# **DATA COLLECTION SURVEY**

## ON

# **HEALTH SECTOR IN NEPAL**

# FINAL REPORT

## May 2023

## Japan International Cooperation Agency (JICA)

Yakuzemi Informative Education Center Co., Ltd. Japan Development Services Co., Ltd. IC Net Limited

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-			-		-
1	Pasupati Old Age Home (Public)	17	National Health Training Center	33	Kanti Children Hospital
2	Himalayan Old Age Home (Private)	18	Spinal Rehabilitation Center	34	MIDAS
3	Mudita Service Old Age Home (NGO)	19	Bir Hospital	35	World Bank, Nepal Office
4	JICA Office	20	UNICEF	36	National Trauma Center
5	Tribhuvan University Teaching Hospital, Maharajgunj	21	UNFPA	37	Nepal Medical Association
6	Tribhuvan University Teaching Hospital, Balkhu	22	Medic Mobile Kathmandu	38	DoHS/National Health Training Center/National Health Education, Information and Communication Center/National Public Health Laboratory/National Health Insurance Board
7	Provincial Health Training Center, Bagmati Province	23	National Information Technology Center, Kathmandu	39	Nick Simons Institute
8	Nursing and Social Security Division, DoHS	24	Aama Ko Maya App	40	GIZ
9	Health Coordination Division, MoHP	25	Ministry of Communication nd Information Technology	41	Patan Hospital
10	Administration Division, MoHP	26	Balwa Health Post	42	UN Organizations (WHO, UNICEF, UNFPA)
11	Policy, Planning and Minitoring Division, MoHP	27	Shahid Gangalal National Heart Center	43	Paropakar Maternity and Women's Hospital
12	Family Welfare Division, DoHS	28	Nepal Medical Counsil	44	Ministry of Health and Population
13	Management Division, DoHS	29	Nepal Nursing Council	45	Nepal Pharmacy Council
14	General Director, DoHS	30	USAID	46	Chandragiri Municipality Primary Hospital
15	Financial Administration Section, DoHS	31	Tribhuvan University Teaching Hospital	47	Bhaktapur Hospital
16	Epidemiology and Disease Control Division, DoHS	32	Manmohan Cardilthoracic Vascular and Transplant Center	48	Human Organ Transport Center



1	Ministry of Health (MOH)	6	Municipality Health Section, Hetauda Sub-metroplitan City	11	Kalaiya Hospital, Bara (Madesh Pradesh)
2	Bhimphedi Primary Health Care	7	Ratnannagar Bakulahar Hospital	12	Simara Primary Healthcare (Madhesh Pradesh)
3	Hetauda Hospital (Secondary B Hospital)	8	Health Office, Makwanpur	13	Ministry of Social Development (MOSD)
4	Bharatpur Hospital	9	Aambhanjyang Health Post		
5	Provincial Health Directorate	10	Provincial Health Logistics Management Center, Hetauda		



1	Ministry of Health (MOH)	6	Koshi Hospital	11	Health Office, Morang
2	Provincial Health Directorate, Koshi	7	Provincial Health Training Center, Koshi	12	Letang Municipality Office
3	B.P Koirala Institute of Health Science	Q	Inanuwa District Hospital, Sunsari District	12	Provincial Health Logistics Management
		0	Hospital	10	Offici
4	Primary Hospital, Letang	0	Health Section, Biratnagar Metropolitan		
		9	City		
5	Hospital Development and Service	10	Dederbaria Health Past		
	Division, MoH	10	Dauarberia Freattir FUSt		

First Field Survey:  $10^{th} - 21^{st}$  October 2022.



Tribhuvan University Teaching Hospital, Main Entrance



Manmohan Cardiothoracic Vascular and Transplant Center, Out-patient area



Manmohan Cardiothoracic Vascular and Transplant Center, Out-Patient Clinical Record Storeroom



Bhaktapur Hospital & Human Organ Transplant Centre, Cluttered Pharmacy



Demonstration of Health Management Information System at DoHS

Manmohan Cardiothoracic Vascular and Transplant Center, Clinical Record Storeroom

Second Field Survey: 8<sup>th</sup> - 27<sup>th</sup> January 2023.



Interview for the specialists at outside of Spinal Injury Rehabilitation Center



Hetauda hospital, Main Entrance, Bagmati province



Kalaiya hospital, Bara Madhesh Pradesh



Interview at Bhimphedi PHCC, Bagmati province



Simara PHCC, Madhesh Pradesh



Bharatpur hospital, Bagmati province, consultation without using curtains

# **ABBREVIATIONS**

ADB	Asian Development Bank
AFS	Adolescent Friendly Service
AHW	Auxiliary Health Worker
AMR	Antimicrobial Resistance
ANM	Auxiliary Nurse Midwife
ASRH	Adolescent Sexual and Reproductive Health
AWPB	Annual Work Plan and Budget
BC	Birthing Centre
BEmONC	Basic Emergency Obstetric and Newborn Care
BHS	Basic Health Services
BMI	Body Mass Index
CAPP	Consolidated Annual Procurement Plan
CB-IMCI	Community-Based approach to the Integrated Management of Childhood Illness
CB-IMNCI	Community-Based Integrated Management of Neonatal and Childhood Illness
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CHT	Community Health Toolkit
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus Disease 2019
CTS	Clinical Training Site
CVDs	Cardiovascular Diseases
DALYs	Disability-Adjusted Life Years
DHS	Demographic Health Survey
DoHS	Department of Health Service
e-LMIS	electronic Logistics Management Information System
EMR	Electronic Medical Records
FCHV	Female Community Health Volunteer
GDP	Gross Domestic Products
GIZ	German Agency for International Cooperation (German description: Deutsche Gesellschaft fur Internationale Zusammenarbeit)
GMP	Growth Monitoring and Promotion
HMIS	Health Management Information System
HRH	Human resource for health
IUCD	Intra-Uterine Contraceptive Devices
JAR	Joint Annual Review
JCM	Joint Consultative Meeting
JFA	Joint Financing Arrangement
LARC	Long-acting reversible contraception

LDL	Low Density Lipoprotein
LMIS	Logistic Management Information System
LMS	Learning Management System
MBBS	Bachelor of Medicine, Bachelor of Surgery
MoCIT	Ministry of Communication and Information Technology
MoEAP	Ministry of Economic Affairs and Planning
MoHP	Ministry of Health and Population
MPDSR	Maternal and Perinatal Death Surveillance and Response
MSNP	Multi Sector Nutrition Plan
NCDs	Non-Communicable Diseases
NDHS	Nepal Demographic and Health Survey
NHSS	Nepal Health Sector Strategy
NHTC	National Health Training Centre
NIP	National Immunization Program
NNRFC	National Natural Resource and Fiscal Commission
NPC	National Planning Commission
NPR	Nepalese Rupee
OAH	Old Age Homes
PAC	Post-abortion care
PCL	Proficiency Certificate Level
PEN	Package of Essential NCD Intervention
РНСС	Primary Health Care Centre
PHC-ORC	Primary Health Care Out Reach Clinic
PLMBIS	Provincial Line Ministry Budget Information System
PNC	Postnatal Care
PPMD	Policy, Planning and Monitoring Division
SBA	Skilled Birth Attendant
SDGs	Sustainable Development Goals
SDIP	Safe Delivery Incentive Programme
SHP	Skilled Health Personnel
Swap	Sector Wide Approach
ТоТ	Training of Trainers
TSB	Technical Specification Bank
UHC	Universal Health Coverage
UNFPA	United Nations Population Fund
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development,
WB	World Bank
WHO	World Health Organization



Figure 1 : Organigramme of the Ministry of Health and Population



Figure 2 : Organigramme of the Department of Health Services

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#### 1. Overview of the Survey

#### (1) Background

Nepal suffered severe damage to its economic activities as a result of the 2015 earthquake, but since 2017 it has achieved real Gross Domestic Products (GDP) growth averaging more than about 6% and has also made significant improvements in many health indicators such as the neonatal and under-five mortality rates. However, there are still lagging behind in comparison with international indicators such as the Human Development Index (142nd out of 189 countries, 2019) and the UHC index (133rd out of 183 countries, 2019), and the high maternal mortality ratio (MMR) (186/100,000 live births) in particular is above the average for the South Asian region, representing a major challenge in Nepal. Regarding the disease structure, while conventional infectious diseases such as Tuberculosis and lower respiratory tract infections are still a major challenge, non-communicable diseases (NCDs) account for a rapidly increasing proportion of deaths; thus, urgent countermeasures are required. There is also a serious shortage of health professionals, the number of which per 1,000 people is below the WHO recommendations and is disproportionately concentrated in urban areas.

Under these circumstances, the Government of Nepal has set the goal of "to increase in the quality and access of every citizen to free primary health services as well as emergency and specialist healthcare services" in the 15th five-year plan and is working to solve health challenges based on the "Nepal Health Sector Strategy (NHSS)" (2015-2020). Japan has cooperated with Nepal on infectious disease control, school health, nutrition and education for health professionals. In recent years, Japan has been providing grant aid to Nepal mainly for the construction of facilities as well as provision of equipment and materials for tertiary hospitals. Based on this background, this study was performed to formulate policies of Japan's future assistance to the health sector in Nepal.

#### (2) Purpose of the Survey

The purpose of this study was to collect and analyse the information necessary to formulate a cooperation policy for the health sector in Nepal, in particular, to examine possible technical assistances. In order to achieve this objective, the survey team undertook the following activities.

- To identify the challenges by analysing the latest information and trends on the current state of the health sector in Nepal; and
- To understand the current status of the health sector in Nepal; particularly, the health service delivery system and human resource allocation in the tertiary hospitals and their subordinate health facilities.
- (3) Period of the Survey

October 2022 to May 2023.

(4) Target Areas

Kathmandu Valley, Bagmati province, Koshi province, and Madhesh province

(5) Main institutions surveyed.

Ministry of Health and Population, Development partners, Primary to tertiary healthcare facilities, Nepal Medical Council, Nepal Nursing Council

#### (6) Schedule of the Survey

Table 1	:	Schedule	of the	Survey
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Schedule	Place	Work contents
Early-mid Oct. 2022	Japan	Review of research content and process, literature review, preparation and submission of the inception report
Mid-late Oct. 2022	Nepal	Interviews with relevant organizations and inspection of health facilities
NovDec.2022	Japan	Identification of issues in the health sector, examination of JICA's cooperation policy, discussion on cooperation policy, preparation and submission of the progress report
Jan. 2023	Nepal	Focusing on the candidate areas for JICA support, fact-finding surveys on health policy implementation and disease control initiatives by administrative bodies in the provinces surveyed, as well as on disease control, clinical services and human resource development in primary and secondary health facilities, In addition to the supplemental meetings with the MoHP, relevant departments, international development partners, etc
Feb.2023	Japan	Finalization of JICA candidate projects
MarApr.2023	Japan	Explanation and discussion on JICA's candidate project proposal, and preparation and explanation of the draft final report
AprMay 2023	Japan	Prepare and present the final report

#### 2. General Overview

#### (1) Nepal Country Profile

Nepal is a landlocked country with a land area of 147,000 km<sup>2</sup>, located at the southern foot of the Himalayas and bordered by the Tibet Autonomous Region of the People's Republic of China to the north and India to the east, west and south. The northern mountainous region along the Chinese border is home to the Himalayas, including Mount Everest and other 8,000 m-high peaks. Its climate is cold and alpine, and people originally subsisted on small-scale agriculture, mainly cereals, pastoralism and trade with Tibet, but in recent years some areas have been developed as a centre for Himalayan trekking and tourism. The border area with India is the hot and humid plains of the southern "*Tarai*" (or "*Terai*"), which has been developed as an agricultural area since the 1960's and is now known as the granary of Nepal. Between the northern mountains and the southern Tarai region is a hilly area with a warm monsoon climate and vast terraced uplands that are used for rice paddies and field crops.

Nepal is a multi-ethnic and multi-lingual country, with a complex interplay of ethnic and caste groups, as well as a mix of religions including Hinduism (80.6%), Buddhism (10.7%) and Islam (4.2%). Ethnic groups can be broadly divided into the Indo-European-speaking people, who are predominant in the south and west, and the Tibetan-Burmese-speaking people, who live in the east and north of the country. Of the Indo-European-speaking people, the "*Parvate Hindus*", whose mother tongue is Nepali (the official language of Nepal), are the largest ethnic group, comprising about half of the population. Other people who are considered indigenous, such as the "*Taru*" and the "*Lavajinshi*", are also included in the Indo-European group. The Tibeto-Burmese group includes ethnic groups living in the mid-hills, such as the "*Rai*", "*Limbu*", "*Tamang*", "*Newar*", "*Gurung*" and "*Magar*", as well as Himalayan ethnic groups represented by the "*Sherpas*". In addition to ethnicity and religion, the concept of occupational caste, known as "*jat*", is also important in understanding the social structure of Nepal. Although the Constitution states that citizens are equal before the law, some people, including "*Dalits*", who are positioned at the bottom of the caste hierarchy, religious minorities and ethnic groups whose mother tongue is not Nepali, are said to suffer social inequalities.

#### (2) Administrative Divisions

Although political unrest continued from 1996 due to armed struggle by the Maoist militants, a peace agreement was reached in 2006; after the monarchy was abolished in 2008, a new constitution was promulgated in 2015, which decreed the transition from a unitary to a federal state. The five development regions and 14 administrative zones previously established were abolished and reorganized into seven new administrative divisions (provinces) and 753 municipalities, resulting in a three-tier system of federal,

provincial and local government (Table 2<sup>1</sup>). In 2017, general elections for federal, provincial and local government were held, and the activities of each government started in 2018 under newly elected representatives.

Administrative Divisions	Number	er Administrative Units	
Federal Government	1		
Provincial Government	7		
(District)	(77)		
Local Government		6 Metropolitan Municipalities	
	750	11 Sub-metropolitan Municipalities	$((724 W_{2}, 1_{2}))$
1		276 Municipalities	(0,734  wards)
		460 Rural Municipalities	

Table 2 : Structure of Administrative Divisions

The new Constitution describes the authorities of the three tiers of governments, the characteristics of which can be organised as follows. Firstly, the authorities vested solely in the federal government are limited to a few, such as defence and the armed forces, central banking, monetary policies, international relations, the federal civil service and nuclear energy. In addition, the federal government is responsible for policy formation and standard setting, the provincial governments are responsible for vertical and horizontal coordination between the three tiers of governments, and the local governments bear responsibility for the provision of basic services. However, many overlaps are found in what are defined as the exclusive and concurrent authorities of the three tiers of governments, and it has been pointed out that the allocation of authorities needs to be clarified hereafter through the enactment or amendment of laws and regulations for each sector<sup>i</sup>. In addition, a number of "*wards*" were established under all cities or municipalities. Wards are clusters of settlements and have no municipal functions, but have existed as the smallest administrative segment since the time of the monarchy.

#### (3) Demographic Trends

The total population estimated in 2021 is approximately 29.67 million in Nepal. The rural population accounts for 79% of the total population, with a population growth rate of 3.9% in urban areas and 1.3% in rural areas. The majority of the population is distributed in rural areas, but the urban population is gradually increasing. The proportion of the total population under 15 years of age is 28.1%, 66.0% of the 15-64 age group and 5.9% of the over-65 age group, indicating a large working population but a gradually increasing proportion of the over-65 population (Table 3 :<sup>2</sup>) (Figure 3 :<sup>3</sup>).

<sup>&</sup>lt;sup>1</sup> Prepared by the Survey Team on the basis of the "Data Collection Survey on Federalism and Decentralization in Nepal", JICA (2021).

<sup>&</sup>lt;sup>2</sup> Prepared by the Survey Team from World bank indicators.

<sup>&</sup>lt;sup>3</sup> Source: www.un.org - United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition. Rev. 1.

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Table 4	Rasic	Indicators	of Por	nilation	Dynamics
Table 5.	Dasie	malcators	0110	Julation	Dynamics

Indicators	2000	2005	2010	2015	2021
Total population (x 10.000)	2,394	2,574	2,701	2,702	2,967
Proportion of urban population (%)	13.4	15.1	16.8	18.6	21.0
Proportion of rural population (%)	86.6	84.9	83.2	81.4	79.0
Crude birth rate (per 1,000 population)	31.5	26.0	22.7	20.8	19.3*
Crude mortality rate (per 1,000 population)	8.5	7.4	6.8	6.5	6.3*
Life expectancy at birth (years)	62.3	65.3	67.6	69.5	71.0*
Annual population growth rate (%)	1.8	1.3	0.5	0.4	1.8
Annual population growth rate in urban areas (%)	5.9	3.3	2.5	2.4	3.9
Annual population growth rate in rural areas (%)	1.2	0.9	0.1	-0.1	1.3
Proportion of population under 15 years (%)	41.0	39.3	36.3	33.4	28.1
Proportion of population aged 15-64 (%)	55.3	56.4	58.7	61.1	66.0
Population aged 65 and over (%)	3.8	4.3	5.0	5.5	5.9



Figure 3 : Population pyramid

Population density is highly unbalanced, with high densities concentrated in the eastern part of the Tarai Plain. The only population concentration in the mid-hills is in the Kathmandu Valley, while the hilly and mountainous areas have generally low population densities (Figure 4<sup>4</sup>).

<sup>&</sup>lt;sup>4</sup> Prepared by the "Report of Census 2021" (preliminary ver.)



Figure 4 : Population density across the country

(4) Socio-economic situation

Nepal's nominal GDP for FY2020/2021 was an estimated 4.2 trillion Nepalese Rupees (NPR) (approximately USD 35.4 billion<sup>5</sup>) and nominal GDP per capita was USD 1,191. Economic growth has been relatively stable at 3-6% per year, except in 2015, when the Nepal earthquake caused extensive damage, and in 2020, when the COVID-19 pandemic occurred (Figure 5<sup>6</sup>).



Figure 5 : Economic growth rate and nominal GDP per capita

The government budget of Nepal for the fiscal year 2021/2022 is NPR 1,632.8 billion, with 64.4% of

<sup>&</sup>lt;sup>5</sup> Converted at 1NPR=0.00843USD (as of January 1, 2021)

<sup>&</sup>lt;sup>6</sup> Prepared by the Survey Team from Ministry of Finance (2021), "Economic Survey 2020/21"

revenue coming from taxes and non-tax revenue, 21.8% from grants-in-aid from foreign countries and 14.6% from domestic borrowing. Expenditure, in descending order from largest to smallest, is 29.3% related to the economy, 26.4% to public services and 11.6% to education. Agriculture and forestry are the main industries in Nepal, accounting for about 25.8% of GDP, followed by wholesale trade (15.7%) and real estate (9.4%). Approximately 64% of the working population is engaged in agriculture, forestry and fisheries, but it accounts for only about a quarter of GDP, indicating low productivity in this sector.

The main export commodities are soya oil, yarn, wool carpets, jute products and cardamom, etc. The main export partners are, in descending order of value, India (75.4%), the USA (9.8%), Germany (2.3%) and the UK (1.7%). Major import partners are India (63.1%), China (15.2%), Argentina (2.7%) and the UAE (2.4%), and import petroleum products, steel products, machinery parts and gold from them. In terms of amount of trade (2020/21), imports amounted to NPR 1.54 trillion, more than 10 times higher than exports of NPR 141.1 billion. The trade deficit has been growing year by year and reached a record high of NPR 1.398 trillion in 2020/21.

Many Nepalese workers migrate to Middle Eastern countries such as Qatar and Saudi Arabia, as well as to Malaysia; in 2013/14, the number of these migrant workers exceeded 500,000 per year but has been declining since then. Having said that, the amount of remittances to their home is on the rise, with NPR 961 billion, representing 22.5% of GDP in 2020/21.

Nepal continues to make efforts to expand educational opportunities and has a high primary enrolment rate in comparison with neighbouring countries. However, there are still challenges such as poor and lower caste children having difficulty accessing education, lack of safe infrastructure for school buildings and routes to school in mountainous areas, and low quality of education (Table 4<sup>7</sup>).

Indicators	Nepal	Bhutan	Bangladesh	India
GDP per capita (USD)	1223 (2021)	3001 (2020)	2503 (2021)	2277 (2021)
Economic growth rate (%)	4.25 (2021)	-10.1 (2020)	6.9 (2021)	8.9 (2021)
Gross primary education enrolment rate (%)	126.9 (2020)	105.8 (2020)	119.6 (2020)	99.9 (2020)
Gross primary education enrolment rate for women (%)	126.3 (2020)	106.6 (2018)	125.0 (2020)	100.9 (2020)
Human Development Indicators/rank out of 189 countries*.	0.602/142	0.654/129	0.632/133	0.645/131
Adult (15+) literacy rate	71.2 (2021)	71.0 (2021)	74.9 (2020)	74.3 (2018)
Youth (15-24 years) literacy rate	94.2(2021)	97.3(2021)	94.5(2020)	91.7(2018)
Female adult (15+) literacy rate	63.3 (2021)	62.8 (2021)	72.0 (2020)	65.8 (2018)
Female youth (15-24 years) literacy rate	93.3(2021)	97.4(2021)	95.9(2020)	90.2(2018)

Table 4 :	Basic	indicators	for Nepa	1
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 $<sup>^7</sup>$  Prepared by the Survey Team from World Development Indicators , \* is the data from UNDP (2020).

#### 3. Development Policy

(1) Positioning of National Development Policy and Health Policy

In Nepal, the National Planning Commission (NPC) formulates the "*National Development Plan*". During the transition to federalism, a three-year plan was formulated as a medium-term plan, but the current "*The Fifteenth Plan (Fiscal Year 2019/20 – 2023/23)*" was formulated as a five-year plan (hereinafter as a "*Current National Plan*") following the formation of a stable government. The Current National Plan includes a review of the 14<sup>th</sup> National Plan (Table 5<sup>8</sup>), a long-term vision to 2043, and five-year development plan with its targets for each sector. The review of the health sector of the 14<sup>th</sup> National Plan assessed that while there were significant improvements in the health sector as a whole, the targets for reducing mortality rate among infants, pregnant women and children under 5 years of age war not achieved.

Table 5 : Progress Achievement of Key Development Goals of the Health Sector of the 14th National Plan

	Target in the FY 2018/19	Achievement in the FY 2018/19
Life expectancy (at birth, year)	72	69.7
Infant mortality rate (at per 1,000 live births)	20	21
Child mortality rate under five years (at per 1,000 live births)	30	39
Maternal mortality rate (at per 100,000 live births)	145	239

The Current National Plan includes a long-term vision for the first time. It states that elections at the federal, provincial, and local government levels have been completed and that a long-term vision is needed to determine national goals for rapid economic development and prosperity based on political stability. The Government of Nepal has set a national goal to reduce economic vulnerability by 2030 through the achievement of the Sustainable Development Goals (SDGs), moving from a least developed country to an upper middle-income country, and then to a high-income country by 2043. The long-term vision focuses on building equitable societies based on social justice, with the following listed as goals (Table 6<sup>8</sup>). Among the development goals of the long-term vision, the main development indicators and targets related to the health sector are listed in Table 8<sup>8, 9</sup>. The lead agency for development indicators related to the health sector is the Ministry of Health and Population (MoHP) at the federal level. The long-term development goals for the health sector are supposed to be achieved through the development of healthy citizens through investments in child health and nutrition.

<sup>&</sup>lt;sup>8</sup> Prepared by NPC, 15th Five Year Development Plan 2019/20-2023/24 of Government of Nepal

<sup>&</sup>lt;sup>9</sup> Please refer to Appendix 5: List of Development Indicators under the MOHP's leadership in the 15th National Plan

1. Prosperity	2. Happiness	
1.1 Accessible modern infrastructure and intensive connectivity	2.1 Well-being and decent life	
1.2 Development and full utilization of human capital potentials	2.2 Safe, civilized and just society	
1.3 High and sustainable production and productivity	2.3 Healthy and balanced environment	
1.4 High and equitable national income	2.4 Good governance	
	2.5 Comprehensive democracy	
	2.6 National unity, security, and dignity	

Table 6 : Long-term National Goals till 2043 in the Fifteenth Plan

On the other hand, the five-year plan for the health sector is summarized in the "7.3 Health and Nutrition" of the Chapter 7 in the Social Sector of the Current National Plan. The Constitution of Nepal stipulates the right of citizens to receive basic health services from the state as a fundamental right. Since a healthy and productive citizenry is important for national development, it states that the state is obligated to ensure equitable access to quality and accessible health services by increasing investment in the health sector. The following are described as major problems and indicators of health sector (Table 7 & Table 8<sup>8</sup>).

 Table 7 : Major Problems of Health Sector listed in the Fifteenth Plan

- > Failure to maintain access to and uniformity of quality health services as per people's expectations
- Failure to develop adequately the health service itself and the human resources that are service-oriented and accountable to public health
- > Lack of required modern equipment and specialist doctors at the government health institutions
- Increased burden of non-infectious diseases and mental health problems due to change in food habits and lifestyle with the increasing pace of globalization, etc.
- > Climate change, increasing food insecurity, emergence of human health problems due to natural disaster
- > Increasing antimicrobial resistance to antibiotics due to lack of their proper use
- > The low pace of decreasing maternal mortality rate
- > Malnutrition in more than one-third children of below five years and women of reproductive age group
- Private sector's dominant presence even in community health services, and lack of proper coordination and effective regulation, among others

# Table 8 : Major Development Goals and Indicators of Health Sector of Long-Term Vision and the Five-Year Plan

National Goals, targets, and indicators	Status in FY 2018/19	Target for the FY 2023/24	Target for the Year 2043/44
Life expectancy (at birth)	69.7	76	80
Maternal mortality rate (at per 100,000 live births)	239	99	20
Infant mortality rate (at per 1,000 live births)	NA	14	NA
Child mortality rate under five years (at per 1,000 live births)	39	24	8
Underweight children below five years	27	15	2
Women who receive 4 prenatal check-ups as per the protocol (%)	NA	81	NA
Births attended by the skilled health worker (in live births)	NA	79	NA
Population covered by health insurance	NA	60	NA
Ratio of health treatment expenses to personal expenses	NA	40%	NA
Adolescent reproduction (Under 19 years)	13	6	NA
Families-households within 30 minutes' distance of access to health centres	49	80	NA

In order to solve the above problems, three objectives are set in order to achieve the goal of " To ensure access to quality health services at the people's level by developing and expanding a strong health system

at all levels".

- 1. To achieve balanced development and expansion of all sorts of health services at the federal, provincial, and local levels;
- 2. To transform the profit-oriented health sector gradually into a service-oriented sector by increasing government responsibilities and effective regulation for easily accessible and quality health service; and
- 3. To promote a healthy lifestyle by making health service providers and service seekers more responsible for increasing the citizens' access to health service through multisectoral coordination and partnership.

See Appendix 6 for SDG health sector targets and achievement levels.

(2) Nepal Health Sector Strategy (NHS-SP)

The NHS-SP has been prepared since 2004. The NHP-SP 2022-2030, the fourth phase of NHP, was drafted based on the 15<sup>th</sup> National Plan, the National Health Policy 2019, the SDGs, and the Public Health Service Act 2018. It is positioned as a strategic tool to address and priorities outstanding health challenges to achieve UHC under the federal system. It aims to improve existing coordination mechanisms with development partners and continue and strengthen the "*Sector Wide Approach*" (SWAp). Based on the main challenges listed in the NHP-SP 2022-2030 (Table 9), the major gaps and their challenges for each of the six components are summarized in Table 10<sup>10</sup>. The draft NHP-SP 2022-2030 was submitted to the Cabinet in 2022, but has not yet been approved and finalised by it as the new Cabinet was formed in 2023 (as of end-January 2023).

#### Table 9 : Major gaps listed in NHP-SP 2022-2030

- a. Inadequate access to quality health services
- b. Failure to manage a balance of highly competent health personnel under the federal system
- c. Limited availability and use of data for evidence-based planning and budgeting
- d. Making health information systems more systematic, integrated, and technology-friendly to address the demand for health information at all levels
- e. Inadequate required modern equipment at the public health institutions
- f. Low budget allocation in the health sector to address emerging health challenges
- g. High level of out-of-pocket expenditure for health care (57% in 2020) are an economic barrier to accessing health services.
- h. Challenges in maintaining the overall good state of the health system by guaranteeing the quality of health services and establishing regulations

Building blocks	Major gaps	Major challenges
Service delivery	<ul> <li>a. Inadequate access to quality health services</li> <li>b. Inadequate access to specialist and superspecialist services</li> <li>c. Inadequate access of most deprived and vulnerable citizens to health services</li> <li>d. Limited multi-sectoral coordination and collaboration in health service delivery</li> </ul>	<ul><li>a. providing health services with priority to ultra-poor and vulnerable citizens</li><li>b. Providing free and quality basic health services available and accessible to everyone at the local levels</li><li>c. Addressing wider determinants of health to resolve health problems relating to climate change and people's lifestyle</li></ul>

Table 10 : Major gaps and their challenges for each of the six components listed in NHP-SP 2022-2030

<sup>&</sup>lt;sup>10</sup> Prepared by the Survey Team from NHP-SP 2022-2030

	e. Limited functionalities of existing outreach mechanisms including Primary Health Care- Outreach Clinics (PHC-ORC)	d. Addressing geographical barriers to improve access to health facilities in remote and difficult areas
Health workforce	<ul> <li>a. Failure to develop service-oriented and accountable human resources for health (HRH)</li> <li>b. Lack of harmonization between the production of HRH and their utilization</li> <li>c. Vacant sanctioned posts of health cadres</li> <li>d. Limited digital health awareness among HRH</li> <li>e. Mismatch of the health staff at the local level due to the general tendency of over posting in the urban setting and under posting in the rural setting</li> </ul>	<ul> <li>a. Balanced management of skilled, competent, and healthy human resources that carry a social responsibility of providing health services</li> <li>b. Due to the limited sanctioned posts, there are challenges to fulfilling HRH in some specialties such as hospital managers and biomedical engineers</li> <li>c. Ensuring the academic institutions meet minimum service standards</li> </ul>
Health information system	<ul> <li>a. Limited availability and use of data for evidence-based planning and budgeting</li> <li>b. Inadequate link of research findings in health planning and budgeting</li> <li>c. Low and inconsistent reporting from private and tertiary level health facilities in Health Management Information System (HMIS<sup>11</sup>)</li> <li>d. The inadequate functional linkage between provincial health offices and municipalities for data management and analysis</li> </ul>	<ul> <li>a. Increasing the use of data in monitoring, assessment, review, policy formulation, and decision process</li> <li>b. Making health information systems more systematic, integrated, and technology-friendly to address the demand for health information at all levels</li> <li>c. Developing a system to record the causes of deaths and continually conducting research on them</li> <li>d. Institutionalising the practice of analysing routine data to measure quality of care</li> </ul>
Medical products, technologies	<ul> <li>a. Inadequate required modern equipment at the public health institutions</li> <li>b. Increasing anti-microbial resistance to antibiotics due to lack of their proper use</li> <li>c. Weak monitoring of supply chain management of medicine and supplies</li> <li>d. Traditional warehouse facilities set up in all the provinces without having adequate HRH as well as enough space for the good housing practice</li> <li>e. Inadequate system linkages between Annual Work Plan and Budget (AWPB), Technical Specification Bank (TSB), Logistic Management Information System (LMIS), and Consolidated Annual Procurement Plan (CAPP) in preparing procurement proceedings and prebid information and planning system</li> </ul>	<ul> <li>a. Achieving self-reliance in drugs production</li> <li>b. Effective management and regulation of drugs and drug-related materials</li> <li>c. Operation and maintenance of equipment on regular basis in terms of availability of skilled HRH and adequate funding</li> <li>d. Institutionalising National Health Accounts (NHA) to routinely monitor health expenditure including spending by private sectors</li> </ul>
Financing	<ul> <li>a. Low budget allocation in the health sector</li> <li>b. High level of out-of-pocket expenditure for health care</li> <li>c. Ineffective implementation of health insurance and other social protection schemes</li> <li>d. Low national population coverage under the health insurance program and low renewal rate</li> <li>e. Fragmentation of existing social protection programs in health resulting in confusion and overlaps</li> </ul>	<ul> <li>a. Determining the volume of financial sources and ensuring their availability</li> <li>b. Increasing the volume of aid from the international community after the graduation of Nepal from low-income-countries to middle-income countries</li> <li>c. Reducing the high level of out-of-pocket expenditure for health care</li> <li>d. Enhancing budget absorption capacity <sup>12</sup> at all levels</li> </ul>
Leadership and governance	<ul> <li>a. Inadequate adherence to Public Health Service Act and regulations, national Standard Operating Procedures (SOPs), and guidelines at the point of service delivery</li> <li>b. Inadequate institutional capacity of local governments in managing complex functions</li> <li>c. Limited organizational capacity due to vacant</li> </ul>	<ul><li>a. Managing the health institutions as per the federal structure</li><li>b. Making the health sector responsible for human health by gradually transforming the profit-oriented health sector into a service-oriented one</li><li>c. Maintaining good governance in the overall health sector by ensuring and regulating the quality of health</li></ul>

<sup>&</sup>lt;sup>11</sup> The HMIS is an information management system for health services from the community to the DoHS level that provides basic information for planning, monitoring, and evaluation of health systems at all levels. (From the website of the Integrated Health Information Management Section of Management Division, DoHS)

<sup>&</sup>lt;sup>12</sup> Indicates actual expenditures relative to budget. If the ratio of expenditures to budget is high, the budget absorption capacity is considered high

positions and long-back developed Organisation and Management (O&M) structure of service delivery sites d. Limited use of the tools for enhancing social	service d. Ensuring full compliance with Public Health Service Act and regulations, national SOP, and guidelines at the point of delivery
accountability	

An outline of the NHP-SP 2022-2030 is summarized in Table 11<sup>10</sup>. See Appendix 7 for the results framework,

including outcomes and outputs.

Table 11 : Outline of NHP-SP 2022-2030

<u>Vision</u> : Healthy, productive, responsible and happy citizens

Mission : Ensure fundamental health rights of the citizens

Goal : Improved health status of every citizen

**Guiding Principles :** 

1) Universal access to the continuous availability of, transparency and comprehensiveness in quality health services;

- 2) Multi-sectoral involvement, collaboration, and partnership in the health system in accordance with the federal structure;
- 3) Special health services targeted to ultra-marginalized, Dalit and indigenous communities;
- 4) Good health governance and assurance of adequate financial investments;
- 5) Diversification of equitable health insurance;
- 6) Restructuring in the health services;
- 7) Health and multi-sectoral coordination and collaboration in all policies;
- 8) Professionalism, honesty and occupational ethics in health service delivery; and
- 9) Resiliency in the health system.

Strategic Objective :

- 1) Enhance efficiency and responsiveness of health system;
- 2) Address wider determinants of health;
- 3) Promote sustainable financing and social protection in health;
- 4) Promote equitable access to quality health services; and
- 5) Manage population and migration.

(3) Multi-sectoral Development Planning

The 15th National Plan and the NHP-SP 2022-2030 clearly state that multi-sectoral cooperation and collaboration is needed in addition to the health sector to achieve the health sector's goals. In addition, cross-sectoral issues such as gender need to be addressed. The multi-sectoral strategies and development plans currently being developed by the MoHP, either under its lead or with its key members, include the following.

- 1) MoHP (2021) National Strategy for Human Resource for Health (HRH) of Nepal (2020/21-2029/30)
- 2) MoHP, National e-Health Strategy 2017
- Ministry of Communication and Information Technology: MoCIT) <sup>13</sup> (2018) 2019 Digital Nepal Framework: Unlocking Nepal's Growth Potential)
- 4) NPC (2020) National Strategy for Early Childhood Development 2077-2088
- 5) Government of Nepal (GoN) & WHO, Multisectoral Action Plan for the Prevention and Control of

<sup>&</sup>lt;sup>13</sup> Ministry of Communication and Information Technology

Non-Communicable Disease (2014-2020)

- NPC (2017) Multi-Sector Nutrition Plan (2018-2022) MoHP & MoE, Joint Action Plan 2015-2020 School Health and Nutrition
- 7) MoHP (2022) Geriatric Health Service Strategy 2021 to 2030
- 8) MoH (National Antimicrobial Resistance Containment Action Plan Nepal 2016)
- 9) MoHP (2018) Gender Equality and Social Inclusion Strategy of the Health Sector, 2018

#### (4) Related Laws

The following are important ground rules and regulations for the health sector in general.

1) Constitution of Nepal 2015, 35. Right to health care

Provides for the right to receive basic health services from the state as a fundamental right of citizens. Provides that since a healthy and productive citizenry is important for the development of Nepal, the state is obligated to ensure equitable access to quality and accessible health services by increasing investment in the health sector.

2) The Public Health Service Act, 2075 (2018)

Legal provisions to exercise the constitutional right of citizens to free basic and emergency health services and to establish a system for easy access to regular, effective and quality health services.

 Public Health Service Regulation 2020 (Section 70) Number 23 Nepal Gazette Part 3 Date 2020/09/21, GoN, notice of Ministry of Health and Population)

The implementing regulations of the Public Health Service Act. It defines the contents of Basic Health Service (BHS) and Emergency Health Service (EHS) to be provided by the state to the public.

4) Nepal Health Service Act, 2053 (1997, latest revision 2010)

Prescribing matters relating to the composition, operation and conditions of service, promotion and filling of vacancies in the health service, in order to provide essential health services to citizens.

5) Nepal Health Service Rules, 2055 (1999, latest revision 2005)

The implementing regulations of the Health Services Act. Regulates the organizational structure, regular positions, recruitment, qualifications, transfers, promotions, conditions of service, and ranks by qualifications and positions for the provision of health and medical services.

6) Civil Service Act, 2049 (1993, latest revision 2007)

Regulates matters relating to the ranks, duties, recruitment, promotion, filling vacancies, conditions of

service, etc., of civil servants.

#### 7) Civil Service Rules, 2050 (1993, latest revision 2010)

Implementing regulation of the Civil Service Law. Regulates matters relating to recruitment, promotion, etc. of civil servants.

(5) Priority Programs in the Health Sector

In Nepal, programs to address priority issues, including those in the health sector, have been planned and formulated at the initiative of the central government based on central government policies. Even after the transition to federalism, the federal government continues to take the lead in formulating programs for key issues. According to data from the MoHP, there are more than 40 programs planned by the MoHP and approved by the Cabinet in the FY 2079/80 of Nepal's calendar (corresponding to the FY 2022/23 AD). One of these programs includes the activities of the highly specialized hospitals and scientific academies under the jurisdiction of the MoHP. The MoHP has requested all seven provinces to implement 12 common programs and has provided financial transfers for these programs. On the other hand, local governments have been requested to implement 13 programs by the MoHP. Since the financial transfers from the MoHP to the local governments are combined in one budget code, it was not possible to confirm whether all program budgets have been allocated to all local governments and how much each program has been budgeted.

	Provincial Gov.	Local Gov.	Program Name and Description
1	х	Х	<b>National Health Training Centre:</b> Basic nursing staff training, adolescent sexual and reproductive health training, cervical cancer screening and treatment training for physicians and nursing staff, skilled obstetrician training, safe abortion training
2	Х	Х	Health Sector Reform Program: Construction and maintenance of healthcare facilities and laboratories, equipment, training in the use of equipment, etc.
3	Х	Х	<b>Tuberculosis Control Program:</b> Nutritional allowances during treatment for the poor, development of TB centres, training to improve TB diagnosis, etc.
4	х	Х	<b>AIDS and STD Control Program:</b> Information development and related training on HIV-related laws and regulations, media broadcasts on reducing HIV discrimination, distribution and transportation of medicines, and training for service providers.
5	х	Х	<b>Family Welfare Program:</b> Maternal and Newborn Health (MNH), including purchase of medicines and training for the Integrated management of neonatal and childhood illness (IMNCI) program, program monitoring, mentor development, training, medicines, etc., infectious disease prevention campaigns, disinfectants, cold chain maintenance, immunization awareness, etc.
6	Х	х	<b>Epidemiology, Malaria, Black Fever Control and Natural Disasters Program:</b> NCD-related programs, early warning reporting systems, care and support centre development, malaria-related programs, etc.

Table 12 : Health	programs in	province and local	governments rec	nuested to be im	plemented b	v the MoHP
Tuble 12. Health	programs m	province and local	governments ree	juested to be mi	premiented 0	y the month

7	Х	Х	<b>Disability Prevention and Leprosy Control Program:</b> Early detection and counselling of disabilities, leprosy management programs, disability management programs, etc.
8	Х	Х	Health Management Program: Recording and reporting of HMIS, LMIS, and DHIS2, equipment maintenance and related training to improve the quality of information, etc.
9	Х	Х	<b>National Health Education Information Communication Centre Program:</b> Health education for students and schools, awareness of tobacco consumption reduction, media advertising, etc.
10	Х	Х	<b>Remedial Service Program:</b> Procurement of essential drugs, provision of basic services and training at health care facilities, etc.
11	Х	Х	<b>Nursing and Social Security Program:</b> Establishment and maintenance of a geriatric ward, education of assistant level medical personnel, program to establish a one-door crisis centre, Training of Trainers (ToT) training, training and retraining of female health volunteers, etc.
12	Х	Х	<b>Ayurveda Service Program:</b> Lifestyle management programs, civic health programs, yoga education programs, etc. at PHC
13	—	Х	Primary Health Care Program Health post management costs, personnel costs, allowances, etc.

#### 4. Health Status of Nepalese Citizens

#### (1) Overview

According to the WHO 2020 report, Nepal's life expectancy is 68.9 years for men and 72.7 years for women (Table 13<sup>ii</sup>) giving an overall life expectancy of 70.9 years, a significant improvement from 54.4 years in 1990 and not much different than other South Asian countries. In addition, healthy life expectancy (HALE: Healthy Life Expectancy) was 63 years in 2016, an increase of 8% in comparison with 59 years in 2000 (Table 14 Table 15<sup>iii</sup>).

Table 13 : Average Life Expectancy in Nepal

	Male	Female	Average
Life expectancy	68.9	72.7	70.9

Table 14 : Average Life Expectancy in South Asian Countries

		Ne	pal		South Asia	Bhutan	Bangladesh	India
Life Expectancy	1990	2000	2010	2020	2019			
	54.4	62.3	67.6	70.9	69.6	71.8	72.6	69.7



Figure 6 : Total disease burden by cause, Nepal, 1990-2017

Maternal and child health (MCH)-related causes of death were the most common causes of death till 2000 but MCH indicators slowly declined due to implemented nutrition improvement programs by the government of Nepal with the support of international organizations such as WHO and UNICEF. However, gradually increased the death cause of ischemic heart disease, chronic obstructive pulmonary disease (COPD), stroke and diabetes, which is thought to be due to unhealthy lifestyles such as smoking and lack of exercise, as well as changes in lifestyle due to economic development (Figure 6<sup>vi</sup>).

NCDs kill 41 million people worldwide each year accounting for 74% of global deaths. 77% of which occur in low- and middle-income countries which means more than three-quarters (31.4 million) of global NCD

deaths occur in low- and middle-income countries including Nepal. Thus, Nepal government has shifted the focus of the NHSS from communicable diseases to NCDs to address the rapidly changing disease structure.

Approximately 193,331 deaths were reported in 2019, of which 71.1% were due to NCDs in the world, and 21.1% were due to infectious diseases, gestational, neonatal, and nutrition-related causes, remaining 7.8% were due to trauma. Cardiovascular Diseases (CVDs) were the most common cause of death, accounting for 24% of all deaths. In terms of male to female ratio, 26.8% of men and 20.7% of women died from CVDs, almost doubling between 1990 and 2017. The second most common cause of death is chronic respiratory disease, accounting for 21.1% of all deaths, 18.9% of men, and 23.8% of women. Malignant neoplasms followed, accounting for 10.8% of deaths among men, 11.5% among women, and 11.1% of all deaths <sup>iv</sup>. According to the 2019 Disability-Adjusted Life Years (DALYs) in Nepal, 61.2% of all DALYs were from NCDs, 29.3% were from infectious diseases, maternal, neonatal, and nutrition-related diseases (CMNN), and the remaining 9.6% were from trauma. Compare to DALYs in 2009 and 2019 (Table 15) shows a decrease in infectious diseases and an increase in NCDs.

	1990	2019
1	Respiratory Disease/TB	Cardiovascular Disease
2	Pregnant /Prenatal Disease	Pregnant /Prenatal Disease
3	Other Infectious Disease	COPD
4	Intestinal Disease	Respiratory Disease/TB
5	Nutritious Disease	Neoplasm
6	Cardiovascular Disease	Mental disorder
7	Other NCDs	Musculoskeletal disorder
8	Accident /Disaster	Other NCDs
9	COPD	Accident /Disaster
10	Digestive Disease	Digestive Disease

	Table 15	: Nepal's	DALYs (	(1990)	and 2019)
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Figure 7 <sup>vi</sup> shows, chronic pulmonary and cardiovascular diseases remained the leading causes of death in the 1990s, but infectious diseases were still an important cause of death such as tuberculosis, respiratory infections enteric infections, and other infectious diseases. Nowadays, cardiovascular disease and chronic lung disease of the respiratory tract still remain the most important causes of death, however increasing the number of malignant neoplasms (cancers) and diabetes (including chronic kidney disease) due to non-communicable diseases due to change lifestyle. Moreover, about 27% of deaths in Nepal and nearly doubling between 1990 and 2017, thus cardiovascular disease is the leading cause of death and disability in Nepal<sup>v</sup>.

		9	% change	e
Parts by saves 1000	Bank by sause 2010	1990-	2010-	1990
Rank by cause 1990	Rank by cause 2019	2010	2019	2019
ronic respiratory diseases	Cardiovascular diseases	-13.4	5.9	-8
rdiovascular diseases	Chronic respiratory diseases	-16.6	1.5	-15
ratory infections and TB	Neoplasms	-5.4	13	
c infections	Respiratory infections and TB	-56.9	-26.8	-68
infections 4	Digestive diseases	-31.2	-2.4	32
ms 🕠	Diabetes and CKD	15.9	27.4	47
d neonatal 🛛 🚮	Totoric infactions	60 F	22.6	70
		-09.5	-32.0	-79.
ases 🛃	Unintentional injuries	-28.8	-5	-32
liniuries	Maternal and neonatal	-41.2	-24.0	61
narinjunes 9	disorders	-41.2	-54.9	-01
ficiencies 🕦	Neurological disorders	7.3	9.7	17.
KD A	Other infections	-78.8	-26.4	-84
rders 💦	Other NCDs	-23.4	-6.7	-28
	Self-harm and interpersonal	-10.6	-75	-75
13	violence	-19.0	-7.5	-25.
erpersonal 14	Transport injuries	-74 3	-0.0	-74
15	15	24.5	0.5	24
5 10.	Nutritional deficiencies	-79.8	-29.8	-85.
ria 🎽	HIV/AIDS and STIS	398.4	-41.1	193.
STIS	Musculoskeletal disorders	15.6	25.6	45.
disorders 🔋	• 18 NTDs and malaria	-63.4	-36.1	-76.
isorders 19-		-15.9	4	-12
itaneous 20-	Skin and subcutaneous	-1.3	10.3	8
<u> </u>	diseases		20.2	
	Mental disorders	77.4	40	148.
ble, Matemal, Neonat	al and Nutritional Diseases			
nunicable Diseases				
ame or increase				
Decrease				

Figure 7 : Change in Age-Standardized Mortality Rates from 1990 to 2010 and 2010 to 2019

Smoking was also the highest risk factor for death in 2019. Cause of the death by smoking was 17.7% of total death and followed by systolic hypertension (12.3%), indoor air pollution (11.2%), air pollution (9.3%), diabetes (8%), high cholesterol and renal dysfunction. Furthermore, the top 10 causes of death over the 10-year period 2010-2019 (Figure 7 ), respiratory diseases, Chronic Obstructive Pulmonary Disease (COPD), lower respiratory tract infections, tuberculosis, and asthma are the most common causes of death, The Nepal Burden of Disease 2019 report also identifies risk factors such as indoor air pollution and particulate air pollution as major risk factors for death from respiratory diseases<sup>vi</sup>.

Recent trend is the increase in suicide in Nepal. The suicide rate has been increased from 16.5% per 100,000 population in 2015 to 23.7% per 100,000 population in 2020. This is the second leading cause of death among 15- to 29-year-old and the most common cause of death among women aged 15 to 45. The reason of increasing the number of suicides is not only cause of mental health but also lose their health by NCDs<sup>vii</sup>.

The Government of Nepal has set the goal of "To increase in the quality and access of every citizen to free primary health services as well as emergency and specialist healthcare services" in the 15th five-year plan and is working to solve health challenges based on the "Nepal Health Sector Strategy (NHSS)" (2015-2020)<sup>viii</sup>.
Nepal was further affected by the COVID-19 pandemic, which spread from the end of 2019 without fully recovering from the 2015 earthquake. Nepal is geographically adjacent to China and India and has a large immigrant population. Nepal ranks the Global Health Security Index 111th out of 195 countries. WHO had indicated since the early stages of the outbreak that Nepal was a country at very high risk of infection because the education on health and hygiene is inadequate. When the infection actually began to spread, the country was greatly affected by inadequate infection control measures due to a lack of human resources and diagnostic techniques, medical facilities such as laboratories and hospital beds, and medical materials such as protective clothing. In poor areas in particular, the nutritional status of children, adolescents, and pregnant and postpartum mothers deteriorated due to the restrictions on their activities, in addition to the original lack of nutritional status in rural areas caused by the lockdown and restrictions on access to medical facilities. In addition, there are concerns about an increase in maternal mortality due to an increase in home deliveries as a result of restrictions on access to medical care in normal and emergency situations <sup>xxvii</sup>. In countries with fragile health and medical systems such as Nepal, natural disasters and the spread of infectious diseases have had a significant impact on the nutritional status of the poor and increased maternal mortality rates.

## (2) Maternal Neonatal and Child Health

Nepal has shown a significant improvement in indicators of MNCH since 1990s (Table 16<sup>14</sup>). Indicators for children including neonatal mortality rate (NMR), infant mortality rate (IMR) and under 5 mortality rate (U5MR) are relatively good among the South Asian countries, and NMR is being ameliorated along the roadmap for achieving the SDGs (Table 17<sup>15</sup>). On the other hand, there is a lag in improvement in indicators related to safe motherhood, such as maternal mortality ratio (MMR), percentage of women who delivered by skilled birth attendants (SBAs), institutional delivery rate, and adolescent birth rate. In general, indicators of maternal health show poor conditions compared with neighbouring countries in South Asia, which implies challenges remain in this area.

<sup>&</sup>lt;sup>14</sup> Prepared by the Survey Team from World bank indicators and UNICEF DATA (accessed on Dec. 11, 2022).

<sup>&</sup>lt;sup>15</sup> Prepared by the Survey Team from "Nepal's Sustainable Development Goals Status and Roadmap: 2016-2030", Nepal National Planning Commission (2017) and "Nepal's Sustainable Development Goals Progress Assessment Report 2016–2019", Nepal National Planning Commission (2020)

# Table 16 : Indicators of MNCH

Indiantara	Nepal				South Asia	Bhutan	Bangladesh	India
Indicators	1990	2000	2010	2020		2	2020	
Neonatal mortality rate (per 1,000 live birth)	57.9	39.3	26.5	16.9	23.9	15.3	17.5	20.3
Infant mortality rate (per 1,000 live birth)	96.5	58.7	36.6	23.6	31.8	23.2	24.3	27.0
Under-five mortality rate (per 1,000 live birth)	138.8	79.1	45.9	28.2	38.5	27.6	29.1	32.6
Maternal mortality ratio (per 100,000 live births)	-	553	305	186 (2017)	163 (2017)	183 (2017)	173 (2017)	145 (2017)
Births attended by skilled health staff (% of total)	-	11.9	-	58 (2017)	76.0 (2018)	96.2 (2018)	52.7 (2018)	81.4 (2016)
Institutional deliveries (%)	-	9.1 (2001)	35.3 (2011)	77.5 (2019)	-	93.6 (2017)	53.4 (2019)	88.6 (2021)
Unmet need for contraception (% of married women ages 15-49	-	-	-	24.7 (2019)	13.8 (2017)	11.7	13.7 (2019)	12.9 (2016)
Adolescent fertility rate (births per 1,000 women ages 15-19)	131.6	113.0	81.2	63.0	22.4	16.3	81.0	9.9
Total fertility rate (births per woman)	5.2	4.0	2.5	1.8	2.3	1.9	2.0	2.2
Immunization, HepB (3 times) (%)	-	-	82	91 (2021)	-	98 (2021)	98 (2021)	85 (2021)
Immunization, DPT (3 times) (%)	43	74	82	91 (2021)	-	98 (2021)	98 (2021)	85 (2021)
Immunization, BCG (3 times) (%)	74	84	94	95 (2021)	-	99 (2021)	99 (2021)	84 (2021)

# Table 17 : Achievement of the SDGs in the MNCH area

SDCa to	reat related to MNCH area	2015	20	2030	
SDOS la	iger related to MINCH area	Actual	Target	Progress*	Target
3.1.1	Maternal mortality ratio	258	125	239	70
3.1.2	Proportion of births attended by skilled health personnel	55.6	69	79.3	90
3.2.1	Under-five mortality rate	38	28	28	20
3.2.2	Neonatal mortality rate	23	18	16	12
3.7.1	Proportion of women of reproductive age (15-49 years) who have their need for family planning satisfied with modern methods	66	71	56	80
3.7.1.a	Contraceptive prevalence rate (modern methods) (percent)	47	52	43	60
3.7.1.	b Total Fertility Rate (TFR) (births per women aged 15-49 years)	2.3	2.1	2.0	2.1
3.7.2	Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group	170	56	63	30
3.8.1.a	Percent of women having 4 antenatal care visits as per protocol (among live births)	60	71	56.2	90
3.8.1.b	Percent of institutional delivery	55.2	70	77.5	90
3.8.1.c	Percent of women attending three PNC as per protocol	20	50	16.4	90

\* Red letters indicate progress that has been delayed.

Among the child health indicators that have shown improvement, there are large regional disparities within the country, with more than a twofold difference between the lowest and highest provinces in all neonatal, infant, and under-five mortality rates (Table 18<sup>16</sup>). Comparing the three provinces covered in this study, Bagmati Province is generally better than the national average and Koshi province is close to the average, while many of the indicators in Madhesh Province indicate a poor situation. This may be due to the fact that Bagmati Province has a large number of households with high incomes and a high concentration of medical facilities and personnel, while Madhesh Province lacks medical facilities and personnel.

