Annual Health Report 2080/81



Government of Nepal

Ministry of Health and Population

Department of Health Services

Kathmandu, Nepal

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April, 2025

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Pradip Paudel

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MESSAGE

Delivering high-quality healthcare to all citizens of Nepal remains a top priority of the Ministry of Health and Population, Government of Nepal. The Ministry is dedicated to progressing the goals outlined in the National Health Policy 2019 and the Nepal Health Sector Strategic Plan 2023-2030. The government is committed to succeeding towards "Universal Health Coverage" through collaborating with the public and private stakeholders as well as National and International health development partners. Our collective efforts align with Nepal's global commitments to strengthen health system and enhancing health outcomes.

Nepal's transition to the federal structure has presented challenges, yet it has also provided opportunities for significant advancement in the health sector. I am pleased to acknowledge the remarkable progress made in the health sector over the past decade which has been achieved through combined efforts of various stakeholders. These contributions have played a vital role in improving service delivery, expanding access to healthcare and addressing critical health challenges across country.

As in the previous years, I am delighted to introduce the Annual Health Report, brought forward by the Department of Health Services, for the fiscal year 2080/81 (2023/24), which marks its 30th edition. This report provides a detailed assessment of the country's health care system, presenting key insights (progress and accomplishments) into service utilization, disease patterns, healthcare infrastructure, and policy impacts. By offering a comprehensive review of the past Fiscal Year's performances, this report serves as an essential tool for policymakers, healthcare professionals, and researchers, facilitating data driven decisions for future improvements.

The timely dissemination of this report including quality health data is crucial for planning effective policies and strategies, and I am confident that this report will serve as a valuable resource for all stakeholders working towards a stronger and more resilient healthcare system in Nepal.

I extend my deepest appreciation to the Department of Health Services team, health professionals, and all contributors for their dedicated efforts in preparing this report. Furthermore, I express my gratitude to health development partners for their unwavering support in strengthening Nepal's health system. Together, we can build a healthier and prosperous Nepal.

April 2025

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PREAMBLE

It is my pleasure to present the Annual Health Report of the fiscal year 2080/81 of the Department of Health Service, 30th series of its kind. This report contains the efforts and outputs of past years in health sector of Nepal. The report reflects the continued and collaborated efforts of Department of Health Services, provincial and local authorities, healthcare professionals, policymakers, and development partners who have worked tirelessly to strengthen the country's healthcare system.

The report is comprehensive document encompassing all the major activities of Department of Health Services including the activities of other departments within the Ministry of Health and Population. It also includes the contributions from health development partners, non-governmental organizations and private sector as well. I am confident that a competent and efficient health care delivery system is in place and all the relevant data from local, provincial and national level are included in this report.

This report is a dedication of all the stakeholders involved in healthcare delivery system from national, provincial and local level authorities ranging from policy makers to community level health workers including Female Community Health Volunteers. This report provides a detailed analysis of health service utilization, disease trends, and policy outcomes offering vital resources for health workers, program managers, researchers, and policy makers in identifying progress while addressing the areas of slackness that needs enhancement. Additional efforts are needed to overcome the obstacles that hamper the progress of those programmed activities. This report will help in informed decision making and also offer information for policy formulation, policy revisions as well as assist in program implementation. Addressing the prevailing issues with the endeavoring of all, I hope we will be able to uplift the health status of the people of Nepal according to our goals and targets.

To conclude, I extend my sincere thanks to Director General of the Department of Health Services and all concerned health personnel for finalization of this report. I would like to congratulate Director of Management Division and his team including IHMIS for preparing, editing and finalizing this Annual Health Report. I take the opportunity to extend my thanks to our national and international partners for their technical and financial support during the year.

.....

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PREAMBLE

It is with great pleasure that we present the Annual Health Report for the fiscal year 2080/81 (2023/24), reflecting the progress and achievements of Nepal's healthcare sector over the past year. This report is a testament to the collective efforts of the Department of Health Services (DoHS), provincial and local authorities, healthcare professionals, policymakers, and development partners who have worked tirelessly to strengthen the country's healthcare system.

Over the years, Nepal's healthcare sector has made significant progresses in enhancing service delivery, expanding access to care, and addressing public health challenges. Despite numerous obstacles, we remain committed to achieving Universal Health Coverage, ensuring that all individuals receive quality healthcare services regardless of their geographical location or socioeconomic status.

This report provides a comprehensive analysis of health service utilization, disease trends, and policy outcomes, offering valuable resources for policy makers, researchers, and program managers for identifying successful initiatives to replicate while addressing areas that require improvement. It also helps in evidence-based decision-making, and drives policy formulation and program implementation.

The achievements documented in this report highlights the dedication of all stakeholders involved in health service delivery from national to provincial and local level authorities, policymakers to frontline health workers, including Female Community Health Volunteers, who play a crucial role in reaching underserved communities. Their commitment has been instrumental in improving health outcomes across the nation and deserves the heartfelt gratitude.

On behalf of the Ministry of Health and Population, I extend my sincere appreciation to the Department of Health Services team members, all contributors, and organizations that contributed to the preparation of this report.

Together, let us continue striving towards a healthier and more equitable future for all.

.....

Dr. Bikash Devkota
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FOREWORD

It is with great honor and pride that I present the Annual Health Report 2080/81 (2023/24) on behalf of the Department of Health Services (DoHS). This report marks the 30th edition in the Annual Health Report series published by the DoHS, Ministry of Health and Population (MoHP).

Health sector is one of the priority sectors of the Government of Nepal. The DoHS remains committed to building a healthier nation through decentralized health system, strengthening coordination with provincial and local governments, and ensuring an effective implementation of health programs. This report provides a detail assessment and analysis of major healthcare initiatives, performance outcomes, and key challenges and strategies necessary to enhance healthcare services across all levels. Our commitment to transparency, accountability, and continuous system improvement in healthcare delivery remains at the core of this report.

This report is built upon the data, routinely collected from various information reporting platforms including health management information system (HMIS). By prioritizing data accuracy and real time analysis, we continue to emphasize evidence-based decision making. This report highlights the comprehensive insights into the key health indicators, service coverage, and achievements of different programs in the last fiscal year including the trends across the past three years for some vital indicators, serving as an essential tool for all stakeholders for strategic planning and informed policy making.

This report also reflects the success of various health programs implemented by different divisions and centers. These achievements are made possible through the persistent and tireless dedication of health care professionals, program managers, and field workers, those who are particularly working in remote and challenging environments.

While we take pride in the significant progress made, continuous efforts and strategic interventions remain essential to ensure that healthcare services align with the National Health Policy, 2076, and the Nepal Health Sector Strategic Plan 2079/80 – 2087/88.

I extend my deep appreciation to the DoHS team, MoHP, provincial and local level entities, health partners and all stakeholders for their collective commitment and efforts to strengthening Nepal's Health System, as outlined in this report. My special appreciation goes to Dr. Pawan Jung Rayamajhi, Director of the Management Division, Mr Ritu Pantha, IHIMS Chief and the entire IHIMS team for their dedication in compiling and publishing this report with precision.

.....

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FOREWORD

It is with great pride and pleasure that we present the Annual Health Report, 2080/81 (2023/24), the 30th edition in its series which provides the comprehensive assessment of the healthcare service delivery, achievements and challenges in Nepal over the past fiscal year. As the Director of the Management Division, I take immense pride in collaborating with my dedicated team to produce this valuable report, which serves as a critical tool for policy formulation, healthcare resource planning, and strategic improvements. The Management Division remains committed to ensuring effective use of information for monitoring the delivery of quality health services and strengthening coordination across all levels of government.

This report reflects the annual performance of key components of the healthcare delivery system and compiling significant activities undertaken by the health facilities across all levels. It highlights the trends and patterns in service coverage and utilization while showcasing major achievements of various health programs. The data presented in this report are primarily derived from the information submitted by health facilities to the Health Management Information System (HMIS) and other reporting platforms, ensuring the credibility of this report, and making it a valuable reference for researchers, health care professionals, and policy makers.

I would like to express my heartfelt gratitude to Honorable Minister of Health and Population, Mr. Pradip Paudel, as well as the Secretaries Mr. Hari Prasad Mainali, and Dr. Bikash Devkota for their exemplary guidance and leadership. I am grateful to Dr. Sangeeta Kaushal Mishra, additional secretary of MoHP for her invaluable support. I am deeply grateful to Dr. Tanka Prasad Barakoti, Director General of DoHS, for his visionary leadership, and insightful guidance. I extend warm appreciation to all Chiefs, Directors, and personnel from various Divisions and Centers for their tireless efforts in compiling the data that forms the foundation of this report. My special appreciation goes to IHIMS team, led by Mr. Ritu Pantha, IHIMS Chief, for their hard work and significant contributions in compiling essential data and publishing this report, which enables data driven policy decisions. Furthermore, I am indebted to all the health works at all levels, from Female Community Health Volunteers (FCHVs) to national policy makers, for their dedication to delivering quality healthcare services across the country.

This report is the result of collective efforts from various contributors involved in data recording, reporting, compiling and analyzing service delivery trends. Without their persistent dedication, this publication would not have been possible. I would also like to extend my gratitude to our health sector stakeholders and development partners for their continued support in strengthening the national health care system. I sincerely hope that this report will contribute to the ongoing efforts to enhance and improve healthcare services across Nepal.

.....

Dr. Pawan Jung Rayamajhi
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ACKNOWLEDGEMENT

The Annual Health Report 2080/81 marks the 30th edition in its series and is a product of the dedicated efforts of the Integrated Health Information Management Section (IHIMS) under the Management Division of the Department of Health Services (DoHS). This comprehensive report highlights the performance and achievements of Nepal's healthcare delivery system over the past year, consolidating data from all tiers of the health system, including community-based services. It stands as a testament to the tireless commitment of health program managers, healthcare providers, and Female Community Health Volunteers (FCHVs), whose invaluable contributions deserve our heartfelt appreciation.

I would like to extend my sincere gratitude to the Hon'ble Minister of Health and Population, Mr. Pradip Paudel; Secretaries Mr. Hari Prasad Mainali and Dr. Bikash Devkota; and Additional Secretary Dr. Sangeeta Kaushal Mishra for their vital guidance and leadership. I am especially thankful to Dr. Tanka Prasad Barakoti, Director General of DoHS, for his exemplary leadership throughout the process. The continued support and direction from Dr. Pawan Jung Rayamajhi, Director of the Management Division, have been instrumental in ensuring effective coordination and the successful publication of this report. I am deeply grateful to all Chiefs and Directors of the divisions and centers within DoHS and the Ministry of Health and Population for their key roles in the collection, compilation, and validation of high-quality data for their respective programs. I also extend my appreciation to section chiefs, program managers, and policymakers across the federal, provincial, and local levels whose efforts have ensured the availability of reliable health data foundational to this report.

I would like to extend a heartfelt thank you to my dedicated team at IHIMS — Statistical Officers Mr. Chhedi Prasad Yadav, Mr. Krishna Raj Pandey, and Mr. Tika Nepal; Computer Officers Ms. Nabina Pradhananga and Mr. Prabin Chauhan; Public Health Officers Ms. Deepsikha Aryal and Ms. Lisasha Paudel; and Health Information Officer Mr. Avay Raj Shrestha — for their diligent efforts, technical expertise, and steadfast commitment to the successful preparation of this report. I also sincerely appreciate the ongoing technical support provided by our health development partners, including WHO, UNFPA, UNICEF, GIZ, NSI, and other key stakeholders, whose valuable contributions have been integral to this achievement.

I am confident that this report will serve as a valuable resource for health planners, managers, researchers, academicians, service providers, and students. It offers insights and opportunities to explore innovative strategies for enhancing the quality of health services. The data and findings presented herein will support evidence-based planning and decision-making across all levels of government -federal, provincial, and local in their pursuit of delivering high-quality healthcare services.

Pantha
.....
Mr. Ritu Pantha
Chief, Integrated Health Information Management Section (IHIMS)

ABBREVIATIONS AND ACRONYMS

Abbreviations	Full Forms
AA	Anesthesia Assistants
AEFI	Adverse Event Following Immunization
AEM	AIDS Epidemic Modelling
AES	Acute Encephalitis Syndrome
AFP	Acute Flaccid Paralysis
AHA	Ayurveda Health Assistant
AHIMS	Ayurveda Management Information System
AHR	Annual Health Report
AIDS	Acquired Immunodeficiency Syndrome
AMR	Antimicrobial Resistance
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
API	Annual Parasite Incidence
ARI	Acute Respiratory Infection
ART	Antiretroviral Therapy
ARV	Anti-Retroviral
ASBA	Advanced Skilled Birth Attendant
ASRH	Adolescent Sexual and Reproductive Health
ASVS	Anti-Snake Venom Serum
ATAC	Assistive Technology Capacity Assessment
AWPD	Annual Work Plan and Budget
BAMS	Bachelor of Ayurveda Medicine and Surgery
BCC	Behavior Change Communication
BCD	Behavior Centered Design
BCG	Bacillus Calmette–Guerin
BEmONC	Basic Emergency Obstetric and Neonatal Care
BHS	Basic Health Services
BMET	Biomedical Equipment Training
BMI	Body Mass Index
BPKIHS	BP Koirala Institute of Health Sciences
BRP	Basic Rehabilitation Package
BTSC	Blood Transfusion Service Centre

CAC	Comprehensive Abortion Care
CAMH	Child and Adolescent Mental Health
CB	Community Based
CCU	Critical Care Unit
CDD	Control of Diarrheal Disease
CEmONC	Comprehensive Emergency Obstetric and Neonatal Care
CHIS	Community Health Information System
CHISS	Child Health and Immunization Services Section
CHN	Community Health Nurse
CHO	Community Health Officer
CHT	Community Health Toolkit
CHX	Chlorhexidine
CITC	Client-Initiated Testing and Counselling
CKD	Chronic Kidney Disease
CL	Cutaneous Leishmaniasis
CME	Continuing Medical Education
CNE	Continuing Nursing Education
CNR	Case Notification Rate
CNSI	Comprehensive Nutrition Specific Interventions
COPD	Chronic Obstructive Pulmonary Disease
CPD	Continuing Professional Development
CPR	Contraceptive Prevalence Rate
CRS	Congenital Rubella Syndrome
CS	Cesarean Section
CSD	Curative Service Division
CSDS	Climate-Sensitive Disease Surveillance
CTEVT	Council for Technical Education and Vocational Training
CVD	Cardiovascular Disease
CVS	Central Vaccine Store
DALYS	Disability-Adjusted Life Years
DDA	Department of Drug Administration
DHF	Dengue Haemorrhagic Fever
DHIS	District Health Information System
DIN	Drug Information Network
DMC	Designated Tb Microscopy Center
DMR	Disability Management and Rehabilitation
DoAA	Department of Ayurveda and Alternative Medicine
DoHS	Department of Health Services
DOTS	Directly Observed Treatment Short Course
DPT	Diphtheria, Pertussis, Tetanus
DSS	Dengue Shock Syndrome

DVS	District Vaccine Store
ECD	Early Childhood Development
ECP	Emergency Contraceptive Pills
EDCD	Epidemiology and Disease Control Division
EHCS	Essential Health Care Services
EHR	Electronic Hospital Records
EHS	Essential Healthcare Service
EID	Early Infant Diagnosis
EmONC	Emergency Obstetric and Neonatal Care
EMR	Electronic Medical Record
ENAP	Every Newborn Action Plan
ENT	Ear, Nose and Throat
EOC	Essential Obstetric Care
EOMS	Epidemiology and Outbreak Management Section
EPI	Expanded Programme on Immunization
EPMM	Ending Preventable Maternal Mortality
EQAS	External Quality Assurance Scheme
ERB	Ethical Review Board
ETAT	Emergency Assessment and Treatment
EVT	Elimination of Vertical Transmission
EWARS	Early Warning and Reporting System
FAS	Financial Administration Section
FCHV	Female Community Health Volunteer
FID	Full Immunization Declaration
FIPV	Fractional Dose Inactivated Polio Vaccine
FMIS	Financial Management Information System
FP	Family Planning
FSW	Female Sex Worker
FWD	Family Welfare Division
FY	Fiscal Year
GBV	Gender-Based Violence
GCP	Ground Crossing Point
GHG	Greenhouse Gases
GIS	Geographic Information System
GIZ	Gesellschaft Für Internationale Zusammenarbeit
GMP	Good Manufacturing Practice
GMP	Growth Monitoring And Promotion
GoN	Government of Nepal
GPS	Global Positioning System
HAI	Healthcare-Associated Infection
HCCIN	Hypertension Care Cascade Initiative Nepal

HCWM	Healthcare Waste Management
HDP	Health Development Partner
HEOC	Health Emergency Operation Centers
HF	Health Facilities
HI	Health Insurance
HIB	Health Insurance Board
HIIS	Health Infrastructure Information System
HIP	Health Insurance Program
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HO	Health Office
HPV	Human Papilloma Virus Vaccine
HR	Human Resource
HRH	Human Resource in Health
HTC	HIV Testing and Counselling
HTS	HIV Testing Services
HURIS	Human Resource Information System
IBD	Invasive Bacterial Disease
ICD	International Classification of Diseases
ICT	Immune Chromatographic Test
ICT	Information and Communication Technology
IDA	Iron Deficiency Anaemia
IDD	Iodine Deficiency Disorder
IEC	Information, Education and Communication
IFA	Supplementary Iron Folic Acid
IHIMS	Integrated Health Information Management Section
IHP	International Health Partnership
IHR	International Health Regulations
ILI	Influenza-Like Illness
IMAM	Integrated Management of Acute Malnutrition
IMCI	Integrated Management of Childhood Illness
IMIS	Insurance Management Information System
IMNCI	Integrated Management of Neonatal and Childhood Illness
IMR	Infant Mortality Rate
INGO	International Non-Government Organization
IOM	Institute of Medicine
IPC	Infection Prevention and Control
IPD	Inpatient Department
IPV	Inactivated Polio Vaccine
IRC	Institutional Review Committee
IRS	Indoor Residual Spraying

IT	Information Technology
IUCD	Intrauterine Contraceptive Device
IVM	Integrated Vector Management
IYCF	Infant and Young Child Feeding
JE	Japanese Encephalitis
KAHS	Karnali Academy of Health Sciences
KMC	Kangaroo Mother Care
KYP	Know Your Pharmacist
LAMA	Leave Against Medical Advice
LARC	Long Acting Reversible Contraceptive
LBW	Low Birth Weight
LDC	Least Developed Country
LF	Lymphatic Filariasis
LIS	Laboratory Information System
LLG	Local Level Government
LLIN	Long Lasting Insecticidal (Bed) Nets
LMIS	Logistic Management Information System
LPEP	Leprosy Post-Exposure Prophylaxis
MA	Medical Abortion
MAM	Management of Acute Malnutrition
MBAHS	Madan Bhandari Academy of Health Science
MBBS	Bachelor of Medicine, Bachelor of Surgery
MBFHI	Maternal Baby Friendly Hospital Initiative
MCH	Maternal and Child Health
MCL	Mucocutaneous Leishmaniasis
MD	Management Division
MDA	Mass Drug Administration
MDG	Millennium Development Goal
MDGP	Medical General Practitioners
MDIS	Malaria Disease Information System
MDR	Multi-Drug Resistant
MDT	Multi-Drug Therapy
MEC	Medical Education Commission
MH	Mental Health
MIS	Management Information System
MIS	Maternity Incentive Scheme
MLM	Male Labor Migrants
MMDP	Morbidity Management and Disability Prevention
MMR	Maternal Mortality Ratio
MNCH	Maternal, New-Born and Child Health
MNH	Maternal and New-Born Health

MNP	Micro-Nutrient Powder
MoEST	Ministry of Education, Science, and Technology
MoHP	Ministry of Health and Population
MPDSR	Maternal and Perinatal Death Surveillance and Response
MR	Measles/Rubella
MSAP	Multi-Sector Action Plan
MSC	Matri Suraksha Chakki
MSM	Men Who Have Sex With Men
MSNP	Multi-Sector Nutrition Plan
MSS	Minimum Service Standards
MUAC	Mid-Upper Arm Circumference
MWRD	WHO-Recommended Rapid Diagnostic
NAHD	National Adolescent Health and Development (Strategy)
NAIHS	Nepal Army Institute of Health Science
NAMC	Nepal Ayurveda Medical Council
NAMS	National Academy of Medical Sciences
NBBD	Newborn Birth Defect Surveillance
NBBT	National Bureau for Blood Transfusion
NBMS	National Board of Medical Sciences
NCASC	National Center for AIDS and STD Control
NCCS	National Cancer Control Strategy
NCD	Non-Communicable Disease
NCDR	New Case Detection Rate
NDHS	Nepal Demographic and Health Survey
NDWQS	National Drinking Water Quality Surveillance
NEQAS	National External Quality Assurance Scheme
NGO	Non-Governmental Organization
NHEICC	National Health Education, Information and Communication Center
NHPC	Nepal Health Professional Council
NHRC	Nepal Health Research Council
NHSP	Nepal Health Sector Program
NHSS	Nepal Health Sector Strategy
NHSSP	Nepal Health Sector Strategic Plan
NHTC	National Health Training Center
NIAC	National Immunization Advisory Committee
NIC	National Influenza Center
NICU	New-Born Intensive Care Unit
NIP	National Immunization Programme
NMC	Nepal Medical Council
NML	National Medicine Laboratory
NMNR	Non-Measles Non-Rubella

NMR	Neonatal Mortality Rate
NMSP	National Malaria Strategic Plan
NNC	Nepal Nursing Council
NNT	Neonatal Tetanus
NPC	Nepal Pharmacy Council
NPHL	National Public Health Laboratory
NRC	Nutrition Rehabilitation Center
NSSD	Nursing and Social Security Division
NTD	Neglected Tropical Disease
NTP	National Tuberculosis Control Program
NTPMIS	National Tuberculosis Program Management Information System
NTRL	National Tuberculosis Reference Laboratory
OCMC	One Stop Crisis Management Center
OOP	Out-Of-Pocket
OPD	Outpatient Department
OPV	Oral Polio Vaccine
ORC	Outreach Clinics
ORI	Outbreak Response Immunization
ORS	Oral Rehydration Solution
OST	Opioid Substitution Therapy
OT	Operation Theater
PAC	Post Abortion Care
PAFP	Post Abortion Family Planning
PAHS	Patan Academy of Health Sciences
PAPL	Priority Assistive Product List
PAS	Personnel Administration Section
PB	Paucibacillary Leprosy
PCCS	Post Campaign Coverage Survey
PCL	Proficiency Certificate Level
PCR	Polymerase Chain Reaction
PCV	Pneumococcal Conjugate Vaccine
PEM	Protein Energy Malnutrition
PEN	Package of Essential Non-Communicable Disease
PF	Plasmodium Falciparum
PHC	Primary Health Care
PHD	Provincial Health Directorate
PHEIC	Public Health Emergencies of International Concern
PHTC	Provincial Health Training Center
PITC	Provider-Initiated Testing and Counselling
PKDL	Post-Kala-Azar Dermal Leishmaniasis
PLAMAHS	Planning and Management of Assets in Health Care System

PLG	Province Level Government
PLHIV	People Living With HIV
PMTCT	Prevention of Mother To Child Transmission
PNC	Postnatal Care
PoAHS	Pokhara Academy of Health Sciences
PPH	Postpartum Haemorrhage
PPHL	Provincial Public Health Laboratory
PV	Plasmodium Vivax
PVS	Provincial Vaccine Store
PWID	People Who Inject Drugs
QC	Quality Control
QI	Quality Improvement
QoC	Quality of Care
RAHS	Rapti Academy of Health Sciences
RDT	Rapid Diagnostic Tests
RH	Reproductive Health
RR	Rifampicin-Resistant
RRT	Rapid Response Team
RTI	Reproductive Tract Infection
RTI	Road Traffic Injuries
RUTF	Ready-To-Use Therapeutic Food
SAM	Severe Acute Malnutrition
SARI	Severe Acute Respiratory Infection
SAS	Safe Abortion Services
SBA	Skilled Birth Attendant
SDG	Sustainable Development Goals
SDP	Service Delivery Point
SHNP	School Health and Nutrition Program
SHNP	School Health Nurse
SHP	Skilled Health Provider
SIMH	Special Initiative for Mental Health
SNCU	Special New-Born Care Unit
SORMAS	Surveillance Outbreak Response Management and Analysis System
SRH	Sexual and Reproductive Health
SSNB	Small and Sick Newborns
SSU	Social Service Unit
STI	Sexually Transmitted Infections
SWAP	Sector Wide Approach
SWOT	Strengths, Weakness, Opportunities, and Threats
TAP	Training for Assistive Product
TAS	Transmission Assessment Survey

TB	Tuberculosis
TCV	Typhoid Conjugated Vaccine
TD	Tetanus and Diphtheria
TFR	Total Fertility Rate
TG	Transgender
TGCS	Ten Group Classification System
TIMS	Training Information Management System
TPT	TB Preventive Treatment
TSR	Treatment Success Rate
TT	Tetanus Toxoid
TWG	Technical Working Group
UHC	Universal Health Coverage
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VAD	Vitamin-A Deficiency
VBDRTC	Vector Borne Disease Research and Training Center
VBD	Vector Borne Disease
VCT	Voluntary HIV Counselling and Testing
VL	Visceral Leishmaniasis
VPD	Vaccine-Preventable Disease
VSC	Voluntary Surgical Contraception
WASH	Water, Sanitation and Hygiene
WFP	World Food Program
WHO	World Health Organization
WPV	Wild Poliovirus
WRA	Women of Reproductive Age
XDR	Extensively Drug Resistant

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Executive Summary

Nepal, a land-locked country situated in South Asia, has a population of more than 29 million. It is a multi-ethnic, multi-lingual, multi-religious, and multi-cultural state where inhabitant cohabitate in harmony within its three main ecological regions: Mountain, Hills, and Terai. The Constitution of Nepal 2015, affirms the country as a federal parliamentary republic nation which is divided into provinces and local levels. There are a total of seven provinces (Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali, and Sudurpaschim) and 753 local levels (also known as 'Palikas').

The history of the healthcare system in Nepal has evolved over many centuries. Until 935 BS (879 AD), Nepal's health system was primarily based on traditional medicine, especially Ayurveda. During the 104-year duration of the Rana regime (1903 – 2007 BS/1847-1951 AD), a significant amount of effort was dedicated to strengthen traditional medicine system, and development and advancement of Nepal's modern healthcare system. This period witnessed the establishment of numerous hospitals and dispensaries, contributing to the growth of Nepal's healthcare system. In 1978 AD, the government adopted the health for all strategy as part of the primary healthcare system. Nepal approved and implemented its first National Health Policy, 1991 AD, resulting in the establishment of modern healthcare facilities at the local level. To strengthen healthcare infrastructure, all 75 districts were equipped with district health offices, and the government also established regional health directorates in the then five regions.

Nepal entered the federal structure of governance after the promulgation of the new constitution in 2015. This constitution recognizes health as a fundamental right of its citizens. In Nepal, the three tiers of government have been provided with specific areas of rights and duties to plan their independent but coordinated action in the health sector. The basic health services (BHS) is guided by Public Health Service Act 2075 BS and Public Health Service Regulation 2077 BS. Likewise, the GoN initiated health insurance program to offer social protection among its citizens in 2072 BS. In 2017 AD, there was a definitive transfer of basic health services to local governments, further reshaping the healthcare landscape in Nepal. The current Nepal Health Sector Strategic Plan (NHSSP) for the period of 2023 to 2030 was developed in alignment with Nepal's federal structure, considering the health-related constitutional mandates and provisions outlined in the Public Health Service Act 2075 BS.

This Annual Health Report (AHR) for fiscal year (FY) 2080/81 BS serves as a key document, serving as a systematic monitoring and evaluation for the progress of planned programs, analyzing shifts in coverage and utilization statistics. This report not only offers a snapshot of the health sector's advancements but also traces its progression over time. It establishes a vital link between service delivery and evidence-informed decision-making and planning for future programs.

Department of Health Services

The Department of Health Services (DoHS) is responsible for delivering promotive, preventive, curative, rehabilitative and palliative care services throughout Nepal. DoHS plays an important role in ensuring health service delivery by developing and facilitating the implementation of the service delivery standards from the service delivery outlets throughout the country. Furthermore, it functions as an intermediary between the Ministry of Health and Population (MoHP) (federal) and other tiers of government (provincial and local level) by providing logistical, financial, supervisory and technical support from the center to the periphery. The DoHS is responsible for maintaining functional viability and coordination of all health systems building blocks, with the primary objective of guaranteeing the delivery of high-quality services to the public.

Currently, DoHS comprises five divisions: Family Welfare Division (FWD), Epidemiology and Disease Control Division (EDCD), Curative Service Division (CSD), Nursing and Social Security Division (NSSD), and Management Division (MD), Additionally, it includes five centres: National Tuberculosis Control Center (NTCC), National Health Training Center (NHTC), National Health Education Information and Communication Center (NHEICC), National Center for AIDS and STD Control (NCASC), and National Public Health Laboratory (NPHL), along with two sections: Personnel Administration Section (PAS) and Financial Administration Section (FAS).

Maternal and Newborn Health (MNH) Services

Maternal and neonatal health (MNH) is a priority programme for Government of Nepal, and has included the Basic Health Services (BHS) package. Over the years, MNH services have played a pivotal role in improving maternal health outcomes. Nepal is committed to achieving the Sustainable Development Goals (SDGs) and the goals set forth in the Global Strategy for Women's, Children's, and Adolescents' Health (2016–2030). In order to promote MNH programmes, the FWD has continued to allocate funds for necessary human resources.

The National Academy of Medical Sciences (NAMS) and the NHTC collaborate to provide pre-service and in-service training as part of the human resources capacity-building process in the areas such as safe abortion services (SAS), operation theater (OT) management, family planning (FP) techniques, rural obstetrics ultrasound, and skilled birth attendant (SBA) and advanced skilled birth attendant (ASBA).

Key activities undertaken during the fiscal year 2080/81 include community level MNH interventions such as Matri Surakshya Chakki (MSC) and Rural Obstetrics

Ultrasound Programme. Additionally, efforts have been directed towards expanding and enhancing quality of service delivery sites, providing onsite coaching and mentoring, ensuring MNH readiness, establishing emergency referral funds, implementing the Aama Surakshya Program and free newborn programme, conducting maternal and perinatal deaths surveillance and response (MPDSR), monitoring newborn birth defect (NBBD) and supporting special newborn care units (SNCUs).

Till FY 2078/79, minimum of four ANC visit was measured as complete ANC visits. However, in FY 2079/80, the ANC protocol was revised and a pregnant woman with eight ANC visit was considered to have complete ANC visit. There was a sharp increase in proportion of women attending eight ANC visits as per protocol, reaching 61% in FY 2080/81. However, the proportion of recommended ANC visit as per the protocol is not consistent among seven provinces underscoring the regional differences in the utilization. The highest adherence rate was observed in Bagmati province (119%), suggesting that women from outside the area may have utilized ANC services. The proportion of pregnant women delivering at health facilities showed a declining trend compared to previous year. This drop in FY 2080/81 indicates a setback in maintaining the gains from prior years, highlighting the necessity of addressing potential issues. About 74% of the deliveries were conducted by SBA and Skilled Health Provider (SHP) in FY 2080/81, showing a decline of six percentage points compared to previous year. Nationally, the met need for Emergency Obstetric and Newborn Care (EmONC) decreased to 48.8% in FY 2080/81. Nationwide, there were 190 maternal deaths and 1,907 perinatal deaths reported in FY 2080/81, with notable provincial variations. These distributions demonstrate how urgently region-specific approaches to maternal and perinatal health issues are needed. The newborn birth defect surveillance showed that the major system affected was Musculo-skeletal system (28%), followed by circulatory system (25%). Prioritizing interventions like folic acid supplementation and improving nutritional status of mothers during their antenatal periods can help in reducing such events. Before FY 2078/79, mothers who had minimum of three PNC visits were considered to have complete PNC check-ups. However, in FY 2079/80, the PNC protocol was revised and a mother with four PNC check-ups were considered to have complete PNC check-ups. In FY 2080/81, about 38% of mothers had complete PNC checkups, an increase in eleven percentage points compared to previous year, indicating progress in maternal health knowledge and service utilization. Among the sick newborns managed with Kangaroo Mother Care (KMC), 30.14% were managed for LBW, 29.93% for preterm, and 6.76% for hypothermia. However, there was geographical variations in KMC services, with certain provinces leading the way in particular newborn care categories.

Child Health and Immunization Services

The Child Health and Immunization Services Section (CHISS) of FWD plays a critical role in Nepal's efforts to reduce child morbidity and mortality. This section covers two major national programs: the National Immunization Program (NIP) and the Integrated Management of Newborn and Childhood Illness (IMNCI).

Since FY 2069/70, Nepal's 'Full Immunization Declaration (FID)" initiative aims to combat social inequities, ensuring complete immunization for every child within administrative boundaries. As of Ashadh 2081, 76 districts have achieved and sustained 'full immunization' status. Likewise, Nepal is the first country in the South-East Asia Region to enact the Immunization Act 2072 (2016) and the Immunization Regulations. Additionally, Nepal has started hygiene promotion activities integrated with routine immunization (RI) in 2077/78. The programme has been crucial to improving mothers' and guardians' hygiene practices and raising vaccination rates.

Likewise, the program also oversees Vaccine Preventable Disease (VPD) surveillance and includes – Acute Flaccid Paralysis (AFP), Measles surveillance, Acute Encephalitis Syndrome (AES), Neonatal Tetanus (NNT) surveillance, Congenital Rubella Syndrome (CRS) surveillance, Poliovirus environmental surveillance, Rotavirus sentinel surveillance and Invasive Bacterial Disease (IBD) sentinel surveillance.

The immunization month is celebrated every year during the first month of the Nepali calendar, Baishakh (mid-April to mid-May), coinciding with "World Immunization Week," celebrated on the last week of April. Nepal's National Immunization Programme (NIP) has made significant progress over the fiscal years 2078/79 to 2080/81. The target population for these programs includes 600,401 expected pregnancies, 497,944 under 1-year children (surviving infants) and 493,884 children aged 12-23 months. The critical vaccines such as DPT-HepB-Hib1 and DPT-HepB-Hib3 showed a slight decline from their peak, however MR1, MR2, and JE, TCV, and PCV3 vaccines demonstrated a remarkable upward trend compared to previous year. Nonetheless, there are provincial disparities in vaccination coverage which further highlight the need for localized strategies. Sustained commitment and targeted efforts will be essential to ensure every child and vulnerable population receives life-saving immunizations. Nationwide, the dropout rates for key antigens under the NIP showed a mixed trend in FY 2080/81, however the trend indicated the positive progress in reducing dropout rates. Similarly, wastage rates for most vaccines remain above the indicative targets across all three fiscal years. Particularly, BCG, JE, and MR continue to exceed recommended limits due to the one-vial-per-session policy, necessitating strategic adjustments.

In FY 2080/81, Nepal reported a total of 258 AFP cases across 63 districts. The national non-polio AFP rate stood at 3.28 per 100,000, surpassing the regional benchmark. The presence of districts with suboptimal AFP rates underscores the need for continued efforts in strengthening case detection, reporting, and sample collection, particularly in underperforming areas.

In FY 2080/81, Nepal's NMNR rate was 2.3 per 100,000 populations, surpassing the standard of 2 per 100,000 populations, which is a positive indicator of the quality of MR surveillance.

In 2024 AD, Nepal recorded a total of 1,107 cases of AES, marking an increase from the 972 cases reported in 2023 AD. Despite this rise in AES cases, the number of laboratory-confirmed JE cases among them declined.

Nepal successfully eliminated maternal and neonatal tetanus in 2005, and this achievement has been maintained till date. Only 2 NNT case were reported in FY 2080/81, one from Tanahu and other from Udayapur district.

The CB-IMNCI programme aims to provide targeted services to 90% of the estimated population by 2030 as outlined in "Vision 90 by 30". This programme focuses on addressing major health conditions in newobrns (0-59 days) children such as low birth weight, bacterial infections, jaundice, hypothermia, birth asphyxia, and breastfeeding counseling. It also offers comprehensive approach to treating major childhood diseases like Pneumonia, Diarrhea, Malaria, Measles, and Malnutrition) in children aged 2-59 months. In addition, the facility based IMNCI (FB-IMNCI) programme aims to address gaps in managing cases referred from peripheral health institutions.

The incidence of ARI increased from 266 under five children in FY 2079/80 to 290 per 1000 under five children while incidence of pneumonia remained constant at 34 per 1000 under five children. Karnali province had the highest ARI incidence (433 per 1000 under five children) as well as highest pneumonia incidence (70 per 1,000 under five children).

The incidence of diarrhea was increased to 127 per 1,000 children under 5 years nationwide, with the highest rates recorded in Karnali Province (251). Nationally, 97% of diarrheal cases were treated with zinc and ORS.

Nutrition Program

Nepal has made significant progress in reducing severe stunting and wasting in children under five, guided by the Nutrition Strategy 2077. Different nutrition program implemented in Nepal includes: Growth monitoring and promotion (GMP), Integrated Management of Acute Malnutrition (IMAM), Integrated Infant and Young Child Feeding (IYCF) and Multiple Micronutrient Powder (Baal Vita) Community Promotion Program, Control and Prevention of Iron Deficiency Anemia, Control and Prevention of Vitamin-A Deficiency Disorders and Helminth Control, Control and Prevention of Iodine Deficiency Disorders, School Health and Nutrition Program, Comprehensive Nutrition Specific Interventions Training Programme, Mother and Child Health and Nutrition (MCHN) Program and Mother Baby Friendly Hospital Initiative.

In FY 2080/81, about 68% of the children aged 0-23 months were registered for growth monitoring indicating a decline compared to past year. The decrease in GMP registration rates suggests that many children are not receiving regular growth monitoring, potentially leading to malnutrition and growth-related issues. There was a decline in proportion of underweight children aged 0-23 months who were registered for growth monitoring. The proportions of new-borns initiated with breastfeeding within one hour of birth was 84.6%. The exclusive breastfeeding rate increased to 150.1%. Similarly, increment was also seen across the provinces. The rate of timely introduction of complementary foods increased to 101% and the rate was steady among all provinces.

The screening of under-five children by female community health volunteers (FCHVs) using Mid-upper arm circumference (MUAC) tape showed that among 3,922,571 under-five children screened, 1.82% children were found to have moderate acute malnutrition (MAM), while 0.2% had severe acute malnutrition (SAM). Provinces with higher SAM rates than the national average were Madhesh, Lumbini, Karnali, and Koshi provinces necessitating focused intervention. A total of 21,925 children were admitted in IMAM program, indicating a significant decline in the number of cases compared to previous year, while the number of children admitted in NRCs increased. The SPHERE standard and management of malnutrition for FY 2080/81 shows that there was better management and healthcare supply, guaranteeing that patients are less likely to succumb to severe nutritional problems. Regarding supplementation of the micronutrients among 6-23 months' children, 53.98% of children in this age group received at least one cycle (60 sachets) of Baal Vita, which is a notable rise over prior years. Similarly, the coverage of 180-day supply of Iron and Folic Acid (IFA) during pregnancy was 65.5%,45-day IFA to postpartum mother was 81.93%, and 26 weeks' regimen of IFA to adolescent girls was 41.6%. Nationwide the coverage of biannual distribution of Vitamin A among the children aged 6–11 months was 132.7% in Kartik and 120.8% in Baishakh, and that of albendazole to children aged 12-59 months was 114.2%.

Family Planning (FP) and Reproductive Health (RH) Program

Family planning (FP) and reproductive health (RH) is a key component of Nepal's health programs which aim to improve the health and well-being of people and families by empowering them to make informed decisions regarding their reproductive health.

The key indicators for the FP program are associated with the adoption of FP methods by both current and new users. These indicators include the method mix, adoption of permanent methods for limiting family size and short acting reversible methods for spacing the family size. These indicators collectively reflect the informed, comprehensive, and voluntary choices made by users in the selection of FP methods.

In FY 2080/81, there were differences in the adoption of family planning methods among current users; the majority chose female sterilization (33.5%), followed by implant users (21.26%), demonstrating the preference for long-lasting and permanent solutions. Among the new users of modern contraceptive methods, 43% used Depo, followed by pills and implants. Male sterilization (1%) was the least popular method. The Modern Contraceptive Prevalence Rate (mCPR) remains almost steady in all provinces over the period of three FYs, with a total of 49 districts having mCPR greater than national average of 30.8%. The uptake of postpartum family planning were 1.62% for tubectomy, and uptake post-abortion family planning declined to 72% in this FY.

Addressing the special needs of adolescents through Adolescent Sexual and Reproductive Health (ASRH) is a

vital part of the nation's public health agenda. The goal of the National Adolescent Health and Development Strategy (2075 BS (2018 AD)) is to promote adolescent sexual and reproductive health. As per Adolescent RH guideline 2079, Adolescent Health Coordination Committees have been established in all the local levels which regularly discusses adolescent health related issues and addresses them.

In FY 2080/81, a total of 1,599 health facilities were certified as adolescent friendly service sites. A total of 39,183 adolescents utilized FP services for the first time, 37,829 utilized ANC services and 6,378 utilized safe abortion services. In FY 2080/81, the major activities regarding RH morbidities was endorsement of infertility management guideline, and Standard Operating Procedure guidelines for HPV DNA screening for cervical cancer. The cervical screening was done in 1,205,994 women aged 30-49 years and 53,465 women aged 50 years and above, and breast cancer screening was done in 65,623 (1.93% suspected and referred). The gradual reduction in program budget for FP and RH services remains a challenge.

