The roll out of DHIS2 to all health facilities is expected to improve the information system.

Several vertical ICT projects were rolled out simultaneously within the MoH. Each system uses a different taxonomy for patient/procedure identification and integration of these silo systems is the main challenge for the MoH. There is a need for data standardization, interoperability and use of unique identifiers across applications. The unique citizen identification (CID) number has been applied in hospitals.

The current patient information system is paper-based, leading to wastage, inefficiency in medical record-keeping. Patients' clinical history and prescriptions are not known since a majority of them do not keep prescriptions safely. Every time a patient sees a physician, s/he is treated as a new case and the present system of follow-up of referred patients is weak; for example, it is difficult to track multidrug-resistant (MDR) TB patients with the existing system.

The National Health Policy and the ICT Master Plan mandates the MoH to introduce the Electronic Medical Record System in health facilities. The MoH is working on developing and introducing ePIS in the country. ePIS will be initially piloted in a few health facilities and eventually introduced in all the health facilities. Once the ePIS is implemented, CID shall be used and JDWNRH has already started using CID for LIS. The Civil Registration and Vital Statistics (CRVS) system is still in the process of development.

The health system comes under considerable strain due to disasters and emergency situations, which lead to high mortality and morbidity. Bhutan has confronted several disasters in the past. As a result, the Health Emergency and Disaster Contingency Plan (HEDCP) has been developed. Under this plan, a Health Emergency Operation Centre (HEOC) will be established to act as the central command, control and coordination centre for effective administration of emergency preparedness and disaster management in any emergency situation. The HEOC will be equipped with communication technology and will be linked electronically to the National Emergency Operation Centre (NEOC), central referral hospital and RRHs, so that the HEOC can update data regularly and coordinate disaster and emergency response appropriately.

The HHC is an ICT-enabled health-care service that will deliver services round the clock (24x7). The services to be delivered include emergency response services and healthcare helpline services. The services will be delivered through the toll-free number 112, which is accessible from mobile phones, fixed land-lines, and public call offices (PCOs). The HHC can also monitor all the ambulances in the country through a vehicle-tracking system and can deploy an ambulance to the right site at the time of emergency (Ministry of Health, Royal Government of Bhutan, 2016a).

4.2 Human resources

4.2.1 Human resources for health

In Bhutan, civil servants working in hospitals, BHUs and health institutions such as sup-posts or traditional medicine facilities are under the umbrella of HRH. The health sector staff in Bhutan are categorized according to their educational background and their core roles and responsibilities (Table 4.5).

The HRH division of the MoH is responsible for HRH planning, recruitment, management, development and deployment, which are done

Table 4.5 Categories of health workers

Categories of health workers	Brief description
Specialists	Specialists have a Master's degree and sub-specialization in their field. They work in referral hospitals and other selected hospitals.
Doctors	Doctors have a Bachelor's degree in Medicine (MBBS) and are placed in basic health units grade I (BHU-Is) and hospitals.
Dentists	Dentists have a Bachelor's degree in Dentistry and are placed in BHU-Is and hospitals.
Drungtshos	Drungtshos have a Bachelor's degree in Traditional Medicine and are placed in BHU-Is and hospitals.
Clinical officers	Clinical officers are health assistants (HAs) with additional training in clinical care and are highly experienced in health-care service delivery. They work in hospitals, BHU-Is and satellite clinics.
Health assistants (HAs)	HAs have a basic education of 12th standard with science background and have a Diploma in Health Sciences from KGUMSB and are licensed to perform public health programmes and treatment of minor illness in the community. They work in BHUs and community health units (CHUs).
Clinical nurses	Nurses have a basic education of 12th standard with science background and are further trained in Bachelor of Science in nursing. In addition to doing what staff nurses and assistant nurses do, they are responsible for performing critical nursing care, holistic patient care and carry out research for evidence-based practice. Team management falls within their responsibilities.
Staff nurses	They are nurses with a Diploma in Nursing. Besides the fundamental nursing care, they take some additional responsibilities such as developing and implementing nursing care plan, assisting the clinical nurses and doctors during advance life support and perform functions according to their specific responsibilities.
Assistant nurses	Assistant nurses have a basic education of 10th standard with an additional certificate course in nursing. They are responsible for fundamental nursing care such as bedside care and hygiene, monitoring and recording of vital signs, assisting patients to collect samples and feeding.
Pharmacists	Pharmacists have a Bachelor's degree in Pharmacy and are engaged in administering drugs and educating patients and the public on use of drugs. They work in BHU-Is and hospitals.
Physiotherapists	They have a Bachelor's degree in Physiotherapy and are engaged in improving and sustaining physical health of patients. They work in hospitals.
Technologists	Technologists hold degrees in various relevant fields and are responsible in supporting doctors and specialists in hospitals.
Technicians	Technicians are diploma holders, engaged in providing services in their respective technical fields.
Dieticians	Dieticians hold a Bachelor's degree in Diet and Nutrition and they work in hospitals.
Basic health workers (BHWs)	BHWs have a basic education of 8th standard and have a certificate in Health Sciences and are licensed to perform public health programmes. They work in BHUs and CHUs.

Source: compiled by the authors

in line with the Bhutan civil service rules and the HRH Master Plan. Within the framework of decentralization, districts are given the autonomy to deploy health workers across health facilities under their administrative jurisdiction. The HRH division of the MoH under the guidance of the RCSC of Bhutan is responsible for drafting retention strategies and instituting performance management systems.

The Medical and Health Council Act of the Kingdom of Bhutan 2002 covers all categories of HRH in Bhutan and the BMHC is responsible for implementing the Act. All the council's regulations aim at improving and sustaining quality services by ensuring that health professionals meet the minimum competency level and ethical standards. Health workers are registered and licensed after evaluation of their degrees and certificates. Subsequent renewal of license is subject to their earning CME credits of 30 points every five years.

Since 1954, the RGoB has been continuously sponsoring high school graduates to study medicine and allied courses outside the country. With the establishment and opening of the Health School in 1974 and the Traditional Medicine Institute in 1979, Bhutan has started training health workforce in selected fields.

4.2.2 HRH trends and quantity in Bhutan

The MoH has a basic Personnel Information System database maintained by the Human Resource Division. The total number of health professionals in Bhutan was 3110 in 2015, which is a fivefold increase from 601 staff in 1985. Consequently, there is now one health professional for approximately every 250 Bhutanese population.

The distribution of doctors and nurses is balanced among the three regions. The ratios of doctors and nurses to the population are slightly higher in the western region due to the presence of the national referral hospital in Thimphu. The very small population of Gasa also impacts the overall average. In terms of the 20 dzongkhags individually, there is no significant discrepancy in the distribution by population. When the two RRHs are fully staffed, the distribution of doctors and nurses will also improve for the eastern and central regions. Today, the ratios for these two regions are slightly lower than the national ratios whereas they are slightly more for the western region (Table 4.6).

Table 4.6 Distribution of health workers among the regions and 20 districts

Regions	Dzongkhags	No. of doctors/ specialists	No. of nurses	Population (12.12.16)	Doctors /1000 population	Nurses /1000 population
Eastern	Trashigang	19	66	59 413	0.32	1.11
	Samdrup Jongkhar	8	41	49 189	0.16	0.83
	Lhuentse	8	14	17 888	0.45	0.78
	Trashiyangtse	4	18	21 339	0.19	0.84
	Pemagatshel	6	17	15 924	0.38	1.07
	Mongar	14	106	45 106	0.31	2.35
	Sub-total	**59**	**262**	**208 859**	**0.28**	**1.25**
Central	Bumthang	5	13	19 385	0.26	0.67
	Dagana	10	29	22 691	0.44	1.28
	Tsirang	3	22	22 196	0.14	0.99
	Trongsa	5	17	16 329	0.31	1.04
	Sarpang	16	79	52 339	0.31	1.51
	Zhemgang	10	27	21 905	0.46	1.23
	Sub-total	**49**	**187**	**154 845**	**0.32**	**1.21**
Western	Paro	10	34	43 823	0.23	0.78
	Samtse	9	44	72 291	0.12	0.61
	Punakha	6	23	21 556	0.28	1.07
	Thimphu	104	380	127 202	0.82	2.99
	Gasa	2	4	3 749	0.53	1.07
	Chukha	22	72	90 514	0.24	0.80
	Haa	3	5	13 691	0.22	0.37
	Wangdue Phodrang	5	28	38 325	0.13	0.73
	Sub-total	**161**	**590**	**411 151**	**0.39**	**1.43**
Total		**269**	**1039**	**774 855**	**0.35**	**1.34**

Source: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016; modified by the authors

Village health workers (VHWs)

One important aspect of Bhutanese health service delivery is the use of VHWs. VHWs were piloted in 1978 in Wangdue Phodrang and Trashigang dzongkhags and rolled out nationwide in the mid-1980s. The main purpose was to create a link between the health system and the communities and to provide first aid, treatment of minor ailments, create awareness and mobilize community for health promotion and improving sanitation. The MoH has been successful in maintaining an adequate number of VHWs despite many challenges and high dropout rates. In

1992, there were 1413 VHWs and in 2016, there are 1149 VHWs with 480 being females (*Annual Health Bulletin* and VHW Programme).

VHWs are selected from within the community/village and have to be someone who are permanent residents and acceptable to the community. The person should be able to read and write (Dzongkha or English) and should be willing to serve as a VHW. Preference is given to married persons. Recruited VHWs are trained by district health officers/HAs using the VHW training manual. Applying this manual, VHWs are taught to perform their key roles: mapping the community, ways to prevent personal and environmental hygiene-related illness, importance of attending key MCH services (ANC, skilled attended and institutional deliveries, PNC), exclusive breastfeeding and understanding possible causes of ARI.

Training for new VHWs is held once in five years for 14 days and a 7-day refresher course is organized in the interval of three years.

In terms of incentives, depending on the availability of funds, the RGoB supports VHWs to undertake study tours and refresher courses. The per diem rate for VHWs during training has been raised from Nu 300 per day to Nu 500 per day. In addition, an Extension Kit containing items mentioned in Table 4.7 is issued to them once every three years and boots/shoes every year. Also, to tap the benefit of their service through the use of mobile technology, a mobile phone is issued to each VHW. An annual award for the best VHW is given in every dzongkhag,

Table 4.7 The VHW extension kit

S. No.	Item	Quantity
1	Aluminium box, length 1.5' x 1.0' breadth	1
2	Gumboot	1 pair
3	Hand towel	1
4	Lock and key	1 set
5	Rain coat	1
6	Re-chargeable torch	1
7	MUAC tape	2
8	VHW badge	1
9	Soap	6
10	Bag	1
11	Soap case	1
12	Scissors	1 pair

Source: VHW Programme Report, Ministry of Health

which is worth about Nu 5000. However, currently the fund for capacity development is limited (as it is dependent on external donors), and the government is planning to allocate a budget for VHW training in the upcoming FYP.

Geographical distribution

The distribution of health workforce is linked to the type of health-care facility, which in turn is linked to the catchment population. This model works best for primary health-care services provided by BHUs, sub-posts and ORCs. According to the service standards, the numbers and types of staff for each category of health facility are calculated at a bare minimum level. However, if correct adjustments are not made to ensure appropriate level of health-care facilities for a population, there could be a mismatch between the type of facility and hence the number of staff and number of patients. All BHU-IIs have two to three HAs and all BHU-Is have one doctor irrespective of the size of population they serve. Hence, there is a need to revise the service standards to allow more staff for busier BHUs.

The MoH is challenged in producing adequate number of female HAs and retaining them in rural and semi-urban areas. In 2015, there were 264 female HAs against 284 male HAs. However, 74 of 207 BHUs did not have a female HA.

The number of specialists is more in the western region because of the presence of the national referral hospital in Thimphu. The capacity of the central and eastern RRHs is being developed as per the service standards. For distribution of health facilities, please refer to Table 4.2.

Composition and density of health workforce

There are more men than women health workers but the variation is small: 2814 men versus 2003 women. There are more women nurses than men nurses while the balance is reversed in other staff categories. The doctor-to-nurse ratio stood at 1:4 in 2016. As in other parts of civil service, the certificate and diploma holders dominate the health workforce in terms of qualification levels. They constitute approximately 52% of the total civil servants under the MoH while only 16% have either a Bachelor's (including MBBS degree) or a Master's degree (Royal Civil Service Commission, Royal Government of Bhutan, 2015).

International comparison of HRH

According to the Bhutan Annual Health Bulletin 2015, the number of physicians and nurses per 10 000 population was 3.3 and 14.1, respectively (Table 4.8), which is higher than the data from the World Health Statistics 2015 at 2.6 and 9.8, respectively. The number of nurses per 10 000 population almost doubled by 2015, due to the introduction of an accelerated nursing programme in 2008.

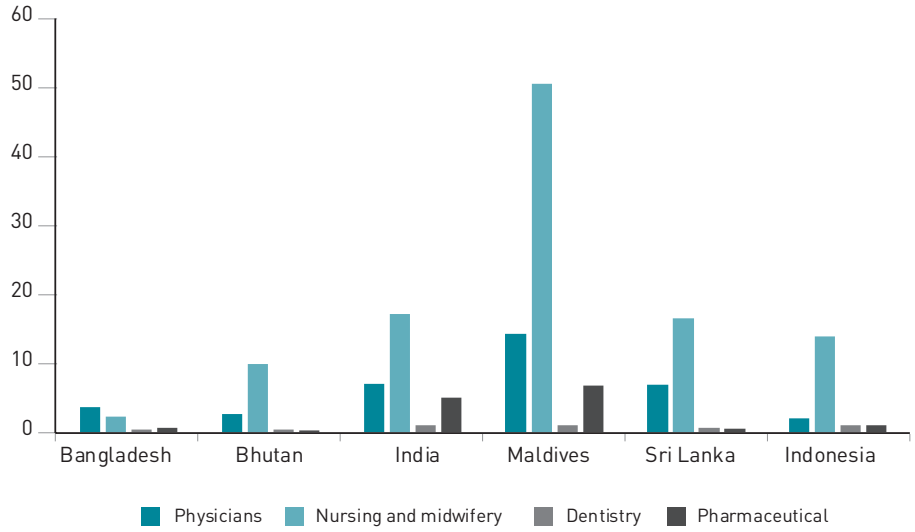
Table 4.8 Health workers in Bhutan per 10 000 population

Categories	1985	1990	1995	2000	2005	2010	2015
Doctors/specialists	1.3	1.3	2.2	2.1	2.3	3.4	3.3
ACOs/HAs and BHWs	0.6	1.7	2.4	4.9	6.5	8.6	8.5
Nurses	1.9	2.4	5.7	7.0	8.3	8.3	14.1
Others	0.9	1.8	3.7	4.7	8.1	11.5	16.1

Notes: ACO: assistant clinical officer; HA: health assistant; BHW: basic health worker
Source: Annual Health Bulletin for various years

The density of doctors in Bhutan was lower than that in all countries of the South-East Asia Region except Indonesia while the density of nurses was also lower than that in all other countries in the Region except Bangladesh. Same is the case with pharmacists and dentists (Figure 4.6).

Figure 4.6 Health professionals per 10 000 population in Bhutan compared to selected countries in the South-East Asia Region, 2015



Source: World Health Organization, 2015

4.2.3 Professional mobility of health workers

Preventing the movement of health workers, particularly medical doctors and specialists, both within and outside the country is a challenge. Doctors and specialists leave the health sector to join other organizations within the country or go to other countries, mainly in search of higher salaries. Within the country, some join prestigious political positions with social recognition, while others join hydropower projects and international agencies that offer higher salaries. As per the Proposal on Strategic Policy for Retention of Clinical Specialists (Ministry of Health, Royal Government of Bhutan, 2016d), 24 (8%) of all doctors in Bhutan are presently working in eight different countries outside Bhutan, functioning in various capacities, with some working in international organizations such as WHO.

All doctors in Bhutan practising in public facilities are civil servants. Hence, once they exit from the civil service, re-entry is not allowed as per the civil service rules. However, to meet the shortage of specialists, the MoH recruits specialists who are interested in working on contract after resignation and superannuation.

In the next 10 years, the country may have sufficient number of doctors (MBBS), but the shortage of specialists and sub-specialists is likely to continue for quite a long time. Hence, the RCSC, MoH and JDWNRH are presently reviewing as to how to retain doctors and specialists.

Within the civil service, mobility of health workforce is guided by Chapter 14 of the Bhutan Civil Service Rules and Regulations 2012. Initially, health workers are recruited and posted where there is a need or vacancy. Staff are normally posted at a location for at least three years after which they can be transferred. Such regular transfers are to facilitate personal development and to prevent complacency or vested interest. Other formal means for staff movement include transfer on request where the Ministry and the dzongkhags address genuine inconvenience for the staff such as those related to family or illness or requests for further study or long-term leave. The fact that most health workers are married to another civil servant working in another agency is the biggest cause of mobility.

4.2.4 Training of HRH

The first HRH Master Plan of Bhutan was developed in 1998, followed by the second in 2003. To incorporate changing national policies, and to address the evolving needs and challenges arising from increase in lifestyle-related NCDs, emerging infectious diseases, impact of climate change on health, expansion of new services, technologies and increasing urbanization, a new HRH Master Plan was drafted in 2011. Analysing the HRH situation back in 2011, this particular plan provides a roadmap for the period 2011–2023.

In addition to guiding the annual HRH planning exercises, the HRH Master Plan also provided strategic inputs for securing adequate budgets for capacity building, and slots for recruiting the required medical professionals during the 10th FYP (2008–2013) and 11th FYP (2013–2018). Further, it guided capacity strengthening of the Faculty of Nursing and Public Health (FoNPH) and KGUMSB.

Considering its importance, the HRH Master Plan roughly provides, short- (2011–2013), medium- (2013–2018) and long-term (2018–2023) projections of health workforce by categories. Nonetheless, corresponding to the changes in most recent national strategies and policies such as consolidation of health facilities, standardization of health services and functioning of KGUMSB, projections for HRH were updated in 2016.

The Royal Institute of Health Sciences (RIHS), which is now renamed as FoNPH, was established in 1974 as the Health School under the Thimphu General Hospital. The RIHS is the only government institute in Bhutan that provides training for the health professionals. Initially, the RIHS offered certificate level courses for primary health workers and medical technicians, and diploma courses for nurses. In 2003, the RIHS came under the Royal University of Bhutan as a member institute. Since then, it has introduced undergraduate courses in Nursing and Public Health.

KGUMSB was established in 2011 as the only medical university in the country, financially supported and managed by the government. It currently offers postgraduate level courses in anaesthesiology, obstetrics and gynecology, internal medicine, ophthalmology, paediatrics and surgery. It also offers undergraduate degrees in nursing, public health, counselling and traditional medicine. The university also offers various

pre-service and in-service trainings related to health care at the diploma and certificate levels.

Table 4.9 summarizes the health-care education system in Bhutan.

The government continues to rely on institutions in the Region and outside to train professionals in medicine, pharmacy, nursing, dental and other health sciences. In addition, interested private candidates are trained abroad in the field of medicine and nursing at their own expense. Government-funded candidates are trained in disciplines, which are identified in the MoH's HRH Annual and Master Plan, and in the universities/institutes decided by the government. The agreement signed between the RGoB and the candidates, mandates the government-funded candidates to return to, and serve the country after graduation. It is noted that many privately funded candidates also return to the country, and seek jobs in the government system. Recruitment is based on the MoH needs, the RCSC rules and regulations, and quality and standards set by the BMHC. RCSC rules and BMHC standards apply to all graduates irrespective of their source of funding. With this scenario and the estimated number of MBBS graduates returning to the country as well as the doctors graduating from KGUMBS, it is expected that Bhutan will reach an adequate number of general doctors by 2023.

It is the policy of the RGoB and the MoH to make available essential tertiary services in the country to reduce the large referral costs for treatment abroad. The MoH supports specialist and sub-specialty training of staff abroad although this will take time.

Retention of HRH in rural areas is a noted concern – all medical doctors and nurses are encouraged to serve in rural and hard-to-reach districts. Various incentives such as the difficulty allowance, high altitude allowance (for health centres located on altitudes higher than 10 000 feet above sea level), accommodation, additional credits for promotions, and privilege for training opportunities, are offered to health professionals working in rural and hard-to-reach districts.

There are reports of unemployed dentists, pharmacists, laboratory technologists and other core health workforce, which is a matter of great concern. Recently, there was an attempt to reform the health professional education but this is still at an initial stage.

Table 4.9 Current system of medical and health professional education in Bhutan

S. No.	Name of course	Criteria	Duration	Institute/place
1	Postgraduate (PG)/ specialization	MBBS degree with one year or less experience	3–7 years	Bhutan/India/ Bangladesh/ Australia/Sri Lanka/ Nepal/Thailand/ Malaysia
2	Sub-specialization	PG/specialization in relevant field	1.5–2 years	India/Bangladesh/ Thailand/Nepal/ Singapore
3	MBBS	Class 12 with distinction	5–7 years	Bangladesh/Cuba/ India/Nepal/Sri Lanka /Pakistan/ Thailand
4	BSc Nursing	Class 12 diploma	After 12th grade 4 years After diploma 3 years	Bhutan/India/ Thailand
5	Diploma in Nursing	Class 12 with Science	3–3.5 years	Bhutan
6	Diploma in Health Assistance	Class 12 with Science	3.5 years	Bhutan
7	Technicians	Class 12 with Science	2 years	Bhutan
8	Drungtsho (Traditional Medicine Doctor)	Class 12	5 years	Bhutan
9	Master in Indigenous Medicine	Bachelor in Traditional Medicine	2 years	Mongolia
10	Diploma in Traditional Medicine	Class 12	3 years	Bhutan

Source: compiled by the authors

All staff are required to register with the BMHC when they start working in Bhutan and receive a licence to practice. The council will only accept their initial degree if they have studied in recognized institutes. Once they have started working, they are required to keep updating their knowledge and skills to earn 30 CME credits every five years. At present, the responsibility for CME-approved training is wholly taken by the MoH. However, this may need to be reviewed in future in line with the Bhutan Civil Services Rules and Regulations training strategy that training and development is a shared responsibility between the BMHC, MoH and the Royal University of Bhutan.

4.2.5 Doctors' career paths

MBBS graduates are required to pass the Bhutan Civil Service Examination to join the civil service. They are initially appointed as general duty medical officers at P4 level, which is one level higher than the entry level of other university graduates. Without a Master's degree or specialization, they can rise to P1 level to the positions of chief medical officer or medical superintendent II with a minimum service gap of four years between each level.

With a Master's degree/specialization in certain required fields such as gynaecology, anaesthesiology, surgery, etc., they can immediately get designated or titled appropriately at the next higher level, i.e. P3. For example, a general duty medical officer at P4 level after acquiring a Master's degree in Gynaecology is designated as Gynaecologist III at P3 level. Previously, only 18 months of training was considered for promotion. However, with the reform introduced by the RCSC in 2016, the entire training period is counted for promotion. The same reform has also approved fast-tracking their first promotion, which is after four years instead of five years for the rest of the civil service.

If a doctor possesses specialization with or without sub-specialization, they become eligible for promotion as specialists up to the highest level of specialist category at ESI position, which is equivalent to the position of Secretary of the MoH. At present, due to shortage of doctors, their movement out of clinical postings is restricted. However, this may change in the future and doctors with excellent leadership and management skills could become administrators, at least in the MoH.

All the above rules are also applicable to drungtshos (traditional medicine physicians) too.

4.2.6 Other health workers' career paths

Other health workers include pharmacists, physiotherapists, nurses, technologists, HAs and technicians.

Pharmacists, clinical nurses and technologists with a Bachelor's degree in respective fields enter the service at P4 level. With a Master's degree, they can become specialists in their fields and obtain the specialists' category (ESIII-ESI).

Staff nurses with a Diploma in Nursing enter at S1 level (two levels lower than P4). After serving for five years at that level, their next level of promotion is SS4 as per the recent reform. They can be promoted to the highest level of SS1. However, nurses are eligible to upgrade their qualification and compete for other positions. Similarly, technicians and HAs after a two-year certificate programme enter at S3 level and can be promoted up to SS1 level.

4.2.7 Dual practice

As of 2016, dual practice (i.e. private practice for government health professionals) was not permitted. The rationale being that since all doctors have been sponsored by the government, they should work only in government facilities. Allowing dual practice would lead to conflict of interest and could compromise quality of services in the RGoB hospitals. It would also increase the gap in access to health services between the poor and the rich.

However, health professionals working in government hospitals are allowed to practice in an off-hour service at government health facilities after normal working hours.

5 Provision of services

Chapter summary

Ever since Bhutan embarked on a path of modernization in the 1960s, its approach to health-care delivery has been focused on primary health-care and preventive health services. The health-care structure also attests to this approach, with a wide network of BHUs and ORCs supported by district level hospitals and three referral hospitals. Public health programmes are well organized and implemented by the MoH through health facilities at various levels. The country has made big strides towards achieving public health goals by meeting most of the MDGs, especially those concerning MCH. Immunization coverage is consistently maintained above 95% while neonatal tetanus, leprosy and iodine deficiency disorders have been eliminated; the last case of polio was reported in 1986 and malaria is almost eliminated. The primary health-care service is also supported by a range of secondary and tertiary care services.

Although a good network of secondary care facilities exists, there is a need to develop the range of services at the district level for equitable access to health care and to reduce the strain on the referral hospitals, especially JDWNRH. At the referral level too there is a need to increase the range of services and specialized care. Most surgical cases have to be referred to the three referral hospitals. NCDs are on the rise, cancers in particular where more than half of cancer patients are referred to abroad for treatment (393 out of 754 cancer cases in 2015 were referred abroad). In general, during the past six years, around 1000 cases were referred abroad annually for diseases and conditions that could not be treated in the country. The practice of chewing betel leaf with areca nuts (locally called "doma"), a known carcinogen, is also of concern.

Although mental health including suicides is acknowledged to be an issue, mental health services are poor in the country with specialized care limited to JDWNRH. Other areas of health care that need to be addressed are rehabilitation, long-term care and family care. Public health

emergencies due to disease outbreaks and the threat of pandemics and preparedness for health emergencies due to natural and human-induced disasters also require substantial resources.

Although the country has made big gains in health outcomes, these gains have to be sustained and additional investments made to address emerging health issues.

5.1 Public health

The health service, since its inception in the 1960s, has been based on the primary health-care approach. This is evident in the health system setup where primary health-care centres (PHCs) cover most of the population. The MoH still maintains this focus with the DoPH primarily responsible for the development of various public health programmes. Although the DoPH is responsible for most public health programmes, the DoMS also implements some public health programmes in areas of elderly care, infection control, oral health, primary eye care, urban health, telemedicine, emergency preparedness, antimicrobial resistance (AMR) and blood safety.

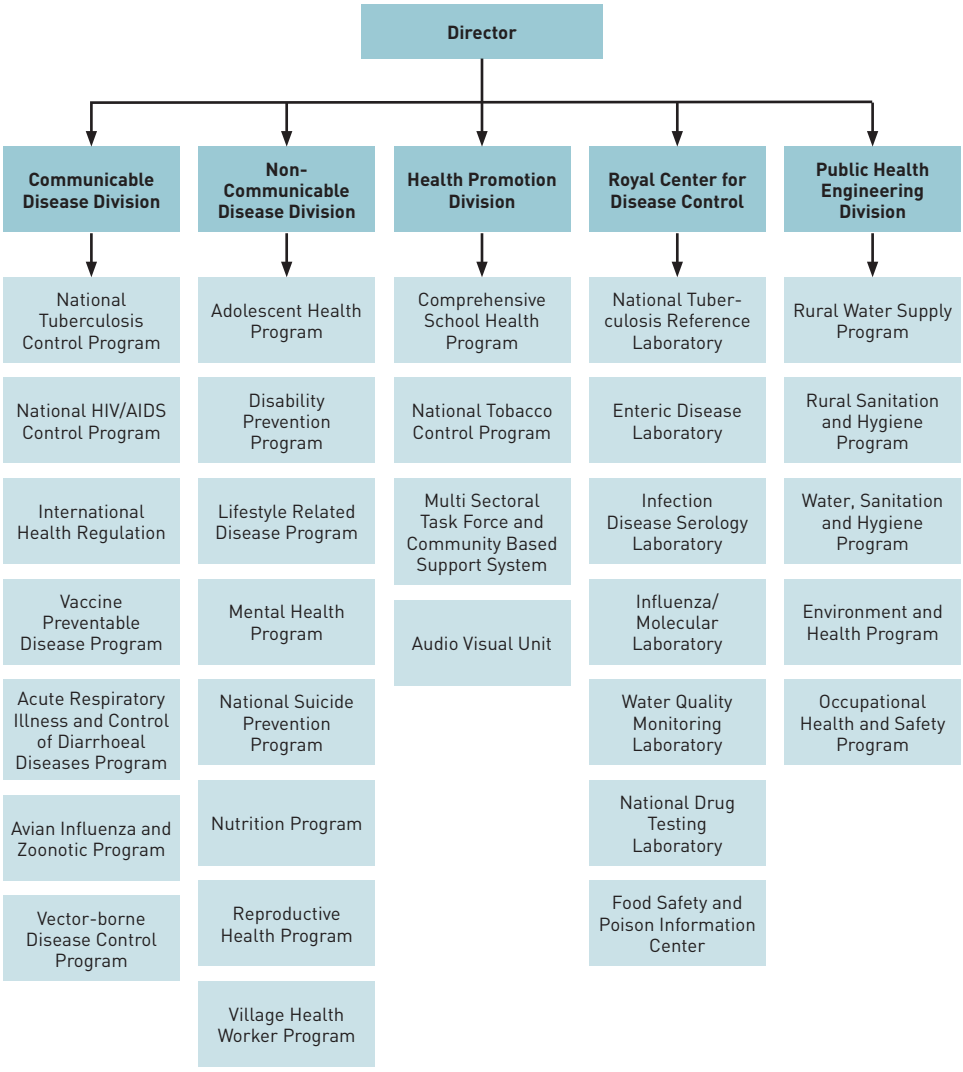
All public health activities are integrated into the general health-care delivery system in the hospitals and BHUs. Health care is also delivered to communities through a system of monthly ORCs conducted by the health centres and VHWs, drawn from the communities.