Area	Neonatal mortality (per 1,000 live birth)	Infant mortality (per 1,000 live birth)	Under-5 mortality (per 1,000 live birth)	Unmet need for family planning (currently married women aged 15-49) (%)	Women aged 15-19 who have ever been pregnant (%)	Total fertility rate (per woman)
Year	2016	2016	2016	2022	2022	2016
Ecological zone						
Mountain	35	57	63	19.1	15.8	3.0
Hill	23	32	38	22.7	12.5	2.1
Tarai	28	41	49	19.7	14.1	2.5
Province						
Koshi	22	31	36	17.6	12.8	2.3
Madhesh	30	43	52	21.1	19.8	3.0
Bagmati	17	29	36	16.0	7.8	1.8
Gandaki	15	23	27	28.1	12.9	2.0
Lumbini	30	42	45	23.3	9.8	2.4
Karnali	29	47	58	23.4	20.5	2.8
Sudurpashchim	41	58	69	22.1	12.5	2.2
Total	21	32	39	20.8	13.6	2.3

Table 18 : MCH indicators by area

Although the total fertility rate in Nepal is declining, the teenage (10-19 years old) fertility rate is as high as 63.0 per 1000 (2019), which is also lagging on the path to achieving the SDG target (56.0 per 1000 in 2019). It is very high compared to the average for South Asia, which is 22.4 per 1,000 women aged 10-19. This high fertility rate in the adolescent age group could be due to the high rate of child marriage, as in Bangladesh. Although Nepal's legal minimum age for marriage is 20, there are still many women under the age of 18 who are married or in union (Table 19<sup>17</sup>). According to the 2016 Demographic Health Survey (DHS), the contraceptive use rate among teenagers (15-19 years) in Nepal is low at 23.1%, of which only 14.5% use modern contraceptive methods. Young mothers are also characterized by repeated pregnancies and short birth intervals, which are considered risks to maternal and child health. Birth intervals are shorter amongst certain groups of mothers, particularly those with any of the following characteristics: less than 19 years old, who live in the Tarai and/or Madhesh province and rural areas, and among those whose child

<sup>&</sup>lt;sup>16</sup> Prepared by the Survey Team from "Nepal Demographic and Health Survey 2016" MoH (2017)

<sup>&</sup>lt;sup>17</sup> Prepared by the Survey Team from UNICEF Data (accessed on Dec. 11, 2022)

from the preceding pregnancy has died.

Table 19 : Indicators on	child n	narriage i	in southern	Asia countries

	Nepal (2019)	Bangladesh (2019)	India (2016)	Pakistan (2018)	World (2021)
Percentage of girls aged 15-19 years who are currently married or in union	19.3	32.9	16.2	13.5	-
Percentage of women (aged 20-24 years) married or in union before age 15	7.9	15.5	6.8	3.6	4.74
Percentage of women (aged 20-24 years) married or in union before age 18	32.8	51.4	27.3	18.3	19.47

Although MMR diverges in figures depending on the source of information, it lags behind the target of the SDGs in any case. The leading causes of maternal death at health care facilities during a four-year period (2015-18) were eclampsia (19%) and Postpartum Haemorrhage (PPH) (17%), which have not changed since the 2008/9. However, there is an increase in indirect causes (NCDs) such as cardiovascular disease and chronic anaemia, as well as infections associated with pregnancy<sup>ix</sup>. The main causes of maternal deaths outside health facilities identified in the community were postpartum haemorrhage (23%), eclampsia (14%), pregnancy-related infections (12%), and indirect causes (NCDs) (11%) (Table 20<sup>18</sup>). More than 70% of maternal deaths occur in the postpartum period, with 42.7% occurring within 48 hours of delivery and 29.5% in the late postpartum period (from 48 hours after birth to up to six weeks after childbirth) (Table 21<sup>18</sup>).

Causes of Maternal Death in health care facilities (n=267)	%	Causes of maternal death outside of health care facilities (n=92)	%
Hypertensive disorder during pregnancy, childbirth and postpartum period	19	Obstetric Haemorrhage (PPH)	23
Obstetric Haemorrhage (PPH)	17	Hypertensive disorder during pregnancy, childbirth and postpartum period	14
Other Direct Causes	17	Pregnancy-related infection	12
Pregnancy-related infection	14	Indirect Causes (NCD)	11
Indirect Causes (NCD)	12	Indirect Causes (Infection)	10
Indirect Causes (Infection)	9	Coincidental Causes	9
Pregnancy with abortive outcomes	6	Other Direct Causes	8
Obstetric Haemorrhage (APH)	3	Pregnancy with abortive outcomes	5
Coincidental Causes	2	Undetermined	5
Undetermined	1	Obstetric Haemorrhage (APH)	3

### Table 20 : Causes of maternal death

### Table 21 : Timing of maternal death

Timing of maternal death (n=148)	%
Antenatal period	21. 6
Intrapartum period	6.2
Post partum up to 48 hours	42.7
Post partum after 48 hours	29.5

July 2015 to January 2019

<sup>&</sup>lt;sup>18</sup> Prepared by the Survey Team from "Nepal Safe Motherhood and Newborn Health Road Map 2030"

The most common causes of neonatal death are respiratory and cardiovascular disorders of the perinatal period (30.9%), complications of pregnancy, labour and delivery (30.5%) and infection specific to perinatal period (16.0%) (Table 22<sup>18</sup>). More than half of neonatal deaths occurred within the first 24 hours of life, with 17% occurring within one hour and 40% between one hour and 23 hours after birth (Table 23<sup>18</sup>). Neonatal deaths due to some causes have been greatly reduced as a result of progress in improving neonatal care, including the establishment of neonatal care units and improvements in the delivery environment. The greatest reductions in mortality between 2000 and 2013 have been in intrapartum events (by 66%), sepsis (66%), and preterm complications (43%)<sup>ix</sup>.

Table 22 : Causes of newborn death

Causes	%			
Respiratory and cardiovascular disorder of perinatal period	30.9			
Complications of pregnancy, labour and delivery	30.5			
Infection specific to perinatal period	16.0			
Congenital malformations and deformations	6.6			
Sudden neonatal death	5.6			
Other	4.9			
Hypothermia	3.6			
Disorders related to length of gestation and fetal growth				

Table 23 : Timing of newborn death

Timing of newborn death	%
Within 1 hour	17
1-23 hours	40
24 hours – 7 days	22
7 days – 27 days	21

# (3) NCDs

The proportion of NCDs as a cause of death has gradually increased, mainly due to lifestyle changes associated with urbanization. NCDs accounted for 31% of deaths in 1990 and this figure doubled to 66% in 2017 (Figure 8<sup>iv</sup>, and Figure 9<sup>19</sup>). 80% of hospitalized patients in medical facilities in FY 2015/16 were NCDs and now account for more new outpatient visits than patients with infectious diseases <sup>xii</sup>.



Figure 8 : Trend of NCDs as a percentage of cause of death

<sup>&</sup>lt;sup>19</sup> Prepared on the basis of the Institute of Health Metrics and Evaluation 'Global Burden of Disease Study (2017)', prepared by the research team.



Figure 9 : Percentage of major cause of mortality in Nepal.

According to the STEPS Survey 2019 was conducted by WHO in collaboration with the Government of Nepal, 24.3% of the population was overweight or obese due to inadequate intake of fruits and vegetables, smoking, excessive alcohol consumption, and lack of exercise. Those were cause of increasing blood pressure, blood sugar, and total cholesterol levels. It is more pronounced among the wealthy population<sup>x</sup>. Ischemic heart disease has seen a significant increase among NCDs from 62.72 per 100,000 population in 1990 to 100.45 in 2017 (Table 24<sup>xi</sup>). Moreover, heart disease survey was conducted by the Shahid Gangalal National Heart Centre in some provinces in Nepal from 2008 to 2011, which showed a trend of more hypertensive patients in urban areas compared to rural areas. WHO has advocated the need for cooperation among various specialized agencies in multiple sectors to implement measures to combat NCDs in Nepal Table 24<sup>xii</sup>) shows a comparison of major NCDs by region within Nepal (1990 and 2019). Thus, WHO has called for cooperation among various specialized agencies in the fields of agriculture, education, economics, information, sports, urban development, trade, and transportation to address NCDs in Nepal. Table 25<sup>iv</sup> provides a comparison of major NCDs by region within Nepal (1990 and 2019).

Year	Global	Nepal	European Region	African Region	Western Pacific Region	South East Asia Region	Region of the America	Eastern Mediterranean
1990	108,72	62,72	270,32	46,77	57,29	69,11	142,27	117,37
2004	108,33	69,05	278,53	45,53	77,75	74	114,73	114,51
2010	111,15	85,32	255,58	41,26	97,39	90,74	105,73	109,89
2017	116,88	100,45	245,3	39,26	115,94	103,47	111,91	112,63

Table 24 : Mortality from Ischemic Heart Disease per 100,000 population WHO

Table 25 : Trend in the number of NCDs	patients by region	in Nepal	(2009-2019)
			(======)

					e	• •	· · · ·		
Disease	Year	Koshi	Madhes h	Bagmat i	Gandak i	Lumbini	Karnali	Sudurpas hchim	Nepal
COPD	2016/2017	24014	12848	74478	34368	28148	14652	21663	210171
	2017/2018	24901	14248	83231	35503	23204	16963	24535	231685
	2018/2019	33234	18805	78350	32039	38705	19833	24802	245768
	2019/2020	34858	21647	78659	30995	48356	23373	28387	266275
	2020/2021	42622	23757	67011	31451	51300	30985	36115	283241
	2016/2017	58495	29356	123897	57937	40000	7919	11739	329343

	2017/2018	65126	37045	160036	64587	54161	8828	14162	403945
Hypertensi	2018/2019	94148	47848	162187	75214	86376	14840	18827	499440
on	2019/2020	13361	167627	171862	97385	127657	17612	25846	74150
	2020/2021	153035	57907	153875	101635	133925	20705	36101	657183
	2016/2017	25847	10637	74541	28128	17236	1098	3862	161349
	2017/2018	32127	9436	95781	32287	22851	1972	4659	199118
Diabetes	2018/2019	54461	15520	90419	38903	33922	5859	6512	251596
	2019/2020	80201	21562	92812	38841	53665	5995	8259	301339
	2020/2021	95665	21585	90443	41398	60096	6598	13445	329130
	2016/2017	46	16	1345	390	47	5	14	1863
	2017/2018	11	29	1435	278	47	2	6	1808
Breast Cancer	2018/2019	9	54	1547	357	40	5	21	2033
	2019/2020	77	22	1142	407	57	8	6	1719
	2020/2021	111	69	1203	536	42	5	1	1967
	2016/2017	82	2	924	267	138	5	3	1421
	2017/2018	362	0	1767	204	44	2	28	2407y
Cervical Cancer	2018/2019	391	3	2148	237	80	0	4	2863
	2019/2020	437	00	1694	175	22	0	3	2331
	2020/2021	32	14	1159	186	25	5	6	1426

COPD is the second most common cause of death in Nepal, and it is projected to be the fourth leading cause of early mortality. The prevalence rate of COPD is estimated to be the range of 11.7%, which is more common among outpatient than cardiovascular disease. It means, its impact is greatest in NCDs in terms of DALYs. The prevalence of COPD in non-smokers was 9.1% and 17.8% in current smokers. Moreover, the prevalence of COPD was higher among those classified as underweight, with 12.5% of men and 11.0% of women, with no significant difference between the sexes. The highest prevalence was among those aged 60 years or older, so, it is predicted that COPD may increase in the future and further burdening the country's health care system of Nepal.

Hypertension, a major risk factor for cardiovascular disease, is estimated to affect approximately 4.7 million people in Nepal. The prevalence of hypertension is 10% among those aged 15 to 29 years, 23% among those aged 30 to 44 years, and 43% among those aged 45 years and older, representing approximately 24.5% of the population aged 15 years and older. The prevalence of hypertension has increased by 6% over the 20-year period from 2000 to 2020. Hypertension tends to be more prevalent in men<sup>xiii</sup>. Among hypertensive patients, 27% are treated for hypertension, and 38% of those treated have their blood pressure under control. Among patients diagnosed with hypertension, 65.9% were screened for hypertension, while 34.1% were not screened <sup>xiv</sup>. It is estimated that one in five of all adults in South Asia has diabetes. The prevalence rates of prediabetics and diabetes in Nepal at 9.2% and 8.5%, respectively<sup>xv</sup>. Diabetes is considered most prevalent among male urban dwellers. On the other hand, with the introduction of federalism and the delegation of administrative authority to local governments, there is a lack of statistical data from local governments. The estimated prevalence of diabetics in Bagmati and Gandaki is 10%, a nearly fivefold increase compared to

2% in the least developed Karnali province. Approximately, 10,145 people died from diabetes in 2017, it is the sixth leading cause of death combined with chronic kidney disease. In addition, 52.7% of diabetics are aware of their diabetes status, and an even smaller percentage are taking diabetes medications. So, only one in three patients can control their blood glucose levels. Lifestyle changes in recent years have increased the prevalence of diabetes due to taking junk and fast foods with high carbohydrates and fats. Moreover, people moving from rural to urban areas are also making increase the risk of developing diabetes due to decreased physical activity.

WHO survey data for malignant tumours show that in 2018, 26,184 new cancer cases were registered and 19,413 people died from cancer. In Japan, the number of newly registered cancer cases in 2019 was 999,075 and the number of cancer deaths in the same year was 376,392. This suggests that many cancer patients in Nepal are not detected early, and by the time cancer is detected, it is already too late. The most common cancer in Nepal is lung cancer, followed by cervical, breast, stomach, and colorectal cancer. Lung cancer is the most common cancer among men, followed by oral cancer, stomach cancer, colorectal cancer, and leukaemia. Cervical cancer is the most common among women, followed by breast cancer, lung cancer, ovarian cancer, and stomach cancer. (Table 26 :<sup>xxi</sup>)<sub>o</sub>

	Cancer in Male	Number of report (%)	Cancer in Woman	Number of report (%)
1	Lung	2121 (16.96)	Cervix	2552 (17.04)
2	Oral	1047 (8.37)	Breast	2392 (15.97)
3	Stomach	909 (7.27)	Lungs	1616 (10.79)
4	Colorectal	812 (6.49)	Ovary	1065 (7.11)
5	Leukaemia	773 (6.18)	Stomach	665 (4.44)
6	Larynx	751 (6.00)	Large intestine	645 (4.31)
7	Bladder	547 (4.37)	Biliary cyst	616 (4.11)
8	Brain and central nervous system	419 (3.35)	Leukaemia	486 (3.25)
9	Liver	374 (2.99)	Thyroid gland	414 (2.76)
10	Non-Hodgkin's lymphoma	353 (2.82)	Oral	379 (2.53)

Table 26 : Number of reported cancers by gender in Nepal in 2020

Malnutrition is still the most influential factor in Nepal in terms of DALYs-based statistics. The factors are such as diet-related hypertension, glycaemic control,  $LDL^{20}$  -cholesterol, and high BMI (Obesity) is rapidly increasing. Especially BMI has the largest rate of increase. The percentage of obese adult women is higher than men in Nepal. It is predicted that y 2030, the percentage of obese adult men (BMI $\geq$ 30) and adult women (BMI $\geq$ 30) will reach 4.26% and 8.48% respectively by 2030<sup>xvi</sup>. Data on the number of overweight and obese women from 1996 to 2016 show the trends shown in Figure 10<sup>xvii</sup>.

<sup>&</sup>lt;sup>20</sup> LDL: Low Density Lipoprotein



Figure 10 : Nepal Demographic and health Survey from 1996 – 2016 Prevalence of overweight (BMI≧25) and obesity (BMI≧30) among Nepalese women

The reason of increase of NCDs is smoking and alcohol consumption, excessive salt and fat intake, lack of vegetables and fruits, and lack of exercise lead to hyperlipidaemia, hyperglycaemia, hypertension, overweight and obesity, which in turn lead to lifestyle-related diseases (Figure 11 :<sup>xviii</sup>).

1	Malnutrition	-47.1%
2	Air Polution	-11.9%
3	Dietary Risk Factors	37.4%
4	Smoking	15.0%
5	Hypertention	24.5%
6	Impaired Fasting Glucose	56.6%
7	Occupational Risk factors	12.5%
8	High LDL	38.8%
9	Hight BMI	109.3%
10	Water/Sanitation	-41.4%
11	Alcohol	26.3%
	Metabolic Risk Factor	
	Environmental and Occupataional F	isk Factors
	Action Risk Factors	
С	Unhealthy Diet	

Figure 11 : Ranking of risks contributing to DALYs as of 2017

Neupane D (2020) et al. reported that the estimated salt intake from 451 participants in Nepal was 13.3 ( $\pm$ 4.7) g/person/day in a population with a mean age of 49.6 ( $\pm$ 9.8) years <sup>xix</sup>. 98% of the population exceeded the WHO recommended salt intake (<5 g/person/day). This means that 98% of the respondents exceeded the WHO recommended salt intake (<5 g/person/day). A joint statement by WHO and the Food and Agriculture Organization of the United Nations (FAO) recommends a daily intake fruits and vegetables at least 400 g to reduce the risk of death from NCDs but most Nepalese citizens, both men and women consume

less than 200 g per day. The data from a 2019 survey<sup>xx</sup> suggested that 76% of 1,600 young people aged 18-29 in Kathmandu do not consume sufficient amounts of fruits and vegetables.

80% of the smokers live in low- and middle-income countries which is 22.3% of the world population (36.7% of all men and 7.8% of all women) use Tobacco worldwide according to the data in 2020. The smoking rate in Nepal has not increased compared to the previous data but Nepal has higher smoking rate than other countries among WHO's Southeast Asia Region (SEAR) such as 48.3% of men and 11.6% of women in the 15-69 age group, or about 3.8 million people as a population, use tobacco, compared to 28.2% of men and 3.8% of women use smokeless tobacco on a daily basis<sup>xxi</sup>.

The government of Nepal has been working to reduce tobacco use by putting large warnings on the packages and conducting educational activities via TV, radio, newspapers, and the Internet. Thus, the smoking rate is on a downward trend. The price of a pack of 20 cigarettes is about 200-300 NPR, which is relatively high considering the national income level. However, it has been reported that 33.5% of adults aged 15-69 are exposed to second-hand smoke at home, so the effectiveness of anti-smoking measures is not certain.

STEPS Survey Nepal 2019 reports that 23.9% of adults (38.6% of men and 10.8% of women) drank alcohol in the past 12 months, with 20.8% drinking within the past 30 days. The number of habitually drinking alcohol was 17.4% in STEPS Survey 2013. So, the percentage of the alcohol drinker is increasing. Men and women are particularly likely to drink heavily with 14.3% and 1.8% of men and women, respectively, consuming alcohol more than 60g or more per day in the past 30days. 88.2% of adults who like drinking alcohol feel alcoholic beverages easy to purchase but the price of alcoholic beverages is increasing, so 27.9% of adults feeling that it is more difficult to purchase than the past. About one in two (47.9%) have seen or heard of public education campaigns that advise against alcohol consumption, indicating a certain level of understanding of the negative health effects of drinking alcohol.

WHO Physical Activity (PA) guidelines recommend that adults aged 18 years and older engage in "150 minutes of moderate-intensity physical activity per week, or 75 minutes of high-intensity PA per week, or an equivalent combination. The report recommends that adults should engage in "The equivalent of 600 METs-minutes <sup>21</sup>/week in the Global Physical Activity Questionnaire (GPAQ) developed by the WHO". In terms of PA levels of the Nepalese population, a survey of daily PA using the GPAQ developed by the WHO found that the median total PA for men and women was 8400 MET minutes/week and 7140 MET minutes/week, respectively with 97% of men and 98% of women meeting the WHO standard<sup>xxii</sup>. Urban dwellers, those with higher education, and smokers tended to have lower levels of PA. Higher PA levels

<sup>&</sup>lt;sup>21</sup> METs stands for "Metabolic Equivalents" and is a measure of energy expenditure during physical activity. One MET is equivalent to the energy expended during rest, while sitting quietly. One MET-minute is the energy expended per minute, which is equivalent to the energy expended per minute during rest. For example, walking has a MET value of approximately 3.5, which means that walking for 30 minutes would burn 105 MET-minutes of energy.

were attributed to higher occupational PA, with a higher proportion of both men and women engaged in agriculture, and very limited exercise habits in the leisure time. It has been suggested that PA in the work domain may have less health benefit than leisure time physical activity, and it is important to improve the lack of leisure time exercise habits in Nepalese countries in order to reduce the burden of NCDs.

However, the difference in health awareness differs between urban and rural areas, and data show that the level of interest in health varies depending on the level of education, with higher levels of education resulting in greater interest in health. Against this background, it is necessary to consider how to approach groups with different educational levels, regional characteristics, and environments in order to increase their interest in health (Figure 12<sup>xxi</sup>). The increase in the number of NCDs can be considered to be accelerated by the fact that lifestyle-related diseases are generally not diagnosed and that many potential patients are considered to have such diseases. To give an example (Figure 13<sup>xxi</sup>) shows that the percentage of patients who receive treatment for hyperlipidaemia is very small, and even when diagnosed for some disease, it is difficult to link it to the perception that treatment is necessary <sup>xxi</sup>.



Figure 12 : Lifestyle improvement was indicated by medical institutions, etc. (15-69 years old)



Figure 13: Diagnosis and treatment gaps among adults aged 15-69 by wealth quintile, Nepal STEPS survey 2019

### (4) Communicable diseases

1) General Communicable diseases

Infectious diseases accounted for about half of all deaths in 1990 (46%), while in 2017 they accounted for 19%. This can be attributed to the fact that major infectious diseases such as Malaria, Leishmaniasis, Filariasis, Dengue fever, Zoonoses, Leprosy, Tuberculosis, and HIV/AIDS have been addressed at the national level. However, malaria, dengue fever, typhoid fever, and hepatitis, which are transmitted through water, are still prevalent during the rainy season, and many deaths of children under the age of five have still been reported.

CMNN related	Mor	tality rate in 199	0	Mortality rate in 2019			
causes of death	All ages	Age standardised	% of total deaths	All ages	Age standardised	% of total deaths	
Lower respiratory infection	146.4	108.6	12.9	28.8	41.7	4.5	
Lower respiratory infection	(121.7-174)	(91.6-129.3)	(10.8-15.3)	(22.7-35.1)	(32-51.4)	(3.6-5.5)	
Drug quagantible TR	76.1	128.9	6.7	22.0	30.5	3.5	
Diug-susceptible TB	(60.3-95.6)	(100.4-162.3)	(5.4-8.2)	(16.1-28.0)	(22.6-38.4)	(2.7-4.1)	
Diarrhan Diseases	117.5	167.5	10.3	18.5	32.6	2.9	
Dialifieal Diseases	(76-163.3)	(88.9-258.5)	(6.6-14.2)	(9.8-33)	(16.6-60.5)	(1.6-5.1)	
Other personal disorders	48.4	24.3	4.3	13.2	13.6	2.1	
Other neonatal disorders	(32.6-69.4)	(16.4-34.9)	(2.9-6)	(9.5-17.7)	(9.8-18.2)	(1.5-2.8)	
Neonatal encephalopathe due to	32.7	16.4	2.9	5.1	5.2	0.8	
birth asphyxia and trauma	(18.6-48.2)	(9.3-24.2)	(1.6-4.3)	(2.9-9.2)	(3-9.5)	(0.4-1.5)	
HIV/ AIDS resulting in other	0	0	0	4.3	4.7	0.7	
diseases	(0-0)	(0-0)	(0-0)	(0-27.8)	(0-30.5)	(0-4.2)	
Neonatal sepsis and other	9.8	4.9	0.9	3.9	4	0.6	
neonatal infection	(4.7-16.4)	(2.4-8.2)	(0.4-1.5)	(2.4-6.2)	(2.5-6.4)	(0.4-1)	
Enconhalitia	7.1	8.6	0.6	3.4	4.5	0.5	
Encephantis	(1.1 - 11.7)	(1.4-13.4)	(0.1-1)	(1-4.9)	(1.4-6.4)	(0.2-0.8)	
Dritain anargy malautritian	43.3	41.3	3.8	3.2	5.2	0.5	
	(27-67.9)	(27-60.9)	(2.4-6)	(2.4-4.2)	(3.9-6.9)	(0.4-0.7)	
Typhoid fovor	9.2	7.3	0.8	3	2.8	0.5	
	(4.3-17.1)	(3.5-13.1)	(0.4-1.4)	(1.4-5.3)	(1.5-5.1)	(0.2-0.8)	

Table 27 : Mortality rate and proportion of total deaths due to leading CMNN disease in 1990 and 2019<sup>xvii</sup>

Respiratory infections may be influenced by environmental factors such as air pollution but the other infectious disease. Tuberculosis is one of the most common causes of death in low- and middle-income countries among both men and women in the working age group 15-45 years. According to a survey conducted in Nepal in 2018-2019, 45% of the population is infected with TB, with a high infection rate of 60% among the working age group of 15-45 years and 40,000 new cases each year. Directly Observed Treatment Short course (DOTS) was introduced by WHO in 1995, and treatment success rate has dramatically improved owing to establish the treatment centres nationwide and the training of health volunteers although tuberculosis is still the fourth leading cause of death in the 2019 statistics, and it is estimated that about 117,000 citizens are still infected with tuberculosis, with 69,000 cases in 2018, this figure is 1.6 times higher than in previous statistics. However, the National Tuberculosis Control (NTP) strategy (2016-2020) <sup>xxiii</sup>has reduced the incidence of tuberculosis by 3% compared to the past decade, and this reduction rate is better than the global annual reduction rate of 1.5%-2%, which should be further reduced to end tuberculosis in the future <sup>xxiv</sup>.

Bacterial diarrhoea has been ranked 10<sup>th</sup> on the mortality since 1990. Many deaths occur from diarrhoea caused by oral ingestion of water or food containing bacteria or parasites, or from diarrhoea caused by unsanitary conditions via animals or people. Malnourished children are especially susceptible to death from dehydration and its shock.

The HIV/AIDS infection situation in Nepal, the 8.1% of population is infected with HIV/AIDS, of which about 8% are children under the age of 14. In terms of rate of male to female, about 1/3 of the population is female, of which 92.2% are women of reproductive age (15-49 years old). The transmission routes include injecting drug use, migrants, sex workers and users, and homosexuals, with higher infection rates in urban areas and lower rates in rural areas.

### 2) Antimicrobial Resistance: AMR

The number of deaths attributed to drug resistance worldwide is expected to rise from 700,000 in 2013 to 10 million by 2050, exceeding the number of those caused by cancer<sup>xxv</sup>. In Nepal, due to the geographical characteristics of the country, particularly in rural areas, appropriate laboratory diagnosis is not available, so "*empiric therapy*" is frequently applied and "*broad spectrum*" antimicrobials, which are less effective against a single organism but effective against many species, are often the treatment of choice. Inappropriate use is also observed, such as prophylactic use in situations where the necessity has not been adequately verified. The use of antimicrobials in the livestock sector is also on the rise. In addition, patients in Nepal are sometimes able to use antimicrobials at their own discretion, and this may be a contributing factor to induce AMR due to inappropriate use of antimicrobials. Although a prescription from doctors is legally required to purchase medicines at pharmacies, in reality, many prescription medicines, including antimicrobials, can be bought without a prescription.

Thus, it is acknowledged that the situation in Nepal induces the emergence of AMR due to inappropriate use of antimicrobials. Although it is observed that drug resistance is actually developing in bacteria isolated from patients and foodstuffs, the AMR surveillance system in Nepal is weak so it is unclear how many deaths are actually caused by AMR currently. However, it is clear from this situation that the Nepalese population is exposed to the risk of AMR even at present, causing many deaths in the future.

## (5) Nutrition

There has been no significant improvement in nutrition-related indicators (Table 28<sup>xxvi</sup>) between 2000 and 2019. About one in four children are underweight in Nepal, it means still 21.4% of births and 24.4% of children under 5 years are underweight. Anaemia is also high among children (6-59 months) and pregnant women, with about half of all cases showing a tendency toward anaemia. However, these figures are not high compared to neighbouring countries, but rather average. Since the main cause of maternal mortality is haemorrhage during and after pregnancy and childbirth, anaemia is a risk factor of concern, but there has

been no significant improvement over the past decade, either for pregnant women or for women of reproductive age. Regional disparities in anaemia are also observed, with a higher prevalence of anaemia among women in the Tarai region compared to the mountainous and hilly regions. (Table 29<sup>xxvii</sup>)

Indicator		Nepal		South Asia	Bhutan	Bangladesh	India
	2000	2010	2019		2	019	
Rate of low birthweight in babies (%)	27.2	23.2	21.8 (2015)	-	-	27.8 (2015)	-
Rate of underweight in under-five children (%)	-	-	24.4	27.4 (2020)	-	22.6	33.4 (2017)
Rate of anemia in children (6-59 months) (%)	61.7	47.5	44.6	51.7	44.7	43.1	53.4
Rate of anemia in pregnant women (%)	51.2	45.2	42.5	47.7	38.2	42.2	50.1
Rate of anaemia in female of reproductive age women (%)	45.8	36.6	35.7	49.4	38.6	36.7	53.0

Table 28 : Nutrition-related indicators

According to the 2021 report, the average height of Nepalese adults is 163.1 cm ( $\pm$ 6.4 cm) and 151.5 cm ( $\pm$ 6.2 cm) for men and women, respectively, and their weight is 61.7 kg ( $\pm$ 13.2 kg) and 50.5 kg ( $\pm$ 9.3 kg). The mean BMI was 21.8 for men and 19.6 for women, with women tending to be leaner<sup>xxviii</sup>. In a survey of mothers and fathers with infants, the average BMI for parents was 23.7, with 5% classified as underweight by WHO standards, 30% as overweight, and 5% as obese<sup>xxix</sup>. The WHO BMI is 23.7, which is the highest of any of the WHO standards. This double burden of malnutrition is a public health challenge in Nepal, as both underweight and overweight/obesity increase the disease risk of NCDs. A comparison of the three provinces targeted in this survey shows that while the Bagmati province is well below the national average for both the rate of underweight women and of anaemic women, both are higher in the Madhesh province. As with other health indicators, it is suggested that these indicators are influenced by the fact that there are more households with higher incomes and more educated people in the Bagmati province<sup>xxx</sup>. These are also supported by the report by Sunuwar DR *et al.* in 2021 that rationality, education level in women and economic status are the factors that significantly increase the incidence of anaemia women of reproductive age in Nepal.

Area	Thin (BMI under18.5) Percentage of Thin women(%)	Prevalence of anemia in women <sup>*</sup> (%)	
Natural Environmental area			
Mountain area	12.2	35.4	
Hilly area	11.6	28.9	
Tarai area	23.0	51.9	
Province			
Koshi province	13.0	43.3	
Madhesh province	29.1	57.8	
Bagmati Province	11.6	29.0	
Gandaki Province	8.1	28.0	
Lumbini Province	19.0	43.5	
Karnali Province	15.2	34.9	
Sudurpashchim Province	22.1	39.3	
National	17.3	40.8	

# Table 29 : Regional disparities in nutritional status

\*Pregnant woman<11.0g/dl, Non pregnant woman<12.0g/dl

According to the Nutrition Profile Nepal (JICA) (Table 30 and Table 31 :<sup>xxxi</sup>), the situation surrounding nutrition in Nepal as of March 2020 reveals the following nutrition challenges:

- Undernutrition in children and women (especially young women): Poor maternal nutrition is associated with higher rates of stunting in children;
- Undernourishment of adolescent girls (15-19 years): High rate of underweight among adolescent girls;
- Inadequate complementary foods for infants and toddlers: Insufficient iron and vitamin A intake in mountainous and Tarai areas;
- Anaemia in children and young women: "Public health serious" level of anaemia, and

Regional disparities are observed, with higher rates of stunting in mountainous areas and wasting in Tarai areas Severe agricultural conditions in rural mountains and mountainous areas, male migrations to urban areas have made women important agricultural workers, placing a heavy burden on them in terms of domestic labour, family care, and childcare. It makes loss of educational opportunities due to early pregnancy and childbirth among adolescent females. The low level of education in these areas results in a lack of knowledge necessary for children's growth, and the heavy burden of household chores prevents women from spending sufficient time on childcare, which in turn affects the nutritional status of children at the household level.

Interviews with stakeholders in this study indicated that lack of knowledge is a contributing factor to malnutrition, but that even when people have knowledge about nutrition, they are unable to purchase nutritious foods for economic reasons, or they lack the motivation to eat properly and are unable to put their knowledge into action.

Nutrition Index	Value	Description	Referrence
Percentage of birth underweight	21.8%	• Down from 27.2% before 2003	GNR2019
(Under2500g)			
Underweight in children Note 1 (2016)			DHS2016
Stunting (Chronic malnutrition)	Average:36%	• Continuous downward trend since	
Urban	32%	2001(57%)	
Rural	40%	• Higher prevalence in mountainous	
Mountainous area	47%	areas	
Hilly area	32%	• Large disparities depending on	
Tarai area	37%	mother's nutritional status	
Mother is under weight	46%		
Mother is normal weight	36%		
Marasmus (Acute malnutrition) (2016)	Average 10%	<ul> <li>Higher prevalence in Tarai area</li> </ul>	
Intermountain	6%		
Hilly area	6%		
Tarai area	12%		
Low nutrition in women (15-49)(2016)	Average 17%	• Down from 27% in 2001	
Urban aera	16%	• Higher prevalence in rural area	
Rural area	20%	than urban areas	
Mountainous area	8%	• Higher prevalence in field area	
Hilly area	8%	(Tarai)	
Field area (Tarai)	14%		
Low nutrition in adolescent girls (15-19	30%	• Increase from 23% in 2001	
years)(2016)			
Overweight/Obesity in children Note 1(2016)	1.2%	• 2011(1.4%)	
Over0nutrition among women (15-49 years)	Average 22%	• Increase from 2011(14)	
(2016)		• Increasing especially in rural areas	
Urban areas	26%	(26% in urban and 11% in rural	
Rural areas	15%	areas in 2011)	

## Table 31 : Nepal Basic Nutrition Data (Food Consumption and Food Security)

Index	Value	Description	Reference
<sub>Note 1</sub> Global Hanger Index: GHI (2019)	20.8 points (Ranked 73/110)	• Nepal's hunger was at "emergency warning level" in 2000, but it is the only country in South Asia that has been improving since then. However, it has been affected in 2015.	http://foodsecur ityindex.eiu.co m/
Global Food Security Index: GFSI (2019)	56.4 points (Ranked 79/113)	• Although the food security situation has been improving in recent years, the country ranks 19th out of 23 countries in Asia and the Pacific, which is a low rank.	FAOSTAT
Energy consumption per person per day (2015)	2,670Kcal/da y/person (2015)	• The average daily energy consumption per person in Nepal is 2,200 Kcal. In 2000 it was 2,280 Kcal, above the average, and in 2015 it was 2,670 Kcal, well above the average.	FAOSTAT
Percentage of energy intake from sources other than carbohydrates (2015)	29%	• The percentage of energy consumption that is not from carbohydrates is less than 30%, and much of the energy intake is dependent on staple foods such as rice.	Global Nutrition Report 2017
Dietary energy supply sufficiency (Average of 2016-18)	119%	• The food supply meets the average dietary energy requirement in Nepal, which has been more than 100% since 1990 and has increased by about 10% over the past 20 years.	FAOSTAT
Consumption of animal protein as a percentage of protein intake (2010)	16%	• In addition to the staple food-centred diet, the consumption ratio of animal protein such as meat, fish, and eggs is very low due to high prices, poor processing and preservation techniques, and the underdeveloped state of distribution and processing facilities.	FAOSTAT

Note 1: A composite index of energy intake and nutritional status is used to present and compare the degree of hunger. An index of 50 or more points is considered "extremely alarming," 35-9 points is considered "alarming," 20-34.9 points is considered "serious," 10-19.9 points is considered "moderate," and 0-9.9 points is considered "severe. .9 is defined as "moderate" and 0-9.9 is defined as "low".

With regard to breastfeeding, WHO recommends that breastfeeding should be initiated within the first hour of life, continued exclusively for 6 months, and continued for at least 2 years, and that complementary foods should be started after 6 months. Table 32<sup>22</sup> shows the status of breastfeeding in each province. The national average percentage of infants initiated on breastfeeding within the first hour of life is very low at about 40%. By income group, the wealthiest group has the lowest rate at 30.1%<sup>23</sup>. One factor contributing to this is the high rate of caesarean sections among the wealthier groups. Caesarean section is reported to be one of the major risks preventing early initiation of breastfeeding <sup>xxxii</sup>, but in Nepal, the wealthier group often chooses to have a caesarean section at private facilities, which can lead to a delay in initiation of breastfeeding<sup>24</sup>. While the national average percentage of children who are exclusively breastfed until 6 months of age is only 62.1%, the national average percentage of children between 6 months and 2 years of age who are fed breast milk and complementary foods is relatively high at 87.0%. However, many families start complementary foods too early, with 8.0% of children being fed complementary foods at 2-3 months and 29.2% at 4-5 months <sup>xxxiii</sup>, suggesting a lack of proper knowledge about infant and young child nutrition.

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Table		٠	Breastfeeding	ctatue	hv	nrovince
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Province	Percentage of children who were first breasted within one hour of birth (%)	Percentage of children aged 0-5 months exclusively breastfed (%)	Percentage of children aged 6-23 months currently breastfeeding and receiving solid, semi-solid or soft food (%)
Koshi	42.5	60.6	85.5
Madhesh	48.5	69.9	78.5
Bagmati	30.2	51.1	92.1
Gandaki	28.7	58.4	92.0
Lumbini	47.4	63.2	88.9
Karnali	39.7	68.3	84.4
Sudurpashchim	50.0	55.0	91.7
Nepal	41.7	62.1	87.0

# (6) Population Aging

In recent years, Nepal has been undergoing a population transition phase. As shown in the Figure 14<sup>25</sup>, the proportion of the population aged 0-14 has continued to decline since around 2000 due to the decline in the fertility rate, but this, combined with a fall in the mortality rate, has continued to increase since the mid-1980s, with the proportion of the population aged 65+ estimated to be 5.9% in 2021. On the other hand, as shown in the Figure 15<sup>25</sup>, Nepal's population has continuously increased and the total population has increased by approximately 2.5 times in the last 50 years, implying that the population growth is largely

<sup>&</sup>lt;sup>22</sup> Prepared by the Survey Team from UNICEF "Nepal Multiple Indicator Cluster Survey (MICS) 2019"

<sup>&</sup>lt;sup>23</sup> By income quintile class, the percentage who initiated breastfeeding within an hour was 41.9% for the lowest income quintile I, 44.4% for quintile II, 45.0% for quintile III, 45.3% for quintile IV, and 30.1% for quintile V. (Source: MICS 2019)

<sup>&</sup>lt;sup>24</sup> The percentage of breastfeeding initiated within one hour is 45.9% for vaginal deliveries compared to 18.5% for cesarean sections. Also, 44.3% of births in public facilities compared to 30.9% in private facilities. (Source: MICS 2019)

<sup>&</sup>lt;sup>25</sup> Data extracted and processed by the Survey Team from the World Bank DataBank (Health Nutrition and Population Statistics).

due to the decline in mortality rates.



This situation is expected to be sustained further and it is estimated that Nepal will reach an "*Ageing Society*" in 2028, when the proportion of the population aged 65 and over will be 7%, and an "*Aged Society*" in 2054, when this proportion will be 14% <sup>xxxiv</sup>. The "*Doubling Time*" - the time it takes to go from an "*Ageing Society*" to an "*Aged Society*" - is 26 years, which is equivalent to 24 years in Japan; therefore, this situation can be understood that Nepal is under the rapid ageing.

- (7) Others
- 1) Air Pollution

Air pollution is a serious problem within the Kathmandu Valley due to its topographical features, with exhaust fumes, dust and even brick factory flue gas being the main sources of air pollution. Many households in rural areas use firewood as fuel. The Swiss IQAir, which collects data on air quality worldwide, ranks Nepal among the 10 worst countries for air quality in 2021<sup>26</sup>. Safiri et al. report that air pollution is the second most influential factor in the DALYs of COPD (20.7%) following smoking (46%), and at the same time, Nepal had the highest COPD age-adjusted mortality rate in the world as of 2019, suggesting strongly that air pollution is an important risk factor for COPD<sup>xxxv</sup>.

2) Traffic Injuries

There are many fatalities reported due to unforeseen accidents, such as falls and tumbles on bad roads and vehicle collisions caused by poor road etiquette. Specifically, there were 11,747 vehicle collisions nationwide in 2009/10, which increased to 25,788 in 2019/20, with steep increases reported in 2017/18 and 2019/20<sup>xxxvi</sup>. In developing countries in particular, motorcycles account for the majority of registered

 $<sup>^{26}</sup>$  Ranked based on average annual PM2.5 concentration ( $\mu$ g/m<sup>3</sup>). IQAir website (https://www.iqair.com/jp/world-most-polluted-countries) (viewed 31 December 2022)

vehicles. In Nepal, information from the Department of Transport also points out that motorcycles account for about 80% of all road accidents, which naturally means that a large proportion of road accidents are caused by motorcycles <sup>xxxvii</sup>.

## 3) Mental Health

Nepal's suicide rate is low compared to that of the world and South Asian averages. However, while the world and South Asian averages continue to decline, Nepal has seen an upward trend in recent years (Figure 16<sup>27</sup>). However, due in part to Nepal's cultural background where "*mind*" and "*body*" are considered separate realities, mental disorders are perceived as "*mental dysfunction*" or "*weak mind*" and many patients' first point of contact with 'healing' is traditional, religious and faith healers. Specialist training in psychological medicine began in 1997, and although the number of specialists and specialised



in Nepal, South Asia and the World

beds has gradually increased to date, it has been insufficient xxxviii.

In response to this situation, the MoHP has recognised mental health as an important area and has put the "*National Mental Health Strategy & Action Plan 2077*" into effect for 2020/21, and initiated training for doctors and other health professionals. WHO is also implementing the "*Special Initiative for Mental Health*", in which Nepal is the seventh target country to participate; a log frame for the initiative based on the survey has been developed by 2020/21 in collaboration with various relevant agencies, and two districts from each province (14 districts in total) are expected to start pilot activities.

 $<sup>^{\</sup>rm 27}\,$  Data extracted and processed by the Survey Team from the World Bank Data Bank

# 5. Situation of Health Systems

# (1) Health Administration

With the introduction of federalism, Nepal's health administration is a three-tiered administrative system consisting of the federal MoHP, provincial governments, and local level governments. At the federal level, there is the MoHP and a central implementing department, the DoHS, which is responsible for formulating national level health policies and strategies and developing medical standards (Figure 17 :<sup>28</sup>).



Figure 17 : Three levels of government coordination mechanisms

According to the list of exclusive and concurrent powers enumerated by the Constitution of Nepal (2015) (Appendix 8), the federal MoHP is responsible for the functions of formulating national level health policy and medical standards, ensuring and monitoring the quality of health care, providing national and specialized health care, providing traditional therapeutic services (Ayurvedic treatment), and infectious disease control. On the other hand, the responsibility for the provision of health services is delegated to all federal, provincial and local governments. In 2016, a list of exclusive and concurrent powers of the federal, provincial, and local governments was promulgated, but the items remain ambiguous <sup>xxxix</sup>. In addition, the positions of Chief Member Secretary, who unites the Secretaries of Provincial Ministries, and the Chief Executive Officer, who corresponds to the administrative secretary of local governments, are appointed by the federal government's national civil servants and sent to provincial and local governments.

When decentralization began, there were no provincial Ministries of Health; instead, the Ministry of Social Development was established in each of the seven provinces, and a Health Directorate was created within the Ministry of Social Development. As of January 2023, four of the seven provinces have established provincial ministries of health independent of the Ministry of Social Development<sup>29</sup>.

Figure 18<sup>30</sup> shows the standard organizational chart of the Provincial Ministry of Social Development as published in the annual report of the DoHS. Figure 19 shows the organizational chart of the Ministry of

<sup>&</sup>lt;sup>28</sup> Prepared Survey Team by NHP-SP 2022-2030

<sup>&</sup>lt;sup>29</sup> Provincial ministries of health have been established in four provinces, except for Madhesh, Karnali, and Sudurpashchim.

<sup>&</sup>lt;sup>30</sup> Prepared by DoHS, Annual Report 2077/78 (2020/21)

Health in Bagmati Province. Several provinces have begun to formulate annual reports for the provincial health sector. The structure of the annual report is like the chapter structure of the DoHS annual report, but the introduction provides basic information about each province and summarizes provincial and local level health indicators, major programs underway in the province, etc. The purpose of the report clearly states that it is not only to assess performance, but also to identify issues, accumulate information, and develop plans based on the information.

Koshi Province and Bagmati Province, covered by this study, have established provincial Ministries of Health and produced annual reports in the last year 2021/22 and 2020/2021, respectively. Madhesi Province has not yet established a Ministry of Health, but the Health Directorate of the Ministry of Social Development publishes an annual report.

At the local level, a Health Division/Section/Unit is established in each Metropolitan City, Sub-Metropolitan City, Municipality, and Rural Municipality administrative office. A Health Coordinator with a diploma in Public Health is assigned as the head of the Health Division/Section/Unit. In Biratnagar Metropolitan City and Hetauda Sub-metropolitan City, where the survey team visited, the head of the division has a diploma in public health. Figure 20 shows the organizational chart of the City Office of Hetauda Metropolitan City, Bagmati. In Biratnagar Metropolitan City and Hetauda Sub-metropolitan City and Hetauda Sub-metropolitan City, where the survey team visited, the head of the division has a diploma in public health. Figure 20 shows the organizational chart of the City Office of Hetauda Metropolitan City, Bagmati. In Biratnagar Metropolitan City and Hetauda Sub-metropolitan City, where the survey team visited, the head of the division has a diploma in public health. Figure 20<sup>31</sup> shows the organizational chart of the City Hall of Hetauda Sub-metropolitan City, Bagmati. The health section of the Hetauda Sub-metropolitan City has been established under the name of Ayurveda and Public Health Promotion Section within the Social Development Division.



Figure 18 : Standard Organigramme of Provincial Health Departments

<sup>&</sup>lt;sup>31</sup> Prepared by the Survey Team from the Nepal Health Infrastructure Development Standards 2017 (Unofficial English Translation) with some modifications.



Figure 19 : Organigramme of Ministry of Health, Bagmati Province



Figure 20 : Organigramme of City Office of Hetauda Sub-metropolitan City, Bagmati Province

After the transition to federalism, the provinces are expected to function independently and each level of organization is responsible for the implementation of plans related to healthcare and public health, as well as the operation and management of facilities. However, as the procurement of many essential medicines and medical materials such as gauze and sutures are dependent on imports at the federal level, the provincial health ministries are also required to perform a coordination function for appropriate logistics with the federal level.

After the transition to a federal system, "*districts*" as autonomy disappeared, and the operational management of health services, which had been handled by District Health Offices, is now handled by each basic municipality. The Province Ministry of Health provides technical support to the municipal health offices (health departments of municipal government offices). However, it was acknowledged that is difficult for some of municipalities to manage health service administration on their own, and District Health Offices have remained to support the implementation of health service administration in reality. Districts are no longer local authorities and therefore do not have their own financial resources. However, when the MoHP or the Provincial Ministry of Health plans a program targeting municipalities, they may plan to implement the program at the district level. In these cases, it was identified that instead of distributing the cost of program implementation directly to the municipalities, the budget may be distributed to the District Health Office, and it may take the lead in implementing the program.

In addition, although the assignment of Public Health Officers of the grade 7 class of civil servants with a diploma in public health are needed to conduct epidemic prevention and control activities, strengthen monitoring systems, and formulate fact-based policies, plans, and programs in the local governments, however, this assignment has not yet been fully implemented<sup>x1</sup>. The same point was made in the hearings for this survey, and human resource shortages are a major challenge.



Figure 21 : Governance Framework for Health Services in Federal System

Health facilities under the jurisdiction of the federal, province, and local government levels are listed in Table 33<sup>32</sup>, based on the Public Health Service Act and Regulations. With the transition to federalism, there are plans to make district hospitals, which were previously under the jurisdiction of the district, the jurisdiction of the province. Some district hospitals have only primary hospital functions. Therefore, it was confirmed through the survey that there are cases where even primary hospitals are under the jurisdiction of the province. In addition, the level of healthcare facilities is being upgraded, and there is a lack of consistency between the level of healthcare facilities and the level of government that has jurisdiction over them. Moreover, based on the needs of citizens, health posts and community health units that provide counselling on NCDs, as well as urban health clinics (urban health centres and urban health clinics) established in wards in metropolitan areas, have been established, and the number of health facilities under the jurisdiction of local governments has been increasing. Urban health centres, urban health clinics, etc., are established and operated by local governments<sup>33</sup>.

Health Service Facilities	Three tiers of government and administrative districts with jurisdiction	Main health Care Workers
Tertiary Hospital, Specialized Hospital, Teaching Hospital	Federal Government: Federal MoHP	Special Doctor
Secondary B Hospital with 100-300 beds	<b>Provincial Government; Provincial Ministry of Health</b> (District Health office (in 77 District))	General Doctor
Secondary A Hospital with 25-50 bed	<b>Provincial Government; Provincial Ministry of Health</b> (District Health office (in 77 District))	General Doctor
Primary Hospital with 5-15 beds	<ul> <li>Provincial Government; Provincial Ministry of Health (District Health office (in 77 District))</li> <li>Local Government: (Health division/section/unit)</li> <li>Metropolitan Municipalities</li> <li>Sub-metropolitan Municipalities</li> <li>Urban Municipalities, Rural Municipalities</li> </ul>	General Doctor
Primary Health Care Centres (Health Posts, etc. (Not established in all wards)	Local Government *They are installed in wards, and not yet established in all wards (Before the transition to federalism, "villages" that were basic local authorities had jurisdiction.)	Health Assistant Community Health Worker Female Community Health Worker (FCHW)

Table 33 : Health administration and main health service facilities

# (2) Health Planning Process

The fiscal year of the Government of Nepal runs from July 15 to July 14 of the following year. The annual process for formulating health plans at the federal level is shown in Table 33. Government planning and budgeting begins in January each year when the National Natural Resource and Fiscal Commission (NNRFC) determines the overall budget for the country. The NNRFC is a constitutional body whose purpose is to ensure the fair and equitable allocation of natural resources and public finances. Next, the President determines the policies and programs of the sectoral ministries, and the Ministry of Finance consolidates

<sup>&</sup>lt;sup>32</sup> Prepared by Public Health Service Regulation 2020 (Section 70) Number 23 Nepal Gazette

<sup>&</sup>lt;sup>33</sup> DoHS (2022) Annual Report 2020/21, https://kathmandupost.com/national/2017/05/07/hospital-classification-to-be-based-on-services

the policies and plans of the ministries and provides budget ceilings and guidelines for planning and budgeting. Provincial and local governments are presented with estimates of revenue transfers and equalization grants.

In the MoHP, the Policy, Planning and Monitoring Division (PPMD) is responsible for the entire planning process. The PPMD reviews budget proposals for all departments, various centres, hospitals, councils, etc. under the MoHP umbrella based on the budget framework provided by the Ministry of Finance. The MoHP will also hold Joint Consultative Meetings (JCM) with its development partners four times a year to discuss priority areas and budgets. The JCM development partners formally present to the MoHP at the fourth JCM their annual commitments for the following year. In addition, the MoHP will identify priority programs to be implemented at the provincial and local levels and finalize Conditional Grants to implement the identified programs. The MoHP will provide guidelines for the implementation of priority programs to the provincial and local levels and finalize conditional Grants to the provincial and local governments.

<b>T</b> '					
Iime	Main Activities				
January	NNRFC determined overall budget for country,				
	• Ministry of Finance (MoF) provides ceiling to sectoral ministries including MoHP,				
	Provides estimates of equalization grant and revenue sharing to Provincial Gov. & Local Gov.,				
January	• PPMD of the MoHP allocates the budget ceiling for all departments, divisions, centres, and hospitals, based				
to	on priority, programme, performance, and actual expenditure,				
February	• MoHP asks for preliminary budgetary commitment from EDPs during the National JAR,				
March	• MoHP entities prepare their AWPBs based on priority & previous budget absorption and details of conditional				
	grants to be provided to Provincial Gov. and Local Gov.,				
	• MoHP holds the first JCM with EDPs to discuss budget & priority areas,				
	• PPMD submits the compiled planning and budgeting to the MoF,				
April	• Discussion on the item-wise justifications on planned budgeted lines,				
	• MoF invites the MoHP Secretary, head of the PPMD, planning Section, and Finance Section for final hearing				
	and finalization of the plan and budget,				
	• Second JCM with EDPs,				
May to	• MoF compiles sectoral budgets and prepares the national budget with policy and programmes,				
June	• The Red Book is compiled, finalized, and announced by the Parliament by 29 <sup>th</sup> May (15 <sup>th</sup> Jestha),				
	• Third & Fourth JCM with EDPs who make their commitments.				

 Table 34 : Annual Schedule of planning and budgeting of health sector at the federal level

Planning and budgeting for provincial and local governments begin in mid-January (Table 34 and Table 35). The planning period for provincial government runs from mid-January to mid-June, while a broader period is allowed for local government planning to accommodate federal and provincial government planning.

Iime	Main Activities	Details
By mid-January		Provinces submit financial statistics, including projections of revenue
	Projection of revenue and	and expenditure for the upcoming FY to MoF
	expenditure	MoF makes the projected details of revenue distribution and fiscal
		equalization grants available to the provinces
By mid-March	MTEF, resource estimation of budget ceilings and guidelines	The Ministry of Economic Affairs and Planning (MoEAP) provides guidelines and frameworks to prepare MTEF and budget for provincial ministries. Budget ceilings are provided to the respective ministries and agencies. MoEAP enters the ministry wise budget ceilings in PLMBIS and sends it to ministries and agencies concerned.

Table 35 : Annual schedule of planning and budgeting of health sector at the provincial level

		Provincial ministries and agencies enter their programmes in PLMBIS, staying within budget ceilings and guidelines, and send this to MoEAP
of April	Pre-budget discussion	Respective ministries and agencies of the provinces submit physical and financial progress on the previous FY and that of the first six months of the current FY. Submitted budgets are discussed at MoEAP and the Provincial Planning Commission.
By mid-June	Budget presentation	PGs present their budgets at their respective provincial assemblies

# Table 36 : Annual schedule of planning and budgeting of health sector at the local level

Time	Main Activities	Details
By mid-January	Revenue and expenditure estimation	Make preparations for budgeting by submitting detailed estimates of revenue generation and expenditure to the FG as per the recommendation of the revenue consultation committee and the budget and source estimation committee
By mid-April	Obtain budget ceiling	Obtain the budget ceiling of revenue transfer and equalization from the FG by mid-March and the PG by mid-April
By end of April	Determine budget ceiling	Estimation of source and determine budget ceiling
By mid-May	Tole (community) level plan selection	Selection of plans at tole level
By end of May	Ward level plan selection	Selection of plans at ward level and prioritization
By 20 June	Formulate plan and budget	Formulation of budget and programmes
By 25 June	Budget presentation	Approval of budget and programmes by municipality executives; budget and programme presentation
By 15 July	Final approval	Approval of budget and programmes by the Local Assembly

# (3) Human Resources for Health (Health Professionals)

1) The Number of Health Personnel in Each Jurisdictional Level

Table 37<sup>34</sup> shows the deployment of health personnel by jurisdictional level. Approximately 80% of health personnel are deployed in the Local Level, which has jurisdiction over the largest number of primary health care facilities. The provincial and federal governments with jurisdiction over secondary and tertiary hospitals, which are larger in size but smaller in number, have lower proportions, at 11.4% and 8.4% respectively.