Nursing and Social Security Services Programs

Nursing and Social Security Division (NSSD) is responsible for delivery of quality health services through capacity development of nursing and its professionalism, including planning, coordination, and facilitation for various aspect of nursing, midwifery, school health and community nursing services. It is also responsible for the evaluation of geriatric and gender based violence programme along with treatment and management facilities for selected diseases to impoverished Nepalese citizens at listed hospitals

Regarding capacity building of nurses and midwives, skill exchange program for critical care nurses were conducted where NSSD gave orientation training to nursing colleges and private institutions on health related guidelines and strategies, and also organized a 14-day midwifery education training for 15 faculty members from 9 midwifery institutes and clinical sites. Likewise, for Bipanna Nagarik Ausadhi Upachar Karyakram capcity building, hemodialysis training was provided to 18 nursing staffs.

With an emphasis on enhancing students' academic and health status, Nepal's "School Health and Nursing Service Program" program seeks to include health services and interventions in schools at the federal, provincial, and local levels. As of FY 2080/81, the program has been implemented in 1387 schools of which nearly 19 % of schools were supported by NSSD, and the remaining were owned by the provinces. One of the key activities conducted was development of socio-emotional learning ToT package for school nurse and a total of 41 school nurse were trained.

Community Health Nursing Program is an essential part of Nepal's healthcare system, and aims to promote, prevent, and treat health issues in people, families, and communities. The main objective of the program is to develop a digital health profile for every individual in each household and to promote healthy lifestyles, thereby reducing the burden of communicable disease and non-communicable diseases. In order to ensure equitable service delivery and close gaps in healthcare access, CHNs routinely recommend individuals of the community to medical facilities for essential treatments. A total of 53 CHNs had been serving in four municipalities (14 in Bardibas, 15 in Chandragiri, 14 in Waling and 10 in Bhaktapur. There are four CHOs in all, one in each municipality. Till now, health profile of a total of 66547 households is created by CHN of which 11667 was in Waling, 14321 in Bardibas, 27696 in Chandragiri and 12863 in Bhaktapur.

FCHVs program was initiated in the year 2045. with the objective of improving the health of local communities by providing knowledge and skill to empower women, raising awareness on health-related issues, and engaging local institutions in promoting healthcare. Currently, about 50,396 FCHVs are actively contributing to health care in Nepal. The major contributions of FCHVs to health service delivery include the distribution of FP commodities, emergency contraception, and iron tablet. Over the course of past three fiscal years, the distribution of commodities shows a downward tendency. This FY showed the significant drops in the distribution of condoms, iron tablets, and contraceptive pills. FCHVs also ensure postnatal visits for home deliveries, with 22277 mothers visited within the first 24 hours of birth, and 28942 mothers on the seventh day. Additionally, FCHVs assisted over 29892 mothers in initiating breast feeding within one hour of birth and distributed postnatal Vitamin A capsules to 71804 postnatal mothers. Furthermore, for tracking MAM and SAM, FCHVs screened children aged 6-59 months using MUAC. Inequitable distribution of FCHVs according to population in federal context remains a challenges.

The Social Service Unit (SSU), within NSSD was established with the primary objective of offering free or subsidized services to economically disadvantaged patients at referral hospitals and has been expanded to all provinces and districts. In FY 2080/81, a total of 88 SSU sties were operating across Nepal, and served 78504 cases. Bir Hospital and the National Trauma Center have been reimbursed a total of NPR 593,815.46 for providing treatment to conflict and disaster victims

Gender-Based Violence (GBV) is a significant human rights issue and public health concern which profoundly impacts the physical and mental health of the individual survivor and their family, and poses a social and economic burden to the society. Hospital-Based One-Stop Crisis Management Centers (OCMC) provide a secure and encouraging setting where survivors can get police services, psychosocial counselling, medical care, and legal support all in one location. In FY 2080/81, a total of 12861 new cases of GBV were reported in OCMC. The common type of the GBV included- physical violence, emotional violence, denial of resources/ opportunities/services, rape, etc. With 29.19% of cases nationwide, psychosocial counseling was the most commonly offered service.

The geriatric health service strategy, 2078/79 – 2087/88 acknowledges that senior citizens are at a higher risk of chronic conditions and multi-morbidities, often accompanied by a decline in functional capacity. As of FY 2080/81, a total of 61 hospitals provide geriatric services to senior citizens under the government geriatric ward program scheme. More than 200 human

resource were trained on geriatric care. A total of 74414 cases were registered in geriatric service across the country. The common morbidities among senior citizens includes Cardio-Vascular, Respiratory, Metabolic, Musculoskeletal, and Urinary conditions.

Likewise, other programs overseen by SSU includes provision of treatment for the injured person of janayuddha, jana-andolan, terai/madhesh andolan, earthquake, and victims of conflicts, and treatment for victims of acid attack.

The Bippana Nagarik Upachar Karyakram covers a targeted population and reimburses treatment expenses for eight selected diseases through listed hospitals under the scheme. As of FY 2080/81, a total of 135 hospitals are enlisted to offer various medical service. A total of 107 hospitals provide haemodialysis services, making it the most widely available specialized service. A total of 41,845 patients received free treatment under this scheme, and NRS 4,002,759,241 was spent and majority of the funds were utilized by Kidney patients.

NCDs and Mental Health Programs

The burden of the NCDs is in the rise and was responsible for 71.1% of total deaths in 2075/76 BS (2019 AD) with the highest out-of-pocket (OOP) expenditure (40.3%) reported for NCDs. GoN has prioritized NCDs and has strategic planning based on National Multi-sectoral Action Plan II (MSAP II) for NCDs (2021-2025 AD). The prevention and treatment programs for NCDs majorly constitute of Nepal Package of Essential NCD (PEN) interventions for PHC in low-resource settings, Hypertension Care Cascade Initiative Nepal and PEN-Plus Program. National Cancer Control Strategy (2024-2030 AD) was formulated to reduce the cancer burden in Nepal. In FY 2080/81 a total of 11,45,926 patients of hypertension, 5,84,347 with diabetes, 2,59,110 with Chronic Obstructive Pulmonary Diseases (COPD), 97,387 with cancer and 30,330 with CVDs were on treatment for NCDs.

Nepal endorsed its National Mental Health Strategy and Action Plan (NMHSAP) 2077 BS as an umbrella strategy to guide overall mental health programs and service delivery. Major programs for mental health include- scaling up suicide prevention with a multiprong collaborative actions, child and adolescent mental health (CAMH) services, distribution of psychotropic medications, integration of mental health into maternal health services, MHPSS preparedness during emergencies and integration of NCDs and mental disorders into the current recording and reporting of HMIS. In FY 2080/81, a total 1,94,773 patients were on treatment for mental health issues.

Epidemiological Surveillance, Research and Outbreak Management

Major programs in epidemiological surveillance and research include Early Warning and Reporting System (EWARS), EDCD Call Center (1115) for Disease Surveillance, media monitoring, Drinking Water Quality Surveillance, Climate Sensitive Disease Surveillance (CSDS) and Surveillance Outbreak Response Management and Analysis System. There are a total of 118 sentinel sites of EWARS of which 16 are consistent reporting sites. In FY 2080/81, a total of 21 infectious diseases were reported through EWARS. The highest number of cases of dengue (25,907) followed by cases of scrub typhus (6,763) was reported. In FY 2080/81, the Epidemiology and Outbreak Management Section (EoMS) of the EDCD carried out programs on risk communication and community engagement in all provinces, capacity building on sample collection and transportation of outbreak prone diseases, emergency preparedness for outbreaks, training to rapid response team, online assessment and orientation of 11 health desks, identification and prioritization of hazards and reviews at point of entry.

Communicable Diseases, IHR and One Health

The diseases covered under NTDs and VBDs include - Malaria, Scrub Typhus, Dengue, Kala azar, Lymphatic Filariasis (LF) and Leprosy. There are disease specific programs - public health interventions, guidelines, strategies and targets of eliminations overseen by EDCD.

The Nepal Malaria Strategic Plan 2070/71-2082/83 BS (2014-2025 AD) aims to achieve malaria elimination in Nepal by 2082/83. In FY 2080/81, there were 791 confirmed cases of the malaria of which there were 24 indigenous cases.

National Guideline of Diagnosis, Management and Prevention of Scrub Typhus has been implemented from the year 2079 BS. The reporting of scrub typhus is done through EWARS and HMIS. There were a total of 16,597 cases of scrub typhus reported in FY 2080/81.

Nepal's dengue control program has the goal to reduce the morbidity and mortality due to dengue fever, dengue haemorrhagic fever and dengue shock syndrome. There were a total of 48,883 cases of Dengue.

The goal of kala-azar elimination program is to contribute to mitigation of poverty in kala-azar endemic district of Nepal by reducing mortality and morbidity of the disease and assisting in the development of equitable health system. In the FY 2080/81, there were 47 districts with endemicity of Kala-azar and there were 225 cases of Kala-azar.

The goal of elimination of LF from Nepal by the year 2087/88 (2030) as a public health problem is to reduce the level of the disease in population to a point where transmission no longer occurs. There were 64 endemic districts for LF. In the FY 2080/81, morbidity data from 57 districts showed that 47,868 cases of LF were identified, among which majority (32,659 cases) were hydrocele.

The National Leprosy Elimination Program of Nepal is guided by National Roadmap for Zero Leprosy (2021-30 AD) and National Leprosy Strategy (2021-25 AD) with the goal to eliminate leprosy at the subnational level. In FY 2080/81, a total of 2,472 new leprosy cases and leprosy cases on Multidrug Therapy (MDT) were reported and 18 districts in Nepal reported the leprosy prevalence rate exceeding 1 per 10,000 populations, indicating continued endemicity. The national new case

detection rate was 8.41 per one lakh, while prevalence rate was 0.92 per ten thousand, 79.98% of MB cases among new leprosy cases and 5.50% of child cases among total new cases was reported.

In FY 2080/81, 2,10,301 cases of animal bites were reported and 3,00,000 Anti Rabies Vaccine (ARV) vials were consumed. Fourteen deaths due to rabies were reported. There are a total of 106 treatment centers with free distribution of quadrivalent anti-snake venom serum (ASVS) nationwide. There were 8,181 cases of snake bites and 1,488 were poisonous.

Furthermore, International Health Regulation (IHR) came into force in Nepal from 1st Shrawan 2064. In FY 2080/81, there was periodic orientation to staffs of point of entry, state party annual report submission, orientation on M-Pox, simulation exercise on mass casualty management and aeronautical information and publication on health requirement component was updated. For one health approach, zoonotic and other communicable disease section is the focal point, to foster understanding of the relationship between wildlife, domestic animals and humans.

National TB Control and Management Program

National strategic plan (2078/79-2082/83) has the goal to reduce incidence rate from 238 per 100,000 populations in 2078/79 (2020/21) to 181 per 100,000 populations by 2083/84 (2025/26); reduce the mortality rate from 58 per 100,000 to 23 per 100,000 within the same period; end TB epidemic by 2091/92 (2035 AD); eliminate TB by 2,107 (2050 AD); and reduce the catastrophic costs to zero. In FY 2080/81 expansion of diagnostic services, quality treatment service, innovative approach to end TB, strengthening monitoring and surveillance, research and capacity enhancement related activities were carried out. In FY 2080/81, the case notification rate (CNR) of all forms of TB was 139 per 100,000 populations (n=40776), and that for incident TB cases (PBC new and relapse) was 78.2 per 100,000 populations. The national treatment success rate was 92.2% with mortality rate of 3.31%. In FY 2080/81, a total of 633 MDR/RR-TB cases were registered. The treatment success rate for DR-TB in this reporting period was 78%. The estimated proportion of TB cases with multidrug-resistant or rifampicin-resistant TB (MDR/RR-TB) was 4% among new cases and 8.8% among those previously treated.

HIV and STIs Control and Management Program

National program on HIV is guided with the vision of 95-95-95 viz. 95% of all people living with HIV (PLHIV) should know their HIV status, 95% of those should receive sustained antiretroviral therapy (ART) and 95% of those on ART should receive viral suppressions. Major programs for HIV and STIs control include – HIV testing and counselling services, STIs management, prevention of mother to child transmission of HIV, HIV treatment services, opioid substitution therapy services, strengthening strategic information of National HIV program, early infant diagnosis, DHIS2 tacker, mobile health, biometrics, integrated biological and behavioral surveillance survey, HIV surveillance, HIV infection estimations and projections and size estimation of key populations. In FY 2080/81 total 5,24,090 individuals were tested for HIV, out of which 2,475 tested positive for HIV. The HIV positivity rate was 0.47%. Total 6,21,412 women were tested during ANC, labor or PNC and 64 were identified as HIV positive. Total number of PLHIV on ART was 25,728. Against the 95-95-95 targets, Nepal has identified 94% PLHIV, 90% PLHIV are under ART and 60% of viral load suppression.

Curative Services and Medico-legal Services

The Public Health Service Act 2075 BS (2018 AD) and the Regulation 2077 BS (2020 AD) define the BHS package. GoN is committed to providing free BHS to all citizens across the country. The BHS package comprises various public health interventions, including promotional, preventive, diagnostic, curative and rehabilitative health services like immunization, IMNCI, nutrition, ANC, delivery, FP, RH and abortion services, infectious diseases, NCDs and physical distortions, mental health and geriatrics, and basic emergencies.

CSD through its sections- Hospital Services Monitoring and Strengthening Section, Basic and Emergency Health Management Section and Eye, ENT and Oral Health sections oversees the overall implementation and management of curative services in the country. The major programs being- implementation and management of basic health service package, emergency health services, assessment of Minimum Service Standards (MSS), and inspection and renewal of hospitals under the jurisdiction of CSD.

In the fiscal year 2080/81, the MSS was evaluated across 133 hospitals. The national average scores were as follows: 65% for primary hospitals, 63% for tertiary level hospitals, and 44% for specialized hospitals. Among federal hospitals, Bheri Hospital obtained the highest MSS score of 80% and Bhaktapur Hospital led the overall hospitals with an impressive score of 98.0%. There were a total of 63,052,391 outpatient visits as reported in the HMIS with an average of 2.15 outpatient visits per person per year. The common reasons for OPD visits include fever, cough, shortness of breath, abdominal pain, fatigue and weakness, chest pain, lower back pain, nausea and vomiting, general counselling and fracture respectively. Similarly, 11.2% and 6.1% of the population utilized the hospital emergency and in patient services respectively. Of the 1,777,642 cases reported in IPD, only 631,921 discharges reported are only with ICD code, therefore it necessitates the need to capture more with ICD code. A total of 852,748 surgeries (major plus minor) were done. The bed occupancy rate in health facilities was 52% and average length of hospital stay (ALOS) was 3.6 days. A total of 8,006 cases were reported brought dead and 13,899 cases were received for post-mortem.

Medico-legal services are intricately linked with the country's justice system. Medical expertise plays a pivotal role in providing medico-legal services including death investigations and defining age. When medico-legal examinations and investigations are required, a report is prepared on the basis of medico-legal examination with relevant evidence. This report is

also presented in court and if needed the doctors are invited as an expert witness. In FY 2080/81, a total of 35 permanent medical officers were provided training on medico-legal issues.

Federal Level Health Academia and Hospitals

By now, government medical college/academy are established in six provinces. Currently, there are seven federal level medical academia, and one additional academia (Ramraja Prasad Singh Institute of Health Sciences) is being proposed. They are National Academy of Health Sciences (NAMS), B.P. Koirala Institute of Health Sciences (BPKIHS), Patan Academy of Health Sciences (PAHS), Karnali Academy of Health Sciences (KAHS), Nepalese Army Institute of Health Sciences (NAIHS), Pokhara Academy of Health Sciences (PoAHS), and Rapti Academy of Health Sciences (RAHS). There are two provincial level academia one each in Madhesh Province and Bagmati Province. These institutions are autonomous in terms of administration and finances and are not-for-profit. All of them are under the authority of the MoHP, except for NAIHS, which is run by Welfare Fund of the Nepal Army under the Ministry of Defense. Each of the academia have their own teaching hospitals with at least one tertiary level hospital for major clinical attachments, as guided by the criteria of the medical education policy. In provinces where there was no prior medical college/academy/health institution, there are ongoing efforts from both federal and provincial government on the establishment of new medical college/academy/health institution.

In FY 2080/81, a total of 219 MBBS graduates, 300 medical post graduates, and 571 nursing graduates were produced from this federal level academia. Highest number of average OPD visits per day was seen in NAMS (2,205 OPD visits), highest average emergency visits per day in BPKIHS (217 emergency visits), and highest bed occupancy rate in PoAHS (72.7%). The average OT per day ranged from 14 OTs (RAHS) to 96 OTs (BPKIHS) among academia. Among the total patients admitted, the inpatient death rate was highest in NAIHS (4.59%). The proportion of health insurance service recipient among total patient was highest in PoAHS (56.4%). The number of lab test in a day in different academia ranged from 722 test in KAHS to 6,330 test in BPKIHS. The program of OCMC and SSU are functional in all of the federal level academia except NAIHS. The highest number of clients served by SSU was from BPKIHS (37,458) and lowest from KAHS. The highest amount was spent by NAMS on free health services. Regarding postgraduate programs, cent percent of the DM/MCh allocated seats were fulfilled in BPKIHS only. None of the academia were able to fulfill the allocated seats for Master's nursing program and BMS programme.

With federalization, MoHP is now mandated to take overall responsibility of functioning of tertiary and above hospitals. As of FY 2080/81, there were federal level hospitals with following categories; six tertiary hospitals owned by the government; three government hospitals under ministry of home affairs and ministry of Defense are dedicated for respective service holders; twelve government hospitals that are organ specific/disease specific/age group specific hospitals; one semi-government teaching hospital of university; five hospitals of academia under government ownership (including Bir hospital); two hospitals of academia under ownership of academy and supported by government; one hospital for prisoners; and two hospitals for Ayurveda and alternative medicines. These federal level hospitals cater country wide referral cases. MoHP is continuously increasing the scope of the readiness and service availability tools to capture all the federal level hospitals.

Disability and Rehabilitation

The Rehabilitation 2030 initiative was launched in February 2017 and introduced a "call for action," rallying stakeholders towards concerted and coordinated global actions to scale up rehabilitation. MOHP/DOHS/EDCD is committed to improving disability-inclusive health and rehabilitation services for all the population in need. Major activities in FY 2080/81 included training for assistive product, disability management and rehabilitation training for medical officers, basic rehabilitation package for health workers, revision of priority assistive product list, assistive technology capacity assessment, health equity for person with disability, national health rehabilitation strategy, caregivers skill training for families of children with developmental disabilities, HMIS training, establishment and strengthening of 3D printed orthosis and prosthesis center and local investment case and cost analysis. In FY 2080/81, a total of 420,261 users were provided with rehabilitation services and a total of 193,364 new user of rehabilitation services has been reported. Total of 13,287 assistive products were delivered, with 75.33% being mobility aids like crutches, canes, and walkers.

Inline with the multi-sectoral strategies outlined in the Nepal Road Safety Action Plan 2077/78-2087/88 BS (2021-2030 AD), in FY 2080/81 low cost high yield intervention for road safety related activities were conducted. Total of 58,569 road traffic injuries were reported in Nepal in FY 2080/81.

Public Health Laboratory Services

National Public Health Laboratory (NPHL) is the primary reference lab for screening, diagnosing, and researching communicable and NCDs at the national level. During outbreaks NPHL is integral in providing laboratory confirmation of diseases having public health threats, including those that could escalate to Public Health Emergencies of International Concern (PHEIC). Apart from its key role in disease surveillance and outbreak confirmation, NPHL is also responsible for registering and licensing private sector labs and blood centers and ensuring quality assurance in health laboratory services through various National External Quality Assurance Programs (NEQAS) programs.

Major public health related activities carried out through NPHL were laboratory-based surveillance of Japanese Encephalitis, measles, respiratory syncytial virus, rubella, polio, rotavirus, influenza etc. NPHL has been the focal point for AMR surveillance in Nepal and currently monitoring 12 organisms. The

AMR surveillance network, which started with nine laboratories, has now expanded to 26 labs. Apart from public health related activities, it has provided results of thousands of routine and specialized tests from various departments. Super specialized services like flow cytometry, immunohistochemistry for cancer diagnosis have also been established in NPHL.

In FY 2080/81, the number of tests performed in different units of NCD section was comparatively higher than the previous fiscal years. A total number of 3,18,202 cultures from different clinical samples were done in bacteriology unit. AMR surveillance indicates that E. coli is the most common and predominant AMR organism, with 45.6% identified as presumptive ESBL E. *coli.*

A total of 1,823 test were done for measles, 1,823 tests for rubella, and 131 tests for polio (from environmental samples). NIC conducted a total of 5,502 PCR tests for various viruses, the majority (3,623) of which were for Influenza-SARS-CoV-2 alone.

NPHL also is a reference laboratory for Transfusion Transmissible infections, HIV and Malaria. As a part of expansion of HIV viral load testing services, PPHL Koshi, PPHL Lumbini, PPHL Karnali, PPHL Sudurpaschim and Bheri Hospital passed the HIV viral load validation and are ready to perform the test using a manual platform. A total of 12,911 viral load tests for HIV, HBV, and HCV were conducted in this unit with 10,773 performed for HIV alone. Hemovigilance sites reported a total of 59,601 recorded blood transfusions among which, 1,345 cases involved minor transfusion reactions, while no major transfusion reactions were reported.

Likewise, there are 17 and 87 registered “A” and “B” category labs respectively in the country and 51 labs were inspected for new registration and renewal. Ten blood banks were inspected for new registration (licensing), renewal and follow up visit.

NEQAS is operated throughout the country through NPHL. In FY 2080/81, samples were dispatched from 685 participating laboratories. The average performance score of TTI NEQAS was 99.5%.

Some major initiative of NPHL in this year includes introduction of new equipment like Fluorescent In-Situ Hybridization System, Miseq Sequencer, Tests like Immunofluorescence Assay for Anti-Nuclear Antibody, Allergy Panel, etc.

Human Resource Capacity Building

NHTC caters the training needs of all human resources under departments and divisions of DoHS/MoHP and coordinates and manages all trainings under DoHS/MoHP. It has the institutional arrangement for training materials development, skill development, training accreditation and regulation and biomedical trainings. In FY 2080/81, training material development, skill development and training accreditation and regulation related activities were carried out. In FY 2080/81, a total of 14,134 participants were trained in different training programs: the major cadre groups trained was nursing (5,779), HA and AHW (5,092), medical officer (1,567) and public health officer and administrator (195). International training on basic training on operation and maintenance of medical oxygen system to 7 participants from Bhutan was conducted. Field epidemiology training program to 126 frontline workers to develop as field epidemiologist from 57 districts was done and total 336 nursing staffs were trained on haemodialysis.

Vector borne disease research and training centre conducted EWARS onsite coaching in hospital and carried out transmission assessment survey for the elimination of LF.

In addition, NHRC also contributes to the capacity building of the health workers in research at federal and provincial levels

Health Education, Information and Communication

The Health Education, Information and Communication Center has the goal to promote health, prevention and control of diseases and increase the maximum utilization of available health care services. NHEICC conducted various health education and communication related, advocacy and orientation and other activities in FY 2080/81. Total of 65,932 health education sessions were conducted in which 19,30,620 people attended the health education sessions.

Logistics and Health Information Management Program

Management Division (MD) administers comprehensive management functions within DoHS and functions as secretariat to DG, DoHS under which HMIS, LMIS, and HIIS are the three vital systems being smoothly implemented. Integrated Health Information Management Section (IHIMS) plays a crucial role in managing health-related routine service data and information from FCHVs to federal level. HMIS conducted series of activities in FY 2080/81, notably, data verification and validation, onsite coaching at hospitals, annual reviews and contribution to NJAR (including health fact sheets) were the major highlights. IHIMS Roadmap 2022-2030 AD has emphasized the establishment of a comprehensive dashboard for all local, provincial, and federal levels. Under which review meetings with LLGs, orientation program to staffs of LLGs and regular supervision, monitoring and technical support were provided. IHIMS also provided eLMIS support activities across the nation including toll free helpline, troubleshooting guidelines, onsite coaching and training, and forecasting and quantification workshops at central and provincial levels. In FY 2080/81 HPs and PHCCs had 100% reporting status with reporting status of FCHVs being 99.6% and for public hospitals it was 90.4%. There were total 5,425 health facilities reporting through LMIS. The total reporting percentage was 99% while timely reporting percentage was 89%.

Human Resources for Heath and Health Finance Management

Human resource in health (HRH) is an essential component of health system building block. In Nepal, one of the important milestone for management of HRH is promulgation of *Nepal Health Service Act 2053 BS (1997 AD)*. MoHP has been putting its efforts to address the HRH planning, projection and management through its broader sector strategic plans as well as strategies dedicated for HRH- Nepal Strategic Plan for Human Resources for Health 2059/60-2073/74 BS (2003–2017 AD), Human Resources for Health Strategic Plan 2067/68- 2071/72 BS (2011–2015 AD) and Nepal Strategic Plan for Human Resources for Health 2077/78-2086/87 BS (2021–2030 AD). Personnel administration section has carried out activities like routine and programmatic administrative functions of day to day administrative requirements, support and conduction of organization and management survey, managing the posting and transfer of medical officers and other health workers under scholarships through MEC, deployment, transfers, promotions, recommendations and retention of human resource of health, support in legal affairs of DoHS in FY 2080/81. There were 73.4% fulfilled posts against the sanctioned posts within the MoHP. There were no consultants and physicians or general practitioners in Karnali Province.

Health financing is an important building block and an essential strategic component to ensure UHC and achievement of SDGs. Nepal has adopted a mixed health care financing system with free BHS, health insurance, targeted social health protection programs and out-of-pocket expenditure for services not covered through the safety nets in both public and private spheres. Major activities in FY 2080/81 were support to programs, division and centers for preparing annual budgets, obtaining and distributing programmer budgets, keeping books of account and financial reports, preparing and submission of financial reports, facilitate internal and external funding, providing financial consultations and clearing and responding to audit findings. In FY 2080/81 out of total national budget, NRS. 12,389,026.50 was allocated for the execution of programs under the DoHS Network. The total absorption rate was 81.62%. The overall conditional grant was 235 billion rupees in current fiscal year. The fiscal equalization was 140 billion and conditional grant was 40 billion. In 2080/81, the share of the conditional health grant was 65% of the budget for health of LLGs.

Department of Ayurveda and Alternative Medicine (DoAA)

Ayurveda, an ancient medical system indigenous to Nepal, is deeply ingrained in the country's customs and culture. DoAA is the apex body of Ayurveda and Alternative Medicine under MoHP and is responsible for planning, programming, coordination, supervision, monitoring, and evaluation of Ayurveda and Alternative Medicine service programs. DoAA has three divisions: Herbs, Medicine and Research Division, *Ayurveda* Medicine Division and Alternative Medicine Division. The GoN is committed towards strengthening utilization of Ayurveda and Alternative medicine services. BHS includes *pancha-karma*, yoga and *satawari* for postnatal women from Ayurveda services and treatment of wart, allergy, tonsillitis, gastritis, vitiligo and arthritis from homeopathy services.

There are Ayurveda health facilities from local to federal level across the nation. There are six Ayurveda health facilities at federal level and five at provincial level, however, no provincial level Ayurveda hospitals are available in Madhesh and Gandaki provinces. Regarding service utilization, the users of Purba-pancha karma were 486,594, yoga services were 237,056, and Satawari (Galactogogue medicines) was distributed for 57734 postnatal women. The common reported morbidities included acute peptic disease, musculoskeletal and nervous disorders, respiratory disorders, abdominal disorders, anorectal disorders, rheumatoid arthritis, etc. Notably, there is an evident trend wherein users with non-communicable and chronic conditions exhibit an increasing preference for Ayurveda services. Overall, 90.1% of the Ayurveda health facilities have reported their data to DoAA. For strengthening health facilities' readiness, MSS for Ayurveda has been conducted at 43 provincial and district level Ayurveda health facilities.

Pashupati Homoeopathic Hospital is the only one federal level Homoeopathic Hospital providing homoeopathic health services to the people of Nepal in the public sector. The hospital provides OPD service only, however, it is planning to provide inpatient service in near future. A total of 16,304 users accessed BHS Homeopathy services. The most common homeopathy services utilized by the users was treatment of arthritis (5949 users). A total of 260 lakhs was allocated for homeopathic services, and expenditure rate was 93%.

Department of Drug Administration (DDA)

DDA through its three divisions- Drug Evaluation and Registration Division, Planning Coordination and Management Division and Inspection Evaluation and Law Enforcement Division and their respective sections have been working for ensuring public access to quality medicines, preventing pharmaceutical misuse, controlling misinformation and overseeing all drug-related activities from production to supply chain.

In FY 2080/81, the major activities performed by DDA includes raising awareness on the rational use of medicines through different media, publication of Drug Bulletin of Nepal, inspection of retail and wholesale pharmacies for compliance, etc. DDA conducted around 3100 inspections of the drug retailers and wholesalers for quality assurance. Similarly, there were remarkable regulatory activities like de-registration of 1245 pharmacies, 101 cases filed against violation of Drug Act 2035 and 39 medicines were recalled from the market due to inferior quality. The domestic production of Essential medicine is below 50% indicating greater dependency on imports of medicine.

Health Insurance Programs

The Health Insurance Program (HIP) in Nepal, implemented by the Government of Nepal (GoN), aims to enhance access to quality healthcare services while reducing out-of-pocket expenses and the financial burden of catastrophic health expenditures.

As of FY 2080/81, HIP has been successfully implemented across all 77 districts, and 753 local levels with active population coverage to 17% and active household coverage to 28%. A total of NPR 12,620,074,546.00 was reimbursed for the claim valuated in FY 2080/81. Likewise, revisions were made in benefit package and costing. The national enrollment status of active insuree has risen to 17% (5,012,213 people) in FY 2080/81, reflecting a collective commitment to achieving comprehensive coverage for the population. Similarly, there was a rise in proportion of insuree renewing the policy, and service utilization among the total active insuree indicating increased satisfaction and perceived value towards insurance program. A total of 454 health facilities are empaneled under the health insurance program, and includes 394 government hospitals and 26 Community hospitals, and 34 private hospitals across the nation.

Councils for Health Professionals and Health Research

There are five councils for health professionals: Nepal Medical Council (NMC), Nepal Ayurveda Medical Council (NAMC), Nepal Nursing Council (NNC), Nepal Pharmacy Council (NPC) and Nepal Health Professional Council (NHPC), and one health research council - Nepal Health Research Council (NHRC) under MoHP.

All the councils are autonomous and are directly under MoHP in hierarchy. The health professional councils are mandated through their respective Acts to - register the practitioners both nationals and foreign origin, maintain code of conduct, avail the good standing certificates, guide on continuous professional development, and regulate the de-registration. As of FY 2080/81, a total of 37,364 medical practitioners, 1,188 Ayurveda doctors, 40,355 active/re-registered nurses/midwives, 6,677 pharmacists, and 13,826 pharmacy assistants are registered in their respective councils. In all the councils, lower pass rate among licensing examination has been a significant challenge questioning the quality of medical education being pursued.

The NHRC is the national apical body for promoting health research across the country, and is mandated to regulate ethical practices in health research, facilitate evidence generation and synthesis for policy and programmatic support, and enhance health research capacity building. In FY 2080/81, a total of 678 research proposals received ethical approval, of which 550 protocols were approved. For the review of submitted protocol, 73 ERB meetings/expedited meeting were conducted. Of the total 63 IRCs across the country, 56 IRCs are active and 7 IRCs are inactive.

In addition to these councils, for regulation of the health professional education in Nepal, Medical Education Commission (MEC) has been established in 2076 (2019) guided by Nepal Medical Education Act 2075, and is mandated for the quality assurance in the process of the production of the health professionals. Prior to the establishment of MEC respective councils were mandated for quality control of their related health professional education.

In FY 2080/81, for DM/MCH programs, allocated seats was 100 but only 67 students were enrolled, indicating a gap between available seats and student uptake. Likewise, MD/MS program, undergraduate program, and PCL program (from CTEVT) also showed a gap between allocated seat and enrolled seats. Fulfilling the allocated seats in different medical educational institute has been a challenge currently.

Health Development Partners

The Foreign Aid Policy (FAP) 2002 and Development Cooperation Policy (DCP) 2014 provide a foundational framework for effectively implementing SWAp and ensuring better coordination of external funding. The contributions of HDPs in health sector strategic plans are executed through Joint Financial Agreement (JFA). In Nepal, various stakeholders including multilateral and bilateral entities, international non-government organizations (INGOs), and non-government organizations (NGOs) operate within the health sector under the leadership and guidance of the MoHP.

1 Introduction

Nepal, a land-locked country situated in South Asia, has a population of more than 29 million. Nepal is a multi-ethnic, multi-lingual, multi-religious, and multi-cultural state where inhabitant cohabitate in harmony within its three main ecological regions: Mountain, Hills, and Terai. The Constitution of Nepal 2015 AD (2072 BS), affirms the country as a federal parliamentary republic nation which is divided into provinces and local levels. There are a total of seven provinces (Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali, and Sudurpaschim) and 753 local levels (also known as 'Palikas').

The average life expectancy in Nepal is 71.1 years, with men averaging 69.2 years and women 73.0 years. Remarkably, there has been a large increase in the life expectancy of 12.7 years (11.5 years for men and 13.9 years for women) over the last three decades. However, the burden of disease (BoD) estimates indicates that the Nepal has triple burden of diseases (communicable, non-communicable, and injuries) and accounts for increase in disability-adjusted life years (DALYs). As a result, there is a need to improve accessibility and comprehensiveness, and accuracy on the health status and advancements within the country.

1.1 Health System in Nepal

The role of health systems in the lives of people has increased and gained more influence in all countries, rich or poor, in recent times. Since humans have endeavored to preserve their health and cure illness, there had been some form of health sytstem. A health system consists of all the organizations, institutions, resources, people, and activities whose primary purpose is to improve health. There is a growing evidence that improving health status requires health systems to be able to deliver services in an equitable and efficient manner.

1.1.1 Before the Primary Health Care (PHC) Movement

The history of the healthcare system in Nepal has evolved over many centuries, with traditional medical practices rooted in herbal remedies coexisting alongside contemporary medicine. These practices persisted, especially for medical conditions lacking effective modern alternatives. However, prior to the expansion of medical knowledge in the modern era, there were limited means to prevent diseases and treat ailments.

Until 935 BS (879 AD), Nepal's health system was primarily based on traditional medicine, especially Ayurveda. Health promoting practices such as safe motherhood and the immediate cutting of the umbilical cord after childbirth were introduced, along with a code of conduct aimed at ensuring non-discrimination in healthcare services.

Throughout the 104-year duration of the Rana regime (1903 – 2007 BS / 1847-1951 AD), a significant amount of effort was dedicated to the strengthen traditional medicine system, and development and advancement of Nepal's modern healthcare system. In the year 1872/73 BS (1816 AD), smallpox vaccination was introduced, and the rulers-initiated efforts to establish modern hospitals and Ayurveda health facilities for accessible services. The establishment of the Bir Hospital in 1947 BS (1889 AD) marked the institutionalization of the modern healthcare system in Nepal. To further advance healthcare services, the Civil Medical School was founded in Kathmandu in 1934 AD, with a primary focus on training dressers and compounders. By 1951 AD, each of the then thirty-five districts in Nepal had been equipped with at least one hospital or dispensary, significantly strengthening the country's healthcare infrastructure. This period witnessed the establishment of numerous hospitals and dispensaries, contributing to the growth of Nepal's healthcare system.

Before 1972 AD, Nepal lacked medical institutions, requiring aspiring physicians to seek education abroad. The landscape changed significantly with the inception of the Institute of Medicine (IOM) under Tribhuvan University in 1972 AD. In 1975 AD, the Government of Nepal took a significant step toward providing fundamental health services nationwide by announcing plans to establish 1462 health posts. Subsequently, in 1978 AD, the government adopted the health for all strategy as part of the primary healthcare system. Vertical public health programs were continuously implemented alongside the establishment of the health facilities for curative services (Box 1.1)

Box 1.1 Important milestones in the health system of Nepal before 1978 AD

Year	Major milestone
935 (879)	Traditional medicine based
1698-1731 (1641-1674)	Ayurveda dispensary in Hanuman Dhoka Royal Palace complex
1872/73 (1816)	Introduction of smallpox vaccine
1906/1907 (1850)	Khokana Leprosy Asylum
1946/47 (1889/90)	Bir hospital- first institutionalization of modern health care system
	Cholera Hospital, Teku
	Singhadurbar Vaidyakhana
1974/75 (1918)	Naradevi Ayurvedic Hospital was established
1980/81 (1924)	Lalitpur Hospital in Patan (Present Patan Academy of Health Sciences)
1981/82 (1925)	Tri-Chandra Military Hospital
1989/90 (1933)	Establishment of Department of Health Services (DoHS)
1990/91 (1934)	Civil Medical School was established
1991/92 (1935)	Tokha Tuberculosis Sanatorium (40 bed) came in operation
1992/93 (1936)	Rajkiya Ayurvedic Vidhyalaya
1993/94 (1937)	Leprosy department and treatment center
2010/11 (1954)	Launch of Nepal Malaria Control Program
	Tansen United Mission Hospital
2012/13 (1956)	First General Health Plan in five-year development plan
2013/14 (1957)	Civil Medical School
2014/15 (1958)	Nepal Malaria Eradication Program was launched
	One health center in each 105 electoral constituency
2015/16 (1959)	Paropakar Maternity and Women's Hospital
2018/19 (1962)	Kanti Children Hospital
	Family planning and maternal child health program
2019/20 (1963)	Anandaban Leprosy Hospital
2020/21 (1964)	Regionalization of health services- establishment of zonal hospitals,
	ICU/CCU opened in Bir Hospital
2028/29 (1972)	Institute of Medicine (IoM) under the Tribhuvan University
2030 (1974)	Nepal Eye Hospital established as first eye hospital
2031/32 (1975)	Declared to establish 1462 health posts throughout the country

1.1.2 PHC movement to commitment for Millennium Development Goals (MDGs)

Amidst the decentralization of country's healthcare delivery system and the formulation of its initial long-term health plan 2034/35 – 2046/47 BS (1978-1990 AD), the Government of Nepal (GoN) committed to the Primary Health Care (PHC) approach in 1978 AD and adopted the health for all strategy. This commitment facilitated community engagement and participation.

The establishment of the first regional hospital in Pokhara in 1986 AD marked a pivotal moment, followed by the establishment of similar hospitals in other regions. Additionally, in 1988 AD, the Female Community Health Volunteer Programme was launched, further contributing to Nepal's evolving healthcare landscape. Specifically, the formalization of modern health services took place with the establishment of the Department of Health Services (DoHS) in 1989/90 (1933).

In response to public expectations following the 1990 AD political transition, Nepal approved and implemented its first National Health Policy, 1991, resulting in the establishment of modern healthcare facilities at the local level. Specialized hospitals were also founded to address non-communicable diseases. The government's adoption of a liberal economic policy in the same year paved the way for the establishment of private medical colleges and hospitals, which have since become significant players within the Nepalese health system. Likewise, the National Drug Policy was formulated in 1995 AD.

To strengthen healthcare infrastructure, all 75 districts were equipped with district health offices, and the government established regional health directorates in five regions. In 1996, legislation was introduced to establish hospitals as autonomous bodies, with the BP Memorial Cancer Hospital being the first hospital established under this legislative framework. Subsequently, a new perspective plan was formulated and endorsed as the Second Long-Term Health Plan 2053/54- 2073/74 BS (1997-2017 AD), focusing on providing quality essential health care services (EHCS) and ongoing restructuring of health services, strengthening the district health system.

Aligned with the Poverty Reduction Strategy Paper, MDGs and Tenth Five-Year Plan 2058/59- 2063/64 BS (2002-2007 AD), GoN formulated the Health Sector Strategy: An Agenda for Reform 2060/61- 2065/66 BS (2004-2009 AD) to provide an equitable, high-quality healthcare system.

A Sector-Wide Approach (SWAp) in health was developed in the early 1990s in response to widespread dissatisfaction with fragmented donor-sponsored projects. The implementation of a sector-wide approach (SWAp) under the Paris Declaration and joining the International Health Partnership (IHP+) in 2063/64 BS (2007 AD) addressed coordination challenges, fostering establishment of health facilities nationwide, including multispecialty centres and domestic health workforce production.

The mass movement (*Jana Andolan*) in 2062/63 BS led to revolutionary changes, a peace agreement, and the formation of an interim government, making Nepal a Federal Democratic Republic. Furthermore, aligning with the principles outlined in the Nepal interim constitution of 2007, the National Health policy, 2014 prioritized inclusive, cost-free fundamental health services. As a result, Nepal went on track to achieve MDGs related to child health (MDG-goal 4) and maternal health (MDG-goal 5). The health sector efforts resulted in effectively controlling communicable diseases and country's progress towards MDG-goal 6 (HIV/AIDS and TB). This success resulted from policy reforms, partnerships, SWAp adoption, and a health sector reform strategy, leading to improved health outcomes and increased resources.

Building on lessons from the first sector strategy, Nepal Health Sector Program II (NHSP-II) 2066/67-2072/73 (2010-2015) prioritized health and nutrition improvement, poverty reduction through equitable healthcare access, and reduced catastrophic health expenses. During NHSP-II, the EHCS package expanded to address Nepal's health care needs, incorporating mental health, oral health, environmental health, community-based new-born care, community-based nutrition care, and support. NHSP-II also included a NCDs control component to address demographics and disease transition. Public-private partnerships, governance, accountability, inter-sectoral coordination, and sustainability were emphasized.