The majority of public health activities are implemented by the MoH through its programmes and district health services. However, the local government at the community level is increasingly becoming an important partner in public health programmes by recruiting VHWs, developing local regulations for alcohol control, supporting health camps and surveys among other activities. The role of NGOs and the private sector to provide health-care services is limited at present as most services are accessible through public facilities. However, with the establishment of NGOs such as Lhaksam for HIV/AIDS, Chitheun Phendey for substance dependence, Ability Bhutan for disabilities, Bhutan Kidney Foundation and Bhutan Cancer Society, the scope for supporting the range of needs of the people with specific conditions has increased substantially.

The DoPH has five divisions for executing various programmes (Figure 5.1):

1. Communicable Diseases Division (CDD)
2. Noncommunicable Diseases Division (NCDD)
3. Health Promotion Division
4. Public Health Engineering Division
5. RCDC (previously the Public Health Laboratory)

Figure 5.1 Organogram of the Department of Public Health



Source: synthesized by the authors

5.1.1 Environmental and communicable disease control functions

All programmes under the CDD and the RCDC are geared towards prevention and control of communicable diseases. These programmes gather relevant information on diseases of interest and develop strategies for their prevention and control. They develop guidelines and manuals and train health workers at health centres on these guidelines. The IHR focal point coordinates responses to public health events of international concern and ensures preparedness of the health system for emerging global diseases such as Ebola, Zika, Middle East Respiratory Syndrome (MERS) and H5N1.

The Vector-borne Disease Control Programme (VDCP) is responsible for vector control as well as for responding to outbreaks of vector-borne diseases. Malaria has been successfully controlled and the programme is targeting its elimination.

Due to a very successful immunization programme, polio and neonatal tetanus have been eliminated and the programme is targeting elimination of measles. Hepatitis B birth dose and human papillomavirus (HPV) vaccine for girls are new strategies to reduce the incidences of hepatitis B and cervical cancer, respectively. Although the incidence of TB has been reduced, the increasing trend of multidrug-resistant (MDR) TB is a cause for concern.

To prevent and reduce the incidence of HIV, various methods have been adopted such as sero-behavioural surveillance, provision of fixed-dose combination therapy, targeting zero mother-to-child transmission by introducing voluntary counselling and testing for HIV/hepatitis B/syphilis to all ANC attendees at all levels of health care, as well as monitoring of CD4 count and viral load.

Box 5.1 The changing face of Bhutan's public health challenge and response

For the past 23 years, Mr Inda Tshering has been at the frontline of Bhutan's public health mission. The solidly built HA is stationed at Dawakha BHU-II, a primary health facility located in Paro Valley. Though the health issues affecting Tshering's community have varied over the years, he has seen a tangible increase in the number of cases of type 2 diabetes. "In my catchment area alone I have four to five cases under medication," he says, adding with concern, "I am sure there are many undiagnosed cases."

Tshering's observations indicate a wider trend. In the year 2000, there were about 35 000 people with diabetes in Bhutan. By 2030 that number is expected to surge more than threefold, to 109 000.

Given this scenario, in 2014 the government initiated the country-wide rollout of WHO Package of Essential Noncommunicable Disease Interventions (PEN), which provides health-care workers the tools to detect and manage NCDs in their communities. In July 2015, the authorities approved a multisectoral action plan to tackle NCDs, thus synchronizing national efforts with the WHO's strategy for the Region.

Though Bhutan has strong regulatory restrictions on commercial alcohol and tobacco use, traditional habits that increase the risk of diabetes remain widely practised. The doma (areca nut with betel leaf and lime), a known carcinogen, is chewed by 60% of the adult population; alcohol continues to be imbibed in worrying quantities; and for many, consumption of high-salt and high-fat foods and beverages such as pork, pickles and butter tea is a daily routine.

As Bhutan's public health journey unfolds, tackling diabetes and other NCDs effectively will prove to be a major test.

Source: synthesized by the authors

5.1.2 Notification and surveillance of communicable disease outbreaks, environmental threats

The RCDC (Public Health Laboratory) is the nationally designated centre for communicable disease surveillance and response. The current surveillance mechanism is an integrated system of indicator-based surveillance (IBS) and event-based surveillance (EBS). There are 22 notifiable diseases and syndromes (Table 5.1). Outbreak notification to the RCDC through mobile phone-based messaging has been introduced from district level upwards and feedback of surveillance results is shared back with the districts via the web-based National Notifiable Diseases Surveillance (NNDS) system (Figure 5.2).

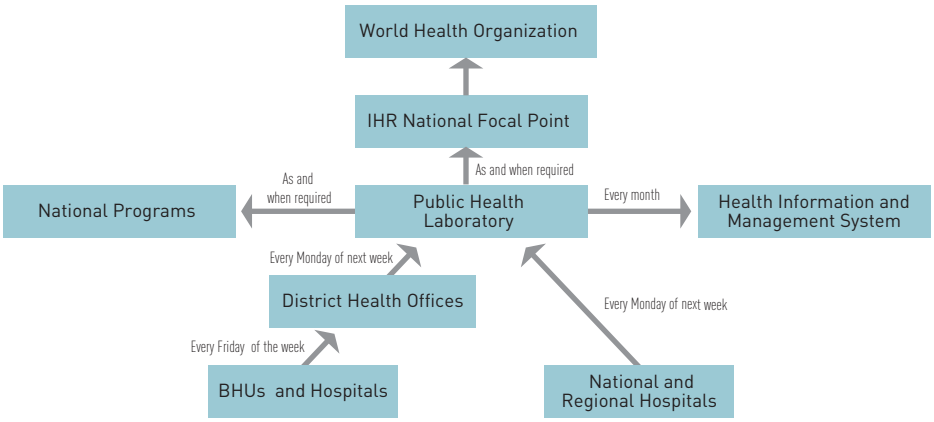
Staff from BHUs or hospitals reports such events via phone or other means of communication (paper-based reporting) to the district health officer, who in turn counterchecks the information and forwards it to the RCDC.

Table 5.1 List of notifiable diseases

SN	Diseases/syndromes
1	Anthrax (ANT)
2	Acute Bloody Diarrhea (ABD)
3	Acute Watery Diarrhea (AWD)
4	Acute Encephalitis Syndrome (AES)
5	Acute Flaccid Paralysis (AFP)
6	Acute Haemorrhagic Fever Syndrome (AHF)
7	Acute Jaundice Syndrome (AJS)
8	Acute Respiratory Infection (ARI)
9	Bacterial Meningitis (BMG)
10	Dengue fever (DGF)
11	Severe Dengue (SDG)
12	Diphtheria (DPT)
13	Fever with Rash (FWR)
14	Food poisoning (FDP)
15	Malaria (MAL)
16	Pertussis (PTS)
17	Rabies (human) (RBH)
18	Congenital Rubella Syndrome (CRS)
19	Multi-drug Resistance TB (MRT)
20	Tetanus (TTN)
21	Typhoid /Paratyphoid fever (TPF)
22	Unusual Disease(s), Death(s) OR Event (UDE)

Source: NEWARS National Notifiable Disease Surveillance System and Epidemiology Unit, Public Health Laboratory, 2014

Figure 5.2 Reporting system of the National Notifiable Disease Surveillance System



Source: NEWARS National Notifiable Disease Surveillance System and Epidemiology Unit, Public Health Laboratory, 2014

There are additional surveillance systems for other programmes: Vaccine Preventable Disease Programme (VPDP) has a monthly zero reporting

system for measles, rubella, and acute flaccid paralysis. The Respiratory and Diarrhoeal Disease Programme (CDD and ARI) has weekly surveillance for ARI, ILI (influenza-like illness) and SARI (severe acute respiratory illness) surveillance, and weekly fever reporting for malaria by VDCP. The National Tuberculosis Control Programme (NTCP) has a web-based TBiSS (Tuberculosis information Surveillance System). Though HIV reporting is integrated into the DHIS, the National AIDS Control Programme (NACP) has a system to track HIV patients. The National Leprosy Control Programme (NLCP) also collects leprosy reports from the districts.

5.1.3 Occupational health programme

The Occupational Health Programme was established in 2009 under the DoPH, in response to the increasing cases of occupational injuries, diseases, disabilities and deaths. As per the Labour and Employment Act 2007, the MoLHR is mandated to regulate and monitor safety at the workplace. Accordingly, the MoLHR conducts occupational health and safety training to safety officers in industries. The MoH has a major role in the prevention and response for occupational health and safety; chemical safety incidents and occupational health services are provided at hospitals and BHUs.

Apart from sending clinicians on short-term courses on industrial health (three were sent to India for three months each), there are no trained human resources in occupational medicine, nursing and hygiene. However, WHO provided training to labour officers on using equipment for dust-tracking, and noise, heat and light measurement at the workplace, and on exposure assessment of chemicals at the workplace. The programme has developed a *First Aid Handbook* for training industrial workers. The MoH in collaboration with the MoLHR conducts yearly occupational health and safety assessment of the industries.

5.1.4 Organization of preventive services

Although the public health programmes plan and develop strategies for the prevention of diseases of public health importance, these services are delivered through hospitals and health centres, i.e. BHU-Is, BHU-IIs and ORCs. Immunization services are provided through health centres and ORCs by health workers. HPV vaccine for girls and diphtheria toxoid vaccines are provided in schools by health workers from the nearest health centre. MCH services, including family planning, are provided at health centres and ORCs.

At the Ministry level, the DoPH is mandated to look after public health and the DoMS to look after health-care delivery. However, at the health facility level there is no differentiation of workforce or infrastructure, i.e. both curative service and public health activities are integrated, and health workers perform both responsibilities. BHU-IIs and VHWs have a stronger focus on public health and health promotion, whereas at the tertiary level the emphasis is more on curative services.

5.1.5 Established health promotion programmes

Various groups and committees have been established at different levels for health promotion and disease prevention. The MSTFs are voluntary groups established in at the district level, which were initially set up for HIV prevention but have now been expanded to include health promotion and advocacy. In the malaria endemic zones, community action groups have been formed for malaria control and advocacy at the community level. The Mental Health Programme has initiated formation of committees at the local government level to raise awareness on harmful use of alcohol and to institute community-based mechanisms to reduce alcohol use. The diabetes control programme has established diabetes clinics at all hospitals and BHU-Is; these clinics conduct screenings and health education for patients attending the clinics. These clinics will be upgraded to NCD clinics and conduct NCD screening on all health centre attendees as per the WHO PEN protocol.

To promote physical activity, outdoor gyms have been established in all the districts in the country by the Lifestyle-related Disease Programme (LSRDP) and the Bhutan Olympic Committee.

5.1.6 Population surveillance

The MoH conducts periodic population-based surveys. The National Health Survey is conducted every ten years, with the most recent survey conducted in 2012. Individual programmes also conduct population-based surveys to gather detailed information on programme indicators and to track progress. The National Nutrition Survey 2015 generated data on the nutritional status of the population, specifically targeting women and children. The National STEPS Survey 2014 was the first national level survey to generate data on NCDs. Similarly, other programmes have conducted their own studies.

5.1.7 Screening programmes for the whole or part of the population

Some public health programmes conduct screening activities for specific groups. Activities involved are for oral health checkups, eye checkups, nutritional screenings, voluntary counselling and testing for HIV and STIs, screening for leprosy, screening for NCDs, pap smears to screen for cervical cancer, and health checkups for the elderly. For populations in settings that may have difficulty accessing health services, mass gatherings are the targets, e.g. students, monks and nuns in monasteries and nunneries, nomads, work sites for migrant workers, and elderly people.

Specialized health camps are also organized either from JDWNRH or in collaboration with international groups. These are geared more towards surgical interventions and conducted in health centres with surgical care facilities. The more common camps are for ophthalmic surgeries, ears, nose and throat (ENT) surgeries, reconstructive surgeries and cleft lips and palate surgeries. A few examples of the groups involved are Interplast Australia and New Zealand (hand and reconstructive surgery); Thai Friendship Medical Mission to Bhutan (ENT); Surgicorps International, USA (cleft lip, cleft palate and people mauled by wild animals); and Operation Smile, Singapore (cleft lip, cleft palate and people mauled by wild animals). Teams from JDWNRH and other two referral hospitals also organize camps on conditions concerning eye, dental, ENT and gynaecology for the whole country in a phased manner.

Reaching health services to the unreached population remains the focus of the government; thus organizing camps and screening programmes has been a priority.

5.1.8 Disaster risk management for health

Under the Disaster Management Act of Bhutan 2013, the Department of Disaster Management, MoHCA, and MoF will be the focal authority for response and coordination in a disaster.

At the MoH, the Emergency Medical Services Programme under the DoMS has been upgraded to a division in 2016 and will assume the key role of coordination during emergencies and disasters. An HEOC will be established to ensure effective communication and coordination for emergency response and disaster management in any emergency situation.

The national HEDCP was developed to address disaster risk management for health. The main objective of this plan is to enhance the preparedness and response capacity of the health sector in emergencies and disasters.

A Bhutan Red Cross Society (BRCS) is in the process of being established with the help of the Swiss Red Cross. It is hoped that in future the BRCS will supplement the efforts of the RGoB during emergencies and disasters. (For more details please refer to section 5.15 Disaster risk management for health)

5.1.9 Addressing antimicrobial resistance (AMR) and emerging threats

Bhutan, like other countries, faces a growing problem of AMR. In 2013, from a total of 253 TB-positive cultures at the RCDC, 63 samples (24.9%) turned out to be MDR-TB, one of the highest in the Region. Approximately 30% of the budget for medicines is spent on antibiotics, with higher expenditure on newer generation antibiotics. Use of antibiotics has been found to be high with every third prescription at pharmacies having an antibiotic. Use of antibiotics in the livestock is also of concern since there is limited awareness and lack of guidelines on antibiotic use in the animal sector. The national data on AMR in the country is limited to a few hospitals (national referral hospital, two RRHs and Phuentsoling Hospital) as there are no facilities to culture bacteria in other hospitals.

The Blood Safety and Diagnostic Programme under the HCDD, DoMS, has been tasked with planning and coordinating measures to combat AMR. A draft national AMR policy together with national action plans aligned with WHO global action plans for both human and animal sectors have been developed. The Drug Technical Advisory Committee has been identified to function as the steering committee for AMR. A coordination mechanism for human and animal health has been established with respective focal points. The DRA regulates production, distribution, sale and prescription of antimicrobial agents; over-the-counter sale of antibiotics is banned in Bhutan. The use of antibiotics in animal feed is restricted.

The National Antibiotic Guideline, Standard Treatment Guideline and Guideline for Infection Control and Medical Waste Management (revised 2013) are in place but need enforcement. Although training of health workers on AMR and improving laboratory capacity has been initiated and conducted, there is an urgent need to develop awareness campaigns on AMR for both the health workforce and the population. Training of health workers on AMR and rational prescribing need to be scaled up, and the number of microbiology laboratories in hospitals needs to be increased.

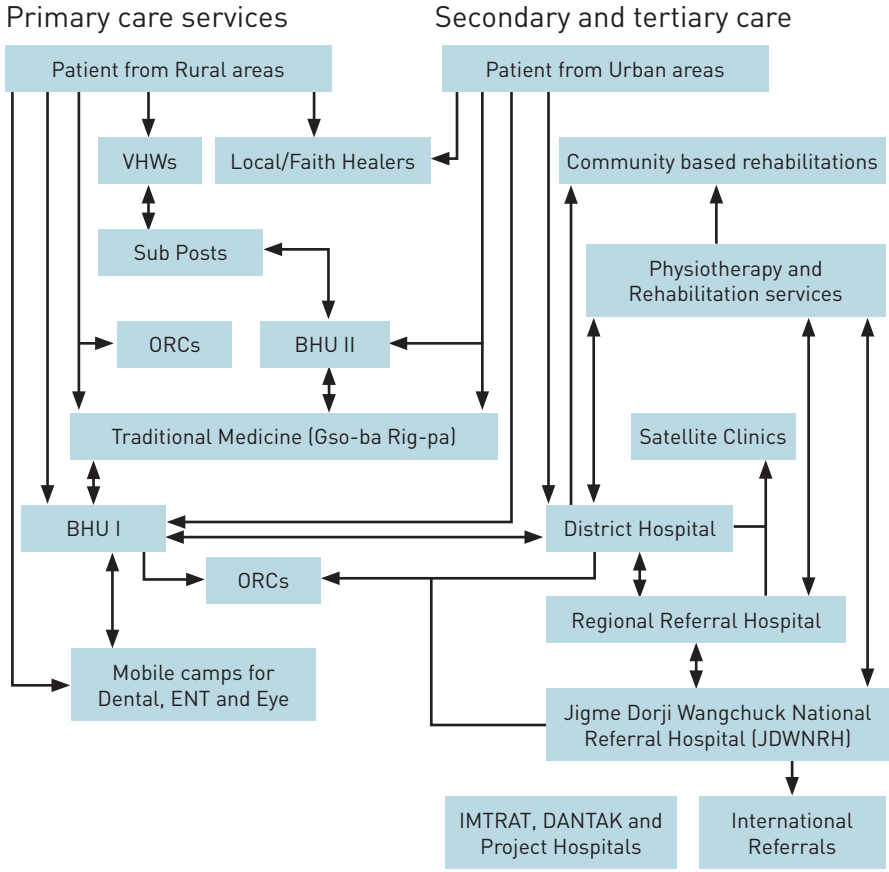
In summary, public health services are highly accessible to the population, especially with the well-established network of hospitals, BHU-Is, BHU-IIs and the monthly ORCs, supplemented by VHWs in the community. Well-trained primary care workforce consisting of HAs, nurses, midwives and different categories of technicians, trained by the FoNPH, KGUMSB, make up the bulk of the health workforce. Regular trainings provided by various programmes keep the health workers up to date on their skills and knowledge. Monitoring by regulatory bodies such as the BMHC and the DRA ensure that standards are maintained. The QASD under the MoH, by providing standards and training on quality processes, also monitors the quality of health services in the country. In addition, the programmes also conduct monitoring and supervision of public health services in health centres. Nonetheless, Bhutan is facing challenges in public health on various health risks, e.g. increase in NCDs and use of doma, a known carcinogen (Box 5.1).

5.2 Patient pathways

The health-care service delivery in Bhutan is structured into a three-tiered system with BHUs at the primary level, district hospitals at the secondary level and regional and national referral hospitals at the tertiary level. The coverage was planned to be sustained with at least 90% of the population living within 3-hour walking distance from a health facility (ORC, BHU and district hospital). The primary health care reaches out to the communities through ORCs and VHWs. District hospitals also serve as nodal referral centres for the BHUs within their jurisdiction and for adjoining BHUs in other districts.

Health facilities recorded a total of 2 804 070 visits in 2015: 2 620 321 as outpatient department (OPD) visits, 73 825 as inpatient admissions and 109 924 OPD visits to traditional medicine practitioners as old and new OPD cases (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016; Jigme Dorji Wangchuck National Referral Hospital, 2015). The per capita outpatient visit per year ranged from 3.3 to 3.6 over a five-year period from 2011 to 2015 while the per capita in-patient visit was 0.08–0.1 for the same period (Table 5.2) (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016; Jigme Dorji Wangchuck National Referral Hospital, 2015; National Statistics Bureau, Royal Government of Bhutan, 2015).

Figure 5.3 Patient pathways for urban and rural residents



Source: synthesized by the authors

Table 5.2 Caseload at various levels of health-care facilities

	2011	2012	2013	2014	2015
1. Total population*	708 265	720 679	733 004	745 153	757 042
2. Total outpatient visits	2 346 062	2 476 794	2 082 603	2 688 105	2 620 321
2.1 At BHU	590 028	618 732	613 087	656 631	608 723
2.2 At district hospitals	1 211 884	1 292 448	1 270 807	1 365 102	1 341 282
2.3 Total referral hospitals	544 150	565 614	**	666 372	670 316
• At Mongar Eastern RRH	45 755	47 681	53 780	80 131	62 823
• At Central RRH	94 604	90 817	105 332	131 401	124 112
• At JDWNRH	403 791	427 116	**	454 840	483 381
3. Total in-patient cases	58 706	60 398	50 179	61 324	73 825
4. Total traditional medicines	98 823	132 294	132 269	119 304	109 924
5. Total cases at health facilities [2+3+4]	2 503 591	2 669 486	**	2 868 733	2 804 070
6. Out-patient visits per person per year [2/1]	3.3	3.4	**	3.6	3.5
7. Inpatient visits per person per year [3/1]	0.08	0.08	0.07	0.08	0.10

** Out-patient data for JDWNRH not available

Source: National statistics Bureau, Royal Government of Bhutan, 2016

Patient pathways for rural and urban patients are slightly different. While a rural patient has the option of visiting a VHW or BHU-II, which are much closer, the urban patient would have direct access to a BHU-I, district hospital or referral hospital. The referral hospitals being tertiary care centres have a referral process for patients from other districts; however, self-referrals are common, with JDWNRH seeing the bulk of patients. In 2015, JDWNRH had 524 760 out-patient visitors (Jigme Dorji Wangchuck National Referral Hospital, 2015). The sheer number of out-patient consultations hampers the delivery of tertiary care services as the few specialists have to spend most of their time at OPDs. Referral hospitals at Mongar and Gelephu also function as secondary care centres because there are no other hospitals in those areas. In urban Thimphu, apart from JDWNRH, there are three other hospitals: the TMH catering purely traditional medicine services, the Royal Bhutan Army Hospital, and the IMTRAT Hospital (a day hospital run by the Indian Military).

Box 5.2 Patient referral system

An 82-year-old man visited Yadi BHU-II with complaints of drowsiness, right-sided weakness and inability to walk for a week. Although he had no history of past medical conditions he had a fall two months earlier. After evaluation at the BHU, he was referred to Mongar RRH. The ambulance from Yadi transported the patient to Mongar RRH. At Mongar RRH, he was admitted to the medical ward and seen by the medical specialist who referred him to JDWNRH, Thimphu to undergo a CT scan of the brain. The journey to JDWNRH took two days, including stay at Bumthang District Hospital where the patient was kept overnight under observation. The patient was accompanied in the ambulance by two family members and an emergency medical technician (EMT). During the travel the patient's condition remained stable.

Upon arrival at the emergency department of JDWNRH, the patient was re-evaluated and admitted to the medical ward. CT imaging of his brain revealed a large subdural haemorrhage and the patient underwent a neurosurgical evacuation of the subdura, followed by admission to the intensive care unit (ICU). On his second postoperative day, the patient was discharged home, and a follow-up visit to Mongar RRH revealed that the patient had fully recovered.

The patient did not have to pay for any of the health-care services with the transfer, medicines and food during admission being covered by the government. The only expenses borne by the patient were the cost of the return journey home when they had to arrange their own transport and days of work lost by the patient's attendants.

Source: synthesized by the authors

A patient has the choice of going to any health centre in any district. In district hospitals, BHU-Is and some BHU-IIs, the patient can avail allopathic or traditional medicine service under the same roof, without any prejudice. In an emergency the family can call the toll-free number

112 for an ambulance of the HHC. BHUs can also refer patients to district hospitals (within the district), which can refer patients to referral hospitals (within the region). The RRHs of Mongar and Gelephu also refer patients to JDWNRH, the national referral hospital. Patients who cannot be treated at JDWNRH may get referred outside Bhutan. Patients who have been referred to higher centres, after getting treatment may get referred back to the lower centre for follow up, e.g. a diabetic patient after being evaluated and put on medication by an internal medicine physician may be sent back to the district hospital for weekly/monthly follow up and top up of medication (Box 5.2).

The number of self-referrals to referral hospitals, especially JDWNRH, has been recognized as a concern. However, the lack of primary care centres in urban areas and the presence of a large migrant population has made it difficult to institute mechanisms for discouraging self-referrals.

5.3 Primary/ambulatory care

Similar to the public health service, primary/ambulatory care is provided mainly through the public system. In the private sector, only diagnostic services and retail pharmacy shops exist. All health service providers (allopathic and traditional medicine) have to be registered with the BMHC, and pharmacies are regulated by the DRA. However, some unlicensed local practitioners do exist, e.g. faith healers, astrologers, shamans and homeopathic practitioners. Primary/ambulatory care is provided through various mechanisms as explained below.

VHWs are trained in public health programmes and are mainly involved in health promotion, spreading awareness about health, advocating healthy practices in the community, encouraging antenatal visits and institutional deliveries, and referring sick people to health centres. They can also provide basic medicines such as paracetamol, antacids and oral rehydration salts.

ORCs are generally conducted on a monthly basis for MCH services such as ANC, immunization, provision of nutritional supplements, growth monitoring, and health education for mothers. ORCs are conducted by HAs from BHUs, and community health units (CHUs) from hospitals.

BHU-IIs are staffed by HAs and provide primarily MCH services, screening for general health conditions such as blood pressure and

physical checkups. BHU-IIs have a suitable range of medicines including antibiotics, antihypertensives and some antidepressants. HAs can also carry out minor surgical interventions such as wound care and stabilization of injured patients. Through telemedicine they can carry out emergency interventions under the supervision of specialists. A BHU-II may have an extended facility called a sub-post supervised by a health worker in areas with substantial populations and facing difficulty in accessing health care due to distance and other difficulties such as snow, rivers, etc.

Primary care services offered at BHU-Is and district hospitals are similar. The services include MCH services, general outpatient checkups, diabetes/NCD screening and treatment, dental services, optometry services, laboratory testing, blood transfusion, X-ray and ultrasound services, minor surgical procedures including wound care, family planning, traditional medical services and physiotherapy. Some bigger district hospitals have obstetricians for providing gynaecological services.

The three referral hospitals also provide primary care services. In addition to the services provided by district hospitals, specialists provide outpatient consultations, renal dialysis, paediatric services, dental services, endoscopy, electrocardiogram (ECG) and electroencephalogram (EEG) scans. JDWNRH also provides CT and MRI scanning. Patients referred from the lower centres are seen by the specialists at JDWNRH.

Health information and Service Centres (HISCs) are set up in bigger towns (Thimphu, Phuntsholing, Gelephu and Samdrup Jongkhar) specifically to reach groups at high risk for HIV and STIs. They provide voluntary counseling and testing (VCT) services for HIV/STIs and some general health checkups. These are staffed by HAs and are outreach services of the National HIV/AIDS Control Programme (NACP). They are located in town centres for easy accessibility.

Satellite clinics are similar in setup to BHU-IIs and provide similar services but do not have inpatient beds or conduct ORCs. They have been instituted to increase access to health services for growing suburban populations in bigger urban centres. There are currently three satellite clinics in Thimphu, and the MoH is planning to establish similar clinics in Phuntsholing and Gelephu.

The HHC was set up in 2011 to increase access to health services. The centre is directly under the EMSD, DoMS and functions like a call centre

with calls attended by a team of 23 health workers (composed of general nurse, midwives, HAs and assistant nurses), and a chief executive officer as the head. Anyone in the country can access the HHC through a toll-free number (112) for information on health-related issues and advice; a suicide helpline is a recent addition. The HHC also coordinates deployment of the air ambulance service and controls deployment of ambulances in the country by sending the nearest ambulance when a request comes in through the 112 number.

Since 2013, the government has approved diagnostic centres to be operated by private licensed individuals in Thimphu, Phuntsholing and Gelephu. This was done to reduce the load on the public service for diagnostic facilities such as X-ray, ultrasound, laboratory tests and endoscopy. By regulation, the private diagnostic centres can carry out only diagnostic tests prescribed by a medical practitioner from the public service (i.e. doctor from a hospital); the diagnostic centres cannot prescribe tests or medication since private practice is not allowed. However, it is widely known that consultation fees are being charged and patients are prescribed medicines as some diagnostic centres are being run by medical doctors.

Retail pharmacy shops sell over-the-counter drugs and some prescription medicines. These shops are regulated by the DRA and can sell only those medicines which are registered with the DRA. These shops have to be registered with the BMHC and can be run by a trained pharmacist with a minimum qualification of a certificate in pharmaceutical science.

Unlicensed practitioners in the Bhutanese context are those who do not require registration with the BMHC and do not prescribe or dispense medications that require DRA registration. Generally, such practitioners include faith and spiritual healers, traditional shamans who invoke spirits to drive away illnesses, and astrologers. They normally do not prescribe medicines but try to cure patients through prayers and rituals. These unlicensed practitioners are not regulated and may only be investigated if a complaint is filed with the BMHC or the DRA. Ayurveda and homeopathy are not recognized by the BMHC and the DRA. However, incidents of unregistered practices of traditional medicine (Bhutanese or Tibetan), ayurveda, homeopathy and sale of unregistered medicinal products have been reported and investigated by the BMHC and the DRA.

The Royal Bhutan Army, the IMTRAT and Border Roads Organisation (of India) also maintain a network of hospitals and dispensaries where the general population can also avail services, free of charge.

5.3.1 Functions of primary care providers

At the primary health-care level (VHWs, ORCs, BHU-IIs) the role of health providers is mainly health promotion and prevention. They provide public health services such as immunization, ANC checkups, growth monitoring of infants, nutritional supplementation to mothers and children, home visits for PNC, elderly care, basic mental health services, alcohol detoxification, basic rehabilitation services for persons with disabilities, health education and awareness programmes to the communities and monitoring of drinking water quality and sanitation. They also provide basic treatment and emergency care, with BHU-IIs also conducting normal deliveries. Primary care providers are also trained on community-based rehabilitation (CBR) for patients with disabilities, PEN for NCDs and basic mental health diagnosis.