Table 37 : Number of Health Professionals assigned to Health Facilities at Federal, Provincial and Local Level by Grade

Grad e	Federation	Province	Local	Total	Total (%)
4/5/6	299	776	18,509	19,584	62.0
5/6/7	1,114	1,471	6,540	9,125	28.9
8	363	377	254	994	3.2
7/8	226	319	11	556	1.8
9/10	470	544	33	1,047	3.3
11	175	106	-	281	0.9
12	3	-	-	3	0.01
Bishishta	2	-	-	2	0.01
Total	2,652	3,593	25,347	31,592	100
Total (%)	8.4	11.4	80.2	100	

<sup>&</sup>lt;sup>34</sup> Source: partly modified and adapted by the Survey Team based on the National Strategy for Human Resources for Health (HRH) of Nepal (2020/21-2029/2030).

Meanwhile, Table 37 also shows the number of health personnel by job grade. The highest number of health personnel is at the Local Level, which oversees primary health facilities, but the highest health personnel grade assigned is 9/10, compared to 11 at the provincial level and up to the *Bishishishta* (highest grade) grade in the federal level.

# 2) Categories and its Number of Registered Health Personnel

The latest health human resource categories and number of registered personnel as listed in the "*National Strategy for Human Resources for Health (HRH) of Nepal*" (2020/21-2029/2030) are presented in the Table 38. The global average number of physicians per 1,000 population is 1.7 (2017) according to the DataBank of the World Bank, whereas in Nepal that is much lower at 0.98. The average number of nurses, ANMs plus midwives is as low as 3.3 in Nepal, compared to a global average of 4.0 nurses plus midwives. The number of staff required to provide minimum services in Nepal is also stipulated in the Minimal Service Standard (MSS) (see below), but there is a large gap with the number of posts stipulated by the government. The number of staff is low, but the services required are also stipulated, which means that the workload on staff is high, yet salaries are low, and many staff often move to private or overseas organisations with better salaries and working environments. This high turnover of healthcare workers is recognised as a major challenge in the Nepalese health sector. In particular, the training of qualified midwives has only just begun, with only 51 as of December 2022, but the number is expected to increase in the future.

Category of Health Professionals.	Number of Registrants	Number of Health Professionals per 1,000 Population
Medical practitioner (Medical officer, dental doctor, and specialist doctor)	28,477	0.98
Registered nurse	61,421	2.11
ANM (Auxiliary Nurse Midwife)	35,009	1.20
Midwife	14	0.00
Pharmacy professional	14,720	0.51
Ayurvedic doctor	790	0.03
Ayurvedic practitioner	4,281	0.15
Public health professional	5,601	0.19
Health Assistant (HA)	17,363	0.60
AHW (Auxiliary Health Worker)	60,241	2.07
Medical science lab professional	29,928	1.03
Radiography technician	2,788	0.10
Ophthalmic technician	2,242	0.08
Dental technician (dental assistant)	2,201	0.08
Rehabilitation technician	1,898	0.07
Anesthesia technician	65	0.002
Health education technician	128	0.004
Audiology technician	92	0.003
Natural medicine and yoga technician	71	0.002

Table 38	3:	Number	of Health	Personnel	bv	Category
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# 3) Health Human Resource Development (under-graduation training)

The general schooling system in Nepal consists of 12 years of primary school (five years), early secondary school (three years), middle secondary school (two years) and late secondary school (two years), followed by three to six years at university for a bachelor's degree. This is followed by a twoyear master's programme and a three-year doctoral programme. Upon completion of the first 10 years, a mid-term secondary school certificate is issued, and upon completion of 12 years, a late secondary school certificate is issued (Figure 22).





In order to be admitted to university as a doctor, registered nurse, pharmacist or clinical laboratory technician, Higher secondary certificate is required and other necessary requirements must be met. (Table 39) For example, to become a doctor in Nepal, after obtaining a post-secondary school certificate with 12 years of education, a candidate must pass an entrance examination conducted by the Medical Education Committee. They then need to complete 5.5 years of MBBS, three years of Medical Doctor (MD) and finally pass the registration examination conducted by the Nepal Medical Council.

			-		· · · · · ·	
	medical personnel	number	Schools, training	Duration of study	Requirements to enter a training school or take a course.	Notices/Registration
1	Medical practitioner (Medical	28,477	University Degree:	MBBS: 5.5 years and	After 12 years of education in (Science Biology) need to	Need to pass the Nepal Medical
	officer, dental doctor, and		MBBS and MD	MD: 3 Years	pass the entrance exam conducted by Medical Education	Council for Registration
2	Pagistered purse	61 421	Dinloma Degree and	A years for Bee. Nursing	Bsc. Nursing: After 12 years of education in (Science	Nepal Nursing Council
-	Registered nurse	01,421	University Degree	and 3 years for staff	Biology) and for Staff nurses after SEF (ten years of	Repair Nursnig Council
			Oniversity Degree	nurses	education) need to pass the entrance exam conducted	
				nui beb	by Medical Education Committee (MEC)	
3	ANM (Auxiliary Nurse	35,009	Diploma Degree	18 Months	SEE (Ten years of Schooling)	Nepal Nursing Council
	Midwife)					
4	Midwife	14	University Degree	3 Years	Registered staff Nurse	Nepal Nursing Council
5	Pharmacy professional	14,720	Diploma Degree and	3 years for Diplopa and	After 12 years of education in (Science Biology) need to	Nepal Pharmacy Council
			University Degree	4 Years for Bachelor	pass the entrance exam conducted by Medical Education	
					Committee (MEC)	
6	Ayurvedic doctor	790	University Degree	5.5. Years	After 12 years of education in (Science Biology) need to	Nepal Ayurvedic Medical
					pass the entrance exam conducted by Medical Education	Council
					Committee (MEC)	
7	Ayurvedic practitioner	4,281				
8	Public health professional	5,601	University Degree	4 Years	After 12 years of education in (Science Biology) or	Nepal Health Professional
					diploma degree in other health sciences courses, need to	Council
					committee (MEC)	
q	Health Assistant (HA)	17 363	Dinloma Degree	3 Vears	SEE (Ten years of Schooling)	Nepal Health Professional
	realui Assistant (TIA)	17,505	Dipionia Degree	5 Tears	SEE (Ten years of Schooling)	Council
10	AHW (Auxiliary Health	60,241	Diploma Degree	18 Months	SEE (Ten years of Schooling)	Nepal Health Professional
	Worker)	,	- 1			Council
11	Medical science lab	29,928	Diploma Degree and	18 months,3 years and 4	For 18 months and 3 years Diploma SLC and for	Nepal Health Professional
	professional		University Degree	years	Bachelor: After 12 years of education in (Science	Council
					Biology) or diploma degree in other health sciences	
					courses, need to pass the entrance exam conducted by	
					Medical Education Committee (MEC)	
12	Radiography technician	2,788	Diploma Degree and	3 years for Diplopa and	For 3 years Diploma after SEE and for Bachelor: After	Nepal Health Professional
			University Degree	4 Years for Bachelor	12 years of education in (Science Biology) or diploma	Council
					degree in other health sciences courses, need to pass the	
					entrance exam conducted by Medical Education	
					Committee (MEC) for university degree and CTEVT	
12	0.14.1.1.1.1.1	2 2 4 2	D'1 D	2 (D) 1	entrance exam for Diploma	
13	Ophthalmic technician	2,242	Diploma Degree	3 years of Diploma	SEE (1en years of Schooling) and need to pass the	Council
14	Dental technician (dental	2 201	Dinloma Degree	3 years of Diploma	SEE (Ten years of Schooling) and need to pass the	Nepal Health Professional
17	assistant)	2,201	Dipionia Degree	Degree	entrance exam conducted by CTEVT	Council
15	Rehabilitation technician	1.898	Diploma Degree/	3 Years of Diploma	For Diploma - SEE (Ten years of Schooling) and need	Nepal Health Professional
	(Certificate In Physiotherapy /	,	University Degree	Degree / 4 and 1/2 years	to pass the entrance exam conducted by CTEVT. For	Council
	Bachelor of Physiotherapy			of bachelor degree	Bachelor - $+2/PCL$ or equivalent in biology stream with	
1	(BPT))			8	minimum C+ grade in physics, biology and chemistry	
1					with an aggregate of 50% GPA, For PCL or diploma	
1					students (General Medicine, Medical Lab Technology,	
1					Ophthalmic Science, Dental Science, Pharmacy,	
					Ayurveda, Radiography, Physiotherapy)	
16	Anesthesia technician	65	Training Course	1 year	Health Assistant or Proficiency Certificate Level in	Nepal Health Professional
					Nursing or Ophthalmic Assistant (Should be registered	Council
			ļ		in professional councils)	
17	Health education technician	128	University Degree	1 year	Undergraduate degree in Health	Nepal Health Professional
1	(Post Graduate Diploma in					Council
1	Health Promotion &					
	Education)	02	II. V. D			
18	Audiology technician	92	University Degree	4 years	1. SC. or +2 or equivalent level from science stream, or	Nepal Health Professional
1	Dachelor of Audiology				any proficiency level nearin science degree of more than	Council
1	(BASIP))				iwo anu ilali year uurauon	
19	Natural medicine and voga	71	Diploma Degree	13 years of Dinloma	ISEE Pass or SEE with minimum GPA 2.0 and C grade in	Nepal Health Protessional
19	Natural medicine and yoga technician (Yoga and	71	Diploma Degree	3 years of Diploma	SEE Pass or SEE with minimum GPA 2.0 and C grade in Compulsory Mathematics. English & Science	Nepal Health Professional Council

# Table 39 : How to obtain medical qualifications.

# 4) Health Human Resource Development (post-graduation training)

Health human resource development in Nepal is carried out under the NHTC Training Network, with NHTC as the highest authority, which develops, coordinates, manages and operates health training in line with national policies as well as plans and programs of the MoHP. The NHTC develops, coordinates, manages, and operates health training in line with MoHP national policies, plans, and programs, and its activities are aimed at: (a) standardising training packages; (b) organising and implementing training; (c) ensuring the

quality of training in accordance with national standards and strengthening the capacity of hospitals and other (training sites); (d) strengthening the capacity of hospitals and other institutions (training sites); and (e) strengthening mechanisms for post-training follow-up and support. The approved annual training program will be provided to health professionals through the Training Network (Figure 23) that includes seven Provincial Health Training Centres (PHTCs) and 62 training sites nationwide. There are 21 training sites in Bagmati, 11 in Koshi, 4 in Madhesh, 5 in Gandaki, 11 in Lumbini, 3 in Karnali, and 7 in Sudupaschim.

The training offered by the NHTC includes pre-service training and post-service training, the former of which allows for various forms of employment within the health system after completion of the training. The latter provides a variety of training to incumbent health professionals to enable them to perform specific clinical and public health tasks, including (a)basic training for Female Community Health Volunteers (FCHVs) (18 days training), (b) competency-based training, (c) refresher training, (d) induction training, and (e) other training. There are 43 courses (Table 40<sup>35</sup>) available for competency-based training in accordance with



Figure 23 : NHTC Training network

competencies of each profession, including SBA and advanced birth attendant. The length and mode of delivery of the training varies from training to training, ranging from 6~8 hours per day to shorter ones, e.g. 5 to 12 days. To give an example, SBA training is conducted over a total of 60 working days and consists first of 21 working days of classroom theory training, followed by 39 working days of practical training at CTS Maternity Ward Maternity Disease, etc. (Figure 24)



Figure 24 : Example of training (SBA)

The process of conducting the training is shown in Figure 25. First, each facility submits a list of potential participants to the PTHC, which then selects participants from the list. The PHTC then selects participants from the list of potential participants, and the PHTC contacts the CTS to arrange the place and time for the training. The remuneration for the trainers varies depending on the training but is usually around NPR 1,400 per session.

<sup>&</sup>lt;sup>35</sup> Prepared by the Survey Team based on the "NHTC Annual Report 2020/21"



# Figure 25 : Process for training implementation

Comp	Competency based courses					
1	Comprehensive family planning (CoFP) counselling	23	Palliative care			
2	Non-scalpel vasectomy (NSV)	24	Paediatric nursing care			
3	Intrauterine Contraceptive Device (IUCD)	25	Infection prevention and Control (IPC)			
4	Postpartum intrauterine contraceptive device (PPIUCD)	26	Mental health			
5	Minilaps	27	Spinal Cord Injury training			
6	Implants	28	Stress Management Training			
7	Skilled birth attendance (SBA)	29	Burn Care Management			
8	Advanced skilled birth attendance (ASBA)	30	ICU/CCU			
9	Comprehensive Newborn care (CNBC)	31	Dialysis Care Management			
10	Safe abortion services	32	Rural ultrasonography (USG) for nurses			
11	Comprehensive abortion care	33	Geriatric Nursing			
12	Medical abortion	34	Cardiothoracic and Vascular Intensive Nursing Training (CTVIN)			
13	Adolescent and sexual reproductive health (ASRH)	35	Diabetes Education for Nurses Training			
14	Gender based violence (GBV)	36	Helping Babies Survive Training (HBS)			
15	Pelvic Organ Prolapse (POP)	37	Primary Emergency Care (PEC)			
16	Management of Obstetric Fistula (MOF)	38	Medico-legal Training			
17	Antimicrobial Resistance Prevention	39	Laboratory Biosafety and Biosecurity			
18	Operation theatre technique and management (OTTM)	40	Basic Life Support (BLS)			
19	Clinical training skills (CTS)	41	Pre-hospital care			
20	Mid-level practicum (MLP)	42	Essential Critical Care Training (ECCT)			
21	Anaesthetic Assistant Course	43	Bio-Medical Equipment Training (BMET)			
22	Packages of Essential Non-Communicable Diseases (PEN)					

The Table 41<sup>35</sup> shows the number of persons by occupation trained during the year 2020-21. Trainees are selected from a pool of candidates by the program's administration department based on recommendations from the central, provincial, and local governments or on individual applications. Auxiliary Nurse Midwives (ANM) (2041) were the most numerous, followed by staff nurses (1129), AHWs (1051), health assistants (686), and medical officers (678). On the other hand, other medical occupations such as pharmacists, physical therapists, radiology technicians, and laboratory technicians are also covered by the Centre and participate in some of its programs, but their participation is extremely small and the training content for

these occupations is not well developed in the "competency-based training". The Centre recognizes the lack of training opportunities for these positions as an issue.

	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
ANM	1864	2545	1814	1612	2041
AHW	972	870	627	680	1051
Staff Nurse	614	725	740	598	1129
Medical Officer	600	646	580	475	678
НА	463	792	516	629	686
Nursing Officer	127	215	257	150	139
Physiotherapist	20	3	8	0	0
Radiographer	7	8	0	0	7
Pharmacist	6	5	6	0	9
Med. Lab Technician	6	9	6	10	3

Table 41 : Number of participants by occupation trained in the past five fiscal years \*Sample of representative occupations only

Table 42<sup>35</sup> lists the issues that the Centre has identified as challenges and has included in its annual report.

Table 42 : Challenges identified by NHTC

Issues	Challenges
Service delivery	•Multi-door trainings
	·Inadequate service related standard protocol for developing training package
	•Focus of training on transfer of knowledge(theory) rather than developing practical skills
	Inadequate training follow up mechanism
Health	•Manage a separate pool of trainers from different discipline
workforce	Unplanned selection of participants
	• Training Need Assessment for institutionalizing need based trainings.
	• Lack of Coordination with Universities/CTEVT to incorporate the national program
	requirement in the pre-service curriculum.
Health	Inadequate skilled technical human resources
information	Inadequate recording and reporting mechanism
Logistics and	·Lack of proper accommodation facilities for training participants and trainers
infrastructure	•Limited sites for special training
Financing	·Inadequate allocation of budget for training monitoring and quality assurance
	·Inadequate incentives for trainers and budget for conducting planned trainings
Leadership and	·Lack of systematic coordination mechanism with province governments and local level for
governance	training management and quality control.
	•Issue of accreditation, renewal and accountability of training sites etc.
	•Timely revision of the training related policies and strategies

# (4) Service Quality Management through the Minimum Service Standards (MSS) for Hospitals and Health Facilities

1) Background of the Introduction of MSS

The MoHP, in collaboration with the Nick Simons Institute and the National Health Training Centre,

launched the "*Hospital Management Strengthening Programme*" in 2014/2015, mainly targeting district hospitals. Initially it was introduced in 18 district hospitals, and in 2018 the "*District Hospital MSS Tool*" was revised by strengthening its coverage, covering all levels of hospitals (tertiary hospitals, level B secondary hospitals, level A secondary hospitals and primary hospitals) as well as healthcare facilities (health posts, PHCCs), based on four years of results. The MSS has been steadily introduced since its launch in 2014/2015, with a total of 111 facilities in all districts of Nepal in 2021/2022. MSS is supposed to be introduced to all health facilities regardless of its facility levels hereafter.

In addition, the "*MSS Implementation Guidelines*" were approved in 2021/2022, as well as the MSS a software being developed. Thus, the federal, provincial and local governments consider the MSS as the main mechanism for management and quality improvement of health facilities at all levels in Nepal. The MSS introduction workshops and follow-ups have all been conducted by the MOHP and the DoHS in collaboration with the Provincial Health Directorate<sup>36</sup> under the Ministry of Social Development, which is responsible for the provincial level health administration. The Quality Assurance and Regulation Division of the MoHP is leading the programme, while the Curative Service Division of the DoHS is responsible for the programme.

2) Mechanisms for Hospital Service Management and Quality Improvement based on MSS.

The programme is designed to introduce a "*Mechanism*" whereby each hospital identifies gaps in the current situation by conducting self-assessments and joint assessments using the MSS tool that each hospital should provide, and each facility develops an Action Plan aimed at improving the quality of hospital services, resulting in sustainable improvement. As mentioned above, the MSS Action Plans are developed for each level of health facility, but the basic components are the same: (a) Governance and Management, (b) Clinical Service Management) and (c) Hospital Service Support Management, with ratings weighted at 20%, 60% and 20% respectively. Table 43 :<sup>37</sup> shows the main evaluation items for each section in MSS for primary hospitals.

<sup>&</sup>lt;sup>36</sup> As of the time of this survey in October 2022, as an independent form of the Health Division (incl. Provincial Health Directorate) under the Ministry of Social Development, "Provincial Ministry of Health" have been established in five of the seven provinces, from the perspective of more efficient implementation of health administration at the provincial level.

<sup>&</sup>lt;sup>37</sup> Prepared by the Survey Team based on the "Minimum Service Standards (MSS) Checklist to Identify the Gaps in Quality Improvement of Primary Hospitals" with partial modification.

Governance and Management (20%)	Clinical Service Management (60%)	Hospital Support Service Management (20%)
Governance	Outpatient services (General Medicine, Obstetrics/Gynaecology and General Surgery)	Central Sterile Supply Department (CSSD)
Organizational management	Special Clinics (Immunization and growth monitoring; family planning; Anti-tubercular treatment (ATT), anti-retroviral treatment (ART), Safe Abortion Services)	Laundry
HR management and development	Emergency Service	Housekeeping
Financial management	Dressing, Injection and Routine Procedure (DIRP)	Repair and maintenance, power system
Medical records and information management	Hospital Pharmacy Service	Water supply
Quality improvement	Inpatient Service (General Inpatient Ward)	Hospital Waste Management
	Maternity Services (Delivery Service, Maternity Inpatient Ward)	Safety and Security
	Maternity Services (Delivery Service, Maternity Inpatient Ward)	Transportation and Communication
	Surgery/ Operation Service	Hospital Canteen
	Diagnostics and investigations (Laboratory and walking blood bank, X-ray, USG, ECG)	Store (Medical and Logistics)
	Dental Services	
	Post-mortem Services	
	Medico-legal Services	

Table 43 : Major evaluation items for each section in the MSS for primary hospitals

# (a) Governance and Management

This stipulates the establishment of a Hospital Management Committee (HMC) as the implementation system for overall hospital management, with the MHC taking the lead in planning, monitoring and



Figure 26 : One-year MSS Implementation Cycle

reporting on various activities, including budget planning. In particular, the system of continuous implementation of a semi-annual cycle of planning and its evaluation (MSS evaluation), followed by the development of new action plan on the basis of the Gap Analysis, including budget and human resources, can be understood as embodying the PDCA cycle (Figure 26).

### (b) Clinical Service Management

This stipulates not only the content of services but also the necessary facilities, equipment, medical equipment, medical supplies and other related goods for each item of clinical services provided at each level of healthcare facilities, providing the necessary information for the required services in a systematic manner. In line with these requirements, each facility draws up plans for procurement of equipment and supplies, and for renovations, etc., and some facilities are allowed to expand the items to be examined in the laboratory and the range of operations that can be carried out.

## (c) Hospital Service Support Management

While quality improvement of hospital services focuses on clinical services, other tasks that support the delivery of clinical services, including ensuring patient safety, must also be properly managed in order to improve overall services. In particular, independent laundry, CSSD, housekeeping services and contaminated waste management are the areas that have not been specifically addressed in relatively small hospitals such as primary hospitals and level A secondary hospitals, and the introduction of these areas can be understood as one of the key initiatives in the MSS.

## (5) Quality management of health and medical services

As noted above, the MSS has been in place since 2016, with further implementation underway in 2018 with the revision of the MSS for district hospitals and the development of the MSS for other levels of health facilities. Figure  $27^{38}$  shows the extent to which MSS scores improved at each level of hospital in the year 2019/2020 to 2020/2021.

Thus, although the average scores for hospitals at each level are not high, ranging from 36% to 52%, increases in average scores are observed over the year for all levels of hospitals. As mentioned above, the MSS is a "*mechanism*" for improving the quality of hospital services on an ongoing basis, so a sustained increase can be expected as the MSS implementation framework shown in the Figure 26 continues to be implemented.

On the other hand, regional differences in MSS scores have also been identified. Figure 28<sup>39</sup> shows the

<sup>&</sup>lt;sup>38</sup> Prepared by the Survey Team from "Annual Report (2020/21)", DoHS.

<sup>&</sup>lt;sup>39</sup> Prepared by the survey team with some modifications to the figure in DoHS, "Annual Report (2020/21)".
average primary hospital MSS scores by province. Madhesi, Gandaki and Lumbini provinces are below the national average of 54%. This will be discussed after collecting relevant information at the time of the second survey in January 2023.



National Average: 54%
Province 1
Madhesh
Bagmati
Gandaki
Lumbini
Sudurpashchim
Karnali
0 20 40 60 80 100

Figure 27 : Change in Average MSS Score from 2019/2020 to 2020/2021



Furthermore, as noted above, it is observed that the average MSS scores at all levels have increased, whereas the effect of implementation has varied inconsistently for each of the health facilities. Figure 29<sup>39</sup> shows the baseline scores at the time of implementation and the latest scores for the 64 primary hospitals across the country that have implemented the MSS.

The differences in scores in Figure 29 are not an objective indication of the effectiveness of the introduction, as the timing of introduction and the time between introduction and the most recent score determination also vary. Thus, baseline scores varied widely, with the lowest facility having a baseline score of 14%, whereas the highest facility had a score of 78%.

Figure  $30^{39}$  also shows the changes in scores for the latest score when the Baseline score is set to 0.



Figure 29 : Change in MSS score from the Baseline to the Latest Scores at 64 primary hospitals



Figure 30 : Change in MSS score of 64 primary hospitals when Baseline score is set to 0

As shown in the, the hospital with the highest improvement in MSS score increased by +30%, while there was a -27% decrease in the other one. Generally, 1/3 of the hospitals increased, 1/3 of those with no significant change and the remaining 1/3 with a decrease. In response to this, interviews with the MoHP and the DoHS considered that varying time periods between the introduction of the MSS and the determination of its effectiveness as a contributing factor. However, it is unlikely that there is a sufficient causal link between the short time periods and the decline in the scores. In addition, interviews with the health sections of the semi-metropolitan municipal offices visited during the second field survey pointed out that in some cases where the MSS was not functioning adequately, i.e., the monitoring had become a formality. In any case, the interviews suggested that a scientific analysis of causes should be conducted from multiple perspectives when considering measures to further improve the effectiveness of MSS in future. On the other hand, as the MSS is a "*mechanism*" for continuous improvement, it is difficult to draw certain conclusions in this case as an analysis of current issues since it can be expected to show a trend towards improvement as the period of implementation increases.

#### (6) Status of introduction of ICT system in the health sector

## 1) Health Management Information System (HMIS)

The HMIS that is based on open-source DHIS2<sup>40</sup> has been introduced, and is utilized as a platform for the collection, communication, analysis, and reporting of health information by the central and local governments. All health facilities nationwide, regardless of public or private, access the HMIS directly from PC via a Web browser and send data by operator's manual input. However, the health facilities that do not have PC equipment and so is not able to access HMIS submit paper-based data to the local government, and the local government input digital data to HMIS on their behalf. Currently, only about 3,300 of the 9,000 health facilities in Nepal have direct access to HMIS. The data collected can be referred to by the central and local governments as well as by the health facilities and used for planning purposes.

#### 2) Logistics Management Information System (LMIS)

There has been a paper-based system in Nepal to request delivery of pharmaceuticals by health facilities, and to manage inventory counts by logistics centres. Apart from that, a digitalised version of electronic Logistics Management Information System (e-LMIS) has been introduced and is utilized concurrently with paper-based system. The e-LMIS is web-based and can be accessed directly from PC at health facilities and logistics management centres nationwide via a web browser.

<sup>&</sup>lt;sup>40</sup> DHIS2 https://dhis2.org/ An open-source system which is developed at the University of Oslo, Norway. As of year 2022, it has been introduced over 73 low- and middle-income countries and utilized as a platform for health information, including collection, communication, analysis, and reporting.

## 3) Insurance Management Information System

The openIMIS<sup>41</sup>, an open-source software, has been introduced as an information system to manage health insurance information. openIMIS is web-based and has functions to manage insurance schemes, policies, and claims. However, it is told that the current operational status is not yet complete. It is also told that it is expected to automate the reception and processing of claims from health facilities by artificial intelligence (AI) in the future.

## 4) Information System for COVID-19

As a platform for collecting information on COVID-19 daily, an information system that is called Information Management Unit (IMU) has been introduced. In addition to tracking the number of infected persons and close contact persons, the IMU manages vaccination status and issues QR codes as proof of vaccination to citizens who have been vaccinated.

## 5) Electric Medical Records System: EMR

The introduction of EMR and the selection of software products are done at the discretion of each health facility, and therefore the situation differs from facility to facility, but even when they are introduced, their utilization of EMR is generally low. Even in tertiary hospitals, physicians write medical records on paper, which are then transferred to the medical records section, where operators manually input them into EMR software developed by private companies, or they are scanned and stored as images in paper form, or never be digitalized and stored as paper. Most hospitals with EMR systems use software which is developed by Midas Technologies Ltd<sup>42</sup>, a private company headquartered in Kathmandu, but the software versions are generally out of date and have not been updated, thus functionality is limited comparing with the latest version of the software product.

The government is focusing on the utilization of EMR in the future. Until now, EMR systems have been subject to a variety of specifications as there have been variety of products, but the MoHP has established a standard protocol for EMR. As a result, it is expected that in the future it will be possible to share various types of patient information among health facilities.

Also, from a technological perspective, standardization of EMR brings a variety of possibility. For example, by adapting maternal and child health care data to a standard EMR format, the government could collect maternal and child health care information each time data is entered by the patient, and this information could be automatically shared with the patient's regular health facility.

<sup>&</sup>lt;sup>41</sup> openIMIS https://openimis.org/ An open-source social security management system which is developed by joint fund of the Swiss Development Cooperation and the German Federal Ministry for Economic Cooperation and Development.

<sup>&</sup>lt;sup>42</sup> Midas Technologies Ltd. https://www.midastechnologies.com.np/site/

## 6) Interoperability of Information Systems

The government also aims to link EMR systems at health facilities with governmental information systems by standardising them. HMIS and openIMIS have web-based interfaces for external systems so that data can be sent directly from information systems at health facilities such as EMR via the internet automatically. If information management is optimized at health facilities in the future through the deployment of digital equipment and the introduction of EMR systems, it is expected that the interoperability helps to transmit monthly statistical data extracted from daily medical information of EMR to HMIS, and to transmit insurance claims to openIMIS, automatically and unitarily. As a result, it is expected to save operators cost of manual data input and prevent input errors and duplication due to human error.

In the past, Bahmni<sup>43</sup>, an open-source integrated hospital management system customized to work with HMIS has been piloted at a hospital in Nuwakot District, Bagmati as an actual example of utilizing the interoperability<sup>xli</sup>. GIZ, which carried out the introduction, has evaluated this pilot introduction as a success.

#### 7) Programs by MoCIT

"2019 Digital Nepal Framework", issued by MoCIT in May 2019, presents strategies of using ICT for eight sectors, including agriculture, education, and tourism and so on. The health sector is one of them and presents seven programs shown in Table 44.

Program	Overview
National Digital Healthcare Platform	A National Digital Health Platform/Mobile App connecting all public sector health facilities in Nepal. The platform should provide all information pertaining to public sector healthcare facilities to citizens and enable easier access to healthcare services.
Next-Generation Digital Healthcare Facilities	New public sector health facilities should be equipped with next-generation digital infrastructure (High-speed Internet access, video conferencing, e-Learning and so on) with the goal to provide specialist healthcare services in remote areas.
EHR (Electronic Health Records) 2.0	EHR is an integrated system that combines the EMR which is a medical record, with various other functions for hospital operations. EHR enables various information on patients to be shared among health facilities and utilized in a paperless manner.
Mobile Health Units	Introduction of mobile clinic vehicles to improve access to medical services in rural areas. The mobile clinic vehicles will be connected to the digital world and GPS for effective tracking and route management as well as electronic record management.
e-Maternal Care	Design a platform to track maternal and child records. Maintain accurate medical records, provide information on health care, and ensure access to regular and appropriate medical services.
Drones for delivery of emergency medical supplies	Consider using drones (unmanned aerial vehicles) to deliver medical supplies and equipment to remote areas in the event of an emergency or natural disaster. This will be used to deliver necessary medical supplies to remote areas that tend to be isolated due to lack of roads or seasonal flooding.
Centralized Telemedicine Centre	A model telemedicine centre that brings together skilled medical professionals through digital technology. Skilled health care professionals working at the telemedicine centre in a public tertiary hospital in Kathmandu provide guidance and advice to less-skilled health care professionals in other parts of the country.

Table 44 : Programs for the health sector by the MoCIT

<sup>&</sup>lt;sup>43</sup> Bahmni https://www.bahmni.org/ An open-source comprehensive hospital management system. Its functions can be extended by combining packages, and in addition to electronic medical records, it can centrally manage various data related to hospital operations such as patient registration, billing, inventory control, and financial accounting.

The "2019 Digital Nepal Framework" is a huge platform initiative for multi-sectoral electronic interoperability of various matters, and although various partner agencies, such as the World Bank, WHO and the Asian Development Bank, are involved, the detailed timeline for its completion is not yet clear as the allocation of roles is still being discussed at present.

## 8) The survey of ICT basic information for digital health adoption

Table 45 shows the results of the survey of basic ICT information in Nepal for the adoption of digital health. While the general impression is that Nepal has a good ICT infrastructure, human resources and business environment, the governance side has not progressed as planned in the past, despite the existence of various plans using modern IT technologies.

Category	Theme of the survey	Results of the survey
	Organization having jurisdiction for digital health/Related Policies	<ul> <li>The policies are made by MOHP on digital health and are implemented by the DoHS. And various central government information systems, including HMIS, are developed by the Management Division of the DoHS, which is responsible for implementation, maintenance, and operation of these systems.</li> <li>A related policy is the 2019 Digital Nepal Framework by MoCIT, which will be used across eight sectors, with the health sector being under the jurisdiction of the MoHP. However, only one person in the MoHP is currently in charge of ICT.</li> </ul>
		Policy making: MoHP, MoCIT
		• Policy operation: DoHS
Governance/	Related stakeholders	• Data Centre: Operated by the National Information Technology Centre (NITC), a subordinate organization of MoCIT
Leadership		• International donors: GIZ, USAID, World Bank, etc.
		• NPO/private companies: Medic, Amakomaya, etc.
	E-government initiatives (including status of national ID)	<ul> <li>Although some government agencies have computerized their procedures to enable online applications, individual user IDs and passwords are issued and operated by each government agency separately. Common identification numbers such as national IDs are not used.</li> <li>Although the national ID platform has been developed since the 2000s, it is currently hardly in widespread use and is not operational.</li> <li>MoCIT plans to issue a new national ID that can be used commonly across all sectors, called the Master Index, in the 2019 Digital Nepal Framework.</li> </ul>
	Digital health strategy/Action plan	• The 2019 Digital Nepal Framework defines the strategy but does not establish a specific timeline.
Strategy & Investment	Strategies for EMR/EHR/PHR	<ul> <li>Standardizing EMR is in progress with the goal of being able to link medical facilities to HMIS and other government information systems for automatic data transmission.</li> <li>The EHR2.0 program of the 2019 Digital Nepal Framework aims to store medical information in the international standard HL7 format and to share among medical facilities. The program also aims to enable Nepalese citizens who have migrated abroad to receive appropriate medical services by presenting EHR information in an environment where they do not speak the language.</li> </ul>
Medical services	Status of EMR/EHR/PHR implementation/possibility of collaboration	• There are many private companies that develop EMR software, but the versions installed in medical facilities are old and not operated efficiently.
	DHIS2/Tracker operational	• It is operated as an HMIS, and the central government, local

Table 45 : The Results of the survey of ICT basic information for digital health adoption

	status	<ul> <li>governments, and medical facilities refer to the data for planning purposes.</li> <li>Many medical facilities are not equipped to transmit data directly du to problems with PC equipment and communication environments and there are also issues regarding the reliability of statistical data.</li> </ul>
	Cooperation with medical facilities	• Currently, there is no data sharing or other collaboration between medical facilities, but this is expected to be realized in the futur through EMR standardization and the EHR2.0 program in the 2011 Digital Nepal Framework.
	Other data managed services	• Information systems have been established and are in operation fo logistics, insurance information and COVID-19.
	Communication infrastructure	<ul> <li>Mobile communication is widespread: according to statistic published in February 2023<sup>44</sup>, the number of fixed-line broadband subscriptions is about 36% of the population, while the number of mobile subscriptions is about 95% of the population.</li> <li>Internet connection speeds were measured at 4-8 Mbps for both downlink and uplink on mobile lines, and 30-50 Mbps for both downlink and uplink on fixed-line WIFI at cafes and other locations</li> </ul>
ICT	Data infrastructure	• NITC, a subordinate organization of MoCIT, also provides domain name and cloud server services to private companies.
ICT infrastructure	Digital device penetration rate	<ul> <li>PCs and other common digital devices are available on the market PCs with entry-level specifications can be purchased for around NPI 42,000, while smartphones can be purchased for around NPR 12,000</li> <li>Because the number of broadband mobile line subscriptions i approximately 95% of the population, smartphone penetration i</li> </ul>
	Personal identification	<ul><li>expected to be similarly high.</li><li>Currently, there is no functioning national ID and no mechanism that</li></ul>
	system	electronically verifies a personal identity.
	Electric power	• Power outages are frequent, and supply is unstable.
Data standards	Data storage location/Security	<ul> <li>NITC, a subordinate organization of MoCIT, operates a state-run dat centre, and various government information systems, including HMIS, are located on servers in the centre.</li> <li>The data centre has robust physical security with surveillanc cameras and biometrics and is temperature-controlled with ai conditioning and monitored 24 hours a day by a rotating staff of about the security of the security</li></ul>
Data standards and interoperability		15 people.
and interoperability	Data structure specifications/Standard specifications	<ul> <li>The data standard for electronic health records in the EHR 2.4 program in the 2019 Digital Nepal Framework is the international standard HL7.</li> <li>Web-based systems already in operation, such as HMIS, eLMIS, and openIMIS, all have interfaces that can be connected from external systems and can be connected from EMR systems at medical facilities. The government is currently in the process of standardizing EMR software for such centralization.</li> </ul>
and interoperability	Data structure specifications/Standard specifications Personal information management	<ul> <li>Conditioning and monitored 24 nours a day by a rotating start of about 15 people.</li> <li>The data standard for electronic health records in the EHR 2. program in the 2019 Digital Nepal Framework is the international standard HL7.</li> <li>Web-based systems already in operation, such as HMIS, eLMIS, and openIMIS, all have interfaces that can be connected from external systems and can be connected from EMR systems at medical facilities. The government is currently in the process of standardizing EMR software for such centralization.</li> <li>The Privacy Act, 2075 (2018), has been enacted to protect personal information.</li> </ul>
and interoperability	Data structure specifications/Standard specifications Personal information management Medical records	<ul> <li>Conditioning and monitored 24 nours a day by a rotating start of about 15 people.</li> <li>The data standard for electronic health records in the EHR 2. program in the 2019 Digital Nepal Framework is the internationa standard HL7.</li> <li>Web-based systems already in operation, such as HMIS, eLMIS, and openIMIS, all have interfaces that can be connected from external systems and can be connected from EMR systems at medica facilities. The government is currently in the process of standardizing EMR software for such centralization.</li> <li>The Privacy Act, 2075 (2018), has been enacted to protect personal information.</li> <li>The Public Health Service Act, 2075 (2018), provides for the proper retention of records.</li> </ul>
and interoperability Regulation	Datastructurespecifications/StandardspecificationsPersonalinformationmanagementMedical recordsElectronic signature	<ul> <li>Conditioning and monitored 24 nours a day by a rotating start of about 15 people.</li> <li>The data standard for electronic health records in the EHR 2. program in the 2019 Digital Nepal Framework is the internationa standard HL7.</li> <li>Web-based systems already in operation, such as HMIS, eLMIS, and openIMIS, all have interfaces that can be connected from external systems and can be connected from EMR systems at medica facilities. The government is currently in the process of standardizing EMR software for such centralization.</li> <li>The Privacy Act, 2075 (2018), has been enacted to protect personal information.</li> <li>The Public Health Service Act, 2075 (2018), provides for the proper retention of records.</li> <li>The Electronic Transactions Act, 2063 (2008), provides for electronic signatures.</li> </ul>
and interoperability Regulation	Data structure specifications/Standard specifications Personal information management Medical records Electronic signature Remote medicine	<ul> <li>Conditioning and monitored 24 nouls a day by a rotating start of about 15 people.</li> <li>The data standard for electronic health records in the EHR 2. program in the 2019 Digital Nepal Framework is the internationa standard HL7.</li> <li>Web-based systems already in operation, such as HMIS, eLMIS, and openIMIS, all have interfaces that can be connected from external systems and can be connected from EMR systems at medica facilities. The government is currently in the process of standardizing EMR software for such centralization.</li> <li>The Privacy Act, 2075 (2018), has been enacted to protect personal information.</li> <li>The Public Health Service Act, 2075 (2018), provides for the proper retention of records.</li> <li>The Electronic Transactions Act, 2063 (2008), provides for electroni signatures.</li> <li>Nepal Medical Association (Nepal Medical Association) has issued guidelines.</li> <li>At present, there are examples of telemedicine services that even issue prescriptions through online medical services.</li> </ul>

<sup>&</sup>lt;sup>44</sup> Report by Nepal Telecommunications Authority https://nta.gov.np/en/mis-reports/

	Data security	•	Standards for cybersecurity are currently being drafted at MoCIT.
	ICT literacy	•	PC operation is taught from junior high school, but there is a shortage of PC equipment and teachers in rural area. Smartphones are widely used except among seniors and there is no concern about their operation
Human resource	SEs, system developers, etc.	•	There are many private IT companies in Nepal. according to the services that have been launched in Nepal, it appears that the technology level is adequate. On the other hand, the level of attention paid to cyber security, which is not easily visible, is uncertain and remains a concern. Approximately 7,000 students graduate from the university each year with a degree in computer science. After graduation, students are usually employed in Nepal. However, it is said that not a small number of them go abroad after 2-3 years of experience.
	Acceptability of PHR/ Maternal and Child Health Handbook	•	Medic and Amakomaya have already provided and operated support tools in the form of smartphone applications for patients themselves, FCHV, and local health workers. It was commented that it is necessary to promote incentives for FCHV and local health workers to introduce the new system, as they will be burdened by the changes in workflow associated with the electronic system and the duplication of work during the transitional period.
l	Restrictions on foreign investment	•	Compared to other countries, no special regulations are found.
	Startup ecosystem	•	A mechanism exists, and the government provides an electronic platform $^{\rm 45}$ .
Business environment	Well-known companies in the health tech sector	•	<ul> <li>Midas Technologies and Mediflow Solution are well known, but there are reportedly numerous health tech companies in Nepal.</li> <li>Midas Technologies has launched a web-based platform called Mero Doctor<sup>46</sup>, which allows users to use a smartphone application to consult with a doctor-staffed call centre, make hospital appointments online. In addition, users can save their own medical records captured with a camera to the cloud and carry them at all times via their smartphones. The platform is free to use, and as of October 2022, it has been downloaded approximately 200,000 times and registered approximately 175,000 times, with 300 to 400 medical appointments are made per day through this platform.</li> </ul>
	Possibility of cooperation with Japanese and Nepalese companies	•	As seen in the services provided by Midas Technologies, Nepal's domestic IT companies have sufficient technological capabilities and there is a good possibility of collaboration in future digital health strategies. As for Japanese companies, there is a possibility to collaborate with private companies that have experience in introducing electronic Maternal and Child Health Handbook and other products at overseas.

(7) Health care facilities, equipment, and pharmaceutical supply functions

1) Regulations concerning supply, etc.

The Department of Drug Administration (DDA), a division of the MoHP, is responsible for regulating the manufacturing, marketing, distribution, sales, import/export, storage, and use of drugs in the country, while logistics is managed by the Logistics Management Section, which is under the Management division. The Logistics Management Section has a network of central and five regional medical stores and a regional level

<sup>&</sup>lt;sup>45</sup> https://startup.npc.gov.np/

<sup>&</sup>lt;sup>46</sup> https://merodoctor.com/

network whose function is to manage the forecasting, quantification, procurement, storage, and distribution of pharmaceuticals and medical supplies for Nepalese government medical facilities in the country, as well as repair and maintenance of biomedical equipment and transport vehicles. The Logistics Management Information system (LMIS) is now web-based, and this "e-LMIS" is being used for supply chain management, data entry, and data visualization.

## 2) Procurement

A breakdown list of essential medicines to be procured at the district level and the proposed number required will be developed based on projections by a working group composed of representatives from various MOHP departments. The working group has developed a three-year forecast with regular annual reviews, which is based on demographic data, consumption patterns, morbidity rates, and several other scientific data. The study also takes into account non-prescription drugs, alternative drugs, and duplicate dosing, which can affect predictions. The procurement status of major pharmaceuticals and medical supplies is monitored and evaluated by the National Pipeline Review Conference held quarterly to monitor shipments, distribution, transportation, and inventory status.



Figure 31 : Pharmaceutical and other supply chains in Nepal.

The distribution channels for medicines, medical equipment and medical supplies in Nepal are shown in Figure 31. If the targets are classified as (i) essential medicines etc., (ii) medicines etc. covered by insurance, (iii) all other medicines, and (iv) medicines etc. which are not essential medicines etc. but are specially focused on by the government (e.g., anti-tuberculosis drugs), the medicines etc. procured through the general distribution system are (i) and (iv). (ii) and (iii) are procured from private wholesalers listed to the right of Figure 31. The normal flow of medicines and other medical supplies is supplied to each medical

facility via the route indicated by the black arrows in Figure 31. Under normal circumstances, all medicines and other supplies are transported once to the provincial logistics centres located in each province, from where they are procured to the national hospitals in the province and to the provincial hospitals under their jurisdiction. The remainder is supplied to the various health facilities via county health offices and city medical stores. On the other hand, the arrows in red in the diagram represent special supply routes, such as for medicines and emergencies where the State in (iv) has a special focus. In this case, medicines supplied to national hospitals are sent directly from the central logistics centre, while to provincial hospitals they are supplied from the provincial logistics centres. In some cases, such as when a project is carried out in a particular city, medicines are sent directly from the central logistics centre to the city medical store. Currently, e-LMIS is used within the left part of the diagram and has been introduced in federal and provincial hospitals. It has not been introduced in primary hospitals, PHCCs and health posts in sub-city health facilities. On the other hand, private wholesalers use a system developed by a private system company instead of e-LMIS for the supply of medicines.

#### 3) Inventory Management

In order to ensure an uninterrupted supply of medicines and medical supplies to patients, the Logistics Management Section introduced storage facilities and warehousing practices in the central and regional warehouses in the country. This manages the supply chain system for pharmaceuticals and medical supplies. The Management Division of the DoHS supports the Provincial Health Logistics Management Centre and is working to coordinate inventory management processes through the mobilization of pharmacists and others in all 77 districts by deploying warehouses according to best practices, conducting inventories, disposing of expired goods, updating inventory records, and building the capacity of inventory management personnel. However, during the actual site visit, several situations were observed in which large quantities of medicines were spread out on the floor in the hospital's pharmacy department.

#### 4) Supply Chain Management Working Group (SCMWG)

In FY2020-21, the SCMWG was formed and worked in all seven provinces. SCMWG meetings were held quarterly with the participation of the Ministry of Social Development, Provincial Health Department, and Provincial Health Logistics Management Centre (PHLMC) to discuss supply chain resource allocation, building capacity of health sector supply chain staff, operationalizing the e-LMIS system, reducing stockouts, and ensuring efficient commodity sharing in the health sector, including COVID-related issues. As a result, LMIS reporting rates increased, e-LMIS utilisation rates increased, and the status of drug distribution was better understood centrally. One of the current challenges is that it takes a very long time for the medicines ordered by individual healthcare facilities to arrive. In some cases, some medicines do not arrive for several months to six months, and even when they do arrive, the number of medicines ordered

is less than the number ordered. According to the interviews, the main reasons for this were lack of supply management, lack of products and lack of human resources.

## (8) Health Finance

#### 1) Health Sector Finance

The overall government budget for the health sector in Nepal has increased from 1.5% of GDP in FY 2016 to 2.4% in FY 2020 (Figure 32 : $|^{47}$ ). The health sector budget as a percentage of the government budget is also on the rise (Figure 33 : $^{47}$ ). According to MoHP data, the analysis attributed the increase in the government budget for the health sector to the response to COVID-19 and the increased allocation to the health sector by the provincial and local governments' own resources.





# Figure 32 : Health Sector Government Budget (% of GDP)

#### Figure 33 : Health Sector Government Budget

On the total expenditure of the health sector, including the private sector, the ratio is 5.6% of GDP, which is not low compared to neighbouring countries, but the per capita government expenditure is low at US\$12 and the out-of-pocket payment (OOP) ratio is high at 58% (Table 46 :<sup>48</sup>).

<sup>&</sup>lt;sup>47</sup> Prepared by MoHP (2022) Health Sector Budget Analysis: First Five Years of Federalism

<sup>&</sup>lt;sup>48</sup> Prepared by WB & Global Financing Facility (2021) Public Expenditure on Health in Nepal: A Narrative Summary

	Health sp	pending		Pubic spending on health									
Country	Per capita (US\$)	Share of GDP	Per capita (US\$)	Share domestic government	Share SHI	Share external	OOP share of health spending						
Bangladesh	36	2.3	7	89	0	11	74						
China	441	5.2	250	51	49	0	36						
India	69	3.5	19	86	13	1	62						
Indonesia	115	3.0	56	73	26	1	35						
Malaysia	384	3.9	194	99	1	0	38						
Nepal	48	5.6	12	89	0	11	58						
Pakistan	45	2.9	14	97	3	0	60						
Philippines	133	4.4	46	82	10	8	53						
Sri Lanka	159	3.8	71	96	1	3	50						
Thailand	247	3.7	188	92	8	0	11						
Vietnams	130	5.5	65	51	45	3	45						
SAR average	191	5.3	116	87	2	11	52						
LIC average	41	6.3	15	63	4	33	41						

 Table 46 : Health Expenditure in Nepal and Neighbouring Countries

Table 47<sup>49</sup> presents the situation in Nepal with regard to the main indicators used in health financing. Current Health Expenditure (CHE), which is expressed as total health expenditure minus investment in health facilities, shows that CHE as a percentage of GDP ((1) in Table 47) has been stagnant. Although the economy is growing, this has not translated into increased spending on health care. Domestic government health expenditures ((4) and (5) in Table 47) are not growing, but domestic government health expenditures per capita are growing, so OOP is not increasing. Expenditures from foreign aid have not increased either; the target of reducing OOP to 40% by 2020 was set in the NHSS, but the target is difficult to achieve.

Table 47 :	Major	indicators	of Health	Finance

Indi	ootoro	2015	2016	2017	2018	2019
man		Value	Value	Value	Value	Value
(1)	Current Health Expenditure (CHE) as % Gross Domestic Product (GDP)	5.47	5.42	4.72	4.53	4.45
(2)	Current Health Expenditure (CHE) per Capita in US\$	47.89	48.32	50.31	51.14	53.25
(3)	Current Health Expenditure (CHE) per Capita in PPP	163.78	162.15	168.34	171.21	176.96
(4)	Domestic General Government Health Expenditure (GGHE-D) as % Gross Domestic Product (GDP)	0.91	1.01	1.07	1.07	1.10
(5)	Domestic General Government Health Expenditure (GGHE-D) as % General Government Expenditure (GGE)	5.15	5.31	4.51	3.81	4.03
(6)	Domestic General Government Health Expenditure (GGHE-D) per Capita in US\$	7.97	8.98	11.35	12.05	13.21
(7)	Domestic General Government Health Expenditure (GGHE-D) as % Current Health Expenditure (CHE)	16.63	18.58	22.56	23.57	24.81
(8)	Out-of-pocket (OOPS) as % of Current Health Expenditure (CHE)	59.44	55.44	57.38	57.73	57.91
(9)	External Health Expenditure (EXT) as % of Current Health Expenditure (CHE)	14.37	11.71	15.42	13.54	11.91

Figure 34 shows the trend of the share of government (MoHP) and development partner budgets in the

<sup>&</sup>lt;sup>49</sup> Prepared by WHO, Global Health Expenditure database.

health sector <sup>xlii</sup>. The share of the MoHP budget had been increasing steadily since 2006, but dropped sharply in 2020/21 and 2021/22, when the COVID-19 infection spread. By 2022/23, the percentage of MoHP budget had recovered to near the rate prior to the spread of COVID-19 infection.



Figure 34 : Trend of the share of government (MoHP) and development partner budgets in the health sector

2) Health financing at three levels of government in the transition to federalism

With the transition to federalism, fiscal transfers have been made to provincial and local governments. To facilitate fiscal transfers, the Intergovernmental Fiscal Arrangement Act, 2074, was enacted in 2017 and provides for the following four grants.

Name	Outline
1. Fiscal Equalization Grants	Grants to be transferred by the Federal Government, through the Ministry of Finance, to provincial and local governments for fiscal equalization purposes as proposed by the NNRFC. The use of the funds is not limited. The MNNRFC will consider the amount of transfers based on a) population and demographic details, b) territory/area, c) Human Development Index, d) requirement of expenditure, e) attempts made for revenue collection, f) infrastructure development, and g) special condition, and will review it every five years.
2. Conditional Grants	Grants to implement federal, province, and local government programmes/projects based on criteria established by the NNRFC. When granting conditional grants, the NNRFC may establish necessary conditions for the implementation of the project. The provincial and local governments involved shall comply with such conditions.
3. Complementary Grants <sup>50</sup>	Grants for provincial and local governments to implement infrastructure projects. Determined by taking into account project feasibility, total cost, benefits from the project, financial and human resources required to implement the project, and needs and priorities.
4. Special Grants	Grans for the implementation of special projects of provincial and local governments. The purpose is to improve and develop basic services such as education, health, drinking water, and other basic services, harmonious development within the provincial and local governments, and the improvement and development of economically and socially discriminated classes and communities. Provided to projects for which provincial and local governments submit proposals to the National Planning Commission and which are adopted.

<sup>&</sup>lt;sup>50</sup> In some government documents, such as the MoHP and the Ministry of Finance, Matching Grant is used instead of Complementary Grants.

Table 48<sup>47</sup> macro-economic data on health sector budgets and expenditures. The number of transfers has been increasing year by year, indicating increased activity by provincial and local governments. The government budget for the health sector in 2021/22 was NPR 179.5 billion, of which NPR 100.9 billion was conditional grants to the MoHP. The provincial governments received NPR 10.6 billion as fiscal transfers from the federal government and allocated NPR 18.3 billion to the health sector as internal resources. Local governments received NPR 29.3 billion in fiscal transfers from the federal government and NPR 970 million in fiscal transfers from the provincial governments, and allocated NPR 6.1 billion of their internal resources to the health sector.

		-	—		
Health Sector Budget	2017/18	2018/19	2019/20	2020/21	2021/22
Health Sector (FG, PG, LL)	60,454.9	77,611.1	105,844.6	143,118.1	179,652.5
Ministry of Health and Population	31,781.1	34,082.3	42,670.9	60,678.8	100,974.8
Federal Ministries other than MoHP	9,563.7	9,564.8	10,440.7	18,209.5	13,379.7
Fiscal Transfer to PGs	164.1	6,153.0	9,258.7	11,869.7	10,590.7
Fiscal Transfer to LLS	18,652.9	23,330.7	29,469.6	30,830.6	29,305.0
Fiscal Transfer from PG to LLs	-	-	826.8	1,684.3	975.1
Internal source from PGs	-	3,103.0	9,396.2	14,419.1	18,326.1
Internal source LLs	293.1	1,377.3	3,781.6	5,426.1	6,101.1

Table 48 : Macro-economic data of Health Sector Budget and Expenditure (NPR millions)

Table 49<sup>47</sup> shows the federal, provincial, and local government health budgets from the MoHP, DoHS, and other major agencies. Fiscal transfers from the DoHS to provincial governments began in FY 2018/19; the share of fiscal transfers from the DoHS to provincial governments increased from 46% in FY 2017/18 to the 60% range in FY 2018/19 and beyond. On the other hand, the budgets for the Drug Administration, the Health Insurance Board, and the Commission and Academy are not allocated to provincial and local governments until 2021/22, suggesting that in these areas the central government-led implementation system is continuing.