Under coordinated actions, Nepal achieved all targets for child health, reducing infant mortality rate (IMR) and under-five mortality rate (U5MR), and increasing measles immunization. IMR dropped from 64 in 2056/57 BS (2000 AD) to 33 per 1,000 live births in 2071/72 BS (2015 AD), achieving the MDGs target early. U5MR declined from 91 in 2000 to 38 in 2071/72 BS (2015 AD). Maternal health achievements were notable, with a decline in maternal mortality ratio (MMR) from 850 in 2047 BS (1990 AD) to 258 in 2071/72 BS (2015 AD). However, progress has been uneven across ethnic groups and geographical regions. Challenges include emerging issues (birth defects, child violence, injuries, accidents), climate change, and inequitable improvement in maternal, new-born and child health related outcomes. Also, in the limited fiscal space designated for health sector, to complement governments' efforts there remains need of health development partners' (HDPs) focused efforts for further improvement.

Amidst a gradual, steady and notable progress in health outcomes, additional challenges such as natural disaster crippled the health system, impeding further to progress in health status of the country. Nepal faced a powerful earthquake in Baishakh 2072 BS (April 2015 AD). The Health Emergency Operations Center (HEOC), established in 2071 BS (2014 AD), played a crucial role in disaster response, ensuring coordinated delivery of health services. The earthquake resulted in 8,962 deaths, 22,302 injuries, and damage to infrastructure, including health facilities. Despite challenges, the health sector demonstrated resilience, emphasizing the importance of a robust health system. The agenda of post-disaster recovery and resilience was henceforth added in the next health sector strategy.

1.1.3 Nepal Health Sector Strategy and Sustainable Development Goals (SDGs)

Between 2047 and 2071 BS (1990 and 2014 AD), Nepal witnessed significant advances in healthcare, characterized by remarkable reductions in under-five and infant mortality rates, along with notable progress in maternal mortality. Achievements in disease control initiatives, such as advancements toward polio eradication and leprosy elimination, were evident. However, persistent health challenges, including stagnated neonatal mortality, malnutrition, and gender inequality, necessitated a nuanced approach to address financial, socio-cultural, geographical, and institutional barriers to healthcare access and utilization.

Nepal entered the federal structure of governance after the promulgation of the new constitution in 2015 AD. The Constitution of Nepal establishes health as a fundamental right for the people. As the nation undergone a transformation, the health sector is significantly affected in its operation and management. In Nepal, the three tiers of government have been provided with specific areas of rights and duties to plan their independent but coordinated action in the health sector. Local and state governments have also started delivering health services after the implementation of federalism in Nepal. Furthermore, the basic health services (BHS) is guided by Public Health Service Act 2075 BS and Public Health Service Regulation 2077 BS. Nepal's equity-based approach and aspirations for rapid, sustainable development resonate strongly with the SDGs.

In 2072 BS (2015 AD), Nepal Health Sector Strategy (NHSS) 2071/72-2077/78 BS (2015-2020 AD) was endorsed under the National Health Policy 2071 BS (2014 AD), alongside insights from the 2072 BS (2015 AD) earthquake and alignment with the newly promulgated constitution of Nepal in 2015 AD. This strategy focused on ensuring universal health coverage (UHC) through equitable access, quality health services, health systems reform, and multi-sectoral approaches. In advancing UHC, NHSS has outlined service delivery arrangements, highlighting BHS and social health protection. In Chaitra 2072 BS (April 2016 AD), the GoN initiated health insurance program to offer social protection among its citizens.

In 2017 AD, there was a definitive transfer of basic health services to local governments, further reshaping the healthcare landscape in Nepal. To enhance the quality of services, several regulatory bodies/councils have been active in ensuring quality and regulating human resources, health services, and health researches.

The resilience of Nepal's health sector was rigorously tested during the COVID-19 pandemic. The response, characterized by the rapid activation of the Health Emergency Operation Center (HEOC) and an efficient vaccine rollout, demonstrated the adaptability and commitment of the healthcare system. Despite initial challenges, Nepal succeeded in swift resumption of the health services and vaccinating a significant proportion of the population to halt the spread of the disease. Additionally, there were initiatives taken amidst pandemic, from the government to establish hospitals in each LLGs to ensure access and availability of health services in the LLGs. However, effectively managing the necessary resources for operations and securing an adequate workforce to provide services pose significant and thoughtful challenges

Under the leadership of MoHP, a comprehensive National Action Plan on SDG - goal 3, Global Action Plan 2076/77- 2078/79 BS (2020-2022 AD) was formulated and presented at the United Nations in September 2019 AD. Focused on enhancing the quality of basic health care services, evidence-based decision-making, response to social determinants of health, and capacity building across government levels, this plan sought to institutionalize the quality of care and a national health care quality framework (endorsed in 2079 BS). In these difficult times, MoHP strategically took the rapid result initiative approach and endorsed National Health Financing Strategy (NHFS) 2080-2090 BS (2023/24-2033/34 AD) guiding the health sector investments in two major areas ensuring equitable access to quality health services and reducing financial hardship of the population and managing financial resources for health and their effective financial management.

The current Nepal Health Sector Strategic Plan (NHSSP) for the period of 2023 to 2030 AD was developed in alignment with Nepal's federal structure, considering the health-related constitutional mandates and provisions outlined in the Public Health Service Act 2075 BS, National Health Policy, periodic plans, and other related policy documents. The NHSSP is envisioned as an instrument to achieve universal health coverage, especially as Nepal transitions from a Least Developed Country (LDC) to a developing country. The NHSSP aims to continue and strengthen the SWAp, as outlined in the development cooperation policy, to address the major unfinished health agendas. The primary focus of the strategic plan is to improve the health status of all citizens by creating an environment that enables every individual to access optimal health services.

1.2 Health Service Delivery in Nepal

Nepal's health system is formed on the foundation of comprehensive and inclusive approach that ensures accessibility, quality assurance and responsiveness to the growing health concerns. The continuous commitment to UHC and alignment with global development goals places Nepal's healthcare system on a path of continuous improvement and resilience.

The Constitution of Nepal 2015 AD, recognizes health as a fundamental right of its citizens. As outlined in the article 35 of the constitution, Nepali citizens have rights to exercise the provision of free basic health services from the state, emergency health services, information about his/her medical treatment, equal access to health services and access to clean drinking water and sanitation.

Health service delivery systems in Nepal encompasses Allopathic, Ayurvedic, Homeopathic, *Unani*, Naturopathy, *Amchi*, Acupuncture/Acupressure, Yoga and other indigenous practices, with a mix of both public and private sectors. The health system underwent and is in continuous restructuring at the federal, provincial, and LLGs, adapting to exercise

authority and fulfil constitutional mandates at each level of government.

At the federal level, MoHP has five divisions (The Policy, Planning & Monitoring Division; the Health Coordination Division; the Quality Standard & Regulation Division; the Population Management Division and the Administration Division) and one unit (Health Emergency and Disaster Management Unit) which are responsible for managing the policy framework, planning, setting standards, coordination, monitoring, and supervision. Immediate implementation and further planning of MoHP activities are conducted through three departments, viz. the Department of Health Services (DoHS), Department of Ayurveda and Alternative Medicine (DoAA), and Department of Drug Administration (DDA).

These three departments are responsible for formulating and implementing programmes, use of financial resources and accountability, and monitoring and evaluation. Furthermore, these departments, through their respective entities viz. divisions, centers, and laboratories, provide guidance to their provincial counterparts under the provincial ministries, which in turn support health offices at the district and health coordination units at the LLGs.

Public institutions, including BHS units/centers and hospitals at the LLGs, primary and secondary hospitals, academia/teaching hospitals at the provincial level, and tertiary, super-specialized, and academia/teaching hospitals at the federal level, are mandated to deliver health services. The structure encompasses both allopathic and Ayurvedic and alternative medicine health service provisions, extending beyond curative aspects to include promotive, preventive, rehabilitative and palliative health care services.

Similarly, the private health facilities operate at all levels, complementing public institutions. Each institution is mandated to allocate 10% of free beds for poor and impoverished citizens to access health facilities as needed. Additionally, development partners in health either collaborate with these public institutions or work through local non-government organizations to strengthen the health system using the SWAp approach to management.

The service provision extends further into communities through FCHVs, school health nurses, and community health nurses. Moreover, there is an expansion of the health insurance program to cover services beyond BHS, aiming to reduce out-of-pocket expenses and protect against catastrophic health expenditure. This

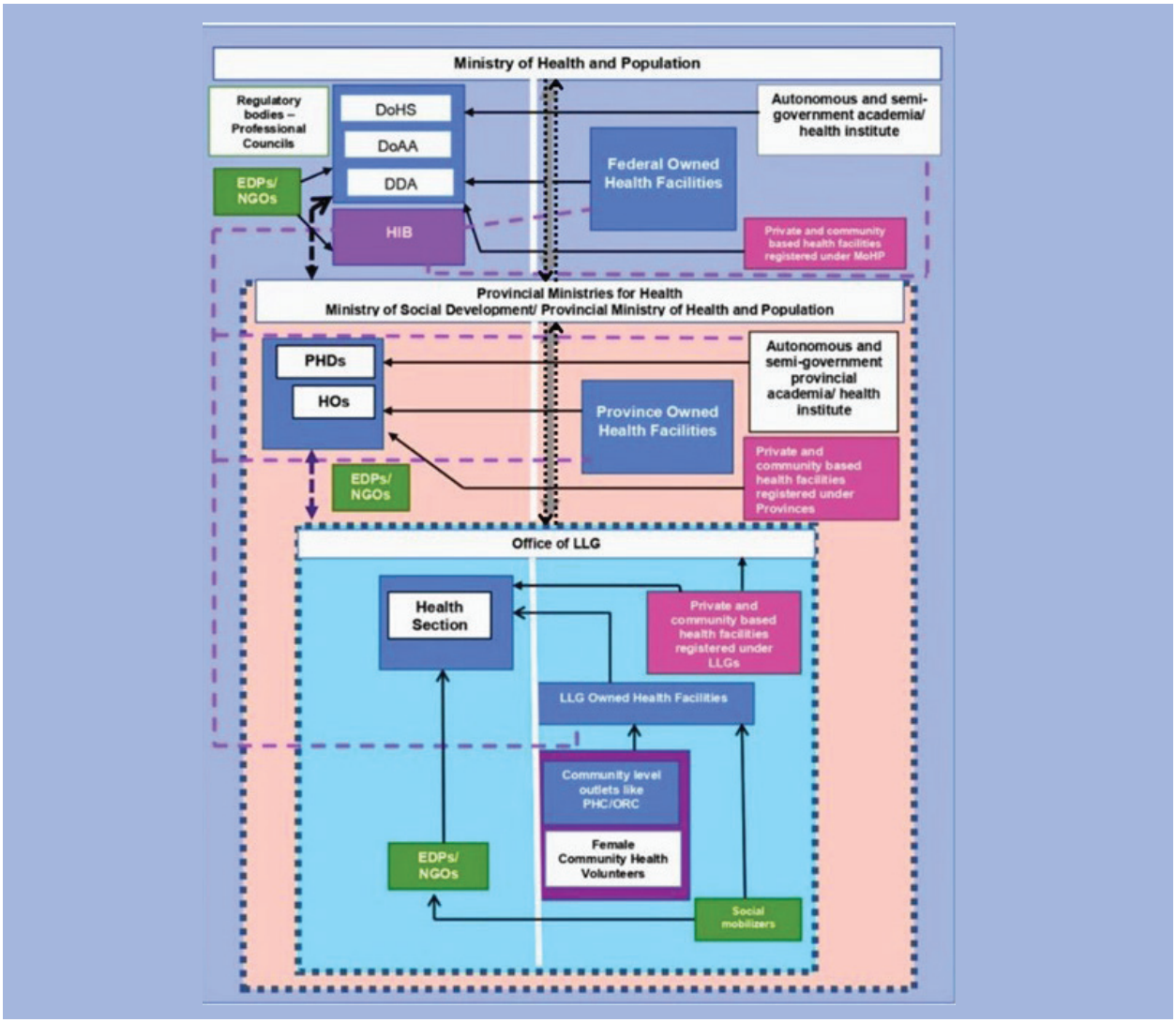


Figure 1.1 Organization of healthcare delivery system in Nepal

comprehensive network, now inclusive of academia/teaching hospitals and super-specialized hospitals at the federal level, contributes to the holistic and community-centric nature of Nepal's health service delivery. (figure 1.1)

In addition to the institutional structures of service delivery, regulatory bodies and professional councils are in place to ensure the quality-of-service provision and safeguard the rights of health professionals and citizens. These entities play an indirect yet crucial role in the health service delivery system. All these structures work together guided by the framework of the plans, policies and commitments of the country and sector specific policies and strategic plans.

Furthermore, all health facilities/programs bear the responsibility of documenting and reporting program/service statistics through standardized platforms for Management Information Systems (MIS). These platforms include Health Management Information System (HMIS), the Logistics Management Information System (LMIS)/electronic LMIS (eLMIS), the Financial Management Information System (FMIS), the Health Infrastructure Information System (HIIS), the Planning and Management of Assets in Health Care System (PLAMAHS), the Human Resource Information System (HuRIS), the Training Information Management System (TIMS), the Ayurveda Health Management Information System (AHMIS), Early warning and Reporting System(EWARS), Malaria Disease Information System (MDIS) and the Drug Information Network (DIN). Additionally, these facilities contribute data to various health surveillance systems, such as disease surveillance, vital registration, censuses, sentinel reporting, surveys, rapid assessments, and research initiatives. DoHS takes the lead in managing information system except for DIN and AHMIS, which are overseen by the DDA and DoAA respectively.

1.3 Sources of Information and Data Analysis

The Integrated Health Information Management Section (IHIMS) provided the major source of information for this report. Similarly, data provided in the chapters are curated from respective programs/entities. Majority of the data are downloaded from the DHIS-2 software and analysed and explained by the respective programs/entities. A technical working group ultimately finalized each section and chapter of this report.

1.4 Rationale for the report

The Constitution of Nepal, 2015 guarantees the right to demand and receive information on any matter of his/her interest or of public interest. Clause 41 of the Good Governance Act 2008, specifies that each department and other government agencies at the central level is obligated to prepare an annual report every year and submit it to the Office of Prime Minister and Council of Ministries within the specified timeframe. As required by the Constitution of Nepal and Good Governance Act, DoHS under MoHP has crafted this Annual Health Report (AHR) for the FY 2080/81 BS (2023/24 AD). This marks the 30th consecutive publication of its kind and the 8th Annual Report since the reorganization of MoHP.

This AHR stands a key document, serving as a systematic monitoring and evaluation for the progress of planned programs, analysing shifts in coverage and utilization statistics. This report not only offers a snapshot of the health sector's advancements but also traces its progression over time.

The report serves a dual purpose, functioning as both an annual program monitoring report and a comprehensive document covering various aspects, including:

- Health Scenario: An overview of the prevailing health issues at the federal and provincial level.
    - The local level details are included in the respective provincial level annual reports, needful information at programmatic level for local levels have also been included as per need felt by the respective programs
- Guiding documents and milestones: Salient features of the key guiding documents and milestones relevant to health programs.
- Major activities in FY 2080/81 BS: A comprehensive account of the significant activities carried out in health sector and related programs/services during the fiscal year
- Status of program/service indicators: Monitoring of the status of the pertinent program/services providing insights into achievements and areas that require attention
- SWOT Analysis: A strategic analysis covering the strengths, weaknesses, opportunities, and threats (SWOT) pertaining to the programs and services.

The timely release of the annual report assumes crucial importance, as it establishes a vital link between service delivery and evidence-informed decision-making and planning for future programs. This dynamic and insightful report not only reflects the health sector's current standing but also guides future initiatives towards more effective and impactful healthcare strategies.

2 Department of Health Services (DoHS)



2.1 Overview of Department of Health Services (DoHS)

The Department of Health Services (DoHS) is responsible for delivering promotive, preventive, curative, rehabilitative and palliative care services throughout Nepal. The DoHS is one of the three departments under the Ministry of Health and Population (MoHP), Nepal. DoHS plays an important role in ensuring health service delivery by developing and facilitating the implementation of the service delivery standards from the service delivery outlets throughout the country. According to the institutional framework of the DoHS and MoHP, the health post (from an institutional perspective) is the first contact point for basic health services. Nonetheless, the health posts are the referral center of the volunteer cadres as well as venue for community-based activities such as Primary Health Care Outreach Clinics (PHC ORC) and Expanded Programme on Immunization (EPI) clinics. Each level above the health post is a referral point in a network from health post to primary health care centers, on to district, provincial, and finally to specialty tertiary care centers. This referral hierarchy has been designed to ensure access and availability of health needs of the people at the cost they can afford. Furthermore, it functions as an intermediary between the MoHP (federal) and other tiers of government (provincial and local level) by providing logistical, financial, supervisory and technical support from the center to the periphery. Also, it facilitates the formulation and implementation of policies, rules, regulations, plans, and programs as well as provision service delivery and effective management of health-related activities.

The DoHS, headed by the Director General has five divisions and five centers. The DoHS is responsible for maintaining functional viability and coordination of all health systems building blocks, with the primary objective of guaranteeing the delivery of high-quality services to the public. (Fig 2.1)



Figure 2.1 Health system building blocks

Since its establishment in 1933, the DoHS has undergone multiple restructuring processes, influenced by concurrent political, administrative, and policy changes within the country. These adjustments have collectively shaped the department into its present organizational structure. Significant historical events contributing to this evolution is represented in box 2.1.

Box 2.1 Major milestones in evolution of DoHS organizational structure

Year	Events
1989/90 (1933)	Department of Health Services was established
2024/25 (1968)	Division of Indent, Procurement and Supply was Established under Department of Health Services and it was later changed to Logistic Management Division in 1993.
2049/50 (1993)	National health training center was established along with five regional health training centers
2050/51 (1994)	Integrated health management information system (HMIS) was initiated under Policy, Planning and Monitoring Division of Department of Health services
2052/53 (1996)	System for making hospital as an autonomous body by legislation was started and the first hospital, BP Memorial Cancer Hospital was established
2055 (1999)	De-concentration of health management started and some management authorities delegated to municipalities and village development committees
2060/61-2072/73 (2004-2017)	Continuous comprehensive devolution of basic health services to local levels • DoHS had six divisions*-MD, CHD, FHD, LMD, EDCD, PHCRD) and five centers- NHEICC, NHTC, NCASC, NTCC and NPHL
2074 Chaitra till present	DoHS organogram restructured to the present form in March 2018 • Five Divisions whose personnel and financial management is completely governed by DoHS: FWD, MD, EDCD, CSD and NSSD • Five Centres with a certain degree of autonomy in personnel and financial management: NHEICC, NHTC, NCASC, NTCC and NPHL • Two sections- Administration Section and Financial Administration Section

[*Abbreviations: Management Division (MD), Child Health Division(CHD), Family Health Division (FHD), Logistic Management Division (LMD), Epidemiology and Disease Control Division (EDCD), Primary Health Care Revitalization Division (PHCRD) and five centers- National Health Education, Information and Communication Centre (NHEICC); National Health Training Centre (NHTC); National Centre for AIDS and STD Control (NCASC); National Tuberculosis Control Centre (NTCC); and National Public Health Laboratory (NPHL); Family Welfare Division (FWD), MD, EDCD, Curative Service (CSD) and Nursing and Social Security Division (NSSD)]

[Sources: Publications on history of health system[1] and annual reports of different fiscal years]

2.2 Major Functions of DoHS

Policy formulation and health institution/ facilities development:

- Provide necessary technical advice to the GoN/ MoHP for the development of health-related policies, strategies, and plans.
- Develop and strengthen health institutions and service delivery outlets in accordance with existing Acts, Regulations, policies, and plans.

Liaison and Support to provincial and local levels

- Provide technical support to the Provincial Health Directorate (PHD) and LLGs for the contextualization and implementation of policies, strategies, and plans.
- Develop and implement capacity building initiatives in collaboration and coordination with stakeholders.

[1] Marasini B. Health system development in Nepal. JNMA: Journal of the Nepal Medical Association. 2020 Jan;58(221):65.

Human resource planning and development

- Determine the human resource requirements for health institutions.
- Develop short and long-term human resource development plan to support the MoHP to produce need-based human resource for the country.

Personnel management

- Manage the employees working under DoHS.
- Facilitate inter-directorate transfers, initiate departmental actions, and provide rewards.

Medicinal products' procurement, supply and quality control

- Ensure standard process for procurement, storage and supply of medicinal drugs, equipment, instruments, and materials at all levels.
- Coordinate with provincial directorates and line ministries for health in matters related to procurement.
- Forecast medicine, equipment and instruments required at federal level for health facilities across the country.

Program development and implementation

- Prepare annual work plan and budget specific to each program as per the overarching guidance provided by MoHP.
- Provide technical assistance to sub-national governments through mobilizing existing internal and external resources.
- Identify issues and challenges through monitoring, evaluation and research and address them through efficient and effective interventions.

International collaboration

- Establish relationships with foreign countries and international institutions (external development partners) to enhance the health care delivery and program development and implementation.
- Identify the priorities area of cooperation and assist the MoHP in receiving foreign aid.

Stakeholder engagement

- Liaise with the key stakeholders including line agencies, private sector, non-governmental organizations, health development partners and community for their engagement in planning and implementation of health program.

Data management and publication

- Utilization of evidence to programmatic update and policy making
- Integration of technology or functionalizing the existing MISs, building interoperability among the systems and its technological advances in health system
- Systematically maintain & update data, official declarations, and information regarding health services
- Update and publish relevant information as required
- Provide regular routine data of health sector progress to the MoHP and other stakeholders.
- Update and disseminate key indicators and statistics of healthcare system.
- Update and publish annual health report and other health related documents.

Surveillance and Research

- Conduct surveillance of communicable and non-communicable diseases and health event for timely detection to facilitate early response.
- Develop and institute event based and indicator-based surveillance as per the need of the program.
- Carry out operations research specific to solve the operational problems of health care delivery.
- Ensure the water quality surveillance across the country.

Health Emergency and Disaster Risk Management

- Develop and implement strategies, plans and interventions for preparedness and response to communicable disease outbreaks, various health emergencies and disasters, aligning with the broader goal of enhancing health security.
- Serve as the primary entity for implementing the International Health Regulations (IHR), 2005 playing a key role in strengthening the IHR's core capacities and reporting progress regularly.

Audit oversight

- Take needful initiative to regulate audit irregularities of federal-level DoHS entities/offices and programs/projects.

The DoHS performs its responsibilities through five divisions, four centers and one public health laboratory. Details on Terms of Reference for each of the divisions and centers within DoHS is available on MoHP website.

- **Family Welfare Division (FWD):** Expanded Programme on Immunization (EPI), Nutrition and Integrated Management of Childhood Illness (IMCI) and Newborn Care, Reproductive Health Care (including Safe Motherhood and Neonatal Health) and Family Planning (FP).
- **Epidemiology and Disease Control Division (EDCD):** Health emergency and disaster risk management, Control of Epidemics, Pandemic and Endemic Diseases, Neglected Tropical Diseases (NTDs), Vector Borne Diseases (VBDs), Zoonotic and other Communicable Diseases, International Health Regulation, NCDs, Mental Health, Leprosy control, Disability Prevention, Event based and indicator-based surveillance of communicable diseases of public health importance and water quality surveillance for outbreak response and management and research.
- **Curative Service Division (CSD):** Hospital service monitoring and strengthening including emergency and basic health care, Ear, Neck and Throat (ENT), Eye, Oral health activities; regulation of private facilities under their jurisdiction.

- **Nursing and Social Security Division (NSSD):** Capacity building of nursing and midwifery personnel, management of geriatric health services and gender-based violence management programme, One Stop Crisis Management Center (OCMC), provision of treatment and management facilities for selected diseases to impoverished Nepalese citizens at listed hospitals and also for management of FCHVs programme.
- **Management Division (MD):** Integrated Health Information Management, Infrastructure Development, Environmental Health and Logistics Management and procurement; also works as secretariat to DoHS.
- **National Health Training Center (NHTC):** Conducts and coordinates all training programmes of the divisions and implements training by sharing common inputs and reducing the travelling time of care providers.
- **National Health Education, Information and Communication Center (NHEICC):** Information, education and communication (IEC) and behavior change communication (BCC) activities are delivered and coordinated at federal, provincial and local level.
- **National Tuberculosis Control Center (NTCC):** Tuberculosis (TB) control, prevention and management related programs and activities delivered and coordinated at federal, provincial and local level and also acts as center for providing services.
- **National Center for AIDS and STD Control (NCASC):** Human Immunodeficiency Virus (HIV)/AIDS related control, prevention and management programs and activities are delivered and coordinated at federal, provincial and local level.
- **National Public Health Laboratory (NPHL):** Laboratory regulation and laboratory-based surveillances; also acts as service center for laboratory services.
- **Personnel Administration Section and Financial Administration Section:** Oversee the overall administrative and financial management of DoHS.

3 Maternal and Newborn Health Services

Family Welfare Division | Maternal and Newborn Health Section

3.1 Introduction

Maternal and neonatal health (MNH) is a priority programme for Government of Nepal, and had made it a part of the Basic Health Services (BHS) package. When the Safe Motherhood Policy[1] was adopted in 1998 (2054/55), the investment journey in MNH was underway. This was later strengthened in 2006 (2062/63) by the National Policy on Skilled Birth Attendants (SBAs)[2].

Nepal showed notable socioeconomic and geographic differences, with 89% of urban households and only 41% of rural households living within 30 minutes of a medical facility. Similarly, 57% of households in the wealthiest quintile had access to a health facility within 30 minutes, compared to only 29% of households in the poorest quintile. In response to these difficulties, the Government of Nepal has highlighted institutional births as a fundamental strategy to enhance maternal health. As an effort to remove financial obstacles that deterred women from seeking deliveries in facilities, and promote institutional deliveries, the Maternity Incentive Scheme (MIS) was launched in Nepal in July 2005. The initiative initially offered financial incentives of NPR 1,500 in Himalayan regions, NPR 1,000 in hilly regions, and NPR 500 in the Terai to women giving birth at public health facilities. The percentage of institutional deliveries in Nepal has significantly increased over the years, with the proportion of live births assisted by a skilled provider rising from 10% in 1996 to 80% in 2022 [3]. Similarly, the maternal mortality ratio (MMR), which was 539 per 100,000 live births in 1996, has significantly decreased as a result of these initiatives, falling to 151 in 2021[4]. (figure 3.1)

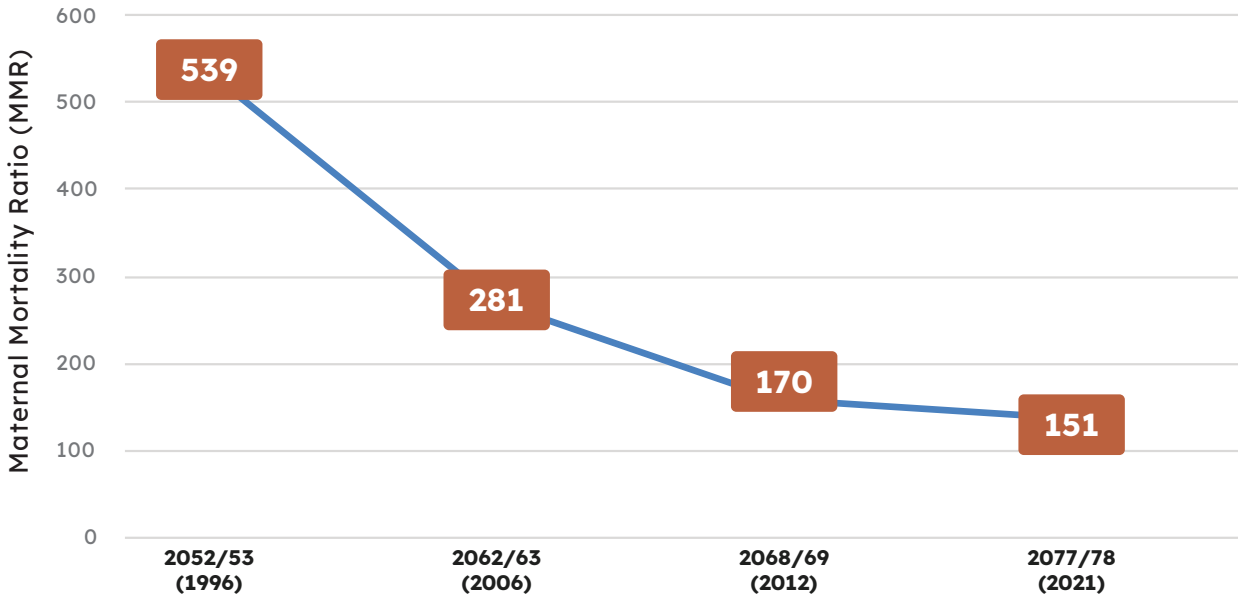


Figure 3.1 Trend of MMR in Nepal 2052/53 -2078/79 (1996-2021)

[1] Ministry of Health, Safe Motherhood Policy 1998. His Majesty's Government, Nepal

[2] Ministry of Health, National Policy on Skilled Birth Attendants 2006. His Majesty's Government, Nepal

[3] Ministry of Health and Population, Nepal Demographic and Health Survey 2022. New Era.

[4] Ministry of Health and Population, Post-Census Maternal Mortality Study 2021.

This achievement is credited to the adoption of progressive policies, strategies, and standards that guarantee maternal health care that are high-quality, affordable, and accessible, especially for marginalized and underserved populations (figure 3.2). Nepal is committed to achieving the Sustainable Development Goals (SDGs) and the goals set forth in the Global Strategy for Women's, Children's, and Adolescents' Health (2016–2030). However, in order to achieve the SDGs targets by 2030 which include bringing the maternal mortality ratio (MMR) down to less than 70 per 100,000 live births and the neonatal mortality rate (NMR) to less than 12 per 1,000 live births, greater efforts are required. The 2018 Global Strategy Monitoring Report emphasizes that, both internationally and regionally, progress toward accomplishing the SDGs has been slowed in a number of crucial action areas. It highlights the necessity of bolstering multi-sectoral and multi-stakeholder initiatives throughout the lives of women and children.

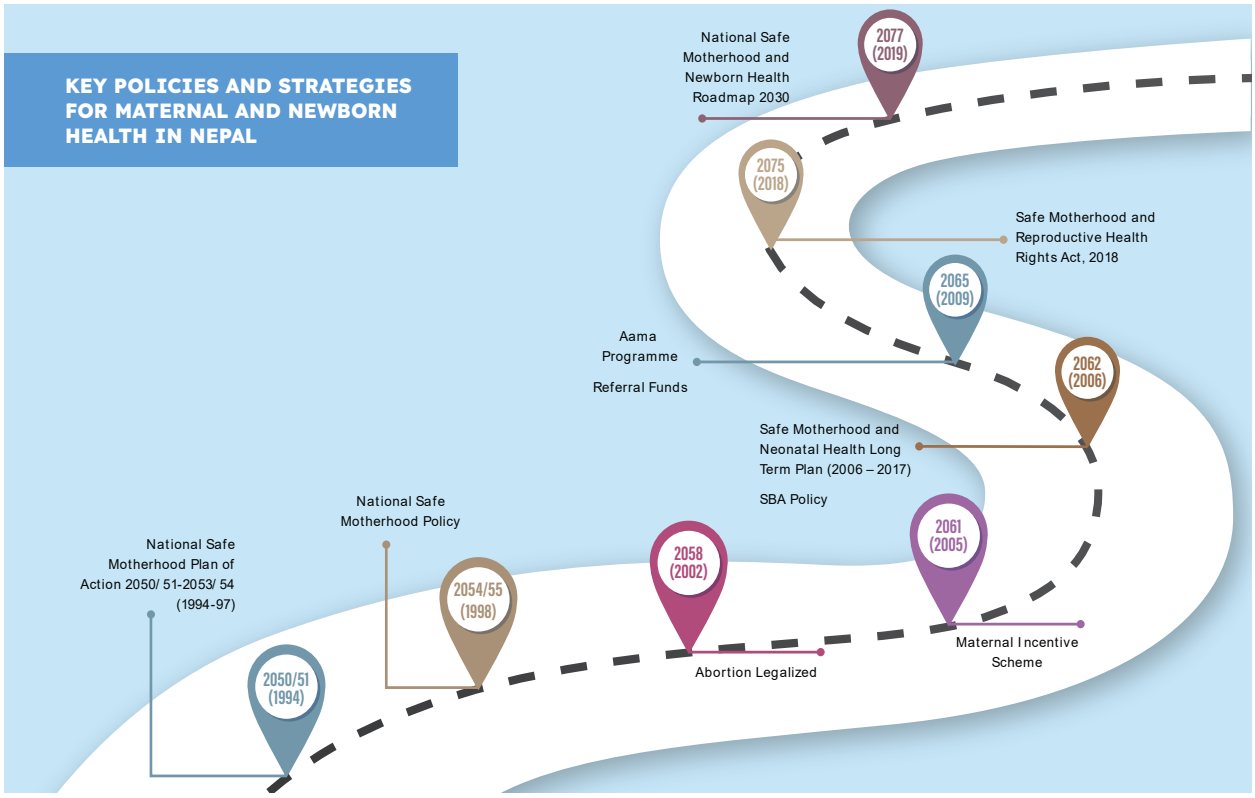


Figure 3.2 Key policies and strategies for maternal and newborn health in Nepal

Box 3.1 National Safe Motherhood and Newborn Health Roadmap 2087/88 (2030)

Goal

Ensuring healthy lives and promoting wellbeing for all mothers and newborns.

Five Outcomes

- Increased availability of high-quality maternal and new-born health services leaving no one behind
- Increased demand for and utilization of equitable maternal and new-born health services
- Improved governance and ensured accountability of maternal and new-born health services.
- Improved monitoring and evaluation of maternal and new-born health services.
- Strengthened emergency preparedness of maternal and new-born health services.

Quality is a central principle of the Road Map and has been integrated across these five outcomes.

In order to promote maternal and newborn health (MNH) programmes, the Family Welfare Division (FWD) has continued to allocate funds for necessary human resources. In FY 2080/81, MNH services received significant human resources support from the FWD. When it came to hiring ANM staff, local level governments (LLGs) were given NPR 515.584 million, while hospitals were given NPR 122.473 million. NPR 112.2 million was also given to provincial hospitals and Emergency Obstetric and Neonatal Care (EmONC) facilities in order to hire different cadres of human resources that are necessary for full-scope MNH services. In order to hire essential experts, such as pediatricians, anesthesiologists, gynecologists, and anesthesia assistants, overcrowded hospitals were given funding. NPR 32.087 million was also given to LLG CEmONC facilities in order to improve their ability to provide essential maternity and newborn care (figure 3.3).

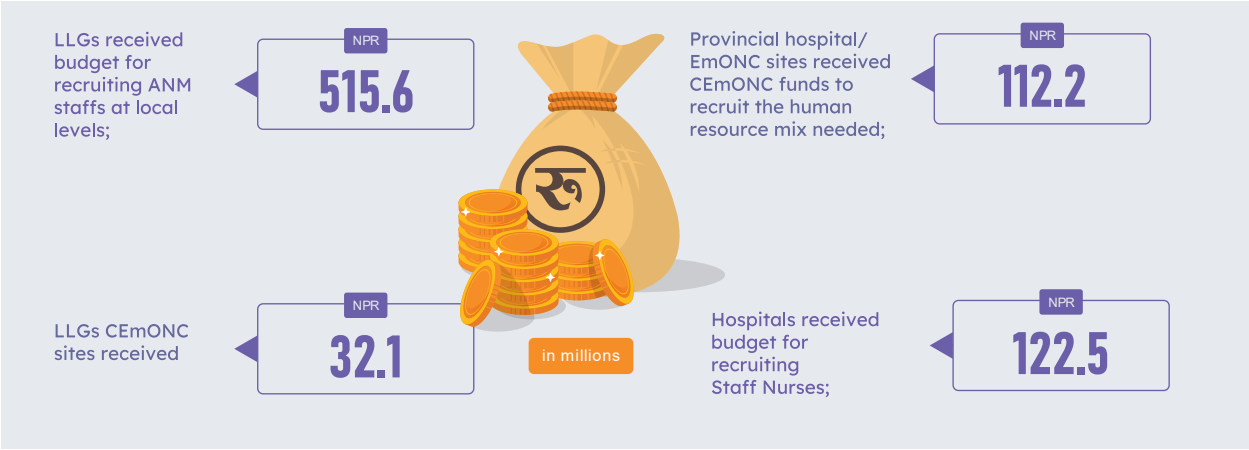
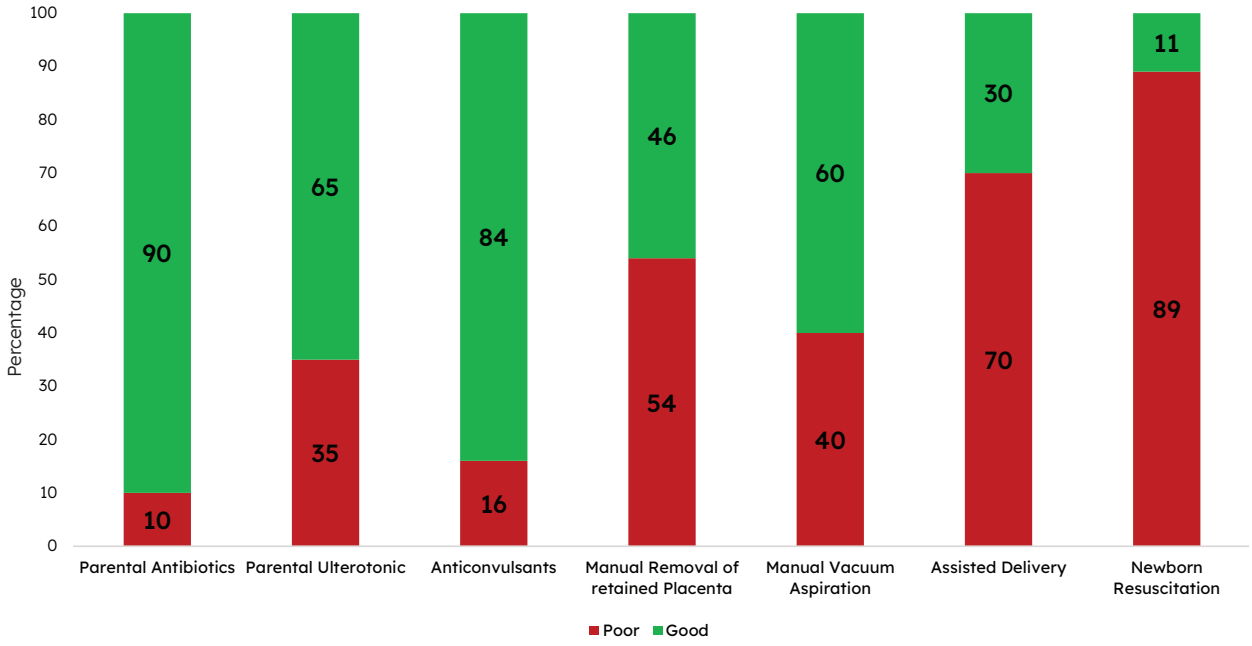


Figure 3.3 HR support for MNH services from FWD in FY 2080/81

3.1.1 Signal function readiness at Birthing Center (BC)/ Basic Emergency Obstetric and Neonatal Care (BEmONC) sites

In FY 2080/81, evaluation of signal function readiness at BC/BEmONC sites showed unequal readiness. Among the signal functions, parenteral antibiotic availability was good at 90%, and parenteral uterotonic preparedness was good at 65%, and 84% of sites were well-prepared to deliver anticonvulsants. Strangely, just 30% of sites received satisfactory rating for aided delivery readiness, and 11% sites for newborn resuscitation, indicating serious deficiencies in these crucial function (figure 3.4).

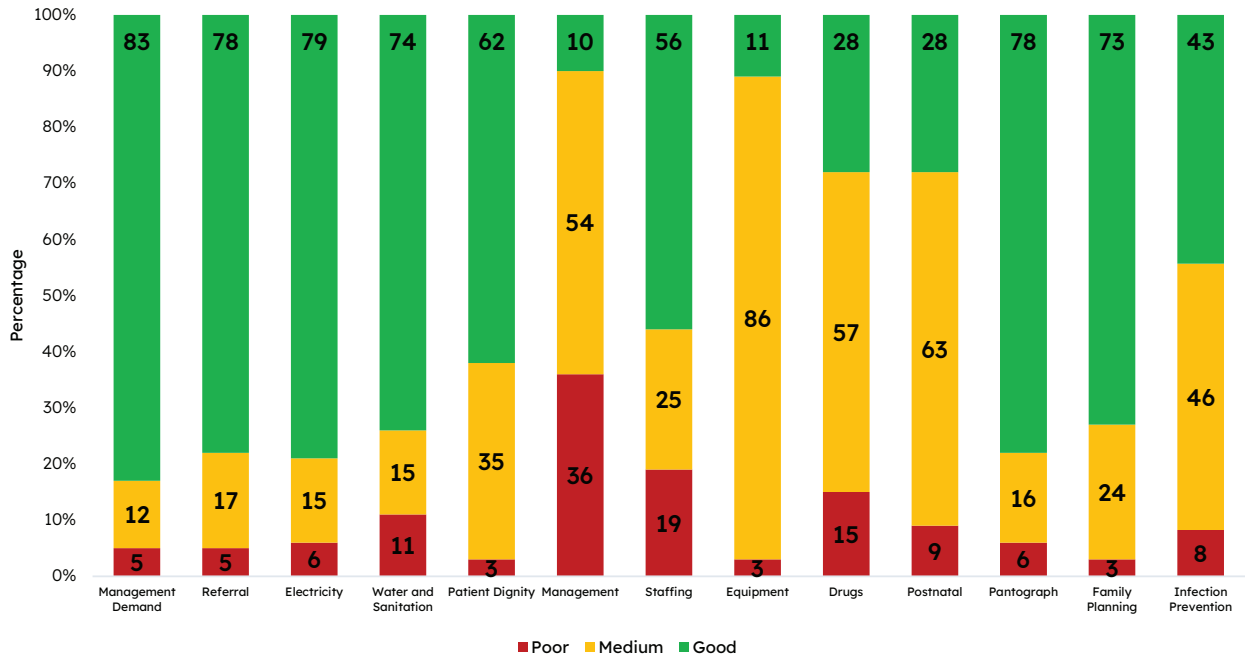


Source: FWD/DoHS

Figure 3.4 Signal Function readiness at the BC/BEmONC Sites in FY 2080/81.