Doctors at the secondary care level (district hospitals, BHU-Is), although mostly involved in patient care, do carry out public health services, which include providing health education and awareness to the population at the district level, and conducting health screening camps. The dental and eye units also conduct screening and health promotion camps, especially for the schools. Medical officers are also provided some training on mental health and detoxification for substance dependence so that they can provide these treatments.

5.3.2 Access to and choice of primary care

As a policy, the MoH would prefer people to avail services at the nearest health centre and get a referral based on their need. However, this process is often circumvented, with the preferred choice being the referral hospitals, which are staffed with specialist doctors. No mechanisms are in place at present to restrict access to service based on place of stay, although the issue arises frequently during discussions to improve tertiary care services.

Primary care providers are mostly in the public sector, with minimal private involvement. The waiting times are generally lower for the primary and secondary care level than the tertiary care level.

Gatekeeping mechanisms exist at all levels of health care – a mother and child seen at an ORC do not need to visit a BHU, a patient seen at a BHU may not need to get referred to a district hospital, similarly from a district hospital to a referral hospital; a patient who can be treated at JDWNRH will not get referred to India. The Community Health Department at JDWNRH does not accept MCH visitors from areas covered by the three satellite clinics and BHUs under Thimphu district. At the secondary and tertiary level, primary care-seekers cannot get direct appointment with the specialist of their choice, they are initially screened by assistant clinical officers (ACOs) or junior doctors and are referred to the specialist on duty only if required, and not based on personal choice. However, in practice the specialists do directly see numerous primary care-seekers who are self-referred often based on personal and professional acquaintances.

The choice of opting for the allopathic service or traditional medicine service is also up to the patient. At the district hospital, BHU-I and RRHs, the two services are housed under the same roof, although cross-referrals do occur based on the disease. Certain conditions respond better to traditional medicines while other diseases can be easily treated with allopathic medicine. A coordination committee, comprising members from the TMH, JDWNRH, DoMS and the DoTMS has been set up to improve cross-referrals and collaboration between the two services.

Although there are no restrictions on access to any hospitals, other factors may influence the choice including OOP expenses that may be incurred in travel and other costs for self-referral, especially from rural to urban areas as well as the intimidation factor when an illiterate farmer seeks service at a large hospital such as JWDNRH.

Rural areas have primary care coverage with a network of VHWs, ORCs, BHU-IIs and district hospitals/BHU-Is. Trained primary health-care workers provide services with very low waiting times. Due to the high coverage and low populations in the catchment areas, health workers know each household and person, are able to follow up on individual patients and provide house visits if necessary. They refer emergencies and complicated cases to higher levels.

In urban areas, services such as VHWs, ORCs and BHUs are not available so the population has to visit the secondary or tertiary care centre for primary care level health services (although this anomaly is being addressed with the creation of satellite clinics). This situation

has increased waiting times and at times families do not avail services. Health promotion also suffers when medical practitioners focus mostly on clearing the patient load. The MoH targets institutional deliveries assisted by health workers at health facilities so there is no role of skilled birth attendants at the community level in urban setting.

JDWNRH also operates "off-hour consultation clinics" from 4 to 7 p.m. where patients can make appointments and seek care at their convenience but they have to pay for the services, including diagnostic services.

5.3.3 Major changes, current problems/challenges and reform plans

The establishment of private diagnostic clinics has heralded the entry of private participation in health-care service and the MoH needs to be prepared for the consequences this will have on the public health-care sector. The burgeoning urban population and the increasing rural-to-urban migration require the MoH to review the urban health-care service. The establishment of the Urban Health Programme, satellite clinics and plans for urban health workers (like the VHWs) and thromde (municipal) health officers are the strategies adopted by the MoH to address this issue. The increasing trend of NCDs is a challenge. The setting up of diabetes and NCD clinics in all hospitals, the adoption of the WHO PEN protocol for NCDs and outdoor gyms are some strategies adopted by the MoH to curb the growing NCD problem.

To reduce the high number of self-referrals to the referral hospitals, an appropriate mix of policy interventions is required, which addresses quality of services at the primary health centres, and effective mechanisms need to be instituted to discourage bypassing of the referral system.

5.4 Inpatient care

Inpatient care is generally available at the secondary and tertiary care levels, although the primary care level (BHU-IIs) does have an observation room with two or three beds and a delivery room. Expectant mothers can be admitted for normal deliveries and patients may be admitted for overnight observation or for referral.

The Royal Bhutan Army provides inpatient facilities through two hospitals and IMTRAT also has a hospital in Haa district.

All BHU-Is and district hospitals are under the administration of the concerned district. Only the RRHs (eastern and central) and a few general hospitals (Phuntsoling, Deothang and Gidakom) are under the DoMS of the MoH. JDWNRH is an autonomous hospital administered by a president. It is also the teaching hospital for KGUMSB.

A district or a general hospital usually has a general ward (segregated by gender) and a birthing centre. Some hospitals have private rooms, which are available for a fee. Inpatients are also provided with daily meals. Inpatient care consists of basic emergency obstetric care, normal and assisted deliveries, minor surgeries that can be done under local anaesthesia, chronic conditions requiring hospitalization, emergency admissions, emergency and primary orthopaedic care, neonatal and infant admissions for nutritional rehabilitation and treatment of some conditions, common mental disorders and detoxification, and TB treatment. Some hospitals may offer more specialized services depending on the availability of an anaesthesiology unit (anaesthetist or nurse anaesthetist), gynaecologist or paediatrician. Many hospitals have gynaecologists and are able to provide gynaecological surgeries and services such as colposcopy, VIA (visual inspection using acetic acid) and caesarean section. The Gidakom Hospital provides inpatient treatment for MDR-TB.

At the tertiary care level, there are specialty wards, private rooms, and ICUs (adult and paediatric). JDWNRH also has a neonatal ICU (NICU). Services provided are: local and general anaesthesia, nerve block, spinal and epidural anaesthesia, maxillofacial surgeries, advanced emergency services, ENT surgeries, caesarean sections, major gynaecological surgeries, laparoscopy and hysteroscopy, treatment and management of HIV/AIDS and TB including MDR-TB, cardiology services (ECG), endoscopy, urology, dialysis, general and laparoscopic surgery, cataract surgery, advanced orthopaedic surgeries, paediatric and neonatal care, and advanced physiotherapy services. JDWNRH, being the national referral hospital, provides additional services such as neurosurgery, oncosurgery, advanced neonatal services, maternal fetal medicine, infertility clinic, advanced psychiatric care, ENT surgeries, advanced ophthalmological surgeries, and paediatric surgeries.

At present, the two RRHs are not able to provide the full range of mandated specialized facilities due to lack of required human resources and facilities, and limited infrastructure in the case of Gelephu RRH.

Since both primary and secondary care services are fully provided by the public sector and are also administered by the same district health office (at the district level), the two services are well integrated and their activities are closely coordinated. There is also no differentiation between the primary and the secondary care providers.

Although the QASD monitors some quality indicators, other important indicators such as re-admission rates, medical errors/adverse reactions and mortality rates are not reported. However, a laboratory-based study of hospital-acquired infections (HAIs) in 2009 on samples submitted to the microbiology laboratory for culture found an HAI prevalence of 27.20% in JDWNRH, which is much higher than the Southeast Asia regional average of 10–12% (Jigme Dorji Wangchuck National Referral Hospital, 2009). Some quality of care indicators are shown in Table 5.3.

Table 5.3 Some hospital-based indicators (HAMT KPI Report 2016)

Key Performance Indicator	NRRH	RRH	Hospitals	BHU-I
Bed occupancy rate (%)	77	65	56	40
Average length of stay (days)	6	5	5	6
Staff unavailable at health centre (%)	5	6	11	7
Emergency response time (min)	10	11	8	6
Average OPD waiting time (min)	53	9	2	2
Utilization of surgical safety checklist (%)	40	81	0	0

Source: Quality Assurance and Standardization Division, Ministry of Health, Royal Government of Bhutan, 2016

5.4.1 Patient referral abroad

Medical procedures that cannot be carried out within the country are referred to India. A referral committee at JDWNRH decides the suitability of cases for referral as per guidelines. Cases eligible for referral are cardiac and neurosurgeries, kidney transplants (provided a volunteer donor is available), and cancer treatment including radiotherapy. The government bears all the associated costs including travel. For the past six years (2010–2015), cancers, heart diseases and kidney and urology diseases have topped the number of referrals, 85% of total referred cases in 2014–2015.

The MoH has a list of empanelled hospitals in Kolkata and Vellore in India where the patients can be referred by the committee. In emergencies, some patients can also be referred to empanelled hospitals in the nearby Indian towns of Guwahati, Bongaigaon and Siliguri. The MoH has liaison

offices in Vellore, Kolkata and Delhi, which look after patients referred to hospitals in these cities and coordinate with the hospitals.

5.4.2 Day care/day hospitals/day clinics/surgi-centres

There are no stand-alone private or public day-care facilities. Day-care services are provided in hospitals and BHUs. A majority of admissions would be in the emergency department (for JDWNRH) or a unit where patients would be admitted to be kept under observation, e.g. a hypertensive patient to monitor their blood pressure, individuals requiring blood transfusion, dehydrated patients undergoing rehydration therapy, a febrile child kept for observation, individuals undergoing surgical procedures that does not require overnight stay (simple fractures in orthopaedic, gynaecological procedures).

5.4.3 Major changes in recent years, current problems/challenges and reform plans

The establishment of the Gyaltsuen Jetsen Pema Mother and Child hospital in Thimphu is expected to improve MCH care in the country. As the health service succeeds in decreasing all-cause mortality rates there is a need to increase the range of services provided at the secondary and tertiary care levels. Most surgeries have to be referred to the three referral hospitals. Psychiatric care needs to be improved. Mammography is not available in the country, and CT and MRI facilities at JDWNRH, although fulfil international standards for population distribution, do not tackle major access issues for patients in other districts. The quality of service needs improvement and areas such as HAI, AMR and readmissions need to be addressed. The establishment of KGUMSB is expected to address the shortage of human resource in specialized care. The lack of specialized human resources in the district hospitals leads to increased referrals to the referral hospitals, the setting up of emergency obstetric and neonatal care (EmONC) and trauma centres have also been held up due to lack of HRH.

5.5 Emergency care

The health-care system has not adopted any definition for emergency care; however, health-care workers generally use the term to provide care to patients who may have a life-threatening condition, whose long-term health may deteriorate if not treated and anyone with traumatic injuries. However, all patients requiring medical attention use the emergency care services once routine services are closed, irrespective of the severity of their condition.

The emergency care setup is different at different levels of health-care service. JDWNRH is the most advanced with an emergency department supervised by emergency physicians and supported by a group of general doctors and emergency care nurses. The emergency department is open 24 hours a day and has its own emergency pharmacy and specialists on call from other departments. It receives all patients referred from district hospitals and processes their admission and consultation to different departments. It also verifies the requirement for air evacuation of patients.

A Training Centre for Emergency Care has been established in JDWNRH in collaboration with KGUMSB, which imparts basic life support (BLS) and advanced cardiac life support (ACLS) training to health workers and first aid training to other institutions. The centre has trained five batches of health workers on BLS (140 health workers), three batches of health workers on ACLS (total of 92), 14 batches of emergency medical technicians (EMTs) and ambulance drivers (total of 562), and first aid training for VHWs, police and taxi drivers.

In other hospitals and health facilities, the medical doctor or health-care worker is on call 24 hours a day so that they can attend to any urgent patients who might come to the facility.

The HHC also acts as an emergency responder, with its 112 toll-free number and control of ambulance service. Once an emergency request for an ambulance is received, the HHC dispatches an ambulance from the nearest health facility to pick up the patient (see Table 5.4). Each ambulance is manned by an EMT who can perform BLS and assist the patient. All EMTs and ambulance drivers are trained on BLS; they also undergo annual refresher trainings. The EMTs are generally high school graduates who receive an eight-week emergency medical training. There are plans to upgrade this course to an undergraduate degree in Emergency Medical Care at KGUMSB. The HHC also coordinates air evacuations by receiving requests from the emergency department of JDWNRH and then processing for the deployment of helicopter with the Royal Bhutan Helicopter Service Ltd. (RBHSL).

Table 5.4 Number of calls received by the Health Help Centre

	2011	2012	2013	2014	2015
No. of calls	17 092	23 784	18 251	15 653	28 831

Source: Administrative report of the Health Help Centre

In the event of a natural disaster requiring health emergency response, the lead role is taken by the Department of Disaster Management, the MoHCA, which is the national focal point for disasters and emergencies and the Health Emergency Contingency Plan would be activated. For disease outbreaks and epidemics, the DoPH would take the lead role and in the event of road traffic accidents, the EMSD would liaise with the Royal Bhutan Police and the Road Safety and Transport Authority and activate EMTs, ambulances and nearby hospitals to respond.

The MoH in its long-term plan has identified ten hospitals as trauma and EmONC centres to attend to these emergencies. These hospitals would be staffed with an obstetrician, paediatrician, general surgeon and anaesthetist, and be able to provide most emergency and general surgery. However, the inability to develop human resources in these areas has hampered the establishment of these centres.

5.5.1 Major changes in recent years

The establishment of the HHC, providing ambulances to BHU-IIs, introduction of the helicopter service, institution of EMTs in the ambulances, improved emergency department with emergency physicians and setting up of the EMSD has helped to improve emergency care and patient survival. However, with the introduction of the air ambulance service, the cost of emergency evacuations has drastically increased (USD 2625 for one hour of flying time). Between its introduction in November 2015 and October 2016, a total of 102 patients have been airlifted, costing approximately USD 385 000.

Box 5.3 Emergency air ambulance service

The HA of Laya BHU consulted the Obstetric Department of JDWNRH about a 30-year-old expectant mother with a transverse lie fetus, near term. Since the patient was about to deliver, the MoH approved for her to be airlifted to JDWNRH through the RBHSL, which provides the air ambulance service. The patient was airlifted to Thimphu and admitted at JDWNRH where she underwent a caesarean section. After three days the mother and healthy baby were discharged from the hospital.

Introduction of the helicopter service in 2015 has benefited health outcomes by airlifting patients who require emergency medical services to JDWNRH for life-saving procedures. The rugged terrain and difficult roads makes transport of patients to hospitals very difficult. Without the helicopter service, the same patient would have had to be manually stretchered to the road point in Gasa (a journey of about 3 days) and then a 5-hour drive to Thimphu to JDWNRH.

Source: synthesized by the authors

5.6 Pharmaceutical care

The government funds the procurement of all medicines and, as other areas of medical care, it also provides most of the medicines required. Each hospital has a pharmacy, which dispenses prescription-based medicines to patients. Health workers at BHU-IIs also prescribe and dispense medicines.

Consequently, there are only a few private retail pharmacies in the country. The private pharmacies are monitored by the DRA and are allowed to stock only registered medicines. Antibiotics can only be sold on prescription, and over-the-counter sales are strictly monitored.

The DoMSHI manages the procurement and distribution of all medicines and medical supplies for the MoH, except for JDWNRH. For the fiscal year 2014–2015, JDWNRH spent 16.57% and the MoH 6.5% of their budgets on procurement of essential medicines (Department of Public Accounts, Ministry of Finance, Royal Government of Bhutan, 2015).

The annual requisition of medical supplies from all health facilities are compiled and the final quantity required for the country, after consideration of physical balance at the Medical Stores and Distribution Division (MSDD) and the buffer stock as per VEN classification (V=30%, E=20% and N=10%) are prepared by the DoMS. Then based on the final quantity of the DoMS, the MSPD under the DoMSHI carries out the annual tender based on an international tendering process where only suppliers registered with the MSPD and DRA are allowed to participate.

Based on the list of registered medicines received from the DRA, the bids are segregated into two sections: Section A for registered medicines where only the Market Authorization Holders can quote and Section B for non-registered medicines where all the suppliers registered with the MSPD can quote.

The quotations are invited in a one-envelope system where technical specifications and prices are quoted together. A committee consisting of pharmacists and pharmacy technicians from JDWNRH evaluates the tender based on the past performance of the supplier and the quality history of the quoted products. The delivery period is usually 90 days after the placement of purchase orders.

The annual requisitions (as per the distribution order prepared by the DoMS) are delivered to facilities through three or four consignments

during the year as and when the suppliers deliver the consignments at the MSDD at Phuentsholing. Additional supplies are distributed from the buffer stock as and when health-care facilities make requisitions due to stock-outs. The situational analysis of 2015 reported availability of key essential medicines at 96–100% in all public facilities (World Health Organization, Regional Office for South-East Asia, 2015).

The MSDD under the DoMSHI is located at Phuentsholing, where there is a large new, well-equipped warehouse, with good shelving and cold storage facilities; it serves as a central warehouse. The MSDD receives medicines and equipment directly from suppliers as procured by the MSPD in Thimphu. After the receipt of medicines from suppliers, a quality inspection committee, formed of pharmacists and pharmacy technicians from JDWNRH and other referral and district hospitals, undertakes a visual quality inspection of the medicines received from suppliers. Unsatisfactory products are rejected at the MSDD and returned to the suppliers. Once quality inspection is completed, medicines are repacked as per the distribution order (taking into account current stock levels and the amounts of medicines received from suppliers) and the process of distribution starts.

After annual distribution, a redistribution system between facilities for short-dated medicines helps to keep stock-outs and expiry to a minimum. The staff in-charge of stores also have groups on social media platforms such as Facebook and Wechat where they keep track of supplies and share information.

In general, there is a shortage of pharmacists in the DoMS, including the HCDD, EMTD and hospitals. Although the procurement division (MSPD) within the DoMSHI has a pharmacist who looks after the entire procurement process, there are no pharmacists at the distribution division (MSDD) based in Phuentsholing. At the MSDD, it is mainly pharmacy technicians who look after the warehouse and manage the logistics.

At the national referral hospital, JDWNRH, there are five pharmacists and 37 pharmacy technicians. At the RRH in Mongar there is one pharmacist and five pharmacy technicians, and at Trashigang hospital there is one pharmacist and three pharmacy technicians. At other district hospitals and BHU-Is stock management, redistribution, OPD, etc. are managed by pharmacy technicians. At BHU-IIs, there are generally only HAs (2–3) who manage everything including dispensing and store management.

The budget for the procurement is prepared by the MSPD based on the total amount spent on the medicines in the previous year with 10–15% increase and submitted to the MoF for approval at the end of every financial year. As such, there is no cap on the funds. However, the MoH cannot exceed the budget ceiling set by the MoF, because higher expenditure on medicines can affect the spending on other areas in health. Since 2014, the BHTF has started funding the budget for medicines and vaccines; funds are released to the division on a quarterly basis. However, the Trust funds only those medicines listed in the NEML; there is currently a problem of funding the named-patient medicines.

The stand-alone electronic logistic management information system, DIGBY, stopped functioning due to frequent crashes of the software and computers and lack of capacity at the districts in maintaining and running the system. In 2016, the MSPD initiated an online system, which is currently in the development stage. It is hoped that by 2018, the enhanced system will be functional by replacing the current manual system of inventory.

The essential medicines programme was upgraded to the EMTD in 2008. The EMTD revises the NEML every two years and the latest edition in 2016 has a total of 429 essential medicines, which are selected as per the National Drug Policy 2007. Based on the NEML, the National Essential Medicines Formulary (NEMF) is also updated every two years. The soft copy of both the NEML and NEMF are uploaded on the MoH website while hard copies are distributed to all health facilities. During the Situational Analysis of Medicines in Health Care Delivery in 2015, it was found that the compliance with the NEML was extremely good throughout the country; 98–100% of all prescribed medicines belonging to the NEML were available in all health facilities. The range of eligible essential medicines in a health facility is based on the level of the facility. However, lower facilities can avail medicines from higher facilities for the purpose of prescription refills. In addition, some vital medicines, which are not in the NEML, such as chemotherapy drugs, and medicines prescribed for the referred patients are procured on a named-patient basis from Kolkata, India.

The Standard Treatment Guidelines (STGs), National Antibiotic Guidelines and Store management manual are updated regularly. With new pharmacists joining various hospitals, hospital therapeutic committees have been established to monitor rational use of medicines at the facility level.

The Situational Analysis of Medicines 2015, also pointed out that the average number of medicines prescribed per patient and the percentage of patients with prescribed antibiotics increased as one went up the health facility level. The average number of medicines prescribed per patient was 2.8 for referral hospitals, 2.5 for district hospitals, 2.3 for BHU-Is and 1.9 for BHU-IIs. Similarly, the percentage of patients receiving an antibiotic was 49.3% in referral hospitals, 41.9% in district hospitals, 40.0% in BHU-Is and 33.3% in BHU-IIs. The percentage of medicines prescribed by their generic name was, as expected, lowest at 78% in referral hospitals, but above 90% in all other type of facilities. The percentage of prescribed medicines belonging to the NEML was very high in all public facilities, being 95–98% in hospitals and 100% in BHUs.

The DRA is responsible for registration of medicinal products as well as the issuance of licences (authorizations) for the manufacture, sale and distribution of medicinal products. The DRA is also responsible for registration of competent persons, wholesalers and retailers, and issuance of licences for the import and export of medicinal products.

As per the Medicines Regulations 2012, Bhutanese and foreign manufacturers can register pharmaceutical products in Bhutan. The majority of medicines are imported from India with a few from Bangladesh. The total number of medicinal products approved for registration until July 2015 was 1122. However, the suppliers registered with the autonomous DRA only covered 263 out of the 367 essential medicines (World Health Organization, Regional Office for South-East Asia, 2015). Even though the DRA has introduced more flexibility concerning the issue of "no-objection" letters for the importation of small quantities of essential medicines that are not registered, getting all essential medicines registered is difficult due to the low volumes required. The DRA has also introduced an abridged registration system for the products registered with one of ten stringent regulatory authorities or produced by a manufacturer with ten products already registered in Bhutan or for products that are prequalified by WHO.

The National Drug Testing Laboratory (NDTL), which is under the RCDC, is not fully equipped and functional yet, although it has three staff members. This is a serious concern since the delay in testing the product quality can lead to late recall and stock-outs.

Currently, the DRA has signed an agreement with two drug testing laboratories outside the country, namely Zest Laboratory Pvt. Ltd. in

Nepal and SGS Life Science Pvt. Ltd. in India, as appellant laboratories. All samples are sent for quality analysis to these two laboratories.

Apart from Menjong Sorig Pharmaceuticals, which manufactures all traditional medicines, there is only one API supplier which mainly acts as a manufacturer in the country, not exporter, importer or distributors.

5.6.1 Major changes, current challenges and future reforms

The procurement division, previously known as Drugs, Vaccines and Equipment Division (DVED) has been upgraded to the DoMSHI with the following divisions to streamline the procurement system:

1. MSPD;
2. MSDD;
3. Biomedical Engineering Division (BMED); and
4. Health Infrastructure Development Division (HIDD).

Given the low volumes required by health facilities, registration of all essential medicines with the DRA is a huge challenge in spite of DRA using measures such as abridged registration and "no-objection certificate" systems. Also, because of low volumes, it is difficult to get supplies through the normal tendering process for most of the medicines from Section B: unregistered medicines, as suppliers refuse to quote for these products. Due to the breakdown of the electronic inventory system, a new online system that would facilitate the inventory and distribution system is much needed.

The lack of a drug testing facility in the country hampers the timely testing of medicines for quality, and leads to inefficiencies in the system with medicines sometimes having to be recalled due to failures in quality tests, months after distribution.

With increase in the number of patients and the number of essential medicines and medical supplies, there is an urgent need to construct a separate medical store. In addition, the design and requirements of the store need to be discussed with concerned agencies like the DRA before the construction.

With the formation of new programmes and divisions in the MoH, an interdepartmental/interdivisional coordination mechanism is required to ensure smooth procurement and distribution of medicines.

The EMTD needs to be involved when programmes are developing new clinical guidelines. Often, the new guidelines are not harmonized with the NEML in terms of recommended choice of treatment as well as the doses. Involving the EMTD would minimize this and can make it easier to recommend new medicines to be included in the next NEML.

Finally, there is a general shortage of pharmacists at all levels, at DoMS including both the HCDD and EMTD as well as hospitals.

5.7 Rehabilitation/intermediate care

Hospitals have well-established physiotherapy services staffed by trained physiotherapists or physiotherapy technicians. JDWNRH has a physiotherapy department that coordinates all rehabilitation services in the country in collaboration with the Disability Prevention and Rehabilitation Programme (DPRP) of the DoPH. The two RRHs are staffed with physiotherapists and physiotherapy technicians (Mongar has two physiotherapists and four technicians while Gelephu has one physiotherapist and five technicians). The district hospitals and BHU-Is have at least one technician.

The concept of community-based rehabilitation (CBR) has been introduced in the country, with DPRP being originally initiated as the CBR programme in 1997 to focus on provision of rehabilitation services in the community through primary health-care centres and through community involvement. The concept of CBR is to train the family and community in rehabilitating disabled people and providing some of the services. The DPRP has now expanded to include disability prevention and road traffic safety. The DPRP has developed a national strategy on disability prevention and rehabilitation and also initiated birth defect surveillance in the three referral hospitals, involving paediatricians and obstetricians.

Patients with stroke, spinal cord injuries, Guillain–Barré syndrome, peripheral neuropathy and orthopaedic cases form the majority of cases seeking rehabilitation services. Patients requiring 4–6 months of inpatient stay are common while the physiotherapy department also sees outpatients that require over one year of rehabilitation services (for rehabilitation in substance dependence, please refer to section 5.11 Mental health care).

The government procures assistive devices such as wheel chairs, crutches, hearing aids for students, and spectacles during eye camps. Prosthetic and orthotic devices are manufactured at the rehabilitation resource centre in Gidakom and are provided free to patients. The physiotherapy department also conducts visits to schools that cater to children with disabilities or special needs, at the beginning of the school year with periodic follow-ups.

Family caregivers of patients requiring long-term care are taught certain procedures such as bed access programmes on a case-by-case basis. There is no institutionalized formal training to family members on caring for patients who require rehabilitation services.

In terms of health promotion, observation of global days, such as World Stroke Day, World Disability Day, World Physiotherapy Day, are undertaken; however, financial constraints restrict the scale of such activities.

5.7.1 Major changes, current challenges and future reforms

The expansion of physiotherapy services to the district hospital and BHU-I levels have improved rehabilitation services; the technology and equipment available for the physiotherapy services plus the number of physiotherapists have been greatly enhanced. The physiotherapy department of JDWNRH has plans to develop parent group education, caregiver education, and to collaborate with the MoE to observe World Disability Day and plan activities in schools.

Physiotherapy services are available at varying levels including outreach programmes; however, the rehabilitation service still faces numerous challenges; these include poor upgrading of skills, inadequate space, dependence on beds in other departments and outreach for CBR. Although CBR has been around for two decades, it needs to be institutionalized and appropriately implemented. The referral hospitals do not have separate beds for rehabilitation with patients being admitted in different wards. This has led to premature discharge of patients to free up beds, resulting in incomplete rehabilitation and readmissions due to development of secondary complications. Earlier discharges have also led to loss to follow-up of patients who require long-term physiotherapy care. Patients who live further away also face difficulties in commuting daily to avail physiotherapy services at the hospitals.

In the 11th FYP, the DPRP had proposed the establishment of a rehabilitation centre at Gidakom, which could function as a long-term rehabilitation service provider for patients, together with the upgradation of the existing resource centre for assistive devices such as wheel-chairs, crutches, prosthetics and orthotics. This has, however, not been approved for implementation.

5.8 Long-term care

Normally, long-term care is provided either in the existing health-care facilities or at home by families. Apart from alcohol and substance dependence, which is provided by NGOs (two centres in Thimphu and one in Paro districts provide 3–6 month stay), specific providers for long-term care are not available in Bhutan. After the medical condition is treated, if there is no scope for a patient to recover (e.g. paralysis after spinal cord injury), the patient is discharged and the family undertakes care at home.

There have, however, been cases where hospitals had to care for patients due to lack of family support or stigma from the community. Gidakom and Riserboo hospitals, which were set up by leprosy missions in the 1970s, still care for old leprosy patients from three to four decades ago who are not able to go back to the community. Some patients requiring bedside care and physical support are also left at the hospitals (some for years) due to poor family support; the health system does not have a proper mechanism for discharging such patients. Agencies such as the National Commission for Women and Children (NCWC), Respect, Encourage, Nurture and Empower Women (RENEW) and the Royal Bhutan Police provide some social services and protection for women and children affected by domestic violence.

5.9 Services for family/informal carers

A formal system (such as training, registration and supporting) of informal carers does not exist in Bhutan. Normally, either family members or relatives act as carers or they employ a carer for a family member who needs it. Nonetheless, such carers are not formally trained and information on them does not exist.

Some support groups have been formed but these do not provide care. They include: Ability Bhutan, a parent support group especially for children with autism; Disabled Persons Association of Bhutan and Draktsho which provides vocational training to children with disabilities.

5.10 Palliative care

Palliative care is a new area that has not been taken up by the health-care service. However, with the training of oncosurgeons and initiation of cancer chemotherapy and care in the country, there has been a felt need for palliative care. The FoNPH, under KGUMSB, has recently sent two faculty members for short-term training in palliative care and has plans to initiate the service in JDWNRH and expand it to other hospitals.