Organization	2017/18			2018/19				2019/20				2	020/	21		2021/22				
	Budget	9	6	%			Rudget %			%				Budget		%				
	Duugei	Dudget	FG	LL	Duugei	FG	PG	LL	Duuget	FG	PG	LL	Duugei	FG	ΡG	LL	Duuget	FG	PG	LL
MoHP	4,385	100	-	15,135	93	7	-	19,725	100	-	-	36,238	96	-	-	74,468	100	-	-	
DoHS	30,380	54	46	25,880	25	40	65	32,086	24	14	63	33,505	21	14	63	38,364	23	14	63	
Department of Drug	150	100		160	100			101	100			165	1.00			161	1.00			
Administration	152	152	100	-	100	100	-	-	191	100	-	-	100	100		-	101	100	-	-
Department of Ayurveda																				
and Alternative	1,581	44	56	1,511	26	13	71	1,226	21	9	69	1,665	13	28	59	1,718	13	28	59	
Medicine																				
Centers	3,167	95	5	2,506	69	30	10	2,362	72	15	13	2,535	75	21	12	2,624	67	21	12	
Central Hospitals	2,558	100	-	2,337	100	-	-	2,843	100	-	-	2,984	100	-	-	2,852	100	-	-	
Health Insurance Board	2,000	100	-	6,000	100	-	-	6,000	100	-	-	7,500	100	-	-	7,500	100	-	-	
Council and Academy	2,643	100	-	2,883	100	-	-	4,348	100	-	-	6,098	100	-	-	5,434	100	-	-	
Total	46,866	68	32	56,420.0	60	7	32	68,779	62	7	31	90,690	67	5	19	133,121	76	5	19	

Table 49 : Federal, Provincial, and Local government health budgets from MoHP, DoHS and other major agencies (NPR million, %)

Table 50 :<sup>47</sup> shows the execution rate of the health budget for the MoHP, DoHS, and other major institutions. It can be seen that the HIB (Health Insurance Board) and hospitals have clear activities to do and have a high execution rate of over 90%. On the other hand, the MoHP 's budget execution rate for FY2020/21 is low at 52.5%. Several other agencies also have execution rates below 70%. The low budget execution rate in the health sector was also pointed out in interviews with the NPCS health directorate. The reasons for the low execution rate for other agencies are assumed to be the ambiguity in the division of roles and functions due to the transition to a federal system, as well as insufficient capacity for budget planning and plan execution.

Table 50 : Health budget execution (NPR billion, %)

Orregiantian	201	7/18	201	8/19	201	9/20	202	0/21	2021/22	
Organization	Budget	% Exp	Budget	% Exp	Budget	% Exp	Budget	% Exp	Budget	
MoHP	4.2	84.9	10.7	75.5	13.9	13.9 69.1		52.5	74.3	
DoHS	18.4	80.2	7.3	84.8	7.2	78.5	7.3	68.0	8.7	
Department of Drug Administration	0.1	76.4	0.2	71.1	0.2	47.7	0.2	59.1	0.2	
Department of Ayurveda and Alternative Medicine	0.6	83.7	0.4	71.8	0.4	74.5	0.2	63.8	0.2	
Centers	3.0	67.7	1.7	78.2	1.7	75.6	1.9	78.7	1.8	
Central Hospitals	2.5	94.5	2.4	99.4	3.8	94.2	3.4	90.0	2.9	
Health Insurance Board	1.8	73.5	3.4	82.1	5.2	89.6	7.5	98.1	7.5	
Council	0.1	99.9	0.11	100.0	0.11	83.6	0.16	46.4	0.2	
Academy	2.6	99.9	3.2	99.8	6.5	89.9	8.4	82.2	5.2	
Total	33.3	82.1	29.4	83.4	39.0	79.8	62.2	66.7	101.0	

Table 51 :<sup>47</sup> shows the budgets of the federal, provincial, and local governments by budget line item. It can be seen that the budget allocation for Capacity Development has changed significantly from the federal government to the provincial and local governments. Similarly, Table 52 :<sup>47</sup> shows the budgets of federal, provincial, and local governments by activity. Approximate 70 percent of the budget for Administration HR

& Office Management is allocated to local governments.

	2017/18			2018/19				2019/20				2020/21				2021/22			
Line Item	Budget	9	6	Budget		%		Budget	%		Budget	%			Budget	%			
	Duugei	FG	LL	Buugei	FG	PG	LL	Buugei	FG	PG	LL	Duugei	FG	PG	LL	Buugei	FG	PG	LL
Wages & Salaries	11,395	14	86	13,800	10	7	83	15,149	2	-	98	18,539	3	2	95	18,375	4	-	96
Support Services	1,826	35	65	1,594	22	5	73	933	52	33	15	2,325	85	6	9	570	98	1	5
Capacity Building	914	77	23	852	20	56	24	514	26	16	58	711	17	67	16	631	11	5	83
Program Activities	5,737	69	31	4,726	27	17	55	6,658	19	40	41	10,321	40	14	46	15,062	29	-	30
Medicine Purchases	5,910	92	8	5,316	66	15	19	6,337	72	12	16	5,674	71	12	17	44,907	97	-	3
Grants and Social Security	14,794	91	9	21,073	89	5	6	30,368	91	3	6	37,516	92	3	5	39,475	96	-	4
Capital Construction	4,906	95	5	7,732	97	-	3	7,926	94	1	5	14,685	99	-	1	13,391	99	-	-
Capital Goods	1,385	91	9	1,327	80	5	15	894	78	6	16	919	77	19	4	712	80	4	16
Total	46,866	68	32	56,420	60	7	32	68,779	62	7	31	90,690	67	5	28	133,121	80	4	16

Table 51 : Federal, provincial, and local government budgets by budget line item (NPR million, %)

Table 52 : Federal, provincial, and local government budgets by activity (NPR million, %)

	201	17/18		2	2018/19				2019/20	0		1	2020/2	1		1	2021/22		
Chart of Activities	Pudgat	%	ó	Pudgat		%		Pudget		%		Pudget		%		Pudget		%	
	D udget	FG	LL	Dudget	FG	PG	LL	D uaget	FG	PG	LL	Dudget	FG	PG	LL	D udget	FG	PG	LL
Administration, HR & Office Management	17,577	41	59	18,099	25	7	68	21,763	30	3	67	24,662	29	1	69	25,669	29	2	69
RMNCAH & Nutrition	7,917	65	35	7,537	39	25	36	9,694	38	24	38	10,043	45	23	32	14,254	45	24	31
FCHV & Community Health Programmes	1,277	30	70	1,135	1	-	99	791	-	70	30	2,577	12	7	81	1,585	21	16	62
Communicable Disease, Infectious Disease, & Epidemic Control	3,225	95	5	2,703	61	18	21	2,418	60	19	21	3,705	71	15	14	2,957	68	16	16
Non Communicable Diseases & Human Organ Transplant	1,327	100	-	1,364	92	7	1	788	69	18	13	2,078	92	5	3	3,492	81	6	13
Eye & Other Health Services	198	65	35	166	69	3	28	54	35	65	-	137	70	2	29	134	84	7	10
Social Health Protection Services	2,974	96	4	7,316	98	2	-	17,510	100	-	-	10,365	98	2	-	12,691	98	2	-
Laboratory and Diagnostic Services	207	100	-	150	99	1	-	173	100	-	-	366	100	-	-	348	93	7	1
Academy and Hospitals	306	100	-	613	99	1	-	115	100	-	-	2,553	95	-	5	685	97	-	3
Health Education and Information	372	71	29	245	49	21	30	325	42	28	30	362	36	15	49	361	41	15	44
Ayurveda and Alternative Medicines	339	52	48	421	22	7	71	1,062	5	10	84	1,667	13	29	57	597	20	80	-
Free Drug Purchase, Drug Regulation and Supply Chain Management	4,071	90	10	3,078	61	6	33	3,604	62	6	32	3,301	59	11	30	3,376	63	5	32
Health Research and Surveys	64	100	-	73	100	-	-	55	100	-	-	199	100	-	-	146	100	-	-
Physical Infrastructure Development and Improvement	7,010	100	-	13,520	100	-	-	10,427	99	1	-	22,563	100	-	-	18,709	99	-	1
COVID-19 Response	-	-	-	-	-	-	-	-	-	-	-	6,113	99	-	1	48,116	98.2	1.3	0
Total	46,866	79	21	56,420	65	7	28	68,779	60	17	23	90,690	66	8	26	133,121	67	13	20

Table 53 :<sup>47</sup> shows the share of the health budget from fiscal transfers from the federal government to provincial governments and from provincial governments' own revenues. It shows that about 60% of the provincial government health sector budget is financed from its own sources.

		2017/	18		2018/	19		2019/2	20		2020/2	21		2021/2	2
			%			%			%			%			%
Province	Budget	Internal Source	Transfer FG												
Koshi	22	-	100	1,469	20	80	2,180	45	55	3,928	43	57	3,506	46	54
Madesh	26	-	100	1,713	54	46	3,109	36	64	3,393	54	46	2,774	61	39
Bagmati	25	-	100	1,013	42	58	2,618	55	45	3,663	53	47	8,900	81	19
Gandaki	26	-	100	1,552	11	89	2,502	48	52	2,805	60	40	2,308	62	38
Lumbini	25	-	100	1,215	13	87	2,539	39	61	4,254	44	56	4,171	62	38
Karnali	20	-	100	931	55	45	2,464	57	43	4,050	68	32	3,865	49	51
Sudurpaschim	19	-	100	1,364	45	55	3,242	70	30	4,194	64	36	3,393	56	44
Total	164	-	100	9,256	34	66	18,655	50	50	26,289	55	45	28,917	63	37

Table 53 : Rate of provincial government's health sector budget from self-financing resource (NPR million, %)

Figure 35 shows the breakdown of the health budget and budgetary sources for the FY2078/79 in Bagmati Province obtained from this survey. The health budget of the Provincial Government was about NPR 3.96 million, including the investment budget (NPR 1.65 million) and the recurrent budget (NPR 23.11 million). This amount represents 7.89% of the overall budget of the provincial government. On the other hand, the budget from the federal government (MoHP) was NPR 1.68 million, including the investment budget (NPR 0.17 million) and the recurrent budget (NPR 1.51 million). Of this amount, NPR 1.3 million was for conditional grants. Finally, the budget sources of the Provincial Ministry of Health were 70% from the provincial government and 30% from the federal government.



Figure 35 : Health Sector Budget of Bagmati Province (FY2078/29)

#### 3) Health care fee

Nepal's payment method to health facilities for health services and the others., is based on a piece-rate payment based on the reimbursement system. Unit prices for medicines, medical materials, and other items are determined for each medical treatment, and payment is made according to the results of the medical treatment. The unit prices for the Basic Health Service and medical services covered by health insurance, which are described below, are also determined by content. The unit prices are reviewed every few years.

From the perspective of improving the efficiency of Nepal's healthcare finances, a proposal has been made to change the reimbursement system to capitation payments<sup>51 xliii</sup>.

4) Initiative for UHC

## a) Basic Health Service (BHS)

The Constitution of Nepal (2015) states that all citizens are entitled to basic health services. The BHS has been introduced for this purpose; the content of the BHS is stipulated in the Public Health Service Regulation 2020. The following nine major items are listed as BHS (Table 54<sup>52</sup>). These services are provided free of charge to all citizens, and the Regulation specifies that BHS is to be provided at health posts, primary and secondary hospitals, as well as specialized and teaching hospitals.

Table 54 : Contents of Basic Health Services

- 1. Immunization services
- 2. Integrated management of newborn and childhood illnesses; nutrition services; pregnancy, labour and delivery services; maternal, newborn and children health services, such as family planning, abortion and reproductive health services
- 3. Services related to infectious diseases
- 4. Services related to non-communicable diseases and physical distortions
- 5. Mental illness services
- 6. Geriatric health services
- 7. General emergency services
- 8. Promotional health services
- 9. Ayurveda and other traditional health services

## b) Introduction of Health Insurance

The Government of Nepal introduced contribution health insurance for citizens in 2015. In 2017, it enacted the Health Insurance Act and Regulations, and established the Health Insurance Board (HIB), which operates Health Insurance. Health insurance is intended to provide everyone with access to quality health services by pre-financing and pooling funds to prevent poverty due to health care expenses. In particular, by making poor households eligible for insurance coverage, the program aims to reduce the number of uninsured households and persons, promote the expansion of UHC, and achieve a 100% coverage rate and UHC by 2030. An outline of coverage of Health Insurance is provided in Table 55<sup>53</sup>. A key feature of the system is that the insured are considered as household units instead person, in order to increase the enrolment of vulnerable households. Vulnerable households and persons are subsidized by the federal government for subsidies. If the health care services are covered by the insurance, the patient can receive

<sup>&</sup>lt;sup>51</sup> A method of paying a fixed amount of remuneration to a medical institution by multiplying the number of patients registered with the institution by a set per capita unit price as the remuneration of the institution concerned.

<sup>&</sup>lt;sup>52</sup> Preparation by Public Health Service Regulation 2020

<sup>&</sup>lt;sup>53</sup> Prepared by the information of HIB

services up to the maximum amount free of charge by presenting the insurance membership card. There is no co-payment by the patient.

Table 55 : Outline of Health Insurance

Insured person: By household

- Insurance reserve fund: NPR3,500 per year up to five family members (Each additional person accumulates NPR 700 per year)
- <u>Subsidy for reserve fund</u>: Extremely poor households and HIV/MDR-TB/Leprosy/severely disabled/elderly over 70 years of age, receive 100% subsidy of reserve funds; FCHV receives 50% subsidy.
- <u>Contributions from public sector employees</u>: Employees working for public organizations contribute 2% of their salary (1% employer + 1% employee) to the Contribution to the reserve fund.
- <u>Health care service</u>: Services are capped at NPR100,000 per year for a family of five, with an additional NPR20,000 per person for each additional person, capped at NPR200,000 per year per family. Elderly persons will have an additional service provision of NPR100,000 per person; patients with three chronic diseases (HIV/MDR-TB/Leprosy) will have an additional service provision of NPR100,000 per person.
- <u>Health care service provider</u>: Public and private health care institutions. However, public health care institutions are the first to be contacted. Private medical facilities are available for emergencies and for referrals from public health care facilities. Referrals to a higher-level health care facility can be made by submitting a letter of referral from the first point of contact to receive specialized services at another health care facility.
- <u>Management Information System</u>: Through the open-source Insurance Management Information System (IMIS), insurance enrolment, claims processing, and examination are conducted.

By FY2021/22, enrolment exceeded 5 million, or 22.5% of the population. Significant differences in participation rates can be observed among the provinces (Table 56<sup>52</sup>). The highest participation rate is 42.2% in Koshi Province and the lowest is 7.6% in Madhesh Province. The number of enrolments receiving health care services through insurance will also increase, exceeding 800,000 in 2021/22, or about 40% of the enrolled population<sup>xliv</sup>. Enrolment is widespread in 75 districts out of 77 districts, and 739 municipalities nationwide, but Kathmandu and Lalitpur districts have yet to experience enrolment. The reason for the lack of enrolment is that there are few primary hospitals that provide the relatively simple health services that are the focus of health insurance, as revealed in interviews from HIB. On the other hand, in the hearing in Madhesi Province, the reasons for the less of insurance coverage were the high cost of insurance premiums for the poor families and the limited medical services covered by insurance for the middle-income and above groups, making it unattractive to purchase insurance. The total number of health service institutions covered by health insurance in 2021/22 is 452 institutions (Table 57<sup>53</sup>).

On the other hand, the budget from the government (Federal Ministry of Finance) to the HIB increased every year, amounting to NPR 75 million in 2021/22. In the same year, premiums collected amounted to NPR3.55 billion and payments were NPR11 billion. With a relatively high-risk segment of the population enrolled, claims payments are expected to exceed revenues<sup>xlv</sup>.

Support for improving the efficiency of HIB's operations is being provided mainly by the GIZ. As part of the efforts to improve operational efficiency, ICT has been introduced for insurance enrolment, premium application and payment.

Total	Total Population	Total Insured	%	User of Insurance Service (person)
Koshi	4,535,943	1,915,448	42.2%	846,957
Madhesh	5,404,145	408,190	7.6%	100,463
Bagmati	5,529,452	1,189,424	21.5%	559,350
Gandaki	2,403,757	745,172	31.0%	311,927
Lumbini	4,499,272	901,767	20.0%	348,263
Karnali	1,570,418	335,725	21.4%	125,170
Sudurpaschim	2,552,517	472,325	18.5%	134,536
Total	26,495,504	5,968,051	22.5%	2,426,666

Table 56 : Number and rate of people with Health Insurance Coverage, by Province and Nationwide (2021/22)

Table 57 : Health service institutions covered by Health Insurance (2021/22)

Province	Primary Health	Public Health	Community/Pri	Eye hospital	Total
	Community Center	Facility	vate Hospital	<b>7</b> 1	
Koshi	44	40	19	7	110
Madesh Pradesh	16	34	8	5	63
Bagmati	51	30	8	6	95
Gandaki	24	24	4	1	53
Lumbini	23	28	5	6	62
Karnali	16	14	1	2	33
Sudurpaschim	16	16	3	1	36
Total	189	186	48	28	452

## c) Other systems related to health insurance

Nepal has traditionally had a contribution social security system under the Ministry of Labour, Employment and Social Security (MoLESS), for which the Social Security Fund (SSF) was established in 2011. The SSF is the organization responsible for implementing the social security system. Considering the 2015 Constitution, the Contribution-based Social Security Act (the Act) was enacted in 2017. The transition from the old system to the new system and the expansion of organizations and participants in the new system are underway. The new social security system includes health care and health protection, maternity protection, accident and disability protection, protection for dependents, and protection for the aged, and is broader in coverage than the old system. Although this social security system primarily covers so-called formal sector workers, there is a policy of transitioning informal sector workers in Nepal to the formal sector. The need to integrate and review the social security system is recommended xlvi.

Similarly, the Bipanna Nagarik Aushadhi Upchar Programme, under the jurisdiction of Nursing and Social

Security Division of the DoHS, provides free services to the poor for certain diseases. The FCHV is the main agent for publicizing the program and providing information on health care facilities that offer free services. The integration of this program into the Health Insurance system administered by the HIB is also under consideration <sup>xlvii</sup>.

Nepal's health financing is supported by several development partners, including WHO, World Bank, USAID and others. The government is currently preparing a strategy paper on health financing, which is expected to be released in early 2023.

## 6. System for Providing Health Services

- (1) Overview of the System for Providing Health Services
  - 1) Health Facilities

The number of government-run health facilities in Nepal is a total of 201 facilities for primary to tertiary hospitals, 189 PHCCs and 3,794 health posts in 2020/2021.

Table 58 shows the number of public hospitals, PHCCs, health posts, and non-public healthcare facilities nationwide. It shows that there is no significant change in the number of primary healthcare centres <sup>54</sup>, health posts, and non-public facilities, whereas the MoHP is expanding healthcare services by upgrading health posts to primary hospitals, and the number of primary hospitals has increased significantly from 134 in 2019/2020 to 201 in 2020/2021. On the other hand, the Table 59 shows the population covered per facility at each level<sup>55</sup> in each province, and it appears that Karnali province, the least developed one, has the lowest population covered per public hospital and health post under the greatest input of public support. The Bagmati province, where the capital Kathmandu is located, has a large population and a large number of public hospital facilities, and the population covered per facility is the second largest after the Karnali province. The number of non-public facilities is significantly higher in the Bagmati province, and the population covered per facility is also the lowest.

Table 56. Number of Lacinties at cach Category	Table 5	8:	Number	of Facilities	at each	Category
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II14h Decilities	Number of Facilities Nationwide							
Health Facilities	2018/2019	2019/2020	2020/2021					
Public Hospitals	125	134	201					
PHCCs	196	194	189					
Health Posts	3806	3767	3794					
Non-public Facilities	2168	2277	2082					

<sup>&</sup>lt;sup>54</sup> The PHCC is a clinic with a physician, which serves as a referral point for the health post as well as administering the health post. Currently, there is a trend to upgrade the PHCC to a primary hospital by enhancing its functions (inpatient services).

<sup>&</sup>lt;sup>55</sup> Calculated by dividing the population of each province by the number of facilities as published in the Nepal National Census 2021 (prepared by the Survey Team).

Province		Public Hospitals	PHCCs	Health Posts	Non-public facilities	Population in 2021 (Thousands) <sup>*</sup>	
Kashi	Number of Facilities	31	39	639	141	4.072	
KUSIII	Population Covered per Facility	160,388	127,488	7,781	35,263	4,972	
Madhash	Number of Facilities	16	33	743	172	6 126	
wadnesii	Population Covered per Facility	382,893	185,645	8,245	35,618	0,120	
Pagmati	Number of Facilities	63	36	638	1,406	6.084	
вадтац	Population Covered per Facility	96,572	169,001	9,536	4,327	0,084	
Condahi	Number of Facilities	19	25	486	96	2.470	
Ganuaki	Population Covered per Facility	130,513	99,190	5,102	25,831	2,479	
Lumbini	Number of Facilities	30	28	569	168	5 124	
Lunionn	Population Covered per Facility	170,808	183,008	9,006	30,501	3,124	
Kamali	Number of Facilities	27	12	342	57	1.604	
Kaman	Population Covered per Facility	62,774	141,241	4,956	29,735	1,694	
Sudurnashahim	Number of Facilities	15	16	377	42	2 711	
Suuupasneniin	Population Covered per Facility	180,751	169,454	7,192	64,554	2,711	

## Table 59: Number of Facilities and Population Covered per Facility by Province

\* 2021 Nepal Census

## (2) Health Services to be Provided at Each Level of Health Facilities

In accordance with the legal changes following the transition to federalism, a new framework of health facilities under the jurisdiction of the respective administrative divisions of the federal, provincial and local governments was set up. This aims to establish the basis for the management, followed by the enhancement (upgrading) and construction of health facilities, and ensuring that quality health services are available to all citizens.

In general, the MoHP is responsible for highly-specialised and tertiary hospitals, the provincial governments for secondary hospitals and local governments for primary health facilities. Details of the main health facilities with their services to be provided are given below for each of the jurisdictional levels.

## 1) Health Posts and PHCC

Administrative Category	Summary of Services to be Provided.
Ward level at Municipality or Sub- metropolitan or Metropolitan city	<b>Basic Health Services</b> Immunization, family planning, ante-natal care, normal delivery, new-born care, nutrition counseling, Treatment of TB and other common communicable diseases and conditions, management of epidemic, basic mental health service, counseling, screening and primary treatment of non-communicable diseases, medicine distribution, pathology lab and other diagnostic services, promotion and prevention of eye/sight and dental problems; and other diagnostic, curative, promotive, and preventive basic health services defined by the MoHP

## 2) Primary Hospitals: hospitals with 5, 10 or 15 beds

Administrative Category	Summary of Services to be Provided.
	① Basic Health Services
Municipality	② Medical Services
	General Medicine
	General Surgery
	Gynaecology And Obstetrics
	Child Diseases and Newborn Services

General Dental Services
③ Emergency Services
General Emergency Services
• Basic emergency care (including basic obstetric emergency and neonatal care (BEmONC))
<ul> <li>Emergency Laboratory and Blood Transfusion Services</li> </ul>
Diagnostic Services
④ Laboratory Services
<b>5</b> Radio Imaging Services
6 Pharmacy Services
⑦ Medico-Legal Services
<b>8</b> Other services prescribed by the ministry time to time

# 3) Secondary A Hospitals: general hospitals with 25-50 beds

Administrative Category	Summary of Services to be Provided.
	① Basic Health Services
	② Medical Services
	General Physician Services
	General Surgery Services
	Gynaecology and Obstetrics
	Child Diseases and Newborn Services
	General Dental Services
	Orthopaedic Services
	General Ophthalmology Services
	Physiotherapy Services
	Anaesthesiology Services
	③ Diagnostic and Other Services
	Radio imaging services
Municipality or	Laboratory Services (except Histo-cytopathology)
Sub-	④ 24-hour Services
metropolitan or	• Emergency Services with Operations
Metropolitan	Emergency Laboratory Services
city	Radio imaging services
	Blood Transfusion Services
	Pharmacy Services
	<b>⑤</b> Intensive Care Services
	• High-dependency Unit (HDU)
	• Intensive Care Unit (ICU)
	Sick Newborn Care Unit (SNCU) Services
	6 Pharmacy Services
	⑦ Other Services
	<ul> <li>Social Service Unit/One-stop Crisis Management Centre</li> </ul>
	<ul> <li>Medico-legal and Forensic Services</li> </ul>
	Nutrition Rehabilitation Services
	Haemodialysis Services
	<b>8</b> Other services prescribed by the ministry time to time

## 4) Secondary B Hospitals: general hospitals with 100-300 beds

Administrative Category	Summary of Services to be Provided.
Provincial Level	<ol> <li>Basic Health Services</li> <li>Medical Services</li> <li>General Physician Services</li> </ol>

General Surgery Services
Gynaecology and Obstetrics Services
Child Diseases and Newborn Services
General Dental Services
Orthopaedic Services
• ENT Services
Psychiatric Services
Dermatology and Venereology Services
General Ophthalmology Services
Physiotherapy Services
Anaesthesiology Services
③ Diagnostic and Other Services
Radio imaging services
<ul> <li>Laboratory Services (including Histo-cytopathology)</li> </ul>
④ 24-hour Services
Emergency Services with Operations
<ul> <li>Emergency Laboratory Services including Pathology</li> </ul>
Radio imaging services
Blood Transfusion Services
Pharmacy Services
⑤ Intensive Care Services
• High-dependency Unit (HDU)
• Intensive Care Unit (ICU)
Neonatal ICU
Paediatric ICU
6 Pharmacy Services
⑦ Other Services
Social Service Unit/One-stop Crisis Management Centre
Medico-legal and Forensic Services
• Diabetics and Nutrition Rehabilitation Services
Haemodialysis Services
⑧ Other services prescribed by the ministry time to time

# 5) Tertiary Hospitals

Administrative Category	Summary of Services to be Provided.
Federal Level	<ul> <li>Basic Health Services</li> <li>Specialized Services</li> <li>General Physician Services</li> <li>Surgery Services</li> <li>Gynaecology and Obstetrics Services</li> <li>Child Diseases and Newborn Services</li> </ul>
	<ul> <li>Dental Services</li> <li>Orthopaedic Services</li> <li>ENT Services</li> <li>Psychiatric Services</li> <li>Dermatology and Venereology Services</li> <li>Ophthalmology Services</li> <li>Ophthalmology Services</li> <li>Clinical Pharmacology Services</li> <li>Physiotherapy Services</li> <li>Anaesthesiology Services</li> <li>Ayurveda</li> </ul>
	③ Diagnostic and Other Services

Radio imaging services
<ul> <li>Pathology Services (Biochemistry, Microbiology and Haematology)</li> </ul>
Pharmacy Services
<ul> <li>Laboratory Services (including Histo-cytopathology)</li> </ul>
④ 24-hour Services
• Emergency Services with Operations
<ul> <li>Emergency Laboratory Services including Pathology</li> </ul>
Radio imaging services
Blood Transfusion Services
Pharmacy Services
⑤ Intensive Care Services
• High-dependency Unit (HDU)
• Intensive Care Unit (ICU)
Surgical ICU
• Medical ICU
• Coronary Care Unit (CCU)
Neonatal ICU
Paediatric ICU
Cardiac Catheterization Services
6 Pharmacy Services
⑦ Other Services
<ul> <li>Social Service Unit/One-stop Crisis Management Centre</li> </ul>
<ul> <li>Medico-legal and Forensic Services</li> </ul>
<ul> <li>Diabetics and Nutrition Rehabilitation Services</li> </ul>
Haemodialysis Services
⑧ Other services prescribed by the ministry time to time
Note: A health institution with 300 or more beds should provide at least one specialised service

## 6) Specialized Hospital

Administrative Category	Summary of Services to be Provided.
Federal Level	<ul> <li>Super Specialty Hospitals will be managed by the federal government. These hospitals will provide specialized services for specific diseases or specialty and will take referrals from the primary, secondary and tertiary hospitals.</li> <li>The federal government will invest and promote them as "<i>Centres of Excellence</i>."</li> </ul>

It should be noted that, in principle, the number of beds is the main basis for these classifications, but in reality, there are often gaps between the classified level and the services that can actually be provided. Specifically, the survey team confirmed in its field research that some facilities are classified as 'primary hospitals' even if they are not able to provide inpatient services or specialist medical services due to a lack of human resources or other reasons. Meanwhile, it is perceived that the services to be provided in secondary hospitals at A and B levels are almost the same, and that there is no hierarchical relationship regarding patient referrals, etc.

## (3) Clinical Patient Management for Disease Treatment

Note that the MSS stipulates operational regulations, facilities and equipment, medicines, etc. related to the provision of clinical services, while the diagnosis and treatment of individual diseases and patient management are prescribed in individual guidelines and protocols. The standard treatments in the "*Basic*"

Health Services (BHS)" are to be provided based on the "Standard Treatment Protocol (STP) For Basic Health Services (BHS) Package 2078-Public Health Update" published by the DoHS in 2021.

#### (4) Referral System

A referral system exists in Nepal, whereby patients visiting a medical facility are referred to another medical facility if they are unable to receive all necessary treatment. (From the Official Gazette of Nepal, NO.23, Part 3) In such cases, the medical facility is defined as the nearest or most convenient facility that can provide the treatment, but if the patient prefers a different facility, he or she is referred to the facility of his or her choice. If the patient, his/her guardian, or others do not want a referral, the health care provider shall reasonably explain the reason for the referral. The referring health care provider shall document on the referral form the treatment to be provided in accordance with the regulations, and its patient information shall be kept up-to-date. Referred patients are prioritized based on severity of illness and treated accordingly. Upon completion of treatment, the medical institution will mention the treatment modalities in a referral letter to the referring medical institution. However, in practice, it is possible to skip the lower-level hospitals and visit the higher level hospitals directly, which currently results in a rush of patients to the higher level hospitals. There is a situation where the referral system is not functioning adequately.

Health posts are the referral points in the network to each level of health service delivery facility above them, and with a few exceptions, this tier is designed to be located in locations accessible to most of the population for public health and minor medical care. The system is also in place to act as a support mechanism to the lower levels by conversely providing logistical, financial, monitoring, supervisory, and technical support from the centre to the periphery. However, there are no health posts or primary hospitals in the central part of the Kathmandu Valley and residents living in the central part of the Kathmandu Valley are closer to tertiary hospitals than to health posts, a reversal of the situation. Several tertiary hospitals, especially in the Kathmandu Valley, visited during the primary survey accepted not only patients requiring advanced treatment, but also patients with minor illnesses. As a result, the space in front of the reception area was so crowded with patients that it extended outside the building, and in the inpatient wards, two to three people were sleeping together in one bed, indicating that the hospital was overflowing with patients. There were no comments from the receiving hospitals that these conditions were burdensome or that there was a need for referral improvement. As indicated in the table above, this may be partly due to the fact that the system stipulates that secondary and tertiary hospitals also provide 'basic health services'. During interviews with tertiary hospitals, some respondents stated that it is natural for them to provide high quality health services to patients who come to them directly on trust and that they would rather strengthen their capacity to provide primary level services at tertiary hospitals, even in situations where they are overflowing with patients with minor illnesses.

## (5) Status of Health Service Provision by Issue

1) Maternal, Neonatal and Child health service

## a) Key policies, strategies and programmes for MNCH

The history of maternal and child health efforts in Nepal is long, with an approach that has integrated community health and family planning (FP) programs since the early 1960s. Nepal's Female Community Health Volunteer Programme was initiated in 1988 and has trained more than 50,000 FCHVs. The role of FCHVs have gradually expanded beyond FP to maternal and child health information and services. The National Safe Motherhood Plan set two main strategies: to establish a 24-hour emergency obstetric care service system in selected health facilities and to deploy health care personnel with midwifery skills that can provide safe and effective delivery care.

The Safe Delivery Incentive Programme (SDIP) was introduced in 2005 to promote delivery by SBAs; the programme provided cash to subsidize transport costs for women giving birth in a public health facility. The SDIP was later revised to the "Aama Program" to include free assisted delivery, incentives for four ANC and institutional deliveries, and free care for newborns. The National Policy on SBAs, endorsed in 2006, identifies the importance of SBAs being present at every birth and set a goal of training physicians, nurses, and ANMs in key skills necessary for maternal protection and deploying them nationwide.

The Family Welfare Division of the DoHS developed "the Safe Motherhood and New-born Health Roadmap 2030" in 2019, which aims to guarantee the health and well-being of mothers and newborns through the outcomes given below:

- (a) The availability of high-quality maternal and newborn health services increased, leaving no one behind;
- (b) The demand for and utilisation of equitable maternal and newborn health services increased;
- (c) The governance of maternal and newborn health services is improved, and accountability is ensured;
- (d) Monitoring and evaluation of maternal and newborn health improved; and
- (e) Emergency preparedness and response for maternal and newborn health strengthened.

b) Maternal and child health service delivery system

## Family Planning and abortion service

The GoN seeks to ensure access to and utilization of quality, user-centred FP services, focusing on those with unmet FP needs. In public health system, short acting reversible contraception (SARC)<sup>56</sup> are provided through all basic health service centres. FCHVs provide information and education to women and couple at community and distribute male condoms and resupply oral contraceptive pills (OCPs). Long-acting

<sup>&</sup>lt;sup>56</sup> Oral contraceptives, condoms, ontraceptive rings, etc.

reversible contraceptives (LARCs)<sup>57</sup> are considered highly effective but are provided through satellite clinics and mobile camps in areas where access to services is difficult due to the limited number of healthcare facilities offering them.

Sterilization services are provided at static sites or through scheduled seasonal and mobile outreach services. FP services are also provided through private and commercial outlets such as NGO run clinic/centre, private clinics, pharmacies, hospitals, including academic hospitals.

As with other health care services, task-sharing and task-shifting<sup>58</sup> are underway in the FP field. Registered nurses, ANMs, AHWs, and health assistants are able to perform implants after 8 days of competency-based training, expanding the pool of service providers.

Although the GoN aims to ensure access to FP services for all, only 57.7 percent of HPs offer five temporary modern methods<sup>59</sup> of FP compared to 90.4 percent of district hospitals <sup>xlviii</sup>. According to the "Nepal Health Facility Survey 2021", the deployment of supplies needed for the above five services is as high as more than 90% at the health post level. Nevertheless, services are not sufficiently provided. This would be due to the lack of appropriate healthcare personnel and the possibility that users do not choose health posts when they receive family planning services.

Comparison by province shows a higher percentage of facilities offering temporary family planning services in all provinces, but disparities in the availability of sterilization services (Table 60<sup>60</sup>).

	Temporary methods of FP $(\%)^*$	Male or female sterilisation (%)**			
Koshi	97.4	29.5			
Madhesh	96.6	24.3			
Bagmati	96.2	42.9			
Gandaki	99.1	44.7			
Lumbini	97.7	54.1			
Karnali	99.7	50.8			
Sudurpashchim	99.7	62.6			
Nepal	97.7	42.5			

Table 60 : Availability of family planning services

\* Percentage of facility which provides, prescribes, or counsels clients on any of the following temporary modern methods of family planning: combined oral contraceptive pills, progestin-only injectable (Depo), implants, intrauterine contraceptive devices (IUCD), or the male condom or offers counselling on periodic abstinence/ rhythm

\*\*Percentage of facility in which providers perform male or female sterilization or counsel clients on it

Since unsafe abortion is a direct cause of maternal mortality, Nepal legalized abortion in 2002. Abortion

<sup>&</sup>lt;sup>57</sup> Implants, IUCDs, Depo (injections), etc.

<sup>&</sup>lt;sup>58</sup> Task shifting, in which tasks traditionally performed by one profession are transferred to other professions, and task sharing, in which tasks are shared with other professions, are considered effective for improving the efficiency of healthcare service delivery, especially in places where healthcare human resources are scarce. In Nepal, task shifting is progressing with the expansion of providers of family planning services and abortion services, as well as the distribution of Misoprostol tablets (a prophylactic for postpartum hemorrhage) to pregnant women by the FCHVs.

<sup>&</sup>lt;sup>59</sup> OCPs, Depo, condoms, IUCD and implants.

<sup>&</sup>lt;sup>60</sup> Prepared by the Survey Team from "Nepal Health Facility Survey 2021 (Preliminary Data Tables)", MoHP (2021)

services in public medical facilities began to be offered in 2004 and have been free in public facilities since 2017. Abortion services can be legally provided only in facilities that are certified as "safe abortion service sites" by authorities in the respective provinces and local governments. Many clinicians have learned to provide safe surgical and medical abortion services through training, and outreach medical service providers such as ANMs are now able to provide medical abortions up to the 10th week of pregnancy, expanding the base of abortion providers. As of 2020, about 4,500 clinicians— 1,833 ANMs, 743 nurses, 1,853 Bachelor of Medicine–Bachelor of Surgery (MBBS) doctors, and 92 obstetrician-gynaecologists and general practitioners—have been trained <sup>xlix</sup>.

## **Pregnancy and Maternal Care**

In Nepal, institutional deliveries with ANC consultation and SBA assistance are promoted through the "Aama Program". The program aims to remove financial barriers to institutional delivery and provides free delivery services, major newborn care, and care for sick newborns. For women who deliver at a facility, NPR 3,000 is paid in mountainous areas, NPR 2,000 in hilly areas, and NPR 1,000 in Tarai areas, with an additional NPR 800 if the woman has had the required number of ANC visits. The number of ANC visits that are a requirement for payment was revised from four to eight<sup>61</sup>, effective July 2022, based on the WHO's recommendation<sup>1</sup>. However, some of the facilities visited in this survey still require four ANC visits as a condition of payment, indicating that the rule change has not been fully implemented. According to the protocol established by the government, PNC is to be seen three times in the postpartum period: within 24 hours, three days later, and seven days later after giving birth. Due to the slow growth in PNC uptake compared to ANC and institutional deliveries, some districts have been providing PNC home visit services since 2017/18. The program has expanded to 50 districts by 2020/21<sup>xlvii</sup>.

Safe Motherhood services including ANC and PNC are provided at health facilities such as health posts, PHCCs, and district hospitals. Almost all health facilities across the country provide some ANC services, although the proportion falls to 94 percent of health facilities in Madhesh province. The availability of all essential ANC drugs (iron, folic acid and albendazole tablets) is good at 90% nationwide. However, there are disparities among provinces, ranging from 69% in Madhesh to 99% in Gandaki and Lumbini provinces<sup>ix</sup>.

Information about ANC, delivery and PNC are to be recorded on the "Maternal and Newborn Health Card" (Photo). The card is given to the pregnant woman at the health facility during the first ANC and is kept by the pregnant woman. The information to be recorded includes personal information such as name, place of residence, and contact information, as well as information about the previous pregnancy, immunization, ANC visit (weight, anaemia/edema, blood pressure, fetal heart rate, administration of iron pills, etc.), delivery records (date, time and place, condition of newborn, mode of delivery, complications, etc.), and

<sup>&</sup>lt;sup>61</sup> A pregnant woman has to visit a health facility for antenatal care in 12th, 20th, 26th, 30th, 34th, 36th, 38th and 40th weeks of gestation.

PNC visit (mother's condition, child's condition, treatment/advice, family planning services, etc.). However, some of the facilities visited in the survey were not using a formal format.



## (Photo) Maternal and Newborn Health Card

FCHVs have played a significant role in Safe Motherhood services. They are selected from married women in the community and receive 18 days of basic training about family planning, maternal, newborn, and child health, and nutrition, with refresher training every five years. They are responsible for holding monthly mother's meetings to provide information on safe delivery and health, identifying expectant mothers in the community and encouraging them to deliver at a medical facility or visit ANC/PNC, conducting home visits to provide health education, and referring pregnant women and newborns to medical facilities if there are any abnormalities in their condition<sup>62</sup>. In addition to these activities, for home deliveries, FCHVs hand over Misoprostol tablets to pregnant women at 8 months' gestation advising them to take them immediately after delivery and before placental evacuation to prevent PPH. The programme is implemented in 58 districts as of 2019<sup>xlvii</sup>.

To expand safe delivery, the GoN has been training skilled birth attendants in accordance with the short-, medium- and long-term measures set forth in the 2006 SBA strategy. As the short-term strategy, SBA training provides in-service theory and skills-based training to ANMs, nurses and doctors. As a medium-term measure, SBA core skills have also been incorporated into the educational curriculum for all levels of health care professionals, including ANM, Proficiency Certificate Level (PCL) for nurses, Bachelor of Nursing, and MBBS. Bachelor in Midwifery education programme, as the long-term strategy, has also been established at Kathmandu University, the National Academy of Medical Sciences, Karnali Academy of Health Sciences. The

<sup>&</sup>lt;sup>62</sup> FCHVs' activities in maternal and newborn care include birth preparedness and complication readiness (preparedness for money, place for delivery, transport and blood donors), self-care (food, rest, no smoking and no alcohol) in pregnancy and postpartum periods, promotion of antenatal care (ANC), institutional delivery and postnatal care (PNC), essential newborn care, identification of and timely care seeking for danger signs in the pregnancy, delivery, postpartum and newborn periods, etc. (Source: "DoHS Annual Report 2020/21")

number of qualified midwives graduating from each institution by 2022 is shown in Table 61<sup>63</sup>.

The government's original plan was to transition the core birth attendants from ANMs to midwives as the number of midwives increased. In reality, however, the training of midwives has been slower than planned, and many ANMs are still undergoing SBA training. Of the 5,722 SBA registered with the NHTC as of July 2019, 4,226 (74%) are ANMs, 1,062 (18.5%) are registered nurses, and 434 (7.5%) are doctors and other nurses. Meanwhile, in terms of midwifery training, while 480 registered nurses were expected to become registered midwives by 2023, and another 315 were expected to graduate as certified or bachelor-level midwives, there were 51 registered midwives in the profession as of December 2022. One factor contributing to the delay in the midwifery training plan is the lack of midwifery educators in Nepal who meet the standards of the International Confederation of Midwives. In addition, there are no permanent positions for midwives in health facilities, which means the country is not currently ready to use midwives.

With ANMs thus constituting most SBAs, a cabinet decision in August 2020 redefined SBAs. Under the new definition, currently registered ANMs will now be considered SBAs, while nurses (PCL and above) and doctors (MBBS and above) engaged in MCH care will now be classified as Skilled Health Personnel (SHP)<sup>64</sup>. In conjunction with this change, a new "Strategy for Skilled Health Personnel and Skilled Birth Attendants 2020-2025" has been developed. The strategy recommends that SBA and SPH provide MCH care as a team, but also recommends the establishment of regular positions for nurses or midwives in health posts, suggesting a clear separation of roles between SBA and SPH<sup>65</sup>.

The strategy also notes that existing SBA training challenges include the use of the same training package for all cadres and a lack of follow-up after the training. To address these issues, the strategy proposes modularization of training content, with specifications that vary training content by job type, and post-training support from clinical coaches and mentors. Other tactics include shifting the focus from managing complications to a comprehensive continuum of care, strengthening supervision, and improving the quality of care through on-site coaching.

<sup>&</sup>lt;sup>63</sup> Prepared by the survey team based on interviews.

<sup>&</sup>lt;sup>64</sup> "SHP/SBA Strategy 2020-2025" defines SBAs as "ANM who has successfully completed Module 1-3 of SHP/SBA training provided by NHTC" and SHPs as "a nurse with PCL Nursing or higher degree, and doctor with MBBS or higher degree that have successfully completed Module 1-4 of the SHP/SBA in-service training provided by NHTC".

<sup>&</sup>lt;sup>65</sup> Currently, health posts do not have permanent positions for registered nurses, and ANMs provide MCH care, including delivery services.

Intake year	Kathmandu University		National Academy of Medical Sciences		Karnali Academy of Health Sciences		B.P. Koirala Institute of Health Sciences		Patan Academy of Health Sciences		Total		
	Intake	Passed out	Intake	Passed out	Intake	Passed out	Intake	Passed out	Intake	Passed out	Intake	Passed out	NNC License Holder
2016	6	-	-	-	-	-	-	-	-	-	6	-	-
2017	0	-	9	-	-	-	-	-	-	-	9	-	-
2018	10	-	14	-	6	-	-	-	-	-	30	-	-
2019	10	-	18	-	9	-	-	-	-	-	37	-	-
2020	0	6	20	9	0	-	-	-	-	-	20	15	15
2021	13	0	20	13	7	-	19	-	-	-	59	13	13
2022	7	0	40	17	8	6	18	-	8	-	81	23	23
Total	46	6	121	39	30	6	37	0	8	0	242	51	51

Table 61 : Number of midwives graduated from each educational institution

Institutional deliveries are provided in a variety of healthcare facilities, ranging from health posts to tertiary hospitals, according to the health condition of the pregnant woman. Depending on the delivery services provided, healthcare facilities are classified as Birthing Centres (BCs), Basic emergency obstetric and newborn care (BEmONC) sites, and Comprehensive emergency obstetric and newborn care (CEmONC) sites. The services provided by each level of facility are shown in Table 62<sup>66</sup>.

Facility level	Signal functions						
Birthing Centre (BC)	<ol> <li>Normal deliveries</li> <li>Obstetric first aid40, including parenteral oxytocin, antibiotics and anticonvulsants They do not qualify as BEmONC facilities.</li> </ol>						
Basic emergency obstetric and newborn care (BEmONC)	<ol> <li>Parenteral administration of antibiotics</li> <li>Parenteral administration of oxytocin or other uterotonic</li> <li>Parenteral administration of anticonvulsant for hypertensive disorders of pregnancy</li> <li>Assisted vaginal delivery</li> <li>Manual removal of retained placenta</li> <li>Removal of retained products of conception</li> <li>Neonatal resuscitation</li> </ol>						
Comprehensive emergency obstetric and newborn care (CEmONC)	<ul> <li>In addition to the BEmONC's signal functions above, BEmONC</li> <li>8) Blood transfusion</li> <li>9) CS</li> </ul>						

Table 62 : Signal functions of BCs, BEmONC and CEmONC site

The number of facilities able to provide BCs and BEmONC services has increased rapidly from 291 in 2007/08 to 2,296 in 2017/18, as the GoN actively promotes institutional deliveries<sup>ix</sup>. According to UN Process indicators, however, whereas Nepal needs approximately 229 BEmONC sites; there are currently only 158 sites<sup>ix</sup>. In addition, very few BEmONC sites provide all seven signal functions. Key BEmONC and CEmONC services provided at each level of healthcare facilities in the three months prior to the 2021 survey are shown in Table 63<sup>67</sup>. The percentage of facilities providing assisted vaginal delivery at the local hospitals, PHCCs, and HPs is low. Regarding the CEmONC site, only 38.3% of facilities at the central and province level hospitals, 6.9% of local level hospitals, and 9.6% of private hospitals offered all the nine

<sup>&</sup>lt;sup>66</sup> Prepared by the Survey Team from "Nepal Safe Motherhood and Newborn Health Road Map 2030", MoHP, Family Welfare Division (2019)

<sup>&</sup>lt;sup>67</sup> Prepared by the Survey Team from "Nepal Health Facility Survey 2021 (Preliminary Data Tables)", MoHP, New ERA and ICF (2021)

#### signal CEmONC functions.

BEmONC • CEmONC services	Federal/ provincial level hospitals	Local-level hospitals	Private hospitals	PHCCs	HPs
Caesarean delivery	85.4	22.4	72.6	-	-
Blood transfusion	75.4	20.6	61.3	-	-
Parenteral antibiotics	94.4	57.8	75.2	57.3	29.2
Parenteral oxytocics	96.7	96.5	83.1	92.7	87.7
Parenteral anticonvulsant	69.6	26.0	42.7	14.6	2.6
Assisted vaginal delivery	68.5	17.3	32.5	10.7	3.3
Manual removal of placenta	79.9	59.7	51.8	52.2	32.6
Removal of retained products of conception	84.3	37.9	52.1	47.2	20.7
Neonatal resuscitation	86.6	49.0	45.2	50.6	24.8
7 signal functions of BEmONC	45.0	10.4	10.5	1.1	0.0
9 signal functions of CEmONC	38.3	6.9	9.6	-	-

Table 63 : Status of BEmONC and CEmONC services by facility level \*(%)

\* Among facilities offering normal vaginal delivery services, percentages that reported applying or carrying out the signal functions for emergency obstetric and neonatal care at least once in the 3 months preceding the survey.

According to the survey in 2021, a relatively high percentage of facilities providing normal delivery services are provided with the necessary equipment for delivery<sup>68</sup>. However, the percentage of facilities with staff trained on delivery care (29.2%) and those that own the delivery care guideline (12.8%) is very low<sup>li</sup>. Although normal delivery is expected to take place at the nearest health facility with BC functions, many women go directly to a higher-level hospital to give birth because of the low quality and instability of services at lower-level health facilities. As a result, BCs and BEmONC sites are underutilized and maternity wards in higher-level hospitals are overcrowded, with reported bed occupancy rates ranging from 80-145%<sup>ix</sup>. "Nepal Safe Motherhood and Newborn Health Road Map 2030" cited a lack of adequate human resources as the main reason why many facilities are not providing all delivery services. The report also recommends that functionality, rather than expansion of existing service sites, is needed to improve readiness to provide life-saving services and to address the problem of overcrowding. Some of the health facilities visited in this study were unable to provide PNC due to staff shortages and discharged postpartum mothers two or three hours after delivery if there were no noticeable symptoms. This severe shortage of staff prevents the provision of adequate MNCH services in some situations. On the other hand, even when the nearest primary health care facility met the criteria, some health care providers expressed the view that most women would prefer to deliver in a facility with more specialized staff and equipment. In their view, since maternity and delivery services are free at public facilities, most women would choose to go to a higher-level facility if they could afford the transportation costs.

<sup>&</sup>lt;sup>68</sup> Examination light 93.8%, delivery pack 97.7%, suction apparatus 65.7%, manual vacuum extractor 23.2%, neonatal bag and mask 91.6%, partograph 90.4%, gloves 97.5%, delivery bed 98.7%

To reduce maternal mortality, the GoN is promoting plans to introduce Maternal and Perinatal Death Surveillance and Response (MPDSR) to health facilities and communities. MPDSR is a continuous process of identification, notification, quantification and determination of causes and factors to avoid all maternal and perinatal deaths, as well as the use of this information to respond with actions that will prevent future deaths. There are MPDSR committees at Health Directorate, Health Office, health facility level and Local level. The committee meeting has to commence within 72 hours of every maternal death. At the central level, the National MPDSR Committee and the MPDSR Technical Working Group have been established. As of April 2021, MPDSR is being implemented in 16 districts and 94 hospitals, whereas training is ongoing in 17 districts<sup>xlvii</sup>. The results of the MPDSR analysis are available on the Ministry of Health and Population website, but only for March-April 2022 (as of December 2022). In addition, some hospitals that have implemented the MPDSR have not reported their results, indicating challenges in the continued implementation of the MPDSR and the use of the analysis.

## Neonatal and child health care

Major programs in neonatal and paediatric care include the National Immunization Program (NIP) and the Community Based Integrated Management of Neonatal and Childhood Illness (CB-IMNCI program). The NIP offers nine immunizations<sup>69</sup> against 12 diseases at a total of about 16,000 locations, including health facilities, outreach services, and mobile clinics. The NIP provided immunization services up to 23 months of age according to the national schedule, but the immunization period was extended to 5 years of age starting in 2020/21 for children who did not receive immunizations according to the schedule. A comprehensive Multi-Year Plan for Immunization, (cMYPI) is developed to plan and implement immunization programs. According to the latest cMYPI (2017-2021), the typhoid conjugate vaccine (TCV) and human papillomavirus vaccine (HPV) are planned to be introduced for immunization. Vaccination history is recorded on the Child Health Card (Photo). The card is kept at children's home and a certificate is given upon completion of all vaccinations. The Child Health Card also contains information regarding growth records, breastfeeding, and weaning. The health facilities interviewed in the survey provided guidance to mothers on nutrition, infection control, and immunization at the time of their children's immunizations.

<sup>&</sup>lt;sup>69</sup> BCG, OPV, DPT-Hep B-Hib, Rotavirus Vaccine, flPV, PCV, Measles-Rubella, Japanese encephalitis, tetanus, and diphtheria



(Photo) Child Health Card

CB-IMNCI is an integration of the Community-Based Integrated Management of Childhood Illness (CB-IMCI) program and the Community-Based Newborn Care Program (CB-NCP) in 2015 and has been implemented in 77 districts across the country since 2016. This integrated package addresses the major problems of sick newborn such as birth asphyxia, bacterial infection, jaundice, hypothermia, and low birth weight, and major childhood illnesses like pneumonia, diarrhoea, malaria, measles and malnutrition in a holistic way. In the program, FCHVs conduct maternal, newborn, and child health promotion activities and distribute items such as iron, zinc, ORS, and chlorhexidine that do not require a diagnosis. If a sick newborn or child shows signs of danger, they refer the patient immediately. Health service providers counsel and provide health services like management of non-breathing cases, low birth weight babies, common childhood illnesses, and management of neonatal sepsis. Also, the program has provisioned for the postnatal visits by trained health service providers through primary health care outreach clinic (PHC-ORC). Data from IMNCI services are reported by health facilities, PHC-ORCs, and FCHVs and recorded in the HMIS.

## Adolescent sexual and reproductive health

Seventeen percent of girls aged 15-19 years are already mothers or pregnant with their first child. The Adolescent Fertility Rate (AFR) is increasing from 81 in 2011 to 88 in 2016 per 1,000 women of 15-19 years, whereas the target of SDG is to reduce it to 30 per 1,000. Since pregnancy and childbirth by immature women are one of the causes of maternal mortality, the Adolescent Sexual and Reproductive Health (ASRH) program is one of the national priorities and is currently being developed in 1,355 healthcare facilities nationwide. In 2020/21, guidance on Adolescent Friendly Service (AFS) was provided to the personnel of the five district health offices. AFS aims to create a safe, supportive, and protective environment for adolescents, whether single or married, to receive the information and services they need from trained health professionals in a non-judgmental manner while respecting privacy, dignity, and confidentiality. The criteria of AFS include the availability of trained staff as well as information materials on adolescent sexual and reproductive health, the delivery of services in a confidential way, adolescent-friendly opening hours, the display of the AFS logo as well as the inclusion of two adolescents in the HFOMC<sup>III</sup>. Adolescent Friendly Sites are certified based on the nine national standards listed in the Quality Improvement and Certification

Tool for AFS which was approved by the Ministry of Health in 2015. By 2020/21, 108 health facilities have been certified as Adolescent Friendly Sites.

Despite these efforts, the DoHS Annual Report (2020/2021) identifies the following challenges to adolescent reproductive health: (a) Low uptake of family planning services resulting in low CPR and high unmet needs, (b) Readiness and functionality of adolescent friendly services is not up to standard, (c) High prevalence of early marriage and teenage pregnancy Intensify community awareness activities and , (d) ASRH services not well integrated with other programmes (family planning, safe motherhood, HIV), (e) IEC/BCC materials not reached to each health facilities.

## c) Status of Service Usage

## Family Planning and safe abortion services

The national average prevalence of modern contraceptive methods in 2020/21 is 39%. Even considering that some facilities had their services temporarily suspended in 2019/20 due to the outbreak of COVID-19 infection, the prevalence of contraceptive methods is not increasing in general (Figure 36<sup>70</sup>).