3.1.2 Quality domain scores at BC/BEmONC sites

An assessment of quality domain scores at BC/BEmONC locations during the fiscal year 2080/81 revealed inconsistent performance across important metrics. Demand management (83%), referral systems (78%), electricity (79%), and partograph usage (78%), all received the highest ratings for "Good" performance. Likewise, with 73% rating for family planning services, and with 74% rating for water and sanitation as good, they also performed well. Nonetheless, there was considerable opportunity for improvement in areas including patient dignity (62%), staffing (56%), and infection prevention (43%). Notably, just 11% and 28% in domains like equipment readiness and medicine availability, respectively had high ratings. With only 28% of locations evaluated as good and 63% performing at a medium level, postnatal care also suffered (figure 3.5).



Source: QI Dashboard FWD, 2080/81

Figure 3.5 Quality Domain Scores at BC/BEmONC Sites

3.1.3 Capacity Building and Personnel Deployment

The National Academy of Medical Sciences (NAMS) and the National Health Training Center (NHTC) collaborate to provide pre-service and in-service training as part of the human resources capacity-building process. Training is provided by NHTC and Provincial Health Training Centers (PHTC) in areas such as safe abortion services (SAS), operation theater (OT) management, family planning (FP) techniques, rural obstetrics ultrasound, and SBA and advanced skilled birth attendant (ASBA). Anesthesia assistant training is also provided by NHTC and NAMS.

The Family Welfare Division regulates the deployment of physicians, such as Medical General Practitioners (MDGP), Obstetricians and Gynecologists (OBGYN), ASBAs, and Anesthesia Assistants (AAs) in order to facilitate transfers and improve the functioning of CEmONC services. It also provides updates regarding the maternal and newborn health programmes to the Ministry of Health and Population (MoHP) and the Department of Health Services (DoHS). However, difficulties in placement of AAs and ASBAs continue to be a major challenge.

3.2 Major Activities in FY 2080/81

3.2.1 Community level maternal and new born health interventions

Matri Suraksha Chakki (MSC)

The distribution of Matri Suraksha Chakki (MSC), which contains misoprostol to prevent postpartum hemorrhage (PPH), was initiated by the Government of Nepal (GoN) during the fiscal year 2066/67. Female Community Health Volunteers (FCHVs) were trained to give 600 mcg of MSC Chakki to pregnant women in their eighth month of pregnancy (three 200 mcg tablets). Especially during home deliveries, these women are advised to take the tablets orally as soon as possible after giving birth and prior to the placental removal in order to prevent PPH.

Rural Obstetrics Ultrasound Programme

Rural Obstetrics Ultrasound Programme aims for timely identification of pregnant women with risks of obstetric complication in remote districts and timely referral to CEmONC sites. Obstetric ultrasound trained SBA nurses are mobilized to scan pregnant woman at rural PHCCs and health posts using portable ultrasound machine. Women with detected abnormalities such as abnormal fetal lie, presentation of the fetus, congenital anomaly, and placenta praevia are referred to a CEmONC site. In FY 2079/80, FWD allocated programme implementation budget to 182 local levels of 33 districts. Additionally, provincial governments of Koshi, Lumbini, Karnali and Sudurpaschim provinces have taken the lead in this programme and expanded to other local levels by allocating budget for training HR and implementing the programme on their own.

3.2.2 Expansion and quality improvement of service delivery sites

FWD continued to expand 24/7 service delivery through birthing centers, BEmONC and CEmONC sites at health facilities. The expansion of service sites is possible mostly due to the provision of funds for hiring staff locally on contract basis. There has been a rapid expansion of public CEmONC sites in districts with an increase in number of sites from 43 in 2066/67 (2010) to 105 in 2079/80 (2023) covering 76 districts, except Manang.

The expansion continues at local levels with 29 LLGs also now offering CEmONC services. Expansion of the CEmONC sites has also met with the challenge of maintaining the functionality and quality of CEmONC services at the service delivery sites especially in the remote areas with human resource constraints being the most common reason for non-functionality. A study by FWD showed that establishment of CEmONC sites in 15 bedded hospitals in accessible areas of terai and the hills can potentially drive human resource shortages in the remote areas in absence of appropriate incentive mechanisms for remote areas (Box 3.2).

It is prudent to conduct a mapping exercise for EmONC for 15 bedded hospitals to ensure equitable access of quality CEmONC services. Notably, the sanctioned position for hospitals correspond to the expected range of service delivery from these sites.

Furthermore, with 57% of the maternal deaths happening at the health facilities[5], it's needful to have multispecialty teams at the referral sites to manage maternal complications.

Box 3.2 Additional key findings from review of mechanism to strengthen functionality and quality of CEmONC services

- Rapid expansion of CEmONC services has increased access, evident with increased CS rate. However, readiness and clinical care at CEmONC sites are inadequate; demands prioritizing strengthening of these sites to enhance QoC. There are protocols to guide the indication of CS and government has initiated to monitor using Robson's classification.
- Provisions for categorization of health facilities made in Nepal Health Infrastructure Development Standards and Public Health Service Regulation, 2077 are not aligned. This misalignment impacts on projected number of CEmONC sites to be established.
- Level of obstetrics services to be offered from different levels of health facilities are inconsistent in SMRH and Public Health Service Regulation, 2077. Asynchrony in these two regulations leads to confusion in relation to services to be delivered from health facilities.
- Public Health Service Regulation, 2077 provisions normal delivery services and counselling, diagnosis, management, and referral of complex deliveries as BHS.
- EmONC is a part of EHCS which are provisioned to be available as BEmONC services from Basic Hospitals (5-15 beds) and onwards as per Public Health Service Regulation, 2077.
- Requirement of OT are stated from 25 bed onwards in Public Health Service Regulation, 2077 and Health Facility Operations Standards, while the skill mix required for provision of CEmONC services are present in 15 bedded hospitals and can provide emergency surgery when relevant specialists is available. This asynchrony has serious implications for number of planned CEmONC sites with 237 out of 396 local levels categorized so far having a 15 bed hospital.

  (Letter from Ministry of Federal Affairs and General Administration addressed to the respective local levels dated 2079/04/01)

3.2.3 Onsite clinical coaching and mentoring

Good coaching and mentoring are essential for improving mentees' abilities, competence, self-assurance, and drive while building professional networks for their growth and future leadership. In order to improve the standard of care at birthing centers, BEmONC, and CEmONC facilities, the FWD has implemented a coaching and mentoring approach. Evidence suggests that training alone is not enough to guarantee high-quality healthcare, even if the NHTC offers ASBA and SBA training. An enabling climate, ongoing capacity building, and follow-up assistance are crucial.

3.2.4 MNH readiness of hospital and BC/BEmONC for quality improvement

The process of raising the quality of care (QoC) in medical facilities is two-step. The first stage is to make sure the facility has the infrastructure, tools, drugs, and personnel it needs. Implementing focused quality improvement initiatives is the second step in providing high-quality care. To minimize avoidable maternal and newborn deaths and stillbirths by 2030, global initiatives such as Every Newborn Action Plan (ENAP) and the Strategies for Ending Preventable Maternal Mortality (EPMM) are in line with the SDGs. It will take targeted improvements in QoC during pregnancy, labor, and the postpartum phase to meet these goals.

3.2.5 Emergency referral funds

It is estimated that around 15% of pregnant women will develop potentially life-threatening complications that needs skilled health care. Women may need immediate referral from BC/BEmONC to nearby hospitals where CEmONC services are available. An effective referral system is important for ensuring the timely and efficient transfer of patients to higher levels of care, especially during obstetric emergencies. So, the main objective of this programme is to support emergency transport during referral of women and newborns from disadvantaged population (poor, dalit, janajati and socially marginalized group).

[5] MoHP, NSO. (2022). National Population and Housing Census 2021: Nepal Maternal Mortality Study 2021. Kathmandu: Ministry of Health and Population; National Statistics Office.

3.2.6 Aama Surakshya Programme and Free Newborn Programme

Initiated as Maternity Incentive Scheme in 2005 AD by providing transport incentives to women to deliver in health facilities, the programme gradually covered user fees for all types of delivery care in 25 low human development index (HDI) districts in 2006 AD and was expanded nationwide as the Aama Programme in 2065 (2009). In 2068 (2012), four ANC incentives programme was merged into it and in 2073/74 (2017) free newborn programme was also merged with Aama Programme. The programme incentivizes the women and the health facilities for health service utilization covered by the programme. Health facilities get reimbursement by unit cost; Rs. 2,500 for normal delivery, Rs. 4,000 for complicated delivery, Rs. 10,000 for caesarean section, Rs. 5,000 for Anti-D and Rs. 7,000 for Molar pregnancy. For newborn care, the health facility gets additional reimbursement based on unit cost for providing free newborn services.

3.2.7 Maternal and Perinatal Death Surveillance and Response and Newborn Birth Defect Surveillance Programme

Maternal and Perinatal Death Surveillance and Response

The Maternal and Perinatal Death Surveillance and Response (MPDSR) is a systematic process of identification, reporting, analyzing, and determination of the causes of maternal and perinatal deaths and their prevention method (figure 3.6). The primary goal is to use this information to guide public health actions, monitor their effectiveness, and ultimately eliminate preventable maternal and perinatal mortality. The National MPDSR Committee, which is chaired by the Director General of the DoHS, and the MPDSR Technical Working Group (TWG), which is headed by the Director of the FWD, are operating in accordance with the Maternal and Perinatal Death Surveillance and Response (MPDSR) guidelines. The provincial health directorate, health office, health facility, and local level governments have also established MPDSR committees. Following a maternal death, the MPDSR committees at respective hospitals and local levels must meet within 72 hours of maternal deaths and hospital committees meet once a month for perinatal deaths (figure 3.7). The TWG and the national committee are required to meet on a quarterly basis or more frequently as needed. The process of MPDSR adopted in Nepal is shown in figure 3.8.



Figure 3.6 Process of MPDSR

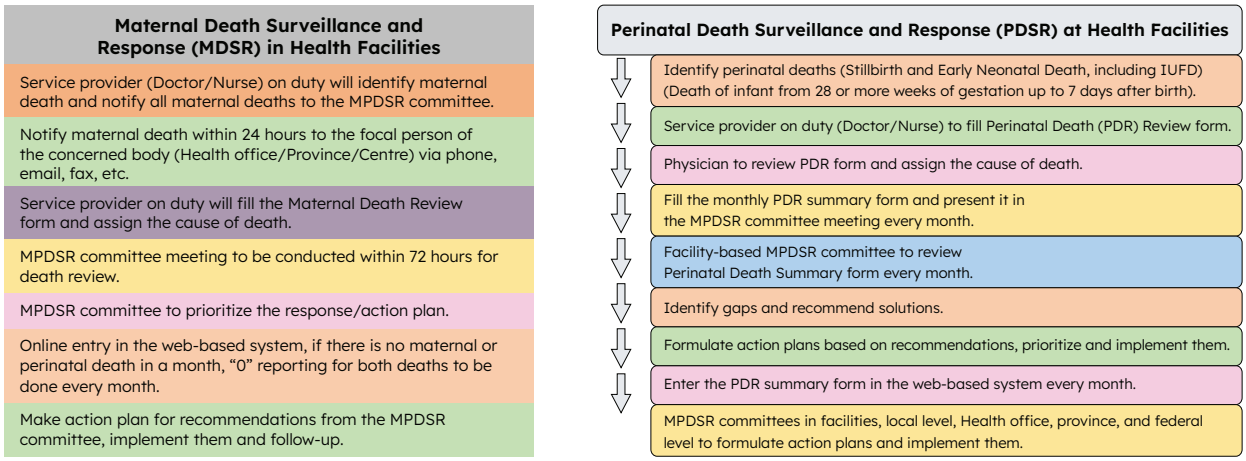


Figure 3.7 Process of Maternal and Perinatal Death Review and Response in Health Facilities

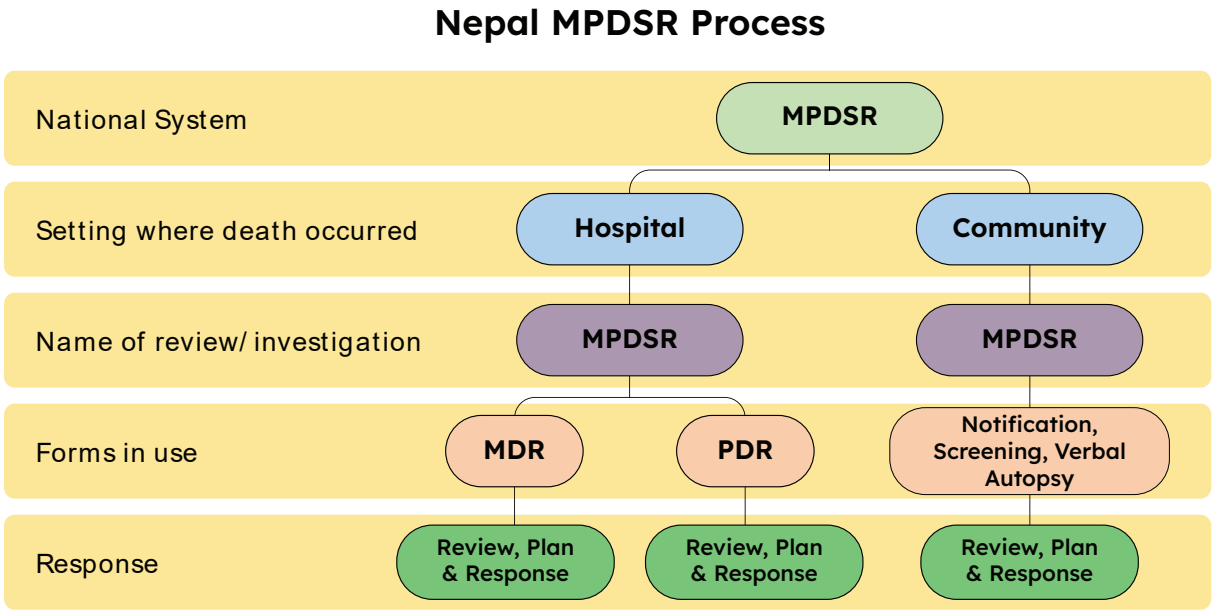


Figure 3.8 Nepal MPDSR process

New-born Birth Defect Surveillance

One of the main causes of child mortality, birth defects, also known as congenital anomalies, are structural or functional abnormalities that arise during pregnancy and can be identified either before or after birth. Prompt care and treatment can prevent disability, improve outcomes, and save lives. In such events, birth defect surveillance helps in timely tracking the trends in the occurrence of the birth defects providing quantitative estimates of their prevalence so that we can make timely intervention. The surveillance for newborn birth defect (NBBD) was initiated in 2071/72 in 10 hospitals and has now been implemented in 27 hospitals in FY 2080/81. (figure 3.9)

Box 3.3 Criteria for Birth Defects Surveillance

- Online Hospital based at birth surveillance
- Passive reporting system: passive reporting of cases from hospitals
- Gestational age: All births from ≥ 28 weeks of gestation (if gestational age not known: birth weight ≥1000 gms)
- Pregnancy outcome: Live births and Still births
- Age at Diagnosis: At birth and until 7 days of age
- Inborn cases: only babies born in the BD Surveillance implementing hospital
- Mandatory to report: eight major externally visible birth defects
  - Neural tube defects,
  - Oro-facial clefts,
  - Talipes equinovarus,
  - Limb reduction defects,
  - Hypospadias
  - Exomphalos/Omphalocele
  - Gastroschisis
  - Imperforate anus
- All external/internal birth defects based on the ability to detect

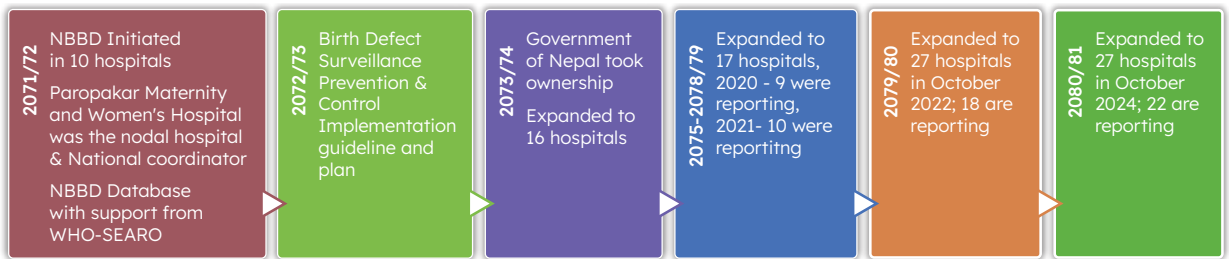


Figure 3.9 Important milestones of NBBD surveillance in Nepal

3.2.8 Special Newborn Care Unit

A Special Newborn Treatment Unit (SNCU), is a specialized hospital unit that offers specialized treatment for ill and small babies and are manned by medical officer, nurses, and paramedics. Premature birth, low birth weight, or medical conditions including jaundice, low blood sugar, or respiratory problems can all cause babies to need SNCU care. At least 12 beds should be available in a district hospital SNCU, with an extra 4 beds added for every 1,000 deliveries over 3,000 per year. In order to meet the goal of bringing newborn mortality down to 12 per 1,000 live births by 2030, Nepal's Ministry of Health and has launched targeted programme to offer specialized care through three levels - newborn corners at the delivery rooms/ operation theatres, SNCUs and neonatal intensive care units (NICUs).

A customized mentoring programme that focuses on critical clinical skills for managing SSNBs at every point of contact has been piloted by FWD for all healthcare professionals working in SNCU Level-II facilities. The introduction of an orientation package, and the development of a Nepal-specific model of care for small and sick newborns (SSNBs) at Level-II health facilities are other initiatives. This orientation package functions as a supplemental, condensed tool to offer crucial information and mentor decision-making while the nationwide comprehensive newborn care training is still in progress. It will be crucial in preparing medical staff at Level II hospitals to handle typical SSNB problems and consequences.

The WHO-UNICEF ten-component framework, which covers topics like vision, political commitment, financing, human resources, infrastructure, equipment, data systems, referral networks, maternal-newborn care linkage, community support, and post-discharge follow-up, serves as the foundation for Nepal's care for SSNB model. Following workshops and consultations, the model was modified to fit the Nepali environment, resolving any shortcomings and difficulties in scaling up each element. At the moment, Level-II medical institutions in the Bagmati Province's Dhading, Trishuli, Sindhuli, and Hetauda hospitals are piloting the Nepal-specific concept.

3.3 Key Indicators of MNH Programs

3.3.1 Proportion of pregnant women with 8 ANC visits[a]

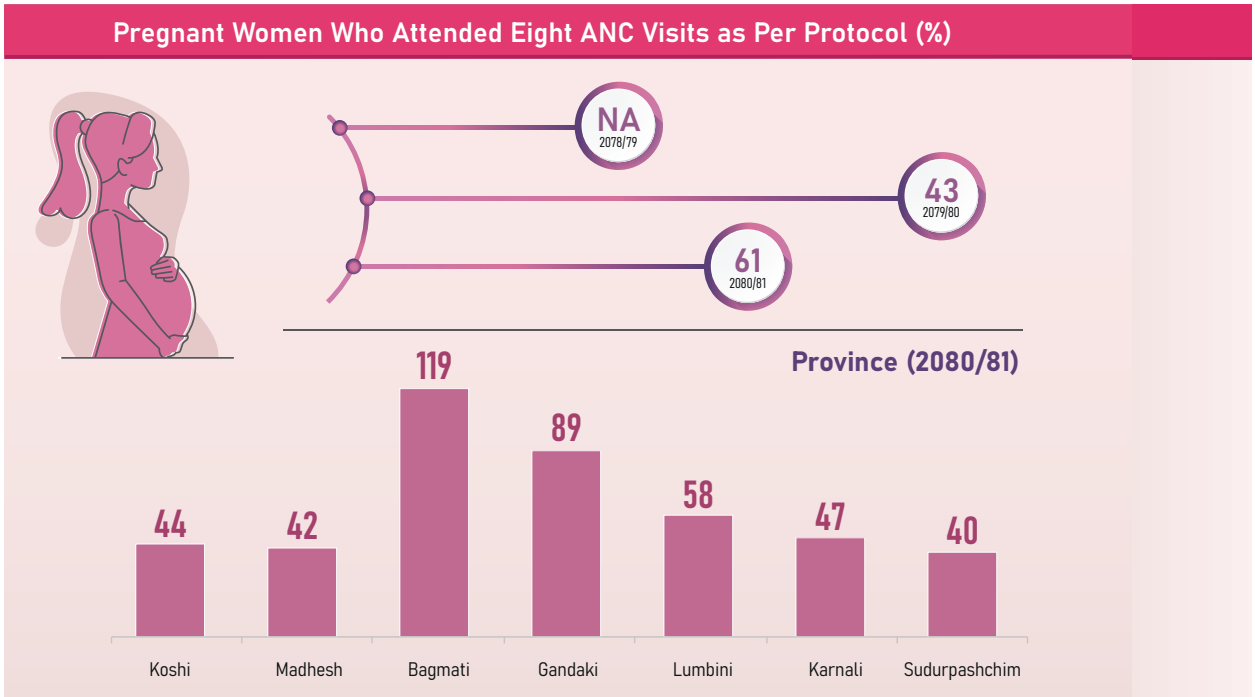


Figure 3.10 Percentage of Pregnant women who attended 8 ANCs as Per protocol

Source: HMIS/DoHS

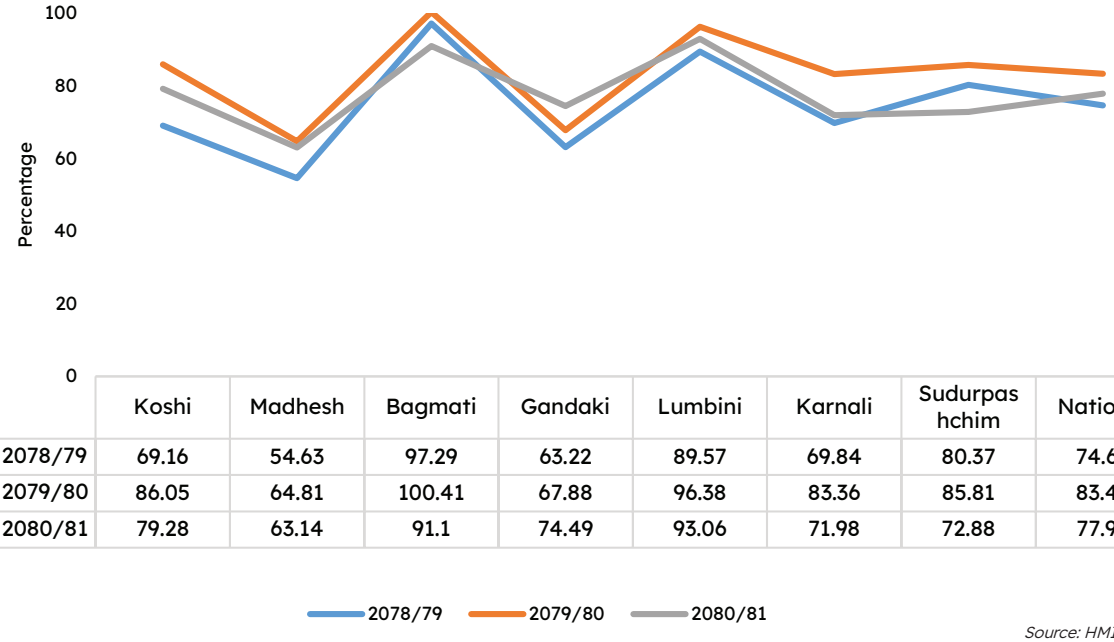
[a] ANC protocol (complete ANC visits) was revised from 4 ANC visits to 8 ANC visits in FY 2079/80

Till FY 2078/79, minimum of four ANC visit was measured as complete ANC visits. However, in FY 2079/80, the ANC protocol was revised and a pregnant woman with eight ANC visit was considered to have complete ANC visit. The figure 3.10 shows the proportion of pregnant women, who, over the course of two fiscal years, attended eight ANC visits in accordance with the revised recommended protocol. In FY 2080/81, 61% of pregnant women had complete ANC visit, an increase in eighteen percentage points compared to previous year, indicating improvement in compliance levels. However, the proportion of recommended ANC visit as per the protocol is not consistent among seven provinces underscoring the regional differences in the utilization. The highest adherence rate was observed in Bagmati province (114%), suggesting that women from outside the area may have been utilized ANC services.

3.3.2 Delivery care services

- For deliveries that take place in a facility, a skilled health provider (SHP) or skilled birth attendant (SBA)
- Early identification and treatment of complex cases, followed by referral to a medical facility offering round-the-clock emergency obstetric care (after administering obstetric first aid)
- Maternal death and neonatal birth and death registration

The figure 3.11 shows that the trend of facility-based deliveries in Nepal during the course of the three fiscal years (2078/79 to 2080/81). The proportion of pregnant women delivering at health facilities showed a declining trend compared to previous year. This drop in FY 2080/81 indicates a setback in maintaining the gains from prior years, highlighting the necessity of addressing potential issues like socioeconomic barriers, healthcare service quality, or accessibility that might have affected institutional delivery rates during that time. Similarly, the pattern of facility based delivery across provinces showed a declining trend except for only Gandaki province, which showed increment by eight percentage point. These numbers highlight provincial differences and necessitates the focused initiatives to maintain and raise institutional delivery rates, especially in areas with lower percentages.



	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim	National
2078/79	69.16	54.63	97.29	63.22	89.57	69.84	80.37	74.67
2079/80	86.05	64.81	100.41	67.88	96.38	83.36	85.81	83.43
2080/81	79.28	63.14	91.1	74.49	93.06	71.98	72.88	77.92

Source: HMIS/DoHS

Figure 3.11 Percentage of pregnant women delivering at the health facilities in FYs 2078/79 - 2080/81

About 74% of the deliveries were conducted by SBA and Skilled Health Provider (SHP) in FY 2080/81, showing a decline of six percentage points compared to previous year. Bagmati province (89%), Lumbini province (88%), and Koshi province had relatively higher proportion of deliveries conducted by SBA/SHP compared to national average. Madhesh province had lowest proportion (60%) of deliveries conducted by SBA/SHP among all provinces. (figure 3.12).

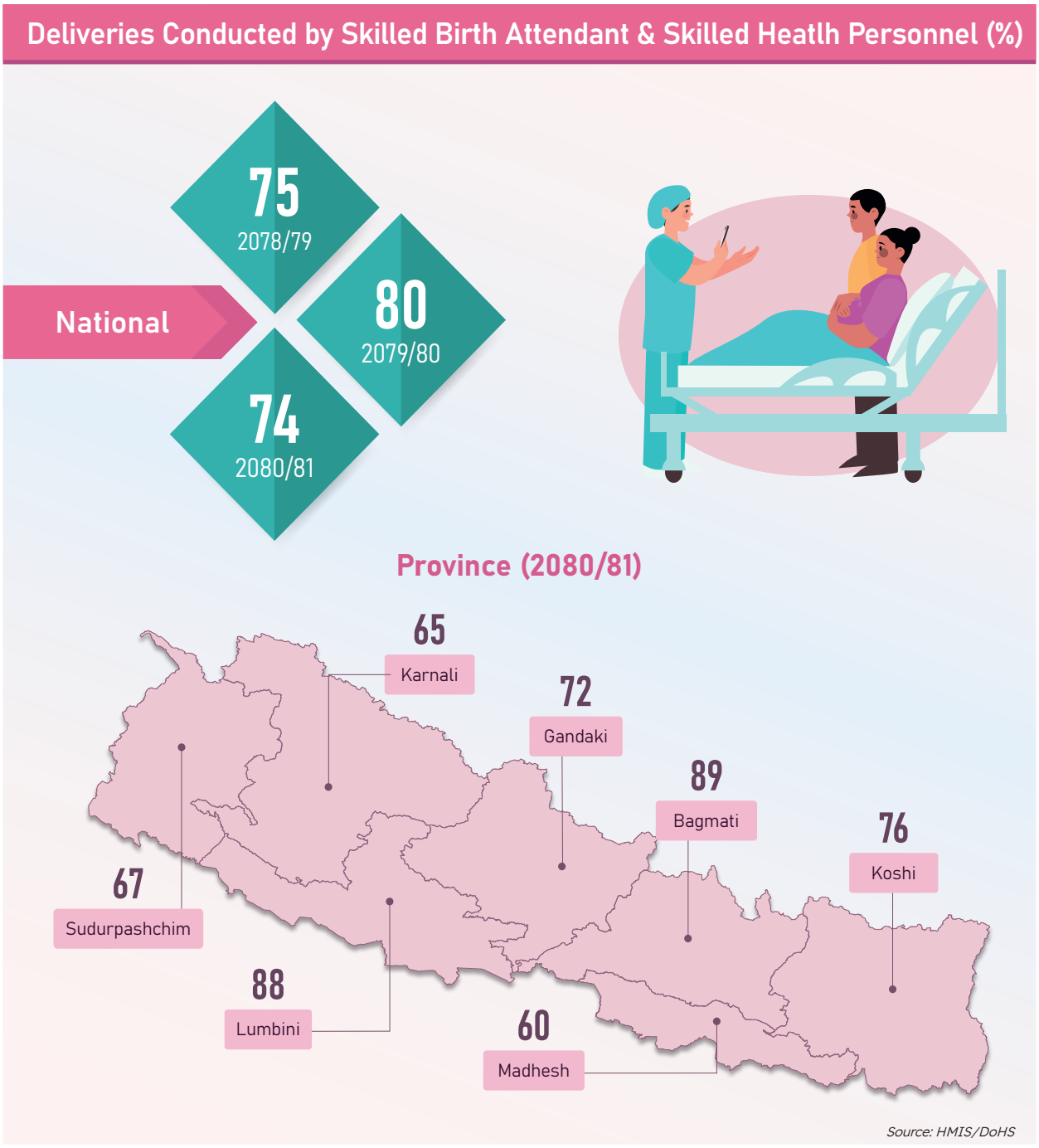
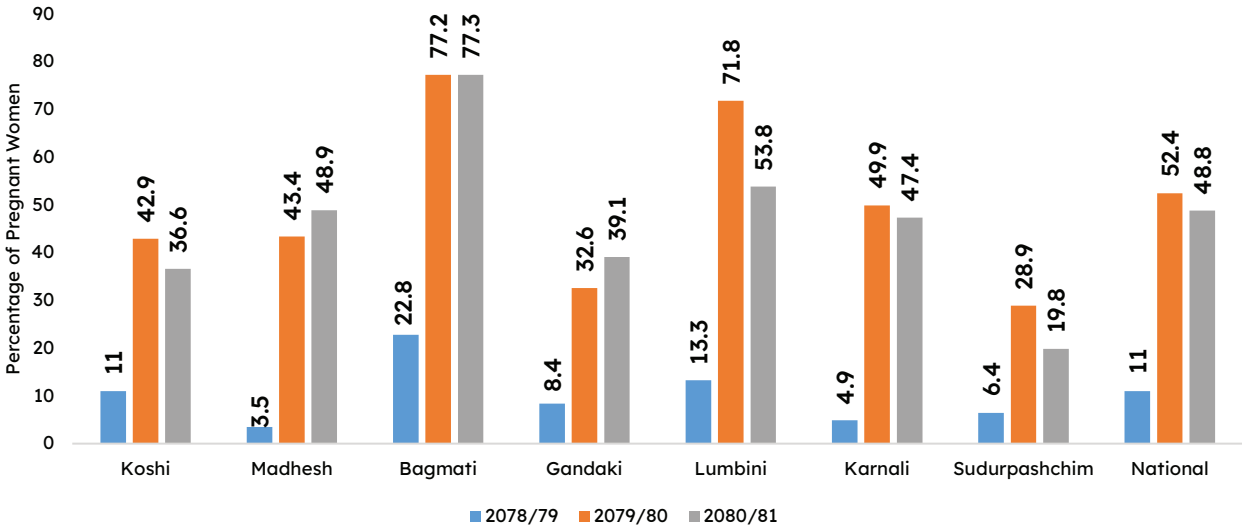


Figure 3.12 Deliveries conducted by Skilled Birth Attendant and Skilled Health Provider

The figure 3.13 shows the met need of EmONC that have been delivered in Nepal's provinces over the course of three fiscal years. Nationally, the met need for EmONC decreased to 48.79% in FY 2080/81. Also, the current fiscal year showed the province-specific variability for met need of EmONC. Madhesh province (48.85%) and Gandaki province (39.06%) showed an increment in met need of EmONC. With a high and steady met need of 77.25%, Bagmati Province demonstrated steady performance.



Source: HMIS/DoHS

Figure 3.13 Met need of EmONC across provinces in last three FYs 2078/79 - 2080/81

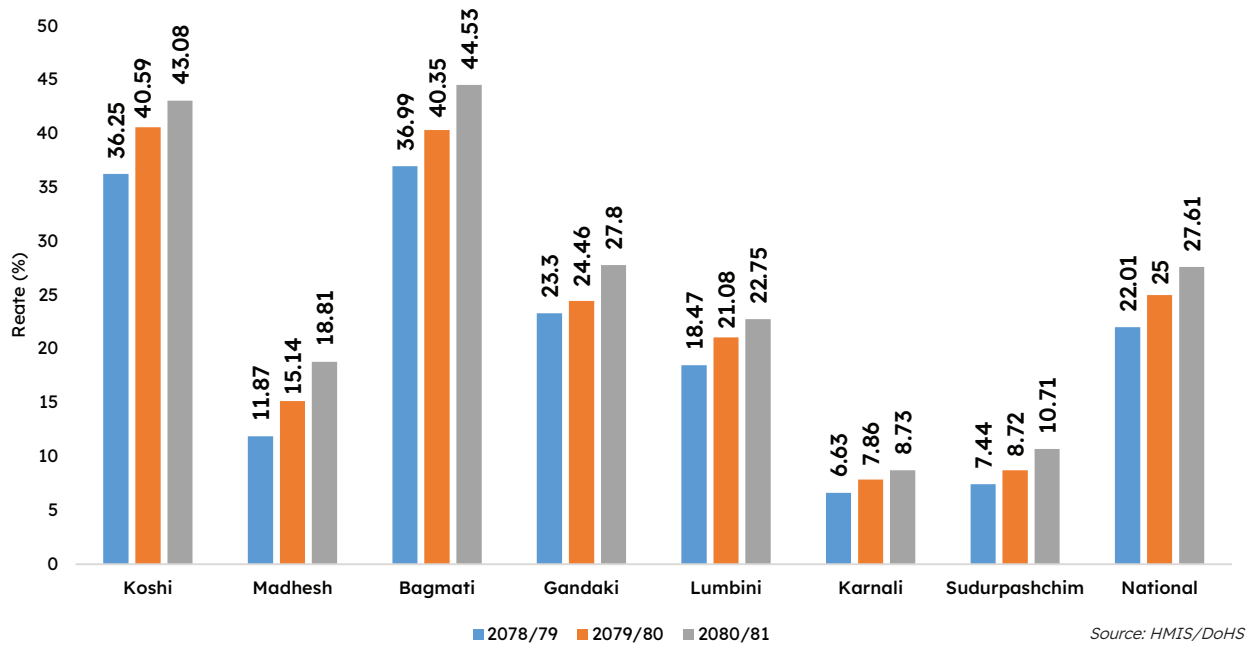
The table 3.1 shows the proportion of cases managed for obstetrics complications among estimated pregnancies in FY 2080/81. Nationally, among many complications, obstructed labor cases were handled most (1.60%) followed by hemorrhage cases (1.21%). Furthermore, the least cases managed was ruptured uterus (0.03%). Similarly, provincial variability was also observed. This information demonstrates how different provinces handle obstetric problems and demands bolstering resources to guarantee equal care, regionally.

Table 3.1 Percentage of cases managed for obstetric complications among estimated pregnancies in FY 2080/81

Complications managed	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
Eclampsia	0.21	0.31	0.12	0.12	0.26	0.09	0.14	0.21
Pre-eclampsia	0.2	0.42	0.88	0.14	0.51	0.1	0.12	0.41
Puerperal Sepsis	0.09	0.32	0.12	0.04	0.1	0.08	0.06	0.15
Hemorrhage	1.1	0.9	2.1	0.75	1.44	1.06	0.75	1.21
Obstructed labor	1.08	2.83	0.95	0.88	1.78	1.72	0.34	1.6
Retained Placenta	0.43	0.27	0.29	0.23	0.37	0.56	0.33	0.34
Ruptured uterus	0.03	0.05	0.03	0	0	0.02	0.01	0.03

Source: HMIS/DoHS

The figure 3.14 shows the cesarean section (CS) rate for deliveries in Nepal in FY 2080/81. The national average of CS rate among deliveries was 27.61% in current year, showing increasing trend, nationally as well as among provinces compared to previous year. The highest recorded CS rate was 44.53% in Bagmati province, and lowest in Karnali province (8.73%). These rates highlight how CS rates vary by region and how surgical procedures are becoming more and more common in maternity care nationwide.



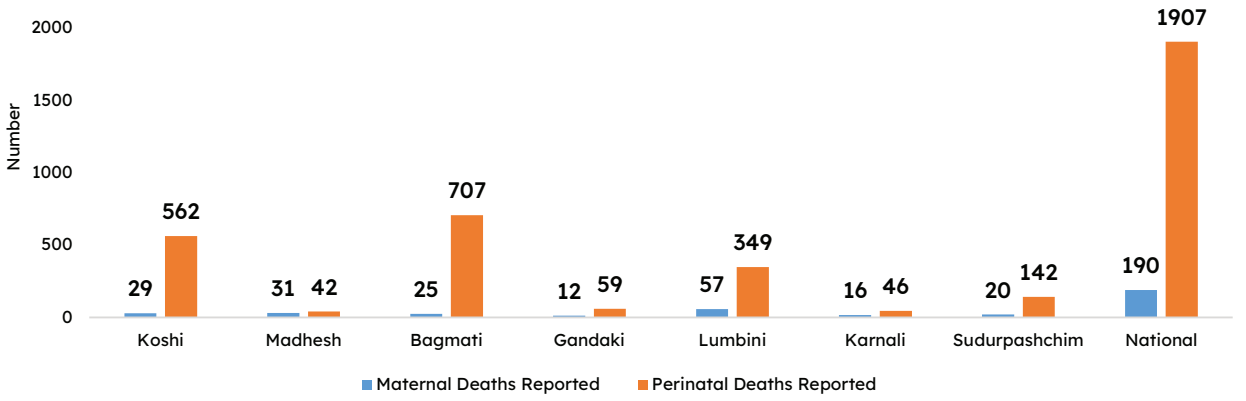
Source: HMIS/DoHS

Figure 3.14 CS rate among deliveries in FY 2078/79-2080/81

A monitoring system for CS has been proposed and piloted in health facilities. By FY 2080/81, FWD has implemented Robson's Ten Group Classification System (TGCS) in 38 hospitals to monitor CS rates at health facilities and has plans to scale the classification system for monitoring facility-based CS rates.