5.11 Mental health care

Mental health care is provided within the existing health-care system. JDWNRH has a Department of Psychiatry with three psychiatrists. The department has 18 inpatient beds: eight for psychiatry and 10 for detoxification in a ward staffed by nurses who do not have specialized mental health training. The two RRHs also have psychiatry departments; however, they do not have any psychiatrists and so are not able to provide specialized psychiatric care. Overall in the country, there are only four psychiatrists (one with the Royal Bhutan Army). In all other hospitals psychiatric patients are admitted in the general ward with other patients. There is no special psychiatric institution where patients can be committed for long-term care. Psychiatric care at the secondary and primary health-care levels is dependent on general doctors and primary health-care workers. The Mental Health Programme has appointed mental health focal persons (usually a nurse) in each district hospital who are trained in basic mental health counselling and conduct mental health awareness programmes. All new doctors are provided basic identification and treatment of mental illnesses (Mental Health manual, Mental Health Programme, Department of Public Health, Ministry of Health, 2010). Since 2008, the psychiatry department at JDWNRH has been supported by a US-based NGO, Health Volunteer Overseas (HVO), which has ensured the presence of one mental health specialist at any given time (psychiatrist, counsellor, social worker, occupational therapist or psychologist).

Major mental health conditions treated at JDWNRH are anxiety (panic attacks, somatoform disorders) depression, psychosis and drug and alcohol dependence. Psychiatrists also treat patients with epilepsy.

The NEML contains 10 antipsychotic medicines of which four are restricted to the referral hospitals (to be prescribed by a psychiatrist) and six are available at the district hospital and BHU-I levels; the BHU-IIs do not have access to antipsychotic medicines. As part of a detoxification

pilot programme, diazepam (5 mg) is being supplied to BHU-IIs to initiate alcohol detoxification; however, since it is in the pilot phase, diazepam has not been included in the NEML.

The Mental Health Programme of the DoPH uses the WHO mhGAP (WHO mental health gap Action Programme) intervention guide to train secondary and primary care health workers on basic mental health interventions. The Mental Health Programme has a national strategy on mental health (2015–2023) and it has also formulated a national policy and strategy on alcohol harm reduction.

Due to the lack of special psychiatric hospitals or beds, patients requiring long-term care and treatment are not admitted for the required duration and families have to bear the burden of care. This is problematic especially with psychotic patients, and puts great stress on the family. Additionally, patients with mental health disorders do not seek treatment due to the stigma attached to the disease. Currently, Bhutan has no laws or regulations governing mental health care.

Suicide has also been identified as a public health problem; with about seven suicides every month, the government has formed a Suicide Steering Committee Task Force and the MoH has set up a Suicide Prevention Programme.

In terms of mental health care in emergencies and disasters, not much preparedness has been done nor are there any plans to address these situations. It is hoped that the counselling training programme started at the FoNPH, KGUMSB, would increase the strength of the mental health counselling service and support the emergency requirement. Experience from the past disasters such as the aftermath of major earthquakes has indicated that Bhutanese are fairly resilient. It is assumed that religious rituals that people undertake tend to help.

Box 5.4 Impressions on mental health care in Bhutan

"In the US there is a psychiatrist for every 10 000 people. If you use that as a yardstick then Bhutan should have 75 psychiatrists; however, you have only four. They are doing a heroic job, with very few drugs, and are also providing care for addiction and epilepsy. In the US, psychiatrists do not treat epilepsy or addiction, we have enough doing just psychiatry. The other problem is there are very few medications here. In the US, I could prescribe 40 antidepressants and they have two here. They don't have lithium, they don't have naltrexone, they don't have some very basic drugs, so they do amazing things with very few drugs. If I were to improve anything it would be to provide more medication. The other problem is, if you are in Thimphu that's fine, as soon as you go out of Thimphu you cannot continue on medication because the medicine is not available, so the treatment is of no value."

Source: Visiting HVO psychiatrist from the USA, October 2016, in an interview with the author

5.11.1 Major changes, current problems/challenges

Plans to provide postgraduate residency programme at KGUMSB and JDWNRH in psychiatry could ease the shortage of psychiatrists in the future. The institution of a counselling course at the FoNPH, KGUMSB, would also improve provision of mental health care.

There is a big deficiency in the number of mental health-care providers, not only psychiatrists but also other mental health professionals. The psychiatry departments at the RRHs need to be staffed by psychiatrists and other professionals. There is a lack of specialized psychiatry services such as child and adolescent psychiatry. The psychiatry service also needs to be expanded to some of the bigger district hospitals. The NEML also needs to review the list of psychiatry medicines available to psychiatric patients.

Long-term care and specialized psychiatry care need to be instituted to provide proper care and to reduce the burden on families especially those caring for psychotic patients. Alcohol and substance dependence and alcoholic liver disease (ALD) account for a very high number of inpatient admissions with ALD causing the highest number of inpatient mortality (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2016). The Mental Health Programme had planned for establishment of a detoxification centre at Gidakom but this has not materialized. Without a dedicated detoxification centre the rate of relapse is very high as the current 10 beds in JDWNRH are inadequate for the number of patients. The high number of patients requiring detoxification also impacts on the

bed availability for psychiatric patients. There are three rehabilitation centres for substance dependence run by NGOs, all located in Thimphu. The current system of detoxification in hospitals and release of patients to the rehabilitation centres leads to loss of follow up especially for patients from other districts. The service is also not easily accessible to patients undergoing detoxification in far-off districts.

5.12 Dental care

Dental care is integrated into the general health services and provided at the tertiary and secondary care levels. There are no private providers of dental services. District hospitals and BHU-Is provide general dental services such as tooth extraction, dental fillings, dentures and oral health outreach programmes. As per the revised service standard, each hospital should be supervised by a dental surgeon, dental hygienist and a technician, and be equipped with a dental chair.

The referral hospitals provide more specialized dental care and, in addition to general dental services, carry out oral surgery and paedodontic services. Prosthodontic, orthodontic, periodontic and endodontic services are provided at JDWNRH. The Oral Health Programme under the DoMS plans and implements oral health schemes, especially in schools, in coordination with dental units of hospitals and the Comprehensive School Health Programme. Dental surgeons or hygienists from hospitals and BHU-Is carry out the outreach programmes consisting of screening, oral health care education and demonstrations. The Oral Health Programme is also in the final stages of developing a national oral health strategy.

A cross-sectional study of 6- and 12-year-old schoolchildren in 2014 showed that 83.8% of 6-year-olds and 41.9% of 12-year-olds had teeth affected by caries (Ngedup S et al., 2016).

Dental service is an area where certain fees have been introduced. Primary dental care including root canal treatment, tooth extraction, wisdom tooth removal, oral surgeries are provided free. However, certain dental procedures are chargeable (Table 5.5).

Table 5.5 Dental procedures that require a fee

S. No.	Procedure	Fee (Nu)	Remarks
1	Denture	130	For one unit, additional cost up to a maximum of Nu 495
2	Orthodontic braces	30 000	
3	Permanent single crown (posterior)	7000	Students/trainees get a 50% discount
4	Permanent single crown (anterior)	10 000	Students/trainees get a 50% discount
5	Two or three unit bridge	11 000	
6	Four or more unit bridge for one quadrant	12 000	
7	Stainless steel crown	2000	
8	Temporary crown/bridge	100/unit	
9	Scaling/cleaning	330	

Source: Dental Department, JDWNRH

5.12.1 Major changes, current problems/challenges

The expansion of services to the BHU-I level requires the provision of human resources and equipment within the existing infrastructure, which the MoH is not able to fulfil immediately. Consequently, there are BHU-Is with dental surgeons but no dental chairs. Prosthodontic and orthodontic services are currently available only at JDWNRH but due to inadequate human resources are not able to match the demand for these services. The resulting backlog has led to many Bhutanese seeking these services in other countries and nearby Indian towns (Guwahati, Bongaigaon, Jaigaon, Siliguri).

5.13 Complementary alternative medicine (CAM) and traditional medicine

Under the national health policy of providing integrated, equitable and balanced health-care services through a three-tier network system, the gso-ba Rig-pa-based Bhutanese traditional medicine system was officially incorporated into the mainstream health-care system in 1968 (Wangchuck D, 2015).

The National Traditional Medicine Hospital (NTMH) serves as the tertiary/referral and teaching hospital. There are traditional medicine units in all the district hospitals and some BHUs. Given the importance of traditional medicine services, the MoH upgraded traditional medicine from a division to a department, DoTMS, in 2013. The DoTMS has four divisions, namely Traditional healthcare, Local healing and spiritual health, Menzerigpa and

Zhibjuk, and Menjong Sorig Pharmaceuticals, which is responsible for the production of traditional medicines.

The department is also mandated to provide technical and policy support to the Ministry and regulators on matters related to complementary and alternative medicine (CAM) including other traditional and Asian systems of medicine. Bhutanese traditional medicine is generally accepted by allopathic medical practitioners. However, for other traditional systems of medicine and CAM, only some systems such as e-acupuncture is recognized by the BMHC.

The DRA mandates specific requirements for the registration of Bhutanese traditional medicine, particularly on safety. Like allopathic medicine, the essential traditional medicine procurement is also financed through the BHTF for free distribution and dispensing. In 2016, the traditional medicines list had 114 essential medicines.

Over the years, the number of patients seeking Bhutanese traditional medicine has been increasing steadily. In 2015, traditional medicine facilities saw a total of 193 667 cases of which 109 924 cases or about 56.8% were OPD cases and the rest were cases of therapy. The top three conditions treated were gastritis (5036), neurological disorders (3283) and arthritis (3203). The Menjong Sorig Pharmaceuticals currently supplies around 13 metric tonnes of traditional medicines per year consisting of 95 essential traditional medicines.

As per the regulations of the BMHC, only traditional medicine practitioners who have undergone a five-year degree course or a three-year diploma course in gso-ba rig-pa medicine are registered with the council to practise their profession. The physicians of traditional medicine are treated on a par with modern medical doctors with MBBS degrees in terms of the grade of entry into the civil service and pay scales.

Table 5.6 Number of patients seen at the National Traditional Medicine Hospital and district traditional medicine units

Year	OPD cases			Therapy	Total cases
	New	Old	Total		
2011	50 138	48 685	98 823	35 923	134 746
2012	67 328	64 966	132 294	40 763	173 057
2013	66 799	65 470	132 269	50 022	182 291
2014	63 041	56 263	119 304	65 779	185 083
2015	51 404	58 520	109 924	83 743	193 667

Source: Department of Traditional Medicine Services, Ministry of Health

Table 5.7 Types of therapies provided, 2011–2015

Therapy	2011	2012	2013	2014	2015
Golden needle	14 445	20 212	18 682	18 186	17 469
Silver needle	630	954	460	1172	287
Blood letting	126	244	393	480	408
Cauterization/heated oil	943	2396	5780	5811	7324
Cupping (new)	–	–	–	–	274
Localized steaming	11 280	14 362	14 759	23 529	35 920
Steam bath	4136	4309	3806	6581	7433
Herbal bath	3338	2316	2803	7069	10 541
Nasal irrigation	990	753	861	1162	1665
Others	35	1617	204	1789	2422
Total	**35 923**	**47 163**	**47 748**	**65 779**	**83 743**

Source: Department of Traditional Medicine Services, Ministry of Health

To streamline and provide quality traditional medicine services, various guidelines such as service standards, standard treatment guidelines, traditional disease codes and classification, therapy guidelines, good dispensing practice, monographs, and patient information management system have been developed.

The Faculty of Traditional Medicine under KGUMSB (previously known as the National Institute of Traditional Medicine) is responsible for the development of human resources required for the delivery of traditional medical services in the country.

5.13.1 Major changes, current problems/challenges

The NTMH has a separate therapy unit and will soon introduce an inpatient facility for lay-nga therapy services. In addition to enhancing Bhutanese traditional medicine to be an efficient integral component of the health-care system, the following reforms are planned:

- expansion and development of a Good Manufacturing Practice-compliant manufacturing facility;
- expansion of services to the community level;
- diversification of services to include mental and spiritual health;
- research capacity development to promote evidence-based services;
- development and promotion of gso-ba rig-pa spa and wellness services; and
- introduce a Master's degree programme in Traditional Medicine.

While Bhutanese traditional medicine has expanded rapidly in terms of infrastructure, human resources and technical capacity, there are still many challenges. Some of the major challenges are:

- limited manufacturing capacity for sustainable production of traditional medicines;
- sustainability of wild crafted raw materials particularly those species that are highly poached or traded informally across the border;
- brain drain and lack of research funds for new drug discovery and innovation; and
- inadequate or limited capacity at the teaching hospital to deliver quality training programmes.

Local healers: In addition to the traditional medicine system recognized by the BMHC, there are also local healers at the community level. These may be faith and spiritual healers, traditional shamans that invoke spirits to drive away illnesses, astrologers, and healers who use herbs and other naturally occurring elements. These form of healings have been used from ancient times and are still deep-rooted in traditional culture and practices. They are normally the first point of consultation especially in rural areas where people still believe illnesses are caused by bad spirits.

There is a lack of information on the number of such practitioners and the proportion of the population availing such services although the DoTMS has plans to study and document the extent of these practices. The National Health Survey 2012 found 4.6% of respondents who recalled being sick in the preceding 30 days first sought care from these healers (Ministry of Health, Royal Government of Bhutan, 2014).

5.14 Health services for specific populations

Despite the harsh geographical terrain, a majority of the population in Bhutan has access to basic health services. The ORCs and the network of VHWs further help to improve the reach of the health services to the people. Only 4.6% of the population has to walk more than 3 hours to the nearest health centre, and 83% of urban and 25.2% of rural population live less than half an hour from the nearest health centre (Ministry of Health, Royal Government of Bhutan, 2014).

Nonetheless, some groups still have difficulty in accessing health-care services; these include nomadic families that migrate with their animals,

villages cut-off during the monsoons due to landslides and swelling rivers, industrial workers on long shifts, road workers constantly on the move, and the elderly unable to walk to health centres.

The major barrier to health service utilization continues to be the harsh geographical terrain, while other contributing factors affecting health-seeking behaviour include perceived nature or severity of illness, work timing and policies, community and family influence, cultural beliefs, domestic priorities, preference for female service providers and stigma (Ugen S, 2015).

Box 5.5 Unreached population

A study conducted by Ugen et al. (Ugen S, 2015) tried to identify the populations which were not reached by the health-care services in Bhutan. The study did not find any particular area that was totally deprived of health services. However, at certain times of the year, some groups did miss out on health-care services. Some excerpts from focus group discussions are highlighted below:

"...particularly during summer we have to cross two rivers. It takes a long time to reach the BHU. Even if there is a health staff in station they cannot come because bridges get washed away during summer months." Male FG participant, Thrisha.

"During monsoon season it is very difficult; during winter, the roads are blocked by snowfall." Male Community Leader, Merak.

"As road workers, we are constantly on the move. We have to wake up early in the morning and go for work. We have to work from 7 a.m. in the morning till 4 p.m. in the evening on the road. Due to this we don't get an opportunity to go anywhere." Male Supervisor, Dupi Labor Camp, Tsirang.

"In my opinion, people in the older age category (70 to 80 years) do not receive health services mainly because they cannot walk. The minimum distance between their house and the ORC is two to three hours. Even if they want to go to the hospital to get medicine, they do not have the physical strength. I think this is why old people have trouble getting health services." Male KI, Dagana

"Pregnant women in their eighth or ninth month have difficulty in walking especially when the ORCs are uphill.... Distance is an issue and it is also difficult to come twice a month towards term." Male KI Samtse.

"When pregnant women go for a checkup, they are required to give their biodata, for example the name of the father of the child, some pregnant women who are not married do not visit the hospital out of embarrassment." Male KI Shigkhar, Thrisha.

Source: synthesized by the authors

In recent years, communities have been requesting for a female health worker in BHU-IIs to provide maternal and reproductive health services. As the health service keeps on improving, studying the populations that are not reached and their needs, and reaching out to them would improve user satisfaction as well as coverage and quality of care.

5.15 Disaster risk management for health (DRM-H)

As a country at high risk for numerous natural disasters, and as party to both the Hyogo Framework for Action 2005–2015 (HFA) and the Sendai Framework for Disaster Risk Reduction 2015 (SFDRR), Bhutan has strived towards progress in disaster risk management with a cross-sectoral approach during recent years. The government is committed to mainstream and improve disaster resilience and management by making this both an NKRA in the 11th FYP (2013–2018), as well as a cross-cutting theme.

In 2013, the Disaster Management Act of Bhutan (Royal Government of Bhutan, 2013) came into force, which applyies to all emergencies with the exception of those threatening the sovereignty, security and integrity of Bhutan.

The Act mandates establishment of disaster management contingency plans by all dzongkhags and agencies with the MoH to specifically manage emergency medical services during disasters. The HEDCP of 2016 is one such example.

The Department of Disaster Management (DDM) within the MoHCA serves as the secretariat/executive arm of the National Disaster Management Authority (NDMA).

In addition to the Authority, two other national-level platforms have a role in disasters/emergencies. First the Interministerial Task Force (IMTF), chaired by the head of DDM and comprising technical experts from various government bodies, including the MoH. Secondly, there is the Environment and Disaster Management Team formed by national members UN-partners and local NGOs, under the UN Development Assistance Framework (UNDAF) 2014–2018 in Bhutan.

At the local level, Dzongkhag Disaster Management Committees (DDMCs) are established in almost all districts and in turn are divided into subcommittees: thromde sub-committees, dungkhag sub-committees and gewog sub-committees. The DDMCs are mandated by the Disaster Management Act of Bhutan to establish dzongkhag emergency operation centres (DEOCs) if deemed necessary.

Role of the health sector

The EMSD under the DoMS is the nodal body to direct, coordinate and manage medical responses during disasters and health emergencies.

The National Health Policy (2011) requires all health facilities to institute an appropriate system of care to deal with emergencies, disasters, epidemics and outbreaks, which includes a system of emergency response for disasters, epidemic outbreaks, mass casualty and routine emergencies.

The Disease Outbreak Investigation and Control Manual (2015), developed in line with the National Early Warning, Alert and Response Surveillance Information System (NEWARSIS) required by the IHR 2005, provides the operational structure of outbreak information flow, command and composition of rapid response teams at the district and national levels and a practical, step-by-step guide to outbreak investigation (Department of Public Health, Ministry of Health, Royal Government of Bhutan, 2015).

For health emergencies, the HEDCP establishes rapid response teams at both the national and dzongkhag levels, to review information, make rapid assessments with regard to health risks, rapidly disseminate health information and provide technical back-up in affected areas in emergency situations.

Health Emergency and Disaster Contingency Plan (HEDCP, 2016)

The HEDCP was developed following WHO's Global Assessment of National Health Sector Emergency Preparedness and Response (2008) and as per the mandate of the National Disaster Management Act (2013). Its stated goals are to enhance preparedness and response capacity for emergency and disaster in the health sector. The plan has three stated objectives: (i) increasing organizational readiness in preparation for an emergency; (ii) ensuring timely and effective provision of health care services when a disaster occurs; and (iii) institutionalizing emergency management at all levels of health facilities.

The plan elaborates a matrix of activities and required resources and actions at the national, dzongkhag, health facility and community levels. As the contingency plan has been developed in 2016, it has not been thoroughly tested in practice at the time of this review.

The HEDCP designates the Health Emergency Management Committee (HEMC) as the highest decision-making body on disasters, emergencies and disease outbreaks in the MoH with the Secretary of MoH as its chairman. The HEMC is supported with technical assistance from the Technical Advisory Committee.

Preparedness

For the process of preparedness, particularly for enabling rapid response and effective coping, the HEDCP designated the following priority activities, which at the time of this review have been implemented in varying degrees:

1. Health Emergency Operation Centre (HEOC) – Establishment as a central command, control and communication facility for effective administration of emergency response and disaster management. (See also Coordination subheading.)
2. Seismic Vulnerability Assessment of Hospitals and Health Facilities – At present only the national referral hospital and Trashiyangtse and Trashigang district hospitals have undergone seismic assessments. The EMSD is expected to undertake assessment of the country's remaining hospitals on a priority basis. With this aim, the EMSD has established the Bhutan National Action Plan for Earthquake Safety of Health Facilities (National Action Plan Development Project for Schools and Hospitals, 2013).
3. Emergency Medical Supplies Buffer Stores – Currently, 30% of buffer stock for essential medicines, 10% for vital drugs and 10% for essential consumables is kept at the Medical Supply Division Store in Phuntsholing. Three additional stores in Paro, Gelephu and Mongar have been designated under the HEDCP.
4. Field Hospitals – Field hospitals are to be kept at Bhutan's three referral hospitals to substitute or complement medical systems in the aftermath of emergencies.
5. Emergency Medical and Trauma Centres (EMTC) – Throughout the country, 10 EMTCs are to be established at strategic locations with immediate availability of health personnel, equipment and capabilities on a 24x7 basis to care for critically injured patients and other medical emergencies.
6. Hazard Monitoring and Early Warning Systems – Systems and mechanism for monitoring and anticipation of hazard events and communication for mobilization are currently in place. These include:
    - RCDC – The national laboratory is required to use NEWARSIS to identify and notify "Public health events of international concern" as required by the IHR (2015).

- Seismology Division – Under the Department of Geology and Mines, MoEA, responsible for the development of seismic hazard and risk maps.
- Department of Hydro-met Services (DHMS) – Provides early warnings in case of GLOF and other floods.

7. Capacity Building – Various training and public education measures are identified with a strong community focus, which provide organizations, staff, first responders, volunteers and at-risk community members with knowledge and skills for disasters and health emergencies.
8. Mock Drill Exercises and Simulations – Tabletop, paper, electronic and field exercises at various levels are mandated by the HEDCP.
9. Risk Reduction Measures – Risk assessments on natural disasters, epidemics, chemical and biological and radiological risks are mandated to be carried out regularly by the HEDCP at various levels.
10. Risk Communication Measures – Systems and processes within the MoH are to be established for effective risk communication, including strategies targeted specifically at vulnerable and at risk populations.

Health response

In addition to other activities outlined in the HEDCP matrix, the following responses have been designated as focus areas:

1. Rapid Health Assessment – A rapid field assessment within 24 hours of reported incidents.
2. Medical Surge Capacity – Surge capacity of health personnel, supplies and equipment, facilities and integrated management policies and processes. With this aim, 20 districts have been grouped into three clusters, each containing one hub (at the referral hospital level) where medical emergency response including re-deployment of personnel from elsewhere in the districts can take place.
3. Mass Casualty Management –The Ministry has established standardized procedures for Mass Casualty Incident Management including the national, district and gewog levels.
4. Ambulance Services – Dispatch of the country's 130 land-ambulances and two helicopters is currently centrally coordinated through the HHC.

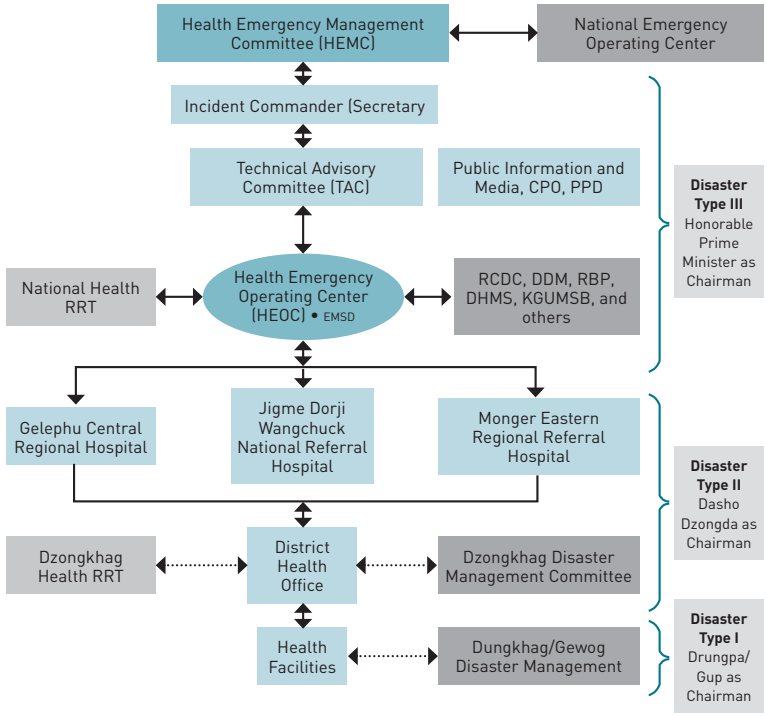
Recovery in health emergencies

The HEDCP recognizes the need for recovery plans, alongside preparedness and response plans, and differentiates between short-term, medium-term and long-term recovery phases. However, unlike preparedness and response action plans, a detailed recovery plan has not yet been established.

Coordination, resource mobilization and monitoring

For type I disaster responses, local authorities bear the responsibility for meeting the needs of the operations. Type II and III disasters response operations are directed by the NDMA, with operations from a Thimphu-based NEOC starting within 24 hours. The HEOC is expected to collaborate closely with the NEOC. Financial resource mobilization in disaster/emergency situations takes place through the NDMA and the MoF. The MoH may also directly approach WHO to secure the South-East Asia Regional Health Emergency Fund, as has recently taken place during the 2016 flooding of southern districts in Bhutan.

Figure 5.4 Coordination and communication mechanism in health emergencies



Source: Ministry of Health, Royal Government of Bhutan, 2016a

Foreign health relief assistance by international organizations or individual countries with regard to health will be coordinated by the MoH. The Ministry is to inform donors through diplomatic and consular representatives abroad of required assistance and specifications. For Bhutanese assistance abroad, in turn, the Ministry is to form a Bhutan Medical Assistance Team (BMAT) as part of Bhutan's humanitarian initiatives abroad. Criteria for the selection of professionals and terms of reference for BMAT are still under development at the time of this review.

6 Principal health reforms

Chapter summary

The allopathic health system was introduced in 1961 coinciding with the first national FYP (1961–1966) (1st FYP). Since its introduction, there has been significant resource allocation to the health sector. Bhutan became a signatory to the Alma-Ata Declaration on Primary Health Care in 1978 and consequently, health sector investment became focused on the public health approach. Over the past half a century, the underlying doctrine of the health reforms was to continue providing quality free health services to all Bhutanese in an effective and efficient manner while being in line with the principles of Gross National Happiness. Currently, Bhutanese people enjoy free health-care services including referrals abroad funded by the government, with low OOP expenditure. Various policies and financial systems have also been adopted to continue the provision of free health-care services to Bhutanese population. These measures include the right to free health as stipulated in the Constitution, health policy and the mandates of the BHTF. Recognizing the importance of health in achieving the national goal of Gross National Happiness, the government has systematically improved the quality of health care and expanded access across the country.

However, there are several critical questions that Bhutan needs to address: How sustainable is the system of current free health-care services? How can the private sector be better utilized for health-care provisions? How can health be made more equitable given the difficult geographical terrain and meet the increasing and evolving needs of the population? What other options can Bhutan adopt for providing quality health-care services? Echoing these questions, the MoH-led reforms since the 1978 Alma-Ata Declaration on Primary Health Care can be broadly categorized under the following thematic areas.

Governance and decentralization of health-care system: Throughout the planned developmental period, there has been progressive decentralization, with the introduction of a democratic system of

governance in 2008. Under the provisions of the Local Government Act, the powers and functions of all social sectors including health services have been decentralized with the MoH facilitating technical assistance and oversight. Coinciding with the 81st Session of the National Assembly, "The Medicines Act of the Kingdom of Bhutan" was endorsed and enacted on 5 August 2003 to control and regulate medicinal products in the country.

Establishment of institutions for medical and health sciences: With the adoption of "the University of Medical Sciences Act 2012", KGUMS was formerly launched in 2015. Although the initial aspiration was to set up a medical college to address the acute shortage of medical doctors, the project was constrained by the absence of adequate resources for establishment, thus a more viable approach of postgraduate residency programme was initiated. Today KGUMS, along with the FoNPH and the Faculty of Traditional Medicine, forms the backbone for training health human workforce.

Improving financial viability of the health sector: With the firm commitment from the State to fund all operating costs including procurement of essential medicines, the majority of the donor support is channelled for capital investment and capacity development. Emulating the commitment is an exponential increase in the absolute budget allocation for the health sector from Nu 3.1 million in the 1st FYP to Nu 13 952.96 million in 11th FYP, 50 years later. One of the major reforms initiated for health-care financing was the establishment of the BHTF endowment fund to ensure free and continued supply of core primary health-care supplies of vaccines, and essential medicines in the future.

6.1 Analysis of recent major reforms

Guiding principles of health reforms

Since the introduction of the allopathic health system in 1961, development of the social sector, particularly health and education, has been a policy priority where approximately 26% of the total government budget was allocated. With continued strong political commitment, the heath sector in Bhutan initiated several major reforms with the aim of improving health-care provision, governance and sustainable financing. Some major areas of reform were primarily focused on strengthening and enhancing the free primary health-care services, developing the competencies of health workers and institutional strengthening. The underlying principles of the health reforms, solely led by the MoH, were

to continue providing quality free health services to all Bhutanese in an effective and efficient manner in line with principles of Gross National Happiness.

The pursuit of happiness is a universal endeavour that Bhutan recognized and uniquely integrated as the government's core development philosophy. Since 1998, with guidance from their Majesties the Kings, the country adopted Gross National Happiness as its national goal (Ura K, 2009). All national policies and reforms are reviewed by the GNHC to assess their impact on the pursuit of Gross National Happiness; the commission approves only those policies that complement while revoking those that have negative impacts. The importance of health has been recognized and highlighted in Gross National Happiness and accorded a domain with several indicators allocated for tracking its development (Tobgay T et al., 2011a). Health indicators are incorporated in almost all development indices, reflecting its importance in the overall socioeconomic development of the country. According to Gross National Happiness, health is recognized as one of the determinants of happiness. Recognizing its importance, the government has systematically improved the quality of health and expanded access across the country. Table 6.1 outlines some major health and policy reform initiatives since 1990.