Female sterilization (38%) occupies the greatest part of the contraceptive method mix among all current users, followed by Implant (18%), Depo (14%), male sterilization (11%), pills (7%), condom (6%), and lastly IUCD (6%) in 2020/21. Among new acceptors, Depo (39.37%) occupies the greatest proportion of the contraceptive method mix followed by condom (22.25%), pills (20.82%), implant (13.54%), IUCD (1.84%), Female sterilization (1.7%) and Male sterilization (0.48%) in 2020/21<sup>xlvii</sup>.

The majority of LARC users sought services from government health facilities: 70.3 percent of IUCDs, 84.1

<sup>&</sup>lt;sup>70</sup> Prepared by the Survey Team from "Annual Report (2020/21)", DoHS
percent of implants and 74 percent of injectables came from such sources. Women using pills sourced their contraceptives from a wider range of sites: HPs (31%), FCHVs (18%), private clinics (17%) and pharmacies (22%); male condom users overwhelming sourced the method from private clinics or pharmacies<sup>ix</sup>.

The discontinuation rate of contraceptive methods in Nepal is high, with three out of five women discontinuing within 12 months of starting. The main reason for discontinuation is the long-term absence of the husband. For LARCs, however, women's health concerns were one of the most important reasons for discontinuation: 61.7% of women using IUCDs and 48% of women using implants discontinued their use due to side effects or health concerns. High-quality counselling would be helpful in addressing these users' concerns and reducing contraceptive discontinuation rates. However, an evaluation of health care facilities based on family planning service delivery protocols found that only 3% provided privacy and confidentiality, 6.3% provided counselling on side effects, and only 13.3% of mothers in postpartum period were given information about family planning<sup>ix</sup>.

According to a 2014 survey, an estimated 323,000 abortions are performed a year in Nepal, with a rate of 42 per 1,000 women aged 15-49. For women aged 35–49 years, 27 percent of pregnancies ended in induced abortion. Half of these women (50.3%) who had an abortion did not want more children but of these women, only 51.9 percent were provided with information on FP and 25.2 percent used a FP method within two weeks of having the abortion. A survey conducted at a medical facility in Kathmandu found that 32% of women had two or more abortions, suggesting an increase in cases of repeat abortions. Furthermore, only 41% of women know that abortion is legal, and only about half (51%) of all abortions are performed in facilities that provide licensed safe abortion services<sup>ix</sup>.

Although government hospitals generally provide more comprehensive abortion care services than private hospitals, many women use the private sector. For example, of women who had abortions in 2016, 31% used government facilities, 27% used private facilities, 13% used NGO facilities, and 27% purchased abortion pills and took them at home. The number of post-abortion complications is much higher after surgical abortion than after medical abortion. Post-abortion care (PAC) services were only implemented in 11,115 cases, or about 14% of the total, compared to 79,952 abortions (Table 64<sup>70</sup>). PAC services include treatment of post-abortion complications as well as preventive care to prevent future unwanted pregnancies, such as counselling on contraceptive methods. Since post-abortion care is known to reduce abortion-related morbidity and mortality, the low rate of PAC service provision in Nepal is one of the challenges in maternal protection.

	Safe abortion services	PAC services	No. of post abortion complication-medical abortion	No. of post abortion complication
Koshi	15,404	1,634	50	122
Madhesh	6,156	695	32	13
Bagmati	14,623	2,254	94	71
Gandaki	11,304	828	41	11
Lumbini	17,497	2,844	83	448
Karnali	4,888	1,160	146	65
Sudurpashchim	10,080	1,700	94	125
Nepal	79,952	11,115	540	855

Table 64 : Number of safe abortion services, PAC and post abortion complication

## Maternal care

The number of women receiving ANC is increasing, with 94.2% having received at least one ANC and 69.4% having received four or more, according to the 2016 DHS. However, only 76.3% of women received their first ANC as protocol and 58.8% of women received four ANCs as protocol, leaving many women missing the appropriate timing of their ANC visits. Moreover, among women who received ANC, only 48.6% were counselled on all five major items to be covered by ANC, indicating that the quality of service is inadequate (Table 65<sup>71</sup>). Furthermore, although ANC consultation rates are on the rise, there are still large disparities based on income, education level, caste/ethnicity, and other demographics (Table 66<sup>72</sup>). In addition to these attributes, women with more access to media and those with higher levels of independence were significantly more likely to have 4 or more ANC visits, suggesting that women's social circumstances have a significant impact on their ANC visits. According to the qualitative research that analysed the reasons for delaying the first ANC visit<sup>1iii</sup>, lack of awareness among pregnant women (e.g., not being aware of their own pregnancy, not knowing/misunderstanding the timing of the first ANC visit, not knowing that ANC is free, etc.) and misconceptions about ANC among those around them (husband, mother, mother-in-law, neighbours, etc.) may also have a significant impact on the appropriateness of ANC visits. This suggests that communication of information about antenatal care to the community as a whole is necessary to improve the rate of timely ANC attendance.

Of the three provinces covered in this study, Madhesh province is below the national average on all indicators, suggesting that there are challenges with both of its service delivery system and user's awareness. Koshi province has an ANC consultation rate above the national average, but the indicator for counselling content is low, suggesting that there are concerns about the quality of services. Some provinces, including Koshi, also experienced a decline in 4 ANC uptake in 2019/2020, which may be partly due to the COVID-

<sup>&</sup>lt;sup>71</sup> Prepared by the Survey Team from "Nepal Demographic and Health Survey, 2016", Ministry of Health (2017)

<sup>&</sup>lt;sup>72</sup> Prepared by the Survey Team from "Maternal Health Cae in Nepal: Trends and Determinants", MoHP (2019)

# 19 pandemic after 2019<sup>73</sup> (Figure 37<sup>74</sup>).

# Table 65 : Timing and contents of ANC

	Percentage of women who timely received the 1 <sup>st</sup> ANC	Percentage of women who timely received the 4 <sup>th</sup> ANC	Percentage of women who received counselling on all five issues that should be included in ANC
Koshi	79.0	62.6	41.5
Madhesh	60.5	36.1	29.6
Bagmati	83.9	70.7	61.0
Gandaki	83.2	66.5	54.3
Lumbini	82.6	67.3	54.2
Karnali	66.8	47.3	64.3
Sudurpashchim	86.5	73.0	63.6
Nepal	76.3	58.8	48.6

Table 66 : Percentage of women who received 4 ANG	per national	protocol (	(by attributes)
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Education		Household wealth quintile		Place of residence		Caste/ethnicity	
No education	41.0	Poorest	50.0	Rural	51.0	Dalits	55.3
Basic education	60.4	Poorer	51.9	Urban	65.0	Muslim	44.5
Higher education	76.2	Middle	53.1			Janajati	62.1
		Richer	64.4			Other Tarai	40.8
		Richest	77.8			Brahmin/Chhetri	69.0





The institutional delivery rate is increasing nationally at 64.9% (2020/21), but there is a disparity between the provinces, with 81.4% in Lumbini province and 42.3% in Gandaki province (Figure 38<sup>70</sup>).

<sup>&</sup>lt;sup>73</sup> Studies conducted in Kenya, Zambia, Democratic Republic of Congo, Pakistan, India, and Guatemala report significant decreases in institutional delivery rates and ANC visit rates following the spread of novel coronavirus infection. (Source: Naqvi S, et al. (2022) "Health care in pregnancy during the COVID-19 pandemic and pregnancy outcomes in six low- and middle-income countries: Evidence from a prospective, observational registry of the Global Network for Women's and Children's Health." BJOG. 2022 Jul;. 129(8):1298-1307)

<sup>&</sup>lt;sup>74</sup> Prepared by the Survey Team from "DoHS Annual Report 2019/2020"



The differences in utilization of institutional deliveries by income level and mother's education level are decreasing, but the disparities remain large. Among women in the lowest quintile income group<sup>75</sup>, 36.5% had an institutional delivery, compared to 91.5% in the highest quintile<sup>76</sup>. 84.9% of women with secondary or higher education delivered at a facility, compared to 36.5% of women with no education. Similarly, while differences by caste and ethnicity are narrowing, the institutional delivery rate is still below the national average (59.3%) at 53.9% for Dalit women, 47.5% for Muslims, and 44.4% for other Tarai regional castes (Table 67<sup>77</sup>). In addition to financial challenges, geographic access is often difficult in areas with high concentrations of poor people.

Education	Education		Household wealth quintile		sidence	Caste/ethnicity	
No education	36.5	Poorest	36.0	Rural	48.2	Dalits	53.9
Basic education	61.3	Poorer	47.7	Urban	68.7	Muslim	47.5
Higher education	84.9	Middle	61.5			Janajati	61.7
		Richer	69.4			Other Tarai	44.4
		Richest	91.5			Brahmin/Chhetri	69.2

Table 67 : Per	centage of	institutional	delivery	(by	attribute)	) (	%)	)
	0		2	<li>2</li>		· ·		

According to 2017/18 HMIS information, 34.5% of institutional deliveries took place in BCs at the Health Post/PHCC level, 14.8% at the district hospital level, 27.6% at the referral hospital level, and 23.1% at private healthcare facilities<sup>ix</sup>. Ideally, the number of deliveries should be highest at the closest facility, a health post or PHCC, and the number of deliveries should decrease as one moves to higher-level health facilities. However, the number of deliveries at secondary and higher-level facilities is currently higher than at primary level facilities, suggesting that many women are selectively giving birth at higher level facilities.

<sup>&</sup>lt;sup>75</sup> Women with household incomes in the bottom 20% of all

<sup>&</sup>lt;sup>76</sup> Women with household incomes in the top 20% of all

<sup>&</sup>lt;sup>77</sup> Prepared by the Survey Team from "Maternal Health Care in Nepal: Trends and Determinants", MoHP

The rate of births attended by SBAs is rising nationally, but there are still large disparities among the provinces and a declining trend in Gandaki, the province with the lowest numbers (Figure  $39^{70}$ ). Needs fulfilment for emergency obstetric care is low and there are large disparities between provinces (Figure  $40^{70}$ ).



Figure 39 : Percentage births attended by SBA among expected live births (Province) (%)



Figure 40 : Percentage of met need for EOC (Province) (%)

According to the 2016 DHS, 54.5% (45.1% within 4 hours, 9.4% between 4 and 23 hours) received their first PNC within 24 hours postpartum, and 53.8% of newborns were examined within 24 hours. Among women who did not give birth in a health facility, the majority (86.7%) did not receive a postpartum check-ups within two days. The PNC unexamined rate among the poorest mothers was 62.3%, compared to 15.5% among the richest mothers. There are also large disparities between provinces, with a national average of 25.1% of women receiving PNC according to protocol, compared to 14.5% in Madhesi province and 19.6% in Gandaki province (2020/21) (Figure 41<sup>70</sup>). Compared to other safe motherhood indicators, the PNC

indicator is consistently low, posing a major challenge to the continuum of care. While cultural and geographic factors affecting postpartum maternal mobility can be a reason for the low coverage, it is also possible that the low perceived importance of care in the postpartum period contributes to the low coverage<sup>ix</sup>.



Figure 41 : Percentage of PNC as per protocol (Province) (%)

# Newborn and child health care

Similar to the PNC consultation rate for postpartum mothers discussed in the previous section, the PNC consultation rate for newborns remains low. The 2019 survey shows that the percentage of newborns who received at least two of the main PNCs within two days of birth is 51.5% nationwide (Table 68<sup>78</sup>). The indicator shows disparities by characteristics such as province (69.5% in Bagmati and 34.0% in Karnali), mother's education level (72.1% had completed at least middle secondary education and 37.1% had never attended school), and income level (71.4% in the richest and 38.0% in the poorest). The difference between home births (16.6%) and institutional births (61.1%) is particularly striking.

<sup>&</sup>lt;sup>78</sup> Prepared by the survey team from "Nepal Multiple Indicator Cluster Survey (MICS) 2019"

		Percentage of newborns receiving post-natal signal care function of:				Paraantaga of nowharma		
		Temper		Breastfee	ding		Receiving	who received a least 2 of
	Cord examination	atture assessm ent	Counse ling	Observat ion	Counseling or observation	Weight assessment	information on the symptoms requiring care- seeking	the preceding post-natal signal care functions within 2 days of birth
Province								
Koshi	47.4	49.3	52.0	48.3	54.9	21.0	50.6	57.0
Madhesh	35.2	34.7	41.4	31.2	45.4	7.4	31.8	47.8
Bagmati	55.1	58.2	62.6	58.8	67.4	19.1	66.1	69.5
Gandaki	45.5	45.7	55.1	48.0	58.1	13.7	64.0	60.5
Lumbini	30.3	29.6	35.0	28.6	36.6	14.7	38.0	37.7
Karnali	25.1	22.6	26.6	21.7	29.9	11.9	32.4	34.0
Sudurpashchim	39.3	38.7	39.1	35.6	43.2	22.5	27.5	45.7
Education								
None	28.2	27.8	31.2	27.3	35.5	10.0	26.3	37.1
Basic	35.8	35.5	41.9	35.4	44.3	14.4	40.5	46.8
Secondary	46.4	47.3	52.5	45.4	56.0	18.4	53.3	58.1
Higher	60.5	63.8	64.4	60.8	68.5	19.1	65.5	72.1
Place of delivery								
Home	11.7	9.6	13.2	10.2	15.2	5.8	15.1	16.6
Health facility	48.6	49.8	54.9	48.1	58.7	18.2	52.9	61.1
Public	47.7	49.4	54.6	47.9	58.0	18.2	51.8	60.0
Private	53.2	52.0	56.9	48.9	62.1	18.2	58.7	66.5
Wealth index quintile								
Poorest	30.7	27.5	32.4	26.1	35.3	14.9	34.5	38.0
Second	35.6	35.7	40.1	35.9	43.7	13.1	42.4	45.9
Middle	40.0	40.6	46.0	40.5	49.2	12.1	39.3	51.3
Fourth	45.1	46.6	51.9	48.8	55.6	19.2	44.1	56.2
Richest	55.9	60.3	64.3	52.6	67.8	19.0	69.4	71.4
Nepal	40.6	41.1	45.9	39.9	49.3	15.5	44.9	51.5

 Table 68 : Percentage of newborns received signal PNC services

Child immunization coverage in Nepal has shown significant improvement, achieving 80% to 90% except for the rotavirus vaccine (2nd dose), which is low at 71%, as shown in Table 69. However, a comparison by province on the MR vaccine (2nd dose) immunization coverage, where the national average is 81%, shows a large disparity between provinces, with 94% achieved in Lumbini province, while 65% in Bagmati province (Figure 42<sup>70</sup>). As for the CB-IMNCI, there are also interprovincial differences in each indicator, such as institutional delivery rate (42.3% in Gandaki and 87.1% in Karnali), CHX gel application to newborns (70.5% in Madhesi and 94.1% in Sudurpashchim), and completion rate of gentamicin administration for PSBI (16.6% in Madhesi and 69% in Sudurpashchim) (Table 70<sup>70</sup>). One possible reason for the disparities in immunization coverage and paediatric care is that decentralization has placed health service provision under the jurisdiction of provincial and local governments, and differences in organizational structures and capacity of personnel have affected health services. In addition, the situation is relatively better in areas where development partners have intervened more frequently. It is also pointed out that FCHVs, who contributed improvement in the area of maternal and child health care, are less active in urban areas than in rural areas, making it difficult for health services to reach mothers and children, especially those in poor households.

No.	Antigens	Target population	% Achieved
1	BCG	under 1 year	91
2	DPT-Hep B-Hib 1	under 1 year	88
3	DPT-Hep B-Hib 2	under 1 year	87
4	DPT-Hep B-Hib 3	under 1 year	87
5	DPT-Hep B-Hib 3 including delayed dose given after 1 year of age	under 1 year	89
6	OPV 1	under 1 year	84
7	OPV 2	under 1 year	82
8	OPV 3	under 1 year	82
9	OPV 3 including delayed dose given after 1 year of age	under 1 year	89
10	fIPV 1	under 1 year	84
11	fIPV 2	under 1 year	82
12	Rota 1	under 1 year	81
13	Rota 2	under 1 year	71
14	PCV 1	under 1 year	87
15	PCV 2	under 1 year	85
16	PCV 3	under 1 year	80
17	MR 1	under 1 year	82
18	MR 2	15 months	81
19	JE	12 months	84
20	TD2 & TD2+	Pregnant women	60

Table 69 : National vaccination coverage by vaccine (2020/21)



Figure 42 : Coverage (%) of measles-rubella (MR) second dose (by Province)(%)

	Institutional Delivery (%)	Newborn applied with CHX Gel (%)	PSBI Cases received complete dose of Inj. Gentamycin (%)	Pneumonia cases treated with antibiotics (%)	Diarrheal cases treated with ORS and Zinc (%)
Koshi	59.7	74.9	37.8	169.8	92.1
Madhesh	54.4	70.5	16.6	206.8	97.1
Bagmati	61.7	71.3	25.2	149.2	94.4
Gandaki	42.3	88.3	22.8	133.1	102.4
Lumbini	79.7	87.1	61.9	121.7	96.8
Karnali	87.1	81.3	65.2	102.1	96.3
Sudurpashchim	82.5	94.1	69.0	131.7	97.2
Nepal	64.9	79.2	50.0	149.7	96.2

Table 70 : Status of CB IMNCI program monitoring indicators (province) (2020/21)

In the area of child nutrition, the distribution of vitamin A supplements and the use of iodized salt have relatively high implementation rates across the country, but there are problems with the household intake of vitamin A and iron, and there are large disparities across provinces (Table 71<sup>79</sup>). Although there is no correlation between these indicators and income level, the higher the mother's level of education, the higher the percentage of adequate nutritional intake at home. This suggests that it is not only economic factors that inhibit proper nutrition, but also lack of knowledge and other factors. In interviews with health care providers conducted in this study, they cited lack of knowledge and economic reasons, as well as lack of motivation to take action despite having the knowledge and financial resources, as reasons for residents' lack of adequate nutrition.

Percentage who consumed foods rich in vitamin A in last 24 hoursPercentage who consumed foods rich in iron in last 24 hoursA supplements in past 6 models age 6-59 monthswith iodized salt among child age 6-59 monthsProvince Koshi59.2 $35.6$ 90.792.6Madhesh47.423.177.699.5Bagmati81.051.387.094.2Gandaki71.545.991.295.2Lumbini67.939.588.094.6Karnali70.132.492.982.0Sudurpashchim64.021.591.091.4Mother's education53.928.983.293.0Primary63.431.985.593.0Suc and above69.340.691.697.9Wealth quintileUU186.994.9Lowest63.129.589.983.3Second68.040.385.694.6Middle55.030.183.298.0Fourth66.840.485.799.1Highest64.835.987.498.5		Among youngest children age 6-23 months living with the mother		percentage given vitamin	Percentage living in household
ProvinceKoshi $59.2$ $35.6$ $90.7$ $92.6$ Madhesh $47.4$ $23.1$ $77.6$ $99.5$ Bagmati $81.0$ $51.3$ $87.0$ $94.2$ Gandaki $71.5$ $45.9$ $91.2$ $95.2$ Lumbini $67.9$ $39.5$ $88.0$ $94.6$ Karnali $70.1$ $32.4$ $92.9$ $82.0$ Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $U$ $U$ $U$ $U$ Lowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $99.1$ Highest $64.8$ $35.9$ $87.4$ $98.5$		Percentage who consumed foods rich in vitamin A in last 24 hours	Percentage who consumed foods rich in iron in last 24 hours	A supplements in past 6 months among all eligible children age 6-59 months	with iodized salt among children age 6-59 months living in households tested for iodized sal
Koshi $59.2$ $35.6$ $90.7$ $92.6$ Madhesh $47.4$ $23.1$ $77.6$ $99.5$ Bagmati $81.0$ $51.3$ $87.0$ $94.2$ Gandaki $71.5$ $45.9$ $91.2$ $95.2$ Lumbini $67.9$ $39.5$ $88.0$ $94.6$ Karnali $70.1$ $32.4$ $92.9$ $82.0$ Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $U$ $U$ $U$ Lowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$	Province				
Madhesh $47.4$ $23.1$ $77.6$ $99.5$ Bagmati $81.0$ $51.3$ $87.0$ $94.2$ Gandaki $71.5$ $45.9$ $91.2$ $95.2$ Lumbini $67.9$ $39.5$ $88.0$ $94.6$ Karnali $70.1$ $32.4$ $92.9$ $82.0$ Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $70.1$ $32.4$ $92.9$ $83.2$ No education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Suce and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $U$ $U$ $U$ $U$ Lowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$	Koshi	59.2	35.6	90.7	92.6
Bagmati $81.0$ $51.3$ $87.0$ $94.2$ Gandaki $71.5$ $45.9$ $91.2$ $95.2$ Lumbini $67.9$ $39.5$ $88.0$ $94.6$ Karnali $70.1$ $32.4$ $92.9$ $82.0$ Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $U$ $U$ $U$ $U$ Lowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$ Hiphest $64.8$ $35.9$ $87.4$ $98.5$	Madhesh	47.4	23.1	77.6	99.5
Gandaki $71.5$ $45.9$ $91.2$ $95.2$ Lumbini $67.9$ $39.5$ $88.0$ $94.6$ Karnali $70.1$ $32.4$ $92.9$ $82.0$ Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $U$ $U$ $U$ $U$ Lowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$ Hiphest $64.8$ $35.9$ $87.4$ $98.5$	Bagmati	81.0	51.3	87.0	94.2
Lumbini $67.9$ $39.5$ $88.0$ $94.6$ Karnali $70.1$ $32.4$ $92.9$ $82.0$ Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $120.5$ $89.9$ $83.3$ Lowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$ Highest $64.8$ $35.9$ $87.4$ $98.5$	Gandaki	71.5	45.9	91.2	95.2
Karnali $70.1$ $32.4$ $92.9$ $82.0$ Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$ Highest $64.8$ $35.9$ $87.4$ $98.5$	Lumbini	67.9	39.5	88.0	94.6
Sudurpashchim $64.0$ $21.5$ $91.0$ $91.4$ Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintile $1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$ Highest $64.8$ $35.9$ $87.4$ $98.5$	Karnali	70.1	32.4	92.9	82.0
Mother's education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintileLowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$ Highest $64.8$ $35.9$ $87.4$ $98.5$	Sudurpashchim	64.0	21.5	91.0	91.4
No education $53.9$ $28.9$ $83.2$ $93.0$ Primary $63.4$ $31.9$ $85.5$ $93.0$ Some secondary $68.8$ $40.1$ $86.9$ $94.9$ SLC and above $69.3$ $40.6$ $91.6$ $97.9$ Wealth quintileLowest $63.1$ $29.5$ $89.9$ $83.3$ Second $68.0$ $40.3$ $85.6$ $94.6$ Middle $55.0$ $30.1$ $83.2$ $98.0$ Fourth $66.8$ $40.4$ $85.7$ $99.1$ Highest $64.8$ $35.9$ $87.4$ $98.5$	Mother's education				
Primary63.431.985.593.0Some secondary68.840.186.994.9SLC and above69.340.691.697.9Wealth quintileLowest63.129.589.983.3Second68.040.385.694.6Middle55.030.183.298.0Fourth66.840.485.799.1Highest64.835.987.498.5	No education	53.9	28.9	83.2	93.0
Some secondary68.840.186.994.9SLC and above69.340.691.697.9Wealth quintileLowest63.129.589.983.3Second68.040.385.694.6Middle55.030.183.298.0Fourth66.840.485.799.1Highest64.835.987.498.5	Primary	63.4	31.9	85.5	93.0
SLC and above       69.3       40.6       91.6       97.9         Wealth quintile	Some secondary	68.8	40.1	86.9	94.9
Wealth quintileLowest63.129.589.983.3Second68.040.385.694.6Middle55.030.183.298.0Fourth66.840.485.799.1Highest64.835.987.498.5	SLC and above	69.3	40.6	91.6	97.9
Lowest63.129.589.983.3Second68.040.385.694.6Middle55.030.183.298.0Fourth66.840.485.799.1Highest64.835.987.498.5	Wealth quintile				
Second68.040.385.694.6Middle55.030.183.298.0Fourth66.840.485.799.1Highest64.835.987.498.5	Lowest	63.1	29.5	89.9	83.3
Middle55.030.183.298.0Fourth66.840.485.799.1Highest64.835.987.498.5	Second	68.0	40.3	85.6	94.6
Fourth66.840.485.799.1Highest64.835.987.498.5	Middle	55.0	30.1	83.2	98.0
Highest 64.8 35.9 87.4 98.5	Fourth	66.8	40.4	85.7	99.1
	Highest	64.8	35.9	87.4	98.5
Total 63.3 35.2 86.3 94.5	Total	63.3	35.2	86.3	94.5

Table 71: Nutritional intake of children by province and attribute

Because Growth Monitoring and Promotion (GMP) provides early detection of child malnutrition and a

<sup>&</sup>lt;sup>79</sup> Prepared by the Survey Team from "DHS 2016"

venue for nutrition counselling, the Government of Nepal recommends that children under two years of age attend a GMP once a month. However, awareness of GMPs is low among mothers of children under 2 years of age, and even when they do attend GMPs, they do not receive adequate counselling (Table 72<sup>80</sup>). In addition to increasing awareness of GMP, there is a need to strengthen the counselling skills of service providers.

	Percentage who knows there is a GMP session among women age 15-49 with a child born in the 2 years	Percentage who report counselling on nutrition and health among women age 15-49 with a child born in the 2 years preceding the survey, who	Percentage who report health worker explained interpreting growth chart among women age 15-49 with a child born in the 2 years preceding the
	preceding the survey	attended the GMP sessions	survey, who attended the GMP sessions
Koshi	25.9	38.9	35.4
Madhesh	3.0	-	-
Bagmati	34.7	62.1	44.0
Gandaki	49.8	51.5	27.1
Lumbini	26.4	56.3	44.1
Karnali	31.0	62.8	46.0
Sudurpashchim	47.5	56.5	46.3
Nepal	25.6	54.8	40.8

Table 72 : Mothers' knowledge of GMP and counselling status

# Adolescent reproductive health

Adolescents have high rates of unmet needs for family planning services. Over the past five years, the number of new adopters of temporary contraceptive methods, excluding condoms, has declined (Table 73<sup>70</sup>).

	2016/17	2017/18	2018/19	2019/20	2020/21
Koshi	7,733	7,277	7,748	6,869	6,133
Madhesh	7,694	3,818	4,119	4,789	3,882
Bagmati	9,566	9,651	7,673	6,840	6,166
Gandaki	3,732	3,003	3,151	2,782	2,672
Lumbini	7,038	7,150	6,347	6,693	6,179
Karnali	5,826	6,748	6,624	7,354	6,675
Sudurpashchim	2,634	2,188	2,406	1,924	2,036
Nepal	44,223	39,835	38,068	37,251	33,743

	Table 73 : New acce	ptor of temporary	contraceptive methods	(excluding condom)	) among adolescents.
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The number of adolescents using safe abortion services is also on the decline (Table 74<sup>70</sup>). The significant decrease in the number of users in many provinces in 2019/20 is considered to be partly due to the lockdown following the outbreak of COVID-19 infection.

<sup>&</sup>lt;sup>80</sup> Prepared by the Survey Team from "DHS 2016"

	2016/17	2017/18	2018/19	2019/20	2020/21
Koshi	1,740	1,361	1,733	1,165	1,282
Madhesh	1,117	594	1,299	1,052	712
Bagmati	4,511	4,433	2,469	2,462	1,444
Gandaki	1,074	1,001	1,592	905	1,056
Lumbini	3,592	1,142	1,445	1,718	1,327
Karnali	442	622	996	630	496
Sudurpashchim	858	974	659	540	607
Nepal	13,334	10,127	10,193	8,472	6,924

Table 74 : Safe abortion services received by adolescents

Figure 43<sup>70</sup> shows the percentage of adolescent pregnant women who received their first ANC appropriately but did not receive their fourth ANC appropriately. The national average for 2020/21 is about 30% of adolescent pregnant women who received their first ANC appropriately but did not receive their fourth ANC appropriately. There is a large provincial disparity, such as 16% in Bagmati province compared to 43% in Madhesi province.



Figure 43 : Dropout rate (ANC 1st visit vs ANC 4th visit as per protocol) among adolescents

## d) MNCH related projects

# MCH Handbook Project: Koshi province

In Koshi province, an MCH manual (Aama Booklet) was developed as a province-specific initiative and distributed to several health facilities. The development and introduction of the Aama Booklet was prompted by the experience of the Director of the Provincial Health Directorate in Koshi province, who learned about the MCH Handbook during a JICA training. Distribution began in 2021 with 10 pilot facilities in 3 districts of the province and has expanded to 19 facilities in 8 districts as of January 2023. The printing and

distribution is to be done by each local government, although some local governments have not been able to secure budgets. In the future, Koshi Province aims to distribute it in all 14 districts, but there are no plans to expand the distribution area for 2023.

The contents of the Aama booklet include maternal health information (pregnant women's health, nutrition, antenatal and postnatal care, danger signs, family planning, etc.), child health information (breastfeeding, weaning, immunization, child growth, care for minor illnesses, etc.), and health records (MNCH card, child health card, immunization record, growth curve, records of visits to health facilities). It is given to the pregnant woman at the first ANC and is used by the health worker to explain its contents or by the pregnant woman to take it home to read by herself or her family members. The same form used in the HMIS is included in the information record section.



(Photo) Cover page and contents of Aama Booklet

# School Health Nurse Project: Bagmati Province

The School Health Nurse Project, which started in 2019/20 and will be implemented in 119 schools as of 2021/22, aims to deploy school health nurses in secondary schools. The areas of responsibility of the School Health Nurse include first aid, mental health, reproductive health, alertness to junk food, tobacco, alcohol, etc., menstrual hygiene, health education, environmental health, and promotion of holistic health care. Expected activities include assisting schools in establishing health policies, implementing health promotion programs, conducting health screenings, distributing nutritional supplements, and providing counselling. Some development partners expressed the expectation that they would be used as a community medical resource during natural disasters and infectious disease outbreaks, and that they would provide sexual and reproductive health counselling to adolescent boys and girls in secondary schools.

# Community Health Nurse Program: Nationwide

The Community Health Nurse Program assigns a community nurse to each community to provide regular health check-ups and first aid, screening for NCDs, health education, and health record keeping through

door-to-door visits in collaboration with FCHVs. The target population spans the life course, including pregnant and postpartum women, children, adolescents, adults, and the elderly. The program has been piloted by NSSD in two municipalities<sup>81</sup> since 2021. As part of the program, an application (Community Health Toolkit, CHT) was developed for the program, which allows health care providers to enter and report screening results and other information via smartphones and tablets. While an SMS-based form-filling mechanism was previously developed and implemented in more than 180 municipalities, a new Android-based app was developed for the Community Nurse Program. The door-to-door visits by community nurses are expected to help address a major challenge in maternal and child health: the low PNC consultation rate.

2) Measures and services for NCDs

## a) Key policies, strategies, and programs related to NCDs

Nepal introduced its first 15-year long-term health plan in 1975 and developed by a second 20-year longterm health plan in 1997. These plans established health posts in all administrative units and extended basic primary health services to the village level. As a response to the rapid increase in NCDs, the "Multisectoral Action Plan for the Prevention and Control of Non Communicable Diseases (2014-2020)" was formulated in 2013, targeting seven diseases/sectors and five risk factors, and setting targets to be achieved by 2025. The MoHP and other relevant ministries and agencies, community organizations, and development partners are to cooperate in implementing the activities. To address the risk of NCDs, WHO PEN was launched in Nepal in October 2016 from two pilot areas. WHO PEN and has now been implemented in all 77 districts. In Nepal, health expenditures related to NCDs are reported to be about 50%, which is a financial burden for the country liv. Therefore, prevention, early detection, and treatment are essential in improving the population's health level and reducing health care costs. The MoHP launched the health campaign "Ma Swastha, Mero Des Swastha" (Healthy Myself, Healthy Nation) in 2017. The campaign recommends five key components of a healthy lifestyle: abstinence from tobacco and alcohol, regular physical activity, a nutritious diet, regular health check-ups, and attention to one's own and family's health. In 2019, the "National Health Policy 2019" has been formulated to ensure that all citizens can exercise their constitutional right to health and improve the quality and access to healthcare facilities at all levels per the federal structure. Nepal also developed the "2nd Multisectoral Action on Prevention and Control of Noncommunicable Diseases, 2021-2025" in 2021, with the following three goals have also been set:

- To reduce the risk factors of non-communicable diseases and inherent in different areas and address the existing social determinants;
- To strengthen the 'People-friendly health system' for effective prevention and control of noncommunicable diseases; and

<sup>&</sup>lt;sup>81</sup> Community Health Nurse Programs are underway in Bhaktapur (Bagmati province) and Bardibas (Madhesh province) and will be launched in Chandagiri (Bagmati province).

• To establish surveillance, monitoring & evaluation system for evidence-based policies and programs.

The policy sets out to reduce premature mortality from cardiovascular disease, cancer, diabetes, and COPD by 25% by 2025 and 33% by 2030, with an annual budget plan for NCDs and a focus on the management and prevention of NCDs and their risk factors at the state and local levels.

Nepal is a signatory to the WHO Framework Convention on Tobacco Control and has implemented support to reduce tobacco dependence and smoking by providing counselling, psychological support, nicotine replacement therapy, and educational programs to help people quit smoking. As for policies related to alcohol consumption, the Nepalese government has tightened regulations on alcohol since 2017, severely restricting where it can be advertised and sold, but even in 2022, the rules are not correctly adhered to the local market.

The National Health Education Information and Communication Centre (NHEICC), a division of the MoHP, uses TV commercials, Facebook, and other social networking sites to inform the public about risk factors and make leaflets to improve the health level of Nepalese people. The "National Health Communication Policy" approved by the Cabinet in 2012 outlines a plan for health promotion, education, and health communication, and the NHEICC is responsible for the program's implementation, monitoring and evaluation. With the support of WHO to improve health literacy, the company has implemented campaigns to reduce alcohol and tobacco use, and recently implemented a smoke-free policy in public places in the Kathmandu Valley and measures to make the majority of tobacco packages with health warning pictures.



(Photo) Health promotion posters and leaflets produced by NHEICC

## b) Service delivery system related to NCDs

# PEN Program and NCDs Services at Medical Institutions

To address the emerging risks of NCDs, MoHP launched the WHO-developed PEN<sup>82</sup> in 2016 to address the early detection and management of CVDs, diabetes, COPD, and cancer. Similarly, the new National Health Policy for 2019 aims to establish a primary hospital in each of the 753 municipalities and to expand the coverage of health services, including guaranteeing free basic health care services. As of 2022, the PEN is in the dissemination phase, and health posts and primary health care centres have been trained by the Provincial Health Training Centre for health professionals in each province. According to interviews with health workers, the PEN program positively spreads to the medical field, and the trained content is put into practice. On the other hand, monitoring and management of PEN has been conducted since its introduction, but in reality, there is no reporting system in place regarding the status of PEN implementation, and at this point, data on the nationwide implementation status has not been published, so the exact current status of operation is not clear. Nepal stipulates the NCDs services to be provided at each level of medical institutions (Table 75<sup>83</sup>).

Level of health institutions	Services for NCDs					
	Health education and counselling on NCD risk reduction behaviour					
	Anthropometric measurements					
Health Post	• Screening for hypertension, diabetes, breast cancer (examination) and cervical cancer as well as breast examination					
	• Drugs for hypertension, diabetes and COPD, and referral of suspected cases of NCDs					
	All above plus:					
	• Screening for lipid disorders (some)					
РНСС	• Early diagnosis of CVDs with the use of CVD risk prediction chart and ECG and CKDs by assessing urine protein					
	• Screening for asthma and COPD including history taking, measuring peak expiratory flow rate and managing exacerbation					
	Management of acute presentation of CVDs					
	Chest rehabilitation techniques					
	All above plus:					
Primary Hospital	• Screening for lipid disorders and tests for albumin, sodium and potassium					
Timary Hospital	• Screening for breast cancer (ultrasonography)					
	Medical management of CVD cases (outpatient, inpatient and referral)					
	All above plus:					
Province Hospital	· Medical management of CVD, hyperglycaemic crises and acute renal failure cases					
(former 50 bedded,	(outpatient, inpatient and intensive care)					
hospital)	• Dialysis service (some)					
	Biopsy test for cancer (some)					
Federal (Central,	All above plus:					
university and	• Medical management of cases (outpatient, inpatient, intensive and interventional therapy)					

Table 75 : NCDs services at various levels of health institutions

<sup>&</sup>lt;sup>82</sup> WHO Package of essential noncommunicable disease (PEN) is a tool to expand access to cost-effective intervention measures in resourceconstrained settings. The main components of the PEN include sections on the detection, diagnosis, treatment and care of cardiovascular disease, diabetes and chronic respiratory disease, as well as the early diagnosis of cancer (cervical and breast cancer). It also contains other sections on healthy lifestyle counselling and palliative care.

<sup>&</sup>lt;sup>83</sup> Prepared by the Survey Team on the basis of the "Building Strong Primary Health Care to Tackle the Growing Burden of Non-Communicable Diseases in Nepal (2020)".

specialized	and specialized tests and services
hospitals)	• Renal transplant (two public and three private hospitals)

## Access to Medicines

Access to health care services and medicines is more likely to be a challenge in lower income countries due to lack of understanding of chronic diseases, health infrastructure in rural areas, and insecure medicine supply. Medicine (6<sup>th</sup> edition), approved on April 21, 2021, lists 398 medicines, which are necessary for basic health care and are provided in the basic health service package. As an example, Table 76<sup>84</sup> provides a list of pharmaceuticals acting on the circulatory system that are included in the package.

Classification Drug name Drugs for angina pectoris Bisoprolol, Nitroglycerin, Isosorbide nitrate, Metoprolol, Verapamil Antiarrhythmic agents Amiodarone, Digoxin, Epinephrine, Isoprenaline, Lidocaine, Metoprolol, Verapamil Amlodipine, Amlodipine-Losartan combination, Enalapril, Hydralazine\*, Hydrochlorothiazide, Antihypertensives Labetalol, Losartan, Methyldopa\*, Nifedipine, Prazosin, Sodium nitroprusside \*indicated for the treatment of pregnancy-induced hypertension Digoxin, Furosemide, Losartan, Ramipril, Spironolactone, Dobutamine, Dopamine, Drugs for heart failure Norepinephrine Aspirin, Clopidogrel, Streptokinase Antithrombotic drugs Dyslipidaemia drugs Atorvastatin, Fenofibrate

Table 76 : List of drugs acting on the circulatory system registered in the Basic Health Service Package

The medicines in this list are covered to some extent within the scope of the Basic Health Service Package and can provide NCDs treatment services for all citizens. On the other hand, it also includes some classical drugs that are not highly useful, such as streptokinase, which is used for thrombolysis during stroke. For example, there are six cholesterol-lowering HMG-CoA reductase inhibitors on the market in Japan, and they are selected according to the individual circumstances of the patient. However, only atorvastatin is registered in this list, which gives physicians little choice in selecting a drug. This has disadvantages, such as the possibility of not being able to keep up with advances in medical technology, such as the use of novel pharmaceuticals, but also has advantages, such as clarifying the choice of drugs for physicians as the drugs used are limited and enabling price negotiations through bulk purchasing, thereby contributing to reducing healthcare costs.

<sup>&</sup>lt;sup>84</sup> Prepared by the Survey Team on the basis of the "National List of Essential Medicine (Sixth Edition)", MoHP.

# **Clinical Laboratory Tests**

Diagnostic laboratory tests in Nepal include general blood counts, blood biochemistry and coagulation tests, liver function tests, myocardial enzymes, lipid tests, immunological tests, thyroid function tests, the Widal tests<sup>85</sup>, and urinalysis at a tertiary hospital in Kathmandu, and the laboratory facility operates 24 hours a day. The price is also based on a fixed price system. As an example, services are offered at 150 NPR each for the measurement of serum lipids (triglycerides, HDL-Cho, LDL-Cho, and total cholesterol), 60 NPR for blood sugar measurement, 500 NPR for Hb1Ac (a measure of blood sugar in the past 2-3 months),



150 NPR for simple X-ray, and 200 NPR for electrocardiogram.

Figure 44: Clinical Laboratory Forms

## **Diabetes Mellitus**

Management of diabetes in primary health care facilities is not comprehensive, and efforts to encourage lifestyle behaviour change, such as support for diet and exercise therapy, are not focused on. Metformin, the basic treatment for diabetes, is provided, but its supply is sometimes unstable. There is also an inadequate supply of glucometers and urine glucose test strips, which are necessary for diabetes screening. Compared to policies, the reality is not yet accompanied by factors such as lack of financial and trained personnel, and patient interventions to maintain and improve medication adherence and diabetes care for early detection and prevention remain inadequate.

# Cardiovascular Disease (CVDs)

Primary CVDs care with a package of essential non-communicable diseases, including CVDs risk assessment and management, screening and treatment of hypertension and diabetes, is available at county-level health facilities, but advanced cardiovascular disease diagnostic and treatment services are required at tertiary-level hospitals concentrated in urban areas. For example, cardiovascular disease patients on warfarin need to undergo regular PT-INR testing, but remote areas are incurring significantly higher transportation costs for the tests<sup>1v</sup>.

## Chronic Obstructive Pulmonary Disease (COPD)

In Nepal, respiratory medicine is scarce and unevenly distributed in the capital city of Kathmandu and other large cities; the PEN program also covers screening for COPD, but primary health care facilities are not adequately equipped with spirometers, so diagnosis based on objective tests for early detection of COPD

<sup>&</sup>lt;sup>85</sup> The Widal test is a blood test (serological diagnosis) method used to diagnose certain bacterial infections, such as typhoid fever and paratyphoid fever.

screening is not institutionalized, limiting the number of people who are diagnosed early and have access to treatment. While the management of hypertension and type 2 diabetes using FCHVs is practiced in some rural areas, no similar efforts have been made for COPD. Some COPD medications are included in the Basic Health Service Package.

## Malignant Neoplasms (Cancer)

In Nepal, cancer treatment services are provided in public hospitals specializing in cancer and several general and private hospitals. A hospital-based cancer registry in Nepal was started in 2003, and there are now 12 such registries in the country as of 2022<sup>1vi</sup>. The three government-funded cancer hospitals are B.P. Koirala Memorial Cancer Hospital, 2. Bhaktapur Cancer Hospital, and Sushil Koirala Prakhar Cancer Hospital. The Nepalese government is currently providing financial assistance of up to NPR 100,000 (Approx. USD 762<sup>86</sup>) per person for cancer treatment under a scheme to support impoverished citizens.

## c) Utilization of Services Related to NCDs

According to the DoHS Annual Report 2020/2021, which is based on HMIS data, 77% of the total population visited outpatient services in FY 2020/2021. Gastritis was the most common disease among outpatients, followed by upper respiratory tract infections and headaches (Table 77 :<sup>87</sup>). Hypertension ranked the ninth most common NCDs-related disease in 2020/2021 and sixth in 2019/2020. However, poor medication adherence, including a lack of knowledge among patients with hypertension, who believe that once their blood pressure is within normal limits, they no longer need to continue taking antihypertensive medication, is also reported<sup>1vii</sup>. In rural areas, where regular access to medications for NCDs is limited by geography, transportation issues, and cost barriers to receiving medical care, and since various types of NCDs that are not severely ill have few subjective symptoms, there is room for widespread use of services for the treatment of NCDs in outpatient settings.

2020/2021		2019/2020		
Disease	Number	Disease	Number	
Gastritis (APD)	1,467,185	Upper Respiratory Tract Infection (URTI)	1,547,389	
Upper Respiratory Tract Infection (URTI)	1,362,177	Gastritis (APD)	1,535,012	
Headache	1,356,471	Headache	1,289,898	
Fractures	1,048,057	ARI/Lower Respiratory Tract Infection (LRTI)	1,072,764	
Lower Respiratory Tract Infection (LRTI)	917,093	Falls/Injuries/Fractures	1,010,336	
Fungal Infection (Lichen Planus)	727,669	Hypertension	740,508	
Backache (Muskuloskeletal Pain)	677,417	PUO	719,570	
Presumed Non-Infectious Diarrhoea	662,708	Skin Diseases-Fungal Infection	687,813	
Hypertension	657,159	Backache (Muskuloskeletal Pain)	661,113	
Pyrexia of unknown origin (PUO)	580,735	Presumed Non-Infectious Diarrhoea	621,383	

Table 7	77:	Top	Ten	Out	patient	Morl	bidity
							2

<sup>&</sup>lt;sup>86</sup> Calculated at the exchange rate on April 3, 2023.

<sup>&</sup>lt;sup>87</sup> Prepared by the Survey Team on the basis of the "Annual Report2020/2021,2019/2020", DoHS.

## 3) Infectious Disease Control

#### a) Major policies, strategies and programs related to infectious diseases

Infectious disease control in Nepal is implemented by the Epidemiology and Disease Control Division (EDCD) of the DoHS, with technical assistance from WHO and financial support from various international organizations and international NGOs. The EPDC conducts epidemiology/control of infectious diseases, malaria elimination preparedness programs, leishmaniasis elimination programs, lymphatic filariasis control, dengue fever control programs, disaster management programs, zoonosis control primarily through animal and snake bites, avian influenza control programs, and surveillance and research on infectious diseases<sup>88</sup>. In 2020, Nepal was affected by the global pandemic of COVID-19, which caused 11,952 deaths by July 15, 2022<sup>1viii</sup>. In 2020, the Nepal Medical Council issued the COVID-19 guidelines for infection control, and the MoHP prepared a pocketbook for all medical institutions and health professionals following those guidelines. Through these measures, the government reinforced hand hygiene, wearing personal protective equipment such as N95 masks, restrictions on visitors, and disinfection of high-frequency contact surfaces to ensure compliance with standard precautions for infection prevention and control and to strengthen infection control measures.

According to Nepal Burden of Disease 2019, trends in infectious diseases in Nepal show that deaths from NCDs have increased over the nearly 30 years from 1990 to 2019, while deaths related to communicable diseases, maternal, neonatal, and nutrition (CMNN) have decreased. At the same time, mortality from lower respiratory tract infections and tuberculosis still account for 4.5% and 3.5% of all deaths, respectively, down from 12.9% and 6.7% in 2019, but specific infectious disease control measures are still needed. The progress made in reducing CMNN is reportedly the result of priority policies and programs implemented by the Nepalese government for specific diseases such as diarrhoea, malaria, leishmaniasis, and tuberculosis. However, there are still challenges such as the recent spread of COVID-19, emerging and re-emerging infectious diseases such as dengue fever, tsutsugamushi disease, and influenza, and measures to combat antimicrobial resistance (AMR).

Against this background, the Nepalese government is urged to establish a cross-sectoral health care system adapted to the changing disease structure, and CMNN measures must be carefully allocated so that resources for disease control are not inadequate. The following are key policies that should not only focus on NCDs but also ensure that CMNN diseases are not deprioritized:

• Enhancing surveillance to prevent public health threats from emerging infectious diseases and early detection of outbreaks;

<sup>&</sup>lt;sup>88</sup> Ministry of Health and Population/Department of health Services/Epidemiology and Disease Control Division. https://edcd.gov.np/ (Last accessed on 1 January 2023.)

- Strengthening health promotion activities by maintaining and improving high vaccination coverage;
- Sustainable financing mechanisms and transition to a self-sustaining, independent health care system;
- Support for evidence-based decision making at the provincial and local levels; and
- Support for additional data needed to provide more accurate statistics.

b) Service Delivery System for Infectious Disease Control

## Infectious Disease Surveillance System in Nepal

Nepal introduced the Early Warning and Reporting System (EWARS) in September 1996 under the management of the Department of Epidemiology and Disease Control of the DoHS. EWARS started with eight sentinel sites<sup>89</sup>, and by 2021, there will be 118 hospital-based sentinel sites in all 77 districts, with weekly reports on infectious diseases of public health importance<sup>lix</sup>. There are nine reportable diseases: malaria, tsutsugamushi disease, internalized leishmaniasis (kala-azar), dengue fever, influenza-like illness, typhoid fever, acute gastroenteritis (AGE), cholera, and severe acute respiratory infection (SARI). Infectious diseases other than these priority diseases are also reportable if the number of cases exceeds the criteria. Weekly reports from hospitals are to report the number of patients and deaths (including zero reports) and are used to provide early warning of the spread of infectious diseases, complementing the HMIS mandated monthly reporting, and to take prompt and appropriate action to address the rising number of cases in the community. However, as shown in the Figure 45<sup>90</sup>, the 2021 EWARS Annual Report shows that sentinel sites completing more than 80% of the annual reports varied from province to province, but four provinces reported about 20% and three provinces reported about 50%, strongly suggesting that they function very poorly as surveillance. The interviews with the DoHS confirmed that they recognize this as a serious issue in infection control, because if the surveillance function is low and the data obtained is not reliable enough, the response implemented based on the data may not be accurate.

<sup>&</sup>lt;sup>89</sup> Since the heavy burden on medical facilities to ascertain the total number of infectious diseases, estimating the number of infected patients based on the number of reports from a certain number of designated medical facilities is called "sentinel surveillance", and the designated facilities are referred to as "sentinel sites".

<sup>&</sup>lt;sup>90</sup> Prepared by Early Warning and Reporting System (EWARS) Annual Report 2021



Figure 45 : Percentage (%) of sentinel sites reporting at least 80% (43 weeks) of epidemiological weeks (52 weeks)

## **Management of Infectious Disease Control in Health Facilities**

As mentioned previously, quality management of services provided in health facilities is stipulated by the MSS, and those related to infection control are also stipulated by the MSS. Specifically, "Nosocomial Infection Control" is specified in "Governance and Management", while "General Infection Prophylaxis" in the clinical setting is specified in "Clinical Service Management". Furthermore, "Sterilisation Services", "Laundry", "Housekeeping" and "Medical Waste Management" related to general hospital safety and infection control are specified in "Hospital Service Support Management". However, the first field survey confirmed a situation in a tertiary hospital in Kathmandu where syringes with needles were left on the bed with no one around, suggesting that infection control management is not thorough.



(Photo) Syringe with needle left on a bed.

## **Implementation Status of General Infectious Disease Control Measures**

The Infectious Disease Act of 1964, the cornerstone of all measures related to infectious diseases, stipulates the measures necessary to eradicate or prevent infectious diseases throughout Nepal. The Malaria Control Project was initiated in 1954 with the support of USAID, and in 1998, with the support of WHO, the control measures were strengthened in mountain forests, foothills, tarai regions, and valley areas, which account

for more than 70% of malaria cases. Currently, the Epidemiology and Disease Control Division (EDCD) of the DoHS is leading a program to eliminate malaria by 2025. In 2008, based on WHO guidelines, "National Guidelines on Prevention, National Guidelines on Prevention, Management and Control of Dengue in Nepal" was formulated in 2008 based on WHO guidelines, and was revised in 2011. To control mosquitoes and mosquito larvae that transmit dengue fever and malaria, laws and ordinances have been developed to control the environment around water sources where larvae are likely to increase, and the use of insecticidal sprays, repellents, and mosquito nets has been promoted to raise awareness that the diseases are preventable through individual behavioural change. Lower respiratory tract infections and diarrheal diseases, both of which are members of the paediatric mortality, have been addressed through community-based integrated paediatric disease management programs utilizing FCHVs, which have shown some effectiveness<sup>1x</sup>. The National Tuberculosis Control Centre of the DoHS is in charge of tuberculosis (TB) control and implements the national tuberculosis program. At the regional level, the District Health Directorate is also responsible for training medical personnel in TB treatment, monitoring and evaluation, and the supply of antituberculosis drugs. The National AIDS/HIV Control Centre within the DoHS is in charge of HIV/AIDS countermeasures. In 2002, the National AIDS Council, chaired by the Prime Minister, was established to raise awareness of HIV/AIDS and set the direction for the national response. The centre is being established to prevent new HIV infections from occurring and to provide quality life-prolonging treatment for those who do contract HIV infection without discrimination.

#### **Implementation Status of AMR Control Measures**

In Nepal, the "National Antimicrobial Resistance Containment Action Plan Nepal" came into effect in 2016 to put the "OneHealth Approach" into practice. However, the "Antimicrobial Resistance (AMR) Surveillance Programme Monthly Bulletin April (2017)" reports that resistance is increasing in important bacterial strains in AMR control. Accounting to the results of 10 AMRs monitored (Table 78) in 2017, many of the bacteria have already become resistant to many first-line drugs. When immunocompromised patients infected with drugresistant bacteria due to nosocomial infections, etc.,

Table 78 : Target Bacterial Species of AMR Surveillance

Vibrio cholerae
Shigella spp
Streptococcus pneumoniae
Hacmophilus influenzae
Neisseria gonorrhoeae
Salmonella spp
ESBL strains of Escherichia coli
Methicillin resistant strains of Staphylococcus aureus
Multidrug resistant Klebsiella spp
Multidrug resistant Acinetobacter spp

chemotherapy becomes difficult as the number of effective antimicrobial agents gradually decreases. As discussed in the Chapter 4, "*Health status of the Nepalese Citizens*", such risks are certain to increase in future, particularly in Nepal, where the challenges related to inappropriate use of antimicrobials remain unresolved.

c) Status of Service Utilisation related to Infectious Diseases.

According to the 2020 report<sup>1xi</sup>, 110 hospital assessments in seven provinces found that 81% of small hospitals with 15 or fewer beds, 39% of medium-sized hospitals with 16-50 beds, and 33% of large hospitals with 50 or more beds did not have isolation beds for suspected COVID-19 patients. Only one hospital had PCR equipment, and there was a significant lack of reN95 masks and personal protective equipment clothing for infection control, suggesting that nosocomial infection control measures may be inadequate.

d) Initiatives and Challenges of the AMR Control in Nepal.

The Brief Summary published by "the Structured Operational Research and Training IniTiative (SORT IT)" in 2021 points out the challenges of the AMR laboratory surveillance system in Nepal<sup>1xii</sup>. Specifically, Nepal participates in the "Global Antimicrobial Resistance Surveillance System (GLASS-AMR)"; however, it reported following issues: 66% of specimens were correctly tested according to GLASS standards; 13% of what was reported to NHPL did not match the content of sentinel site records; and that there were delays in reporting of sentinel sites up to 269 days.

AMR surveillance in Nepal was initiated with the support of WHO and Bangladesh and is still in operation, but as mentioned above, it can be understood that there are more administrative and operational challenges than technical aspects.

4) Issues in Nutrition

# a) Key Nutrition-related Policies, Strategies and Programmes

In Nepal, the hunger status was declared at "*emergency warning level*" in 2000. Although Nepal was affected by a major earthquake in 2015, Nepal is the only country in South Asia that the hunger status has been improving since then. This can be attributed to the Nepalese Government's efforts to improve the chronic malnutrition situation through the "*Multi Sector Nutrition Plan*" (MSNP) developed by the NPC in 2012, which set the following main objectives to improve the nutrition situation:

- Improving policy, planning and inter-sectoral coordination at national and local levels;
- Improving MCH status by promoting appropriate use of nutrition-specific and sensitive services; and
- Strengthening local government capacity to provide nutrition-related basic services.

However, continued action on nutritional issues should be taken, as undernutrition and anaemia are still observed in children and women, especially adolescent young women, and poor maternal nutrition tends to lead to higher rates of stunting in children.