Maternal and Perinatal deaths in FY 2080/81

Nationwide, there were 190 maternal deaths and 1,907 perinatal deaths reported in FY 2080/81, with notable provincial variations. Lumbini province (57) reported the most, and Gandaki province (12) the least maternal fatalities. Likewise, Bagmati province reported the most perinatal fatalities (707), while Madhesh province reported the least. These distributions demonstrate how urgently region-specific approaches to maternal and perinatal health issues are needed. (figure 3.15)

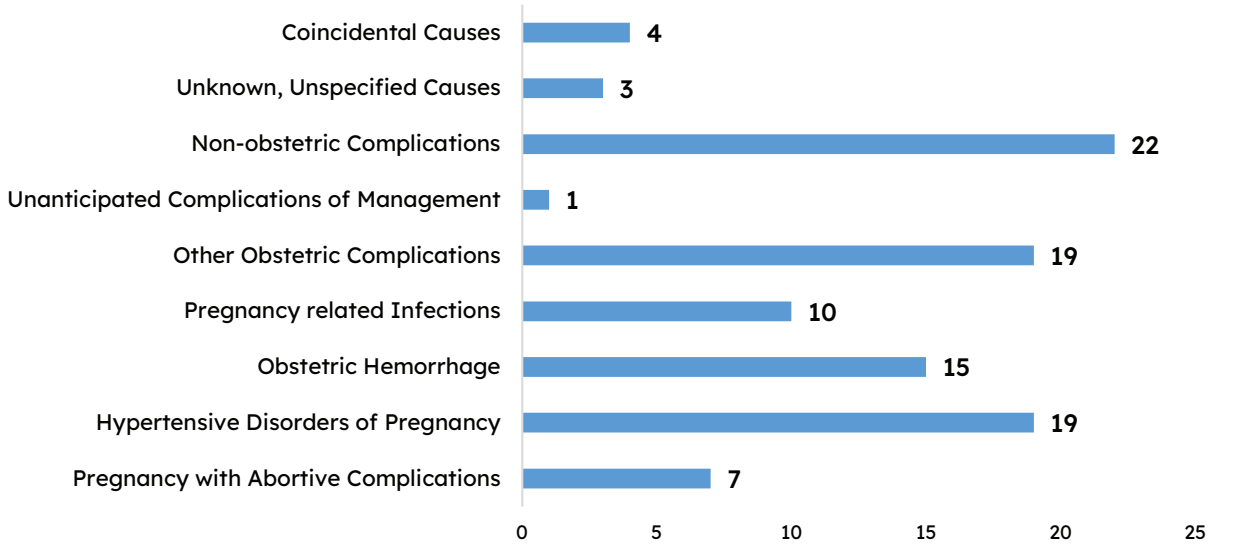


Source: MPDSR/FWD

Figure 3.15 Distribution of Maternal and Perinatal deaths reported by province in FY 2080/81

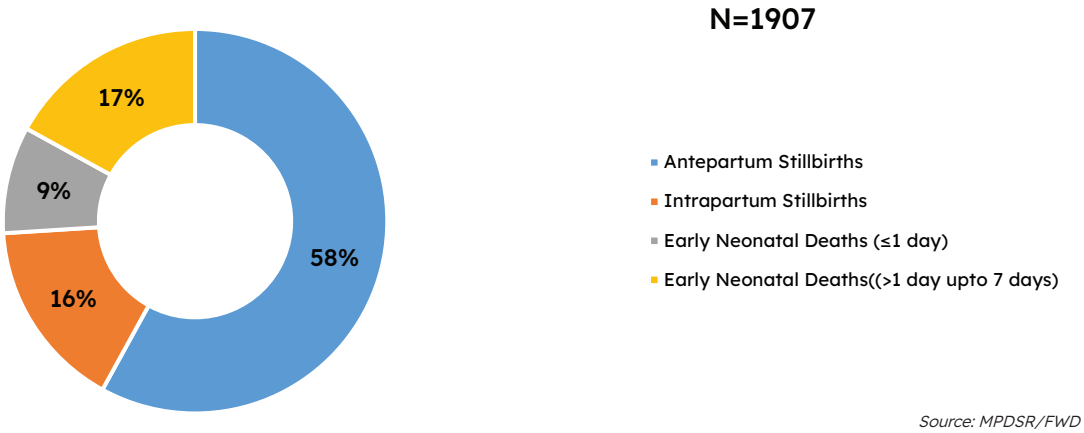
Of the various causes of maternal deaths (190 deaths), non-obstetric complications (22%), hypertensive disorders of pregnancy (19%), and other obstetric complications (19%) share the major proportions, while only 1% of deaths were due to unanticipated complications of management (figure 3.16).

Among 1,907 perinatal deaths, 58% were antepartum stillbirths. Early neonatal deaths were dichotomized; 9% deaths occurred within first day of birth, while 17% deaths occurred after the first day and within the first seven days of life (figure 3.17).



Source: MPDSR/FWD

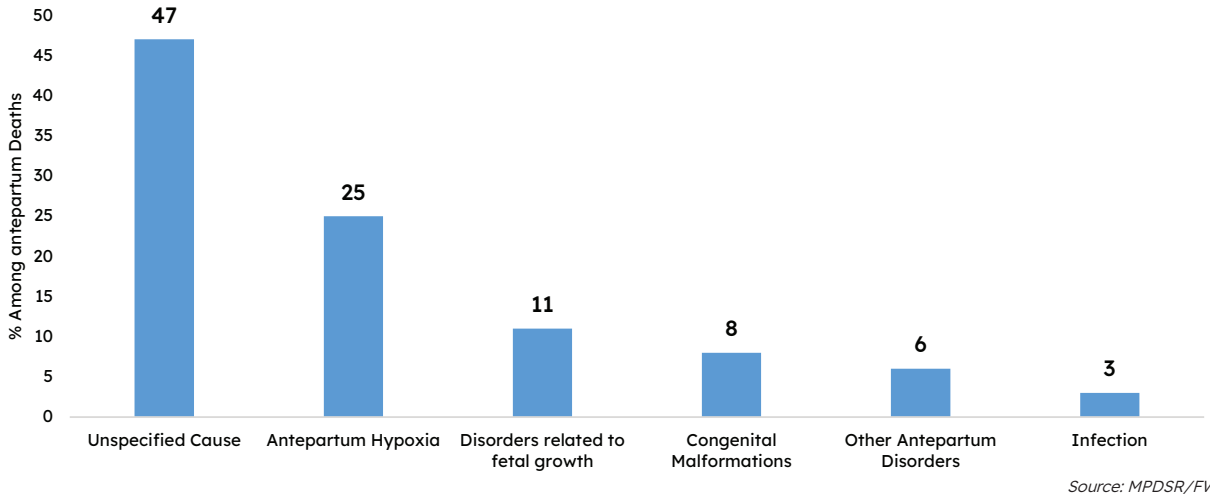
Figure 3.16 Causes of Maternal Deaths Reported in FY 2080/81 (in percentage)



Source: MPDSR/FWD

Figure 3.17 Timing of perinatal deaths

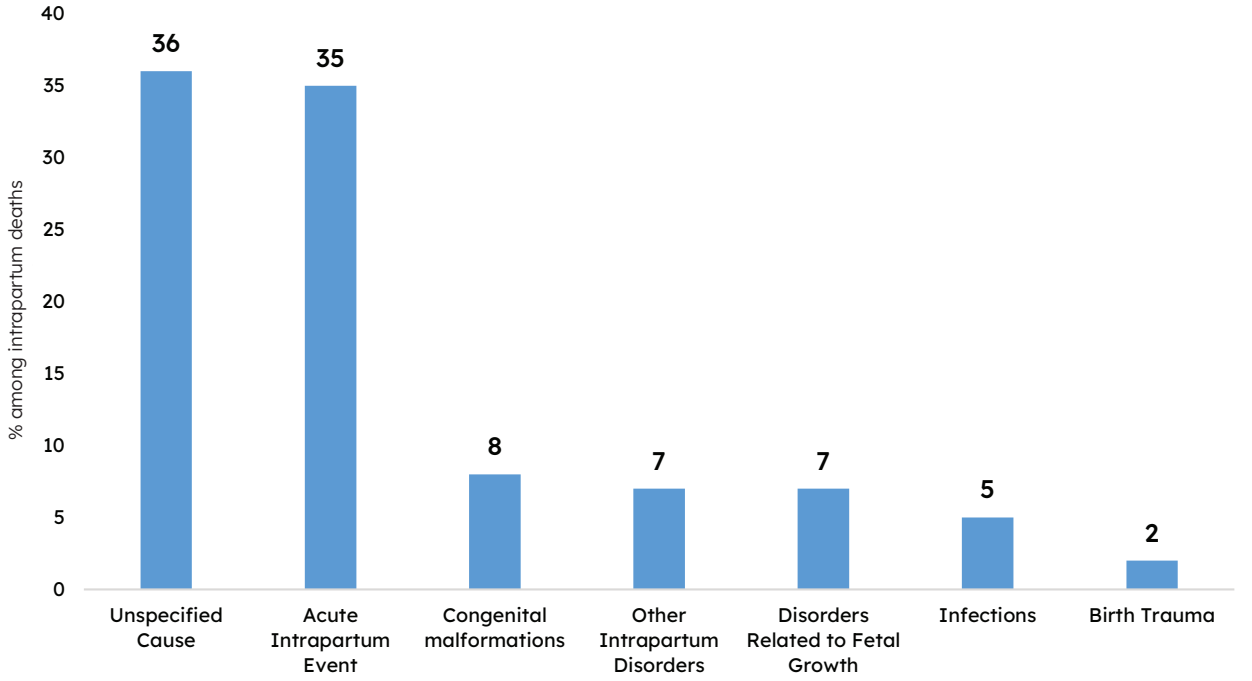
Of the 1,109 antepartum stillbirths, almost half (47%) had unidentified causes, suggesting that there were either diagnostic or documentation gaps. Twenty-five percent of the cases were due to antepartum hypoxia, indicating that prenatal oxygen deprivation plays a major role in stillbirths (figure 3.18).



Source: MPDSR/FWD

Figure 3.18 Causes of antepartum stillbirths

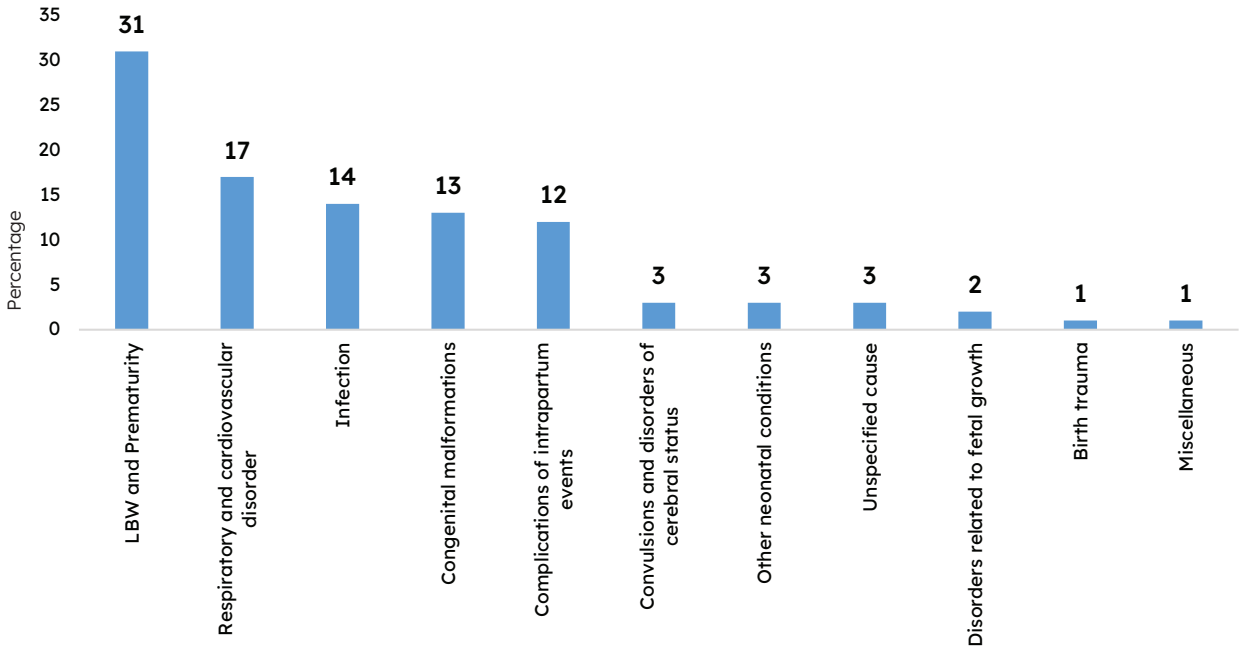
Among 298 intrapartum stillbirths, 36% had unidentified causes, while the least common cause identified for intrapartum stillbirths was birth trauma (2%). (figure 3.19)



Source: MPDSR/FWD

Figure 3.19 Causes of intrapartum stillbirths

Figure 3.20 shows the causes of early neonatal deaths (0-7 days of birth) in FY 2080/81. Low birth weight (LBW) and prematurity were the most common cause accounting 31% of deaths. Twelve percent of the deaths were due to complications of intrapartum events, demonstrating the effect of delivery-associated problems on neonatal survival.

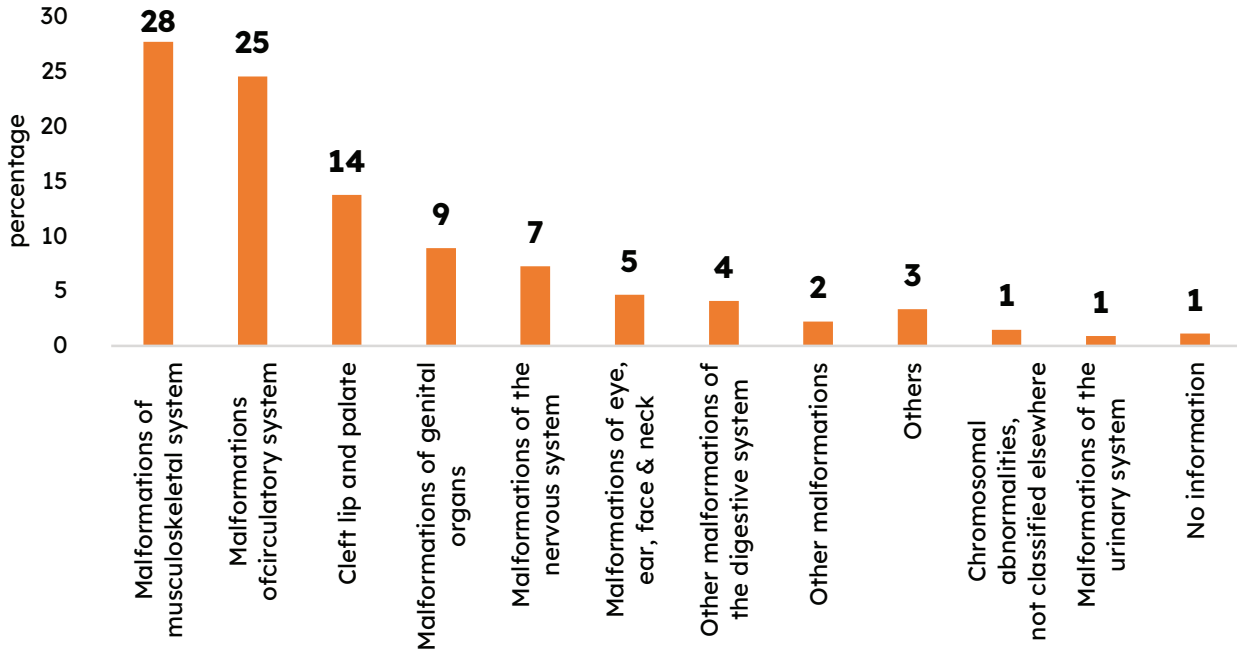


Source: MPDSR/FWD

Figure 3.20 Causes of Early Neonatal deaths FY 2080/81

Newborn Birth defects in FY 2080/81

Data from the NBBD surveillance showed the distribution of significant birth defects by system affected in FY 2080-81. The major system affected was muskulo-skeletal system (28%), followed by circulatory system (25%). About 1% of the new-born defects were not classified/no information (figure 3.21). Prioritizing interventions like folic acid supplementation and improving nutritional status of mothers during their antenatal periods can help in reducing such events.



Source: NBBD Surveillance

Figure 3.21 Percentage distribution of birth defects by system affected in 2023 (January – December)

3.3.3 Postnatal services

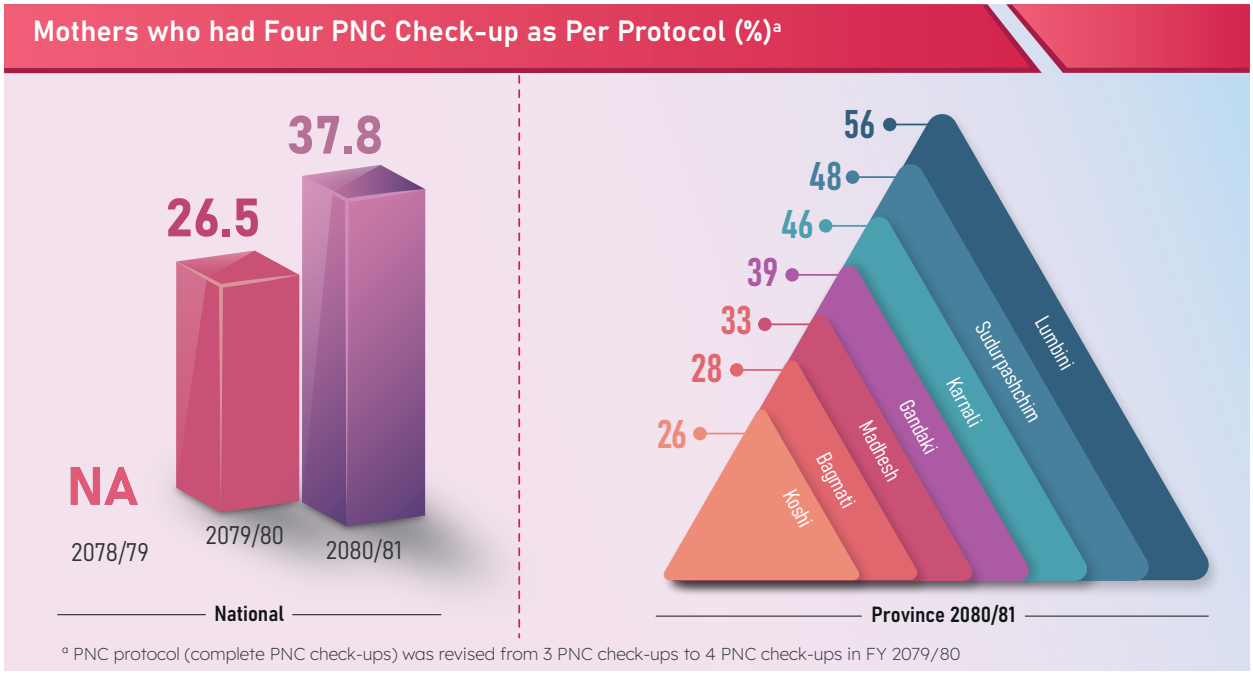


Figure 3.22 PNC coverage based on 4 PNC visits as per protocol in FY 2078/79 - 2080/81

Source: HMIS/DoHS

Before FY 2078/79, mothers who had minimum of three PNC visits were considered to have complete PNC check-ups. However, in FY 2079/80, the PNC protocol was revised and a mother with four PNC check-ups were considered to have complete PNC check-ups.

Figure 3.22 shows the proportion of mothers who had attended four PNC check-ups (complete PNC check-ups) over the course of two fiscal years, in accordance with the revised recommended protocol. In FY 2080/81, about 38% of mothers had complete PNC checkups, an increase in eleven percentage points compared to previous year, indicating progress in maternal health knowledge and service utilization.

There is a notable variation in the proportion of mothers receiving four PNC check-ups among provinces. Lumbini province showed the highest adherence to PNC protocol at 56.1%, and least adherence in Koshi province (25.7%). The necessity for focused efforts to increase PNC adherence in provinces with lower compliance rates is highlighted by this data (figure 3.22).

3.3.4 Gap in continuum of care utilization from pregnancy to postnatal phase

Table 3.2 Gap in continuum of care utilization from pregnancy to postnatal phase

Gap in continuum of care utilization (%)	FY 2076/77	FY 2077/78	FY 2078/79	FY 2079/80	FY 2080/81
Four ANC visits	52.6	55.4	79.2	93.5	88.42
Eight ANC visits as per revised protocol	NA	NA	NA	43	61
Women who received 180 days of IFA during Pregnancy	44	44.8	60	75	65.49
Institutional Deliveries	65.7	64.9	79	83.4	77.92
Postpartum women who received IFA for 45 days	37.6	40.7	52.6	74.5	81.93
Mothers who had Three PNC check-ups	18.8	25.1	40.8	44.2	49.48
Mothers Who had Four PNC Checkup as per revised protocol	NA	NA	NA	26.5	37.8

Source: HMIS/DoHS

Table 3.2 shows the gap in continuum of care utilization from pregnancy to postnatal phase over the course of past five FYs. In FY 2080/81, there is an eminent gap between utilization of four ANC visits (88.42%) vs. women who received 180 days of IFA during pregnancy (65.49%), indicating concerns of either irregular supply or error in recording/reporting. Similarly, there is notable gap between proportion of institutional deliveries (83.4%) vs. mothers who had three PNC check-ups (44.2%), and four PNC check-ups (26.5%).

Additionally, the proportion of postpartum mothers who received IFA for 45 days, who had three and four PNC check-ups showed an increasing trend compared to previous FY, suggesting gradual improvement in PNC adherence. However, a decline in proportion was observed among pregnant women who had four ANC visits, who received 180 days of IFA, and who had institutional deliveries compared to previous FY. These patterns point to a mixed performance, with advances in postpartum care services and setbacks in ANC visits and deliveries.

3.3.5 Utilization of Safe abortion service

In FY 2080/81, a total of 102,357 cases used safe abortion services, of which majority used medical abortion (72.27%), also showing an increasing trend compared to previous years. In contrast, surgical abortions showed a declining trend (figure 3.23). These patterns indicate a shift of the SAS user's preference towards non-invasive procedures over surgical methods.

Regarding provincial distribution, Bagmati province had highest cases (22,231 cases), and Karnali province had lowest cases (5,762 cases) of utilizing safe abortion services. (figure 3.24)

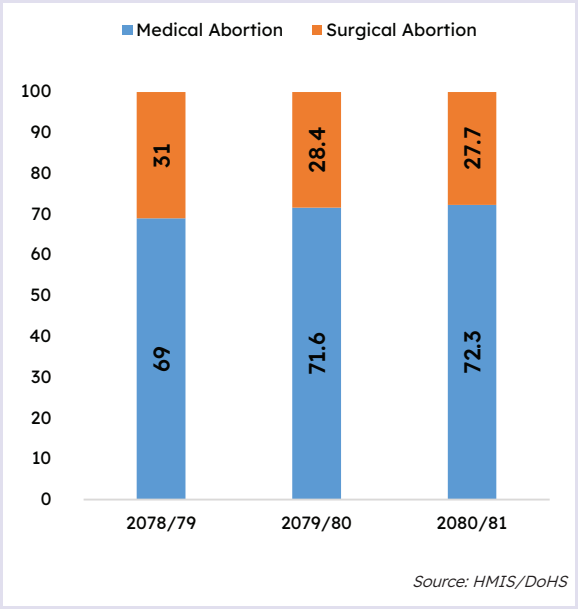


Figure 3.23 Type of safe abortion among total cases in FY 2078/79-2080/81

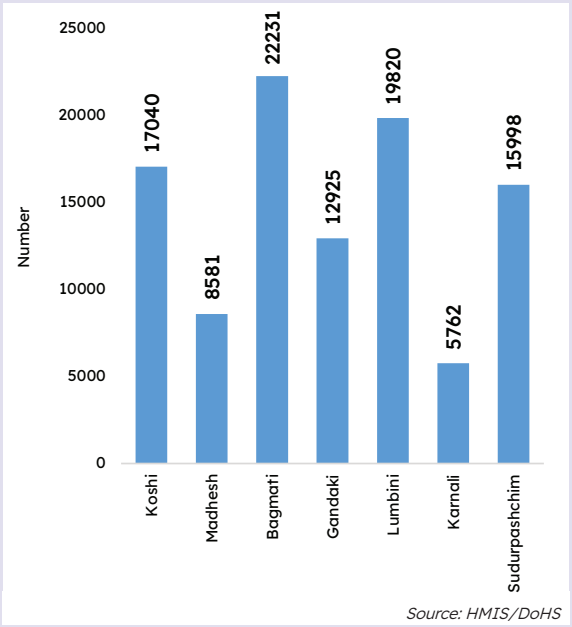
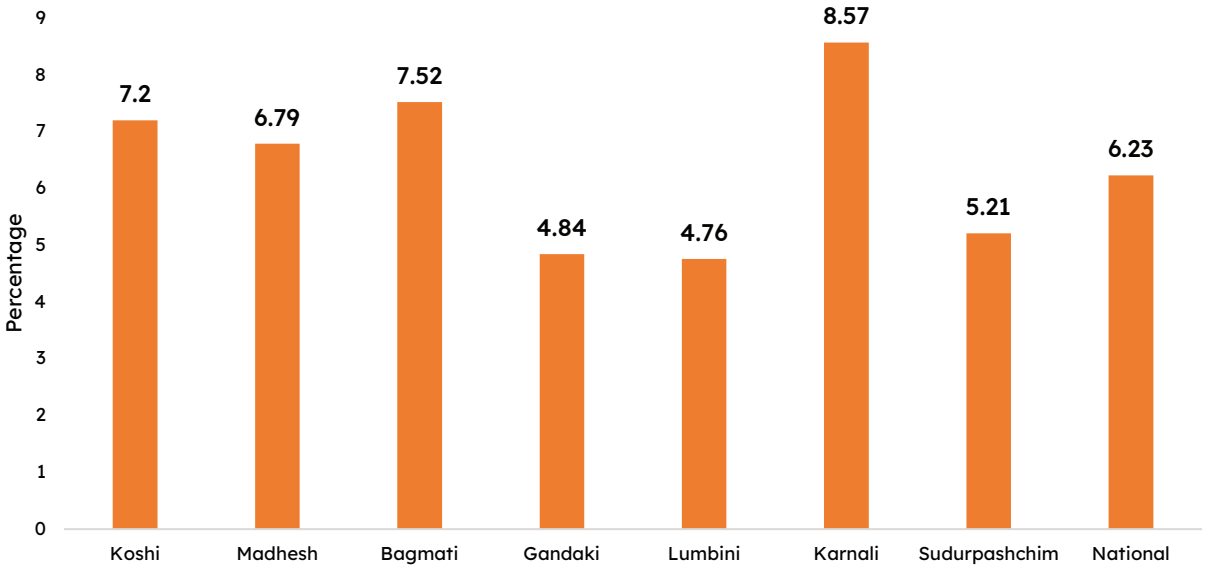


Figure 3.24 Number of cases utilizing safe abortion services by provinces in FY 2080/81

In FY 2080/81, among the total SAS users, 6.23% of women were under 20 years of age. The proportions were also varied by provinces, with Karnali provinces reporting the highest proportion (8.57%), while Lumbini province reporting the lowest (4.76%) (figure 3.25). Furthermore, this data depicts only registered cases of abortions and doesn't capture the burden of the illegal, unregistered, unsafe abortions.



Source: HMIS/DoHS

Figure 3.25 Percentage of women under 20 years among safe abortion services users in FY 2080/81

The table 3.3 presents national and provincial data on abortion complications, post-abortion care (PAC), and comprehensive abortion care (CAC) for FY 2080/81. PAC services were used for 7.61% of induced abortions and 6.76% of spontaneous abortions, while 3.93% of women received treatment for abortion-related complications. A total of 102,357 safe abortion services were reported nationwide. With 17,040 safe abortions performed, Koshi Province had the highest rate of women treated for complications (7.76%) among all provinces. Among women treated, Madhesh Province had the greatest rate of complications (12.88%) and surgical abortion complications (100%), with 8,581 services. Significant surgical abortion complications (81.25%) and total services (22,231) were highest in Bagmati Province.

Table 3.3 Number of CAC, PAC and Post Abortion Complication and Women Treated for Abortion in FY 2080/81

National/Provincial	Total Safe abortion Service	% PAC services (Induced)	% PAC services (Spontaneous)	% of women treated for abortion complications	% MNH-Obstetric Complication-Abortion Complication-Referred Out
National	102,357	7.61	6.76	3.93	4.18
Koshi	17,040	6.6	7.69	7.76	5.86
Madhesh	8,581	5.46	6.59	12.88	1.15
Bagmati	22,231	7.99	2.83	3.09	8.52
Gandaki	12,925	9.35	6.77	5.02	8.55
Lumbini	19,820	17.84	11.02	4.44	9.77
Karnali	5,762	5.81	4.58	1.63	4.6
Sudurpaschim	15,998	7.74	6.21	5.97	4.19

Source: HMIS/DoHS

3.3.6 New-born service utilization

Among the total 17,859 newborn cases admitted nationally in SNCU/NICU/KMCU, majority of the cases were reported from Lumbini province (4306 cases). Regarding the causes of the admission, majority were admitted due to sepsis (5001 cases), and least were due to congenital anomalies (250 cases). The causes of the admission were similar across provinces except for Lumbini province where hyperbilirubinemia was the major cause (729 cases). (table 3.4)

Table 3.4 Causes of Newborn Admission across provinces reported in FY 2080/81

Province	Asphyxia (No.)	Congenital Anomalies (No.)	Hyperbili rubinemia (No.)	Hypothermia (No.)	Low Birth Weight (No.)	Preterm (No.)	Seizure (No.)	Sepsis	Other (No.)	Total (No.)
National	**2,227**	**250**	**2,989**	**607**	**1,679**	**1,786**	**669**	**5,001**	**2,651**	**17,859**
Koshi	294	34	447	23	189	332	58	628	402	2,407
Madhesh	438	32	398	236	357	221	248	865	118	2,913
Bagmati	187	30	343	11	184	185	26	483	267	1,716
Gandaki	165	23	575	7	81	151	36	835	453	2,326
Lumbini	494	56	729	258	414	431	152	699	803	4,036
Karnali	195	19	100	4	98	142	23	662	246	1,489
Sudurpaschim	454	56	397	68	356	324	126	829	362	2,972

Source: HMIS/DoHS

Table 3.5 Proportion of newborn managed by KMC for preterm, LBW and/or hypothermia reported in FY 2080/81

Indicators	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
Newborn care-Managed with KMC-Hypothermia	3.56	22.59	3.09	2.40	2.91	0.36	4.57	6.76
Newborn care-Managed with KMC-LBW	30.88	23.78	34.62	31.74	33.49	31.54	29.12	30.14
Newborn care-Managed with KMC-Preterm	40.62	22.46	30.37	59.88	31.86	40.50	23.43	29.93
Newborn care-Managed with KMC-Preterm/LBW/ Hypothermia	24.94	31.18	31.91	5.99	31.74	27.60	42.89	33.18

Source: HMIS/DoHS

Of the total 2898 Cases of sick newborns were managed with Kangaroo Mother Care (KMC) in FY 2080/81, 30.14% were managed for LBW, 29.93% for preterm, and 6.76% for hypothermia. Around one third of the newborn cases were managed for preterm, LBW, and hypothermia, combined together. By provinces, most of the hypothermia cases were managed from Madhesh province (22.59%), LBW cases from Bagmati province (34.62%), preterm cases from Gandaki province (59.88%). (table 3.5). These statistics shows geographical differences in KMC services, with certain provinces leading the way in particular newborn care categories.

Table 3.6 Treatment outcomes of the newborns reported in FY 2080/81

Treatment Outcome	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
LAMA/Absconded	0.7	0.7	0.3	0.4	0.7	0.5	1.2	4.5
Referred	1.3	0.8	0.8	0.7	1.5	0.2	1.4	6.7
Death (per 1000)	4.5	5.6	1.5	3.5	9.1	5.3	9.1	38.5

Source: HMIS/DoHS

The table 3.6 shows the treatment outcomes of the newborn's admission in FY 2080/81. Among total newborn admissions, around 4.5% of neonates absconded or leave against medical advice (LAMA), with the highest rate (1.2%) recorded in Sudurpashchim province. Likewise, 6.7% of the admitted cases were referred. Regrettably, the mortality among newborn admission was 39 newborn deaths per 1000 admissions, with highest mortality reported in both, Lumbini, and Sudurpaschim provinces (9.1 newborn deaths per 1000 admission, each. These findings highlight the necessity of focused initiatives to enhance newborn care and mitigate unfavorable outcomes in high-risk regions.

3.4 Key Achievements of MNH programme in FY 2080/81

- QI Dashboard developed and linked with FWD websites
- Expansion and strengthening of CEmONC programme to 76 districts.
- Facility based MPDSR programme has been expanded to 126 hospitals and community level MPDSR has been expanded to 52 districts in FY 2080/81
- Robson's Ten Group Classification system for monitoring caesarean section has been expanded to 38 hospitals
- Coaching mentoring programme for SNCU level II care facilities developed and being piloted
- Level II newborn care orientation package development and orientation to SNCU workers
- Value clarification and attitude transformation training conducted for MNH and safe abortion service providers
- Orientation of Reproductive, Maternal, Newborn, Child, Adolescent Health and Nutrition (RMNCAH) database to health workers across country
- Orientation to service providers on management of postpartum hemorrhage and non-pneumatic anti-shock garment
- Facilitation guide on Maternal mental Health (Aama ko Mann) developed and maternal mental health services initiated at Paropakar Maternity and Women's Hospital
- Development of Birth Defect Surveillance, Prevention and Management- National Implementation Guidelines 2025-2030

Box 3.4 SWOT analysis of MNH Programme

Strengths	Opportunities
• Real-time monitoring of QI assessment of health facilities through QI dashboard • Coaching mentoring programme for continuous improvement of quality of care • Expansion and strengthening of CEmONC programme in 76 districts • Regular death auditing through MPDSR programme has been expanded • Monitoring for CS and its indication using Robson Ten Group Classification being expanded • Integration of Maternal and Newborn Health services into primary health care facilities • Provision of essential newborn care packages including immediate thermal care, resuscitation and newborn immunization • Continuous capacity building and HR support • Integration of Mental health into Maternal and Newborn Health services	• Implementation of Respectful Maternity Care (RMC) • Initiation of companionship in labor • Integrating MNH QI tools with other programme/ tools for integrated supervision
Weaknesses	**Threats**
• Inadequate Budget for supervision and monitoring • Inefficient implementation of Data Quality Self-Assessment (DQSA) • Insufficient budget emergency transport system • Weak referral mechanism	• Reduction of preventable Maternal/newborn deaths at health facilities • Timely referral from remote areas and execution of emergency referral funds / airlift • Self-referral and crowding at the CEmONC sites and less uptake of delivery services from birthing centers

4 Child Health and Immunization Services

Family Welfare Division

Child Health and Immunization Services Section

The Child Health and Immunization Services Section (CHISS) of Family Welfare Division plays a critical role in Nepal's efforts to reduce child morbidity and mortality. At the federal level, the section bears responsibility for the strategic planning, execution, monitoring, and evaluation of child health and immunization services with close coordination and collaboration with the provincial and local level governments as well as with various centers and sections of different divisions of the Department of Health Services (DoHS), Ministry of Health and Population (MoHP), including Management Division (MD) ((Integrated Health Information Management Section (IHIMS), Logistics Management Section (LMS)), National Health Education, Information and Communication Centre (NHEICC), Epidemiology and Disease Control Division (EDCD), National Public Health Laboratory (NPHL), Provincial Health Directorates (PHDs), and Health Offices (HOs). Through a combination of immunization, disease surveillance, and other child health programs, including Integrated Management of Neonatal and Childhood Illness (IMNCI), this section strides towards child health, survival, and well-being. CHISS implements targeted interventions to address the leading causes of child deaths, ensuring accessibility to essential health services across all levels with a focus on hard-to-reach and high-risk communities.

Major programs of CHISS are the National Immunization Programme (NIP), explained in section 4.1, and the Integrated Management of Newborn and Childhood Illness (IMNCI) programme, explained in section 4.2 of this chapter.

4.1 National Immunization Program

Nepal initiated immunization in the late seventies with a smallpox vaccine. NIP was first introduced as the Expanded Programme on Immunization (EPI) in 2034 B.S. and has been the priority programme of the Government of Nepal (GoN). It has played a significant role in lowering the morbidity, mortality, and disability caused by diseases that can be prevented through childhood vaccination. The programme offers free vaccination services against 13 pathogens, such as Tuberculosis, Diphtheria, Pertussis, Tetanus, Hepatitis B, *Hemophilus influenza* type B, Polio, Rotavirus, *Streptococcus Pneumoniae*, Measles, Rubella, Japanese encephalitis (JE) and Typhoid. Nepal has planned to introduce the HPV vaccine in the upcoming FY 2081/82 as an effort to accelerate the elimination of cervical cancer. The country has eliminated maternal and neonatal tetanus in 2005, and maintained its polio-free status since 2010 (regional certification in 2014) due to its strong immunization efforts. Even in rural locations, the programme is accessible because of its wider network in health facilities, outreach clinics, and community health volunteers. Since FY 2069/70, Nepal's 'Full Immunization Declaration (FID)" initiative aims to combat social inequities, ensuring complete immunization for every child within administrative boundaries. As of Ashadh 2081, 76 districts have achieved and sustained 'full immunization' status. NIP will significantly contribute to achieving SDG 3 (Indicator 3.2.1 Under-five mortality rate and Indicator 3.2.2 Neonatal mortality rate) through a reduction in under-five child mortality. (See table 4.1 for major milestones of the programme and Box 4.1 for key guiding strategies.)

Nepal, the first country in the South-East Asia Region with Immunization Act, 2072, Immunization Regulation 2074, and the first country to adopt Full Immunization Declaration Initiative. Provinces adopting their own acts demonstrate the government's commitment to recognizing immunization as a fundamental right for all children. Alongside global, regional, and national guiding documents, the NIP also has a Comprehensive Multi-Year Plan (cMYP) 2017–2021. National Immunization Strategy (2023-2030) (draft version), aligned with the Nepal Health Sector Strategic Plan (2023-2030), will be the primary guiding document for NIP.

Table 4.1 Major Milestones of National Immunization Programme, Nepal

Year	Achievements/Milestones
1977	-Eradicated smallpox -BCG and DPT vaccines started in Dhanusha, Sindhupalchowk, and Rupandehi districts
1978	-Started TT vaccination for pregnant women
1988	-Nepal's commitment to eradicate Polio in World Health Assembly -BCG and DPT vaccines were introduced all districts -OPV and Measles vaccines were introduced in routine immunization
1996	-First nationwide Polio vaccination campaign -Integration of VPD surveillance in Early Warning and Reporting System (EWARS)
1998	-Polio Eradication Network established to conduct AFP surveillance
1999	-The first case of Polio detected in Nepal
2002	- Hepatitis B vaccine introduction in phase wise manner
2003	-AD syringe introduced -Measles surveillance started -Neonatal Tetanus (NNT) surveillance started
2004	-Measles campaign conducted -AES surveillance started
2005	-Maternal Neonatal Tetanus (MNT) Eliminated -Integration of Measles Rubella (MR), Japanese Encephalitis (JE) and NNT surveillance into VPD surveillance -Hepatitis B vaccine integrated in DPT and started to provide DPT-HepB vaccine -TT vaccine for grade 1, 2 and 3 students in 8 districts
2006	-JE vaccination campaign started in multiple phases (JE vaccine introduced in high-risk districts in phase wise manner)
2009	-Hib component was integrated in DPT-HepB vaccine as Pentavalent vaccine
2010	-Last Polio case detected in Nepal
2012	-Full Immunization Declaration Programme started
2013	-Rubella vaccine component was integrated in routine immunization as 'MR vaccine'
2014	-IPV introduced in routine immunization -Nepal declared "Polio-Free" by WHO Regional Certification Commission - TT vaccine replaced by Td
2015	-Second dose of MR vaccine started in Nepal -Pneumococcal Conjugated Vaccine (PCV) introduced in routine immunization
2016	- Immunization Act 2072 enacted and published in Nepal Gazette -Initiation of Congenital Rubella Syndrome (CRS) surveillance with elimination goal -MR sub-national lab expansion at BPKIHS, Dharan -JE vaccine campaign and JE vaccine included in routine immunization all over Nepal -trivalent OPV switched to bivalent OPV -HPV demonstration conducted in Kaski and Chitwan
2017	-Environmental Surveillance of polio virus started in Kathmandu Valley
2018	-Switched from IPV to fIPV -Nepal was certified as having achieved Rubella and CRS control
2019	-Nepal was certified as Hepatitis B control nation among children through vaccine
2020	-Introduction of Rotavirus vaccine in routine immunization -Integration of Hygiene Promotion activities in routine immunization -Introduction of delay schedule (Ceiling for routine immunization services for missed children expanded to under 5 years)
2021	-COVID-19 vaccine introduced in Nepal
2022	-TCV vaccine introduction in routine immunization
2023	-Environmental surveillance expanded in Madhesh and Koshi Provinces
2024	-Environmental surveillance expanded in Gandaki Province -MR sub-national lab expanded in Sudurpashchim Province -HPV Demonstration conducted through 7 hospitals of 7 provinces

Box 4.1 Key guiding policies, strategies, and guidelines for immunization programme in Nepal

- Reaching Every District Strategy, 2068 BS (2002 AD)
- Immunization Act, 2072 BS (2016 AD)
- Comprehensive Multi-Year Plan for Immunization, 2073-2077 BS (2017 – 2021 AD)
- Global Vaccine Action Plan (2011-2020 AD)
- Full Immunization Sustainability Guideline, 2077 BS

Key activities adopted for identification and vaccination of zero doses and under-immunized children.

- Search and vaccinate during Immunization Month (Baishakh)
- Screening of children for missed routine vaccination.
  - During Vitamin A campaigns for under 5 years children (Biannual)
  - Screening of Under 5 years' children at the time of school enrollment (through vaccination card)
- Yearly house-to-house visit (Magh to Chaitra) to identify zero dose and under-immunized children, with additional sessions during Immunization Month to vaccinate zero dose and under-immunized children.
- Zero dose and under-immunized children screening through campaigns, surveys, and real-time monitoring.
- Yearly micro-plan update focusing on high-risk areas/population.
- Mass media and social mobilization for vaccination
- Use of immunization monitoring charts to monitor the coverage and identify dropouts by health facilities

Target Population

The Table 4.2 below is the estimated target population of different age categories which are the beneficiaries of NIP.

Table 4.2 Target Population of NIP (FY 2080/81)

Age group	Target Population FY 2080/81
Under 1-year children (surviving infants)	497,944
12-23 months children population	493,884
0-59 months children population	2,353,757
Expected pregnancy	600,401

Source: HMIS/DoHS

4.1.1 Major Activities Conducted in FY 2080/81

The immunization month is celebrated every year during the first month of the Nepali calendar, Baishakh (mid-April to mid-May), coinciding with "World Immunization Week," celebrated on the last week of April. In fiscal year 2080/81, the "Extensive Search and Vaccination" strategy was adopted to vaccinate children below 5 years who have missed routine vaccinations (table 4.3). The vaccination campaign was conducted nationwide in all health facilities. Health workers and Female Community Health Volunteers (FCHVs) conduct house-to-house surveys to list eligible children and identify unvaccinated and dropouts (Search and Immunize strategy). Involvement of local administration, intellectuals, teachers, political figures, and social workers is crucial in addressing dropouts. National, and sub-national level government, partners, and relevant stakeholders engage in activities to celebrate Immunization Month, with additional support from partners, highlighting the importance of collective efforts for comprehensive immunization coverage.