Table 6.1 Chronology of major reforms of health systems in Bhutan, 1992–2012

Year	Reform/major event
1992	Royal Decree on sanitation and a latrine for each household – His Majesty the King
1995	Royal Decree on population planning – His Majesty the King
2000	The Royal Charter of Bhutan Health Trust Fund
2002	Medicine and Health Council Act of the Kingdom of Bhutan – National Assembly of Bhutan
2003	The Medicines Act of the Kingdom of Bhutan and formation of the Drug Regulatory Authority – National Assembly of Bhutan
2004	Ratification of WHO Framework Convention on Tobacco Control – National Assembly of Bhutan
2007	Civil Society Organization (CSO) Act promulgated
2008	Constitution of the Kingdom of Bhutan – National Assembly of Bhutan
2010	Tobacco Control Act of Bhutan – Parliament of Bhutan
2010	Tertiary Education Policy – Ministry of Education
2011	National Health Policy – Ministry of Health
2012	University of Medical Sciences Act of Bhutan – Parliament of Bhutan
2012	Framework Guideline for Establishment of Private Selective Diagnostic Services – Ministry of Health
2015	Health-care ICT Master Plan – Ministry of Health

Source: synthesized by the authors

Analysis found that reforms focused mainly in the areas of governance, delivery of health services, institutional and health financing. There have also been reforms in other sectors that impact health, e.g. preservation of forest and environment, strengthening agriculture and food security and improving transport and safety. The rest of this chapter highlights a few of these reforms which have had major consequences on the health systems and health of the population.

Decentralization

The *sui generis* of Bhutanese development, under the leadership of the monarchs, was its ability to extensively plan and implement modern developmental activities, without losing its tradition and traditional values. Throughout its planned developmental period, initiated by their Majesties the Kings, there has been steady and progressive decentralization, with devolution of power from the King to the people (see Chapter 2, section 2.4). This process had gradually matured into a fully democratic system of governance by 2008, and thereafter established the framework for decentralization through the Local Government Act 2009 and Local Government Rules and Regulations 2012 (Sithey G, 2013).

The provisions of the Act decentralize powers and functions from Central to the dzongkhag tshogdu and gewog tshogde. In the health sector, administration and management of secondary and primary health care are devolved to the dzongkhags (districts) and gewogs (sub-districts) (Ministry of Home and Cultural Affairs, Royal Government of Bhutan, 2016). The establishment and the role of district health offices has been instrumental in managing health at the dzongkhag level and in representing health at the local government level. Planning and budgeting of district health services are done at the dzongkhag (district) and at the gewog (block) level which is discussed and endorsed by dzongkhag tshogdu and Gowog tshogde. Construction of BHU-Is and BHU-IIs, sub-post and RCs and indenting of medical supplies are carried out at the district level. The MoH mainly facilitates in mobilizing fund and provides technical support when required.

Local governments have clear and legally identified geographical boundaries over which they exercise their authority (HELVETAS (Swiss Intercoorporation), 2016). However, in some areas, they are not coterminous with BHUs, usually when the villages under one BHU

catchment area but administratively it is under a different gewog. This can have problems for both budget support and service provisions.

Transition to democracy and its impact on health

Bhutan's transition to democracy in 2008 (section 1.3) was not only unique but was a case of a well-planned and long envisioned goal of His Majesty Jigme Singye Wangchuck, the fourth King of Bhutan. The first democratically elected Parliament of Bhutan (National Assembly and National Council) endorsed the 2008 Constitution of Bhutan. The Constitution mandates the State to provide free basic public health services in both modern and traditional medicine (Royal Government of Bhutan, 2008). In line with the Constitution, health services are provided free at the point of service delivery from primary to tertiary level including referrals outside the country when services are not available in the country.

The elected governments are facing difficulties in balancing the needs based on evidence and fiscal capacities with demands of the voters. For instance the first democratically elected government of 2008 had a manifesto to provide three doctors including a gynecologist in every hospital. This was not based on empirical data on maternal mortality, population and patient size but rather responded to the demand of the voters. Consequently, the pledge could not be met (Sithey G, 2013). However, as the political systems and civic participation matures with awareness, education and expectations, it is hoped that the discourse will become more evidence-based in terms of fiscal capacities and prioritization of cost-effectiveness and equity across country. The GNHC is holding discussions with all political parties and also with the people for the 12th FYP, so that people and the party converge their views on national plans irrespective of which party wins the elections.

National health policy

In the absence of consolidated documents for effective implementation of health policies and programmes, the government decided to come up with a National Health Policy document to enforce synergistic health programmes and policies across the country (Ministry of Health, Royal Government of Bhutan, 2011). The National Health Policy is developed according to the guidelines prescribed by the Cabinet "Protocol for Policy Formulation" (Royal Government of Bhutan, 2015b). The National Health Policy was approved through two stages: the Policy conception stage and the Policy formulation and approval stage, with each stage going through

consultative discussions. The MoH initiates a series of consultations to incorporate and accommodate views of relevant stakeholders and policy actors such as CSOs, parliamentarians, local governments, Monastic Bodies, business houses, health workers, etc. at all levels. The final document is endorsed by a high-level committee at the Ministry level. Upon approval from the high-level committee of the Ministry, the policy document is submitted to the GNHC, whereby using the screening tool, the policy is reviewed for its effectiveness and synergies in promoting Gross National Happiness. Once it is certified as favourable to Gross National Happiness, the policy is finally submitted to the Cabinet for approval.

The National Health Policy is the core guiding document for management and delivery of health services in the country, and covers almost all areas of health development. The broad areas included are service provision, human resource, medical products and technologies, health financing, governance, community participation, intersectoral collaboration and public–private partnerships. The policy documents are reviewed periodically as necessary.

Tobacco control

Tobacco consumption in Bhutan is discouraged by religion and its use was banned in government and religious buildings as early as 1651 (Givel M, 2009). Government's efforts to regulate tobacco began in the 1980s and 18 of the 20 districts had already banned the sale of tobacco when Bhutan ratified the WHO Framework Convention on Tobacco Control (FCTC) in 2004, which came into force in 2005. As required by the Convention, Bhutan has so far submitted five reports in 2007, 2010, 2012, 2014 and 2016.

The National Assembly of Bhutan on banning the sale of tobacco in 2004. The resolution banning the sale of tobacco had limitations in enforcement primarily because of the absence of a legislation. Subsequently, tobacco black market flourished and attempts at enforcement were sporadic at best. To address these deficiencies, the Tobacco Control Act was enacted in 2010. The Act essentially bans the sale of all forms of tobacco. Import of tobacco is allowed only for personal use and is limited to 200 cigarette sticks or 30 cigars and up to 150 grams of other types of tobacco. Individuals importing tobacco for personal use have to pay a 200% tax, and possessing tobacco without valid receipt is deemed illegal. Individuals can face up to 3–5 years of immediate imprisonment

without bail if found guilty. Bhutan therefore is the only country in the world with comprehensive ban on the sale of tobacco. Though BNCA is the lead agency, enforcement is usually carried out in collaboration with the customs and police departments. Despite stringent regulations and enforcements in place, the STEPS survey conducted in 2014 found that 24.8% of respondents were currently using tobacco, either smoked or smokeless.

Establishment of regulatory bodies

The Bhutan Essential Medicines Programme was formulated by the MoH in 1986 with the technical and financial support of WHO. The programme became a regional success story ensuring availability and access of essential medicines. The 81st Session of the National Assembly in August 2003 enacted "The Medicines Act of the Kingdom of Bhutan" to control and regulate medicinal products in the country. The DRA was established in June 2004 as mandated by the Act, separating the mandate for services and regulation; thus clearly distinguishing quality and accountability.

The establishment of DRA has strengthened the safety and improved the quality of medicines. Considering the small market size, many products are not registered in Bhutan as the retail pharmacy could not submit the required dossiers and pharmaceutical companies were not interested. This limits the choice for the prescribers to prescribe and the public to use medicines (Drug Regulatory Authority, 2016).

The second regulatory body to be established was the BMHC as mandated by the Bhutan Medical and Health Council Act, which was enacted by the Parliament on 24 July 2002. This Act ensures that medical and allied health practitioners are qualified and skilled to provide safe and quality medical services to the population. At present, there are 4626 registered health professionals. BMHC also mandates continuing medical education (CME) for doctors and continuing professional development for other health workers in Bhutan promoting quality of care to the patients and instilling professionalism among health workers (Bhutan Medical and Health Council, Royal Government of Bhutan, 2017). Despite limited human resource, the council has implemented these provisions and instituted measures to certify professional education and training.

Establishment of Royal Institutions for Medical and Health Sciences

The RIHS was established in 1974 to produce basic health professionals in nursing, paramedics and technicians in allopathic medicine. Similarly,

formal training of Drungtshos (traditional medicine doctors) was started in 1968 at the National Institute of Traditional Medicine. Before the recent establishment of the medical university, these two were the only institutes which were the backbone of health workforce in the country, and almost all health workers except medical doctors were graduates from these institutes.

Although the initial aspiration of the RGoB was to set up a medical college to address the acute shortages of medical doctors in Bhutan, the project was constrained by the absence of faculty to conduct the training programme and lack of resources. Hence, a more feasible and less costly approach was taken by starting a postgraduate residency programme with JDWNRH as the teaching hospital. The need for a postgraduate medical institute was first perceived in 2006 in the people's project initiated by His Majesty, Jigme Khesar Namgyal Wangchuck, the fifth King of Bhutan. Befitting the contributions made by the Kings to the people of Bhutan, the university was later renamed to honour the vision of the fifth King, as KGUMSB. Vision 2020 "Vision for peace, prosperity and happiness", published in 1999, entails a path for self-reliance in health workforce to ensure that "health of the Bhutanese is in the hands of Bhutanese" (Gross National Happiness Commission, Royal Government of Bhutan, 1999). The University of Medical Sciences Act 2012, Bhutan Medical and Health Council Act and the Tertiary Education Policy, 2010 provided the legal and policy framework for the establishment of academic institutions including the development and professionalism of the health workforce. With these legal frameworks in place, KGUMSB was formerly launched in 2015 by Her Majesty The Gyaltsuen Jetsun Pema Wangchuck, The Queen of Bhutan (Khesar Gyalpo University of Medical Sciences of Bhutan, 2017).

As per the provisions of the Act, KGUMSB took over the RIHS and the National Institute of Traditional Medicine and renamed them as the FoNPH and Faculty of Traditional Medicine, respectively. These two institutes formed the backbone for training health workforce and were further strengthened to serve as the founding blocks of KGUMSB.

These two faculties conduct research activities and provide degree, diploma and short courses as per the need of the country. In addition, the Faculty of Postgraduate Medicine was established, which provides residency programmes in anaesthesiology, internal medicine, surgery,

ophthalmology, gynecology and paediatrics; it plans to expand into other critical areas such as general practice, orthopaedics and radiology.

Growth of civil society

Bhutan has always recognized the importance of multisectoral approach to heath agenda (Chapter 2.6). Although the government enacted the Civil Society Organization (CSO) Act in 2007 and corresponding Rules and Regulations in 2010, the principle of solidarity and voluntarism has been an integral part of the traditional Bhutanese society. Unique to Bhutan is the cultural institution of welfare, popularly termed in the local language as "kidu", a Royal prerogative provided for the well-being of the people, particularly the most vulnerable sections of society (Royal Government of Bhutan, 2007), which is now enshrined in the Constitution as a responsibility of the King.

In addition to acting as a mechanism to provide space for public participation in decision-making, civil society in Bhutan also supports the developmental philosophy of Gross National Happiness. Chapter 2, section 4 of the CSO Act distinguishes between two types of CSOs in Bhutan: public benefit organizations (PBOs)[4] and mutual benefit organizations (MBOs)[5]. Currently, there are 47 registered CSOs (35 PBOs and 12 MBOs) with all health-related CSOs being PBOs. CSOs play an important role in complementing the government in education, health, gender equality and women empowerment, environmental and cultural preservation, as well as private sector development.

In the case of health, a majority of CSOs provide care and support services to enhance health and well-being of the population. Over the past five years, some CSOs have been formally collaborating with the MoH through various vertical programmes (Asian Development Bank, 2013), mainly with the division of NCDs and the Communicable Diseases Division (CDD), see Table 6.2.

4 Public benefit organizations (PBOs) are CSOs that are established to benefit either at community level or the society as a whole].

5 Mutual benefit organizations (MBOs) are CSOs that are established to advance the shared interests of their members or supporters, such as to advance the shared interests of people working in a particular profession, the businesses engaged in a particular industry, youth studying in a university, or people who are interested in a particular cultural activity, sport or hobby.

Table 6.2 CSOs established during 2010–2015, which collaborate with MoH

National PBOs	Focus area	Year of registration	MoH partner
Disability Association of Bhutan	Disability	2010	NCD-DPP
Draktshog	Empowerment	2010	NCD-DPP
Lhaksam	HIV/AIDS	2010	CDD-NACP
RENEW	GBV/HIV	2010	CDD-NACP
Youth Development Fund	HIV	2010	CDD-NACP
Tarayana Foundation	TB/nutrition	2010	CDD-NTP
Ability Bhutan	Disability	2011	NCD-DPP
Kidney Foundation	Renal disease	2012	NCD-LSRDP
Bhutan Cancer Society	Cancer	2015	NCD-RHP

Notes: CSO: civil society organization; MoH: Ministry of Health; PBO: public benefit organization; TB: tuberculosis; NCD: noncommunicable disease; CDD: Communicable Diseases Division; NACP: National AIDS Control Programme; NTP: National Tuberculosis Programme; LSRDP: Lifestyle-related Diseases Control Programme; GBV: Gender Based Violence; DPP: Druk Holding and Investments Private Sector Partnership (DPP), RHP: Religion and Health Project

Source: Civil Society Organizations Authority, 2017

National health budget allocation

Since the introduction of the modern health-care system in the 1960s, the RGoB has always maintained that all operating costs including procurement of essential medicines shall be borne by the State. The donors' support was channeled for capital investment such as public health initiatives, infrastructure development and human resource development whereas the government met routine running costs including staff salaries, per diem, and procurement of consumable and medicines.

This was carefully designed to enable continuity of functioning of health facilities particularly when a donor withdraws support. The government allocates 7–8% of the total outlay to health for provision of equitable and free health-care services including referrals abroad (Ministry of Finance, Royal Government of Bhutan, 2016b). Although the THE as percentage of GDP remains at 3–5% (Chapter 3), there has been an exponential increase in absolute budget allocation over the past 50 years; increasing from Nu 3.1 million in the 1st FYP (1961–1966) to Nu 13 952.96 million in the 11th FYP (2013–2018) (Chapter 3). External resources, though declining recently, have played an important role in financing health-care services in Bhutan (Chapter 3). The reliance on external funding to finance health has contributed to achieving several MDGs. According to the WHO Global Health Expenditure Database, the external resources as THE had reduced from 21% in 2000 to 6% in 2014. With Bhutan graduating from

a low-income to a lower middle-income country, the external resources in health sector are expected to decline further. The reducing trend of external funding and limited fiscal space for health pose a challenge as to how Bhutan can sustain the current practice of free health care in the context of cost pressure from technology advancement and high expectation of the citizens. This warrants in-depth examination, and consensus of society on policy choices.

Bhutan Health Trust Fund (BHTF)

One of the major reforms initiated by the RGoB to sustain perpetual free health-care delivery was the establishment of BHTF (see also Chapter 3 on financing).

BHTF was formally launched on 12 May 1998 at the WHO Headquarters in Geneva. Later in August 2000, a Royal Charter was issued to establish BHTF as an endowment fund to ensure continued and uninterrupted supply of core primary health-care supplies of vaccines, essential medicines and related equipment for all times to come. Capitalization of BHTF is done through contributions from foundations, multilateral organizations, bilateral partners, NGOs, donor partners and private citizens with matching contributions from the RGoB on a one-to-one basis. This principle amply demonstrates the firm commitment of the Royal Government for the development and success of the Fund and to sustain funding of medicines. BHTF also mobilizes funds within the country through the "Move for Health" programme. This initiative was led by the former Minister of Health Lyonpo Sangay Ngedup where a seven-member team walked from the eastern part of country to the capital city in 2002. The health walk programme was restarted in 2013 to reinvigorate BHTF's resource mobilization effort. The health walk is undertaken not only to mobilize funds but also to create awareness on healthy living, hygiene, sanitation, preventable and communicable diseases, alcoholism and health hazards as well as physical activity. A substantial amount was raised through the health walk programme.

The role of BHTF is increasingly becoming important in view of the decline in international assistance and soaring health-care costs. Since its operation in 2003, BHTF has progressively contributed to the procurement of vaccines, including nationwide introduction of measles-rubella vaccine, essential medicines, needles and syringes. The first operation of the Fund started in the fiscal year 2003–2004 by funding procurement of hepatitis B vaccines. The Fund began financing all essential medicines from the

fiscal year 2014–2015, which is around Nu. 180 million. Since 2016, after phasing out of the Gavi fund, BHTF will spend about USD 122 000 annually on the procurement of pentavalent vaccine alone.

Table 6.3 Cost estimates of vaccines and medicines to be funded by BHTF (in million USDs)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total cost of vaccines	0.90	1.03	1.45	2.26	2.60	2.88	3.13	3.45	3.79	4.17
• Donor funding	0.56	0.66	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00
• BHTF funding	0.34	0.37	0.73	2.26	2.60	2.88	3.13	3.45	3.79	4.17
Total cost of medicines	3.86	4.25	4.69	5.19	5.75	6.37	7.06	7.84	8.70	9.67
• Donor funding	0.49	0.52	0.54	0.23	0.25	0.28	0.30	0.34	0.37	0.41
• BHTF funding	3.37	3.73	4.14	4.96	5.50	6.10	6.76	7.50	8.33	9.27
BHTF funding for vaccines and medicines	3.71	4.10	4.87	7.22	8.10	8.98	9.89	10.95	3.79	13.44

Sources: Bhutan Health Trust Fund and Vaccine Preventable Disease Programme

The role of BHTF in financing health is bound to grow and the Fund may also have to support public health programmes as support from donors diminishes. For instance, Global Fund's support to HIV/AIDS, TB and malaria is increasingly becoming difficult due to Bhutan's graduation to a middle-income country. BHTF is gradually becoming a major player in financing free health care in Bhutan. In the coming years, the government will have to further strengthen BHTF and explore alternative options for financing health in response to diminishing donor support. Developing innovative health financing strategies to mobilize additional resources will be essential to sustain free health care in Bhutan.

Special consultation service and private diagnostic service

The special consultation service (SCS) was introduced at JDWNRH on 14 October 2010 as a one-year pilot project, based on a recommendation of the report following an opinion poll conducted by the Research and Epidemiology Unit of the MoH. The SCS was defined as a non-emergency clinical service to be provided after the normal working hours (9 a.m.–3 p.m.) to patients who are willing to pay for consultation, basic investigations and minor OPD procedures using the available government facilities at the hospital. The following objectives were clearly stated and deliberated in consultation with the key partners.

Objectives of the SCS:

- To decongest the OPD at JDWNRH during the normal working hours;
- To give choice to the people who are willing to pay;
- To reduce waiting time to see doctors;
- To reduce time for getting diagnostic reports/results;
- To increase doctor–patient consultation time;
- To increase utilization of limited clinical expertise available in the country; and
- To incentivize health-care providers.

While the objectives are clear, bulk of patients who opted for the service were those who wanted medical certificates for scholarships and employment. Though the service was purely voluntary, paradoxically, many beneficiaries are unemployed who do not have a regular income. Since the inception and implementation of the SCS, much of the discussion within and outside the health system revolved around improving accessibility, e.g. reducing the waiting times for medical attention and treatment. At the same time, there was an argument on equitable access as well as OOP expenditure of patients. The year-end evaluation of the SCS also supported the move towards choice-based financing of health services. Later, this resulted in the development of framework guidelines for establishment of private selective diagnostic services by the MoH.

With the framework in place, the first privately owned diagnostic centre was opened in Thimphu on 30 June 2012, paving the way for private sector involvement in delivery of health services. Even though there is no roadmap to enhance or scale up the current private diagnostic centres, national-level discussions and deliberations are concerned with the growing expenditure of health services due to epidemiological and demographic transitions and medical technological advancement.

At present, sustainability of the free health services is in the forefront of developmental discussion as Bhutan anticipates a phased transitioning from donor support. It has also been opined that better evaluation of quality and cost-effectiveness would add value to the current system. Introduction of stronger gatekeeping mechanisms and expansion of competencies in primary care would also prevent unnecessary and expensive procedures.

6.2 Future development

Numerous challenges confront the health sector which will force changes in the current health service delivery model (Yangchen S et al., 2016). The government has taken cognizance of some of the core challenges and has initiated reforms, albeit at a slow pace. A number of alternative pathways have already been established to deliver health in addition to the government health services.

National agenda – The 12th Five-Year Plan

Sustaining free health care is a priority for future health-care system of Bhutan. To do so, the health sector will have to explore alternative options to reduce the burden on government resources. Currently, the 12th FYP is in initial discussion phase and is expected to be finalized by December 2017 (Gross National Happiness Commission, Royal Government of Bhutan, 2016).

The GNHC is spearheading discussions and sensitizations through social media and also through discussions with various sectors and agencies including political parties, private, NGOs and government agencies. After this thorough discussion, it is expected that the documents will be adopted by the ruling government without much amendments. Unlike the 11th FYP, which was based on the four pillars of Gross National Happiness, the 12th FYP will be guided by the nine domains of Gross National Happiness as the main planning approaches. This will enable the GNHC to actually measure the various aspects of Gross National Happiness in terms of the nine domains.

Taking inspiration from His Majesty's speech at the 11th Convocation of the Royal University of Bhutan on 7 June 2016: "What is our end objective when we talk of Gross National Happiness? It is to ensure that we have a **just, equal and harmonious** society. When our people are able to live Happy and Secure Lives, we know that we have achieved our objectives. That is what Gross National Happiness means", the working goal for the 12th FYP is "A **just, harmonious and a self-reliant society**".

All the key result areas are grouped under relevant domains to measure the domain effect. For example, under the health domain, some of the NKRAs are: enhanced food and nutrition security, health, increasing safety and caring society, reducing poverty and inequality, improved quality of life and sustainability of human settlements. The 12th FYP will address the key challenges faced by health which are: delivering quality

health care, supplying adequate workforce, tackling noncommunicable, emerging and re-emerging infectious disease surveillance and response, and sustaining free health-care services. Although communicable diseases are equally important, the 12th FYP tends to focus more on the increasing burden of NCDs. Other important areas that the 12th FYP focuses are self-reliance, equity, research and development, quality improvement in services and education. In view of the forthcoming plan the respective section highlights the reforms that are currently in the process of implementation and the way forward for achieving sustainable health services for future generations.

Governance and organizational reforms

Subsequent to the organizational development exercise carried out by the RCSC, the MoH has undergone many structural changes. There are additional departments such as the DoMSHI and the Directorate of Services as well as a progressive shift in the role of MoH from an implementing agency to the one with mandates of more regulatory, policy and oversight in the context of full devolution to the district level. JDWNRH has been provided full autonomy and district health officers are more empowered to carry out health activities in their respective districts. The MoH has drafted a Health Bill, which is currently under discussion with stakeholders. Once the bill is enacted, it will provide the legal authority for relevant agencies to perform various health initiatives and reforms.

Financing of health services

From the fiscal year 2015–2016, the government has started fully financing of essential medicines and pentavalent vaccine from the BHTF. In recent years, government had also started gradual co-financing of the essential reproductive health commodities and by the end of the 11th FYP, the government plans to finance all essential reproductive health commodities from government budget. The important milestone was transferring revenue collected as health contribution from all salaried people in country to the BHTF for financing and procurement of all essential medicines by the government from the fiscal year 2014–2015 onwards.

To increase the budget size, the MoH may have to advocate for tax collected by the Department of Revenue on harmful products such as tobacco and alcohol and contribute to BHTF. In addition, government may have to initiate taxes on sugary products and food items containing trans-

fats. This innovative financing for health would increase the MoH revenue which could be used to address the growing burden of NCDs while discouraging consumption of harmful products.

Increasing cost of referrals abroad is a concern in view of sustaining free health care. The referral cost amounts to nearly 5% of THE (Chapter 3). In this regard, the government continues to fill the vacancies in posts of specialist doctors and technicians. This will improve national curative and diagnostic capacity, provide more timely treatment and reduce cost of referrals abroad. Importantly, there is a need to strengthen best buy interventions for primary prevention of certain NCDs to reduce prevalence of cancers and other NCDs which are commonly referred aboard (Chapter 5).

In 2011–2013, the government investment in preventive care stood at 2–3% of the government health expenditure (Chapter 3), more investment in prevention and health promotion is urgently required. Otherwise, the pressure on the BHTF would increase as more people would become sick due to demographical and epidemiological changes.

To ensure that the BHTF remains the perpetual funding mechanism for health, it is important to increase the size of its main corpus. The current negotiation with ADB to donate USD 10 million to the BHTF, if materialized, would boost the corpus fund. The government should also consider increasing the fiscal space through tax on commodities harmful to health, as well as other novel taxations such as Tobin tax from financial transactions and invest in the BHTF. Bhutan should also strive to reduce cost escalation of commodities through pooled procurement at the regional level and vigorous HTAs.

Introduction of voluntary cost-sharing of health services

The initiation of the SCS and the private diagnostic services together with other factors, such as people's expectation, have raised the demand for alternative choices of providers. There has been a call by people who can afford and willing to pay and medical professionals outside the civil service to allow establishment of full-fledged private practice. The outsourcing of non-clinical and selective diagnostic services and charging user fees for non-essential health services are enshrined in the National Health Policy. However, there is neither a clear definition of essential and non-essential services nor a proper procedure in making such a decision. At present, few non-clinical services at JDWNRH are outsourced. Since

user charges are currently being imposed for some dental services and private cabins, there is scope for their expansion to other services.

Insurance and involvement of the private sector

While the MoH has guarded the free health-care services and OOP payment by the public has been restricted to only SCS, the economic development policy encourages greater involvement of the private sector through FDI in high-end health-care and wellness services. Despite this policy, there has been no FDI in health, possibly due to the small market size. Also, no regulatory procedures are in place for the implementation of this policy.

However, a number of private diagnostic clinics have been established. There are currently 13 private diagnostic centres in the country located at different major towns. The establishment of such diagnostic centres may be complementing free health service delivery, yet its pros and cons may be assessed in the light of potential supplier-induced demand that may result in high OOP in the near future.

Although involvement of the private sector in health is inevitable with the government endorsing the establishment of high-end hospitals in its economic development policy, concerns abound around equity in access and impact on internal shifting of health professionals. Lack of regulatory framework, procedures and capacity as well as inexperience indicate lack of preparedness within the BMHC and MoH for such major reforms. A majority of private ventures are likely to be in major urban centres, which could potentially result in pulling highly qualified specialists from the government sector into the private sector and making their services available only for those who can afford them. Bhutan's health system is based on a strong public health approach and privatization may affect these principles. This is an opportune time to deliberate these issues and to plan realistically and be prepared for any eventuality. Monitoring and evaluation of the impact of the private sector on development of the health system in Bhutan is urgently required on various issues particularly on equity in access, financial risk protection and efficiency.

Although in its infancy, the voluntary health insurance started by the RICBL in 2012 covers around 1% of the population (Ministry of Health, Royal Government of Bhutan, 2013c). This scheme is mainly provided to formal sector employees, some affluent private individuals and also to the large number of students studying abroad particularly in India.

WHO (World Health Report 2010) recommends countries to have innovative funding mechanisms such as social health insurance as a path to UHC (World Health Organization, 2010). However, apart from the BHTF, other modalities of health financing have not been discussed so far though the issues of rising health expenditure and sustainability have often been mentioned in policy and academic documents. There is a need to start a discourse on models of alternative funding, which are feasible and suitable for Bhutan and in keeping with the constitutional requirements.

Reorganization of health infrastructure and services in addressing demographic shift

Population movement within the country is becoming an important policy issue with consequences on health services. There is rapid rural to urban migration leading to dwindling population in many rural areas across the country. There has also been substantial migration from east to west resulting in some of the villages in the eastern Bhutan becoming nearly empty and raising the issue of "Gung Tong" (empty houses). This has led to low utilization and increase in cost of health services in these areas. The MoE has already started consolidation of schools due to decreased enrolments in some villages. The construction of a wide network of roads and increasing numbers of vehicles has also made access to health centres much quicker. Introduction of a helicopter ambulance service and strengthening of emergency services through free-toll number 112 have further improved access to tertiary and emergency services. Due to these rapid changes, debate has already started on whether to build new health centres or to consolidate by closing centres that have fewer clients. The new demographic shifts will be better understood from the results of the upcoming population and housing census, which will enable better decisions to be made on locating functional health centres.

While it may be prudent to close health facilities with low catchment population, care must be taken not to deny access to those still living in the area. Lack of good health facilities might further promote rural–urban migration, which is contrary to the government policy. A careful analysis of service utility, road connectivity, communication services and cost-efficiency must be made to evolve a new strategy for future health infrastructure development and service delivery.