The MSNP-II (2018-2022) had been implemented, succeeding the MSNP-I (2013-2017). The MSNP-II aims to improve the nutritional status of mothers, adolescents and children, with nutrition-specific or -sensitive

interventions in cooperation with local government across sectors, such as health, education, agriculture, livestock farming, water and sanitation, women and children. Currently, a total of 720 municipalities in 72 districts introduced the MSNP-II.

This MSNP-II was approved by the Cabinet and published in January 2018. In it, the target is to reduce the chronic malnutrition rate from 36% in 2018 to 24% by 2025 and 14% by 2030. Priorities of the second MMSNPI are as follows:

- Establishing target areas based on poverty analysis;
- Ensuring equity regardless of gender, cultural and sociological factors;
- Challenges in nutrition among adolescent boys and girls; and
- Overweight (mainly in urban areas),

# b) Nutrition-related Service Provision System

As noted in "*a*)" above, Nepal is working on improving nutrition cross-sectorally, and its policies (Table  $79^{xxxi}$ ) and implementation systems (Table  $80^{xxxi}$ ) show that they are trying to improve citizen's nutrition status in a multisectoral manner with a focus on mothers, adolescents and schoolchildren. However, although there are moves to promote intersectoral dialogue at the central level, and there is a common understanding that not only nutrition issues but also NCDs, maternal and neonatal health and other issues should be tackled in collaboration with other sectors, we did not identify any practical platforms (such as meetings or committees) for intersectoral collaboration at provincial or municipal level in the areas visited during the field survey.

Title	Name of Policy, Plan and Strategy	Implementing Agencies	Summary of Contents
Multi Sector Nutrition Plan (MSNP)	National multi-sectoral nutrition plans (five-year plans)	(National Planning Commission (NPC)	<ol> <li>Created to improve chronic nutritional conditions. Key objectives include.</li> <li>Improvement of policy, planning and intersectoral coordination at national and local level</li> <li>Improving maternal and child health status by promoting appropriate use of nutrition-specific or nutritionally sensitive services</li> <li>Strengthening the capacity of central and local government to deliver nutrition-related basic services</li> </ol>
Agriculture Development Strategy (ADS) 2015-2035	Agricultural Development Strategy	Ministry of Agricultural Development	Recognising the importance of 'nutrition', it has identified 'food and nutrition security' as one of the four main programmes of its agricultural development strategy.
Food and Nutrition Security Plan of Action) FNSP)2013	Action plan on food and nutrition security.	Ministry of Agricultural Development	The above represents the 10-year activities of the ADS 2013-2022 and complements the multi- sectoral nutrition plan aimed at promoting improved maternal and child health nutrition.
School Sector Development Plan (SSDP)2016-2023	School Sector Development Plan	Ministry of Education	Key interventions include school meals, the establishment of food management committees within school management committees, the development of WASH facilities and behaviour change activities, various nutrition-sensitive materials, etc.

Table 79 : Nutrition-related policies and programmes and their content

National School Health and Nutrition Strategy (NSHNS)2006	National School Health and Nutrition Strategy	Ministry of Education Ministry of Health and Population	Aims to nurture children's physical and mental state, emotional and academic development
Joint Action Plan- School Health and Nutrition 2015-2020	School Health and Nutrition Joint Action Plan	Ministry of Education Ministry of Health and Population	Based on the above NSHNS, the School Health Division of the Ministry of Education has the following four responsibilities ①creation of children's clubs; ②registration of children's attendance; ③strengthening school management for school health and nutrition activities; and ④school meals.
Mother's milk Substitute (Control) of Sale and Distribution Act, 2051(1994)	Regulations governing the marketing of breast milk substitutes.	<ul> <li>Breastfeeding Protection and Promotion Committee</li> <li>Central Food Laboratory</li> </ul>	A monitoring officer is appointed and detailed rules are in place to monitor breaches of the law.
IodizedSalt(Production, Sale andDistributionAct,2055 (1998)	Addition of iodine to salt	Salt Trading Corporation	Iodisation of all salt is required by law.
Food Regulation 2027 (1970) Fourth Amendment Regulation, 2054 (1998)	Government notification mandating the addition of iron and folic acid to wheat at the industrial level.	Government of Nepal	Mandatory addition of iron (60 ppm) and folic acid (1.5 ppm) to wheat for millers whose production exceeds 20 tons per year.

Table 80: Implementation System of the Multi-sectoral Nutrition Improvement

Organisations/committees Summary/Situation.						
Nutrition sector coordination under the international Scaling up Nutrition Movement (SUN) This is the Cooperative Secretary of the Secretariat of the National Planning Commission. The actual nutrition sector coordination mechanism is as follows						
National Planning Commission (NPC)	• Central body for national development planning production and programme management and evaluation, including in the nutrition sector					
	• Act as an intellectual hub with academic institutions, the private sector, civil society and development partners					
High Level Nutrition and Food Security Steering Committee (HLNFSSC)	• Provides strategic guidance to National Nutrition and Food Security Coordination Committee					
National Nutrition and Food Security Coordination Committee (NNFSC)	• Multi-stakeholder, platform in Nepal.					
National Nutrition and Food Security Secretariat (NNFSS)	NNFSC technical support provided					
Civil Society for Nutrition Nepal (CSANN)	Private sector platforms					

c) Status of Utilisation of Nutrition-related Services.

The national average availability of safely managed drinking water services in Nepal is as low as 19%, with wide regional variations (Figure 46<sup>91</sup>). It is also very low in rural areas at 13% in comparison to 22% in urban areas <sup>1xiii</sup>. In addition, there are nutritional problems among women in general, but the underweight rate among adolescent girls (15-19 years) in particular is significantly high and on the increase. About one third of adolescent girls in Nepal experience early



Figure 46 : Average of Safely Managed Drinking Water Services

pregnancy and childbirth. The agricultural environment in rural areas, particularly in mountainous and hilly regions, is harsh, and women are leading farming as men go to urban areas to work in many families. This results in adolescent girls missing out on educational opportunities as well as the benefits of nutrition-related services<sup>xxxi</sup>.

## 5) Health And Social Services for Elderly People

Figure 47<sup>92</sup> shows that the social, Pscycho-psychological and Physiological factors that influence the declining of ADL. Elderly people suffer from physical, mental and psychological decline, which impairs their daily activities and general life functions, reduces their social activities and further leads to the need of care due to the "*Geriatric Syndrome* <sup>93</sup>". Therefore, with the support of health professionals with expertise in "*Geriatrics*", not only medical services but also approaches to assist with daily living as well as independence support are also deemed to be important in Nepal hereafter.



Figure 47 : Social, Psycho-psychological and Physical Factors Influencing ADL Decline

<sup>&</sup>lt;sup>92</sup> Source: Diagram from the Active Senior "Food and Nutrition" Research Group website (in Japanese), partly modified and drawn by the Survey Team.

<sup>&</sup>lt;sup>93</sup> The state in which the vitality of the body and mind (motor function, cognitive function, etc.) declines with age and is affected by the coexistence of multiple chronic diseases, resulting in impaired living functions and the emergence of physical and mental vulnerability. Meanwhile, it is possible to maintain and improve the functions of daily life with appropriate intervention and support" (Summary research report (in Japanese): Research on the ideal health service for the elderly people in the later stages of life, from Dr. Takao Suzuki, Principal Investigator of the research).

## a) Major Policies, Strategies and Programmes related to Elderly People

The Senior Citizens Act, which came into force by the Government of Nepal in 2006, stated that the social, economic and human rights of elderly people should be protected, but also specified the significance of the 'family' as an important 'social unit' for implementing the daily life, health and care of elderly people and that the care of elderly people was an obligation of the family. In addition, it stated that it was the family's responsibility to provide care for the elderly. In addition, as noted above, as part of the social security system, the pension for elderly people started at USD 5 per month and was increased to approximately USD 25 per month in recent years; however, this is still not sufficient. Elderly people often have multiple and severe health problems, and a large proportion of elderly people do not use health services, partly because they find it difficult to pay their own health expenses.

As described above, initiatives related to elderly services have not been sufficient due to the cultural background of Nepal to some extent. However, in the meeting with the Director General of the DoHS, it was clearly mentioned that elderly services are regarded as an important area and that the Government intends to strengthen its initiatives from now on. In particular, the MoHP has just announced the "*Geriatric Health Service Strategy 2021-2030*" in 2022 and is in the process of setting out targets for practical activities at this moment.

## b) Service Delivery Systems for Elderly People

#### **Clinical Services for Elderly People**

With the onset of an ageing society on the horizon, the MoHP has in recent years commenced initiatives to serve the elderly people in earnest. Specifically, the MoHP has set out a policy to establish independent geriatric beds in hospitals with more than 100 beds, and eight hospitals established those beds in 2021, resulting in a total of 24 hospitals having established geriatric beds. Further initiatives include the development of guidelines and standards for the implementation of elderly care centres for Old Age Homes (OAHs), and the provision of training on the integrated care for elderly people geared to a total of 60 health professionals as a primary health level. Having said that, these initiatives have just begun at this stage, and the MoHP and the DoHS stressed the necessity of the support of partner agencies with skills and experience in relation to elderly people's services at the time of the meeting opportunities with them.

### OAH, Briddhashram

OAHs are originally oriented to elderly people who have no family to take care of them, but the need of those is increasing due to the rapid ageing of the population in recent years as well as the increase in the number of elderly households due to the migration of their children abroad for work opportunities. According to a survey in 2018<sup>lxiv</sup>, there are 141 public and private OAHs in Nepal (approximately half of

them in Kathmandu); however, it is suggested that the need for OAHs is increasing rapidly against the backdrop of a growing elderly population in recent years.

# Pension System for Elderly People

Currently, the Government of Nepal provides 3,000 NPR (approximately USD 24<sup>94</sup>) per month to all citizens aged 70 years and above, and 2,000 NPR per month to widows aged 60 years and above and residents of the Karnali province. While these pension payments are appreciated by Nepalese citizens, they are not sufficient for self-reliance, and the reality is that they are largely dependent on their families for their livelihoods.

# c) Availability of Elderly Services

The current situation and issues related to elderly services in health facilities as well as OAHs are described below.

# Status of Service Provision for Elderly People in Health Facilities

As mentioned above, although the secondary B-level hospitals in the Bagmati province visited in the second survey had secured six beds for elderly patients, the situation was not such that geriatric-based treatment and care was being provided, except for the benefit of an expanded quota of free services that could be obtained by being admitted to the geriatric ward, and the patients were provided with the same services as the general patients. The situation is that the same services are provided as for the general population. In addition, no staff at the hospital had received specialised training in geriatric specifically. In other facilities at the local level, no doctors or nurses with specialisation in geriatric care have been nurtured, and the situation is such that services are provided based on their individual expertise at present. Nevertheless, it is not a situation of inadequate medical services for older patients, but rather a situation where a more systematically organised medical approach to older patients has not yet reached the stage of being put into practice, and older patients are not particularly disadvantaged.

Thus, as confirmed by the interviews at the MoHP and DoHS and the literature review, a geriatrics-based service delivery system has been gradually initiated in the provinces, and there is a need to promote human resource development in geriatrics-based practice and care to relevant health professionals in future.

# **Status of Service Provision for Elderly People in OAHs**

The function and current status of OAHs are shown through interviews and direct observation at public OAHs (only one public OAH exists) and private ones in Kathmandu during the second field survey.

(a) Social Welfare Centre, Elderly's Home, Ministry of Women, Children and Senior Citizens (Public OAH

<sup>&</sup>lt;sup>94</sup> Calculated at the exchange rate as at 11 November 2022

in the Kathmandu Valley)

The only OAH run by the Government of Nepal; it was established in in 1882 AD. It has been run as a *Panchadevar Paksala* in the administration of His Majesty *Surendra Vir Vikram Shah*. It has been administered under the name of Social Welfare Centre Old Age Home, *Pashupati* since 1977. It has a capacity of 230 inmates, but at the time of the survey team's visit, a total of 90 people were being accommodated. There are 32 men and 58 women, divided into a disabled section and a general section. Disabled people include the visually impaired, the hearing impaired and the mentally disordered.



(Photo) Inmates having their way in the courtyard of a public OAH.

Unlike Japanese elderly homes that provide professional and technical skills-backed services to those in need of care, OAHs serve as shelters for those who have no relatives. As the function and role of the facility is not to provide active interventions such as functional maintenance and prevention of frailty, OAHs are understood to be facilities that provide a peaceful environment for the end of life with minimal personal care, although Care Givers are assigned to work there. Residents appeared to be spending their time as they pleased, and although there was no active intervention, they appeared to be living peacefully. Staff numbers seemed to be limited, and although the facility itself appears dilapidated, it seems to be a clean and tidy environment.

#### (b) Private OAH

Similar to the public OAH, it serves as a shelter for the elderly without relatives and does not receive any fees from the inmates. The label "private" OAH may give the impression of a for-profit aspect or a service in return for the inmate's fees, but in reality, they are operated under the registration of a non-profit organisation (NPO) with the support of donors and neighbourhood residents. Many facilities are similar in function to public the OAH. Some facilities also accept short-term stayers for a fee, even if they do not fulfil the requirements.



(Photo) Inmates having their way on the roof of a private OAH.

The operation of private OAHs is on a licensing basis, with applications made to the Ward Office and approved by the District Administration Office after the necessary assessment.

# 6) Rehabilitation services

Rehabilitation is necessary to restore and maintain function after cerebrovascular disease, cardiac disease and road traffic accidents, but rehabilitation in Nepal is facing challenges in terms of both number and quality. The national policy is to strengthen rehabilitation, including plans to establish trauma hospitals in all seven provinces in the future, but at the time of this study, this was only just beginning to be considered, so it is not a priority. Existing tertiary hospitals have rehabilitation units, but their size is small as a percentage of hospitals, and there are no rehabilitation specialists, so rehabilitation based on rehabilitation science and other evidence is not being provided. According to the Nepal Physiotherapy Association, there are 2,500 physiotherapists registered with the Council of Health Professionals in Nepal, but the exact number is unknown as it varies according to different sources. In any case, the number of rehabilitation specialists and physiotherapists are both very small as a percentage of the country's total population, making the shortage of human resources a serious issue. The fact that Kathmandu University of Medical Sciences is the only institution in the country offering a bachelor's degree in physiotherapy, with a limited number of 30 students per year, also suggests that there are challenges in training physiotherapists.

On the other hand, at the Kathmandu Spinal Rehabilitation Centre (NPO) visited in this survey, a menu of rehabilitation programmes was systematically developed, the length of which depended on the patient's condition, but efforts were made to provide maximum services within limited resources, with the longest programmes lasting up to four months. The length of rehabilitation depends on the patient's condition, but some of the longer rehabilitations lasted four months. One of the unique features of the rehabilitation programme is that it is adapted to the cracked ground, bumps and unpaved roads found in various parts of Nepal, and efforts are made to train patients to navigate cracked roads using sturdy bump wheelchairs so that they will have no problems when they return to their daily routines.



(Photo)Rehabilitation centre facilities Courses with replicated cracks and steps for training purposes.

# 7. Japan's and JICA's development assistants to Nepal

## (1) Japan's Development Assistance

Japan's "Country Development Cooperation Policy for Nepal" (September 2021), the basic policy (major goal) of ODA is to support sustainable and balanced economic growth aimed at overcoming the Least Developed Countries (LDC) status, and Nepal has set the goals of overcoming the LDC status by 2026, becoming a middle-income country by 2030, and joining the developed countries by 2043. Nepal is being supported to achieve its goals of becoming a middle-income country by 2030 and a developed country by 2043. Under (1) Economic growth and poverty reduction development issues 1-5 (sub-targets) of the priority areas (medium targets), strengthening the health sector is mentioned.

The actual amount of bilateral aid to Nepal in 2019 was higher in the order of the U.S., Japan, and the U.K  $^{lxv}$ . The Table 81 $^{lxv}$  below shows the actual economic cooperation with Nepal by international organizations.

Year	1st	2nd	3rd	4th	5th	Other	Total
2015	IDA	AsDB	IMS-CTF	EU Institution	GAVI		
	297.95	168.82	49.88	47.96	29.70	84.55	673.88
2016	IDA	AsDB	EU Institution	IFAD	GFATM		
	233.97	209.37	100.77	16.88	16.74	64.19	641.91
2017	IDA	AsDB	EU Institution	GFATM	OPEC Fund		
	296.39	279.09	94.88	23.68	16.29	72.82	783.14
2018	IDA	AsDB	EU Institution	GFATM	GAVI		
	597.67	250.70	54.35	18.55	15.07	66.98	1,003.31
2019	IDA	AsDB	EU Institution	GAVI	IFAD		
	485.34	310.47	49.35	24.77	15.65	62.41	948.02

Table 81 : Achievements of International Organizations in Economic Cooperation with Nepal

Table 82 : Japan's Assistance to Nepal in the Health Care Sector Ixvi

Year	Project Title	Scheme	Overview
2020	Support for countermeasures against coronavirus via international organizations	Multiple	
2020-2021	Economic and Social Development Plan (Medical Equipment)	Grand Aid	
2021	Medical Equipment Development Plan for Higher Hospitals	Grand Aid	Strengthen the health sector by
2021	Preparatory study for the development of a trauma and emergency wardrobe center at the Dhulikhel Hospital	Preparatory Survey for Cooperation	upgrading facilities and equipment at key hospitals in the capital and
2020-2021	Maternal and Child Health and Nutrition Improvement Program (Coordinated with WFP)	Grand Aid	major cities in each region, while securing new medical personnel and improving human resource
2020-2021	Capacity building for epilepsy diagnosis and strengthening regional cooperation in Kathmandu and surrounding areas	Gras Roots Grand Aid	development and service delivery through various training programs and NGO collaboration projects
2020-2021	Japanese NGO Grant Assistance in the Health Care Sector	NGO	Improve maternal and child health nutrition in collaboration with
2021	Japan Platform for Health Care	Grand Aid	international organizations.
2020-2021	Grant Assistance for Grassroots and Human Security in the Health Care Sector	Gras Roots Grand Aid	
2016	Tribhuvan University Teaching Hospital Medical Equipment	Grand Aid	

Japan's assistance to Nepal by type of assistance (cumulative total) is shown in Table 82, including assistance in the field of health and medical care, which began in the 1970s and included the Project for the Construction of Medical Facilities in Western Region (1978), which was implemented through grant aid, and the Basic Health Service Project in the Western Region of Nepal (1979), which was implemented through grant aid.

FY	Loan Aid (Net)	Grant Aid	<b>Technical Cooperation</b>	Total
FY2016	26.50	16.13 -	22.49	65.13
FY2017	39.20	28.25 -	29.96	97.41
FY2018	52.02	34.54 -	20.51	107.07
FY2019	60.31	48.62 -	17.59	126.52
FY2020	42.83	2.99 (6.32)	16.87	82.69
TOTAL	227.17	1,904.18 (37.24)	793.70	2,925.05

Table 83 : Japan's assistance by type of aid to Nepal (OECD/DAC reporting standards)

### (2) JICA's Assistance

JICA's assistance to Nepal began in the 1970s. JICA provided infrastructure development, education and health and medical care by grant aid, and the focus was on infrastructure projects such as electricity and roads by loan aid, and mainly provided assistance in the field of education, disaster prevention and recovery, and governance. Others were, JICA experts, JICA Overseas Cooperation Volunteers (formerly Japan Overseas Cooperation Volunteers (JOCV) and Senior Overseas Cooperation Volunteers (SOCV)) have also been dispatched. In addition, JICA provides financial support for grass-roots technical cooperation conducted by NGOs, as well as grant assistance to Japanese NGOs from the Ministry of Foreign Affairs of Japan.

All projects had a large number of beneficiaries and received high evaluations for their appropriateness and usefulness but the healthcare projects currently being implemented are only to improve medical equipment for public tertiary hospitals. So, the government of Nepal requests to provide grant aid to expand medical services, improve medical equipment, and dispatch volunteers. In addition, the country also asked for JICA's cooperation in countermeasures against infectious diseases, such as the lack of medical facilities and surveillance, as well as the shortage of medical personnel due to corona virus pandemic.

Duration	Project Title	Overview	
October 1973 February 1985	The Basic Health Services Project in Western Region	The purpose of this project is to improve tuberculosis control, tuberculosis, bacteria, and radiation technology in the region.	
June 1980 - June 1989	Tribhuvan University Medical Education Project	Creation of the University's Faculty of Medicine	
April 1987 ~ April 1994	Tuberculosis Control Project	Support for strengthening management capacity of NTPs and establishing TB control models in urban and remote areas.	
June 1989 ~ June 1994	Medicine Education	Support human resource development to enhance basic clinical diagnostic, laboratory, and treatment skills and to improve hospital administration, nursing management, and equipment maintenance.	
April 1993 ~	Primary Health Care	Improve the health status of the local population by	

Table 84 : Technical cooperation health projects that were implemented by Japanese Fiscal Year of 1999

# March 1999

July 1994~ July 1999

Tuberculosis Control Project Phase II

#### strengthening primary health care services

Further strengthen the organization and functions of the NTP (training, logistic supply, reporting records, regular guidance and supervision, and other systems) and support the dissemination of short-term chemotherapy in the western region

# Table 85 : Grassroots Technical Cooperation

Fiscal Year	Project Title	Organization	Overview
FY2020 (2nd)	Pilot project to support communication for patients with deafness in a hospital in Kathmandu	General Incorporated Association. All Japan Association of Hard of Hearing and Late- Deafened People (Zennancho)	Create a situation in medical institutions where people with hearing impairment can understand what doctors and nurses say and proceed with treatment with conviction.
FY2018	Project to Improve Diagnostic Capacity for Epilepsy and Strengthen Regional Collaboration in Kathmandu and Surrounding Areas	Hiroshima University Hospital Epilepsy Center	Improve diagnostic capacity for epilepsy and strengthen regional cooperation to correct the shortage of human resources, improve the medical system, and promote access to medical care.
FY2017 (2nd)	Project to support the promotion of club activities on the theme of disaster prevention at schools.	NPO +arts	Support for the promotion of club activities with disaster prevention as a theme in extracurricular activities at schools in order to establish disaster prevention education methods that make students to learn while having fun.
FY2016 (2nd)	Project to support the poor in mountainous areas of Nepal to improve their mathematics skills through video education	NPO e-Education	To improve basic life though ability of math by using video education.
FY2016 (1st)	Activities to improve nutrition and prevent lifestyle- related diseases in Machhapuchare village Ward 6, Kaski District, Nepal (formerly Detal Village)	Morinomiya Academy of Medical Sciences. A School Cooperation.	Addressing diarrhea and nutritional issues in the target mountain community
FY2016 (1st)	Women's Livelihood Improvement Project Connecting Higashikagawa city and Nepal.	Committee for Technical Cooperation to Nepal	Improve livelihoods by developing women's agricultural cooperatives established through JICA volunteer activities in order to improve their income
FY2015	Project to establish a training system for female teachers	NPO Japan-Nepal Female Education Association (JNFEA)	Training of excellent female teachers
FY2015	Training for sustainable disaster education, human resource development and development of teaching materials for teachers and staff	NPO +arts	Teachers and staff in the target areas become leaders in disaster education and learn about disaster education programs and its methods.
FY2015	Empowerment and mainstreaming of persons with disabilities affected by the earthquake.	NPO Okinawa Life Independent center Iruka	To help people with disabilities or those who have become disabled by the earthquake receive the support they need to live independently in the community and regain hope for life.
FY2015	Project for Strengthening Education in Agricultural High Schools in Nepal	Sinshu University	Improve the curriculum to meet Nepal's educational needs and create an efficient and practical agricultural high school education model that contributes to the development of agriculture and rural areas.
FY2014	Technical Guidance for Appropriate Use of Pesticides in Sankhu, Nepal	Agricultural Development Research Association	Improve excessive pesticide use and disseminate appropriate pesticide use techniques.

# Table 86 : Grassroots Partnership program

Fiscal Year	Project Title	Organization	Overview
FY2019 (1st)	Creating a Mechanism to Improve Science and Mathematics Teachers' Teaching Skills and Students' Academic Achievement by Using Video Education in Low-Income Areas of Nepal	NPO e-Education	Creating a mechanism to improve science and mathematics teachers' teaching skills and students' academic achievement by using video education in low-income areas.
FY2019 (1st)	Formation of a model disaster prevention community using school club activities	NPO +arts	Formation of a disaster reduction community model through local community cooperation using school disaster reduction club activities
FY2018	Low-cost revetment and support for river disaster prevention activities with the participation of local residents	Kochi University	Promotion of serpentine revetments based on traditional Japanese knowledge and promotion of river disaster mitigation measures with the participation of local residents
FY2016 (2nd)	Establishment of a sustainable local livelihood improvement system through soil improvement and human resource development based on recycling- based agriculture in Panchkar, Kavrepalanchok District	NPO Love Green Japan	Establishment of a system for developmental and sustainable livelihood improvement in the region through human resource development in the agricultural sector in the target area.
FY2016 (2nd)	Livelihood improvement project by grouping farmers in Sindhupalichok District to improve farming and utilizing the experience of underpopulated areas in Japan.	NGO Peace Winds Japan	Farmers are grouped together to improve their livelihoods through farm management plans developed by each farmer, and to use the experience of Japan's underdeveloped knowledge base for future planning.
FY2014 (1st)	Project to Strengthen Retinal Disease Clinical Services in Nepal	Tokushima University	Strengthening Retinal Disease Clinical Services in Nepal
FY2014 (1st)	Efforts to Support Early Reintegration of Patients with Respiratory Diseases in the Kathmandu Basin: Dissemination of Respiratory Rehabilitation	Japan International Medical Technology Foundation (JIMTF) t	Pulmonary rehabilitation improves dyspnea, mobility, and quality of life in patients with chronic respiratory disease.

# Table 87 : Regional Revitalization Projects

Fiscal Year	Project Title	Proposed Organization	Designated Organization	Overview
FY2021	Project to Promote Continues Care from Pregnancy to Infancy in Pokhara City	Komagane city	Citizen's Association For Nepal Exchange	Activities to improve the high maternal and infant mortality rate, one of the challenges facing the city of Pokhara
FY2019	Technical Cooperation Project for Systematization of Water Supply and Distribution Management in Pokhara City, Nepal.	Sapporo City Waterworks Bureau	Hokkaido International Exchange and Cooperation Center (HIECC)	Systematic and continuous implementation of operations necessary for maintenance and management of water quality and quantity in the water supply and distribution pipe network in the model area.
FY2017(Re vision)/FY2 018	Strengthening Agricultural Education in Secondary Education in Nepal (Nagano Prefecture, Promotion of Glocal Education in High School - University Cooperation)	Nagano Prefecture	Shinshu University	Reinforcement of practical agricultural education adapted to the local community
FY2016 (Revision)	Sustainable Maternal and Child Health Project Based on Community Health Activities with Participation of Local Residents in Northern Pokhara City	Komagane city	Citizen 's Association For Nepal Exchange	Providing opportunities for safe delivery and prenatal and postnatal care for expectant and nursing mothers
FY2015 (Revision) /FY2016	Dissemination Project of Locally Adaptive Snake Basin Technology for Disaster Prevention and Environment in Nepal	Yusuhara, Kochi	Kochi University	Dissemination of Disaster Prevention Snake baskets with Japanese Traditional Knowledge and Improvement of Road Safety in Dhading District, Nepal
FY2013 (Revision)	Maternal and child health improvement projects for safe and secure childbirth	Komagane city	Citizen 's Association For Nepal Exchange	Increased safe deliveries and more expectant and nursing mothers receiving prenatal and postnatal care

Table 88 : Ministry of Foreign Affairs Country Development Cooperation Policy for Nepal Project Development Plan (as of September 2021)

Fiscal Year	Project Title	Scheme	Overview
1978	Project for the Construction of Medical Facilities in Western Region	Grand Aid	Project construction of Medical Facilities in Western Region
1979	Basic Health Service Project in the Western Region of Nepal	Grand Aid	Strengthening basic health services in western Nepal (Gandagi, Lumbini and Dhaukagiri)
2016	The Project for Improvement of Medical Equipment in Tribhuvan University Teaching Hospital	Grand Aid	Improve medical equipment, improve medical services, and enhance clinical education for healthcare professionals.
2020	Support for Against Novel Coronavirus via International Organizations	Multi	
2020- 2021	Economic and Social Development Plan (Medical Machine)	Grand Aid	
2021-	The Project for the Improvement of Medical Equipment in Advanced Public Hospitals	Grand Aid	
2021-	The Project for Improvement of Trauma and Emergency Medical Centre at Dulhikhe Hospital	Cooperation	Strengthen the health sector by upgrading facilities and equipment at key hospitals in the capital and
2020- 2021	Implementing the Mother and Child Health Programme in Five Vulnerable Districts of Province 1 and 2	Grand Aid	majr cities in each region., while securing new medical personnel and improving human resource development and service delivery through various
2020- 2021	Improve epilepsy diagnostic capacity and strengthen regional cooperation in Kathmandu and surrounding areas	Grass Roots	training programs and NGO
2020- 2021	Japanese NGO grant assistance in the health care sector	NGO	
2021	Japan Plat Form in the health sector	Grand Aid	
2020- 2021	Grant assistance for Grassroots and Human Security in the Health Care Sector	Grass Roots	

The first case of corona virus was confirmed in Nepal in January 2020. The country issued "Preventive Measures to Prevent the Spread of the New Coronavirus" and gradually expanded medical facilities available for diagnosis and treatment. However, vulnerabilities in the health system and nutritional problems were highlighted during the lockdown<sup>lxvii</sup>.

Thus, JICA formulated the "JICA's Initiative for Global Health and Medicine " to strengthen the diagnostic and treatment systems for infectious diseases based on the global outbreak of COVID-19 and its impact is aimed at strengthening infectious disease diagnosis and treatment systems, infectious disease in terms of strengthen the research and early warning systems for infectious diseases, and also prevention of infectious diseases. The mainstreaming of health crisis response in order to achieve "*Human Security 2.0*" and UHC in the international community.

# 8. Cooperation Status by Development Partners

# (1) Framework for Aid Coordination

The formal meeting for aid coordination in the Nepal health sector are the Joint Consultative Meeting (JCM) and the Joint Annual Review (JAR), which is attended by the MoHP and major development partners. The JCM meets about four times a year. At the meeting, the MoHP shares the latest AWPB and reports on progress since the last meeting, and several issues are discussed like prioritization of issues. The most recent meetings were held on May 11 and October 8, 2022; according to interviews from GIZ, in addition to the JCM, there are many related committees such as Technical Working Committees for each sub-sector, which are very complex compared to other countries. The JAR meets annually with the participation of the NPC, the Ministry of Finance, and international NGOs. The most recent meeting was November 28-29, 2022.

The health sector SWAp was initiated in 2004, and partners participating in the SWAPs are jointly implementing the preparation, implementation, and monitoring and evaluation of the Nepal Health Sector Strategic Plan (NHS-SP) with the MoHP. At the time of this study, the NHS-SP (2022-2030) was being finalized.

The Joint Financing Arrangement (JFA) for the health sector was introduced in 2010 under the SWAPs, allowing key development partners to provide funding to support the NHSS-SP through a common funding pool and aid management system. Institutions that have tied JFAs are working with the MoHP to formulate and implement the NHSS-SP<sup>95</sup>.

## (2) Cooperation Performance

1) WHO

In its Country Cooperation Strategy (CSS) for 2018-2022, WHO has identified four main strategies to support Nepal: (a) advancing UHC in a federalized governance structure, (b) effective delivery of priority public health programmes, effectively implement high-priority health programs, (c) enhance health security and disaster preparedness and response, and (d) multisectoral engagement and partnerships for improved health outcomes.

For the first strategy, WHO is advocating for UHC at the central and provincial levels and assisting in planning and budgeting. Regarding the second and fourth strategies, WHO is supporting the strengthening of health systems at the PHC level, school health, and nutrition in the area of NCDs. In addition to assigning school nurses to each school to be in charge of health promotion activities related to NCD prevention, it is expected to contribute in the future to collect information on infectious disease outbreaks. Diverse

<sup>&</sup>lt;sup>95</sup> Major institutions with which JFAs are tied: WHO, UNICEF, WB, WFP, ADB, USAID, GIZ, KfW, UKaid, etc.
government agencies, UN agencies, international NGOs, and other related organizations participate in supporting school health. For the third strategy, strengthening preparedness and response to disasters and public health emergencies, WHO has established a national health emergency operation centre and provincial health emergency centres, trained hospital preparedness officers by the Ministry of Health and Population, and provided technical support for the establishment of an inter-hospital network for emergencies. It also supports compliance with the International Health Regulation (IHR); a joint external evaluation of the IHR is scheduled to take place in November-December 2022.

In addition to the above, WHO provides support in diverse areas, including health system governance (central and provincial level policy and strategy development and review), community-based mental health programs, MSS implementation, training of information management personnel, Result Based Finance, the National Health Account, improvement of health information systems, development of regulations for medicines, and various research studies (Table 89). Assistance from WHO is focused on the central and provincial levels, with less intervention at the local government level. The next CSS is currently being developed (as of October 17, 2022).

Table 89 : Major support area by	y WHO in the health sector in 2020/2021
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Maj	or program focus	Geographical coverage	Health sector budget for FY2020/21
1.	Vaccine preventable disease surveillance and technical support to strengthen immunization coverage.	All 77 districts	
2.	Strengthen prevention, detection, and response capacities to health consequences of emergencies or disasters as per International Health Regulations following an all-hazard and multisectoral approach.	All 77 districts	Total allocated budget of all program activities: US \$ 11.1m
3.	Support in development of National Policies, Strategies and Guidelines for Communicable and Non-Communicable Diseases and strengthening Disease Control & Elimination interventions.	All 77 districts	Total expenses of all
4.	Support to strengthen health systems capacities – policy, regulations, strategies, plans, guidelines, protocols on environmental health, SRHR, RMNACH health information, digital health and health system improvement including support to provincial government.	All 77 districts	US \$9.5m

## 2) USAID

USAID has set the goal of the Country Development Cooperation Strategy (CDCS) for Nepal for 2020-2025 as "A more self-reliant, prosperous, and inclusive Nepal that delivers improved democratic governance and health and education outcomes". The CDCS sets the following goals. One of the development goals is to strengthen inclusive health systems. The medium-term outcomes for achieving the goal are (a) improved quality of health services (quality), (b) improved equitable access to health services (equity), and (c) expanded health system capacity for shock preparedness and recovery (resilience).

With regard to (a), it is strengthening health system governance and addressing gaps in leadership, policy formulation and implementation, public financial management, monitoring and supervision, access to and distribution of needed materials, resources, and supplies to areas of need, and appropriate human resource

deployment. (b) is shaping the content of service packages to meet the needs of specific beneficiaries and working directly with local communities and community groups to improve equitable access for the most marginalized populations, and mobilizing resources for priority areas where service provision is inadequate. (c) is promoting infection control measures, construction of safe facilities, stockpiling of water, and advance procurement of supplies to Nepal, one of the most disaster-prone countries in the world. Alternative service delivery methods, such as community-based distribution of medicines, are being considered and are being explored in collaboration with local government health departments, health facilities, community groups, and private sector actors.

Sub-sector efforts focus on maternal and child health, newborn care, child nutrition, family planning, and HIV. In the area of maternal and child health, the subsector supports the Female Community Health Volunteer Program, which provides vitamin A supplementation, immunizations, family planning counselling, safe motherhood protection interventions, integrated local community-based child disease management, and community-based newborn care packages.

Major program focus		Geographical coverage	Health sector budget for FY 2020/21
1.	Maternal Newborn and Child Health	District number: 47 districts through different projects (Suaahara II, and SSBH project)	Total allocated budget
2.	Family Planning & Reproductive Health	District number: all 75 districts through different projects (GHSCPSM, Suaahara II, SSBH, Redbook and MPHD project)	of all program's activities: US \$58,692,385
3.	HIV/AIDS and STI	District number: 17 districts (EpiC project)	Total expenses of all
4.	Water Sanitation and Hygiene program	District number: 42 districts through different projects (SUAAHARA, SafaaPani, Swachchta project)	US \$58,692,385

Table 90 : Major support area by USAID in the health sector in 2020/2021

#### 3) World Bank

The World Bank was implementing the Nepal Health Sector Management Programme (2017-2021), but against the backdrop of the need for further corona response and the extension of the NHSS III implementation period to 15 July 2022, the programme implementation period was extended to the same date and additional financing of USD 50 million was provided. The programme is part of the NHSS programme, and its development objective is to improve the efficiency of the public resource management system in the health sector in Nepal. Support was provided for five of the nine outcomes of NHSS III: (a) improved health sector procurement systems; (d) strengthened strategic planning and institution-building capacity; (e) improved health sector management and governance; (f) strengthened health financing systems; and (i) improved evidence-based decision-making capacity.

The next phase of support under the NHSS (2022-2030), a programme (2023-2027) with the development objective of 'accelerating health system renewal to strengthen financial protection and improve the quality

of health care' is being formed and partners for technical cooperation and field implementation are being sought. The programme outcomes include (a) improved preparedness and efficiency of the health care delivery system (improved quality of health care, improved quality and use of information for decision-making), (b) improved health financing effectiveness and equity (reduced co-payment rates for health care, health care planning and budgeting for the rural poor), and (c) strengthened state and municipal emergency health care (Rapid Response Team) to respond to medical emergencies within 24 hours).

Table 91 : Major support area by World Bank in the health sector in 2020/2021.

	Major program focus	Geographical coverage	Health sector budget for FY2020/21
1.	Support for COVID-19 compliance	77 Districts	Total hudget for all programme allocations
2.	Support governance reform in results-based health sector management reform programmes (data for procurement/financial management, decision-making and accountability in public health sector management).	77 Districts	USD 146.17 million Total activity expenditure of all programmes USD 146.17 million

## 4) German International Cooperation Agency: GIZ

GIZ has been working in Nepal since 1974. Health is one of the priority sectors, along with sustainable economic development and reusable energy/energy efficiency. The Support to the Health Sector Programme (S2HSP) (2016-2021) conducted 1) the expansion of social protection, 2) professionalization of midwife (creation of university bachelor and master programs, in partnership with Tribhuvan University), 3) strengthening the health management system following the federal transition, 4) harmonization of health information systems (creation of a DHIS2-based HMIS platform), and 5) menstrual hygiene management in schools, in order to improve the inefficiency of the health care system, the social inadequate protection, incomplete data to guide decision-making, and inadequate access to quality health services immediately after the start of federalism.

Support to the Health Sector Strategy (S2HSS) (2021-2023)) conducts 1) promote social protection of health (improve health insurance committees and social security funds), 2) strengthen health management capacity (in five municipalities) and waste department management and improving infection prevention and sanitation at district and 130 hospitals), 3) improving integrated health information systems (improving interoperability of multiple systems), and 4) improving reproductive health (providing training for birth attendants and menstrual health services).

In addition to the HMIS, openIMIS has been implemented for the central government, and Bahmni, an opensource integrated hospital management system, has been piloted at a hospital in Nuwakot District, Bagmati Province. The system was customized to work with the HMIS, automatically aggregating daily medical data and automatically sending the data to the HMIS without manual re-entry by the operator. GIZ also works on the theme of interoperability of information systems and has a significant presence in the upstream process of developing various information systems.

Table 92 : Ma	ior support a	area bv GIZ in	health sector	in t	he 2020/2021
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Major program focus	Geographical coverage	HealthSectorBudgetforFY2020/21
<ol> <li>Implementing a social health protection system</li> <li>Supporting the availability of qualified human resources for health</li> <li>Strengthening governance in the health sector</li> <li>Digitalizing health information systems and work processes</li> <li>Promoting adolescent health and development GIZ Nepal has received additional Euro 1 Mio. from the German Government for the combat of COVID-19 in Nepal. With this received fund, GIZ supported Nepal government, Ministry of Health and Population on 5 out of the 8 pillars of WHO COVID- 19 Strategic Preparedness &amp; Response Plan-specifically the Pillars         <ul> <li>(1)Coordination, Planning, and Monitoring</li> <li>(2)Surveillance, Rapid Response Teams and Case Investigation</li> <li>(3)National Laboratories</li> <li>(4)Infection Prevention &amp; Control</li> <li>(5)Case Management</li> </ul> </li> </ol>	<ul> <li>76 districts (HIB health insurance scheme)</li> <li>74 districts (official economy by Social Security Fund)</li> <li>9 districts</li> <li>5 municipalities in 4 districts</li> <li>10 districts</li> <li>2 municipalities in 1 district</li> <li>13 COVID-19 designated hospitals in 11 districts</li> </ul>	Totalbudgetallocatedforallocatedforallocatedforallocatedforallocatedforallocatedforactivityforactivityforallfor <td< td=""></td<>

#### 5) United Nations Population Fund (UNFPA)

The UNFPA Nepal works with the Government of Nepal to support youth (including adolescents), sexual/reproductive health (Including family planning), gender equality and poverty reduction. Specifically, they provide family planning support (training, supply chain management), policy and guidelines development support, midwifery system establishment support, support to address population and migration issues (census implementation support, digitisation support, maternal mortality surveys), and gender- based violence (GBV), support for the establishment of One-Stop Crisis Management Centres (OCMCs) in health facilities (at central, provincial and local government levels, including the preparation of operational manuals). Support for humanitarian crises including socio-culturally sensitive issues (e.g., issues related to family planning and premarital sex among adolescents) are recognised as interrelated challenges; thus, bilateral donors do not touch this area. Under these circumstances, the UNFPA Nepal is taking the lead in providing assistance in this area (a part of the EU, South Korea and others are also providing support).

The focus of support is on those who are left behind (e.g., the impoverished, ethnic minorities, people living in remote areas, and adolescents), even though overall health indicators are showing improvement. In particular, with regard to adolescents, there are some challenges such as difficulties in accessing contraceptives due to the social taboo against premarital sex; therefore, comprehensive sex education, quality reproductive health services and capacity development support for the promotion of human rights and human development are being provided by them.

At the initiative of the MoHP, the introduction of midwifery qualifications has realized in recent years, with support from WHO, GIZ, universities, Midwifery Association of Nepal (MIDSON) and so on, and the NAFPA is working with these organisations to support safe childbirth. As of the time of this survey, to increase the number of midwives trained, the UNFPA provides short training courses for midwife educators and supports the development of curricula for bridge courses for registered nurses to become qualified

midwives. Future plans include providing training support for a one-year course to train educators to nurture midwives that meets international standards. Advocacy work on the establishment of sanctioned posts and the importance of midwifery is also being undertaken, as the lack of such posts is considered to be one of the reasons for the delay in midwifery training and placement.

Table 93 : Major support area by UNFPA in the health sector in 2020/2021

Maj	or Program Focus	Geographical Coverage	Health Sector Budget for FY2020/2021
1. 2.	Sexual and Reproductive Health Program (SRHP) Policy Advocacy & Capacity Building on SRHR, Capacity Building of Health Workers on ASRH, and Strengthening Adolescent Friendly Health Services; Emergency preparedness and response including RH sub-cluster coordination and support. Family Planning (FP) FP/RH commodities support; Strengthening SCM including eLMIS; Service delivery and capacity building support to improve method mix and accessibility to services, Systems strengthening	Nation-wide with provincial offices in Madhesh, Lumbini and Sudurpashchim Provinces. • Ongoing project/programmes:	Total allocated budget of all programmes' activities: US \$ 6,122,828
3.	<ul> <li>(Family Planning Sustainability Roadmap, FP2030 partnership), and evidence generation.</li> <li>Maternal Health</li> <li>Support implementation of Safe Motherhood Roadmap, Midwifery regulations, faculty strengthening, education standardization, support national program on RH morbidities, Support Maternal Mortality Study, and policy advocacy.</li> </ul>	<ul> <li>Koshi (2 districts),</li> <li>Madhesh (8 districts),</li> <li>Bagmati (3 districts),</li> <li>Lumbini (5 districts)</li> <li>Karnali (2 districts)</li> <li>and Sudurpashchim</li> </ul>	Total expenses of all programmes' activities: US \$ 6,102,081
4.	Health sector response to GBV Functionalization of the safe house, shelter home and OCMC, including psychosocial and medico-legal training to service providers.	(7districts).	

## 6) United Nations Children's Fund: UNICEF

In its Country Programme (2018-2022, under review as of 21 October 2022), UNICEF focuses on the following six areas: health; nutrition; education; WASH; child protection; social policies and economic analysis. Of these, in the health field, the focus is placed as follows: equitable access; and high impact support for quality healthcare and improved health-sensitive behaviours, while in the nutrition field, the focus is on equitable access and improved nutrition-sensitive behaviours and practices of care. In addition, cross-sectoral areas address the early childhood development (ECD), adolescent development, gender and social inclusion, disaster risk reduction/emergency preparedness and response, and environment and climate change.

In the area of MCH, the focus is placed as follows: (a) strengthening the quality of Maternal and Newborn Health (MNH) in remote areas; (b) strengthening the capacity of Community Health Workers (CHWs) and other health workers in the field; (c) respectful MCH with special attention to adolescent mothers; (d) strengthening the maternal and newborn death audit systems, and (e) the utilization of ICT. In the area of child health, the focus is placed as follows: (1) full immunization of all children; (2) identification and response to zero-dose and immunodeficient children; (3) strengthening the vaccine supply chain and vaccine management systems for immunization; (d) improving stock control and information management systems;

and (e) introduction of novel vaccines.

As for the strengthening of health systems, the focus is on child health, adolescent health and MCH, while relevant cross-sectoral matters are addressed at three levels: community (demand creation), decentralized management (evidence-based prioritization and programme monitoring) and the development of policy frameworks and strategies. As urgent issues, the focus is on NCDs control and its risk factor analysis for children and adolescents. Meanwhile, in the area of nutrition, UNICEF is supporting the Government of Nepal in implementing the "*Multi-Sector Nutrition Plan*" and advocating for a system approach that links health, water and sanitation, education and social protection, with food as the central focus.

## 7) Nick Simons Institute

Nick Simons Institute (NSI) is an NGO established in 2006 and has been working with the Nepalese government since 2015 with a mission to solve rural healthcare issues and scale up rural healthcare through training of health professionals and hospital support. NSI's main areas of activity are training for strengthening rural health care, curative service support programs (CSSP), hospital strengthening programs (HSP), research and government advocacy and monitoring. Currently, in collaboration with the Social Welfare Council, the Rural Hospital Strengthening Project is being implemented in 65 districts in 7 provinces from 2021 to 2026, with Memorandum of understanding signed with the MoHP and 7 provincial governments. Training includes courses in anaesthesia assistant, SBA, operating room technical management, medical equipment engineering, and emergency life support at 22 facilities in the country, with a total of 7,900 participants from 2006 to 2022. NIS also provides development support in the software for Continuing Professional Development (CPD) under the jurisdiction of the Nepal Medical Council. The curative services support program has so far been implemented in 48 hospitals, mainly at the primary level, with the aim of improving the quality of health care in rural areas. The Hospital Strengthening Program supports the development of the MSS concept to hospital assessment using the evaluation tool, and the introduction of in-hospital activities to identify and improve gaps between existing resources and MSS requirements began in 2015 in public hospitals (except at the health post level) and had been implemented in all 77 districts in 2021. There are 12 specialized hospitals in Nepal, and NIS is also currently working on developing MSS for four specialized hospitals (Infectious Diseases, Mental, Paediatric, and Maternity), which is expected to be completed by the end of this year. NSI provides grants to primary and secondary hospitals, and to date has provided NPR 400,000 each to 90 hospitals, about 50% of which has been used for human resource training. Support activities also include the provision of equipment and medical supplies necessary for training.

#### 8) Asian Development Bank: ADB

In 2021, the ADB's support to the Government of Nepal for the COVID-19 response measures included

resources for containment and prevention, protection of vulnerable groups, and relief for small businesses. ADB committed a \$165 million loan to procure about 15.9 million dosages of COVID-19 vaccines. A \$5 million grant from the Government of Japan is helping prevent and control the spread of COVID-19 through improving water supply and strengthening health systems in small towns<sup>lxviii</sup>.

9) Norwegian Agency for Development Cooperation: NORAD

Implementation of a project to provide support through the implementation of the Nepal PEN and Nepal Integrated NCD Care Model (NINCM) in six counties, with financial support from NORAD and technical support from WHO, was signed in July 2021. Interviews with the EDCD-NCDs section officer of the DOHS revealed that activities were at the stage of being implemented in two counties as of February 2023.

10) Others

## <u>Medic</u>

Medic is a non-profit organization based in the U.S. that has been active in Nepal since 2012 and has developed an open-source software framework called CHT (Community Health Toolkit), which is available to anyone in the world for free. The CHT framework is designed to be applied to various purposes in the health field by adding applications tailored to local needs on top of the CHT framework. The collected data can be output in a form compatible with the HMIS being operated by the Nepalese government, and there are plans to link the two in the future.

Currently, the main activity in Nepal is the provision of a smartphone application developed based on CHT as part of the "Community Health Nursing Program" piloted by MoHP in 2021 for the purpose of human resource development of community health workers. The application guides them through the protocols and workflows required for tasks such as screening, and input and send data to CHT server.

Medic's ultimate goal is to develop a CHT-based model in Nepal that can operate independently without Medic's support. And for that purpose, it has launched a project called the "CHT Academy", which is working to build an ecosystem involving universities and industry.

#### <u>Amakomaya</u>

Amakomaya is a private software development company established 8 years ago in Nepal, but in reality, it is more like a non-profit organization that provides various free services for maternal and child health. They have developed systems such as IMU, a statistical system for Covid-19, a QR code issuing function for vaccination certificates, and Nepali localization of DHIS2.

The main activity of Amakomaya is the development of a smartphone application for prenatal and postnatal care of mothers and children, which is provided to mothers, FCHVs, and medical facilities. Data entry is

done at FCHV and medical facilities, but mothers can also refer to the content of the data. The application also allows mothers to learn about safe prenatal and postnatal care through video and text. The application is specifically designed to work offline, so that videos and texts can be downloaded with WIFI access and can be watched in an offline environment.

The service also offers a free phone consultation service for mothers, which can be accessed with a single click from the smartphone application. The service desk is located in Amakomaya's office in Kathmandu and receives about 50 calls a day at the most.

# 9. Priority Issues in the Health Sector in Nepal

## (1) Maternal and Child Health (MCH)

1) Lack of a continuum of care

Consistent care from pregnancy to the postpartum period is necessary to prevent maternal deaths. However, compared to the ANC consultation and facility delivery rates, which have been improving in recent years, the PNC consultation rate remains low nationwide, presenting a challenge for the continuum of care (CoC). CoC in MCH is a concept that considers the entire life cycle of a mother and child, including pregnancy, childbirth and child rearing, and provides the necessary health care and service packages seamlessly through collaboration between families, communities and health facilities. The international community has identified CoC as an important concept for reducing maternal and child mortality and is promoting its use.

Reasons for inadequate provision of CoC for mothers and children in Nepal include low awareness of the importance of PNC among pregnant women and their families, physical and financial difficulties in accessing health facilities, cultural practices that discourage contact with people after childbirth, and lack of financial incentives for PNC that exist for ANC and institutional delivery. The importance of PNC needs to be communicated at ANC and mothers' meetings, but in many cases, this is not done adequately. In addition, while maternal health information is recorded on the MNCH card, information about the child is recorded on a different form, the Child card. As a result, there are few opportunities to use the MNCH card after childbirth, and it is difficult for health workers to highlight missed PNC examinations.

Inadequate distribution of roles between facilities at different levels is another major challenge. In maternal and newborn care, as with general healthcare services, it is expected that pregnant women will first go to the nearest facility for ANC/PNC and delivery services and then they are referred to a higher-level healthcare facility if necessary. However, women often go directly to higher-level medical facilities because many BC or BEONC facilities do not have adequate staffing, and the quality of explanations and counselling for expectant mothers is poor. As a result, higher-level facilities are always crowded, fail to provide a safe and comfortable environment and quality services during hospitalization and force mothers to leave the hospital too early. These situations could be barriers to timely and quality PNC provision.

Since high-quality CoC is important in preventing maternal deaths and neonatal deaths, improving the uptake rate of maternal care, especially PNC, is an urgent need. Furthermore, it is known that health issues such as maternal malnutrition directly affect the health status of children and that exposure to health-beneficial or adverse events during childhood can have long-term effects on later health. In Nepal, where the number of NCDs is increasing and the population is showing signs of aging, it is essential to promote health and prevent disease with consideration of the life course. Continuous health service provision for a wide range of ages, genders, and demographics, including mothers and children, is required.

2) Poor quality of health care services and low capacity of health care personnel

Although the number of users of ANC and institutional deliveries is increasing, insufficient benefits have been indicated due to the low quality of these services. One of the factors contributing to the poor quality of services is the low capacity of the personnel assigned to each facility. Although SBAs have been actively trained to expand births attended by SBAs, some studies have reported no significant difference in practice between trained and untrained SBAs. There is particular concern about the lack of capacity at lower-level facilities, with low rates of service delivery in following protocols at the health post level. One reason for the poor quality of services and low adherence to protocols at lower-level facilities could be the lack of proper supervision that should be in place after the trainings. In addition, the lack of adequate supportive supervision, such as on-site coaching and mentoring, from upper-level facilities is also likely to hinder the improvement of service quality at lower-level facilities. While the government plans to separate the roles of SBAs (ANMs) and SPHs (doctors and nurses, midwives) to improve service quality, regular monitoring and technical assistance to facilities and staff providing on-site MCH care services is still considered necessary.

## (2) NCDs

1) Current status, issues, etc. related to prevention, medical services, etc. in common with NCDs.

## The general public and/or patient side

NCDs impose a high burden of disease, particularly in low-income and low- and middle-income countries, where NCDs are responsible for three-quarters of all deaths and 82% of all early deaths in these countries <sup>lxix</sup>. It is suggested that the poor may be more vulnerable to NCDs for many reasons, including material deprivation, psychosocial stress, higher levels of risk behaviour, unhealthy living conditions, limited access to high-quality health care and reduced opportunity to prevent complications <sup>lxx</sup>.

Although Nepal was upgraded to a lower middle-income country in July 2020 when its gross national income (GNI) per capita reached USD 1,090, the survey team confirmed through its field activities that there is still a certain proportion of residents who are vulnerable to NCDs, particularly in rural areas, where the proportion of people living in poverty is also high. Specifically, for instance, when diabetes is first identified, the treatment usually starts with diet and exercise, and only when the condition is still uncontrolled is drug therapy indicated. However, interviews at health facilities in rural areas have shown that residents who are economically unable to afford a balanced diet tend to consume inexpensive, high-calorie diets, and that there is a certain number of residents in some areas who can only eat one meal per day. This not only makes primary prevention of NCDs (preventive actions such as improving lifestyle to prevent illness) difficult, but also has a significant negative impact on secondary prevention (actions to prevent serious illness including early detection and treatment).