Table 4.3 Number of children reached during extensive search and vaccination Campaign (Immunization Month) (FY 2080/81)

Number of children reached during extensive search and vaccination campaign	Number
Zero Dose* Children	1,709
Children (0-59) Months of age	34,424

**Zero Dose refer to eligible children who has not received first dose of DPT-HepB-Hib (Pentavalent).*

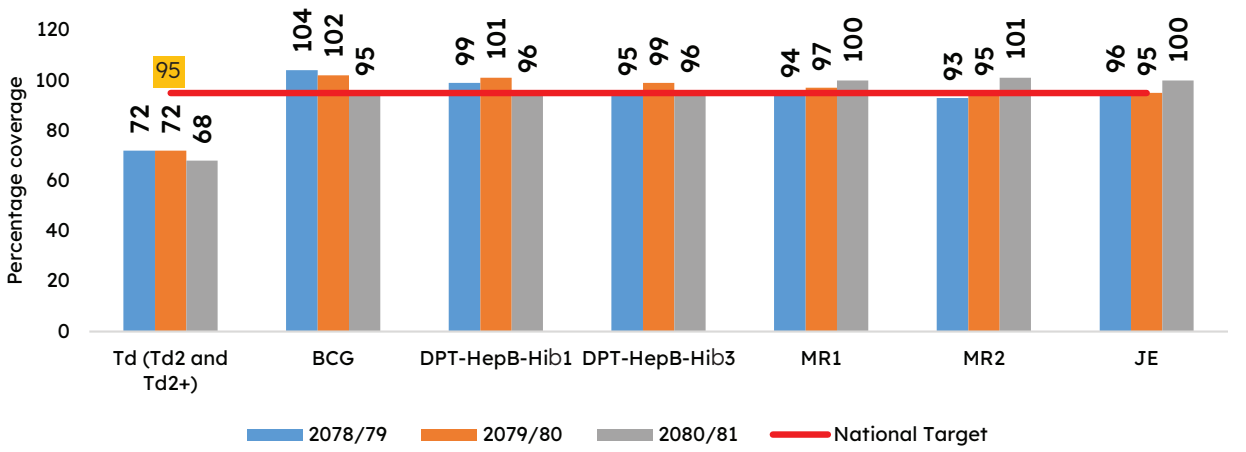
Source: FWD and WHO-IPD

4.1.2 Key Programme Indicators for NIP

Routine Immunization Coverage

Nepal's National Immunization Programme (NIP) has made significant progress over the fiscal years 2078/79 to 2080/81. In FY 2080/81, critical vaccines such as DPT-HepB-Hib1 and DPT-HepB-Hib3 maintained high coverage at 96%, though they experienced a slight decline from their peak in FY 2079/80 (101% and 99%, respectively).

Meanwhile, MR1, MR2, and JE vaccines demonstrated a remarkable upward trend, surpassing 100% coverage in FY 2080/81, showcasing the success of intensified immunization efforts. However, the persistently low Td vaccination rate of 68% signals an urgent need for targeted interventions, particularly for pregnant women. (figure 4.1)

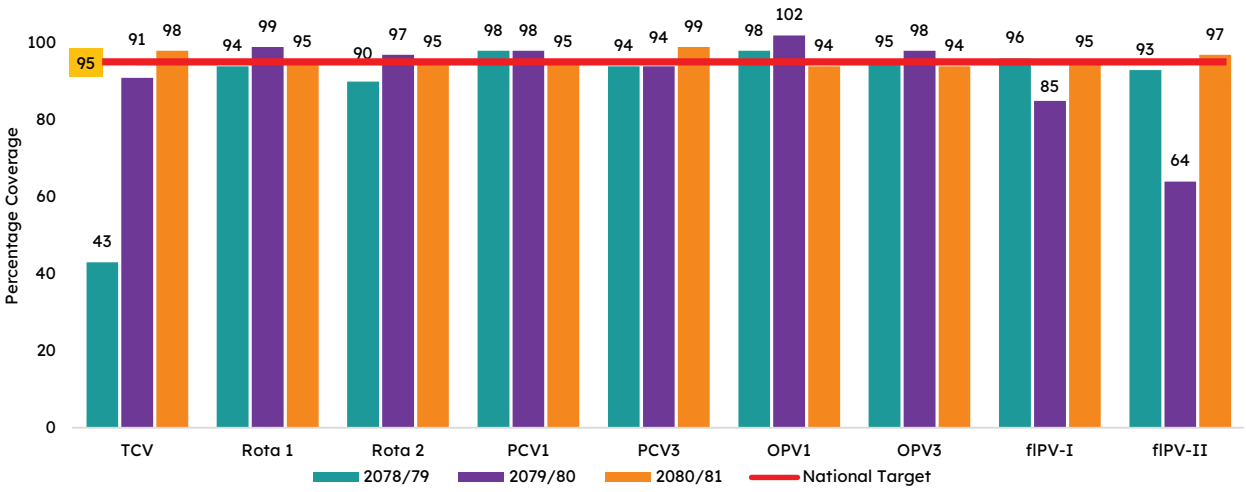


Source: HMIS/DoHS

Figure 4.1 Coverage of Td, BCG, and DPT-HepB-Hib, MR and JE (FY 2078/79 - 2080/81)

The introduction of the Typhoid Conjugate Vaccine (TCV) has been a major success, with coverage soaring from 43% in FY 2078/79 to 98% in FY 2080/81, reflecting the effectiveness of nationwide campaigns. Similarly, the Rotavirus vaccine (Rota) achieved strong uptake, reaching 95%, though it showed a slight decline from previous year.

Furthermore, the Pneumococcal Conjugate Vaccine (PCV) also exhibited steady progress, with PCV3 coverage increasing from 94% in FY 2078/79 to 99% in FY 2080/81, reinforcing Nepal's commitment to full-dose completion. Polio immunization presented mixed results—while fIPV-1 and fIPV-2 coverage showed dip in 2079/80 (85% and 64%, respectively) following schedule adjustments, OPV1 and OPV3 declined to 94% after peaking at 102% and 98% in FY 2079/80 (figure 4.2).

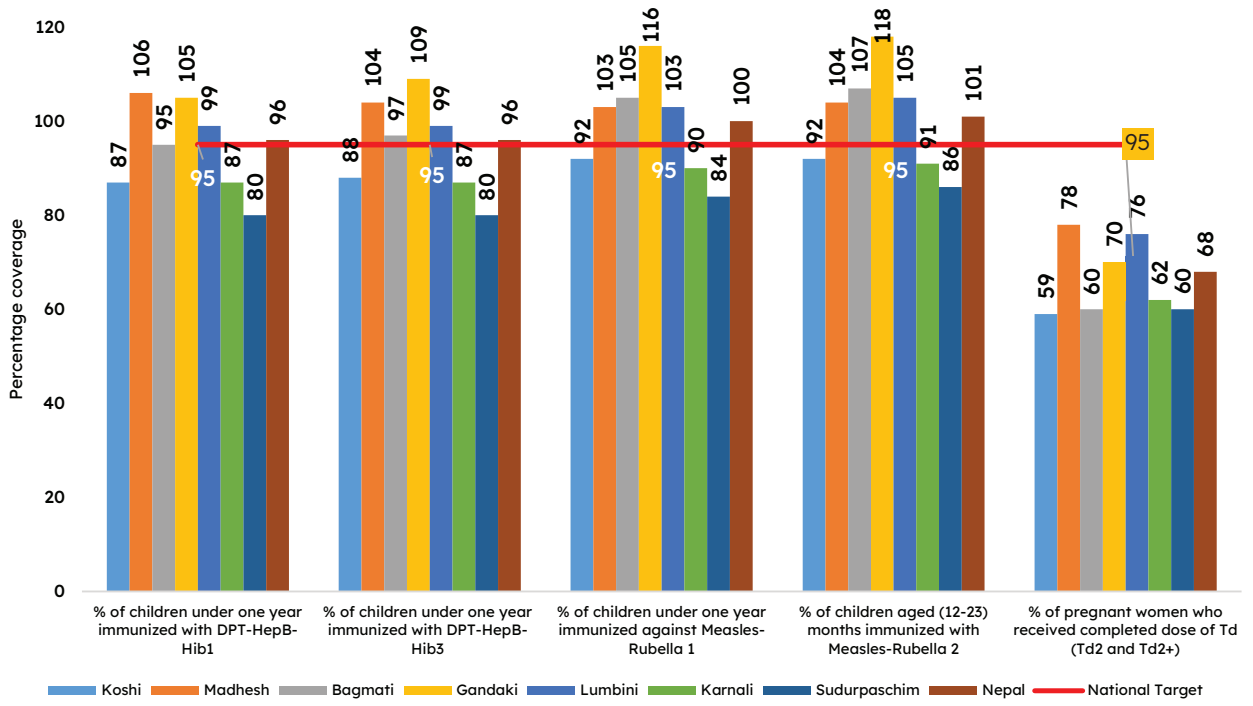


Source: HMIS/DoHS

Figure 4.2 Coverage of different antigens (FY 2078/79 - 2080/81)

Vaccination coverage by province

In FY 2080/81, there were notable variations in the national and provincial coverage of key antigens under the NIP. The DPT-HepB-Hib3 vaccination rate nationwide was 96% for children under one-year-old, with provincial coverage ranging from 80% in Sudurpashchim to 109% in Gandaki. For MR1 vaccine, 100% of children aged 9 months and older received the vaccine, with Gandaki having the highest coverage (116%) and Sudurpashchim the lowest (84%). Similarly, MR2 coverage for children aged 12 to 23 months stood at 101% nationwide, with provincial rates ranging from 86% in Sudurpashchim to 118% in Gandaki. The lowest national coverage was for Td vaccination for pregnant women, at 68%, with provincial coverage ranging from 59% in Koshi to 78% in Madhesh (figure 4.3). These figures highlight the provincial disparities in immunization coverage, underlining the need for targeted interventions to improve access in lower-performing region.

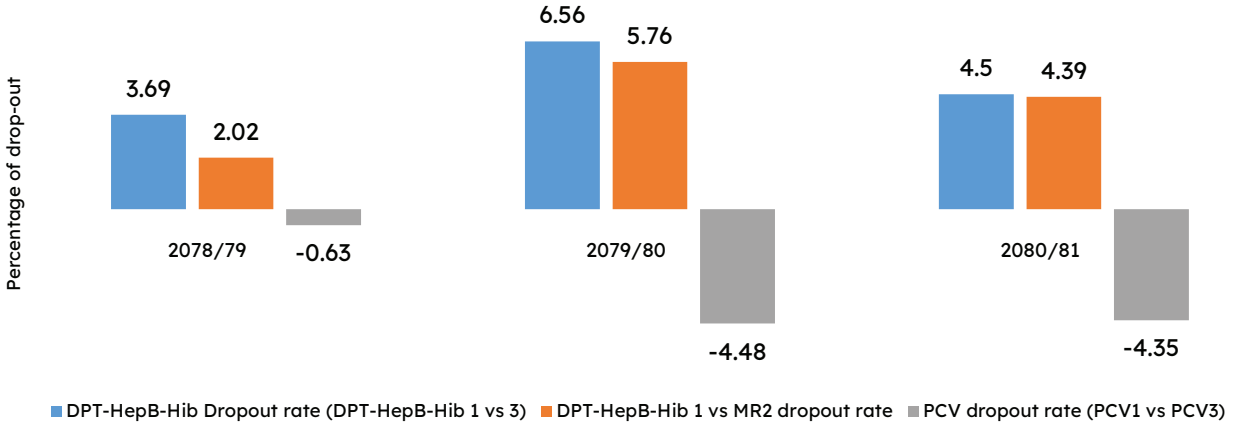


Source: HMIS/DoHS

Figure 4.3 Coverage of Pentavalent, MR and Td (FY 2080/81)

Drop-out rates (%) of vaccination

Nationwide, the dropout rates for key antigens under the NIP showed a mixed trend in FY 2080/81. The dropout rate for DPT-HepB-Hib1 vs. DPT-HepB-Hib3 was 4.5%, an improvement from 6.6% in FY 2079/80. Similarly, the dropout rate for DPT-HepB-Hib1 vs. MR2 also improved, decreasing from 5.8% in FY 2079/80 to 4.4% in FY 2080/81. Similarly, the PCV dropout rate (PCV1 vs. PCV3) remained consistently negative for the third consecutive fiscal year. These trends indicate positive progress in reducing dropout rates for these vaccines. (figure 4.4).



Source: HMIS/DoHS

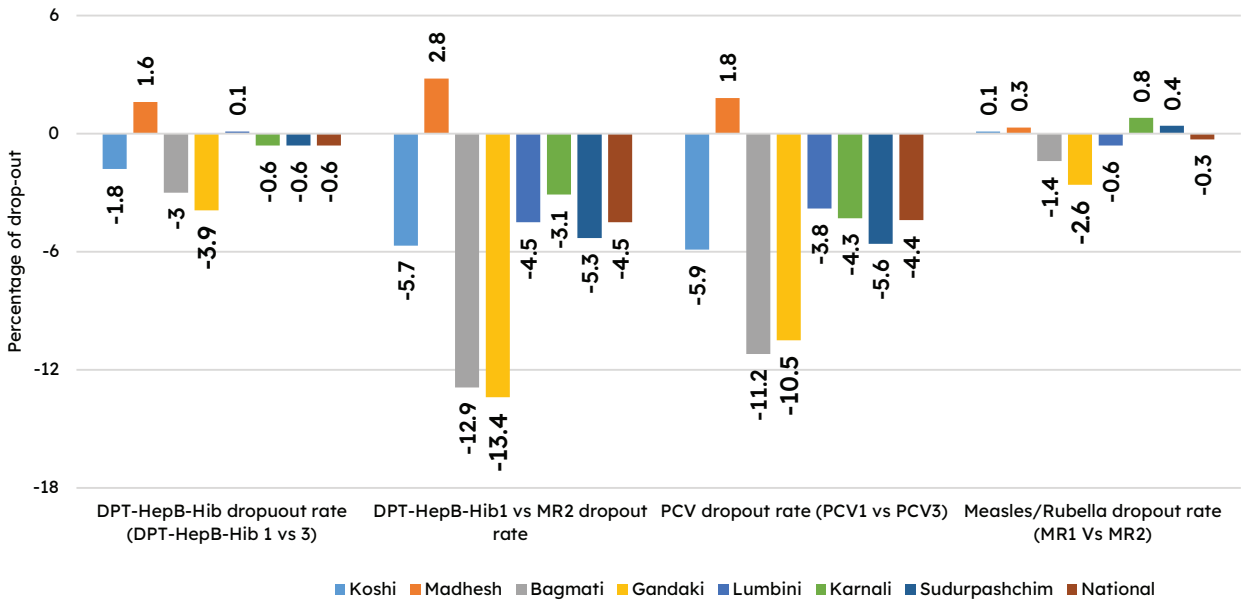
Figure 4.4 National dropout rates for reference antigens (2078/79 – 2080/81)

In FY 2080/81, Nepal witnessed significant variations in vaccination dropout rates at both the national and provincial levels, with several provinces reporting negative dropout rates—an encouraging sign of improved retention. (figure 4.5)

- DPT-HepB-Hib1 vs. DPT-HepB-Hib3: The national dropout rate was -0.6%, with Gandaki (-3.9%), Bagmati (-3.0%), and Koshi (-1.8%) demonstrating strong retention. In contrast, Madhesh had a marginally positive dropout rate of 1.57%.
- DPT-HepB-Hib1 vs. MR2: The national dropout rate stood at -4.5%, with Gandaki (-13.4%) and Bagmati (-12.9%) showing the highest retention gains—a remarkable achievement.

- MR1 vs. MR2: The national dropout rate was -0.3%, with Gandaki (-2.6%) and Bagmati (-1.4%) again showing higher retention rates than other provinces.

These figures highlight provincial disparities in vaccine retention, showcasing commendable progress in certain regions while underlining the need for targeted interventions in provinces with positive dropout rates. Strengthening outreach, addressing logistical challenges, and promoting community engagement will be key to ensuring sustained improvements in immunization coverage across Nepal.



Source: HMIS/DoHS

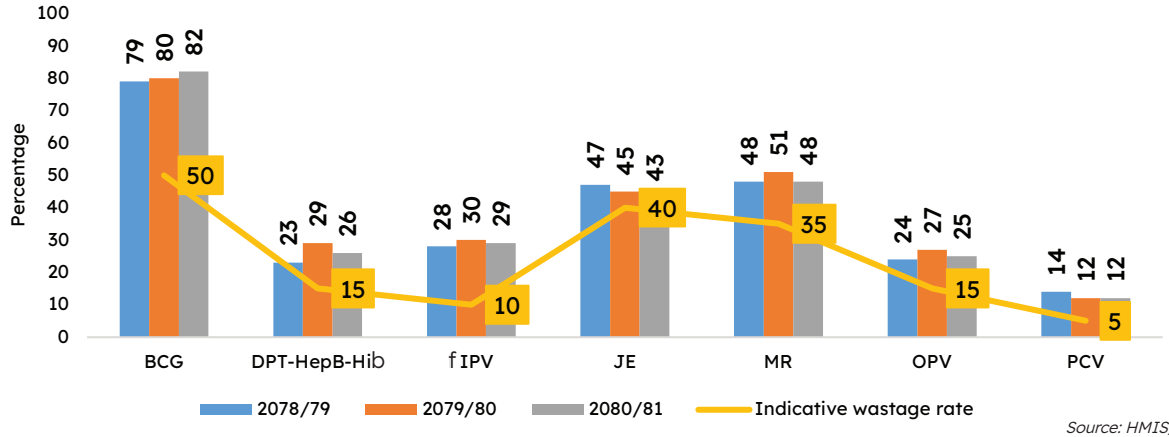
Figure 4.5 National and Provincial vaccinations drop out (FY 2080/81)

Vaccine Wastage Trends: Progress and Challenges

An analysis of vaccine wastage rates in FY 2080/81 compared to previous years' reveals mixed trends across various antigens:

- BCG Wastage: Continued its upward trajectory, increasing from 80% in FY 2079/80 to 82% in FY 2080/81, highlighting need for assessment intervention.
- fIPV Wastage: Declined slightly from 30% in FY 2079/80 to 29% in FY 2080/81.
- JE and MR Wastage: Showed notable reductions, with JE dropping to 43% and MR to 48% in FY 2080/81, marking significant improvements over their peak levels in FY 2079/80.

Despite these fluctuations, wastage rates for most vaccines remain above the indicative targets across all three fiscal years. Particularly, BCG, JE, and MR continue to exceed recommended limits due to the one-vial-per-session policy, necessitating strategic adjustments. Strict enforcement of the multi-dose vial policy is crucial to curbing unnecessary wastage of Penta, fIPV, and OPV, ensuring more efficient vaccine utilization and better immunization coverage. (figure 4.6)



Source: HMIS/DoHS

Figure 4.6 Vaccination wastage rate against indicative wastage rate (FY 2078/79 - 2080/81)

COVID-19 Vaccination

Nepal has administered a total of 24.38 million first doses and 24.52 million full doses of the vaccine, with over 10.53 million receiving a first additional dose and 1.92 million receiving a second additional dose. Bagmati leads in first-dose vaccinations, while Lumbini has the highest uptake of additional doses. In contrast, Karnali has the lowest numbers across all categories, indicating potential challenges in vaccine distribution. Notably, Madhesh reports more full-dose vaccinations than first doses, suggesting possible data inconsistencies. Overall, while initial vaccination coverage is high, additional dose uptake varies significantly across provinces. (table 4.4)

Table 4.4 Coverage of COVID-19 vaccination across province till FY 2080/81

Province	Total 1st dose	Total Full dose	Total 1st Additional dose	Total 2nd Additional dose
Koshi	3,960,883	3,903,205	2,089,530	326,326
Madhesh	4,939,391	4,966,868	1,521,925	280,092
Bagmati	5,669,661	5,495,800	2,004,628	215,859
Gandaki	2,022,385	2,277,088	1,071,228	177,133
Lumbini	4,302,045	4,352,948	2,127,139	548,108
Karnali	1,314,704	1,272,659	566,653	105,998
Sudurpashchim	2,175,434	2,250,573	1,151,241	270,670
Nepal	**24,384,503**	**24,519,141**	**10,532,344**	**1,924,186**

Source: HMIS/DoHS

Integration of Hygiene Promotion in Routine Immunization

MoHP, in coordination with WaterAid Nepal, started hygiene promotion activities integrated with routine immunization (RI) in 2077/78. The programme has been crucial to improving mothers' and guardians' hygiene practices and raising vaccination rates. Targeting 530,000 people yearly, the government expanded the integration of hygiene into routine immunization across 77 districts. To provide quality vaccination services integrated with hygiene promotion, the child health and immunization service section works with other relevant departments and partners, including Gavi, WHO, UNICEF, and WaterAid. Using the Behavior Centered Design (BCD) approach as a guide, mothers of children under two years who attend routine immunization sessions participate in interactive, 30 to 35-minute sessions that promote full immunization and five important hygiene behaviors: exclusive breastfeeding, food hygiene, water treatment, handwashing, and toilet use. These sessions, conducted concurrently with immunization sessions (static, outreach, and mobile clinics) by trained health workers, supported by FCHVs, benefitted 630,840 mothers/guardians exposed multiple times (at least five times for one-year vaccination schedule) in the one-year period. Similarly, in FY 2080/81. Out of 226,068 immunization sessions, 212,316 (94%) hygiene promotion sessions were conducted. The hygiene promotion sessions were conducted in more than 90 percent of the immunization sessions conducted in the provinces, except Bagmati Province. (table 4.5)

Table 4.5 Hygiene Promotion Sessions by Provinces

Province	Immunization Sessions Conducted	Hygiene Promotion Sessions among conducted immunization session	People benefitted from hygiene session (exposed multiple times)
Koshi	36,668	35,869 (98%)	99,322
Madhesh	51,872	46,766 (90%)	158,245
Bagmati	37,942	33,314 (88%)	81,433
Gandaki	22,551	21,416 (95%)	52,242
Lumbini	37,790	37,531 (99%)	128,634
Karnali	17,110	16,574 (97%)	49,553
Sudurpashchim	22,135	20,846 (94%)	61,411
Total	**226,068**	**212,316 (94%)**	**630,840**

Source: HMIS/DoHS

The district-wise hygiene session coverage proportionate to the immunization session conduction is as shown in the below map. The majority (58%, n=45) of the districts have coverage >95%, with 17% (n=13) of the districts reporting <90% coverage. Kaski, Bhaktapur, Dhanusha, Kathmandu, Bara, Rasuwa, Lalitpur, Chitwan, Jhapa, Surkhet, Sunsari and Nuwakot fall under the latter category.

Vaccine Preventable Disease (VPD) Surveillance

VPD surveillance started in Nepal since 1998 with AFP surveillance. Following it, neonatal tetanus, Measles and AES surveillance was started in 2003, 2003 and 2004 respectively.

Maintaining robust VPD surveillance, coupled with high coverage in routine immunization, ensures the attainment of the goals and strategic objectives of NIP. The VPD surveillance includes – Acute Flaccid Paralysis (AFP), Measles surveillance, Acute Encephalitis Syndrome (AES), NNT surveillance, CRS surveillance, Poliovirus environmental surveillance, Rotavirus sentinel surveillance and Invasive Bacterial Disease (IBD) sentinel surveillance. FWD with support from WHO-IPD has oriented more than 2,000 medical doctors and 8,500 health care workers on 'VPD Surveillance'.

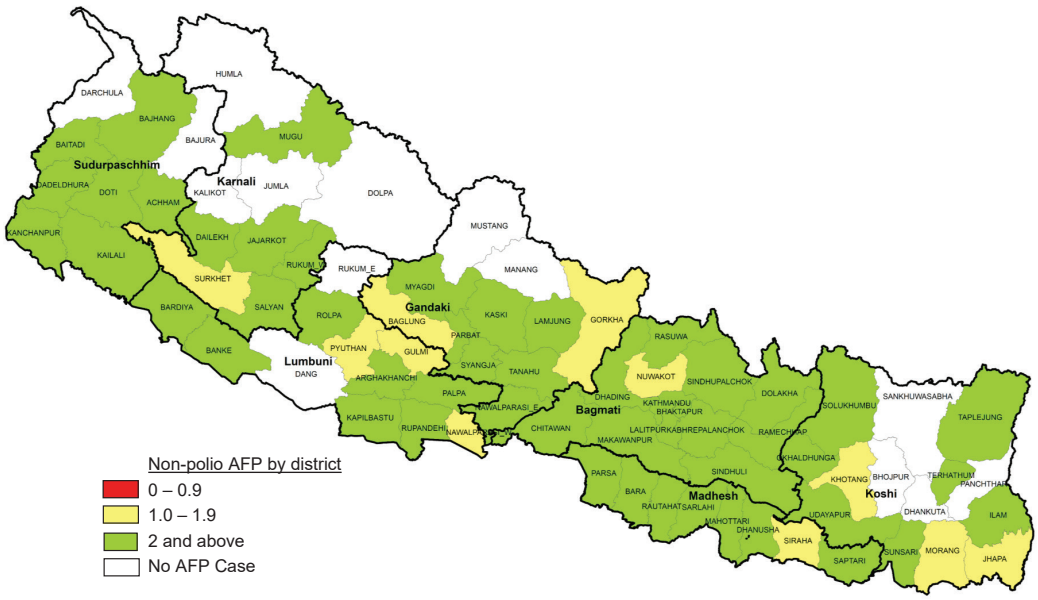
Acute Flaccid Surveillance

As per global and regional standard, surveillance performance indicators of AFP surveillance for Poliovirus are: 1) Non-polio AFP rate ≥ 2 per 100,000 under 15 years age children and 2) Stool adequacy rate ≥ 80%. In FY 2080/81, Nepal reported a total of 258 AFP cases across 63 districts. The national non-polio AFP rate stood at 3.28 per 100,000, surpassing the regional benchmark. Of the reporting districts, 52 successfully met the target rate of 2 or more, while 11 districts recorded rates between 1 and 1.9, signaling the need for enhanced surveillance efforts in these areas. (figure 4.7)

The adequacy of stool sample collection, a key measure of surveillance quality, was notably high, with Nepal achieving a national stool adequacy rate of 98%. Among the 63 districts reporting AFP cases, 60 met the stool collection target of 80% or higher, ensuring reliable laboratory confirmation of suspected cases. These achievements highlight Nepal's strong surveillance system and commitment to polio eradication. However, the presence of districts with suboptimal AFP rates underscores the need for continued efforts in strengthening case detection, reporting, and sample collection, particularly in underperforming areas.

Note: The 14 districts (Sankhuwasabha, Bhojpur, Dhankuta, Panchthar, Manang, Mustang, Dang, Dolpa, Humla, Jumla, Kalikot, Rukum East, Bajura and Darchula) have reported no Acute Flaccid Paralysis (AFP) cases. Most of these districts are sparsely populated, with a relatively smaller number of individuals under 15 years. For quality AFP surveillance, at least one case per year is expected from any district with a population under 15 years of 50,000 or more.

Non-Polio AFP rate per 100,000 under 15 population, Nepal, FY 2080/81



Source: FWD and WHO-IPD, Nepal

Figure 4.7 Non-Polio Acute Flaccid Paralysis (NP AFP) rate by district, FY 2080/81 (2023/24)

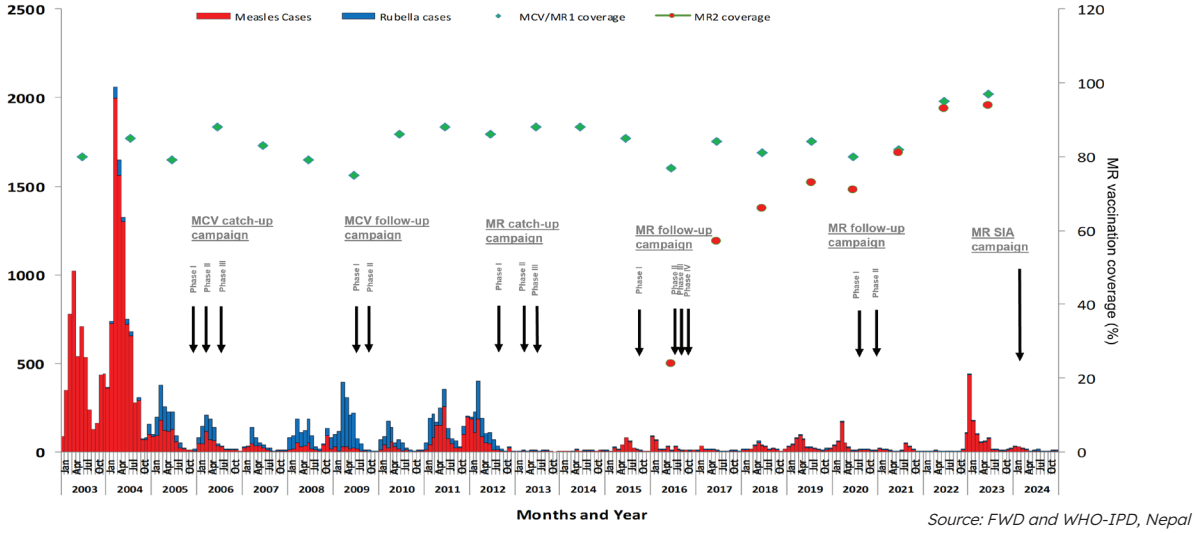
Measles-Rubella surveillance

Nepal has made significant strides in rubella control, achieving a 97% reduction in rubella cases in 2017, with reported cases dropping from 786 in 2008 to just 22. This remarkable achievement exceeded the 95% reduction target set for rubella elimination. As a result, Nepal was certified in Bhadra 2075 (August 2018) for successfully controlling rubella and CRS.

Despite this success, measles elimination remains a challenge, as achieving zero reported cases is the key target. In FY 2080/81, Nepal recorded 148 measles-positive cases, including laboratory-confirmed, epidemiologically linked, and clinical cases, as identified through case-based measles surveillance sites. Among these, 99 cases were lab-confirmed, indicating continued transmission across the country. These findings highlight the need of high coverage of MR vaccination, enhanced surveillance, outbreak preparedness, and response plan to achieve measles elimination and sustain rubella control in Nepal. Aligned with Nepal's Measles Rubella Elimination Roadmap 2023-2026, NPHL in close collaboration with FWD and WHO, has expanded MR laboratory at sub-national level in Provincial Public Health Laboratory (PPHL),

Dhangadi, covering western part of Nepal. Currently, there is NPHL at national level, and two sub-national MR laboratories; one in BPKIHS, Dharan, and second in PPHL, Dhangadi.

The figure 4.8 shows that the Measles cases have been drastically reduced compared to 2003 following successful implementation of campaign and routine immunization. In every 4 years, MR campaign/SIA were conducted to vaccinate the missed cohort. In 2022-2023, there was a large measles outbreak in different parts of the country, a peak as shown in the graph. The measles cases have declined dramatically after the recent MR SIA campaign in Q1 (2024).



Source: FWD and WHO-IPD, Nepal

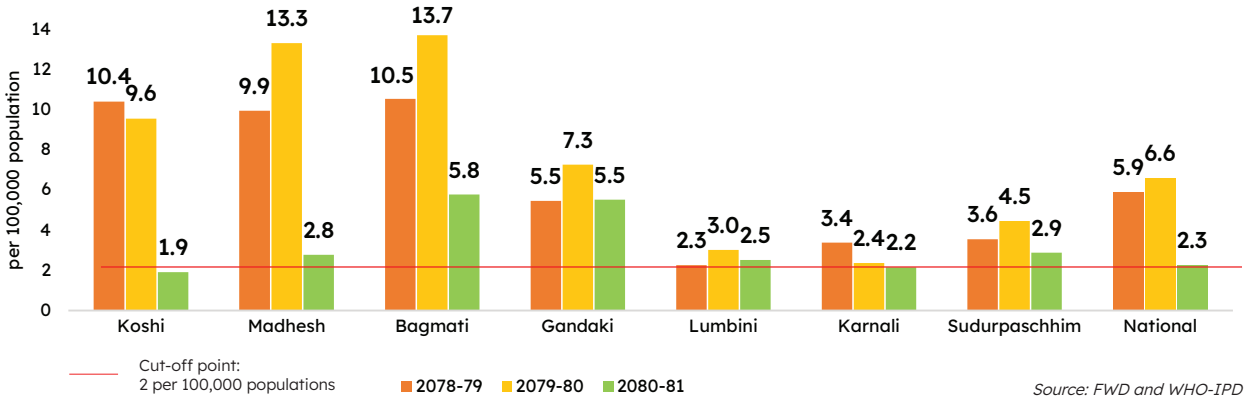
Figure 4.8 Confirmed Measles Rubella cases and Measles Containing Vaccine (MCV)/MR1/MR2 coverage, Nepal, 2003-2024

Non-Measles Non-Rubella rate (NMNR rate)

In FY 2080/81, Nepal's NMNR rate was 2.3 per 100,000 populations, surpassing the standard of 2 per 100,000 population, which is a positive indicator of the quality of MR surveillance. However, Koshi province had a slightly lower NMNR rate of 1.9 per 100,000 populations, indicating that while the national rate met the standard, some provinces may require further attention to strengthen surveillance systems and improve reporting. (figure 4.9)

Notably, in FY 2080/81, Measles outbreak occurred in 5 district and spread to over 5 districts (Makwanpur, Tanahu, Sarlahi, Jhapa, Dhanusha).

Note: One of the cardinal indicators for measles-rubella surveillance is the non-measles non-rubella rate (NMNR rate) which should be at least 2 per 100,000 populations i.e. at least 2 suspected measles cases (which after laboratory tests are Non-Measles Non-Rubella) per 100,000 populations should be reported for quality measles-rubella surveillance.



Source: FWD and WHO-IPD

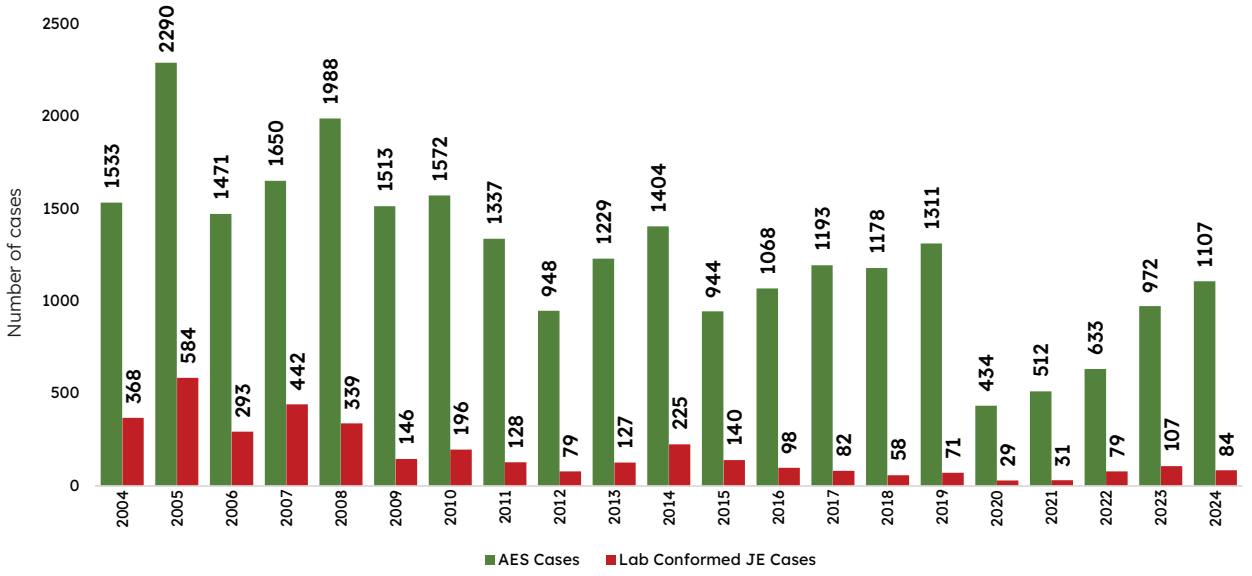
Figure 4.9 NMNR rate per 100,000 populations (FY 2080/81)

Acute Encephalitis Syndrome surveillance

AES case definition: Any person, irrespective of age, who experiences a sudden onset of fever at any time of the year, along with at least one of the following symptoms: altered mental status (including confusion, disorientation, coma, or inability to speak) or new onset of seizures, excluding simple febrile seizures.

In 2024 AD, Nepal recorded a total of 1,107 cases of AES, marking an increase from the 972 cases reported in 2023 AD. Despite this rise in AES cases, the number of laboratory-confirmed JE cases among them declined, with only 84 confirmed JE cases in 2024 AD.

This trend suggests a potential shift in the causes of AES, emphasizing the need for continued surveillance, accurate diagnostics, and targeted interventions to prevent and control JE and other AES-related illnesses across the country. (figure 4.10).



Source: FWD and WHO-IPD, Nepal

Figure 4.10 Reported AES and lab-confirmed JE cases, Nepal (2004 – 2024 AD)

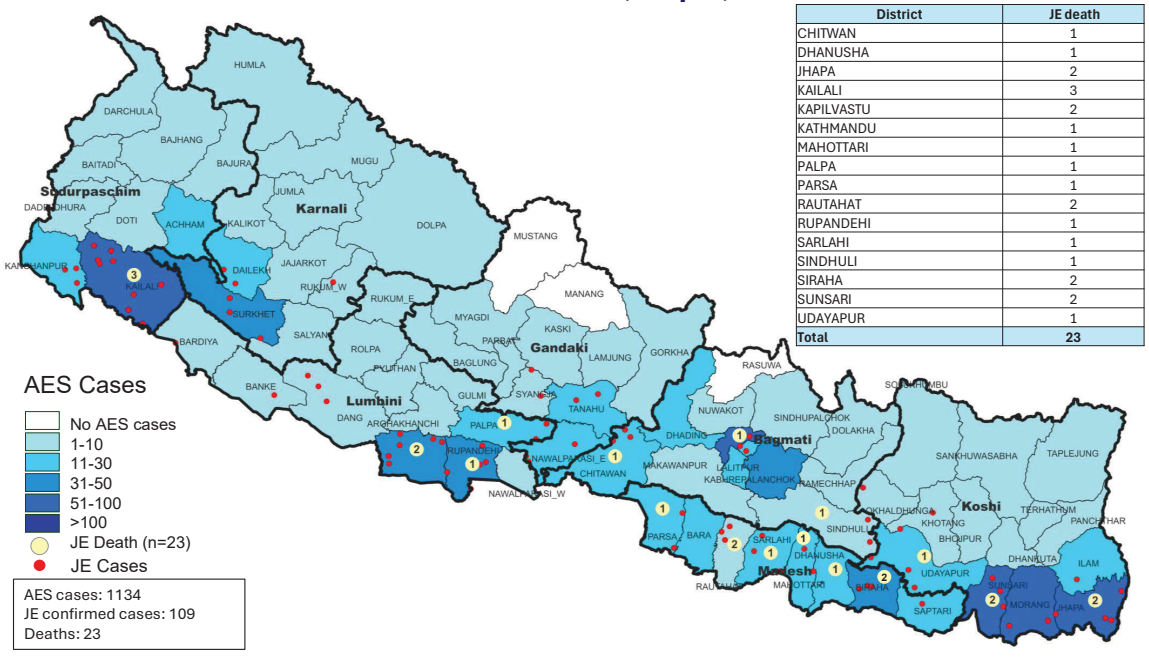
Geographical Distribution of AES and JE Cases in FY 2080/81

In FY 2080/81, a total of 73 districts across Nepal reported AES cases, indicating widespread occurrence of the disease. Among these, 37 districts had laboratory-confirmed cases of JE, highlighting ongoing transmission and the need for targeted interventions in affected areas.

This data underscores the importance of continued surveillance, vaccination efforts, and vector control measures to mitigate the spread of JE and other encephalitic diseases in Nepal. (figure 4.11)

Acute Encephalitis Syndrome (AES)/Japanese Encephalitis (JE)
Surveillance status, Nepal, 2024

District	JE death
CHITWAN	1
DHANUSHA	1
JHAPA	2
KAILALI	3
KAPILVASTU	2
KATHMANDU	1
MAHOTTARI	1
PALPA	1
PARSA	1
RAUTAHAT	2
RUPANDEHI	1
SARLAHI	1
SINDHULI	1
SIRAHA	2
SUNSARI	2
UDAYAPUR	1
Total	**23**



Source: FWD and WHO-IPD, Nepal

Figure 4.11 Reported AES, laboratory-confirmed JE cases and JE deaths by district (Jan-Dec. 2024)

NNT surveillance

Nepal successfully eliminated maternal and neonatal tetanus in 2005, and this achievement has been maintained till date. However, in FY 2080/81, two NNT cases were reported, one from Tanahu and the other from Udayapur districts.

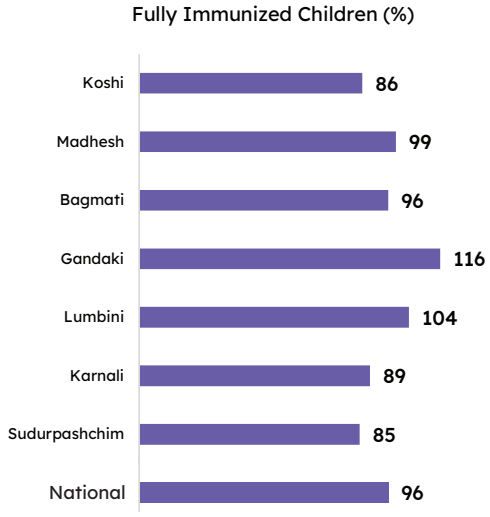
Despite this, the national incidence rate of NNT in FY 2080/81 remains very low at 0.002 per 1,000 live births, reflecting Nepal's continued success in maintaining the elimination status. These cases emphasize the need for ongoing vigilance and vaccination efforts, particularly in high-risk areas.