Addressing epidemiological transition

Bhutan is tackling the triple burden of disease – communicable infectious disease, non-communicable lifestyle-related diseases and diseases related to injuries, nutrition and maternal mortality. Through successful implementation of the vaccination programme, coverage stands at over 95% of the population. Most of childhood infectious diseases have largely been eliminated or reduced to an extent that it is not a public health concern. However, there are a host of other emerging and re-emerging infections that are causing increasing morbidity and mortality at a faster and more complex pace. The ease of travel and increasing mobility within and across countries augmented with a porous border have made the spread of infectious diseases faster and efforts to control and prevent them more difficult. Globally, occurrence of influenza pandemic, MERS, Ebola, Zika, dengue have become more frequent and spread across continents faster. A small country like Bhutan with small population size is vulnerable, given the level of preparedness and limited specialist facilities. The government will have to strengthen preparedness through improved facilities and strengthening of its surveillance systems.

Although rapid advances have been made in preventing and treating many infectious diseases at all levels of health care, improved laboratory technologies have made identification of pathogens easier and faster. Newer antibiotics have enabled more effective treatment to be given and have reduced morbidity and mortality to a great extent. However, the greatest danger in the coming years stems from overuse and/or irrational use of antibiotics; it poses immense risk of spread of more potent and deadly multiple antibiotic resistance bacteria strains. Agencies need to keep abreast of events around the world and the emergence of resistance, which could potentially impact resistance patterns in the country.

NCDs, related to lifestyle changes is already recognized as a huge burden on resources compelling the MoH to initiate lifestyle-related disease programme under the NCD division of the DoPH. High costs associated with treatment amidst the demographic transition become another significant challenge in the years to come. While health promotion strategies are being planned and new initiatives are being taken to address lifestyle-related diseases, the government in the future must invest more in the health sector and renew public health measures to promote healthy lifestyles and prevent NCDs. With Bhutan poised for further economic development with the escalation in the hydropower sector, it is expected that lifestyle of many Bhutanese will change into a

more sedentary one with more risks for NCDs. Future policy directives and programme planning must take into account risk factors, such as alcohol consumption, tobacco, doma, unhealthy dietary practices, exposure to harmful chemicals, environmental pollution, urban living and radiation. Although there is huge discourse on the menace of alcohol that has affected every individual, family and the society, the debates are not commensurate by actions. Contrary to MoH advocacy, other parts of the government have approved further licenses for alcohol production.

The number of road traffic injuries has exponentially increased with the number of imported vehicles and building wide networks of roads in the country. This trend is expected to increase with road traffic accidents contributing significantly to morbidity and mortality. Other injuries related to sports and violence, although small, are already a growing trend especially in urban areas.

Strengthening health-care delivery system

Bhutan's developmental policies, which focus on improving the happiness of the people, are already aligned with the SDGs. However, to achieve future national and international goals, the country requires a critical mass of health professionals. Currently, Bhutan is faced with an acute shortage of health workforce especially front-line workers such as doctors, nurses and other paramedical health professionals. An analysis of the trend of the past five decades shows an increase in the number of health professionals. The numbers are expected to rise exponentially as a result of the increasing number of MBBS scholarships by the government and private candidates. A positive impact on various health outcomes by increasing the ratio of doctors and nurses to the population being served is well demonstrated (World Health Organization, 2006). While the international ratio based on population may serve as an indicator, Bhutan's geographical terrain and dispersion of population have to be taken into account in deciding the true human resource requirements of the country. Due to the size of the population, investment and development of specialized care by specialists would need evidence to support decision-making of policies.

Traditional medicine has been and is an important part of the Bhutanese health-care system not only for promoting health and wellbeing but also as an economic livelihood for the people. The allopathic and traditional health-care delivery systems are housed in the same hospital providing people freedom to choose between the two health-care services. While

both systems are housed under the same roof, cross-referral in an integrated and systematic manner has been a challenge. Traditional medicine could be useful and complement allopathic medicine particularly in the treatment of chronic ailments, lifestyle, autoimmune diseases and mental health (Wangchuk P et al., 2007). Considering the rich biodiversity of Bhutan with abundant medicinal plants and historical health benefits of the Bhutanese traditional medicine, there is a huge potential to explore and research into traditional medicine and biotechnology.

Beside the number of health workers, the quality of health care has always been a critical subject of debate and discussion at all levels, from personal conversations to highest decision-making forums. While health service delivery in district hospitals and BHUs has largely escaped criticism, the services at the referral hospitals and in particular at JDWNRH have come under scrutiny after numerous complaints and high expectations of society. The hospital and the limited number of specialist doctors are overstretched as demand for specialist care has increased amidst failure of the gatekeeping mechanism by the filter clinics and referral system. The functions of screening process, need for general practitioners and family physicians to be the gatekeepers and cater to a more health literate society, strengthening referrals to specialists within and outside the country, need for a district hospital in Thimphu and completely separating JDWNRH to function as the apex hospital are some of the decisions that need to be debated and made in the coming years. KGUMSB has already taken the mantle to address the human resource component in terms of training and capacity building, which will need further strengthening. The increasing demand for super-specialist services and advanced health technology to treat a myriad of diseases will contribute to improving quality; however, they must be balanced with affordability and rationalization of scarce resources. While the university needs to expand its institutional capacity to train Bachelor level nursing and public health courses and even aspire to start the undergraduate medical course, or expand postgraduate courses in various health sciences, it and the country need to be cognizant of the employability of graduates. The discourse should be whether the university will supply according to the demand or should the university educate to generate employment and produce as per its capacity. The other option is to make the university internationally recognized to attract foreign students and make Bhutan the hub of education, research and development in line with the university's strategic aims.

7 Assessment of the health system

Chapter summary

The predominantly public financed and managed health system in Bhutan has grown remarkably in the past five and a half decades. With overwhelming presence of the government in health care as its fundamental strength, health policies have evolved from an initial emphasis on expanding coverage to recent measures on strengthening quality of care and equity. Similarly, population health outcomes have significantly improved with Bhutan among the global top performers in life expectancy gains in the past 40 years.

The outlook for financial protection stands positive with largely progressive health financing framework and minimal burden posed by health expenditure on household livelihood.

Despite the difficult geographical terrain and dispersed population settlements, access to health services has remarkably improved with higher utilization of primary level care and more rural residents expressing satisfaction with services. New initiatives such as the HHC, SCS, private diagnostic centres and autonomy of the national referral hospital hold potential to further improve access and user experience of health services. Monitoring of quality and safety in health services needs significant push. Similarly, variations in efficiency levels among different districts and health facilities highlight the potential for gains in overall efficiency.

Health equity requires further attention. Disparities exist in access to and utilization of health services as well as health outcomes between urban and rural areas, income levels, districts and between western, central and eastern regions, particularly in areas requiring multisector response to health, which should prompt policy interventions.

Major progress has been made in making the health system more accountable and transparent. A more participatory process in the prioritization of benefit package would not just help the system becoming more transparent and accountable, but would also facilitate control of health-care costs.

7.1 Stated objectives of the health system

The development objectives outlined in the series of FYPs have reinforced the overarching goal of the health system to maintain universal access to services while focusing on quality and equity. Till the end of the 8th FYP, emphasis was on increasing access to health care (Gross National Happiness Commission, Royal Government of Bhutan, 1997). This led to huge expansion of health facilities across the country. Since then, the focus has shifted to consolidation of infrastructure, quality improvement and closer attention to equity of access and outcomes.

Over the past five and a half decades of planned socioeconomic development, Bhutan has developed from an embryonic health system, with two hospitals and 11 dispensaries and three doctors in 1961 (Tobgay T et al., 2011b) to a closely knit network of 264 health facilities supported by a rich pool of health workers and clinicians. A Joint Sector Review attributed the remarkable development in the health sector to the sustained focus on primary health-care approach, concern with equity and expansion of coverage (Ministry of Health, Royal Government of Bhutan, 2009). Having developed a comprehensive physical network of health infrastructure, the health system has now embraced the issues of quality and equity on a more serious footing, having officially adopted the UHC approach. Sustainability of the predominantly public-driven health system is increasingly featured in health policy dialogue and identified as a critical goal. The current (11th) FYP (2013–2018) of the health sector has emphasized, as its objective, strengthening UHC. While cautioning on inadequate services for NCDs which may not provide adequate financial protection, an assessment revealed that Bhutan stands on a well-established pathway to UHC (Sharma J et al., 2014).

National institutions and mechanisms have significantly supported the translation of these goals and objectives. Royal Kashos (edicts), religious bodies and multisectoral national commissions have supported interventions for priority health issues. Bhutan was the first country to ban the sale of tobacco through a national legislative process (Royal Government of Bhutan, 2010). The Gross National Happiness policy screening tool[6] advocates for screening of all policies to ensure that they promote health.

6 See http://www.gnhc.gov.bt/ for further discussions on the tool

The RGoB continues to have an overwhelming presence in the health system, having largely taken care of both financing and provision of health care. Such engagement of the government in health care, then and now, represents the fundamental strength of the Bhutanese health system.

7.2 Financial protection and equity in financing

As a predominantly public financed and delivered health system, universal in scope and with public health services provided free of charge in government health services, Bhutan has made excellent progress towards UHC. The entire population is covered under the public health system. A comprehensive range of health services available in the country is provided except for cosmetic and some dental services. The range of free health services includes, upon recommendation of a committee of specialists, sponsored treatment abroad.

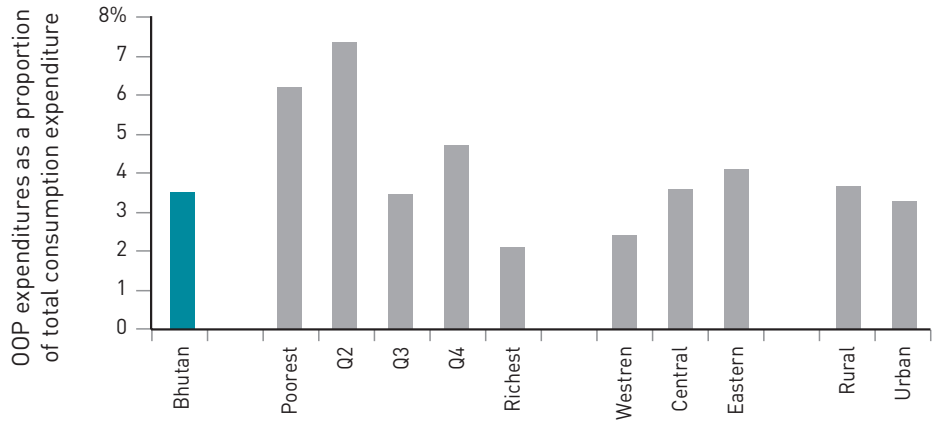
The role of the private sector in health financing and delivery is a recent phenomenon and insignificant in scale. Private sector engagement in health is limited to a few diagnostic centres, private retail pharmacies in major district towns and, of late, a small health insurance market and off-hour services provided by government physicians using public health facilities.

This framework of health delivery system has offered high levels of financial risk protection to the population. OOP expenditure for health stands low by regional and global comparisons (see Chapter 3). In 2014, direct household payments for health in Bhutan was 12% of THE, after a steady decline in the period 1995–2010, owing to enhanced access to government health services. This gradual increase in household expenditure for health may be attributed to the availability of choice owing to the introduction of private sector engagement in health and the affluent families increasingly availing health services abroad, notably in India and Thailand. Gaps in coverage, particularly in the remote areas and the associated limitations in the range and depth of benefits along with absence of a rigorous referral gatekeeping mechanism, have contributed to indirect expenditure (notably transportation cost) for health care.

The outlook for financial protection has been positive. The three rounds of Bhutan Living Standards Survey have estimated the average household spending on health care at 2.9% (2003), 1.52% (2007) and 6.7% (2012) of total consumption expenditure. Owing to inconsistencies in the definition and measurement of household OOP expenditure over these three

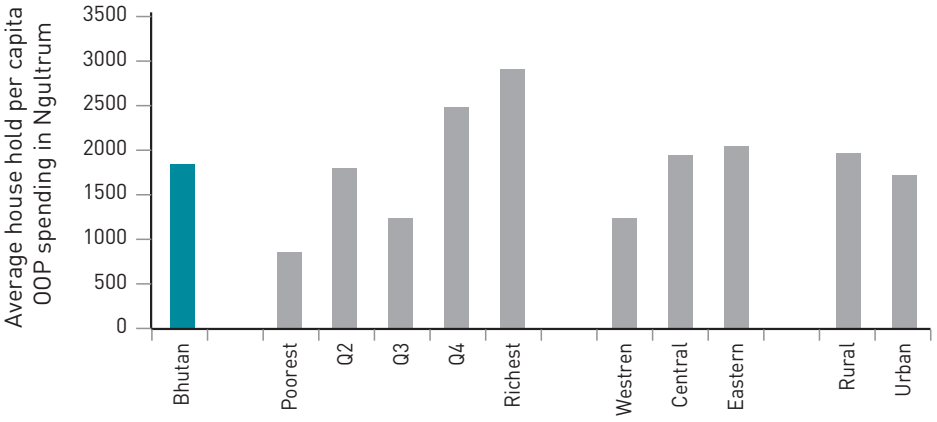
rounds, it is difficult to estimate and establish the trend. The 2012 figure was clearly an overestimation as it incorporated expenditures that would typically not qualify as health expenditure such as "rimdo" or puja/prayer ceremonies, which occupied about half the OOP basket. Adjusting the micro data and the variables included, the average household spending on health care for 2012 was estimated at 3.5% of total consumption expenditure (Figure 7.1). The average per capita household spending on health care was Nu 1851 (USD 28.5 at 2015 average exchange rate) progressively increasing along the consumption quintiles (Figure 7.2).

Figure 7.1 Out-of-pocket expenditure on health (including transportation) as a proportion of total consumption expenditure by consumption quintile and geography



Source: Sharma J, 2016

Figure 7.2 Direct payments for health (including transportation) by consumption quintile and geography



Note: 1 USD=65 Ngultrum (2016 average)
Source: Sharma J, 2016

Health financing in Bhutan is heavily reliant on general government revenue and a major share of direct tax in all financing sources. While the overall health financing framework appears progressive, the increasing trend in direct household payments and the emerging health insurance market would warrant closer monitoring of equity in health financing in terms of financial contribution and benefit incident analysis in the future.

7.3 User experience and equity of access to health care

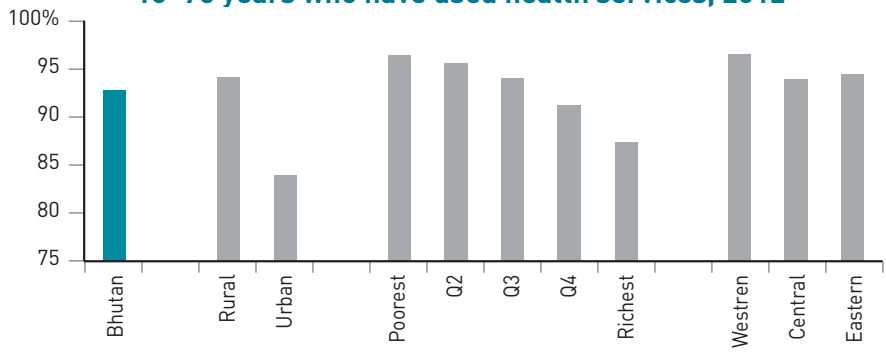
7.3.1 User experience

As per the Gross National Happiness Survey 2010, 93.1% of Bhutanese were satisfied with the services received from the health-care providers. More rural residents (94.4%), who mostly access lower level health facilities, reported satisfaction with the health services compared to urban residents (89.6%).

More updated data of the National Health Survey 2012 revealed that:

- 62.5% of Bhutanese aged 10–75 years visited a health facility during the recall period of one year. Of these, 92.1% were generally satisfied with the services received (Figure 7.3).
- The proportion of population who were satisfied with health services was higher among rural residents (94.2%) as compared to the urban counterparts (84%).
- 38.2% of Bhutanese households visited BHU-IIs, while 33.3% visited district hospitals, 15.9% visited referral hospitals, 9% visited BHU-Is, and 3.6% visited military hospitals. The most commonly cited reason for visiting a health facility was because it was "most accessible". Those who visited BHU-IIs were the most satisfied followed by those who visited BHU-Is.

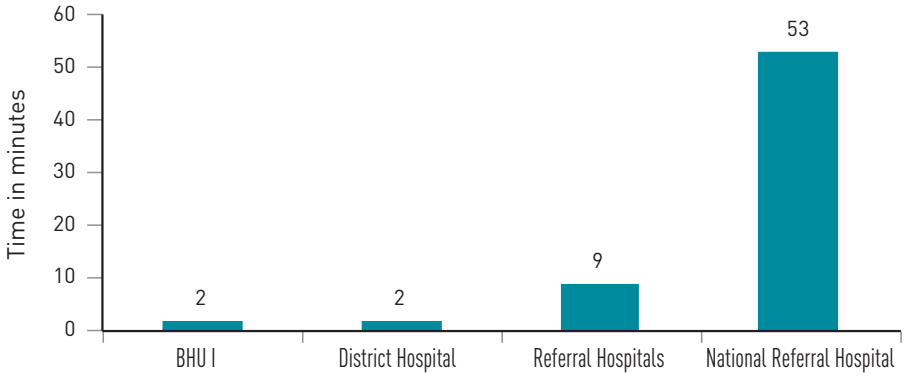
Figure 7.3 User satisfaction with health services by Bhutanese aged 10–75 years who have used health services, 2012



Source: Ministry of Health, Royal Government of Bhutan, 2014

The nationwide OPD waiting time[7] was 20 minutes in 2015; higher waiting times were recorded with increasing level of health facilities (Figure 7.4).

Figure 7.4 Average OPD waiting time (in minutes) at BHU-Is, district hospitals and referral hospitals, 2015



Source: Ministry of Health, Royal Government of Bhutan, 2016b

Both sources of data provide a similar pattern of high user satisfaction; user satisfaction was reported higher among the rural population and among the lower quintiles despite the limitations in coverage and access to higher levels of care. These may be due to a number of factors such as shorter waiting time (Figure 7.4) and closer relationship among health workers and the communities they serve. There is generally lower expectations and higher appreciation of free health services in rural areas. The urban and affluent are more literate, aware and, owing to their exposure to private health services in nearby countries, demand better quality and client-friendly services.

The most substantive reform initiative to improve user experience in accessing health services has been the introduction of SCS. The SCS were initiated to decongest outpatient crowding during the normal hospital hours and to provide choice for people willing to pay and avail their choice of health-care provider at their convenient time. The service was initially started in the national referral hospital in the capital city, Thimphu. An independent assessment reported a shorter waiting time

7 The MoH defines OPD waiting time as the time taken by a patient from reception till examination by a health professional in the chamber. OPD waiting times are monitored twice a year at the national referral hospital and monthly for district hospitals and BHUs through sampled patients. A routine monitoring system would provide more robust information but that will pose issues of data quality and logistics.

and higher level of patient satisfaction including adequate time for consultation and interaction with the service provider (Ministry of Health, Royal Government of Bhutan, 2012). A total of 30 713 patients attended the special consultation clinic in 2015, which is about 5% of the total outpatient attendance (Ministry of Health, Royal Government of Bhutan, 2016b). While expansion of this service to other hospitals, particularly those in border and more urbanized towns, was initially planned, due to issues of human resource and logistics, SCS is limited to Thimphu, Phuntsholing and Gelephu.

Similarly, selective diagnostic services were opened for the private sector participation at four most populous and border towns such as Thimphu, Phuntsholing, Gelephu and Samdrup Jongkhar to decongest government hospitals, migrant labour screening (tuberculosis, malaria, HIV/STIs and other routine health examinations) and provide more options for the people to avail health services in the country. Currently, a total of 13 private diagnostic centres are in operation. There are anecdotal reports of substantially reduced workloads in government hospitals, particularly for migrant labour screening services, after introduction of these private centres.

The BMHC has been established to regulate and safeguard human health from harmful medical and health practices. The council regulates medical and health profession in all its aspects especially in respect of ethics and related matters. The council also ensures uniform standards of education and training for all categories of medical and health professionals. Respect for dignity and informed consent of patients as well as confidentiality of patient information are emphasized by the National Health Policy.

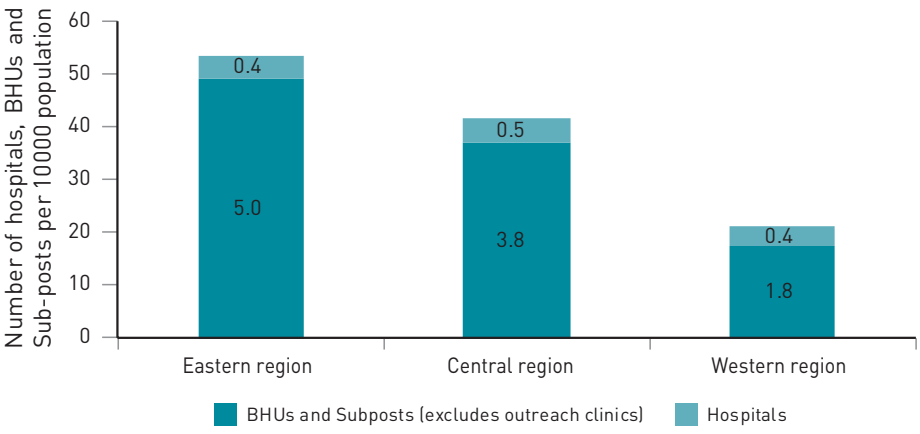
The national referral hospital in the capital city has been granted autonomy with effect from September 2014 with the aim to support innovation and foster dynamic management models to improve user experience and efficiency of its operation. The hospital now functions under an independent board with complete management, administrative and financial autonomy but with limited autonomy to manage human resources. The hospital's annual report of 2016 indicated that, after the autonomy, it catered to more patients with almost similar resources before the autonomy and initiated a number of tertiary care services and advanced diagnostic facilities for patient care (Jigme Dorji Wangchuck National Referral Hospital, 2015).

7.3.2 Access to health services

Access

Physical accessibility to health services has been a significant challenge for Bhutan considering its difficult geographical setting characterized by high mountains, deep valleys and scattered population settlements. Expansion of health facilities had played a critical role in bridging access gaps not just in the health sector but also in a multitude of socioeconomic development programmes for the rural communities. There has been tremendous progress in access to health care. In 2012, 94.8% of the population lived within 3 hours by any means of travel from a nearest health facility (Ministry of Health, Royal Government of Bhutan, 2014). In addition, eight ORCs and 17 VHWs per 10 000 population provide basic services at the primary level of care (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2015). The density of health infrastructure is higher in the eastern region compared to the central and western regions (Figure 7.5). The pace of socioeconomic development, particularly the huge expansion of the network of roads, is expected to further improve the population's access to health services.

Figure 7.5 Number of hospitals, BHUs and sub-posts per 10 000 population by region, 2015



Source: Health Management and Information System Policy and Planning Division Ministry of Health Royal Government of Bhutan, 2016

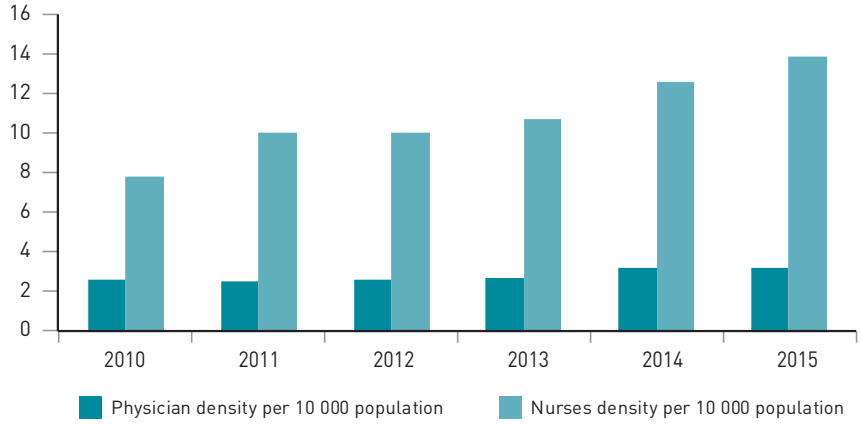
There has been an increasing trend in utilization of health services with the annual use rate of outpatient visit was 3.5 visits per capita in 2015 in the allopathic system (excluding prevention and health promotion visits,

see next paragraph). In addition, 109 924 visits were made for traditional medicine services, which are expanding in niche areas of elderly and chronic care. Utilization of traditional medicine services, consequently, has more than doubled in the past five years, i.e. 83 743 visits in 2015 compared to 35 923 visits in 2011 (Chapter 5). As a mainstream health delivery system, efforts are being made to increase service delivery points and enhance cross-referrals with the allopathic system to increase access and utilization of traditional medicine services.

In terms of coverage of preventive health services, steady improvements have been reported in the most recent national health survey (Ministry of Health, Royal Government of Bhutan, 2014). At present, 97.7% of the population has access to safe drinking water as compared to 77% in 2000; 97.9% of mothers received at least one ANC visit during their most recent pregnancy, which is a substantial increase from 51% in 2000. The institutional delivery rate has also increased from 23.7% in 2000 to 89.5% at present. Similarly, immunization coverage has reached 98.8% and, following its introduction in 2011 just five years ago, coverage of routine HPV vaccination for 12-year-old girls has reached 90.5%.

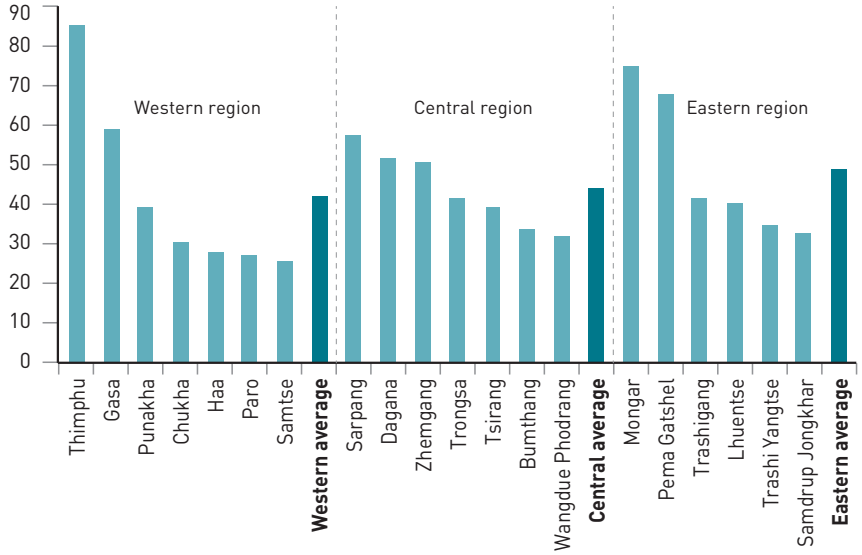
The population density of physicians and nurses has steadily increased, particularly nurses have outpaced doctors (Figure 7.6). However, there have been large variations in the geographical distribution of HRH (Figure 7.7), with large concentration in those districts hosting referral hospitals or with smaller catchment population. The health system continues to be constrained by shortages and sub-optimal distribution of medical specialists. Only 12 of the total 20 districts have met the government goals of having a minimum of three clinically active doctors per district (Ministry of Health, Royal Government of Bhutan, 2015a). Recent policy measures on increasing scholarship slots and promoting private medical education (self-funded by the households) is expected to address the shortage of physicians in the next five years. Rural retention, particularly of female health workers, in the context of high demand for female health personnel, is another issue hampering access to and utilization of health services. Only 62% of BHU-IIs have at least one female health worker against the target of deploying female health workers in all BHU-IIs during the 11th FYP period (Ministry of Health, Royal Government of Bhutan, 2015a).

Figure 7.6 Physicians and nurses per 10 000 population, 2010–2015



Sources: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2011, 2012, 2013, 2014, 2015, 2016

Figure 7.7 Total health workers (all categories) per 10 000 population by district and region, 2015



Source: HR PIS, 2015

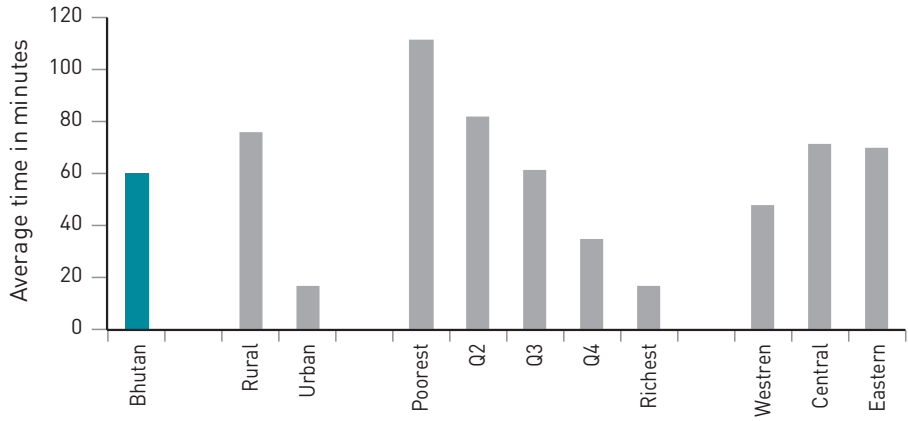
Given this context, the health help centre (HHC) launched in 2011 represents an important policy measure to enhance accessibility to health professionals through tele-health services. Among the services that the centre provides, through an ICT-enabled platform, 90% is for emergency

ambulance services and about 9% for advice on medical and other issues. The centre is expanding its scope of services to include suicide counselling and prevention and tobacco cessation helpline with promising initial response. However, while 62% of the population is aware of the HHC, only about 7% of them had availed its services (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2013), which highlights the huge potential to maximize the use of services provided by the centre.