On the other hand, NCDs and their risk factors often have few subjective symptoms in the early stages of the disease and do not lead to early detection unless active screening is carried out. In Nepal, although basic health care is free, the cost of transportation to the hospital is at the patient's expense, and this often does not lead to early consultation when subjective symptoms are mild. In addition, in cases such as NCDs, which require continuous hospital visits, there is often a financial burden and the patient has to take time off work to go to hospital, so there are a number of cases where regular visits are not made, or treatment is suspended by their own judgement. In addition, diabetes can cause thirst, polyuria, rapid weight loss, general fatigue and other subjective symptoms only when a certain level of hyperglycaemia is reached. The subjective symptoms of hypertension, such as headache and dizziness, also occur after a certain level of blood pressure has been reached. Although patients seek medical care while these subjective symptoms are present, they often disappear once the condition has been treated with medication, etc., and there are many cases of patients discontinuing treatment themselves as the subjective symptoms disappear.

Although awareness of NCDs and their risk factors is increasing owing to the NHEICC's efforts to raise awareness of NCD prevention, there are still many people who, because of their social and cultural backgrounds, rely on traditional medicines that are not evidence-based and/or who have a certain level of knowledge about prevention and treatment but do not change their behaviour in terms of eating, drinking, smoking and physical activity habits, etc. Interviews with health professionals in this survey also showed that patients tend to prefer drug therapy, which is easier to implement, to painful dietary restrictions. Taking diabetes as an example, drug therapy without appropriate dietary management often leads to weight gain, which in turn contributes to insulin resistance, making diabetes harder to control. In addition, interviews conducted during the survey revealed that residents, especially those in low-income areas, have less access to information about NCD prevention measures than the general population and often have less knowledge about NCD prevention measures naturally.

## The health facilities' side

In Nepal, the MoHP policy is to promote Nepal PEN as a key pillar of NCDs prevention and control, and the DoHS annual report states that it was "*introduced*" in all 77 districts in the last fiscal year. However, when the survey team confirmed the specific status of "*introduced*" with the DoHS, they stated that "*at least one person from each district has received training on Nepal PEN-based NCDs prevention and control*", which is considered "*introduced*". However, they had no information on whether those who had received training had actually implemented Nepal PEN-based NCDs prevention and control and screening. The DoHS representative also explained that the training coverage of health professionals engaged in NCDs prevention and control is estimated to be around 25% based on the number of participants and 50% based on the number of facilities. At the time of this survey, information from the NHTC indicated that there were 364 participants in the ToT participants related to Nepal PEN provided to district-level health professionals

and 1,035 participants in the training for general health professionals. It is not possible to determine the exact coverage as the population of targeted health professionals is not known, nor is it possible to determine the extent to which ToT-trained trainers actually provide training in their own districts. During the fieldwork for the second survey, the survey team confirmed that in many of the facilities visited, the health professionals in charge had not received any training, or in many cases had received training but had not yet been able to implement it. In Koshi province, for example, Nepal PEN has so far been introduced in the provincial hospitals, and the intention is to gradually introduce it in earnest in health facilities at the district level. Although Nepal PEN-based NCD prevention and control are gradually being introduced, the team also observed that all health facilities visited in the survey provide NCD care and screening as part of their regular services.

Appropriate patient education is also necessary for the prevention and treatment of diabetes, hypertension and other CVDs. Although some doctors start their services early in the morning to secure time for consultations with patients, many provide only a brief explanation of the disease and its treatment, which limits the opportunity for adequate patient education as the number of patients increases in higher-level hospitals. In Japan, patient education is also not always provided in the context of daily clinical practice, hence a variety of educational opportunities are provided, including patient education videos in waiting rooms, diabetes classes, health counselling by nurses (public health nurses), and self-management guidance such as the use of blood pressure and diabetes handbooks. In Nepal, such initiatives could be localised to suit the local health settings.

In view of the above, screening activities using tests that can be measured with relatively simple medical equipment, such as BMI, blood pressure, blood glucose, HbA1c, serum lipids and respiratory function, should be disseminated more widely, and interventions for early detection of abnormalities and lifestyle improvement should be carried out. Inadequate information provided by health professionals also has a negative impact on patients' continuity of care and/or adherence to treatment, therefore it is important to implement preventive awareness and patient education in conjunction with screening for early detection, taking into account the local settings.

2) Current status and issues for each disease, etc.

## **Diabetes Mellitus**

At present, information and education about diabetes is mainly provided by doctors to patients, with few opportunities for education by nurses, pharmacists, nutritionists and other medical staff to patients, combined with insufficient manpower and training of health professionals. As no cases of effective preventive education, such as diabetes classes in hospitals, were observed in the hospital facilities during the field survey, there seems to be a need to establish more education mechanisms to optimise diabetes care

and improve adherence.

Diet, on the other hand, is the first-line treatment for diabetes. However, as noted above, the socioeconomic situation in some regions and for some groups of residents often makes general nutrition (e.g. frequency, balance and quantity of meals) difficult for economic reasons. However, as these populations are the most vulnerable to diabetes and other NCDs, there is a strong need to consider diet and other treatments that can be applied in the context of such situations.

In addition, pharmacists at pharmacies play an important role in the treatment of diabetes, but their expertise is not well recognized by the public and their awareness is also low lxxi, so the number of cases in which they provide information is limited. In the future, pharmacists also need to be encouraged to fulfill their professional roles. In general, the absolute number of educators on diabetes is insufficient, so it is necessary to create a system to provide information not only by physicians but also by co-medicals, including nurses, pharmacists, and nutritionists.

## Cardiovascular disease (CVDs)

Although detailed factual data on hypertension, a risk factor for CVDs, are scarce for Nepal as a whole, the number of unscreened patients is estimated to be 34.1% in 2022 according to the literature <sup>lxxii</sup> and treatment adherence is also a challenge. As with diabetes, it is important to raise awareness of the disease and to implement appropriate interventions for people who need exercise, diet and medical treatment, as the field survey found that many cases of mild hypertension go undetected and treatment continuity is not maintained. National targets are from the "*Multisectoral Action Plan for the Prevention and Control of Non Communicable Diseases (2014-2020)*" to reduce hypertension by 25% and salt intake by 30% by 2025 In 2016, a WHO <sup>96</sup> technical package was introduced to intervene at the primary health care level in cardiovascular diseases, with some success. However, access to hypertension diagnosis and treatment services is less accessible and needs to be improved for poor and rural patients and those under 30 years of age, who tend to be less aware of their health status. <sup>lxxiii</sup>

#### Chronic obstructive pulmonary disease (COPD)

Nepal has more than 3,000 DALYs per 100,000 people due to COPD, which is still the highest disease burden in 2019 and one of the worst in the world<sup>1xxiv</sup>. Since COPD symptoms are irreversible once they have progressed, it is important to encourage people to quit smoking before the disease becomes severe, to regulate emissions from motorcycles and automobiles to improve air quality, and to use clean heat sources indoors that do not produce harmful combustion products. In addition, screening of respiratory function tests using spirometers is not yet common. Particularly in the hospitals visited during the second survey in

<sup>&</sup>lt;sup>96</sup> The "*HEARTS technical package for cardiovascular disease management in primary health care*" provides a set of effective, practical interventions for strengthening the management of risk factors for CVDs in primary health care.

Koshi, Bagmati and Madhesh provinces, the availability of spirometry, even in provincial hospitals, was limited (only in one secondary hospital and not in primary care facilities) and many were diagnosed symptomatically. The results confirm that diagnosis is often symptomatic. This is particularly the case in chronic lung diseases where hypoxia progresses gradually and patients develop tolerance to hypoxia, often presenting with significant subjective symptoms only when the disease is more advanced; therefore, screening should be conducted in adults of appropriate age (about 40 years) in a wide area to promote early detection of COPD, an irreversible disease, in order to avoid increasing the burden of medical costs.

## Malignant neoplasms (cancer)

The prevalence of cancer has increased over the years and is expected to continue to do so in the future due to the increase in life expectancy. In addition, a higher proportion of site-specific cancers in women, namely cervical, breast, and ovarian cancers, are more prevalent between the ages of 45 and 64, suggesting that they are affected by cancer at a younger age than men. The effectiveness of early detection through screening, particularly for cervical and breast cancers, has been confirmed, and the WHO PEN also provides procedures for early diagnosis of these cancers. However, none of the facilities visited during the field survey had implemented screening for cervical and breast cancer in accordance with the Nepal PEN. Although triple evaluation with mammography / ultrasound and biopsy in addition to clinical evaluation is recommended for screening for breast cancer in Nepal, no national-wide screening program for breast cancer has been implemented. In addition, none of the health facilities in the 3 provinces visited in this survey were equipped with mammography. Given this situation, the introduction of mammographyequipped breast screening vehicles, which can also carry out cervical screening, could make a significant contribution to improving screening coverage in rural areas. On the other hand, screening vehicles are expected to play an active role in Nepal, as they enable mobile screening, but there are many areas that are physically difficult to access, such as mountainous areas where large vehicles cannot enter and there are many areas with poor road conditions, suggesting the need to consider the effects of vibration on the sophisticated medical equipment mounted.

Meanwhile, the incidence of lung cancer in which smoking is a major factor, and oral cancer in which chewing tobacco is a major cause, is high particularly in men, and further promotion of tobacco regulation is needed. In a primary hospital visited during the field survey, some health professionals pointed out that the surrounding area is characterised by high levels of alcohol consumption, which often progresses from cirrhosis to liver cancer. Although data on specific prevalence rates could not be obtained, there is a need to promote awareness-raising activities on risk factors such as alcohol consumption and smoking. However, as mentioned above, even if residents have a certain level of knowledge, this often does not lead to action, and it is therefore necessary to consider sustainable support approaches such as community mobilisation and health promotion combined with health education through awareness-raising, etc.

## (3) Health and Welfare for Elderly People

There is an absolute shortage of geriatric specialist (doctors) and geriatric nursing specialists (nurses). These specialists provide services for elderly people from the aspect of "*medical care*", but in order to cope with a further increase in the population of elderly people in future, it would be desirable to introduce professional "*Kaigo*" skills in Nepal, which is a concept not of usual nursing care but of the support in maintaining and restoring their residual functions and independence before the situation becomes more serious. However, services are often perceived as services "*for a price*" <sup>97</sup>, especially in the case of feebased services, in many developing countries; thus, this is a barrier to the introduction of "*Kaigo*" services.

Meanwhile, the MoHP and the DoHS are highly aware of the need to address the rapidly ageing population in Nepal and have launched the "*Geriatric Health Service Strategy 2021-2030*" in 2022. Based on this, the MoHP began to work on the following priority items: strengthening the social security system, improving the social environment, developing medical human resources for the care of the elderly, improving access to medical services, and promoting public-private partnerships. In particular, the MoHP has just launched initiatives to introduce geriatric beds in hospitals with more than 100 beds and to train core staff in geriatric medicine and nursing. With regard to geriatric beds, it was noted that even in hospitals that have secured "geriatric beds", as mentioned in Chapter 6, the situation is that medical services are provided according to the diseases and the geriatric approach is not yet applied. However, at present there are no development partner organisations actively supporting this area and there is a strong demand for support from partners with excellent skills and experience in order to actually promote the strategy.

In interviews with the officials of the MoHP and DoHS, they showed great interest in the technology and experience of Japan, in particular, as an advanced country in the field of elderly people's services and were also interested in the concept and technology of "*Kaigo*" as a new resource for elderly people's services, on top of the development of medical human resources. In particular, with regard to "*Kaigo*", Japan has already been accepting "*Kaigo*" technical trainees and those who have specific "*Kaigo*" skills from Nepal; therefore, it is deemed that they already have some human resources with expertise and knowledge in "*Kaigo*" in Nepal. In order to maximise the effects of the introduction of concept of "*Kaigo*" for elderly people, it would be effective to develop a system as an administrative service and to collaborate with other sectors, etc. Moreover, the know-how of Japan's "community-based comprehensive care system" is also considered to contribute to the practical implementation of the above strategy, and the timing of these kind of support is deemed to also be optimal.

<sup>&</sup>lt;sup>97</sup> https://jiyuland5.com/タイで初の日本的有料老人ホーム/ (in Japanese)

## (4) Supply and management of pharmaceuticals and medical equipment

As mentioned above, the supply of essential and other medicines, as well as focused medicines directly managed by the State, is managed by logistics centres. Supply routes are managed by e-LMIS and the flow is via the federal logistics centres, provincial logistics centres, health offices and warehouses managed by the Municipal Medical Stores, but the process of ordering medicines is still complicated and there is no information management on how many medicines are needed in which areas and how urgent they are. The supply of medicines at the right time is not possible due to a lack of information management on how many medicines are needed is. As a result, ordered medicines sometimes do not arrive for months, and even when they do, the number of medicines ordered is often less than the number ordered.

Several pharmacies were identified where medicines were not properly managed. No specific issues were identified in relation to supply or disposal logistics, but it was suggested that there may be significant issues with proper management within pharmacies (e.g., hygiene, stock control, temperature control). In some of the hospitals visited, drugs were not kept in the dispensing cabinets and were spread out cumbersomely on the floor, or if the dispensing cabinets were used, different drugs were mixed in each cabinet. This can lead to dispensing errors where different medicines are given by mistake, which can cause serious health risks to patients.

## (5) Medical Rehabilitation

Appropriate rehabilitation is required to restore and maintain patient function after cerebrovascular disease, cardiac disease and accidents, but rehabilitation in Nepal lags far behind other countries and is a pressing issue. The government intends to strengthen medical rehabilitation in the future, but this has only just begun to be considered and remains a low priority. Currently, there are only two rehabilitation facilities, which means that the population is not receiving adequate rehabilitation. Another major challenge is the lack of know-how to train rehabilitation specialists in Nepal, although the two physiotherapists have both acquired their skills abroad. Currently, rehabilitation is provided in rehabilitation hospitals run by several NGOs and in limited spaces within hospitals, but due to the lack of numbers, there are cases where patients are discharged without receiving adequate rehabilitation. It was also commented that although there were a large number of motorbikes in the Kathmandu Basin, there was no requirement for rear seat passengers of two-seaters to wear helmets and this has led to many deaths due to head trauma and disabilities after accidents.

#### (6) Antimicrobial Resistance (AMR)

As already mentioned, AMR is a growing threat in Nepal. However, AMR needs to be tackled through a

"OneHealth Approach" in which the relevant sectors of humans, animals and the environment work together. Therefore, issues are also discussed in each sector.

1) Issues in the Health Sector

In the health sector, the main cause of developing AMR is the "*inappropriate use*" of antimicrobials in humans, as shown in Table 94.

Table 94 : Main Causes of the Emergence of AMR in Health Sector: Inappropriate Use of Antimicrobials.

The Health Professionals side	The User (patients, general population, etc.) side		
Empiric Therapy	Discontinuation of medication due to self-determination		
Unnecessary prophylactic administration	Self-determined (non-prescription based) use of antimicrobials		

## The Health Professionals side

Although it is advisable to carry out tests on patients with suspected infections such as fever for determining the existence of infection as well as the causative pathogens (viruses, bacteria, fungi, etc.), testing services are often not available in Nepal, especially in rural areas and primary health facilities, forcing doctors to do empirical treatment. In principle, antimicrobials are only effective against bacteria, and common colds are usually caused by viruses; however, antimicrobials are often given either as treatment or as prophylaxis against secondary infections. In a Knowledge-Attitude-Practice (KAP) survey of healthcare professionals and patients on AMR in Nepal reported in 2021, 76 out of 87 (87%) healthcare professionals (majority doctors) reported that antimicrobial abuse was a growing challenge in Nepal, and 80 out of 87 (92%) reported that the use of broad-spectrum antimicrobials was contributing to the worsening of the AMR situation. This may be due to the fact that it is inevitable to do empiric therapy in situations where laboratory services are not available.

## The patient or the general population side

One of the most important factors in the emergence of AMR is patients' self-interruption of antimicrobials. In the aforementioned KAP survey, 150 out of 324 patients (46%) reported self-interrupting their medication once their symptoms had relieved. Furthermore, 58 out of 324 patients (18%) reported using antimicrobials without a prescription. Other survey results also revealed that patients and the general population did not have proper knowledge about antimicrobials and the treatment of infections, revealing that self-interruption and self-treatment contribute significantly to the emergence of AMR.

## **Others**

As mentioned above, 18% of patients responded that they self-medicate with antimicrobials, sometimes using leftover medicines from previous treatment; however, another major issue is the fact that antimicrobials can be purchased from pharmacies without a prescription. Although the Drug Act Section 17 stipulates that the purchase of medicines must be by prescription (there are no specific penalties), the first

field survey also confirmed that it was possible to purchase medicines without a prescription in practice.

2) Issues in the Animal Sector

Antimicrobials have been used in livestock production worldwide for decades, not only for the prevention (inappropriate treatment) and treatment of human infections, but also because they promote animal growth when only small doses are added to feed. It is known that the amount of antimicrobials used in the world is significantly higher in the livestock sector than that in the treatment of human infectious diseases <sup>lxxv</sup>. In Nepal, it is reported that between 2002 and 2012, the total amount used doubled (from about 16 to 32 tons) <sup>lxxvi</sup>. The same report also showed that although antimicrobials are normally not used for a certain period of time before being shipped to the market, the report examining food products in Nepal showed that antimicrobial residues were detected in many meat and dairy products, of which a certain amount were resistant bacteria (Table 95).

Antimicrobial agent	Sample	Resistance (%)
Tetracycline	Chicken $(n = 50)$	10
Penicillin	Milk ( <i>n</i> = 98)	13.2
Penicillin	Chicken $(n = 80)$	40
Sulphonamides, penicillin Qualitative (meaning)	Milk ( <i>n</i> = 140)	23
Sulphonamides, penicillin	Milk ( <i>n</i> = 150)	17.3
Sulphonamides	Chicken $(n = 25)$	96
Sulphonamides	Milk (n = 50)	20

Table 95 : Resistance Status of Bacteria Isolated from Foods and Dairy Products

#### 3) Issues in the Environmental Sector

The disposal of medical waste is often an issue in health-care facilities in Nepal. Small amounts of antimicrobials (and its residues) in improperly disposed medical waste and patient excreta can leak into the environment, as can livestock feed and excreta, which are returned to humans and animals through drinking water and foodstuffs such as vegetables. However, it is also a problem that the environmental sector is often slow to respond, not only in Nepal but also in general.

(7) ICT

1) Lack of digital equipment in health facilities

Although the central government has introduced a web based HMIS (DHIS2) and is ready to send monthly data directly from PCs at health facilities nationwide via a web browser, currently only about 3,300 health facilities out of about 9,000 in the country, both public and private, are able to send data directly to the HMIS. Other health facilities send paper-based data to local governments, which then enter the data on their behalf. In some cases, the reason for not being able to transmit data directly is the communication environment, such as the Internet, but in many cases, it is because they do not have digital equipment such

as PC in the first place. Currently, it is considered that about 4,000 medical facilities in Nepal do not own PC. To increase the reliability of data, the government aims to enable direct data transmission from all health facilities nationwide. In addition to the HMIS, as the government has various plans to utilize ICT at health facilities in the future, it is concerned that the availability of digital equipment would enlarge the gap in the quality of medical services.

## 2) Inefficient ICT management in health facilities

The current state of ICT utilization in health facilities shows that in many hospitals, patient registration, medical record information, accounting, and reporting to HMIS are either not linked through separate systems or are done only on a paper base without digitalization. As a result, there are concerns about the burden on administrative departments, resulting delays in patient care, lack of information sharing, and input errors due to human error. There are also concerns that this prevents the government's plans to promote the use of EMR, and inter-operativity with HMIS and other governmental information systems.

Most of these systems currently introduced are from the same private companies, but they are uniformly out of date and therefore limited in functionality. The latest versions of the company's products are more multifunctional and integrate the various packages necessary for health facility management. It is also expected that additional functions will be added more and more in the future, such as implementation of EMR in a government standardized format and inter-operativity with governmental information systems such as HMIS. Some people say that the reason for the lack of upgrade is due to a shortage of human resources and frequent personnel shifting, but many on the frontline hospital staffs are eager to renew their ICT facilities. In the case of Bir Hospital, a tertiary hospital in Kathmandu City, an ICT promotion committee consists of six staffs, including doctors and nurses, has been established, and it is told that they would like to proceed with the renewal of the ICT system as soon as a budget is secured. On the other hand, according to the interview with the DoHS, the government side is aware that the ICT system in the hospital is old and needs to be renewed, but they are still in the process of analysing the cyber security risks associated with the shift to cloud computing for data management, which is the mainstream in these days, and budget consideration will come later.

In the meeting with the GIZ, the pilot introduction of Bahmni, an open-source integrated hospital management system, at a hospital in Nuwakot District, Bagmati, was considered a great success, but they consider it is difficult to deploy Bahmni at other hospitals due to competition with products from private companies and so currently they don't have such plan.

## (8) Health Human Resource Development

1) Shortage in the number of medical personnel

Issues related to staffing shortages were identified during the interviews at the primary hospitals. Where the number of doctors stipulated in the MSS is four, the number of doctors authorised on a regular basis is only one. A situation was identified where the staffing shortfall is being met by employing doctors on a contract basis through the MSS promotion budget and financial support from local authorities.

2) Quality of healthcare human resources and gaps in accessibility to the training opportunity.

In Nepal, the MSS, introduced in health facilities under the initiative of the MoHP, defines the functions of hospitals at each level and the level of doctors who should be associated with them, but the shortage of medical personnel is also seen in terms of quality. The NHTC runs training courses for healthcare personnel in the country to enable them to improve their knowledge and skills, but the number of healthcare personnel who have actually received targeted training is extremely low in relation to the overall healthcare workforce, at approximately 90 000 over 28 years, and the environment is not conducive to accessing appropriate training opportunities. There are also various disparities in access to training at different hospital levels, in different regions and in different professions.

3) Disparities in access to training by hospital level and by region

According to the interviews, the need for general human resource development in tertiary hospitals is limited, as each hospital is fully engaged in this area. On the other hand, there is a need for medical staff upgrading in relation to new medical technologies and advanced medical care, as well as in relation to equipment maintenance. Healthcare professionals working in primary hospitals have limited training opportunities compared to those working in tertiary hospitals, and there were calls for training by development partners and others. In a hearing at the Bagmati Provincial Department of Health, some pointed out the lack of training opportunities for health professionals in rural areas compared to those in urban areas. Most of the training for Nepalese healthcare professionals is conducted offline, with transport costs paid for when participants are invited from rural areas. Both the capacity of the training venue and the programme content itself and the budget that can be provided for transport costs make it difficult to widely disseminate the training to local healthcare professionals offline only.

## 4) Disparities in access to training, depending on job types

Disparities were also observed in terms of the types of jobs available for training. As shown in Table 96, the training developed by the NHTC targets a wide range of healthcare professionals, but due to capacity issues, it is not possible to offer training opportunities to everyone. As a result, ANWs, AHWs and nurses are the main target audience for the course, with pharmacists, radiologists and laboratory technicians having

only limited training opportunities. This is recognised as a challenge by the NTHC. They responded that if possible, they would like to promote training for those healthcare professionals who are not currently able to do so.

		1 2		00,	
	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
ANM	1864	2545	1814	1612	2041
AHW	972	870	627	680	1051
Staff Nurse	614	725	740	598	1129
Medical Officer	600	646	580	475	678
НА	463	792	516	629	686
Physiotherapist	20	3	8	0	0
Radiographer	7	8	0	0	7
Pharmacist	6	5	6	0	9
Med. Lab Technician	6	9	6	10	3

Table 96 : Trends in the Number of Participants by Profession in Training organised by the NHTC

#### 5) Less use of ICT technology for training

Most training for healthcare professionals in Nepal is conducted offline (face to face), and no mechanism exists to upskill many healthcare professionals due to the location of training delivery institutions and limited resources. Under the Covid-19 infection expansion, some live-streamed training was conducted on ZOOM, but this was only through the use of a conferencing system to stream live lectures. There is no culture of using a Learning Management System (LMS) or video lectures designed to improve skills. Those responsible for the NHTC recognise the importance of combining offline and online training operations, but the challenge is that current know-how does not go that far in terms of resources.

6) Lack of mechanisms to monitor and coach healthcare professionals from a technical perspective.

As previously mentioned, there are mechanisms in place to regularly monitor in terms of 'service delivery' through MSS and annual reports. However, most of the health facilities visited during the field survey, other than some tertiary hospitals, did not provide technical guidance or monitoring to subordinate health facilities, regardless of job type, and similarly, the subordinate health facilities indicated that they did not receive such support from the superior health facilities. It is difficult to assess the health services provided at each level of health posts themselves in this study. However, one health post visited in this study identified cases of treatment that differed from standard procedures. Specifically, as mentioned above, patients with hyperglycaemia are first treated with diet and exercise, and only if they are still poorly controlled is drug therapy applied. However, the Health Post responded that 'if blood glucose levels are even slightly above normal, pharmacotherapy should be started immediately'. This entails the risk of developing hypoglycaemia in some cases, which could lead to medical accidents. Although the Health Post is not staffed by a doctor and is therefore prescribed by senior-level AHWs, it is presumed that a certain number of such risk cases exist. This lack of communication and mechanisms between healthcare organisations to monitor and provide

technical guidance from a technical perspective, even though there is monitoring from a 'service delivery' perspective, is considered to be a strong indication that this is also important for ensuring the quality of healthcare. Furthermore, internal monitoring and follow-up to ensure that the knowledge and skills acquired through various training opportunities are applied in practice is being conducted by the PHTC and others under the leadership of the Family Welfare Division. Specifically, monitoring and follow-up is carried out by teams of trainers, CTSs and on-site coaches who visit facilities, but the implementation of this monitoring and follow-up has been observed to be limited due to issues such as lack of human resources.

In view of the above, it is important to utilise ICT to correct the above-mentioned disparities in training opportunities, but at the same time, mechanisms to ensure that the acquired knowledge and skills are appropriately applied to the work and the quality of the work, such as technical monitoring and supportive supervisory guidance from higher-level medical institutions to lower-level medical facilities and the implementation of facility-based The establishment of an internal monitoring system at the facility level, for example, is considered highly necessary.

- (9) Request from the Tribhuvan University.
  - 1) Tribhuvan University Teaching Hospital

From the 1980s to the early 1990s, JICA provided support to Tribhuvan University through technical cooperation to support its establishment, strengthen basic medicine and improve clinical functions, grant aid for various facility construction projects, and the dispatch of cooperation teams. As of 2022, Tribhuvan University and its affiliated hospitals have 1,400 students, approximately 2,200-2,400 outpatients per day, 850 beds and 2,256 staff. Tribhuvan University Teaching Hospital is currently preparing a master plan to improve the functioning of the Teaching University Hospital in order to provide advanced medical education and services that meet the current needs, which includes the relocation of the tertiary functions of the buildings on the site in Kathmandu city to a new location in Kirtipur in the suburbs, and the establishment of a new hospital in Kathmandu. With JICA's long-standing support, Tribhuvan University requested JICA's assistance in implementing the above master plan at the time this study was being conducted.

2) Reasons for the request, current situation

Tribhuvan University and its affiliated hospitals currently have a large number of students and outpatients/inpatients, but have undergone multiple expansions since their establishment, and the cumbersome arrangement of outpatient and inpatient facilities, teaching buildings, doctor and staff living spaces and parking areas on the current site , has This hinders the efficient implementation of hospital operations (Figure 48). In addition, the facilities are too small to accommodate the number of patients who come to the hospital, and patients who could have been admitted are turned down, with an average of 200-

250 outpatients and 25 patients per day not being admitted on average. Staffing is sufficient in terms of both number and quality, and the lack of facilities is a challenge, so support needs outside of the master plan are not a priority.

3) Master plan contents.

Currently, outpatient care, inpatient facilities, educational buildings and residential spaces are arranged in a cumbersome and intricate manner on the site. These are grouped together by area, and tertiary (advanced medical specialities) functions are moved to a new annex to be built in Kiltipur. The master plan consists of three phases: in the first phase, an inpatient ward, an administration building and a building to house medical staff will be constructed to eliminate the complex layout. In the second phase, an outpatient ward will be constructed, and in the third phase, a maternity ward will be constructed, and tertiary (advanced medical specialities) functions will be moved to a new annex in Kiltipur, a 20-minute drive away. The current location will be used as a medical facility specialising in primary and secondary functions and for education. (Figure 49,Figure 50)



Figure 48 : Current Tribhuvan University and affiliated hospitals, building layout.



Service area / Waste treatment Hospital zone Proposed new Block-2 Academic zone -1 (Existing Nursing Campus)

> Hospital zone Existing TUTH blocks

> BP eye Hospital Blocks

Central Plaza Space

Manmohan Cardiovascular Hospital Blocks

> Academic zone -2 (Maharajgunj Medical Campus)

Hospital zone Proposed new Block-1

Administrative / Clinical zone Proposed new Block



Figure 49 : Master plan (main building)



Figure 50 : Master plan (annex: advanced medical care)

#### (10) Health Administration and Finances

1) Health Sector Budget, Planning, and Decision-Making Mechanisms

The health sector budget has been increasing both in terms of the ratio to GDP and to the government budget. With the introduction of federalism, the budget for the implementation of health services at the provincial and local levels was confirmed to be increasing with the initiation of direct financial transfers from the federal government to the provincial and local governments (equalization grants) as well as financial transfers from the MoHP to the ministries/departments in charge of health in provincial and local governments (conditional grants). However, the use of the equalization grant is not specific to the health sector, and the percentage allocated to health varies from place to place; the MoHP cannot direct provincial and local governments to increase their health sector budgets.

On the other hand, the costs of major provincial and local health programs are financially transferred from the MoHP budget to provincial and local governments, but the proportion is less than 35% of the overall MoHP budget, and the MoHP still holds a large share of the budget. One reason for this is the lack of human resources in both local health administration and health care workers. The fact that the MoHP is responsible for planning major programs in the health sector is an indication of this. The major national goals of establishing primary hospitals in all municipalities and community-level health facilities in all wards are also expected to take considerable time.

With the transition to federalism, the implementation of health services has only just begun, and although the implementation system and health facilities in rural areas will gradually be put in place, support related to strengthening the system in this area will continue to be needed.

#### 2) Improvement of Out-of-pocket rate

Government spending on health expenditure in Nepal has been increasing with economic growth, but the OOP rate has remained high at around 50%. With the transition to a federal system, the budget is allocated directly from the Federal Ministry of Finance to provincial and local governments, and transfers from the MoHP are also increasing. On the other hand, the budget execution rate is high for institutions such as health care facilities, HIBs, and medical universities, where the details of expenditures are clear and the necessary expenses must be spent accurately, but the execution rate for other institutions remains at around 60%. If the low rate of execution in the health sector continues, it could lead to budget cuts. It is necessary to review the strategic allocation of resources and results-based budget allocation, including financial transfers from the federal government to provincial and local governments.

In addition, some provincial governments have developed their own health plans, leaving budget planning and its execution to the discretion of their respective provinces. There is a need to improve the

health planning capacity of province and local governments and to initiate effective planning, execution and improvement of operations, and monitoring and evaluation capacity.

#### 3) Establish a fair health security system

As a means of achieving UHC, the Health Insurance scheme has been introduced and operated by HIB since 2017. Nepal has a separate employee social security system, and the Health Insurance system is primarily intended to cover the poor and elderly. In order to encourage the poor to take up insurance coverage, the entire household, rather than the individual, is covered by the insurance, with 100% premium subsidies, etc. n the other hand, the Constitution of Nepal (2015) guarantees that citizens receive BHS and it is available to all citizens. Although the Health Insurance covers health care services not covered by the BHS, the services are limited. Under these conditions, it is not easy to further increase enrolment; in our interviews with HIB, they indicated that they are considering increasing premiums and integrating with other social security programs. In this case, a fundamental review of the health security system is needed in cooperation not only with the MoHP but also with MoLESS, the Ministry of Women, Children and Senior Citizens, which are responsible for other health security systems, and the Ministry of Finance. In the review, the utmost care should be taken to ensure that no one is left behind in the social security system.

A draft strategy on health financing is currently being prepared in Nepal. If this strategy presents a clear strategy for achieving UHC, comprehensive support for achieving the strategy will be an important medium-term issue.

#### (11) Issues related to the reliability and utilization of medical statistical information

During the interviews at the health posts in the rural areas visited during the second round of the survey, it was confirmed that there were cases of gaps between the HMIS statistics and the actual figures. Specifically, the HMIS calculated the estimated population as 3,600 while the actual population of the area was 3,200, resulting in errors in the population figures, which are the basic premise for statistical analysis. As a result, the facility delivery rate measured by the facility is as high as 98%, while the rate in the HMIS is only 55%.

The DoHS also pointed out the need to provide training on how to operate HMIS to those in charge of medical facilities as an issue in operating HMIS. It was confirmed that almost all medical facilities that currently report (transmit) electronically to HMIS manually input numerical data for reporting. This suggests that there is a certain risk of human error, such as simple input errors, as well as cases where the person in charge has not received sufficient training on HMIS. Therefore, there is a significant issue as to how much the reliability of medical statistics based on such information sources can be ensured.

In addition to issues related to the reliability of medical statistics, challenges in understanding and interpreting the data were also recognized. In the health section of one of the semi-metropolitan city offices

we visited, various health-related statistical graphs were displayed on the wall, but one year's data showed an unnaturally sharp increase, so we asked questions regarding interpretation and analysis of the reasons for the increase, but did not receive accurate answers. Thus, while the willingness to use the data was observed, it is suggested that there is room for improvement in the ability to analyse and interpret the data.

# 10. Proposals of possible JICA's assistances based on the Prioritised Subjects Analysed.

Based on the subjects indicated in the Chapter 9, the following is a list of proposals of possible JICA's assistances (Table 97).

Table	97 ·	List	of Pro	posals	of Po	ssible	IICA'	s Assist	ances
raute	11.	LISU	01110	posais	0110	331010	JICA	2 2 2 2 2 2 2	ances

	Proposed Project Title	Scheme	Duration
1	Project to improve healthcare services including CoC for mothers and children	Technical Assistance (TA)	Short term
2	Project for provision of equipment to strengthen the continuum of care for mothers and children	Grant Aid	Short term
3	Project to improve community health through community-level health human resource development	ТА	Short term
4	Project to develop a model to supervise and support the practice of SPH/SBA	ТА	Short term
5	Project for strengthening of health facility-based early detection and treatment of NCDs	ТА	Short term
6	Project for provision of medical equipment, etc. for the early detection and treatment of NCDs	Grant Aid	Short term
7	project for the strengthening of community-based NCD prevention and control	TA	Short term
8	Project for strengthening of AMR Control Measures	ТА	Short term
0	Project to strengthen the supply chain for medicines, medical equipment and health	ТА	Medium to long term
9	products	Dispatch of JICA Expert	Short term
	Project for optimization of ICT information management	ТА	Short term
10		Grant Aid	Short term
		ТА	Medium to long term
11	Project for enhancing Medical Rehabilitation in Nepal	Grant Aid	Medium to long term
		Dispatch of JOCV	Short term
12	Project for strengthening ICT-based training for healthcare professionals	TA	Short term
12		Grant Aid	Short term
13	Project for the training of health professionals (doctors, nurses, "Kaigo-shi", etc.)	Dispatch of JICA Expert	Short term
	with expertise in geriatric medicine	ТА	Medium to long term
14	Project for the requests from the Tribhuvan University.	Grant Aid	Medium to long term
15	Project for Policy formulation for achieving UHC	Loan (Policy Loan)	Medium to long term

## (1) Improvement of healthcare services including CoC for mothers and children

1) Purpose and Need of the Project

Based on the results of this study, the survey team proposes to support the introduction and use of a Mother and Child Health (MCH) Handbook to strengthen the continuum of care for mothers and children. The project aims to increase access to prenatal and postnatal MCH care and improve the quality of MCH care services by developing a national version of the MCH Handbook and strengthening the capacity of health care providers to conduct health education activities, counsel pregnant women, and record and use maternal and child health information in health facilities. The goal is to increase access to antenatal and postnatal care and improve the quality of MCH services.

One of the priority issues of the MCH sector in Nepal is the lack of continuum of care, which is due to the fact that the importance of PNC is not sufficiently communicated to pregnant women and their families, the tool for recording maternal and child health information is switched, and the quality of maternal health education and counselling by health workers is considered an issue. One measure to address these issues is to strengthen the continuum of care through the MCH Handbook. The MCH Handbook is a tool that consistently records health information about the mother and child during pregnancy, childbirth, and the postpartum period, and also has an educational aspect that includes information about pregnancy, childbirth, and child development. By using these tools to continuously monitor the mother and child from prenatal to postpartum, provide timely advice from FCHVs and health providers, and effectively communicate useful health-related information to the woman and her family, the continuum of care for the mother and child can be strengthened.

JICA's experience in providing assistance in various countries has confirmed the benefits of using the MCH Handbook, including improved knowledge of the comprehensive continuum of care for pregnant and postpartum mothers, an increase in the percentage of mothers and children receiving the care they need, and improved performance of health workers in providing counselling and recording information. In Nepal, Koshi province has developed its own MCH Handbook and piloted it in some areas, and the MoHP has also shown strong interest in implementing the MCH Handbook. Support for improving maternal and child health through the use of the MCH Handbook is expected to be implemented with high ownership on the Nepalese side. Since development partners such as UNICEF, which has been actively supporting the MCH sector in Nepal, are also interested in the MCH Manual, efficient and effective support is possible through donor collaboration. In addition, JICA's "Global Agenda" identifies "Strengthening Quality Continuum Care for Mothers and Children, including the Use of Maternal and Child Health Handbooks" as a cluster to be given special priority. Nepal is included among the 23 target countries for cooperation for active project formation, and this proposal is also in line with JICA's Global Agenda.

## 2) Project summary

The project includes a) support for the formulation of a national standard version of the MCH Handbook and guidelines; b) support for the development of a training model for health workers on the use of the MCH Handbook and implementation of the training; and c) accumulation of knowledge on the impact of the MCH Handbook. Under a), the standard version of the MCH Handbook will be finalized based on trials in pilot areas, and guidelines for use by health workers and operational guidelines for health administrations will be developed. It will also be necessary to examine methods of implementation according to regional characteristics in order to apply the Handbook to different regions of Nepal, which is rich in diversity. In (b), training will be conducted to strengthen the capacity of FCHVs and health workers to conduct effective awareness raising, counselling, record keeping and record-based care using the MCH Handbook. This will include development of training materials, support for training implementation and post-training monitoring, and modelling of training packages. In (c), findings and lessons learned from practices in the project target areas will be collected for national dissemination. It should be compiled in a manner that can be used for decision making by central, provincial and local government health administrations.

3) Implementation structure

Since the most recent local information is needed to finalize the project details, a two-step method is suggested. The possible inputs are as follows.

- Nepal Staffing of counterparts (DoHS Family Welfare Division, MoH of Koshi Province DoHS MNH section), provision of offices and facilities necessary for project implementation, local costs for operation of activities
- Japan Dispatch of experts (maternal and child health, obstetric newborn care, maternal and child health handbook, training system, IEC total about 60 M/M), provision of equipment, local activity expenses
  - 4) Proposed schedule

Implementation is proposed for a period of five years, including the first and second phases, starting around 2024.

- Phase 1: Approximately one year from the start of the project will be a period of information gathering and coordination to finalize the details of the proposed project. The PDM will be finalized by collecting updated information on the MoHP's progress in developing the MCH Handbook, the health service providers to be covered by the project, consistency with existing health information systems, the status of health administrations at different levels, the possibility of digitization, and trends in support from development partners. The project will also collect and coordinate information for the selection of pilot areas.
- Phase 2: Activities based on the completed PDM will be implemented during the approximately four years following the first period. Those activities for which the necessary information is available to implement the activities will be started in the first period. Based on the assumption

that the MCH Handbook will be implemented in all provinces in the future, the activities should be implemented in close collaboration between the target provinces and the central level, and support should be provided for coordination with relevant agencies and the development of action plans for national rollout before the termination of the project.

#### 5) Proposed measures for the use of ICT for the efficient and effective implementation of the project

The form of the MCH Handbook could be paper or electronic. If an electronic MCH Handbook can be introduced, it will be possible to reduce the risk of defacement or loss of the handbook, to send information and reminders for medical examinations from the health facility side, and to facilitate the transfer of information to the destination. In addition, by adopting a data format compatible with HMIS, it is expected to reduce the amount of work required by medical staff to record data and minimize data entry errors. It is important to note that before implementation, it is necessary to carefully assess whether the conditions are in place for continued effectiveness and whether the introduction of the system will have a negative impact. If the conditions are not met, such as field staff having the IT skills to maintain and manage the electronic version of the MCH Handbook, the possibility of securing an ongoing budget, and the absence of problems such as leakage of personal information and the widening of the digital divide, the introduction of an electronic version may not be appropriate. If it is difficult to introduce an electronic version s.

#### (2) Provision of equipment to strengthen the continuum of care for mothers and children

The development of basic medical facilities, such as health posts, PHCC and primary hospitals, through grant aid in conjunction with the technical cooperation project described in (1) above is also expected to contribute to strengthening the continuum of care. During the field visits for this study, it was observed that the lack of an adequate number of beds and post-delivery rooms resulted in the premature discharge of postpartum mothers and the lack of PNC. Therefore, strengthening the facilities of basic-level health facilities would allow more postpartum mothers to spend a reasonable amount of time in health facilities and receive PNC. In addition, strengthening basic-level health facilities would be expected to alleviate some of the concentration of patients at higher-level health facilities. The provision of equipment would require that the target facilities be adequately staffed.

## (3) Improvement of community health through community-level health human resource development

1) Purpose and Need of the Project

One of the challenges in maternal and child health is the lack of adequate services at the community level. To address this situation, we propose to strengthen community health by developing human resources for health at the community level. Currently, a Community Health Nurse Program is being implemented in Nepal to improve the quality of basic health services, including MCH care, by placing community health nurses in each community and linking them to FCHVs. In terms of PNC, the Family Welfare Division is implementing a door-to-door service by nurses in 50 districts. By strengthening the capacity of these community health workers, the quality of MCH care can be improved by providing adequate information to pregnant and postpartum women, appropriate counselling based on health records, and timely PNC through door-to-door visits. Although the goal of this project is to improve maternal and child health, it is expected that such improvements in community health services will, in the long term, contribute to addressing community health issues beyond MCH, such as addressing NCDs and promoting health among adolescents and adults.

JICA has supported the strengthening of community health through community-level health facilities and health human resources in many countries. Based on its experience in contributing to improving the quality of maternal and newborn services and primary health care, JICA can effectively support the Nepalese government in strengthening community health human resources.

## 2) Project summary

The project includes: a) capacity building of community health workers, and b) strengthening of linkages between community health workers and health facilities. Under a), the project supports the implementation of capacity-building training for community nurses and FCHVs to conduct maternal and child health awareness-raising activities and information collection, and to provide appropriate MCH services; develops activity tools and manuals; and supports the implementation of post-training activities and monitoring. The training should be packaged to reflect the results of activities in the target areas and to allow for national dissemination. In (b), support the establishment of a system that enables community health workers and community-level health facilities, such as health posts and PHCCs, to share information efficiently and receive advice and support as needed. In addition, model a system of collaboration between health facilities and health workers so that it can be replicated in other regions.

#### 3) Implementation structure

The Community Nurse Program is in its pilot phase, having been implemented in only two communities as of March 2023. The implementation of PNC home visits in the 50 districts is not uniform, as some local governments have only held training sessions and have not yet started field activities. Therefore, it is necessary to determine at the time of project implementation which human resources will be most effectively strengthened to improve community health. In order to complete the project with the most up-to-date information, a 2-phase approach is proposed. The expected inputs are as follows.

Nepal: Staffing of counterparts (DoHS Family Welfare Division, DoHS Nursing and Social Security Division, MoH of the project target Province), provision of offices and facilities necessary for project implementation, local costs for operation of activities

- Japan: Dispatch of experts (community health, obstetric newborn care, human resource development, health information management, IEC, training management, total about 60 M/M), provision of equipment, local activity expenses
  - 4) Proposed schedule

Implementation is proposed for a period of five years, including the first and second phases, starting around 2025.

- Phase1: Approximately one year from the start of the project will be a period of information gathering and coordination to finalize the details of the proposed project. The PDM will be finalized with updated information on the progress of the Community Health Nurse Program, key community health service providers, and development donors. In addition, information will be gathered and coordinated for the selection of pilot areas, while some pilot activities will be implemented in advance.
- Phase 2: Activities based on the finalized PDM will be implemented over the approximately four years following the first phase of the project.
  The development of an action plan for the national roll-out of the project's training package and model of collaboration between community health workers and health facilities should be supported before the end of the project. Based on the premise of future national rollout, active participation at the central level should be encouraged from the early stages of the project.
  - 5) Proposed measures for the use of ICT for the efficient and effective implementation of the project

The Community Health Nurse Program developed and implemented an application (CHT) to record information collected by community health nurses on smartphones and tablets. By supporting the correct use of CHT by community health workers and introducing health facilities to ways of analysing and using the information collected, their collaboration could be more effective.

- (4) Development of a model to supervise and support the practice of SPH/SBA
  - 1) Purpose and Need of the Project

One of the factors contributing to the low quality of MCH services is the lack of supervision and guidance in field practice; capacity building programs such as SBA training lack a mechanism to monitor whether the training outcomes are being implemented in the field. In addition, there is currently no system in place to provide regular supervision and guidance from higher-level medical facilities and other institutions. To improve this situation, the study team proposes the establishment of a model to supervise and support the practice of birth attendants. In discussions with stakeholders during the field survey, some expressed the hope that JICA would assist in establishing a mechanism for monitoring and technical support in the field, since the training itself is being conducted by the Nepalese government with support from other development partners. In order to respond to these needs, the proposed project aims to improve the quality of MCH services by adding a monitoring component to existing programs and establishing a system of regular on-site supervision and technical support (supportive supervision).

JICA projects to strengthen the capacity of health administration management and healthcare workers in various countries often include the establishment of a system of supportive supervision as a component of the project. In these projects, a series of cycles are continued in which problems are identified through supervision, actions are taken to address them, and the results are confirmed in the next visit. It is expected to lead to an improvement in service quality in Nepal as well. As the SHP/SBA Strategy (2020-2025) identifies strengthening the capacity of birth attendants through post-training support and monitoring and supervision as one of the key issues, this is an area of high demand for support.

## 2) Project summary

The project includes (a) the addition of monitoring to SBA training and (b) the establishment of a system for conducting supportive supervision on a regular basis. Under a), training supervisors or personnel with equivalent skills will visit SBA assignments after SBA training to monitor service delivery and provide technical guidance. Project activities include adding a monitoring component to the existing curriculum, strengthening the capacity of supervision providers, developing monitoring tools, and supporting the implementation of supervision. (b) includes strengthening the capacity of supervisors, establishing a timeline, and developing supervision tools and manuals. It is also necessary to identify the agencies and personnel that will carry out supervision. At present, it is difficult for local governments to take over all health administration, so in some areas district health offices, which were established before the transition to a federal system, continue to take over some health administration functions. The level at which the supervisory implementation organization is established should be determined based on the situation at the time the project is initiated. In addition, the availability of appropriate personnel to carry out supervision is a prerequisite for the start of the project.

3) Implementation structure

The expected inputs are as follows.

- Nepal: Staffing of counterparts (DoHS Family Welfare Division, NHTC, MoH of the project target province), provision of offices and facilities necessary for project implementation, local costs for operation of activities
- Japan: Dispatch of experts (health administration, monitoring/supervision, maternal and child health, training systems, total about 48 M/M), provision of equipment, local activity expenses

#### 4) Proposed schedule

The proposed implementation period is approximately 4 years, starting around 2025. During the first year of the project, pilot areas within the target province will be selected and monitoring and supervision will be

conducted on a trial basis to finalize the training materials and tools; after the second year, the project will be rolled out within the province and a model for national rollout will be developed by the end of the project. It is recommended that the MoHP be involved at an early stage and that an action plan for national roll-out be developed during the project period, assuming that national dissemination will take place at the end of the project.

5) Proposed measures for the use of ICT for the efficient and effective implementation of the project

Inadequate or insufficient practical training and post-training support have been identified as problems with existing training systems. By making the lecture portion of the training available online, it would be possible to reduce labour, time, and administrative costs for both trainers and participants and devote more resources to hands-on training and on-site instruction.

(5) Strengthening of health facility-based early detection and treatment of NCDs

1) Purpose and Need of the Project

The MoHP has made the promotion of Nepal PEN one of the key pillars of NCD prevention and control in the country and is promoting the training of health professionals. The number of trainees has increased each year, and by 2021, at least one person from each of the 77 districts had received training. However, it has been found that trainees do not always conduct Nepal PEN-based NCDs screening appropriately in their own health facilities. In addition, NCD treatment is not being systematically implemented in the field, nor are efforts being made to effectively educate patients and raise awareness of prevention. In view of the above, it is desirable for JICA to support the introduction and implementation of Nepal PEN so that it can function properly in clinical settings, in parallel with the Nepal PEN training promoted by the MoHP. In JICA's Global Agenda, NCDs are not included as a priority cluster, but the importance of addressing NCDs as a risk factor for the severity of infectious diseases such as COVID-19 is highlighted and JICA will continue to support this area. It can therefore be understood that this proposal is also in line with JICA's assistance policy.

## 2) Project Summary

Specific project outputs include: a) Strengthening the patient education system by opening an NCDs corner in hospital waiting rooms; b) Strengthening the counselling capacity of health professionals (including



building an implementation system and standardising counselling content); and c) Organising diabetes (patient education) classes, etc. to establish a model of facility-based early detection and treatment of NCDs based on the Nepal PEN at frontline facilities (as the project purpose). The target facilities will be primary and secondary hospitals with high patient load, as it is desirable to have a certain number of patients registered in each facility to establish an efficient patient management and education system.

The proposal is to support efficient treatment of NCDs by introducing an NCDs corner, but Nepal is facing a shortage of health professionals, so it is desirable to consider improving operational efficiency and effective staffing not only in NCDs but also in the facility as a whole when establishing a corner management system. In addition, although diet is the primary treatment for diabetes, hypertension and dyslipidaemia in particular, it is necessary to also consider that there is a certain group of residents who, due to socio-economic conditions, are unable to take a properly balanced and proportionate diet, and to consider dietary management and exercise therapy, etc., taking into account the circumstances in Nepal.

3) Implementation Structure

The expected inputs are as follows.

- Nepal: Allocation of counterparts (NCDs and Mental Health Section of the Epidemiology and Disease Control Division of DoHS and the Nutrition Section of the Family Welfare Division; health coordinators from pilot municipalities; PHTC; and the target provincial Ministries of Health), provision of offices and facilities necessary for project implementation and local costs for the project activities.
- Japan: Dispatch of JICA experts (NCDs prevention and control, NCDs patient education, nutritional therapy, efficiency improvement of hospital operations Total: about 60 M/M), provision of equipment, local activity costs

On the JICA side, the NCDs Prevention and Control Expert will oversee the entire team of experts as a senior advisor, while the NCDs Patient Education Expert will work with the NCDs and Mental Health Section of the Epidemiology and Disease Control Division of DoHS to help strengthen patient education and counselling for health professionals. On the other hand, as it is considered a major challenge to apply the nutritional approach to the poor population at vulnerable to NCDs, especially in Nepal, it is envisaged that the nutrition expert will work with the Nutrition Section of the Family Welfare Division of DoHS to address this issue.

## 4) Proposed Schedule

The implementation period is suggested to be approximately 4 years, starting around 2025. In the first year of the project, NCDs corners will be established in pilot facilities in the target provinces (to support the introduction of PEN in facilities that have not yet introduced it and to support the implementation in
facilities that have already introduced it), training content to strengthen counselling capacity will be developed, and patient education materials will be developed. From the second year, the project will support the operation of the NCD corners and the training of health professionals in the pilot facilities, as well as the initiation of patient education activities, such as diabetes classes. During the implementation of these activities, the content and processes will be modified as necessary, and eventually a feasible manual for the practice of Nepal PEN will be developed, and the pilot facilities will be nurtured to serve as model sites that can receive tours.

#### 5) Proposed measures for the use of ICT for the efficient and effective implementation of the project

The application of ICT in relation to efficient training delivery is the same as described in "(4)Develop a model to supervise and support the practice of SPH/SBA".

#### (6) Provision of medical equipment, etc. for the early detection and treatment of NCDs

Due to limited resources in Nepal, screening for diabetes and hypertension is carried out in health facilities. However, chronic lung diseases and cancers, which require special laboratory equipment for diagnosis, are often diagnosed on the basis of symptoms. Under these circumstances, it is desirable for JICA to provide assistance to strengthen the diagnostic function of chronic lung diseases by providing spirometers to facilities, and to provide breast cancer screening vehicles equipped with mammography that can also perform cervical cancer screening to improve the coverage of the screening population. This support is expected to strengthen initiatives against chronic lung diseases and cancers (especially cervical and breast cancer, which are diseases covered by PEN), where the disease burden is high but adequate preventive measures have not been developed.

It should be borne in mind that medical examination vehicles are equipped with sophisticated equipment and thus road conditions should be considered when considering coverage.

#### (7) Strengthening Community-Based NCD Prevention and Control

1) Purpose and Need of the Project

The general population and patients in Nepal often have a certain level of knowledge about NCD prevention and control but this often does not translate into actual practice: when illnesses are mild, NCDs often have no subjective symptoms, and even when they do have subjective symptoms, they often stop treatment at their own judgment when the symptoms abate. On the other hand, access to information is often particularly difficult for the poor and those living in some specific areas, and support is needed to improve their practical prevention activities and adherence to treatment, in addition to the implementation of appropriate prevention awareness-raising activities.

## 2) Project Summary

Specific project outputs include: a) Implementing active NCD screening and prevention awareness activities in communities using FCHVs that have a national delivery system in collaboration with neighbouring primary health care facilities (primary hospitals, PHCCs and health posts), and b) Working with local communities to introduce continuous and self-sustaining health promotion for NCD prevention and control. These initiatives are expected to strengthen community-based NCD prevention and control (as a project purpose).



The relevance of this proposal to JICA's Global Agenda is the same as the above proposal, and it is therefore understood that consistency between this proposal and JICA's support policy is ensured.

The FCHVs' main activity is to provide support to maternal and child health, specifically ANC/PNC and maternal and child nutrition, as voluntary services. While the effectiveness of community volunteers in preventing and controlling NCDs has been academically confirmed, it is necessary to take into account the workload of FCHVs, as it is an additional task for them. Furthermore, it should be noted that the activities of FCHVs are only as volunteers, and consideration should be given to avoid excessive responsibility by incorporating them into a part of "*system*" for NCDs prevention and control.

1) Implementation Structure

The expected inputs are as follows.