Percentage of Fully Immunized Children

According to the GoN guidelines, full immunization refers to the complete administration of all vaccines recommended under the NIP. A child is considered fully immunized if they receive all vaccines as outlined in the national immunization schedule, ensuring protection against a range of preventable diseases. This comprehensive vaccination coverage plays a critical role in reducing child mortality and protecting public health across the country. In 2016, the government promulgated the National Immunization Act (NIA), the first country in the WHO Southeast Asia Region to have such an Act, which provides a legal mandate to immunization as a citizen's right. This is a pivotal concept in the Act, signifying a change to a rights-based approach for immunization services, obligating a parent or guardian to vaccinate children or others in their care if there is no medical contraindication.

In 2012, Nepal launched the FID initiative, a bold commitment to ensuring every child receives life-saving vaccines. Rooted in community ownership and local leadership, the initiative mobilizes resources at every administrative level—starting from wards—to drive nationwide immunization coverage. With the powerful slogan: "With local participation, ownership, and resource mobilization, our commitment is to ensure full immunization", FID shifts the responsibility to local governments, making them the driving force behind immunization success. More than just a health initiative, it is a pledge to equity and inclusion, ensuring that no one—no matter how remote or arginalized—is left behind. Compared to recent years, the full immunization rate dropped by 7%, from 91% to 84% in FY 2079/80, before rebounding by 12% to reach 96% in FY 2080/81.

The provincial coverage for full immunization for FY 2080/81 ranged from 85% (Sudurpashchim) to 116% (Gandaki) (figure 4.12)



Source: HMIS/DoHS

Figure 4.12 Fully Immunized Children as per NIP schedule (FY 2080/81)

Other Activities:

1. HPV Demonstration Programme:

In the fiscal year 2080/81 (2023/24), the GoN implemented a demonstration programme for the bivalent HPV vaccine (Cecolin) all over Nepal (table 4.6). A total of 20,000 vaccine doses were procured, targeting 14-year-old adolescents, with a two-dose schedule administered six months apart. The programme was conducted across 17 hospitals, ensuring widespread access to vaccination. Nearly 10,000 adolescents successfully received both doses, highlighting the programme's reach and effectiveness. This demonstration programme showed the wide acceptability of HPV vaccine in Nepal and the school-based vaccination centers would be the most efficient strategy to reach adolescent girls as majority of adolescent's girls are school-going. These insights provide a strong foundation for potential expansion of the programme across all provinces, ensuring broader coverage and protection against HPV-related diseases.

Table 4.6 HPV vaccine demonstration programme coverage

Province	District	Hospital	Estimated target	Total Vaccinated Adolescent Girls (2 dose schedule)			
				1st dose		2nd dose	
				No.	%	No.	%
Koshi	Morang	Koshi Hospital, Biratnagar	1,929	2,026	105	1,900	94
Madhesh	Parsa	Narayani Hospital, Birgunj	1,501	1,577	105	1,473	93
Bagmati	Kathmandu	Propakar Maternity and Women's Hospital, Thapathali	2,878	2,925	102	2,537	87
Gandaki	Kaski	Pokhara Academy of Health Sciences, Pokhara	877	919	105	883	96
Lumbini	Banke	Bheri Hospital, Nepalgunj	1,155	1,215	105	1,092	90
Karnali	Surkhet	Provincial Hospital, Birendra Nagar	801	840	105	815	97
Sudurpaschim	Dadeldhura	Dadeldhulra Hospital, Dadeldhura	364	384	106	347	90
Total			**9,505**	**9,886**	**104**	**9,047**	**92**

Source: FWD/DoHS

2. Measles-Rubella Supplementary Immunization Activities (MR SIA) and Typhoid Conjugate Vaccine (TCV) campaign in earthquake affected districts.

Following a strong earthquake of 6.4 Richter Scale on 03 November 2023 that took lives of 154 and injured 934 people (Sitrep, Health Service Directorate, Karnali, 2023), MoHP conducted MR preventive vaccination and TCV campaign in earthquake affected districts. The MR preventive vaccination campaign was conducted in two highly affected districts – Jajarkot and Rukum West for children 6 months to under 15 years and TCV was administered to the target age group 16 years to 45 years in seven affected districts, including the two most affected districts. TCV vaccination was not provided to under 15 years, as this age group was already covered during the TCV catch-up campaign conducted in 2022 achieving high coverage as per the recommendation of the National Immunization Advisory Committee (NIAC). NIAC also recommended to enhance surveillance of VPDs, strengthen routine immunization and hygiene promotion, and provide MR vaccination and typhoid vaccination in the earthquake-affected districts (figure 4.13).

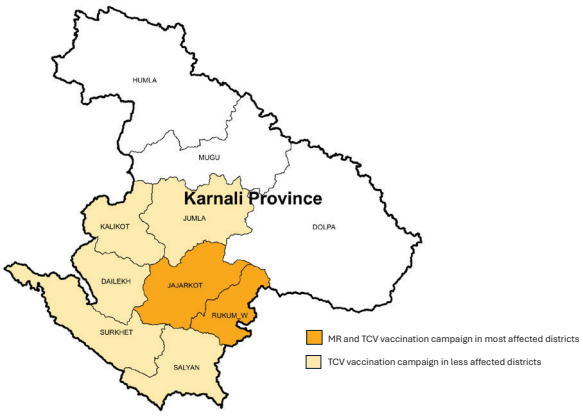


Figure 4.13 Map of Karnali Province showing campaigns in earthquake affected districts (FY 2080/81)

In line with these recommendations, the NIP enhanced VPD surveillance, strengthened routine immunization and undertook planning for preventive vaccination in the districts. The MR campaign, earlier planned in February 2024 was conducted in Dec 2023 in the two most affected districts by the NIP, with the initial planned campaign target group (9 months to under 5 years) widened to 6 months to under 15 years.

MR Campaign 2080/81

Total Target Population: 1,16,171

Total children vaccinated: 1,18,831

Coverage: 102.3%

In this initiative, a total of 118 831 children (59 537 female, and 59 294 male) received MR vaccine achieving 102% coverage, and a total of 520 900 (318 214 female, and 202 686 male) persons received TCV achieving 75% coverage against the administrative target.

TCV Campaign Coverage 2080/81

Total Target Population: 6,78,131

Total children vaccinated: 5,07,547

Coverage: 75%

3. Nation-wide Measles-Rubella (MR) vaccination campaign.

To accelerate the progress towards achieving the national target of measles elimination by 2026, the NIP conducted nation-wide MR vaccination campaign from 25 February 2024 to 20 March 2024.

Nation-wide MR Campaign 2080/81

Total Target Population: 56,48,627

Total children vaccinated: 63,17,399

Coverage: 112%

The campaign was conducted in a modular approach: nation-wide non-selective campaign targeting all children aged 9 months to under 5 years (excluding two districts Jajarkot and Rukum-West where the campaign was preponed as a response to Jajarkot earthquake) and additional 5 years to under 15 years in 24 high risk districts (21 Terai districts bordering India and 3 districts in Kathmandu Valley), irrespective of their measles/measles-rubella vaccination history. The campaign was conducted with Gavi, the Vaccine Alliance support and with technical support of WHO and UNICEF. (figure 4.14)

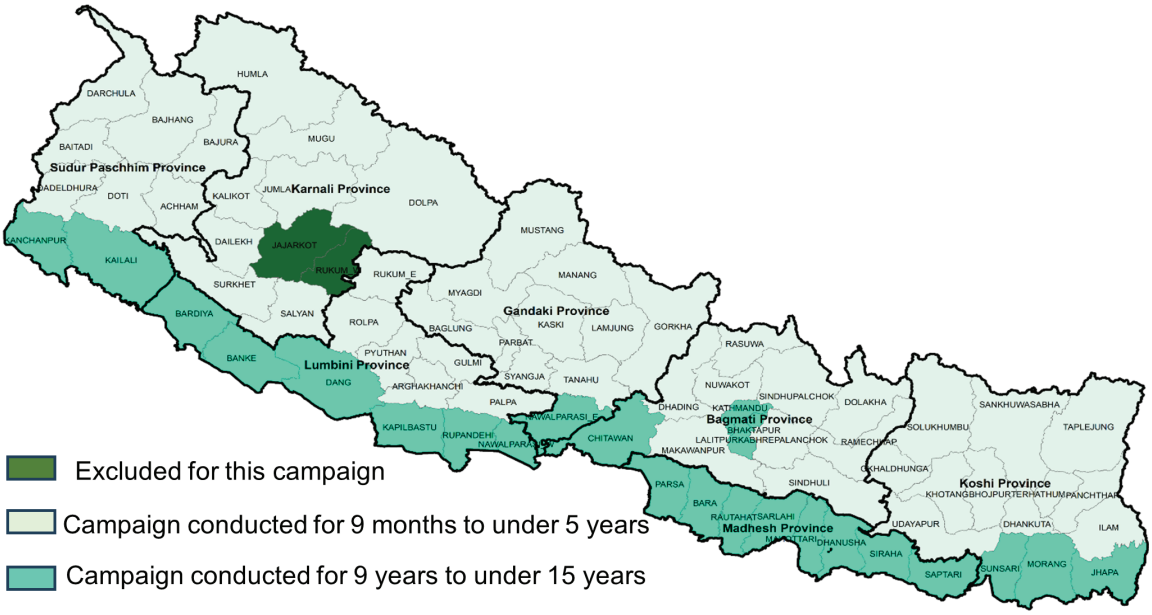


Figure 4.14 MR vaccination campaign districts as per the target age group (FY 2080/81)

More than 6.1 million children aged 9 months to 15 years in 24 high risk districts and 9 months to 5 years in remaining districts were vaccinated during the campaign (excluding vaccination in earthquake affected districts Jajarkot and Rukum West). As a part of Big catch-up, the campaign was also integrated with pentavalent, PCV and IPV to vaccinate zero dose and under-immunized children up to 5 years who have missed vaccination during pandemic period (figure 4.15).

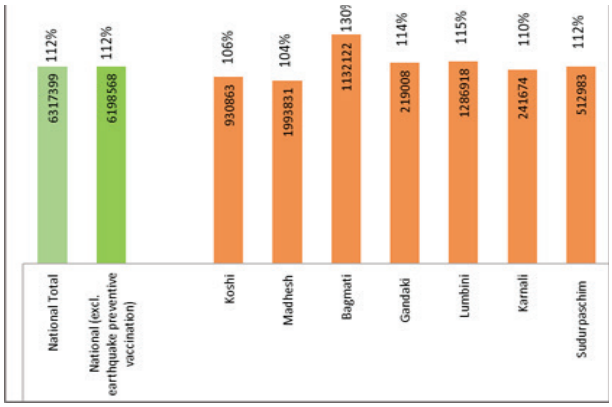


Figure 4.15 Province wise MR vaccination coverage (%) (FY 2080/81)

4. Nation-wide IPV catch-up campaign for children who missed IPV due to global shortage in 2016-2018.

A single dose IPV catch-up campaign was conducted nation-wide in May/June 2024 for the cohort that had missed IPV vaccination due to global shortage of the vaccine in May 2016-August 2018.

A total of 1,403,359 children were vaccinated achieving 96% administrative coverage. During the campaign, these children were approximately 5 years 7 months to 8 years 1 months of age, which is one of the unique target populations for vaccination campaign.

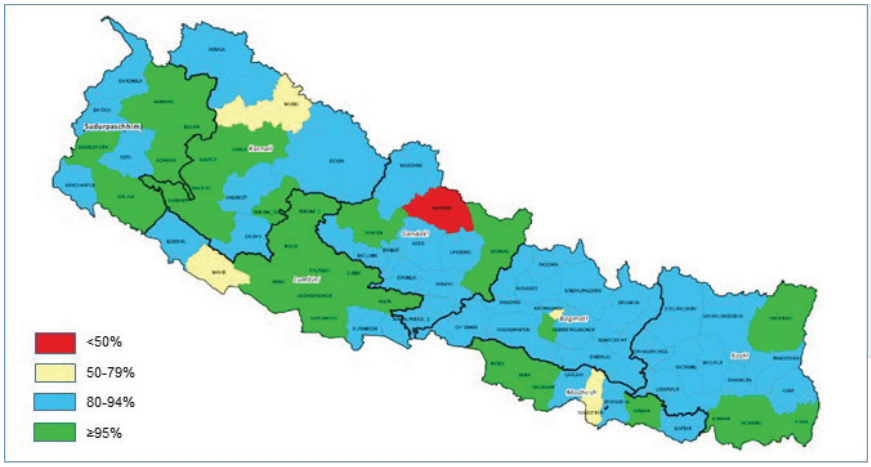


Figure 4.16 District wise coverage of IPV catch up campaign (FY 2080/81)

Campaign Duration
13 – 26 Jestha, 2081
(26 May – 08 Jun 2024)

Total Target Population
14,62,712

Total children vaccinated
14,03,359

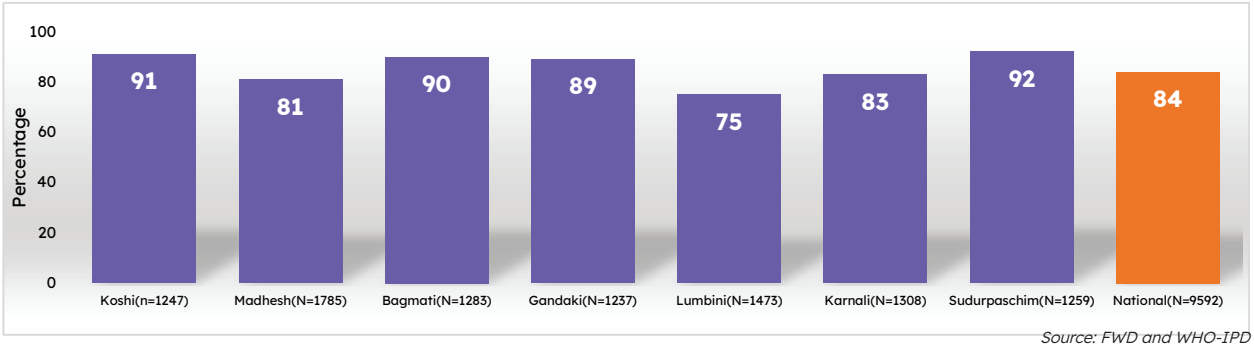
Coverage
96%

There was a challenge of identification of target age group and date of birth verification. A strong and well-coordinated collaboration among health and education sectors has led to successful completion of the campaign. The IPV catch-up campaign was conducted for risk mitigation, primarily to minimize the number of paralytic poliomyelitis cases.

5. TCV Post Campaign Coverage Survey (PCCS)

A nation-wide TCV vaccination campaign was conducted from 8 April 2022 to 1 May 2022 targeting 7.4 million children aged 15 months to under 15 years. The campaign was able to achieve 99.7% administrative coverage. A PCCS was conducted in 2023/2024 (FY 2080/2081) to provide accurate vaccination coverage estimates to assess programme performance for monitoring and planning and for evidence-based decision making. The PCCS showed 84.1% of the target population was reached during the campaign with coverage varying across regions and demographic factors. While the campaign effectively targeted both children aged 15 to 59 months and those aged 60 to 179 months, coverage was highest in Sudurpashchim (91.9%) and lowest in Lumbini (75.2%). A significant gap in awareness and vaccine uptake was observed across regions, with better awareness in Koshi but lower coverage in Lumbini despite relatively high awareness. Factors like education level, access to information from local health workers, and the presence of invitation cards strongly influenced vaccine coverage. Additionally, mothers who received recommendations from health workers showed higher vaccination rates, highlighting the importance of personal engagement in promoting vaccination (figure 4.17).

As per the PCCS, a multi-faceted approach was recommended to improve future campaigns. It was suggested that awareness programme should be region-specific, utilizing a variety of communication channels, including social media, local health workers, and schools. Engaging schoolteachers and FCHVs in pre-campaign awareness efforts was found to be particularly effective in regions like Bagmati and Madhesh, where they play a significant role in community outreach. Second, improving the distribution of invitation cards with clear information on the age eligibility and vaccination schedule was known to increase campaign coverage. Lastly, focusing on hard-to-reach areas with tailored strategies that address local challenges would help reduce the disparities observed in coverage rates.



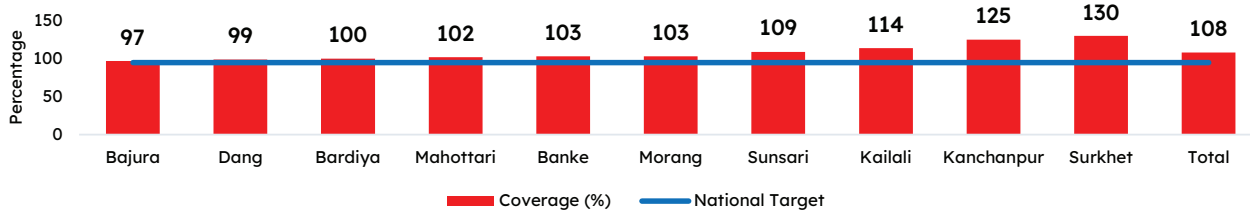
Source: FWD and WHO-IPD

Figure 4.17 Percentage coverage of TCV vaccine by provinces and national coverage (FY 2080/81)

6. MR Outbreak Response Immunization (MR ORI)

The Outbreak Response Immunization (ORI) during the 2079–2080 measles outbreak in Nepal was a decisive intervention to halt the spread of the disease and protect vulnerable populations. The ORI was conducted in Banke starting on Poush 21, 2079, and rapidly expanded to other high-risk districts, including Bajura, Dang, Bardiya, Morang, Sunsari, Mahottari, Kailali, Kanchanpur and Surkhet targeting children aged 6 months to 15 years, with the aim of interrupting transmission. With 1,845 healthcare workers trained across ten priority districts, the initiative ensured widespread vaccine coverage and reinforced Nepal's commitment to eliminating measles.

A meticulously planned and executed operation, the ORI involved intensive coordination, risk communication, and logistics management. Virtual meetings with provincial health directorates, municipalities, and immunization coordinators ensured seamless implementation. Community engagement was key—advocacy efforts mobilized teachers, local leaders, and health workers to counter vaccine hesitancy and misinformation. Vaccines and essential supplies were delivered through Nepal's national immunization supply chain, allowing over 1.8 million children to be vaccinated. (figure 4.18)



Source: FWD/WHO-IPD

Figure 4.18 MR Coverage (%) during ORI Campaign (FY 2080/81)

Access and utilization of immunization services

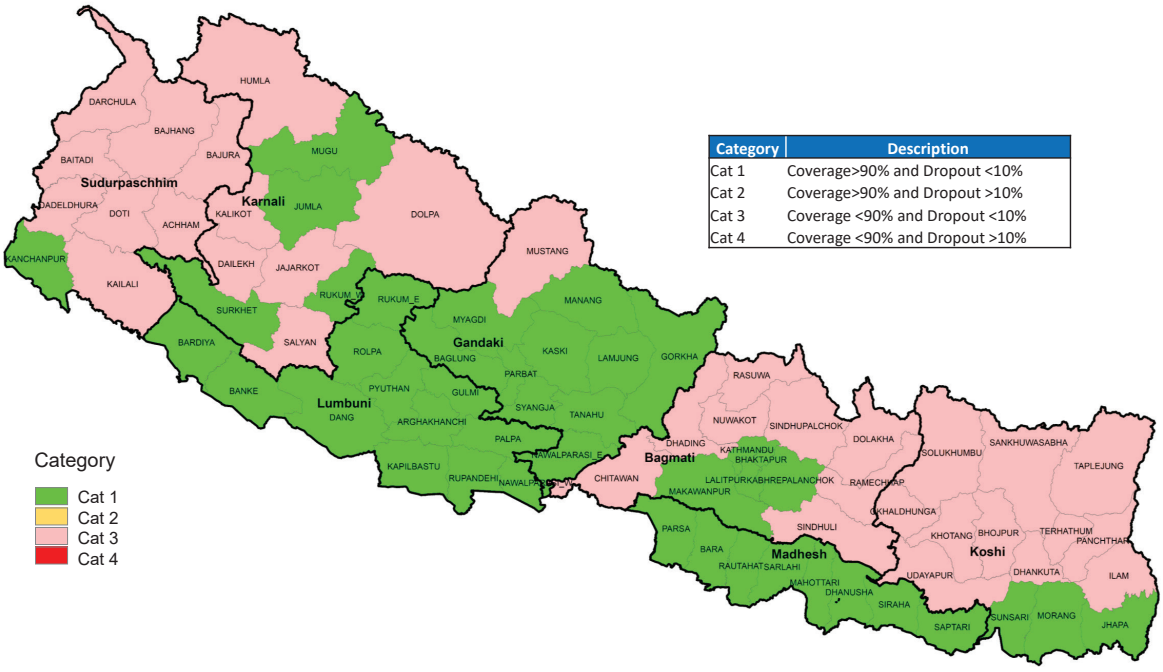
The NIP monitors district-level immunization performance by assessing accessibility and utilization of immunization services. Districts are categorized into four groups based on:

- DPT-HepB-Hib1 coverage, which indicates accessibility to immunization services
- The dropout rate between DPT-HepB-Hib1 and MR2, which reflects utilization of vaccination services

In FY 2080/81, a total of 43 districts demonstrated both good access and good utilization, indicating strong immunization service delivery in these areas. However, 34 districts faced challenges in access but had good utilization rates, suggesting that while services were effectively used where available, access to immunization sites remains a barrier (figure 4.19).

These findings highlight the need for targeted interventions in districts with poor access, ensuring that all children, especially those in remote and underserved areas, receive timely and complete immunization.

District categorization based on access and utilization, FY 2080/2081



Source: HMIS/DoHS

Figure 4.19 District categorization based on access and utilization (FY 2080/81)

Immunization coverage at local level government: Analysis of ward level immunization data

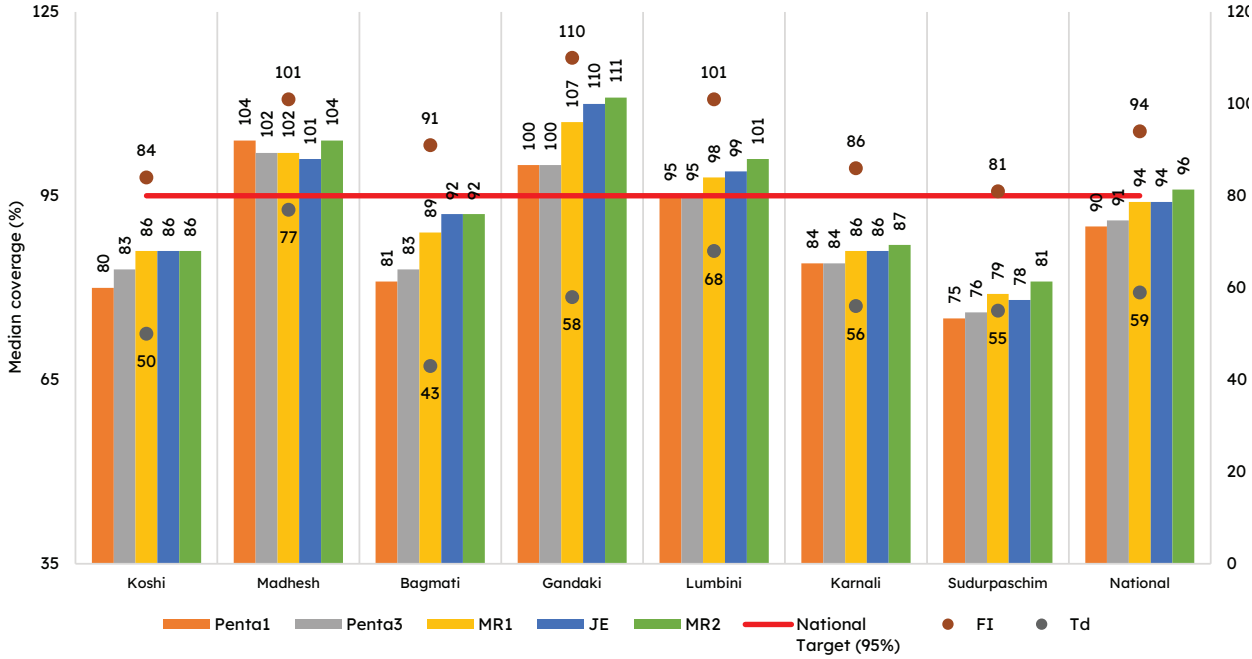
It was observed that Madhesh, Gandaki and Lumbini had coverage rates above the national target (95%) for key antigens (BCG-DPT-HepB-Hib (Penta), Measles and JE). In addition, there is also gap between child immunization rates and Td vaccination of pregnant mothers (figure 4.20). Operational research may be useful to explore the reasons for low maternal Td vaccination and means to overcome them.

Methods: The IHMIS annual immunization coverage data for FY 2080/81 was analyzed across 6,743 wards at the local level to assess immunization status. Of these, 475 wards (7%) with incomplete data were excluded. In the second stage, 169 wards (2.5%) reporting coverage rates exceeding 300% for major antigens were identified as outliers and removed from the analysis.

Exploratory Data Analysis (EDA) and significance tests were conducted on the remaining 6,099 wards (90%) using Python 3.10. Correlations among antigens were performed to assess associations and their statistical significance. Coverage rates for MR2 and FI were classified into four categories*- category a, category b, category c and category d, distinguishing between **High Coverage** (above the median) and **Low Coverage** (below the median).

Districts falling into the **Low Coverage** category ('d') were further analyzed at the province, district, municipality, and municipality type levels to drill down to the ward level within lower administrative divisions.

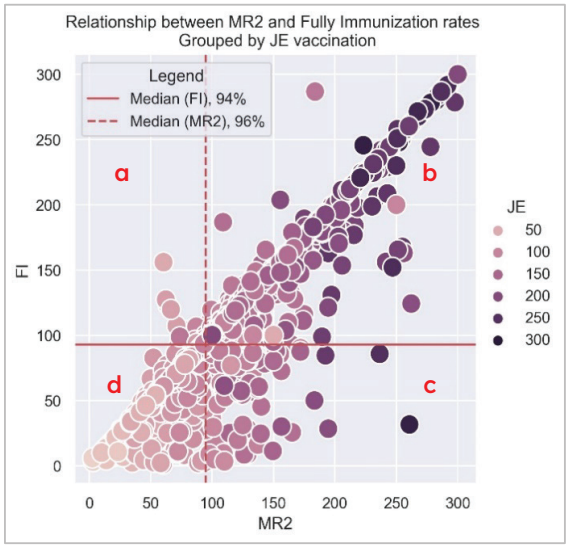
Ward level immunization statistics shows Nepal's progress toward universal childhood vaccination coverage at the lowest administrative level. The median coverage of pentavalent vaccine was > 90% for Penta 1 and Penta 3. Similarly, median coverage exceeded 94% coverage for MR1, JE, MR2, TCV and full immunization (FI) presumably as a result of better outreach initiatives. However, the median coverage for Td vaccine remained fairly low (59%). (figure 4.20)



Source: HMIS/DoHS

Figure 4.20 Immunization coverage rates by provinces and antigens (FY 2080/81)

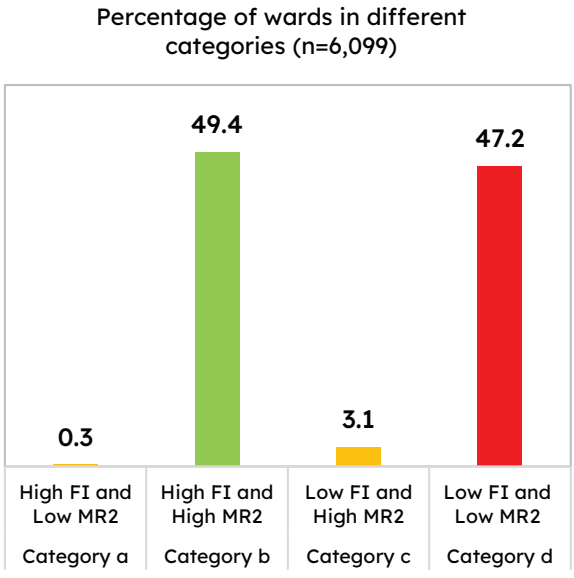
Analysis was done on FI status and type of antigen coverage at ward levels. The correlation heat map reveals a substantial correlation (r=0.97, p<0.05 at 95% CI) between FI and MR2 coverage. The strong correlation of FI with MR, JE and TCV suggests a higher likelihood of FI when a child receives any of these vaccines, emphasizing the need for focused campaigns. Among the antigens, MR2 and JE had strong correlation (r=0.93, p<0.05 at 95% CI).



Source: FWD/DoHS

Figure 4.21 Scatter plot categorizing 6099 wards into 4 categories* (1 dot= 1 ward) (FY 2080/81)

***a,b,c,d denotes categories based on coverage (like in Figure 4.22).**



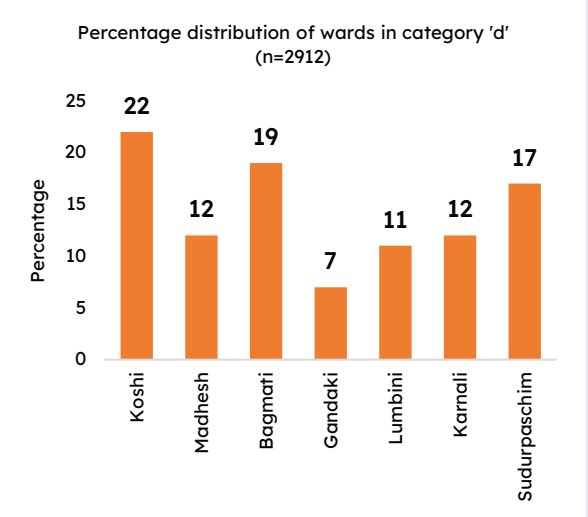
Source: FWD/DoHS

Figure 4.22 Percentage distribution of wards by categories (FY 2080/81)

The scatter plot, exploring the relationship between MR2 and FI grouped by JE coverage, shows a strong dependence of FI on MR2 & JE, and has been categorized into four clusters a, b, c, and d based on their coverage rates against the medians of MR2 (96%) and FI (94%). Bivariate analysis indicates that 47.2% wards (n=2912) clustered at 'Category d' signifying low FI status and low MR2 coverage rates. (figure 4.21 and figure 4.22).

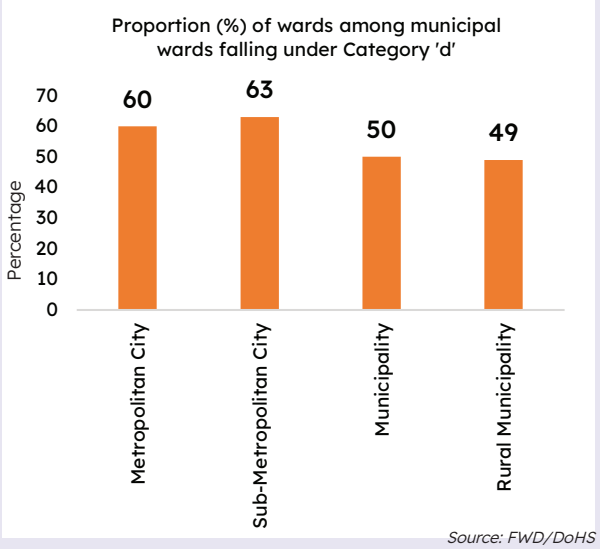
Koshi 22% (n=634) has the maximum number of wards followed by Bagmati 19% (n=539) and Sudurpashchim 17% (n=493) among the 2912 wards from 'category d'. (figure 4.23) Hence, it is strongly recommended for targeted MR campaigns for category 'd' followed by enhanced immunization monitoring along with micro-planning for immunization to boost up the FI rates for these municipalities and finally contributing to provincial and national FI rates.

Municipal disaggregation in the immunization of children showed **equity issues** especially with 60% (n=96) and 63% (n=127) for Metropolitan and Sub-Metropolitan wards falling under category 'd', indicating need for immediate policy adjustments focusing **urban immunization**. (figure 4.24)



Source: FWD/DoHS

Figure 4.23 Percentage distribution of category 'd' wards at provinces (FY 2080/81)



Source: FWD/DoHS

Figure 4.24 Proportion of ward falling under category 'd' by municipality type (FY 2080/81)

Cold Chain Management

Nepal's vaccine cold chain system is essential for maintaining vaccine quality and ensuring nationwide immunization coverage. The system includes 749 cold chain points, consisting of one Central Vaccine Store (CVS), seven Provincial Vaccine Stores (PVS), 77 District Vaccine Stores (DVS), and 664 distribution centers. Together, these facilities provide a total storage capacity of 540,897 liters for 2-8°C vaccines and 163,102 liters for -15 to -30°C vaccines. The Central Vaccine Store in Teku, the country's largest storage facility, holds 103,086 liters at 2-8°C and 21,799 liters at -25°C, while the Central Store in Pathalaiya has 31,902 liters at 2-8°C and 5,355 liters at -25°C. The provincial vaccine stores add significant capacity, ensuring vaccines reach all regions efficiently. (table 4.7)

Table 4.7 Cold Chain capacity by types of vaccine stores

Supply Chain Levels	Cold chain capacity available at different cold chain points (liters)								Total Capacity (Liters)	
	Central Vaccine Store (CVS)		Provincial Vaccine Stores (PVS)		Districts Vaccine Stores (DVS)		Distribution Centers			
	(2-8°C)	(-25°C)	(2-8°C)	(-25°C)	(2-8°C)	(-25°C)	(2-8°C)	(-25°C)	(2-8°C)	(-25°C)
Central vaccine store, Teku	103,086	21,799							103,086	21,799
Central Store Pathalaiya	31,902	5,355							31,902	5,355
Koshi			29,917	1,407	23,212	11,238	8,112	7,868	61,241	20,513
Madhesh			28,571	1,162	20,493	6,958	8,333	10,571	57,397	18,691
Bagmati			22,074	1,557	24,356	9,947	18,371	10,977	64,800	22,482
Gandaki			27,121	1,162	19,968	8,669	6,248	8,317	53,336	18,148
Lumbini			30,479	1,738	25,411	11,702	11,993	12,756	67,883	26,196
Karnali			20,245	1,458	14,817	6,793	4,591	4,706	39,653	12,957
Sudurpashchim			30,511	1,257	19,109	6,648	11,979	9,057	61,599	16,962
Total	134,988	27,154	188,918	9,741	147,366	61,955	69,625	64,252	540,897	163,102

Source: FWD/DoHS

To maintain the required storage conditions, Nepal has deployed 2,388 cold chain units, including walk-in coolers (WICs), walk-in freezers (WIFs), ice-lined refrigerators (ILRs), and deep freezers. Each unit is equipped with fridge tags to monitor temperature, ensuring vaccines remain safe. Additionally, 100 Remote Temperature Monitoring Devices (RTMDs) have been installed with support from UNICEF, allowing real-time tracking and quick response to temperature fluctuations. Since the COVID-19 pandemic, Nepal's cold chain capacity has expanded 5 folds, with 2-8°C storage increasing from 115,500 liters to 540,897 liters and the introduction of 8,474 liters of ultra-cold storage (-60 to -90°C). All equipments are powered by

renewable energy, with 95% of the equipment powered by electricity and remaining 5% by solar energy. These improvements have strengthened Nepal's vaccine distribution network, ensuring safe, reliable, and efficient immunization across the country.

After COVID-19, the national cold chain capacity, including DVS, PVS, and CVS, saw a significant expansion across all temperature ranges. The refrigerated storage (2-8°C) increased from 115,500 liters to 540,897 liters, adding 425,397 liters. Frozen storage (-15 to -30°C), which was not available before, expanded to 163,102 liters. Ultra-cold storage (-60 to -90°C), essential for mRNA vaccines, increased from 0 to 8,474 liters. In total, 596,973 liters of additional cold chain capacity were introduced, highlighting a major improvement in vaccine storage and distribution infrastructure. (table 4.8)

Table 4.8 Total Net Cold Chain Space (National including DVS, PVS & CVS)

Before COVID-19 (2-8°C) in Liters	After COVID-19 (2-8°C) in Liters	Expanded Space after COVID-19	Before COVID-19 (-15 to -30°C) in Liters	After COVID-19 (-15to -30°C) in Liters	Before COVID-19 (-60 to -90°C) in Liters	After COVID-19 (-60 to -90°C) in Liters
115,500	540,897	425,397	NA	163,102	0	8,474
Total Volume Expanded (in Liters) after COVID-19					596,973	

Source: FWD/DoHS

Box 4.2 SWOT analysis of NIP

Strengths

- Strong Government Commitment: Immunization is a P1 programme of Gov Nepal, which is provided free of cost to all eligible target populations.
- Strong Immunization Policy and Law (Immunization is mandated as a fundamental right in the Immunization Act, 2072, and Immunization Regulation 2074)
- Expert committees (National Immunization Advisory Committee, Immunization Coordination Committee, Adverse Event Following Immunization Committee, National Certification Committee for Polio Eradication, National Verification Committee for Measles and Rubella Elimination, etc.) to guide and oversee NIP.Immunization coordination committee at all levels (i.e., up to ward level) to guide and support the immunization programme.
- Support from donors and partners (Collaboration with Gavi, WHO, UNICEF, WaterAid, and other health organizations).
- Extensive network and accessibility (services are available in all 77 districts through over 16,000–19,000 immunization sites and outreach clinics, which ensures vaccine access in remote and rural areas).
- Full immunization sustainability declaration initiative ensuring full immunization of every child.
- Strong AEFI surveillance system
- Well-established VPD surveillance system with laboratory support
- Well-established integrated health management information system and logistic management information system (IHIMS, LMIS)
- Well-maintained and robust cold chain infrastructure and supply chain management.
- Community engagement and reach through a cadre of FCHVs.

Opportunities

- Integration with Maternal and Child Health Services.
- Expansion of cold chain management and supply chain by Provincial Health Logistics Management Centers (PHLMC).
- Decentralized governance for resource mobilization, smooth service delivery, and accountability.
- Strong inter-ministerial collaboration, for example, the use of school platform for vaccine delivery and demand generation activities (e.g., TCV).
- New vaccine introduction campaigns (TCV, Rota, etc.) and supplementary immunization campaigns (SIAs) provide an opportunity to strengthen the routine immunization programme.
- Public-private partnership for vaccine service delivery and surveillance
- Improved monitoring and supervision using structured checklists at all levels with a regular feedback mechanism.
- Digitalization of immunization records

Weaknesses	Threats
• Limited internal resource mobilization (high dependency on external funding and no plans for long-term sustainability) • Limited local resource allocation and mobilization • Human resource constraints (high turnover and inadequate capacity) • Vaccine hesitancy (pockets of high-risk population having vaccine hesitancy due to religious, cultural, and social beliefs) • Geographical Barriers {hard-to-reach areas with difficult terrains (e.g., mountainous regions)} • Paper based routine immunization recording and microplanning • Inadequate documentation of monitoring/supervision and feedback mechanisms • No dedicated immunization focal person at sub-national level after federalization • Inadequate monitoring of routine health information system data related to immunization	• Sustainable international funding commitment and resource allocation during transitions and co-financing (e.g., VPD Surveillance transition, including polio transition) • Outbreaks of VPDs • Rapid and unorganized migration and urbanization

4.2 Integrated Management of Neonatal and Childhood Illness (IMNCI)

4.2.1 Overview of IMNCI Programme

The Community-Based Newborn Care Programme (CB-NCP) and the Community-Based Integrated Management of Childhood Illness (CB-IMCI) have been merged into the Community-Based Integrated Management of Neonatal and Childhood Illness (CB-IMNCI) programme. Following the MoHP decision on October 14, 2015 (2071/6/28), this programme was implemented nationwide with the aim of addressing critical health issues among under-five children. The CB-IMNCI programme aims to provide targeted services to 90% of the estimated population by 2030 as outlined in "Vision 90 by 30". This programme focuses on addressing major health conditions in newobrns (0-59 days) children such as low birth weight, bacterial infections, jaundice, hypothermia, birth asphyxia, and breastfeeding counseling. It also offers comprehensive approach to treating major childhood diseases like Pneumonia, Diarrhea, Malaria, Measles, and Malnutrition) in children aged 2-59 months.

The CB-IMNCI programme, focuses on major childhood illnesses, to improve healthcare-seeking behaviors at the household level and significantly lower the rates of diarrhea and pneumonia. The programme is conducted by the CHIS Section, thereby ensuring equity and accessibility while also providing coaching, supervision, and monitoring. The treatment chart booklet was revised in FY 2079/80 in accordance with WHO guidelines to help health professionals classify and treat childhood illnesses in children up to five years of age. In this programme FCHVs distribute Zinc, ORS, and Chlorhexidine, report cases with danger signs, and promote maternal, neonatal, and child health.