Equity of access

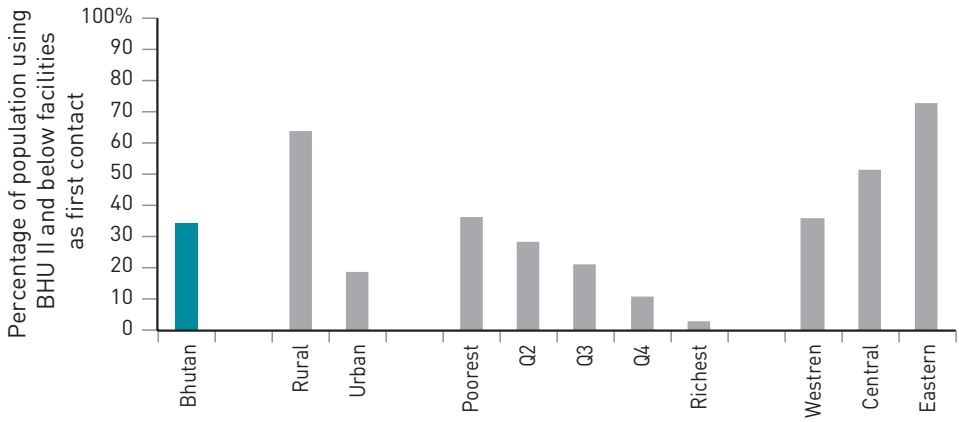
Despite health services being universal in scope and having made tremendous leaps in accessibility to care, gaps in inequity persist. There are disparities in the population's physical accessibility to the nearest health facility (Figure 7.8); urban, richer residents and those residing in the western region reach a nearby health facility much faster. Utilization of primary level care (BHU-II and below), as first contact, is concentrated among rural residents, poorer quintile groups and districts in the eastern region (Figure 7.9).

Figure 7.8 Average time (in minutes) to reach nearest health facility, 2012



Source: Ministry of Health, Royal Government of Bhutan, 2014

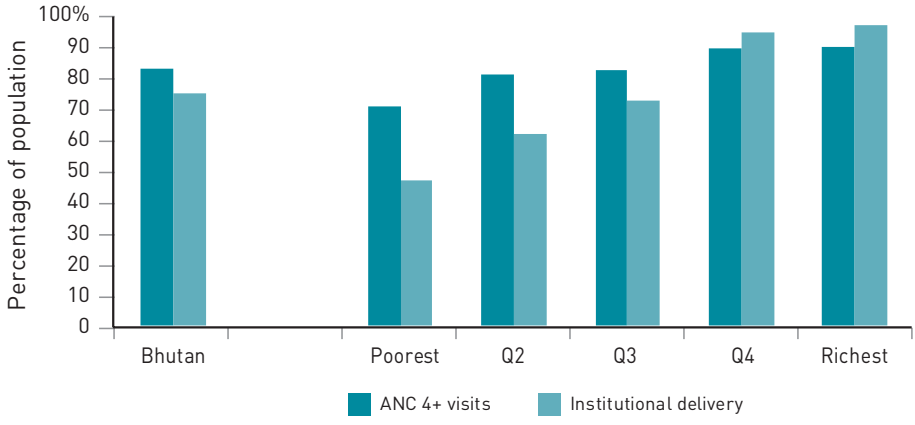
Figure 7.9 Utilization of first contact primary level facilities, 2012



Source: Ministry of Health, Royal Government of Bhutan, 2014

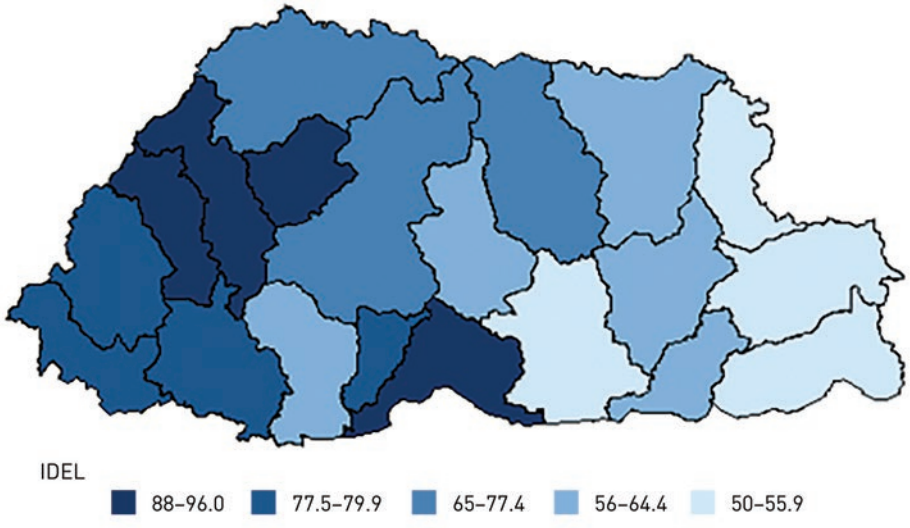
Similarly, coverage of four or more ANC visits, skilled birth attendance and institutional delivery shows geographical variations and disparities among the wealth quintiles (Figure 7.10). While variations among districts are evident (Figure 7.11), the pattern indicates that utilization of services is higher among people who reside in the western region than those who reside in the central and eastern regions. Similarly, utilization of services shows a negative income gradient where the richer population groups are progressively using more services than the poorer groups. The gaps in inequity in ANC visits are much less than the gaps observed for institutional delivery. This requires policy attention to minimize the supply side barriers while also creating awareness among pregnant women on the benefit from use of safe motherhood.

Figure 7.10 ANC 4+ and institutional delivery by wealth quintile, 2012



Source: Ministry of Health, Royal Government of Bhutan, 2014

Figure 7.11 District-wise variations in coverage of institutional delivery (IDEL), 2012



Source: Ministry of Health, Royal Government of Bhutan, 2014

7.4 Health outcomes, health service outcomes and quality of care

7.4.1 Population health

People reporting "healthy days" increased by 10% from 2010 to 2015 (Centre for Bhutan Studies, 2016) indicating that Bhutanese were ill for fewer days in 2015 than in 2010. Health is the top contributor (13.1%) among the total of nine domains of the Gross National Happiness index. Indicators of health domain measures include self-reported health status, number of healthy days, disability and mental health.

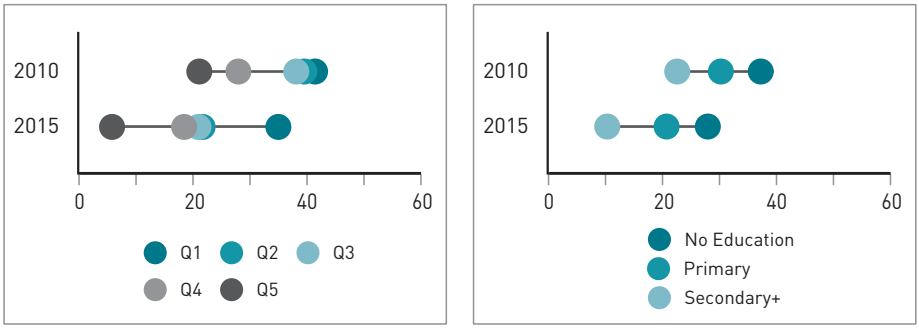
Bhutan recorded sex-specific life expectancy gains of 23–29 years in the past 40 years, taking it into the rungs of global best performers on this front (Wang H et al., 2013). Life expectancy at birth has increased since the1950s, from 36.1 years to 69.5 years (69.9 years for women and 69.2 years for men) in 2014. Maternal and child mortality have been scaled down and prominent communicable diseases such as HIV, TB and malaria have been kept largely under control. As per the National Health Survey 2012, the MMR decreased by 89% between 1984 and 2012. Similarly, the IMR and under-5 mortality rate (U5MR) were reduced by 70% and 77%, respectively from 1984 to 2012. In 2015, MMR was 148 per 100 000 live births while IMR and U5MR were 28.3 and 34.4 per 1000 live births, respectively.

While the health system continues to address the infectious and maternal-related disease profile, incidences of lifestyle-related NCDs are already growing. The epidemiological transition, emerging infectious diseases and adverse health impacts of climate change have left the health sector battling a complex and broader array of challenges; these require effective intersectoral actions for health. Socioeconomic transitions have contributed to the increasing trend of migration and urbanization, changing food habits, injuries and mental health issues.

7.4.2 Equity of outcomes

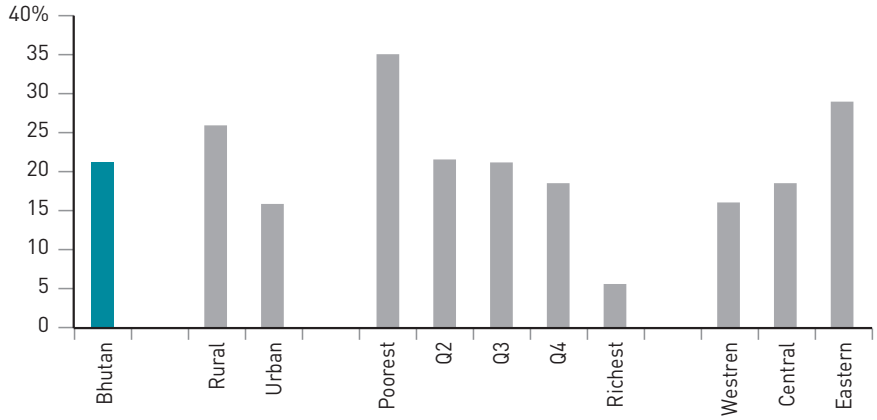
The National Nutrition Survey 2015 estimated the national stunting prevalence at 21.2%, a 37% decrease from 2010. While stunting prevalence has decreased, the rate of reduction has been faster among the richest (73% decrease) than the poorest (15% decrease) wealth quintiles (Ministry of Health, Royal Government of Bhutan, 2015c). As evident in Figs. 7.12 and 7.13, assuming comparability of the two data sources, equity seem to have widened between 2010 and 2015. In 2015, children from poorest quintile were 6.2-times more likely to be stunted compared to the children in the richest quintile, while this figure stood at 1.9-times in 2010. This indicates a 4-times increase in disparities between children in the richest and poorest quintiles. Similarly, children whose mothers have no formal education are 63% more likely to be stunted compared to the children whose mothers have secondary and above education level. Children living in rural areas were 1.6-times more likely to be stunted compared to those in urban areas, and the eastern region of the country has the highest prevalence of stunting, which is 80% more than that in the western region (Figure 7.13).

Figure 7.12 Change in prevalence of stunting between 2010 and 2015 by wealth quintile and maternal education



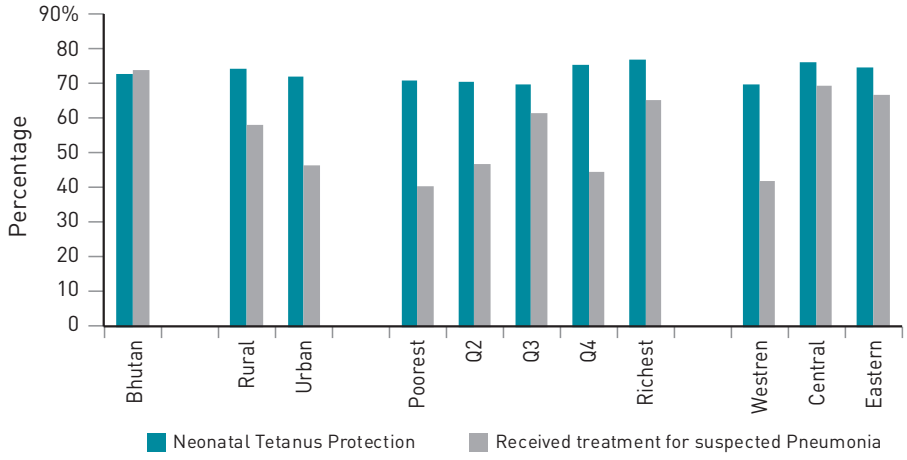
Sources: Stunting profile – Ministry of Health, Royal Government of Bhutan, 2015c; National Statistics Bureau, Royal Government of Bhutan, 2011

Figure 7.13 Prevalence of childhood stunting by socioeconomic profile



Source: Stunting and NMR profiles – Ministry of Health, Royal Government of Bhutan, 2015c

Figure 7.14 Service coverage of neonatal tetanus and suspected pneumonia, 2010



Source: National Statistics Bureau, Royal Government of Bhutan, 2011

While Bhutan has achieved the target of MDG 4 on reducing the IMR by two-thirds, there are geographical and socioeconomic disparities in the results. The IMR is more than 3-times higher in the poorest groups compared to that in the richest group (National Statistics Bureau, Royal Government of Bhutan, 2011). The National Health Survey 2012 indicated that neonatal mortality, which contributes to 70% of infant deaths in Bhutan, is 1.8-times higher in the eastern region compared to that in the western region and 86.2% more in rural areas compared to urban areas.

The disparity is also evident between the richest and poorest, with 90% of deaths occurring in the poorest wealth quintile. Similarly, 69.8% more mortality is observed among children with mothers having no education compared to children with mothers having secondary or higher education.

The Bhutan Living Standards Survey 2012 found a higher rate of incidence of sickness or injury in the rural areas. Geographical disparities in "likelihood of injury" or "sickness" are apparent, with rates ranging from 10% to 30% among districts. It also reported that women are more likely to be susceptible to sickness or injury than men, irrespective of area (urban or rural). About 16.7% of women compared to 11.2% of men aged 18–69 years have three or more risk factors for NCDs; 40% of women compared to 27% of men are overweight or obese (World Health Organization, Regional Office for South-East Asia, 2016).

Health inequity in Bhutan is largely driven by socioeconomic factors. In services with high coverage like immunization and where health systems capacity is an important contributor, limited inequality is observed (see Figure 7.14). In areas where socioeconomic factors and multisectorality play a larger role, such as prevalence of stunting or infant mortality, inequity is significant. This corroborates with the evidence from Thailand, which established that inequitable MCH outcomes are largely due to socioeconomic inequity, especially differences in the educational level of mothers or caregivers (Limwattananon S et al., 2010). The eastern region is generally lagging behind in terms of health outcomes, while the health workforce density and health infrastructure are higher in the eastern region compared to that in the western and central regions (Figures 7.5 and 7.7).

7.4.3 Health service quality

Despite being key policy objectives in Bhutan, monitoring of quality of care has generally been limited in terms of data and indicators. In a reform to bridge this gap, the HAMT initiative has been implemented. The HAMT system periodically monitors KPIs related to quality and efficiency of health services such as OPD attendance, OPD waiting time, emergency attendance, staff utilization and patient safety aspects. The HAMT system is still developing and has issues with consistency and reliability of its reports. The BMHC, which regulates the professional activities of all health workers, is gaining prominence with increasing number of cases and investigations. Health laboratories have not been able to contribute optimally owing to various limitations (World Health

Organization, Regional Office for South-East Asia, 2003). These issues highlight gaps in human resource capacity and suggest the need to establish a comprehensive, robust and integrated monitoring system on health care quality at the national level. While quality standards have been established along with standard operating procedures (SOPs), no accountability framework exists for the use of these protocols. A conscious and focused approach to patient safety is required, especially towards optimum level of infection control, prevention of medical errors, surgical safety, and environmental safety in health facilities.

Outcomes in preventive health have been promising. Bhutan has sustained immunization coverage of more than 95% at the national level for over more than a decade. While the coverage is high at the national level, there are some districts with coverage of less than 80% (World Health Organization, Regional Office for South-East Asia, 2014). Reaching out to hard-to-reach population, especially the migrant and nomadic population, continues to remain a challenge for effective delivery of immunization services in the country. Introduction of new vaccines such as pneumococcal and rotavirus vaccines into the routine immunization programme is being considered in the face of limited country capacity to carry out HTA and the concern for future resource burden to the BHTF. Health promotion activities, often supported by eminent personalities and institutions outside the health sector, have significantly contributed to the health literacy levels of the predominantly rural and agriculture-based Bhutanese society.

However, much less is known about the quality of care and outcomes for chronic NCDs. Hospital-based statistics show a trend of rising inpatient admission due to NCDs (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2015). NCDs account for 56% of total deaths in Bhutan (World Health Organization, 2014). There is a need to monitor ambulatory sensitive hospitalization for conditions such as grand mal status and other epileptic convulsions, chronic obstructive pulmonary disease, asthma, heart failure and pulmonary oedema, hypertension, angina and diabetes to assess quality and efficiency of the health system.

The WHO PEN package has been introduced as an integrated management of chronic diseases such as diabetes and hypertension in primary health care. Considering a highly favourable review, which demonstrates improvement of outcomes and quality of care (Dukpa W

et al., 2014; Dukpa W et al., 2015), the approach is being gradually rolled out nationwide. To improve MCH, PNC home visits for home deliveries have been initiated since 2015. Similarly, a programme on community-based approach to care of the elderly has been established throughout the country. These are excellent examples of the health system's increasingly reaching to the needs of patient with chronic conditions to address the need of the elderly population in the country and promote resourcefulness, productivity, vitality and happiness. However, issues related to patient information management, level of care and long-term follow-up of service require a more comprehensive and holistic approach to chronic disease management in the country.

7.4.4 Disaster risk management for health

Bhutan is extremely prone to natural disasters and climate change has exacerbated its vulnerability to landslides and glacial lake outbursts. As a country lying on a seismically active zone, vulnerability of hospitals and health infrastructure is a significant concern.

The National Disaster Management Act 2013 provides the legal framework for the disaster management in the country. The Act mandates all agencies to prepare, implement, review and update emergency contingency plans. The health sector has prepared the HEDCP, which encompasses all aspects of disaster preparedness and response. A national HEOC has been operationalized. All health facilities have emergency management units and designated emergency management focal persons. Disaster management committees have been established in all districts. In addition, guidelines and SOPs for health facilities at various levels have been developed and reinforced through periodic simulation exercises. The EMSD was recently established in the MoH to coordinate these measures.

Earlier, all health emergencies and disaster responses were managed by an emergency medical team. This team was nationally appreciated through a Drakpoi Thuksey medal, a high civilian award. The team has maintained credible reputation through all emergencies and disasters in the country as well as in the recent assignment of the team for Nepal earthquake relief. The outlook is not as optimistic on the seismic preparedness of health infrastructure with even the national referral hospital featuring a number of seismic vulnerabilities in its buildings (World Health Organization, Regional Office for South-East Asia, 2012). Considering these vulnerabilities and likely increase in vulnerabilities,

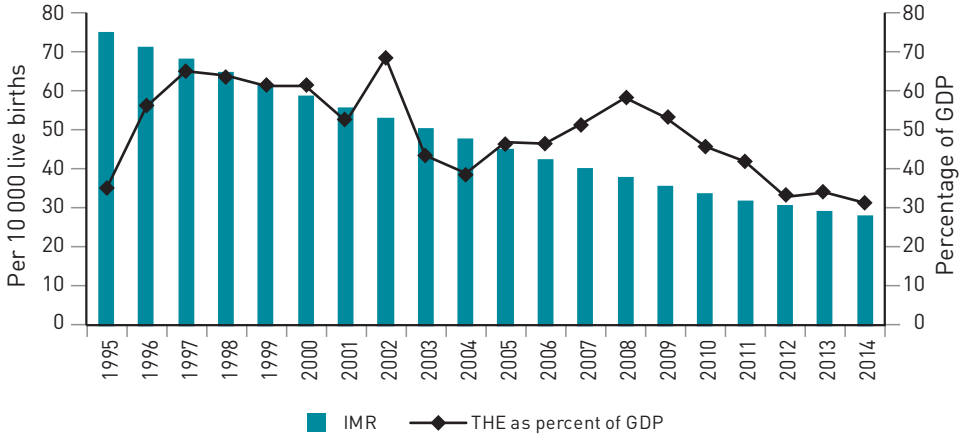
it is important to strengthen the country's preparedness and response system along with emphasis on disaster resilient health infrastructure.

7.5 Health system efficiency

7.5.1 Allocative efficiency

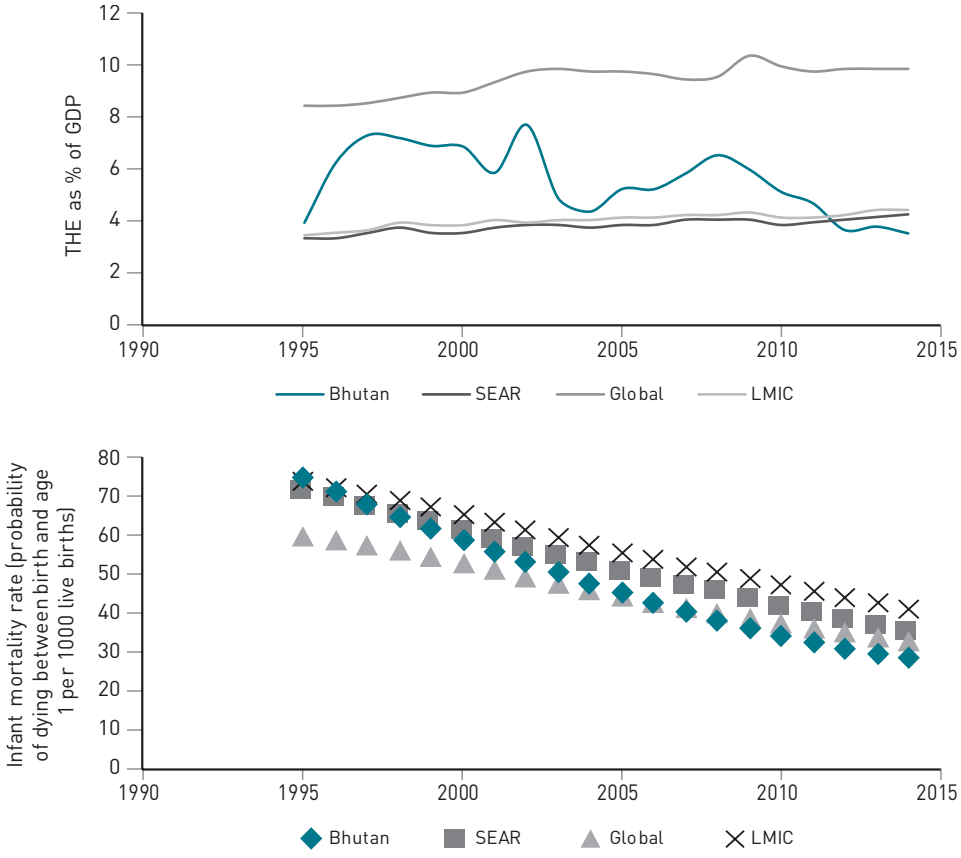
The five and a half-decade old Bhutan's planned socioeconomic development plans have prominently emphasized investments in the social sector (particularly education and health sectors) as key drivers of social and economic prosperity. In line with this, significant investments were made in expanding the physical network of health facilities and building up the pool of health professionals. Dramatic improvements have been made in, among others, child health outcomes (Figure 7.15), demonstrating a fairly well placed resource allocation model. In regional, global and income group comparison (Figure 7.16), Bhutan has achieved speedier improvement in child survival rates without a significant pattern of rise in investment levels.

Figure 7.15 Trend in health investments and IMR



Source: World Health Organization, 2017b

Figure 7.16 Trend in health investments and child health outcomes



Source: World Health Organization, 2017b

The process of decentralization, which began in 1981 and reinforced over the years, has played a pivotal role in bringing in community and grassroots participation in planning, implementation and decision-making processes. District and sub-district level grants were instituted through a formal resource allocation formula, which considered, besides the population size and geography, multidimensional poverty indices.

The annual health budget allocation to the Central government is 70% while local governments receive 30%. This share of 30% to local governments is divided in the ratio of 60:40 between districts and their respective blocks (Gross National Happiness Commission, Royal Government of Bhutan, 2013). Over the years, there have been numerous policy measures to enhance the capacity of decentralized governance. Most notable are the guidelines for the preparation of the 12th FYP, which

highlight "enhanced decentralization" among its overarching goal and stipulate a resource allocation modality of 50:50 between the Central and local governments (Gross National Happiness Commission, Royal Government of Bhutan, 2016), instead of the current ratio of 70:30. Recent elected governments have also introduced constituency development grants and gewog (sub-district) development grants to strengthen community stewardship of development. Evidence is lacking on the impact of decentralization.

Having signed the Alma-Ata Declaration, Bhutan adopted primary health care as the official approach for health development. Considerable early expansion in the number of primary health-care workers and services led to a substantial improvement in access to these services throughout the country (DANIDA, 2014). Bhutan was given an appreciation award by WHO for its success in primary health care.

The BHTF, established in 2000, represents a critical step forward to sustain the investments in primary health care through a sovereign and self-sustaining resource framework. Notable efforts are being made to enhance the corpus and scope of the Fund to enable it to finance primary health-care services for all times to come.

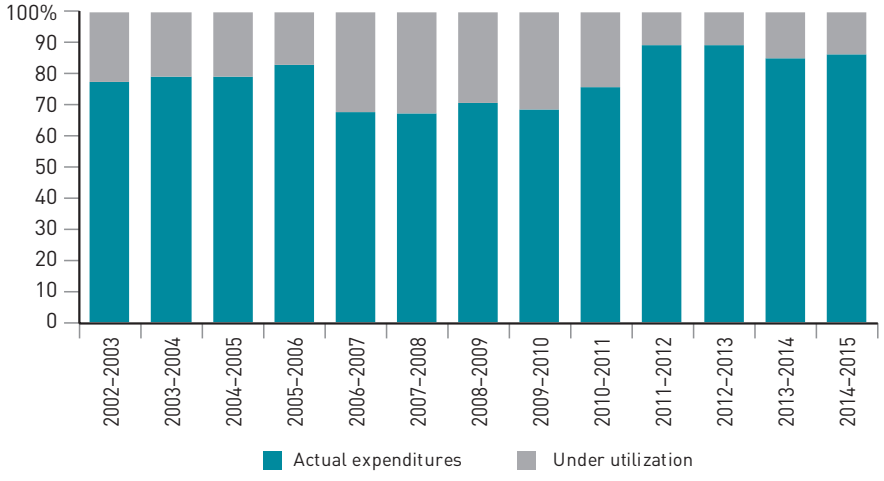
Despite the investments and success in primary health care, pressure is mounting on the secondary and tertiary care services challenging the balance among service delivery levels and exposing the glaring absence of a formal gatekeeping mechanism. The national referral hospital in the capital caters to 40% of all outpatient services in the country. This indicates that the population's preference, subject to access, is for use of services at higher levels health facilities; this would significantly challenge the policy emphasis on PHC and pressure to review the proportion of investments made in community-level health facilities.

Although people are expected to use primary health facilities in their communities, in practice, there is bypassing of PHC and use of higher health facilities in urban areas (Damrongplasit K et al., 2016). This increasing preference and use of health services in urban areas puts pressures on these urban tertiary facilities, compromising quality and hindering continuity of care. It can also lead to sub-optimal utilization of services available in rural areas. The issue hinges on the broader matter of rural-urban migration, the phenomena of "goongtongs" (empty/abandoned houses) in rural areas as a result of urban migration, and the need to rationalize health service infrastructure in the rural and urban

areas. Policy-makers need more evidence to address health services in very small catchment populations to gain allocative efficiency while not increasing inequity in those areas. The health sector can draw lessons from the education sector, which faces a similar challenge of diminishing number of pupils in rural remote areas. The MoH has taken precautionary measures through consolidation of health infrastructure and enforcing guideline/criteria for establishing new health facilities. In addressing this challenge, it is important to be mindful of the emergency nature and unpredictable demand for medical services, unlike stable demand by the education sector.

There are other prominent issues related to resource allocation. The increasing cost of patient referral abroad (see Chapters 3 and 5) brings in a policy dilemma as to the trade-off between availing services outside the country versus introducing services within the country. Results-based planning and management has been instituted since 2008 with the start of the 10th FYP. More recently, APAs have been instituted to track goals and progress. These measures have enhanced the focus, direction and clarity of health planning as well as facilitated moving away gradually from largely historical trends-based health budgets to results-based financing. Budget utilization or the absorptive capacity (Figure 7.17), while improving, still provides opportunities for efficiency.