- Nepal: Allocation of counterparts (NCDs and Mental Health Section of the Epidemiology and Disease Control Division of DoHS; health coordinators from pilot municipalities; PHTC; and the target provincial Ministries of Health), provision of offices and facilities necessary for project implementation and local costs for the project activities.
- Japan: Dispatch of JICA experts (NCDs prevention and control, NCDs screening, and NCDs awareness raising, Total: about 60 M/M), provision of equipment, local activity costs

#### 3) Proposed Schedule

The proposed implementation period is 4 years from around 2025. In the first year of the project, pilot sites (several communities) will be selected based on a detailed assessment of the status of NCD prevention and control in the communities. In the second year, a system for implementing activities in primary health facilities and communities in those catchment areas will be established in collaboration with the target provincial Ministries of Health. Master trainers in health promotion will be nurtured and, in collaboration with the nurtured master trainers and the PHTC, health promotion trainers for community officials will also be nurtured. Once the trainers have been nurtured in the municipalities, assistances to introduce health promotion for NCD prevention and control will be initiated in each site in collaboration with primary healthcare facilities. In the final year of the project, the status of achievements in the pilot sites will be compiled, a manual for effective implementation will be prepared by analysing good practices, etc., and the best sites will be widely introduced as model sites.

Proposed measures for the use of ICT for the efficient and effective implementation of the project
 Ditto to the previous statement.

#### (8) Strengthening of AMR Control Measures

AMR is estimated to be a greater threat than cancer in future, and it is confirmed that AMR is progressing in Nepal. In addition to a well-functioning laboratory surveillance system, test results must be used as reliable epidemiological information in the control of AMR in Nepal. However, the timeliness, completeness and accuracy of reporting from sentinel sites in Nepal's general infectious disease surveillance system are not sufficient. Therefore, it is suggested for JICA to support the strengthening of the general infectious disease surveillance system by strengthening the AMR laboratory surveillance system.

Inappropriate use of antimicrobials is a major cause of AMR, and in Nepal, inappropriate use of antimicrobials in health facilities as well as self-determined use of antimicrobials by the general population and patients are considered to be major causes of AMR. Therefore, it is proposed for JICA to support capacity building of doctors involved in infectious disease treatment as well as pharmacists in prescription audit and patient counselling, and to conduct awareness raising activities for the public and patients to eradicate inappropriate use of antimicrobials and thus strengthen AMR control measures in Nepal. In Nepal, the sale of antimicrobial medicines to the public without a prescription is prohibited in principle, but in reality, many antimicrobial medicines can be purchased without a prescription in some cases. Regulations on the purchase of medicines for doctors, including antimicrobials, need to be strengthened, but pharmacies need to take a cautious approach as this will directly lead to lower profits for them.

## (9) Strengthen the supply chain for medicines, medical equipment and health products

As noted previously, the distribution of essential and insured medicines in Nepal is problematic because of the complexity of the order-to-delivery process and the lack of information about the urgency and importance of these medicines, resulting in frequent shortages and significant delays in the arrival of medicines ordered by hospitals. The supply chain for medicines, medical equipment and health products needs to be strengthened to address this issue. The process from order placement to product arrival will be streamlined, and training will be provided to strengthen warehousing and inventory management processes for hospital staff and managers at all stages of the supply chain who handle these products. As a result, it is expected that the required medicines and other products will be delivered to each health facility as and when needed, thereby alleviating the shortage of medicines and other products in Nepal, especially in rural areas.

At the same time, the project will address the problem of mismanaged medicines in each hospital. By training pharmacists and pharmacy managers in each pharmacy on stock management methods, the system will prevent dispensing errors, where patients are mistakenly given medicines that do not match their prescriptions. It is also expected to be effective in strengthening the lean supply chain by properly managing the amount of medicines that are actually needed in each hospital.

## (10) Support for optimization of ICT information management

The number of medical facilities with direct access to HMIS will be increased by providing equipment as well as communication facilities to medical facilities in rural areas that do not have PC equipment. The effect of this measure is to increase the reliability of statistical information by enabling medical facilities to send statistical data to HMIS, and also to enable medical facilities to refer to the statistical information, which is expected to contribute to



policy making at each medical facility. Furthermore, the introduction of EMR and other software as needed is expected to improve the efficiency of daily medical facility operations.

In order for the support provided by this proposal to be effective, it is assumed that it will be necessary to establish guidelines for equipment maintenance and management and cyber security, as well as to plan and implement training for HMIS operation for persons in charge of medical facilities, in addition to the provision of equipment.

## (11) Support for enhancing Medical Rehabilitation in Nepal

In Nepal, rehabilitation has only recently been reassessed in terms of its importance and is still a low priority in relation to other issues. The number of rehabilitation specialists and physiotherapists in the country is low and the population does not have access to adequate rehabilitation. Therefore, the preferred way to solve this problem is to create model cases on a small scale and then spread them over a wide area.

First, support should be provided to rehabilitation hospitals run by NPOs in the country to standardise rehabilitation based on Nepal's medical and social environment. At the same time, rehabilitation specialists, physiotherapists and occupational therapists should be trained or nurses should be given competence in accordance with national policy. In addition, model hospitals will be established to develop effective models.

## (12) Strengthening ICT-based training for healthcare professionals

As mentioned above, most of the training provided by NHTCs and PHTCs is face-to-face training, which limits the number of participants that can be accepted; NHTCs and other organisations strive to eliminate gaps in training opportunities during selection and other processes to provide training opportunities to healthcare professionals in remote areas as equally as possible, but this is not sufficient. The possibility of providing training to a wide range of healthcare professionals in a wide range of regions can be increased by using the LMS to provide training on this issue. In addition, many of the training courses conducted by NHTCs combine classroom lectures and practical skills, and the efficiency of training can be improved by using a format where the classroom part is studied at home or in the workplace using ICT, and only the practical skills are actually attended at the CTS. In fact, in several PHTCs, there were many welcoming comments on the introduction of ICTs for education. However, in Nepal, except during the COVID-19 infection outbreak, most of the training has been conducted in a group setting, and there is some scepticism about e-Learning training, and in some mountainous areas, where the internet environment is poor, so care is needed in its implementation.

It may be more effective to combine medical personnel education with efforts to train medical personnel in maternal and child health and NCDs, rather than to use ICTs alone.

Strengthening the supply chain for pharmaceuticals, medical equipment and health products As mentioned above, the distribution of essential medicines and medicines covered by insurance in Nepal is problematic and the process from ordering to supply is complicated, resulting in a lack of information management on how urgent and important the medicines are, which frequently leads to significant delays in the arrival of medicines ordered by individual hospitals and shortages in quantity. The supply chain for medicines, medical equipment and health products needs to be strengthened as a means of resolving this issue. Streamline procedures from order placement to product arrival, and provide training to strengthen the hospital staff who handle them, managers at each stage of the supply chain, warehouse management and stock control processes. This will ensure that the required medicines and other products are delivered to each health facility as and when required, thereby improving the shortage of medicines and other products in Nepal, especially in rural areas.

At the same time, issues related to the lack of proper management of delivered medicines at each hospital will be addressed. Training of pharmacists and pharmacy managers at each pharmacy on stock management methods will prevent dispensing errors, where drugs that do not match the prescription are mistakenly given to patients. In addition, it is expected to be effective in strengthening a lean supply chain, as the quantity of medicines that are really needed at each hospital is properly managed.

# (13) Training of health professionals (doctors, nurses, "Kaigo-shi", etc.) with expertise in geriatric medicine.

As Nepal has become a lower-middle income country, it is clear that Nepal's population will continue to age in the coming years. To prepare for this situation, the MoHP formulated its first "*Geriatric Health Service Strategy 2021-2030*" in 2022 and started training health professionals with expertise in geriatrics in parallel with the deployment of geriatric beds. However, the number of geriatric specialists in Nepal is currently low, and although health professionals are gradually being trained, the geriatric approach to health services has not yet been implemented on the ground.

As Japan has top knowledge and experience in the field of medical and elderly care, this is seen as an area where Japan can best use its strengths in providing support. In Nepal in particular, initiatives in line with the Strategy have only just begun, and if experts with solid knowledge and experience can support the implementation of the Strategy, it is expected that medical and elderly care in Nepal will be standardised in line with the Nepalese context.

In addition, care for the elderly in developing countries is often categorised as "*medical care*"; however, in Nepal there are limited number of health professionals available, and it is obvious that health professionals alone will not be able to cope with the future increase in the number of elderly people. Therefore, the training of care workers, i.e., professionals with specialised skills in caring for the elderly, etc., is considered to be an effective preparation for the future increase in the elderly population (in Japan, this kind of care giver is officially licensed as a "*Kaigo-shi* (professional care giver)). In addition, care skills are expected to contribute to the care of the elderly not only in health facilities but also in OAHs and at home.

JICA's "Global Agenda" does not specifically address "Ageing" as a priority "Cluster", but states that "the rapid ageing of the population, particularly in Southeast Asia and Latin America, is becoming a major challenge, and as this is an area where Japan can make use of its experience, JICA will work on cooperation with a view to creating clusters in the future". Therefore, this proposal is the most appropriate timing to meet Nepal's needs and is also in line with JICA's "Global Agenda".

It should be noted that the training of professionals in geriatric medicine and care should be included not only in postgraduate but also in undergraduate education. As the MoHP is in charge of postgraduate education for health professionals and the Ministry of Education is in charge of undergraduate education, it should be noted that these ministries should promote human resource development in cooperation with each other. In addition, in Japan, being a professional care giver is a national qualification (kaigo-shi), but there is no equivalent professional qualification in Nepal. Particularly in developing countries, care of the elderly is often perceived as a service received in return for payment, so it is important to note that the concept of *"kaigo"*, which emphasises the maintenance of residual functions and support for independence, may not be accepted, and efforts should be made to promote understanding of this. It is also important from a sustainability perspective that *"kaigo"* is clearly positioned in Nepalese policy, and with this in mind, it is noted that it is important in future to objectively gather information on the impact of *"kaigo"* on elderly care and thus on policies for older people.

## (14) Support for requests from Tribhuvan University.

Tribhuvan University's request is for assistance in implementing a master plan for the construction of the hospital. The master plan consists of three phases, with an estimated budget of NPR 22,169,000,000 for the first phase, which involves the construction of an in-patient ward, an administration building and an occupancy building for medical personnel on the current site (NPR 20,000,000,000 for the in-patient ward, NPR 819,000,000 for the administration building and NPR 1,350,000 000,000 NPR). NPR 3,420,000,000 for the second phase, which involves the construction of an outpatient ward on the current site. The construction of an obstetric and treatment ward and other facilities on the current site and the third phase of the project to transfer tertiary (specialised advanced medical care) functions to a new annex in Kiltipur have not yet been estimated in total, but are estimated at NPR 1,845,000,000 for the construction of the obstetric ward and NPR 1,000,000,000 for the other facilities. NPR has been estimated at NPR 1,845,000,000. Although it is difficult to cover the entire budget for any of the first three phases of the project, there is scope to consider providing some support in the master plan through grant aid or other means.

#### (15) Policy formulation support for achieving UHC

Nepal's national plan identifies the achievement of UHC as a priority for the health sector, and while the introduction of the BHS and health insurance schemes is a step in this direction, there are many challenges, such as strengthening the BHS implementation system at the local level and reviewing the health insurance system. Once the health financing strategy currently under preparation is finalized, policy formulation to achieve UHC and support for its steady implementation is likely to be an effective support to achieve UHC. Policy loans are considered to be an effective means of providing results-based comprehensive support from policy formulation to implementation, and JICA's previous experience in policy loans for UHC in Kenya, Senegal and Côte d'Ivoire can be used as a reference.

# Appendices

- Appendix 1 List of the Mission Members
- Appendix 2 Schedule of the First Field Survey
- Appendix 3 Key Interviewees
- Appendix 4 List of Collected Documents
- Appendix 5 Health Development Indicators under the MoHP in the 15th National Plan
- Appendix 6 Targets and Achievement of the SDG Targets in Health

# 11. Appendices

## Appendix 1: List of the Mission Members

## Member List of the Mission

Name	Job Description	Professional Affiliation
Mr. MATSUNO Yoshinori	Mission Leader / Health Systems	Division Head, International Division, Yakuzemi informative Education Center Co.,Ltd.
Dr. INOUE Yoichi (Mr.)	Subleader / Quality of Health Services / Hospital Management	Senior Consultant, Consulting Division, Japan Development Service Co., Ltd.
Ms. KOMATSUBARA Yoko	Health Policy / Health Financing	Senior Consultant, Social Development Division, International Development Center of Japan
Ms. TSURU Akiko	Maternal, Neonatal and Child Health (MNCH) (1)	Consultant, Development Consulting Division, IC Net Limited
Mr. SUZUKI Ryohu	Non-Communicable Diseases (NCDs) (1)	Consultant, International Division, Yakuzemi informative Education Center Co.,Ltd.
Ms. SUZUKI Maho	NCDs (2) / MNCH (2)	Consultant, International Division, Yakuzemi informative Education Center Co.,Ltd.
Mr. HATAKEYAMA Nobuaki	Information and Communication Technology (ICT)	Consultant, Consulting Division, Japan Development Service Co., Ltd.

## Appendix 2: Schedule of the First Field Survey

日付	訪問先
10 <sup>th</sup> Oct (Mon)	JICA Nepal Office
11 <sup>th</sup> Oct (Tue)	<ul> <li>Health Coordination Division ,MoHP</li> <li>Management Division, DoHS</li> <li>Director General, DoHS</li> </ul>
12 <sup>th</sup> Oct (Wed)	<ul> <li>Epidemiology and Disease Control Division</li> <li>Nepal Nursing Council</li> <li>Nepal Medical Council</li> <li>Shahid Gangalal National Heart Centre</li> <li>Population management division, MoHP</li> </ul>
13 <sup>th</sup> Oct (Thu)	<ul> <li>Patan Hospital</li> <li>National Health Training Centre</li> <li>Bhaktapur Hospital &amp; Human Organ Transplant Centre</li> </ul>
14 <sup>th</sup> Oct (Fri)	<ul> <li>USAID</li> <li>Kanti Children Hospital</li> <li>Chandragiri Municipality Primary Hospital</li> <li>Oxford Policy Management Dr. Suresh Tiwari (Country Director Nepal Office, former HIB Board member)</li> <li>Nepal Medical Association</li> </ul>
16 <sup>th</sup> Oct (Sun)	<ul> <li>Bir Hospital</li> <li>Quality Standard and Regulation Division, MOHP</li> <li>Manmohan Cardiothoracic Vascular and Transplant Centre</li> <li>Paropakar Maternity and Women's Hospital</li> </ul>
17 <sup>th</sup> Oct (Mon)	World Health Organization

	World Bank
	Integrated Health Information Management Section, Management Division, DoHS
	Baluwa Health Post
	National Public Health Laboratory
	Nick Simons Institute
18 <sup>th</sup> Oct (Tue)	Midas Technologies
	Tribhuvan University Teaching Hospital
	• GIZ
	• Family welfare division, DoHS
	Curative Service Division, DoHS
19 <sup>th</sup> Oct (Wed)	National Trauma Centre
	• Quality Standard and Regulation Division, MOHP (IT section)
	Policy Planning and Monitoring Division, MoHP
	• Bhakutapur Hospital
	MOH of Bagmati province (online)
20 <sup>th</sup> Oct (Thu)	Chandragiri Municipality Primary Hospital(online)
	• person in charge of ICT, National Health Training Centre
	Nursing and Social Security Division, DoHS
	• UNFPA
	National Centre for Health Education, Information and Communication
21 <sup>st</sup> Oct (Eri)	Health Insurance Board
	• UNICEF
	Nepal Pharmacy Council
	JICA Nepal Office

# Appendix 3: Key Interviewees

## MoHP

Organisations	Name of Interviewees	Position
Director General, DoHS	Dr. Dipendra Raman Singh (Mr.)	Director General
Policy Planning and Monitoring Division, MoHP	Dr. Krishna Prasad Paudel (Mr.)	Chief
Population management	Inframani Pokharel (Mr.)	Chief
division, MoHP	Poshni Devi Karki (Ms.)	Under Secretary, Gender Equality and Social Inclusion Section Chief
Health Coordination Division,	Dr. Sanjay Kumar Thakur (Mr.)	Chief
МоНР	Bhim Prasad Sapkota (Mr.)	Senior Public Health Administrator
Quality Standard and Regulation Division, MoHP	Dr. Madan Kumar Upadhyaya (Mr.)	Chief
Quality Assurance and Regulation Division, IT section, MoHP	Jagdish (Mr.)	Chief

## DoHS

Organisations	Name of Interviewees	Position
Epidemiology and Disease Control Division, DoHS	Dr. Chuman Lal Das (Mr.)	Director
Family welfare division, DoHS	Dr. Bibek Kumar Lal (Mr.)	Director
Management Division, DoHS	Dr. Sarbesh Sharma (Mr.)	Director
Curative Service Division, DoHS	Dr. Anup Bastola (Mr.)	Director
	Dr. Narendra Kumar Khanal (Mr.)	Section Chief, Hospital Service Strengthening and Monitoring
	Kamlesh Mishra (Mr.)	Public Health Inspector, Planning Focal Person
Integrated Health Information Management Section, Management Division, DoHS	Anil Thapa (Mr.)	Director IHMIS section
Nursing and Social Security Division, DoHS	Prof. Goma Devi Niraula (Ms.)	Director

# Provincial Ministry of Health

Organisations	Name of Interviewees	Position
MOH of Bagmati province	Dipak Tiwari (Mr.)	Spokesperson, Senior Public Health Administrator
	Durga Datta Chapagain (Mr.)	Senior Public Health Officer, Health Office, Chitwan

# Hospitals, Centres and Health Posts

Organisations		Name of Interviewees	Position
Bhaktapur Hospital		Sanjana Sakya (Ms.)	Senior Nursing officer
		Prakriti Acharya (Ms.)	Hospital management officer
Bir Hospital		Dr. Anupama Karli (Ms.)	Deputy Director
		Dr. Bhupendra Kumar Basnet Director	
Chandragiri Primary Hospital	Municipality	Dr. Parashuram Shrestha (Mr.)	Chief Advisor
		Krishna Prashad Khadgi (Mr.)	Ward Chairman Chandragiri Munincpality-4
		Dr. Madhesh Koirala (Mr.)	Medical officer
		Dr. Reeju Maharjan (Ms.)	Medical officer
Chandragiri Primary Hospital	Municipality	Dr. Reeju Maharjan (Ms.)	Medical Officer
Human Organ Transplant Centre, Bhaktapur		Dr. Pukar Chandra Shrestha (Mr.)	Executive Director
		Dr. Mr. Ranjan Shah	Biomedical Engineer
		Kopila Dahal (Ms.)	Acting Nursing Director

	Yubaraj Bhattarai (Mr.)	Account Officer
	Harihar Pokhrel (Mr.)	Section Officer
	Bijaya Sharma (Ms.)	Nayab Subba (Record Section)
Kanti Children's Hospital	Dr. Yuba Nidhi Basaula (Mr.)	Director
	Roshan Bajracharya (Mr.)	Maintenance officer
Manmohan Cardiothoracic Vascular and Transplant Centre	Prof. Dr. Uttam Krishna Shrestha (Mr.)	Executive Director
National Trauma Centre	Dr. Rudra Pd. Marasini (Mr.)	Director Nursing Chief
Paropakar Maternity and	Dr. Pawan Jung Rayamajhi (Mr.)	Director
Women's Hospital	Asha Laxmi Prajapati (Ms.)	Administration
	Janak Raj Ghimire (Mr.)	Assistant
	Raj Shrestha (Mr.)	IT Officer
	Parshuram Bhandari (Mr.)	Finance Officer
Patan Hospital	Dr. Rabi Shakya (Mr.)	Director
	Mr. Lila Raj Acharya (Mr.)	Administration officer
Shahid Gangalal National Heart	Dr. Chandra Mani Adhikari (Mr.)	Director
Centre	Bimala Aryal (Ms.)	Admin Chief
Tribhuvan University Teaching	Prof. Dr. Dinesh Kafle (Mr.)	Executive Director
Hospital	Chanchal Joshi (Mr.)	Chief, Maintenance Department
Baluwa Health Post	Bharat Gurung (Mr.)	Health Post In charge (Public Health
	Rupesh Ghimire (Mr.)	Public Health Inspector
	Lekha Raj Niroula (Mr.)	Senior AHW

## National Centres

Organisations			Name of Interviewees	Position
National Health Training Centre		Centre	Dr. Yadu Chandra Ghimire (Mr.)	Director
			Saroj Deo (Mr.)	IT officer
National Laboratory	Public	Health	Dr. Runa Jha (Ms.)	Director

# Specialised Organisations

Organisations	Name of Interviewees	Position
Health Insurance Board	Damodar Basaula (Mr.)	Executive director
	Mr. Baburam Khanal	Under Secretary
	Mr. Bhagawan Regmi	Senior AHW, Policy and Planning Department
Nepal Medical Association	Dr. Lochan Karki (Mr.)	Director
Nepal Medical Council	Dr. Bhagwan Koirala (Mr.)	President
	Dr. Krishana P. Adhikary (Mr.)	Register

Nepal Nursing Council	Sakuntala Prajapati (Ms.)	Acting registrar of Nepal Nursing Council
Nepal Pharmacy Council	Prajwol Jung Pandey (Mr.)	Chairperson
	Sanjiv Kumar Pandey (Mr.)	Registrar

# International Partner Agencies

Organisations	Name of Interviewees	Position
UNFPA	Young Hong (Ms.)	UNFPA representative
	Kamla Khatri Bisht (Ms.)	Gender and Human Rights Specialist
	Kamla Khatri Bisht (Ms.)	Gender and Human Rights Specialist
	Ajay Acharya (Mr.)	Programme Analyst
	Apekchya Rana Khatri (Ms.)	Programme Officer, Harmful Practices
UNICEF	Dr. Budhi Setiawan (Mr.)	Chief
	Haruko Yokote (Ms.)	Health Officer (JPO)
USAID	Patricia Mengech (Ms.)	Director, Health Office
	Mr. Nur Pant (Mr.)	Senior Health Adviser, Health Office
World Bank	Sangeeta Carol Pinto (Ms.)	Senior Operations Officer
	Dr. Amit Bhandari (Mr.)	Senior Health Specialist
World Health Organization	Dr. Allison Gocotano (Mr.)	Team Leader
(WHO)	Dr. Subash Neupane (Mr.)	NPO-PPM
	Kimat Adhikari (Ms.)	NPO-Health
	Dr. Lonim Dixit (Ms.)	NPO-NCD
GIZ	Mr. Tirtha Kumar Sinha (Mr.)	Deputy Programme Manager, Lead of Component, Sub- national Health Management
	Ms. Helen Witte (Ms.)	Technical Lead, Social Health Protection
Nick Simons Institute	Dr. Archana Amatya (Ms.)	Executive director
	Bikash Shrestha	Deputy Director
	Dr. Md. Kasim Shah (Mr.)	Senior Program Manager
	Indra Rai (Ms.)	Senior Training Manager

## Others

Organisations	Name of Interviewees	Position
Midas Technologies	Bidur Karki (Mr.)	Technical Director
	Ankit Bhandari (Mr.)	Chief Executive officer
	Ashish Sigdel (Mr.)	Business development manager

ASHA (Affordable and Sustainable Healthcare Access)	Yoshifumi Nin (Mr.)	President
International Techno Centre Co., Ltd.	Shoji Matsusue (Mr.)	Consultant Unit
Citizen's Association for Nepal Exchange, Komagane City, Japan	Terumi Kitahara (Ms.)	Project Manager
Green Tara Nepal	Dr. Ram Chandra Silwal (Mr.)	Country Director
Oxford Policy Management	Dr. Suresh Tiwari (Mr.)	Country director Nepal Office (Former HIB Board member)
JICA	Tomoko Tanaka (Ms.)	Senior Representative
	Shinya Kimura (Mr.)	Project Formulation Advisor
	Krishna Prasad Lamsal (Mr.)	Senior Program Manager

## Appendix 4: List of Collected Documents

No.	Title
1	MULTI-SECTORAL ACTION PLAN FOR PREVENTION AND CONTROL OF NCDS 2021-2025
2	Nepal Demographic and Health Survey 2016
3	Nepal 2016 Demographic and Health Survey Key Findings
4	Barriers and facilitators to the implementation of a national multisectoral action plan for the prevention and control of noncommunicable diseases in Nepal: perspectives of stakeholders
5	Building Strong Primary Health Care to Tackle the Growing Burden of Non-Communicable Diseases in Nepal
6	Community health workers for non-communicable disease prevention and control in Nepal: a qualitative study
7	Annual Report Department of Health Services 2077/78 (2020/21)
8	Gender Equality and Social Inclusion Strategy of the Health Sector, 2018
9	Digitalising Nepal's health sector
10	Categorization of Health Facilities as per Health Infrastructure Development Standards 2074 (B.S)
11	What we need to know about Health in All Policies (HiAP)?
12	Health system gaps in cardiovascular disease prevention and management in Nepal
13	JICA Global Agenda - JICA's 20 Strategies for Global Development - 6. Health
14	Noncommunicable Disease Risk Factors: STEPS Survey Nepal 2019
15	Nepal Burden of Disease 2019
16	National e-Health Strategy 2017
17	Nepal's significant progress in the nutrition of mothers and children at risk due to current inequities and COVID-19 pandemic: UNICEF
18	Prevalence of underweight, overweight and obesity and their associated risk factors in Nepalese adults: Data from a Nationwide Survey, 2016
19	Prevalence, pattern and determinants of chronic disease multimorbidity in Nepal: secondary analysis of a national survey
20	Referral to hospital in Nepal: 4 years' experience in one rural district
21	Proposed Countercyclical Support Facility Loans Republic of the Philippines: COVID-19 Active Response and Expenditure Support Program
22	Status and determinants of intra-household food allocation in rural Nepal

No.	Title
23	The state of diet-related NCD policies in Afghanistan, Bangladesh, Nepal, Pakistan, Tunisia and Vietnam: a comparative assessment that introduces a 'policy cube' approach
24	Translating evidence into policy: opinions and insights of Health Researchers and Policymakers in Nepal
25	Use of antimicrobials and antimicrobial resistance in Nepal: a nationwide survey
26	Use of Healthcare Services by Patients with Non-Communicable Diseases in Nepal: A Qualitative Study with Healthcare Providers
27	Nepal–WHO Country Cooperation Strategy (CCS) 2018–2022
28	Basic design study report on the Project for Improvement of. Medical Equipment in the Advanced Public Hospitals in Nepal ( <i>advance publication version</i> )
29	Federal Democratic Republic of Nepal Data Collection Survey on Federalism And Decentralization in Nepal: Final Report
30	Data Collection Survey on Emergency Medical Service and Disaster Medical Service in Federal Democratic Republic of Nepal: Final Report
31	Needs Report on Health and Medical Area (Nepal) (in Japanese)
32	National Strategy for Human Resources for Health (HRH) of Nepal (2020/21-2029/2030)
33	Nepal Health Sector Strategic Plan (2022-2030)
34	NEPAL SAFE MOTHERHOOD AND NEWBORN HEALTH ROAD MAP 2030
35	Nepal Health Facility Survey 2021(Preliminary Data Tables)
36	Nepal National Health Accounts 2017/18
37	SECOND ROUND SEROPREVALENCE SURVEY FOR SARS-COV-2
38	JICA Nepal Office Quarterly Newsletter (September 2022)
39	National Medical Standard for Maternal and Newborn Care
40	2019 Digital Nepal Framework
41	National Digital Policies and Project in Nepal
42	Maternal health care services in Nepal: A qualitative perspective based on the socio-ecological model
43	Nepal Sustainable Development Goals, Status and Roadmap: 2016-2030
44	Nepal Sustainable Development Goals, Progress Assessment Report 2016-2019
45	Progress of the Health and Population Sector, 2020/2021, National Joint Annual Review Report - 2021 (2078 BS)
46	Minimum Service Standards (MSS)_Checklist to Identify the Gaps in Quality Improvement of Primary Hospitals
47	Risk Assessment of Smokeless Tobacco among Oral Precancer and Cancer Patients in Eastern Developmental Region of Nepal
48	Use of community health workers to manage and prevent noncommunicable diseases (COACH Study)
49	Prevalence of non-communicable chronic conditions, multimorbidity and its correlates among older adults in rural Nepal: a cross-sectional study
50	How Well the Government of Nepal Is Responding to COVID-19? An Experience From a Resource-Limited Country to Confront Unprecedented Pandemic
51	Engaging Female Community Health Volunteers (FCHVs) for cardiovascular diseases risk screening in Nepal
52	Role of the Female Community Health Volunteers (FCHVs) for Continued Improvement in Primary Healthcare in Nepal
53	Analyzing the Implementation of Policies and Guidelines for the Prevention and Management of Type 2 Diabetes at Primary Health Care Level in Nepal
54	Integrated care for tuberculosis (TB) and diabetes mellitus (DM) comorbidity in Asian countries: health system challenges and opportunities
55	Integrated Care for Prevention and Management of Tuberculosis and Diabetes Mellitus (TB-DM) Comorbidity in Nepal

No.	Title
56	Medic Mobile Case study by UNESCO-Pearson Initiative for Literacy
57	Health Sector Budget Analysis: First Five Years of Federalism
58	Nepal Quality Health Systems Program-for-Results: Proposed World Bank Operation to Support Nepal Health Sector Strategic Plan 2022-2030, Brief Overview for Development Partners (Head of Agencies)
59	Country Development Cooperation Strategy (CDCS)December 2020 - December 2025
60	Geriatric Health Service Strategy 2021-2030 -English -(unofficial) version
61	Early Warning and Reporting System (EWARS) Annual Report 2021
62	Minimum Service Standards (MSS)_Checklist to Identify the Gaps in Quality Improvement of Primary Hospitals
63	Basic Health Service Package-2075 _ Public Health Update. Pdf
64	anusuchi_9_(payment_mechanism_and_rates)2074/75 (List of services covered by health insurance)
65	anusuchi_9_(payment_mechanism_and_rates)2074/75 (Price list of services covered by health insurance)
66	Standard Treatment Protocol (STP) For Basic Health Services (BHS) Package 2078_Public Health Update
67	AAMA Booklet
68	The perils of COVID-19 in Nepal: Implications for population health and nutritional status
69	Nutrition Profile -Nepal- (in Japanese)
70	MSS Implementation Guidelines (in Nepali)
71	The Public Health Service Act, 2075 (2018)
72	The Public Health Service Regulations, 2020
73	Aging in Nepal
74	Antimicrobial Resistance in Nepal.
75	Elderly care in Nepal: Are existing health and community support systems enough
76	NATIONAL ANTIMICROBIAL RESISTANCE CONTAINMENT ACTION PLAN NEPAL 2016
77	ANTIMICROBIAL RESISTANCE (AMR) SURVEILLANCE PROGRAMME Monthly Bulletin April 2017
78	Nepal Health Infrastructure Development Standards 2017
79	Health Status of Elderly living in Government and Private Old Age Home in Nepal
80	DEMOGRAPHIC CHANGES OF NEPAL_Trends and Policy Implications (Policy Brief)
81	Annual Health Report 2076/2077
82	2021-2025 NCD NEPAL Cross-sectoral action plan for prevention and control of non-communicable diseases: approved by decision of the Council of Ministers of the Government of Nepal ( <i>in Nepali</i> ).
83	Quality Assessment of an Antimicrobial Resistance Surveillance System in a Province of Nepal
84	Nursing and Midwifery Strategies 2022
85	Nepal Demographic and Health Survey 2022 Key Indicators Report
86	Annual Report_Fiscal Year 2077/2028 (Bagmati Province)
87	Burden of chronic obstructive pulmonary disease and its attributable risk factors in 204 countries and territories, 1990-2019: results from the Global Burden of Disease Study 2019
88	Need for improving the health system preparedness for road traffic injuries in Nepal

## Appendix 5: Health Development Indicators under the MoHP in the 15<sup>th</sup> National Plan

			Base			Target			Source of
	Result Indicators	Unit	Year (2018/19	2019/2 0	2020/2 1	2021/2 2	2022/2 3	2023/2 4	Informatio n
1. Hig	gh and Equitable National Income								
	Impact								
7	Wealth-based Gini coefficient2	coefficient	0.31	0.31	0.30	0.30	0.29	0.29	NPHS
2. De Hum	velopment and Full Utilisation of a Capital Potentials								
	Outcomes: Health and population								
5	Ratio of health treatment expenses to personal expenses	Percent	53	45	44	43	42	40	NDHS
6	Maternal Mortality Ratio (per 100000 live birth)	Person	239	200	175	150	125	99	NDHS
7	Under-five mortality rate (per thousand live birth)	Person	39	35	31	28	26	24	NDHS
8	Infant mortality rate (per thousand live birth)	Person	21	18	17	16	15	14	NDHS
9	Total fertility rate]	Per woman	2.3	2.3	2.2	2.2	2.1	2.1	NDHS
10	Adolescent fertility rate (women below 19 years)	Percent	13	12	10	9	8	6	NDHS
11	Successful treatment rate of tuberculosis identified patients	Percent	86	90	95	95	95	95	MIS
12	Mortality rate of people in the 30 - 70 years age group having cardiovascular disease, cancer, diabetes	Per thousand	2.80	2.54	2.45	2.40	2.35	2.30	MIS
Ou	tputs: Health and population								
28	Population covered by health insurance	Percent	7	40	50	60	60	60	AR
29	Number of health worker per one hundred thousand population	Number	1,050	4,450	4,450	4,450	4,450	4,450	HMIS
30	Number of doctors per one hundred thousand population	Number	78	80	85	90	95	100	HMIS
31	Contraceptive prevalence rate (modern method)	Percent	43	52	52	52	53	53	NDHS
32	Women taking maternity service from health institution	Percent	57	65	69	72	74	76	NDHS
33	Births attended by the skilled health worker (in live births)	Percent	52	69	70	71	73	79	HMIS
34	Women who receive 4 prenatal check-ups as per the protocol	Percent	50	71	72	73	75	81	HMIS
35	Women who receive 3 postnatal services as per the protocol	Percent	15	50	55	60	65	70	HMIS
36	Pregnant women receiving vitamin A	Percent	74	75	76	77	80	85	HMIS
37	Children receiving all the vaccines as stipulated	Percent	70	90	93	95	95	95	HMIS
38	Children receiving DPTHepB third vaccine	Percent	90	91	92	98	94	95	HMIS
39	Children receiving the measles vaccine	Percent	90	91	92	93	94	95	HMIS
40	Person infected by malaria (indigenous infections only)	Number	359	200	100	50	25	0	HMIS
41	Newly infected persons by HIV	Per one hundred thousand	30	22	22	19	18	17	HMIS
42	Pregnant women receiving PMTCT service	Percent	70	75	80	85	90	95	HMIS

								1	
43	Tuberculosis incidence rate	Per one hundred thousand	158	85	79	72	67	64	HMIS
44	Person infected by Kalaazar (Visceral leishmaniasis)	Per one thousand	0.08	0	0	0	0	0	HMIS
45	Lymphatic filariasis prevalence rate	Per one humdred thousand	3.21	0	0	0	0	0	HMIS
46	Malaria fever	Per one thousand	0.04	0.05	0.04	0.04	0.04	0.02	HMIS
47	Dengue	Number	985	455	425	395	364	325	HMIS
48	Active trachoma	Number	136	85	81	77	73	69	HMIS
49	Tobacco/ smoking intake rate for people of age 14 years or above	Percent	30.8	26.2	26	25	24.3	21.6	HMIS
5. We	ll-being and Decent Life								
	Outcomes								
6	Households with access to a health institution within a travel distance of 30 minutes	Percent	49.3	69	70	73	75	80	NDHS
7	Children under 5 years (low- height for age) suffering from stunting	Percent	36	32	30	27	24	20	NDHS
8	Children under five years suffering from underweight (Prevalence of underweight)	Percent	27	20	20	19	18	15	NDHS
	Drinking water and sanitation								
12	Households with access to improved sanitation (single use)	Percent	64.6	72	79	86	93	100	NDHS
	Outputs: Health and nutrition								
19	Population covered by health insurance	Percent	7	40	50	60	60	60	Health Insurance Board
20	Anaemia among women of reproductive age	Percent	40.8	26	26	25	24	23	NDHS
21	Women of reproductive age receiving all vaccines	Percent	73	83	93	95	98	99	HMIS
22	Children receiving all vaccines	Percent	70	90	93	95	98	99	HMIS
23	Children breastfed within 1 hour of birth	Percent	54.9	64	73	82	91	99	NDHS
6. Saf	e, Civilized and Just Society								
12	Households with house and land registered in women's name	Percent	26	27	28	29	30	33	NDHS
13	Women who have victimized lifetime physical, mental or sexual violence	Percent	24.4	22.2	20	17.8	16	13	NDHS
14	Women who have faced physical, mental or sexual violence in the last	Percent	13.5	11	9.5	8	7	6	NDHS
10. Na	12 months								
	ational Unity, Security and Dignity								
	ational Unity, Security and Dignity								
2	ational Unity, Security and Dignity Impact Households with basic food security	Percent	48.2	56	63	70	75	80	NDHS
2	ational Unity, Security and Dignity Impact Households with basic food security Outcomes: National unity	Percent	48.2	56	63	70	75	80	NDHS

Appendix 6:	<b>Targets and Achievem</b>	ent of the SDG	<b>Targets in Health</b>

	2015	2019	2022	2025	2030
	(Actual)	(Target/	(Target)	(Target)	(Target)
3.1 By 2030, reduce the global maternal mortality rat	io to less than	70 per 100.000 live births			
3.1.1 Maternal mortality ratio	258	125/239(2016)	116	99	70
3.1.2 Proportion of births attended by skilled health personnel	55.6	69/79.3(2018)	73	79	90
3.2 By 2030, end preventable deaths of newborns and cl mortality to at least as low as 12 per 1,000 live births an	hildren under d under-5 mo	5 years of age, with all co rtality to at least as low as	untries aiming 25 per 1,000	g to reduce no live births	eonatal
3.2.1 Under-five mortality rate	38	28/28(2019)	27	24	20
3.2.2 Neonatal mortality rate	23	18/16(2019)	16	14	12
3.3 By 2030, end the epidemics of AIDS, tuberculosis, diseases and other communicable diseases	malaria and i	neglected tropical diseases	and combat	hepatitis, wat	er-borne
3.3.1 Number of new HIV infections among adults 15–49 years old (per 1000 uninfected population)	0.03	0.022/0.015 (2017)	0.018	0.014	0.014
3.3.2 Tuberculosis incidence (per 100,000 population)	158	85/111(2017)	67	55	20
3.3.3 Malaria incidence (per 1,000 population)	0.1	0.05/0.1(2017)	0.04	0.03	0.01
3.3.4 Hepatitis B prevalence (per 100,000 population)	2654	2654/-	2654	2610	2566
3.3.5 Number of people requiring interventions against neg	glected tropical	diseases			
a. Leprosy cases	2271	1693/1019(2018)	1370	911	0
b. Kala-azar (Leishmaniasis) cases	325	203/239(2017)	163	102	0
c. Lymphatic Filariasis cases	30,000	25,100/6,500	21,000	18,000	14,000
		(2017)			
d. Dengue cases	728	455/698(2018)	364	228	0
e. Active Trachoma cases	136	85/136(2017)	73	61	49
f. % of children under age 5 with Diarrhoea in the last 2 weeks	12	8/8(2016)	6	4	1
g. Number of laboratory confirmed cases of Influenza (H1N1)	204	128/-	113	98	83
3.4 By 2030, reduce by one third premature mortality for promote mental health and well-being	rom non-comi	nunicable diseases throug	h prevention a	and treatmen	t and
3.4.1 Mortality rate attributed to cardiovascular disease, ca	incer, diabetes	or chronic respiratory disea	ise		
Mortality between 30 and 70 years of age from					
Cardiovascular disease, Cancer, Diabetes or Chronic respiratory disease (per 1000 population)	2.8	2.54/2.8(2017)	2.35	2.15	1.96
a. Cardiovascular disease	1.44	1.31/ -	1.21	1.11	1.01
b. Cancer	0.67	0.61/ -	0.56	0.52	0.47
c. Diabetes	0.27	0.25/ -	0.23	0.21	0.19
d. Chronic respiratory disease	0.8	0.73/ -	0.67	0.62	0.56
3.4.2 Suicide mortality rate (per 100,000 population)	16.5	14.5/17.8(2018)	9.7	7.8	4.7
3.5 Strengthen the prevention and treatment of substan	ce abuse, incl	uding narcotic drug abuse	and harmful	use of alcoho	l
3.5.1 Coverage of treatment interventions (pharmacologica disorders	al, psychosocia	l and rehabilitation and afte	rcare services	) for substance	e use
% of hard drug users who ever visited Rehabilitation Centres for comprehensive services	40	50/ -	55	60	75
3.5.2 Harmful use of alcohol, defined according to the nat calendar year in litres of pure alcohol: 6.5	ional context a	s alcohol per capita consum	ption (aged 15	5 years and old	der) within a
% of people aged 15 years and older having harmful use of alcohol	2	1.9/2(2019/20)	1.9	1.8	1.8
3.6 By 2020, halve the number of global deaths and inju	ries from roa	d traffic accidents			

3.6.1 Death rate due to road traffic injuries	19.86	9.93/15.92(2019/20)	8.94	7.45	4.96	
3.7 By 2030, ensure universal access to sexual and repre- education, and the integration of reproductive health in	oductive healt to national str	h-care services, including ategies and programs	for family pla	nning, inforn	nation and	
3.7.1 Proportion of women of reproductive age (aged 15- 49 years) who have their need for family planning satisfied with modern methods	66	71/56(2016)	74	76	80	
<ul> <li>a. Contraceptive prevalence rate (modern methods)</li> <li>(%)</li> </ul>	47.1	52/43(2016)	53	56	60	
b. Total Fertility Rate (TFR) (births per women aged 15-49 years)	2.3	2.1/2.0(2019)	2.1	2.1	2.1	
3.7.2 Adolescent birth rate (aged 10-14 years; aged 15- 19 years) per 1,000 women in that age group	71	56/63(2019)	51	43	30	
3.8 Achieve universal health coverage, including final access to safe, effective, quality and affordable essential	ncial risk prot medicines and	ection, access to quality es l vaccines for all	sential health	-care services	s and	
3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)						
a. % of women having 4 antenatal care visits as per protocol (among live births)	59.5	71/56.2(2018)	75	81	90	
b. % of institutional delivery	55.2	70/77.5(2019)	74	79	90	
c. % of women attending three PNC as per protocol	20	50/16.4(2018)	65	75	90	
d. % of infants receiving 3 doses of Hepatitis B vaccine	88	90/86.4(2018)	93	95	95	
e. % of women aged 30-49 years screened for cervical cancer	16.6	36/ -	47	63	90	
f. % of people living with HIV receiving Antiretroviral combination therapy	39.9	90/75	92	93	95	
g. % of population aged 15 years and above with raised blood pressure who are currently taking medication	11.7	31/19.8(2016)	39	50	60	
h. % of population aged 15 years and above with raised blood glucose who are currently taking medication	25	33/ -	38	47	60	
<ul> <li>% of households within 30 minutes travel time to health</li> <li>Facility</li> </ul>	61.8	69.3/49.3(2016)	75	80.6	90	
j. % of poor people enrolled in health insurance	0	20/ -	50	75	100	
3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income	10.7	7.5/ -	6	4	2	
% of out of pocket expenditure in total health expenditure	53	45/ -	42	40	35	
3.9 By 2030, substantially reduce the number of deaths contamination	and illnesses f	rom hazardous chemicals	and air, wate	er and soil pol	lution and	
3.9.1 Mortality rate attributed to household and ambient air pollution per 100000 population	111	103.32/ -	98.19	90.51	77.7	
a. Mortality rate attributed to ambient air pollution	64.2	59.76/ -	56.79	52.35	44.94	
b. Mortality rate attributed to household air pollution	64.3	59.85/ -	56.88	52.43	45.01	
3.9.2 Mortality rate attributed to unsafe water, sanitation and hand washing (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services) per 100000 population	37.7	35.09/ -	33.35	30.74	26.39	
3.9.3 Mortality rate attributed to unintentional poisoning	0.53	0.49/ -	0.47	0.43	0.37	
3a Strengthen the implementation of the World Health appropriate	Organization	Framework Convention o	n Tobacco Co	ntrol in all co	ountries, as	
3a.1 Age-standardized prevalence of current tobacco use among persons aged 15 years and older	30.8	26.18/16.5(2016)	24.33	21.56	15.09	

3b Support the research and development of vaccines and medicines for the communicable and noncommunicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all

3b.1 Proportion of the target population covered by all vaccines included in their national program	88	90/42.6(2016)	95	95	95			
3b.2 Total net official development assistance to medical research and basic health sectors (External Funds for Health as % of Total Health Budget)	12.7	14.5/ -	16	18	20			
% of health sector budget for research and development	n/a	2/ -	2	3	3			
3b.3 Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis								
% of government health facilities with no stock out of essential drugs	70	95/75(2018/19)	95	100	100			
3c Substantially increase health financing and the recru developing countries, especially in least developed count	itment, develo tries and smal	opment, training and reter l island developing States	ntion of the h	ealth workfor	ce in			
3c.1 Health worker density and distribution (per 1000 population)	1.05	4.45/ -	4.45	4.45	4.45			
Total health expenditure as % of GDP	5	5.60/1.90(2017/18)	6.00	6.50	7.00			
3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks								
3d.1 International Health Regulations (IHR) capacity and health emergency preparedness	77	82/ -	85	90	95			

\* Red letters indicate progress that has been delayed.

#### Appendix 7: Summary of the Draft Nepal Health Sector-Strategic Plan (NHS-SP)2022-2030 (2022.6)

	Nepal Health Sector Strategic Plan (NHSSP): Results Framework					
	Resul	ts Chain	L			
Code	Output	Code	Outcome	Code	Strategic Objective	Goal
OP1.1.1	Competent human resources for health produced based on projections	0.01.1	Skill-mixed human resources for health			
OP1.1.2	Human resources for health mobilized effectively	001.1	produced and mobilized			
OP1.2.1	Evidence generated, analyzed and used at all levels leveraging technology	OC1.2	Evidence- and	OBJ1	Enhance efficiency and responsiveness of health system	Improved health status of every citizen
OP1.2.2	Promoted high-quality health research in priority areas		planning			
OP1.3.1	Physical infrastructure of health institutions strengthened		Safe and people friendly health infrastructures			
OP1.3.2	Physical infrastructure of health institutions strengthened	001.5				
OP1.4.1	Domestic production of medicines, diagnostics and health products promoted and regulated	OC1.4	Ensured uninterrupted			
OP1.4.2	Procurement of medicines and supplies reformed		availability of			
OP1.4.3	Supply chain management of medicines and supplies strengthened		quality medicine and supplies			
OP1.5.1	Governance and leadership performance improved at all levels	0015	Ensured			
OP1.5.2	Citizen engagement platforms enhanced and institutionalized	001.5	uninterrupted availability of quality medicine			
OP1.5.3	Ethical health practice and rational use of services promoted		and supplies			

OP1.5.4	Improved public financial management				
OP1.6.1	Strengthened preparedness for public health emergencies	001.6	Public health emergencies		
OP1.6.1	Public health emergencies responded effectively and timely	001.0	managed effectively		
OP2.1.1	Institutional and policy arrangements governing wider determinants developed and/or formed	0.02.1	Reduced adverse effects of wider	OBJ2	Address wider determinants of health
OP2.1.2	Operationalized multi-sectoral collaboration by establishing an institutional mechanism	002.1	determinants on health		
OP2.2.1	Modified behaviour of citizens for a healthier lifestyle	OC2.2	Citizens responsible for their own, family and community health		
OP3.1.1	Increased domestic financing and efficiency in health sector	0.02.1	Improved public investment in health sector	OBJ3	Promote sustainable financing and social protection in health
OP3.1.2	Improved management of development cooperation in the health sector	003.1			
OP3.2.1	Free basic health services ensured in urban and rural settings		Improved Social		
OP3.2.2	Reformed health insurance system	OC3.2	Protection in health		
OP3.2.3	Streamlined social health protection schemes				
OP4.1.1	Quality assurance mechanism for health services strengthened	004.1	Promote equitable	OBJ4	Promote equitable access to quality health services
OP4.1.2	Quality of care improved at each level of health facilities	004.1	health services		
OP4.2.1	Partnership to expand service coverage promoted	0012	Reduced inequity in		
OP4.2.2	Drivers of inequities in health services addressed	004.2	health services		
OP5.1.1	Strengthened population information management system and research		Maximized demographic dividend and managed demographic transition in development process	OBJ5	Reduced inequity in health services
OP5.1.2	Enabling environment created for demographic dividend and transition management	OC5.1			
OP5.2.1	Safe migration and planned settlement promoted	OC5.2	Systematic migration and planned settlement practiced		

<b>Appendix 8:</b>	Authorities	of Federal,	Provincial	and Local	Governments
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Exclusive powers of federal, provincial, and local governments as stipulated in the Constitution				
Constitution Schedule 5: Federal G exclusive jurisdiction, 16 Health	Constitution Schedule 6: Provincial G exclusive jurisdiction, 9	Constitution Schedule 8 Local G exclusive jurisdiction, 9		
Health policies, health services, health standards, quality and monitoring, national or specialised service providing hospitals, traditional treatment services and communicable disease control	Health service	Basic health and sanitation		
Federal G exclusive jurisdiction	Provincial G exclusive jurisdiction	Local G exclusive jurisdiction		
16.2 Development and promotion of promotional, preventive, curative, rehabilitative and palliative health services in national level	9.1 Provincial policy, law, quality standards, planning, implementation and regulation relating to health service and nutrition	9.1 Policy, law, standards, planning, implementation and regulation relating to basic health and sanitation		
16.3 Formulation of standards and regulation of academic, occupational and professional institutions relating to health	9.2 Promotional, preventive, counter acting, curative, rehabilitative and palliative health service management as needed in the state level	9.2 Operation and promotion of basic health services		
16.4 Establishment, operation and regulation of health institutions	9.3 Registration, operation, permission and regulation of state level academic, professional and occupational organizations relating to health services	9.3 Establishment and operation of hospitals and other health institutions		
16.5 Accreditation of hospital and health institutions	9.4 Quality assurance, registration, permission for operation, management and regulation of state level treatment centers and services	9.4 Physical infrastructures development and management relating to health services		
16.6 Registration, operation, permission, physical infrastructures, management and regulation of national or specialized service providing hospitals	9.5 Quality standards, registration, permission for operation and registration relating to production of medicinal and health technology materials, storage, maximum retail price, final disposal according to the national standards	9.5 Matters relating to healthy drinking water and quality of food materials and air and sound pollution control		
16.7 Quality standardization and regulation relating to medicine health equipments and health technology production and development, storage, sales and distribution and final disposal	9.6 Agency wise cooperation and coordination	9.6 Management of sanitation awareness program and health related waste		
16.8 International health regulation, health relating treaty and agreement and relation, coordination and cooperation with development partners		9.7 Collection, reuse, processing, disposal, determination of service fee and regulation of health related soli waste		
16.9 Policy and standardization of traditional health treatment service including ayurvedic, yunani, amchi, homeopathy and naturopathy		9.8 Matters relating to blood circulation service, local and urban health service		
16.10 Policy and standardization relating to communicable and non- communicable disease control		9.9 Matters relating to medical shop operation and regulation		
Constitution Schedule 9(3)Health Federal, Province, Local concurrent jurisdiction, 3 Health				
Among Federal, Provincial, and Local G	Among Provincial, Federal, and Local G	Among Local, Federal, and Provincial G		

3.1 Policy, law, standards and regulation relating to health (treatment) tourism	3.1 Registration, permission for operation and regulation of hospital and nursing house, Nidan (Curing) centre and other health institutions according to national standards	3.1 Target and quality determination of local level according to the nation and provincial target and standards
3.2 Policy, law, standard and regulation relating to social security including health insurance	3.2 Quality monitoring and analysis model of drinking water, food material, sound and air and standard of quality and implementation	3.2 Clinic registration, operation, permission and regulation of general hospitals, nursing homes, observation centres and other health institutions
3.3 Human resource development and management of health sector	3.3 Implementation, surveillance and monitoring of provincial programs	3.4 Production, processing and distribution of medicine related vegetation, herbs and other medicine related materials
3.4 National standardization, implementation and regulation relating to health services and material fee	3.4 Management and regulation of health insurance including health security programs according to national standards	3.5 Social security program management including health insurance
3.5 Pharma vigilance and regulation	3.5 State level health sector human resource development and management	3.6 Minimum price determination and regulation of medicine and other medical products in local level
3.6 Standard and regulation of medicine procurement and supply management	3.6 Matters relating to pharma vigilance, appropriate use of medicine and antimicrobial resistance reduction	3.7 Appropriate use of medicine and antimicrobial resistance reduction in local level
3.7 Study, research and regulation relating to health science	3.7 Procurement and supply management of immunization and family planning including quality sensitive medicine and health materials	3.8 Procurement, storage and distribution of medicine and health equipment in local level
3.8 Medicinal research of herbs and mineral	3.8 Determination of priority of research, study and research and information delivery in the state level	3.9 Health system management in local level
3.9 Management of health information system and health audit system	3.9 Institutional management of health information system and health audit system in the state level	3.10 Public health surveillance in local level
3.10 Public health surveillance of national and international concern	3.10 State level public health surveillance management	3.11 Operation of promotional, preventive, curative, rehabilitative and palliative health services of local level
3.11 Standardization of basic health service	3.11 State level standard and management relating to Ayurveda and other vogue health services	3.12 Promotion of public health including healthy lifestyle, nutrition, physical exercise, yoga, adoption of health circle, panchakarma
3.12 Formulation of national protocol of health service necessary in different level	3.12 Standards, control and regulation of tobacco, alcohol and intoxicant matters	3.13 Control and management of zoonotic and insects related diseases
3.13 Establishment of operation of national reference laboratory and testing centre	3.13 Permission, operation and expansion of cure centres and laboratory services	3.14 Control in use and awareness promotion of tobacco, alcohol, and drugs related substances
3.14 Development of national referral system	3.14 Public health emergency situation, disaster in health sector and epidemic management	3.15 Management of traditional health treatment services including ayurvedic, unani, amchi, homeopathy and naturopathy
3.15 Quality monitoring and analysis, model/pattern and quality standardization of drinking water, food stuffs and air	3.15 Communicable and non- communicable disease control and prevention	3.16 Control plan and implementation of public emergency health, epidemic control in local level
3.16 Model/scheme formulation, implementation coordination and regulation of health sector climate change adoption	3.16 Physical infrastructures development and management relating to health service according to national standards	3.17 Control and prevention of communicable and non-communicable disease in local level
3.17 Public health emergency	3.17 Standardization, implementation	3.18 Matters relating to emergency

situation, disaster in health and epidemic management	and regulation relating to health related solid waste management	health services delivery
3.18 Buffer stuck management of medicine and medical equipment for emergency situation	3.18 Provincial buffer stock management of medicine and medicine related materials for emergency situation	
3.19 Determination of scope of basic health services	3.19 Matters relating to Ayurveda, unani, amchi, homeopathic, naturopathy including traditional and health services management	
3.20 Emergency health service delivery	3.20 Emergency health services delivery	

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