Figure 7.17 Budget utilization

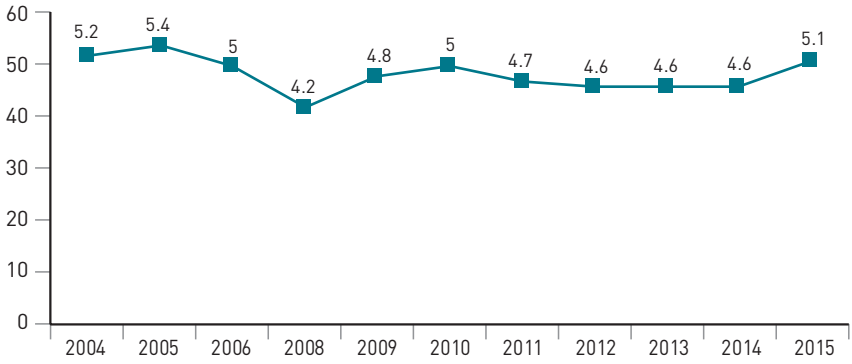


Sources: Department of Public Accounts, Ministry of Finance, Royal Government of Bhutan, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

7.5.2 Technical efficiency

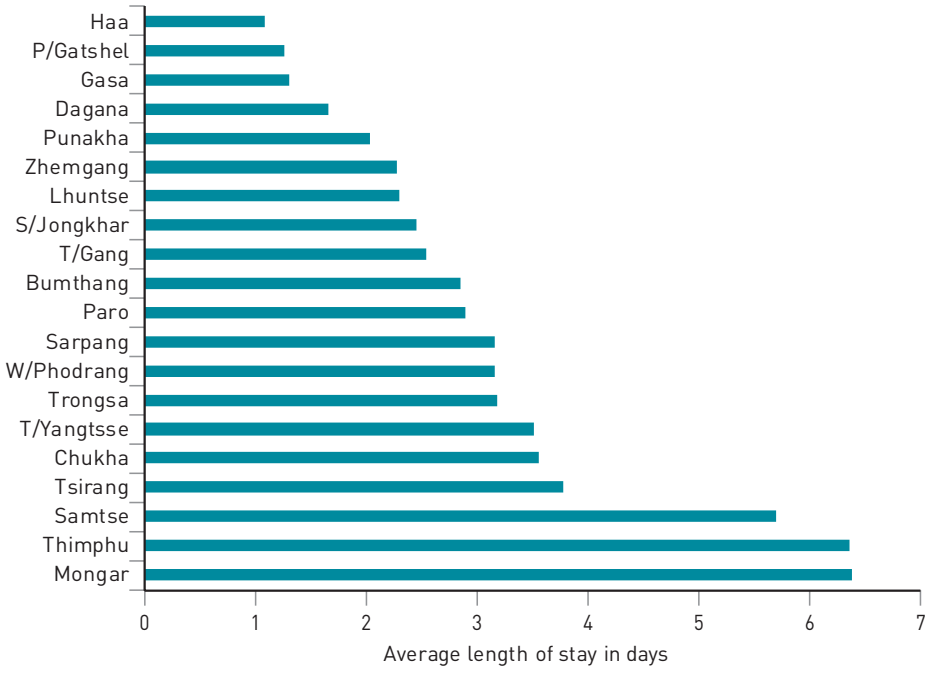
There has not been a significant change in the average length of stay at hospitals over the past 12 years (Figure 7.18). However, there are wide differences in district level averages (Figure 7.19), with higher length of stay concentrated in districts with higher level of health facilities. This

Figure 7.18 Trend in average length of stay in days



Source: Annual Health Bulletin, respective years

Figure 7.19 Average length of stay for health facilities aggregated at district level, 2014



Source: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2015

reveals that the outlook is far from optimal and that there is potential to gain efficiency. The HAMT initiative has established systems and processes to improve efficiency by monitoring utilization of health care, referral in and out, expenditures and staff availability. A recent initiative of integrating WHO PEN package into the primary health-care services was found cost-effective and good value for money on assessment of two pilot districts (Dukpa W et al., 2014).

A modified Pabon Lasso framework (Pabón Lasso H, 1986) is used to compare efficiency for health facilities aggregated at the district level using three indices of bed occupancy rate (BOR), bed turnover rate (BTR) and average length of stay (ALS), for the 2015 data. Given a mathematical correlation between these three indices, a line which starts from zero and passes through each point in the graph shows that ALS increases from left to right. The graph in Figure 7.20 is divided into four zones by two perpendicular lines; one is drawn from the average BOR point on (35%)

Figure 7.20 Pabon Lasso graph on relative technical efficiency of aggregated health facilities by district, 2015

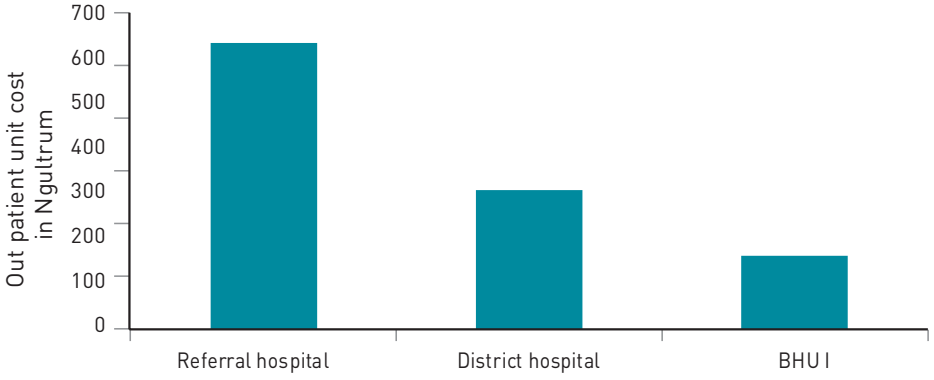
Source: Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2015

axis and the other from the average BTR on (41 patients per bed per year) axis. Given the distribution of BTR and BOR, seven districts lie in quadrant III, which are considered as efficient (with BOR and BTR higher than the average). There are eight districts in quadrant I whose BOR and BTR were lower than the average, and efficiency improvement of health facilities in these districts could be investigated.

Note that the Pabon Lasso framework is the cross-sectional analysis of 2015 for average of health facilities in these districts by aggregating different levels of health facilities for each district. The type of services provided at the health facilities and the number of beds including human resources are not uniform across the different levels of health facilities. For example, some districts have referral hospitals while some have sparse populations leading to wide variations in bed occupancy and utilization. In addition, the analysis is limited by a single-point estimate and should be calculated over a number of years to validate the estimates. In addition, unique situations of different districts, for example as an epidemic of dengue haemorrhagic fever, would affect the pattern of admission.

The higher the level of the health facility, the higher is the unit cost of services (Figure 7.21). This is the case for OPD visits as well as inpatient admissions. In 2015, an OPD visit at a BHU was about half the cost of visit at a district hospital and about one-fourth at a referral hospital, as outpatients in referral hospitals may have more clinical complexity requiring more diagnostic and treatment. Inpatient unit cost was about Nu 5700 at BHUs, Nu 10 000 at districts hospitals and more than Nu 17 000 at referral hospitals.

Figure 7.21 Unit cost of outpatient services by level of health facility, 2015



Note: 1 USD = 65 Nu (2015 average)
Source: Ministry of Health, Royal Government of Bhutan, 2015

While at first glance, it appears cheaper to provide services at lower levels of care, the absence of a gatekeeping mechanism has led the population to bypass and seek services from higher levels of health facilities. Instituting a formal gatekeeping mechanism has been problematic for Bhutan considering the small population base, a close-knit society, easy access to services and a population that has high expectations of high quality service delivery.

Access to essential medicines is being maintained at over 95% in all facilities across the country (Health Management and Information System, Policy and Planning Division, Ministry of Health, Royal Government of Bhutan, 2014). Among the measures to generate value for money is the adherence to the periodically updated NEML and the use of generics in the mainstream medicine procurement and distribution system.

Significant reforms to improve health systems efficiency include the revamp of mechanisms for procurement and distribution of medicines and medical supplies. More robust procurement cycles were instituted, administrative control of bidding and procurement was separated, and the financial and procurement rules of the government were made more accommodative of the challenges of procuring medicines and medical technologies in the country. The procedural tweaks have, however, not solved the larger weakness of the system. Given the complete dependence on importation of medical supplies and the small volume of requirement, Bhutan remains vulnerable to limitations in access and price control. Logistical issues in distribution, owing to the difficult geographical terrain, make it expensive to provide timely access to medicines and supplies.

Free access to medicines and supplies creates limited cost-consciousness and value for services among the population, often leading to wastage. Service providers are all salaried employees. While salary differentials have been made to benefit health professionals, there are limits to efficiency improvement in the absence of a performance-driven provider payment mechanism.

7.6 Transparency and accountability

7.6.1 Transparency

Health policies and strategic plans are increasingly evidence-informed and developed through a more open, consultative process. The National Health Policy 2011, for example, involved consultation with all major stakeholders and remained in public domain for feedback; the entire process taking almost two years. At the grassroots level, the VHWs play a key role in communicating health policies, information and messages to the communities. Five-year health development planning and monitoring is carried out in a decentralized framework, at the dzongkhag (district) and gewog (sub-district) levels, where people participate through local officials and elected representatives.

Health statistics and reports including budget utilization statements are available through published reports and on government websites, though the use of such information has been limited. However, periodic presentations and updates are made to the people's representatives in the Parliament.

An HAMT initiative has been rolled out to monitor and improve safety, quality and efficiency of services in hospitals and health facilities. Its reports are published and made available on the MoH website. In addition, a Social Media Policy has been adopted, which encourages government officials, stakeholders and citizen to engage in information-sharing and establish a convenient feedback mechanism.

While the Constitution of the Kingdom of Bhutan guarantees free access to basic health services in both modern and traditional medicine, the range of benefits is not specified. Though service standards at different levels of care have been developed, enforcement of these standards and their effective implementation through appropriate gatekeeping system is needed. In parallel, awareness of the rights and responsibilities of both supply (providers) and demand (citizens) sides are required. Along with the package of services, the inclusion and exclusion criteria, if any applied, and the range of services included and excluded could be made transparent for a common understanding of the society. The process of developing and identifying the benefit package should be evidence-based, involving participation by key stakeholders and must be responsive to new and emerging public health priorities. Evidence should not be limited to cost-effectiveness but also take into account other dimensions such

as supply side readiness, budget implications, societal acceptance and equity concerns. Having a formal transparent participatory process of prioritization of benefit package would also assist the health system in its efforts to control health-care costs.

7.6.2 Accountability

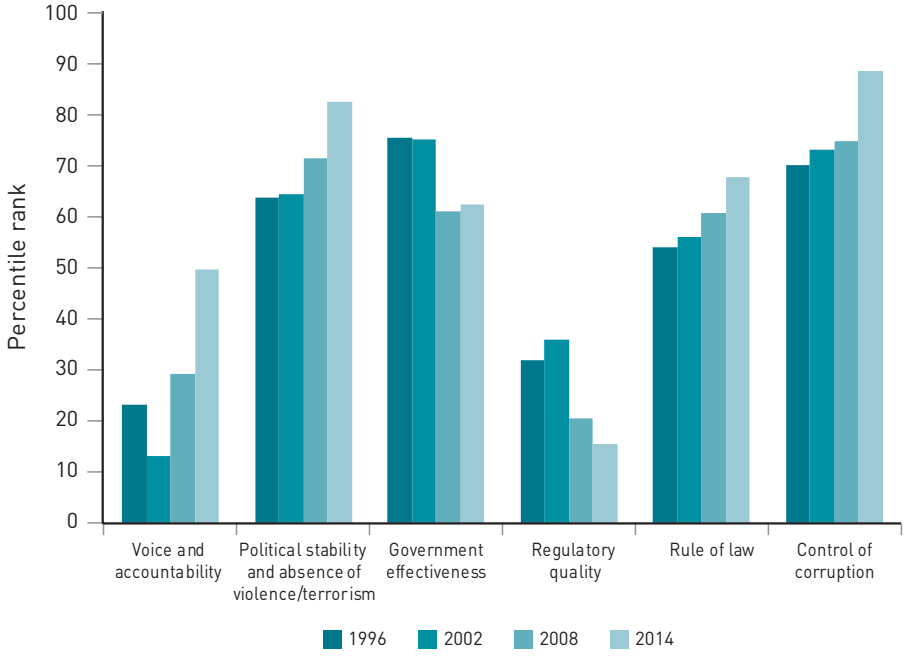
Recent governance reforms have re-emphasized social accountability. Systems such as performance contracts and APAs are instituted, which make civil servants not just accountable to the plans and programmes but these systems impact their career progression as well. These are processes where plans and programmes along with their results and targets are negotiated at the beginning of the year and agreed with the head of the government. Progress on the compacts/agreements is deliberated at a public forum and verified by an external team to the concerned agency. Agencies are ranked based on progress and the progress scores are factored into the civil service performance management system. All the national level health indicators are reflected in these compacts/agreements. Financial, performance and human resource audits are carried out periodically and major cases are investigated by the Anti-Corruption Commission.

Government to citizen (G2C) services, a platform directly managed by the office of the Prime Minister, monitors efficiency and accountability of the frontline public service delivery system. People are provided the platform for feedback on public services or voice grievances on issues affecting them.

Special sessions of the Parliament are dedicated for the people's representatives to questions relevant government agencies on specific concerns or demand the status of progress on certain plans and programmes. New alcohol licensing, penalty for tobacco ban offenders and maternity leave are recent examples of issues raised during these sessions.

Figure 7.22 shows consistent improvements in governance indicators such as voice and accountability, political stability and absence of violence/terrorism, rule of law and control of corruption. However, indicators on government effectiveness and regulatory quality have declined and merit legislative and policy review. The higher the percentile rank, the better the governance performance.

Figure 7.22 Trend in six governance indicators, percentile rank, between 1996 and 2014



Notes: Percentile rank of the estimate governance score which ranges from approximately -2.5 (the weak) to 2.5 (the strong) governance performance among all countries. The percentile rank ranges from 0, which is the poorest governance performance to 100, which is the highest performance rank. The higher the percentile rank, the better the governance performance.

Source: World Bank, 2017c

8 Conclusions

Key findings

Bhutan has made remarkable progress in socioeconomic development, including health, in about five and a half decades. The 2015 triennial review found Bhutan eligible for graduation from a least developed country (LDC) to an LMIC for the first time by fulfilling the gross national income (GNI) and human development index (HDI) criterion. Only the economic vulnerability index is to be fulfilled.

The development philosophy underpinned by Gross National Happiness and its operationalization through a systemic planning and monitoring process has, true to its objectives, ensured a definitive improvement in the happiness and satisfaction of the people rather than mere growth of GDP. The most outstanding achievement is the reduction of extreme poverty measured by USD 1.90 a day income to just 2% (2012) of the population – almost achieving poverty elimination.

The organization of the health system, focused on a primary health-care approach, is an integrated system of modern and traditional medicine supported by secondary and tertiary care. This design of the health services (public provision and publicly financed) and its effective implementation has led to a health service that is accessed equitably by all citizens. The extensive coverage of primary health-care services, the commitment of the basic health staff and adequate funding of services has ensured comprehensive delivery of PHC services in terms of health promotion, disease prevention and curative care.

These primary health-care arrangements are fully operational. The health system is mature and functioning as evident by the near universal immunization coverage: 99% for DTP3 and HepB3 and 97% for measles during the past five years. Life expectancy has increased from a mere 32.4 years in 1960 to 69.5 years at present. Between 1984 and 2012 (in 28 years), the MMR has decreased by 89%. Similarly, the IMR and U5MR have been reduced by 70% and 77%, respectively in the same period. By 2015, Bhutan has achieved the MDGs with an MMR of 148 per 100 000

live births and the IMR and U5MR of 28 and 34 per 1000 live births, respectively. The significant improvement in health outcomes is the result of providing free access to comprehensive PHC services, which is now mandated by the Constitution, and other factors such as improvements in female literacy, sanitation facilities and access to clean water.

The existing problem of shortage of HRH is also being gradually addressed by placing the required categories for training in-country as well as qualified institutions in and outside of the Region. With the establishment of a university of medical sciences and different faculties and training institutions under it, adequate human resources are anticipated to be in place soon. Though shortage of specialists is expected to continue for some time, Bhutan would have sufficient numbers of general doctors in the near future. In fact, taking into account the students already studying in medical colleges, more than 250 will graduate by 2023. The successful candidates of these batches will boost the current health workforce and enhance better services to the citizens.

Despite the difficult geographical terrain and dispersed population settlements, access to health services has improved remarkably; Bhutan has achieved full geographical coverage of BHU-Is and BHU-IIs, district hospitals and referral hospitals. Today, about 95% of the population lives within 3 hours by any means of travel from a nearest health facility. The pace of current socioeconomic development, particularly the expansion of roads network, is expected to further improve access to health services by the people. Therefore, Bhutan is making good progress towards UHC, which is funded by government revenue, the BHTF and some donor support. Health services, including referral abroad for conditions that cannot be treated within the country due to lack of equipment or expertise, are free and financed by the government. The OOP payment was 12% of THE in 2014 and the average household spending on health care for 2012 was estimated at 3.5% of the total consumption expenditure.

Bhutan is prone to natural disasters and climatic hazards, which is due to its geographical location and climate change. In this respect, though many of the preparedness plans need to be rehearsed, Bhutan has made very good progress in setting up institutional mechanisms and plans for disasters and emergencies. A Disaster Management Act (2013) was legislated and a National Disaster Risk Management Framework has been developed. Institutional mechanisms to implement the framework and disaster management contingency plans have been established at

various levels including the gewog and dzongkhag levels. The health sector developed the HEDCP in 2016, which will enhance preparedness and response capacity for emergencies and disasters in the health sector. Mainstreaming of improved disaster resilience and management are the NKRAs in the 11th FYP (2013–2018).

Remaining challenges

Despite the achievements, Bhutan is currently facing a multiple burden of health challenges. While communicable diseases such as respiratory and skin infections and diarrhoeal diseases remain a substantial burden to the people, NCDs are increasing rapidly. Conditions such as hypertension, CVDs and diabetes are on the increase. Chewing doma, a known carcinogen, still remains a problem and oral cancer was among the highest number of causes for referral abroad. Furthermore, emerging issues such as crime, substance dependence and suicide/other mental health problems, particularly in the younger population, highlight the negative impact of rapid socioeconomic development.

Some broader issues such as rural–urban/internal migration and youth employment (mis-match between jobs available and aspirations) pose key challenges that directly impact the health of the people. Rapid urbanization poses the need for improving urban health services. The current policies focus on extending the good coverage of rural communities with health facilities, including infrastructure and human resources. A careful analysis of service utility in rural facilities, improved road connectivity and telecommunication supports the evidence of cost-effectiveness, which guides a new strategy for future health infrastructure development and service delivery in urban and rural settings. But decentralization of decision-making authority and current constituency politics may pose challenges in relocation or downsizing of health facilities to achieve the objectives of efficiency in health systems, taking into account of population sparse in some areas.

Bhutan's economic development has placed the country in the LMIC category, which would result in significant reductions in donor support that has played an important part in health achievements. Though the percentage of external resources financing the health-care services has significantly declined (from 21% in 2000 to 6% in 2014 of THE), it raises the question of sustainability of financing of health services in Bhutan after transitioning from donor support. Gavi (the Vaccine Alliance) and Global Fund, which have been supporting core areas of health services,

are already considering Bhutan as a graduating country. In light of the rising health-care expenditure, particularly for vaccines, medicines and new technologies as well as increasing investment on prevention and public health services from current levels of 2–3% of THE, alternative financing sources in addition to the BHTF need to be explored. The possibilities of increasing government/public spending from the current low levels of 3–5% of GDP need to be evaluated.

Another challenge facing the country is the issue of to what extent the private sector should be involved or allowed to participate in the health service delivery. Though the 2010 and 2017 Economic Development Policy objectives have recommended opening of the health sector to private investment and practices, specific mentions have been made that such practices shall not under any circumstances lead to privatization of the public health services. So, while the MoH is developing a policy to enhance private engagement in health, this needs to be considered with caution so that the basic public health services are ensured as access to health services is a fundamental right of the citizens irrespective of one's ability to pay. Another aspect of concern for private investment is the migration of health staff from the public to private sector. While private participation can bring in competition, particularly in the diagnostic and curative sectors, and strengthen the health delivery system, it should not compete for scarce HRH currently available in the public sector. So, there is definitely a need to assess the positive and negative impacts of private sector investment and participation to the current public health system.

The country has been successful in developing a good infrastructure for primary and secondary care levels and for public health services in general. But it is time to strengthen the tertiary care level and bring in a good balance of primary, secondary and tertiary care levels. The range of curative and rehabilitation services needs to be expanded. Currently, cases that cannot be managed in the country are referred abroad at government cost, consuming about 5% of THE.

Health gains have been substantial as a result of a comprehensive health service consisting of preventive, promotive, curative and rehabilitative aspects. But an analysis of THE for the fiscal year 2012–2013 shows that the expenditure is mainly on curative services (about 70% of THE). Expenditure on preventive care was only around 2% of THE. Bhutan should invest more on primary prevention and interventions that contribute to health gains. Thus, primary health-care workers need to

be equipped with public health competencies and supported by adequate budgetary provisions to accomplish essential preventive and promotive functions.

Performance of health systems as well as health outcomes have been outstanding as outlined above. However, equity of some health outcomes is a concern. Disparities exist in access to and utilization of health services and in health outcomes between urban and rural areas, income levels, across districts and between western, central and eastern regions. This is particularly so in areas requiring a multisectoral response to health. In services with high coverage such as immunization and where the capacity of the health systems plays an overarching role, limited inequality is observed whereas in areas where socioeconomic factors and multisectorality (such as poverty, lower education and deprivations) play a larger role such as stunting and infant mortality, large inequities are evident. For example, children living in rural areas are 1.6-times more stunted compared to those in urban areas and children whose mothers have no formal education are 63% more stunted compared to the children whose mothers are educated up to secondary and above level.

Quality standards have been established along with SOPs. An HAMT system has also been initiated to periodically monitor KPIs related to quality and efficiency of health services such as outpatient attendance, outpatient waiting time, emergency attendance, staff utilization and patient safety. However, no reliable and consistent data are available to assess the quality of care. Given the increasing number of reports regarding quality issues, a comprehensive, robust and integrated system to monitor health-care quality and patient safety is necessary.

Another problem that health services face is overcrowding at referral hospitals such as JDWNRH. Health facilities in the country allow free access to anyone who seeks service, irrespective of from where the care-seeker comes. Though a referral system is implemented, there is no effective mechanism in place to discourage self-referrals. This has led to congestion and hampers the quality of service delivery at tertiary facilities. A gatekeeping mechanism needs to be established and effectively enforced to promote efficient use of resources by different levels of health facilities.

Telemedicine has a large scope given the difficult terrain and impracticality of having specialists in all referral health facilities. With improvements in IT infrastructure and availability of several modes of

communication, the scope of telemedicine in Bhutan has evolved since the time of its inception. Therefore, telemedicine needs to be revitalized. The system can also be used for continuing professional development in collaboration with institutes in the country as well as abroad.

Future prospects

Article 21 of the Constitution of the Kingdom of Bhutan stipulates that "The State shall provide free access to basic public health services in both modern and traditional medicines." While this guarantees the right to health for all Bhutanese, rapid technological advancements including costly diagnostics, medicines and other medical products, not only stimulate demand for and expectation by the population, they also add fiscal pressure on the government. In this context and the finite health resources in the country, there is a need for the State to define what is covered by basic public health services in both modern and traditional medicine.

In response to this challenging question, an immediate way forward is to evolve a process that is transparent, objective and deliberative and with full engagement of citizens and stakeholders in the decision-making process supported by objective evidence. The ongoing legislative process of the Bhutan Health Bill could clarify the balance between rights and responsibilities. International experience suggests that evidence from HTA is essential in supporting decision on a benefit package; in particular (i) the cost-effectiveness of new medical products or interventions; (ii) the long-term budget impact to the government or tax payers; (iii) capacity of health systems to provide new interventions equitably; and (iv) other ethical and equity considerations. The country needs to spell out the societal preference and willingness to pay for one quality-adjusted-life year (QALY) gained from these interventions; the international norm is one- to three-times the national annual GDP per capita for one QALY. However, there is no established benchmark in the international literature on budget impact, which depends heavily on the country's socioeconomic and political context. Undoubtedly, there is an urgent need for Bhutan to establish, strengthen and sustain institutional capacities to conduct HTA; as well as to develop a deliberative process of citizen engagement in the decision-making upon availability of the evidence. Once the decision is made to introduce a new intervention, the government must ensure that associated services are fully funded and equitably delivered to all citizens who require it.

The health information system has developed quite well over the years and there is a mine of information. However, use of information at the local and the national levels need to be improved. High attention needs to be paid to build individual and institutional capacity to generate evidence and translate that into action and policy. This is particularly relevant for the national referral hospital where information on important aspects of the services is difficult to obtain, e.g. OPD cases and patient referrals outside. The fact that the BHMIS collects data from all health centres except JDWNRH, which takes care of almost 50% of national caseload and spends a substantial amount on patient referrals abroad, makes the need more urgent.

Retaining health workers, particularly specialists, in the public health system is an issue that has the potential to become a major future challenge. The current payment scale by the government has been indicated as one of the reasons for specialists leaving service before their age of retirement. There is a need to revisit the payment scale and offer other allowances not in contravention of the civil service rules and regulations; or to explore alternative mechanisms to retain and keep the health workers motivated and deliver quality health-care services in the public system.

There is good evidence of intersectoral action for health that has been undertaken. This needs to be fostered further to build on the gains so far. This is particularly so as evidence shows that inequality of an outcome currently is more where multisectoral action is essential, e.g. stunting. Furthermore, achieving the SDGs will require strong intersectoral action.

The issue of large numbers of self-referrals to JDWNRH causing overcrowding of the facility and compromising the efficient use of resources needs to be studied further by gathering evidence. An effective enforceable referral system from primary care to secondary and tertiary care would improve the efficient use of tertiary care resources, minimize overcrowding while optimizing the use of primary care services. This could lead to improvements in efficiency and quality particularly in the control of NCDs where good continuity of care is needed. Causes of self-referrals to tertiary hospitals, be it poor quality of services, lack of trust in people at other levels or simply patients' preference, need to be ascertained and solved before enforcing an effective referral mechanism to prevent patients residing outside Thimphu unnecessarily coming to the OPD at JDWNRH. Dis-incentives like cost-sharing or only choice

of off-hour clinics at JDWNRH for self-referred patients could also be investigated. In short, evidence through health system research needs to be developed to improve allocative efficiency.

Various mechanisms for further development of tertiary level care need to be evaluated. If FDI, as recommended by the 2010 Economic Development Policy, is considered as an option, a cautious approach which includes evaluation of evidence and public consultation on the merits should take place to ensure that decisions are transparent, evidence-based and participatory.

As per the 2014 STEPS survey, 50% of men and 29% of women drink alcohol whereas 29% of men and 14% women are binge drinkers; indicating alcohol dependence as a big problem. There has also been a steady increase in overall ALD-related morbidity and mortality in recent years In fact, ALD is now one of the top causes of mortality in JDWNRH. There is in place an alcohol control policy although its implementation has been difficult given the sociocultural context and availability of unregulated alcohol in the country. Furthermore, there are inconsistencies between policy and implementation across different sectors, for example the recent issuance of new manufacturing licences contradicts the policy to curb alcohol consumption. Thus, there is a need to review and support policy coherence across government agencies responsible for health, tax and industry. A multisectoral consultation guided by evidence is necessary and political leadership at the prime ministerial level is critical to balance health and economic interests from alcohol production and sales.

To sustain publicly financed free health services, diversification of financing sources as well as reducing cost pressures need to be explored. As the BHTF is becoming increasingly important in light of declining international assistance and soaring health-care costs, there is a need to constantly review methods to accumulate a substantial capital fund and for its appropriate investment to maximize returns. In addition, alternative options of financing and resource mobilization will have to be explored. To reduce cost pressures, regional negotiation on best possible price for assured quality medicines and vaccines that have been initiated through WHO needs to be pursued.

9 Appendices

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9.2 Useful websites

- Bhutan Health Trust Fund: http://www.bhtf.bt/
- Bhutan Medical and Health Council: http://www.bmhc.gov.bt/
- Centre for Bhutan Studies and GNH: http://www.bhutanstudies.org.bt/home-2/
- Drug Regulatory Authority: http://dra.gov.bt/
- Gross National Happiness Commission: http://www.gnhc.gov.bt/
- Jigme Dorji Wangchuck National Referral Hospital: http://www.jdwnrh.gov.bt/home/
- Khesar Gyalpo University of Medical Sciences of Bhutan: http://www.kgumsb.edu.bt/
- Ministry of Finance: http://www.mof.gov.bt/
- Ministry of Labour and Human Resources: http://www.molhr.gov.bt/molhr/
- Ministry of Health: http://www.health.gov.bt/
- National Portal of Bhutan: http://www.bhutan.gov.bt/index.php
- National Statistics Bureau: http://www.nsb.gov.bt/main/main.php
- OECD, Bhutan: http://www.oecd.org/countries/bhutan/
- Royal Government of Bhutan: https://www.citizenservices.gov.bt/home
- Royal Institute of Health Sciences: http://www.rihs.edu.bt/
- Royal Insurance Corporation of Bhutan: http://www.ricb.com.bt/index
- South Asian Association for Regional Cooperation (SAARC): http://www.saarc-sec.org/
- United Nations Population Fund (UNFPA), Bhutan: http://bhutan.unfpa.org/
- World Bank, Bhutan: http://www.worldbank.org/en/country/bhutan
- World Food Programme, Bhutan: http://www1.wfp.org/countries/bhutan
- World Health Organization, Regional Office for South-East Asia (about Bhutan): http://www.searo.who.int/bhutan/about/en/
- World Health Organization, Bhutan: http://www.who.int/countries/btn/en/

9.3 HiT methodology and production process

HiTs are produced by country experts in collaboration with an external editor and the Secretariat of the Asia Pacific Observatory based in the WHO Regional Office for South-East Asia in New Delhi, India.

HiTs are based on a template developed by the European Observatory on Health Systems and Policies that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended for flexible use to allow authors and editors to adapt it to their particular national context. The template has been adapted for use in the Asia Pacific region and is available online at: http://www.wpro.who.int/asia_pacific_observatory/hits/template/en/

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to the published literature. Data are drawn from information collected by national statistical bureaux and health ministries. Furthermore, international data sources may be incorporated, such as the World Development Indicators of the World Bank. In addition to the information and data provided by the country experts, WHO supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the Global Health Observatory (GHO) data and Global Health Expenditure Database. HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

The quality of HiTs is of real importance as they inform policy-making and meta-analysis. HiTs are subject to wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following:

- A rigorous review process consisting of three stages. Initially, the text of the HiT is checked, reviewed and approved by the Asia Pacific Observatory Secretariat. It is then sent for review to at least three independent experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies to check for factual errors.

- Further efforts to ensure quality focus on copy-editing and proofreading before the report is finalized.
- HiTs are disseminated (hard copies, electronic publication, translations and launches). The editor supports the authors throughout the production process and, in close consultation with the authors, ensures that all stages of the process are taken forward as effectively as possible.

9.4 About the authors

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