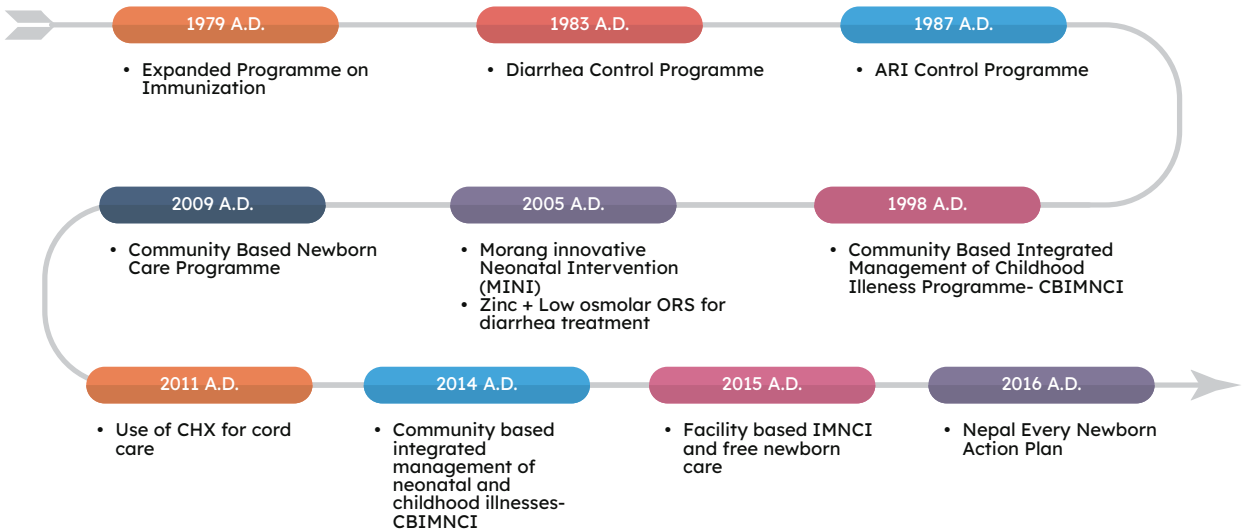


Figure 4.25 Development of CB-IMNCI Programme in Nepal

Facility Based Management of Neonatal and Childhood Illness (FB-IMNCI)

FWD initiated FB-IMNCI programme to address gaps in managing cases referred from peripheral health institutions in 2073 BS. Linked with CB-IMNCI, it uses Emergency Triage Assessment and Treatment (ETAT) at health facilities. The thematic approach covers systematic and standard management of new-born care, cough, diarrhea, fever, malnutrition, and anemia as well as other common childhood illness. The goal is to equip district hospital teams for effective management of complicated under-five and neonatal cases. Training session has been conducted for three days for Paramedics and Nursing staff, and six days for Medical Officers, working at district, provincial, and federal hospitals.

4.2.2 Major activities in FY 2080/81

In the fiscal year 2080/81, CHIS Section of the FWD achieved major milestones in advancing child health services. The Health Sector Guideline on Early Childhood Development (ECD) was successfully endorsed by the MoHP, laying a strong foundation for the holistic development of children (0-8 years). Based on this guideline, a national level orientation on ECD was conducted for tertiary-level hospitals staff and DoHS personnel, with active participation from the Ministry of Education and External Development Partners, reinforcing a multi-sectoral commitment to child health and development. To strengthen data management, new recording and reporting forms and formats for FB-IMNCI introduced facilities (Level II hospitals and above) were developed, with ongoing efforts to integrate them into the IHIMS/DHIS-2 platform. Additionally, capacity-building efforts resulted in the development of 150 provincial-level trainers on FB-IMNCI and 100 provincial-level trainers on CB-IMNCI, expanding technical expertise and ensuring effective implementation at the provincial and local level. (figure 4.26)

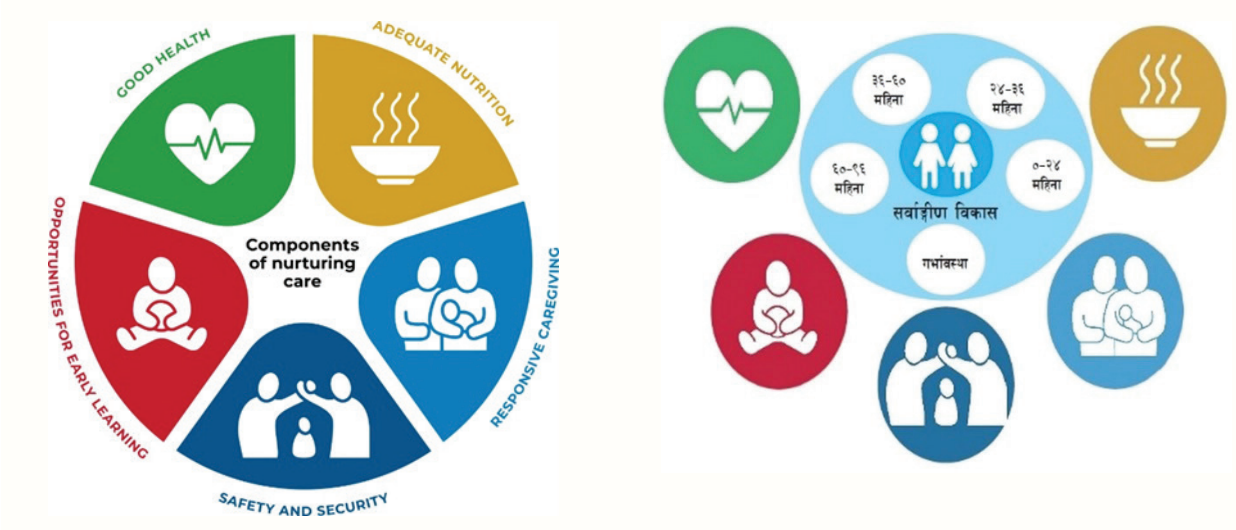


Figure 4.26 Components of ECD

4.2.3 Key Indicators of IMNCI Programme

Indicators of CB-IMNCI Programme

The monitoring indicators of CB-IMNCI programme in the three fiscal years (2078/79 to 2080/81) are presented in table 4.9. The national coverage for treatment of PSBI cases with complete dose of Inj. Gentamycin was 55%. Koshi (34%), Madhesh (19%) and Bagmati (14%) had lower coverage rates.

The incidence of ARI was increased from 266 under five children in FY 2079/80 to 290 per 1000 under five children while incidence of pneumonia remained constant at 34 per 1000 under five children. Karnali province had the highest ARI incidence (433 per 1000 under five children) as well as highest pneumonia incidence (70 per 1,000 under five children) while Madhesh had the lowest ARI (242 per 1000 under five children) as well as pneumonia incidence (19 per 1000 under five children). The national rate of antibiotic-treated pneumonia remained above 100% for all the three consecutive fiscal years. Nationally, 97% of diarrheal cases were treated with zinc and ORS. (table 4.9)

Table 4.9 Status of CB- IMNCI Programme monitoring indicators by Province in Three FYs 2078/79-2080/81

Indicators	Year	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
% of Institutional Delivery	2078/79	69	55	97	63	90	70	80	75
	2079/80	86	65	101	68	96	83	86	83
	2080/81	79	63	91	75	93	72	73	78
% of newborn applied with CHX Gel	2078/79	90	81	65	98	97	99	100	87
	2079/80	83	81	57	97	98	97	99	83
	2080/81	80	86	58	98	100	99	99	85
% of PSBI Cases received complete dose of Inj. Gentamycin	2078/79	45	32	23	32	40	75	60	48
	2079/80	41	41	39	25	36	89	60	54
	2080/81	34	19	14	60	69	72	71	55
ARI incidence rate among children under five years (per 1000)	2078/79	298	200	226	276	248	425	377	267
	2079/80	290	210	231	275	245	406	357	266
	2080/81	344	242	245	304	260	433	348	290
Incidence of pneumonia among children under five years (per 1000)	2078/79	44	19	35	27	29	86	60	37
	2079/80	38	19	32	28	27	74	53	34
	2080/81	43	19	33	28	28	70	49	34
% of pneumonia cases treated with antibiotics	2078/79	106	150	108	102	96	99	104	109
	2079/80	100	116	99	102	100	99	101	102
	2080/81	100	103	100	101	100	100	102	101

Source: HMIS/DoHS

Incidence, Case Fatality and Management of Diarrhoea <5 years' children

In FY 2080/81, the incidence of diarrhea was increased from 115 per 1,000 children under 5 years (FY 2079/80) to 127 per 1,000 children under 5 years nationwide, with the highest rates recoded in Karnali Province (251), while Bagmati had a comparatively lower rate of 80 per 1000 under five children. There were 14 diarrheal deaths nationwide, with the biggest numbers occurring in Madhesh (6) followed by Lumbini (3), Karnali (3) and Bagmati (2), while other 3 provinces had no reported deaths. A total of 289,967 diarrheal cases were treated with zinc and ORS at national level, with the highest numbers reported from Madhesh (81,366) followed by Lumbini (56,609). Among diarrheal cases, 2,515 cases were treated nationally with intravenous fluid in medical facilities, with the highest numbers of serious cases treated occurring in Lumbini (706). (table 4.10)

Table 4.10 Incidence, deaths and management of diarrhea < 5 years' children by province FY 2078/79-2080/81

Indicators	Year	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
Estimated <5 years population prone to Diarrhoea [1]	2078/79	435,078	652,567	430,599	195,210	475,002	183,858	249,611	2,621,925
	2079/80	427,512	650,000	424,617	191,859	470,407	182,776	249,515	2,596,686
	2080/81	379,390	608,766	395,951	149,952	418,669	165,117	235,912	2,353,757
Incidence of Diarrhoea /1000 U5 Population	2078/79	310	325	311	263	347	595	601	365
	2079/80	79	129	79	83	110	216	162	115
	2080/81	86	141	80	90	135	251	161	127
% of children under five years with diarrhea suffering from Severe dehydration	2078/79	0.3	0.3	0.1	0.1	0.2	0.5	0.4	0.3
	2079/80	0.2	0.1	0.2	0.1	0	0.4	0.5	0.2
	2080/81	0.2	0.1	0.2	0.2	0.1	0.2	0.4	0.2

Indicators	Year	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
% of diarrheal cases treated with ORS and Zinc	2078/79	89	94	93	97	99	95	97	95
	2079/80	89	94	95	99	99	97	99	96
	2080/81	91	96	96	99	100	99	98	97
Diarrhoeal Deaths (no.)	2078/79	9	3	10	4	0	2	6	34
	2079/80	0	1	1	0	0	1	1	4
	2080/81	0	6	2	0	3	3	0	14
% of children under five years with diarrhoea treated with IV fluid	2078/79	1.4	0.6	0.6	0.2	0.5	0.7	0.6	0.7
	2079/80	1	0.6	0.5	0.4	0.1	0.7	0.7	0.5
	2080/81	0.9	0.8	0.3	0.6	1.2	0.6	1.1	0.8

Source: HMIS/DoHS

[1] The change in estimates to lower number is related to the estimates on pregnancies and changes in TFR.

Box 4.3 SWOT Analysis of IMNCI Programme

Strengths

- Ongoing training for both CB-IMNCI and FB-IMNCI programmes, enhancing community-based and facility-based care.
- Addresses key health issues like Immunization, diarrhoea, pneumonia, malnutrition, and new-born care to reduce child morbidity and mortality.
- Strong coordination and support from developing partners
- Collaboration of FCHVs for child survival.
- Adherence to standardized protocols to ensure quality of care.

Opportunities

- Integration of evidence-based treatment protocols, newer vaccines, and therapies.
- Coordination among different tiers of government to avoid duplication and effective delivery of programmes.
- Accountability and self-appraisal of health institutions
- Involvement and ownership of private sectors in government programmes.
- Improving health-seeking behaviour and practices through community education and engagement.

Weaknesses

- Inconsistent delivery of essential medicines, equipment, and supplies for new-born and child health services.
- Limited supportive supervision and monitoring in high priority areas.
- Limited infrastructure and workforce affecting programme delivery.
- Incomplete data collection and its authentication resulting in suboptimal programme planning and implementation.

Threats

- Increase in the risk factors and evolution of non-communicable childhood illness.
- Deep rooted social barriers and stigma existing in our community that negatively influence the health service utilisation
- Geographical hardships and poor economy serves as a major basis of programme failure and poor outcomes.
- Childhood programmes being overshadowed by other health programmes.
- Frequent turnover and difficulty in retention of trained healthcare workers.

5 Nutrition Program

Family Welfare Division | Nutrition Section

5.1 About the Program

Nutritional interventions has been proved to improve human capital through increased productivity and are very cost-effective for socioeconomic development. Improving the nutritional status of the people in Nepal is a major responsibility of the Nutrition Section of Family Welfare Division (FWD), Department of Health Services (DoHS). Nutrition section focuses especially on vulnerable populations such as marginalized communities, pregnant and lactating women, elderly and children under five. Implementing national nutrition policy and coordinating with the Ministry of Health and Population (MoHP) to include nutrition-specific and nutrition-sensitive initiatives into the health system are among its duties. The Nutrition Strategy, 2077 (Box 5.1) serves as the overall framework for the initiatives, and numerous nutrition programs are presently in varying phases of piloting, scaling up, and attaining national coverage.

Under the Multi-Sector Nutrition Plan III (MSNP 2023-2030) (Box 5.2), the section supports multi-sectoral activities by designing and managing interventions to address micronutrient deficiencies, stunting, wasting, and malnutrition. It assures the efficacy of interventions and makes the required modifications by routinely monitoring and assessing important nutrition parameters. The unit also ensures timely purchase and distribution of key nutrition commodities, including micronutrient powders, vitamin A, iron and folic acid supplements, and therapeutic foods. It places a strong emphasis on behaviour change communication (BCC) initiatives that engage the community, raise knowledge of healthy eating habits, and motivate proactive community involvement for long-lasting gains.

Box 5.1 Key components of nutrition strategy 2077

Vision

To prepare well-nourished, healthy, happy and capable citizens

Mission

To build a nutrition friendly society

Goal

To reduce the current problem of malnutrition in line with the Sustainable Development Goals by 2030

Objectives

- Improving the nutritional status of newborns, children, adolescents and women by increasing their access to nutritionally specific and nutrition-sensitive services
- Enhancing the quality of nutrition specific and nutrition sensitive services and enhancing the capacity of service providers to provide nutrition services
- Increase the demand for nutrition specific and sensitive services by raising public awareness at the community level, promote positive behaviors related to nutrition and eliminate negative habits.
- To increase the scope of nutrition services in accordance with time.

Strategies

- Multi-sectorial nutrition policy and programs including food security will be updated and implemented with high priority.
- Short-term, medium-term, and long-term measures will be adopted at all levels with an emphasis on food diversification and balanced diet to improve the micro-nutrition status of different age groups including women and children.
- Programs will be developed and operated by strengthening school health programs and nutrition education.
- Domestic production will be promoted by encouraging the consumption of various nutritious and healthy foods.

Box 5.2 Multisectoral Nutrition Plan 2023 - 2030

Vision

Ending malnutrition, building human capital, and overall socio-economic development.

Goal

To improve nutritional status throughout the human life cycle by ensuring the availability and accessibility of quality nutrition services.

Objectives

- Ensure equitable access and consumption by improving the availability and quality of nutrition-specific services.
- Ensure equitable access and consumption by improving the availability and quality of nutrition-sensitive services.
- To enhance the engagement, accountability and institutional capacity of the three tiers of government and stakeholders to institutionalize nutrition-friendly systemic approaches
- Promote good practices related to health, nutrition, and water, sanitation, and hygiene through social behavior change.

Outcome

- Equitable access to and improved utilization of quality nutrition-specific services.
- Equitable access to and consumption of quality nutrition-sensitive services and adequate consumption of safe, healthy and nutritious food.
- Nutrition-friendly systemic approaches institutionalized across the three levels of government.
- Positive changes in knowledge, attitudes and practices related to health, nutrition, drinking water, sanitation and hygiene.

Nepal made significant advances in lowering the rates of severe stunting and wasting in children under five between the fiscal years 2052/53 and 2078/79, going from 57% to 25% and 15% to 8%, respectively. Even with these developments, there are still many obstacles to overcome. The prevalence of underweight in children under five years is still 19%, and anemia, affects about 43% of children under five years and 23.1% of women aged 15 to 49 years; these all raises serious public health concern. The high prevalence of anemia in children aged 6–23 months (> 65.7%) is especially worrisome.

Box 5.3 Phases of implementation of different nutrition program/services

Nationwide programme	Scale up programme	Pilot programme
Growth Monitoring and Promotion	Mother Baby Friendly Hospital Initiative (MBFHI)	Model Nutrition Specific Program
Maternal, Infant and Young Child Nutrition (MIYCN)	Nutrition Rehabilitation Center (NRC)	
Micro-Nutrient Powder (MNP) supplementation Program	Comprehensive Lactation Management Center (CLMC)	
Biannual distribution of Vitamin A and Albendazole	Lactation Management Unit (LMU)	
Control and Prevention of Iodine Deficiency Disorders (IDD)		
School Health and Nutrition Program		
Integrated Management of Acute Malnutrition (IMAM)		

5.1.1 Growth monitoring and promotion

Growth monitoring and promotion (GMP) is a vital public health procedure that aims to continuously evaluate a child's growth and development in order to guarantee their general health and nutritional well-being. This includes regularly measuring important indicators, mainly height and weight, and comparing the results to standardized growth charts or World Health Organization (WHO) growth guidelines in order to identify early markers of undernutrition or growth flattering. GMP makes it possible for prompt interventions to avoid long-term health concerns by promoting the early detection of problems like stunting and wasting. The approach also incorporates nutrition counselling, the supply of necessary supplements, and early disease identification and treatment. Children between the ages of 0 - 23 months registered under GMP are regularly observed for general health, developmental milestones, and anthropometric measurements. The program is guided by Growth Monitoring and Promotion Guideline, 2079. (figure 5.1)

5.1.2 Integrated Management of Acute Malnutrition

In Nepal, the Integrated Management of Acute Malnutrition (IMAM) program is a thorough method for

detecting, treating, and preventing acute malnutrition in children, especially those under five. It targets both severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) and provides services through facility-based and community-based therapies. It uses basic indicators such as weight-for-height, mid-upper arm circumference (MUAC), and the presence of bilateral edema, and focuses on early screening and the detection of malnourished children. Ready-to-Use Therapeutic Food (RUTF) for SAM and supplemental feeding for MAM cases are provided as part of treatment services, which also include medical management of infections and other problems.

Nutrition Rehabilitation Centers (NRCs) help malnourished children regain their health, these homes typically offer a combination of medical care and therapeutic feeding. They also educate and support families on proper nutrition and healthcare practices in order to prevent future malnutrition (figure 5.2).

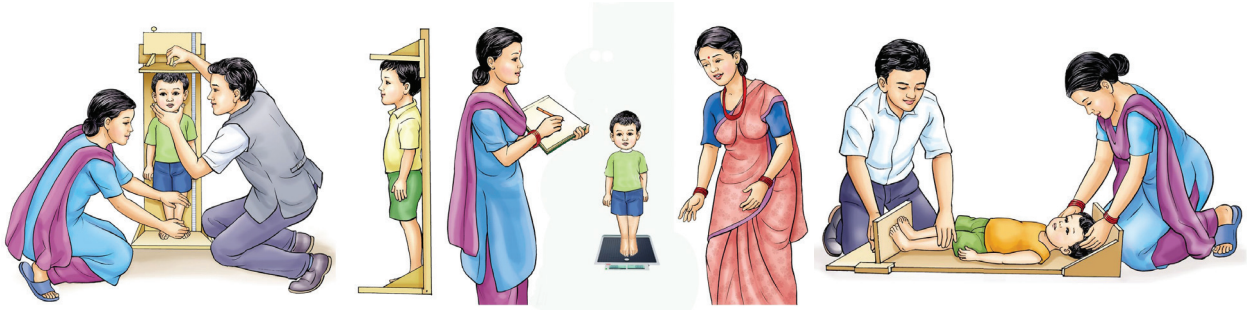


Figure 5.1 Anthropometric measure during GMP visit

Source: NHEICC

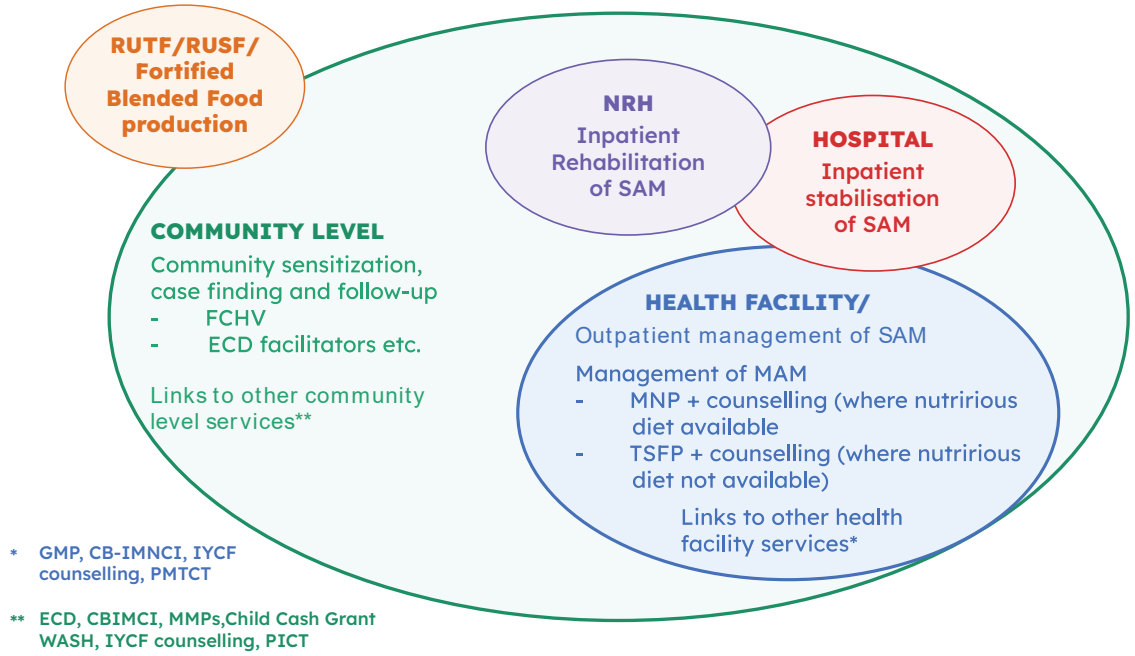


Figure 5.2 Components of IMAM in Nepal

5.1.3 Integrated Infant and Young Child Feeding (IYCF) and Multiple Micronutrient Powder (MNP) (Baal Vita) Community Promotion Program

In 2065/66, to address anemia in children aged 6–23 months, the Government of Nepal, Ministry of Health and Population (MoHP) partnered with UNICEF and the US-CDC Atlanta, implemented an Integrated IYCF and MNP project at the community level as a pilot program in six districts. The intervention targeted children aged 6-23 months, distributing 60 sachets of Baal Vita every six months (figure 5.3).



Source: NHEICC

Figure 5.3 Baal Vita Micronutrient Powder

Single sachets of Baal Vita provide a combination of vital vitamins and minerals in powdered form that can be readily incorporated into semi-solid foods. Baal Vita contains 15 micronutrients, including iron and zinc, which helps addressing iron deficiency anemia.

Through at-home or point-of-use fortification of their meals, they are an efficient way to increase the micronutrient intake of children under two. Families are instructed to mix one sachet into the child's food daily for two months, returning every six months for a new batch. Distribution occurs through local health institutions or female community health volunteers.

5.1.4 Control and Prevention of Iron Deficiency Anemia

Iron deficiency anemia (IDA) prevention and control is a major public health concern in Nepal, with a focus on vulnerable populations such children under five, adolescents, and expected and nursing mothers. The initiative aims to boost iron intake by distributing iron and folic acid (IFA) supplements, fortifying basic foods, and encouraging dietary diversity. Efforts are coordinated with maternal and child health services, emphasizing behaviour modification communication, school-based supplementation programs, and prenatal care to raise knowledge of iron-rich foods and healthy eating. The prevalence of IDA and the related health effects are reduced through routine monitoring and community-based interventions. Iron deficiency anemia is addressed through multifaceted approach: mandatory fortification of staple foods, supplementation programs and health education.

5.1.5 Control and Preventions of Vitamin-A Deficiency Disorders and Helminth Control

The Nepal National Vitamin A Program (NVAP) was launched in 1993. The program initially focused on eight of the 75 districts in the nation. Expanding to 32 districts by 1997, the program reached countrywide coverage by 2003. Under this program, Albendazole is used to address soil-transmitted helminth infections, which can cause anemia and stunt growth, and Vitamin A supplements are given to avoid deficiencies-related problems like night blindness and impaired immunity. The distribution of vitamin A and albendazole occurs twice a year on Baisakh 6th and 7th and Kartik 2nd and 3rd to children of age 6 to 59 months, and by Female Community Health Volunteers (FCHVs) through targeted campaigns.

5.1.6 Control and Prevention of Iodine Deficiency Disorders (IDD)

In early 1970s, Nepal recognized iodine deficiency illnesses as a serious public health issue, and in 1973, it started its first nationwide control initiative. These included salt iodization programs including the Goitre Control Project and the Goitre and Cretinism Eradication Project, which distributed iodized oil injections and capsules. Since 1998, the only method to treat iodine deficiency has been salt iodization. The introduction of iodized salt standards in 2001 required a minimum of 50 parts per millions of iodine at the production level and 30 parts per million at the retail level. GoN employs the Two-Child-Logo to certify adequately iodized salt, and DoHS utilizes a social marketing system to enhance awareness and promote household usage.

5.1.7 School Health and Nutrition Program

School Health and Nutrition Program is initiated in 2063 in Nepal. The program is a key initiative aimed at improving the health, nutrition, and overall well-being of school-age children. It is implemented through the collaborative efforts of the MoHP and the Ministry of Education. The program focuses on delivering essential health and nutrition services in schools. By addressing both health and nutrition needs, this initiative aims to enhance school attendance, academic performance, and overall child development, contributing to long-term improvements in the health outcomes of Nepal's younger population. Recognizing the connection between health, nutrition, and educational attainment, the MoHP, in collaboration with World Food Program (WFP) and UNICEF, has initiated various programs to address these issues through SHNP. The school health and nutrition program comprise of following major intervention programs: Mid-day meal programme, Annual physical check-ups, First aid service, Deworming program, Child club mobilization, Iron and folic acid distribution program, one school-one health worker program and WASH. The program also integrates health education to raise awareness about nutrition, personal hygiene, and disease prevention among students, teachers, and parents. One school - one health worker program is being implemented through Nursing and Social Security Division (NSSD) and provinces, elaborated in Chapter 7 section 7.4 of this report under school health nursing service program.

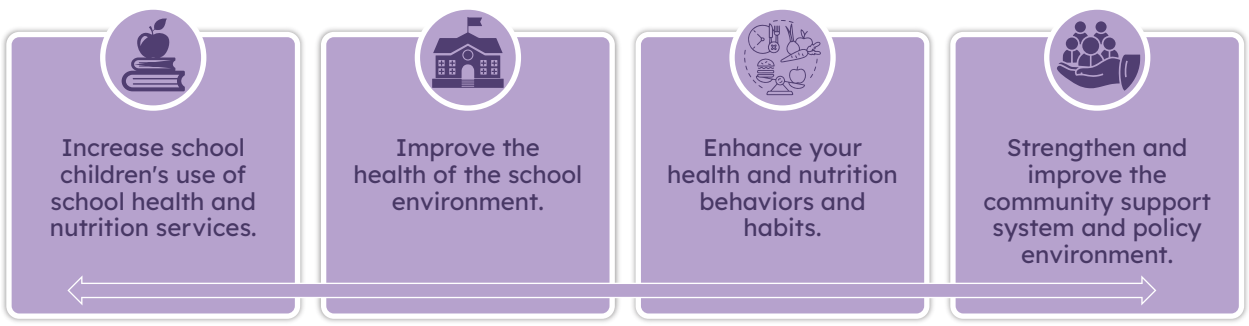


Figure 5.4 Strategic objectives of SHNP

As part of SHNP, Iron-Folic Acid (IFA) supplementation programs for adolescent girls have been implemented in Nepal since the FY 2072/73 targeting 10-19 years old from schools for school going adolescent girls and form health facilities for out-of-school adolescent girls. As part of SHNP, the supplements are typically given one tablet of IFA per week for 13 weeks, then stopped for another 13 weeks before starting again for the next 13 weeks. In a year, one adolescent girl should take 26 tablets of IFA.

5.1.8 Comprehensive Nutrition Specific Interventions (CNSI) Training Programme

Nepal has implemented a Comprehensive Nutrition Specific Interventions (CNSI) Training Program to improve the ability of frontline staff and health workers to provide efficient nutrition services throughout the nation. The CNSI Training covers nine major topics, all of which are related to nutrition-specific programs offered across the country into single comprehensive package of seven days. It has led to remarkable reduction of number of days for training with CNSI development (27 days to 7 days). The main goal of the program is enhancing knowledge and abilities of health care providers to implement important nutrition-specific interventions, such as micronutrient supplementation, growth monitoring and promotion, management of acute malnutrition, maternal, infant, and young child nutrition (MIYCN), and nutrition counselling. The program had been undertaken in partnership with the MoHP and development partners. The program gives trainees useful skills to recognize, prevent, and treat malnutrition in the community and in medical facilities.

5.1.9 Maternal Baby Friendly Hospital Initiative (MBFHI)

The "Mother-Baby Friendly Health Initiative (MBFHI)" in Nepal is a national adaptation of the global initiative aimed at promoting maternal and child health through breastfeeding and baby-friendly practices. It seeks to integrate supportive healthcare practices into hospitals, ensuring that new mothers and their infants receive optimal care. With Nepal's commitment to the Sustainable Development Goals (SDGs), particularly those focusing on reducing neonatal and maternal mortality, MBFHI serves as a cornerstone for advancing breastfeeding, promoting bonding, and ensuring the health of mothers and their newborns (Box 5.4).

The government has prioritized Maternal and Child Health and Nutrition (MCHN) implementation in Humla, Jumla, Dolpa, Mugu, and Kalikot districts of Karnali Province and Solukhumbu district of Koshi. As outlined in the agreement, the government manages the purchase, supply, and delivery of fortified food (Wheat Soya Blend Plus) to the final delivery points. Additionally, food distribution at government health facilities is facilitated for Pregnant and Lactating Women (PLW) and children aged 6 to 23 months within each program local level.

WHO and UNICEF started the BFHI, a global initiative to adopt policies that safeguard, encourage, and support breastfeeding. The initiative's two primary objectives are to: a) execute the Ten Steps to improve hospitals and maternity facilities, and b) stop the practice of giving out free or inexpensive supply of breast milk replacements to hospitals and maternity wards. BFHI has adopted the International Code of Marketing of Breast-milk Substitutes (1981) to safeguard and encourage breastfeeding. Nepal developed guideline for MBFHI in 2073. This was based on FIGO SMNH 2014 and BFHI. After the development of MBFHI guideline in 2073, Family Welfare Division initiated the orientation through five hospitals in FY 2076/77, and further 5-5 hospitals in FY 2077/78 and FY 2078/79. Nepal's MBFHI guideline 2073 was revised to align with the WHO/UNICEF revised Implementation Guideline of Baby Friendly Hospital Initiative 2018.

It reached 64 hospitals by FY 2080/81 (initiation by Federal, Provincial, and Development Partner).

Box 5.4 Maternal Baby Friendly Hospital Initiative (MBFHI)

General objective

To provide mother-baby-friendly services through the implementation of MBFHI in hospitals.

Goal

To improve nutritional status throughout the human life cycle by ensuring the availability and accessibility of quality nutrition services.

Specific objectives

- To provide training to the staff regarding mother and baby-friendly services to provide services in a dignified manner.
- To help the clients receive services by informing them about the services provided by the institution.
- To prepare the action plan to make it compatible with the annual program and budget of the health institution.
- To develop mechanisms for effective monitoring and collaborative supervision.

Major activities in the MBFHI program

- Two days orientation and self-assessment for the initiation of mother-baby friendly initiatives in health facilities.
- One-day review of mother-baby friendly initiatives program using self-assessment tool.

5.2 Major Activities for FY 2080/81

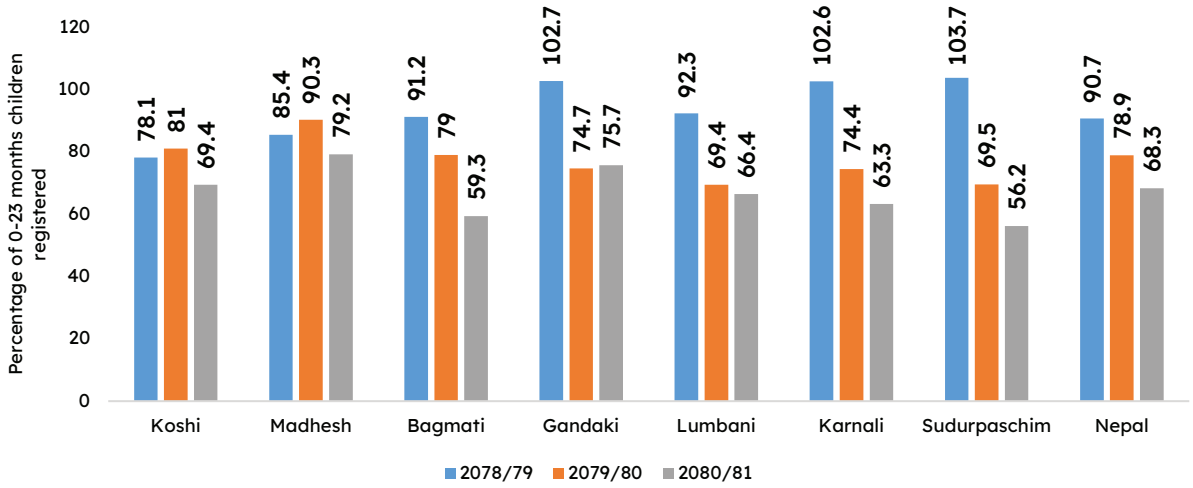
Identification of barriers and expansion of integrated management of acute malnutrition
Situational analysis on nutrition program for senior citizen and differently abled citizen
Seminar on reviewing the progress of national nutrition programs and formulation of action plan
Training on comprehensive nutrition specific interventions (CNSI) package for health workers
Nutrition related days celebration (like- breastfeeding week, school health and nutrition week, iodine month)
Seminar on progress review of nutritional rehabilitation center and formulation of action plan
Onsite coaching for nutrition program
National workshop on adolescent, maternal and child nutrition
Nutrition in emergency
Nutec meeting and strengthening.
Review of mother baby friendly hospital initiative
Training of trainers and refresher training (ITC MToT and refresher) for operation of inpatient treatment centers in hospitals
Development of audio-visual materials to discourage unhealthy eating
Analysis and orientation program for provincial logistic management center and district store and logistics management regarding nutritional commodities
Facilitating the implementation of model nutrition special programs at the local level
Capacity building (onsite training) program for doctors, nurses working for establishment or strengthening of services in inpatient treatment centers
Nepal micronutrient status survey program preparatory workshop
Formulation of strategies to reduce excess use of salt
Promotion of school health and nutrition
Procurement of nutritional commodities (vitamin a, rutf, mnp, f-75, f-100, resomal, height board, weighing machine, muac, super cereal etc)

5.3 Key Performance Indicators for Nutrition Services

Registered for growth monitoring and promotion

The percentage of children aged 0-23 months registered for growth monitoring in FY 2080/81 is depicted in figure 5.5. About 68% of the children aged 0-23 months were registered for growth monitoring, indicating decline by about ten percentage point compared to previous FY. The highest proportion of children were registered in Madhesh province (79.2%) while lowest proportion in Sudurpaschim province (56.2%).

The major drops in registration rate was seen in Bagmati province (79% in FY 2079/80 to 59.3% in FY 2080/81), whilst Gandaki (75.7%) and Lumbini (66.4%) had more constant but lower rates. The registration for growth monitoring in Koshi province fell from 81% in FY 2079/80 to 69.4% in FY 2080/81, despite having been higher in prior years. The decrease in GMP registration rates suggests that many children are not receiving regular growth monitoring, potentially leading to malnutrition and growth-related issues. This highlights inadequacies in healthcare outreach and access, particularly in rural areas.

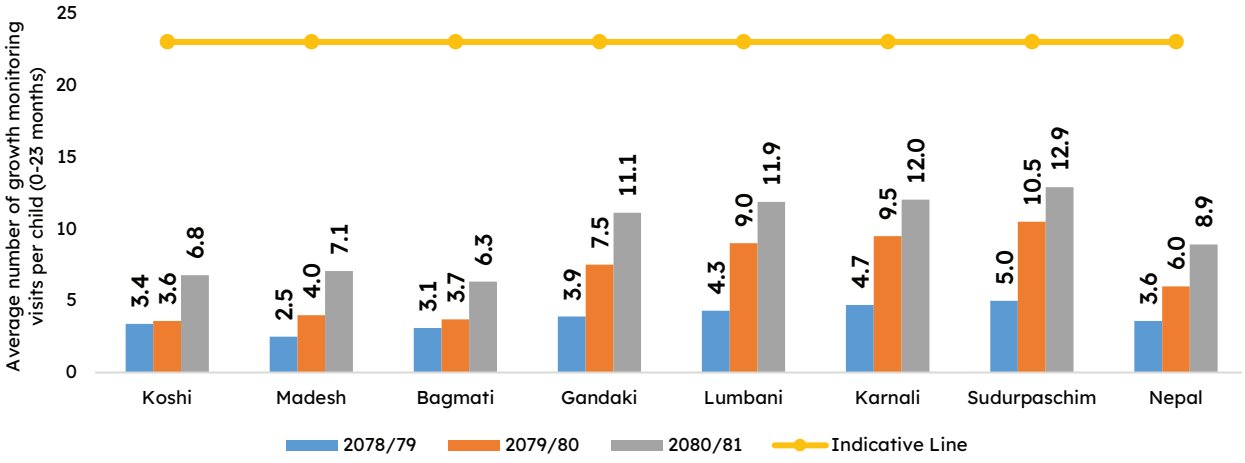


Source: HMIS/DoHS

Figure 5.5 Percentage of children aged 0-23 months registered for growth monitoring

Average number of visits for growth monitoring per child

Average number of growth monitoring visits per child kid during the last three fiscal years (2078/79 to 2080/81) is shown in figure 5.6. There has been a rising trend in the number of growth monitoring visits for children nationwide, with the average rising from 6.0 visits in FY 2079/80 to 8.92 visits in FY 2080/81. The provinces with the higher average visits in FY 2080/81 were Sudurpaschim (12.9 visits), Karnali (12.02 visits), Lumbini (11.88 visits), and Gandaki (11.12 visits), indicating enhanced monitoring efforts in these areas. On the other hand, other provinces had relatively lower but still rising averages over time. The rising average number of growth monitoring visits per child indicates that child health monitoring is progressing, but regional differences show that specific interventions are required to guarantee uniform access to growth monitoring in every province.

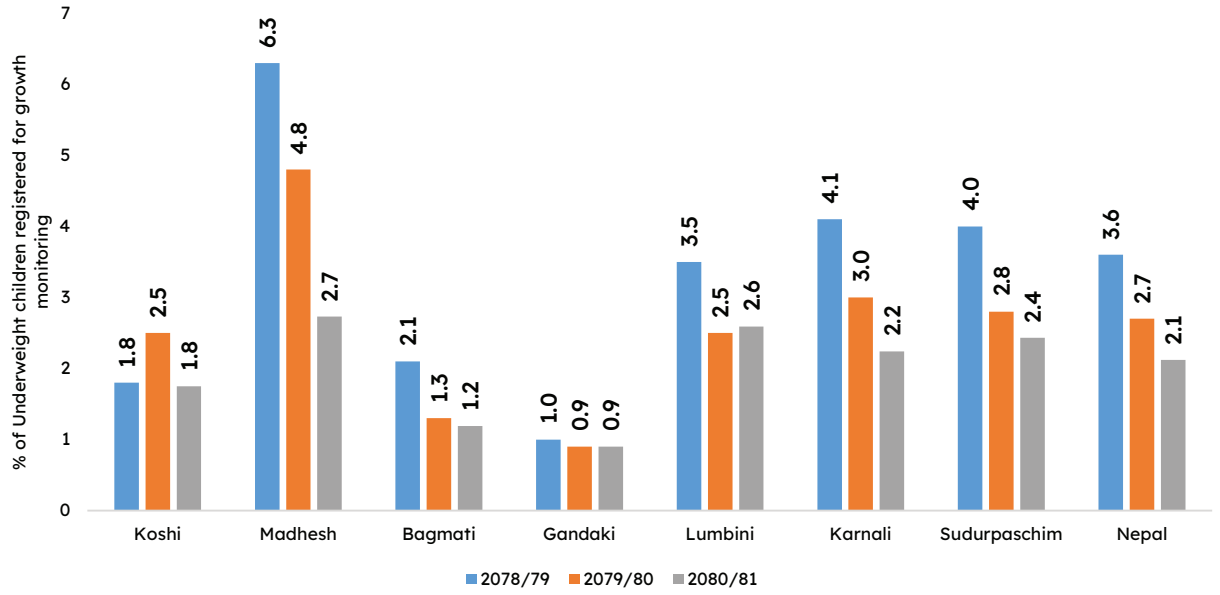


Source: HMIS/DoHS

Figure 5.6 Average number of growth monitoring visits per child in last three FYs 2078/79 - 2080/81

Percentage of children aged 0-23 months registered for growth monitoring who were underweight

The percentage of children aged 0–23 months registered for growth monitoring who were underweight over the three FYs (2078/79 – 80/81) is shown in figure 5.7. There is a decline in proportion of underweight children in current FY (2.12%) compared to previous FY (2.7%), demonstrating improvements in growth monitoring and child nutrition overall. In FY 2080/81, the province with the lowest percentages of underweight children was Gandaki (0.9%), indicating improved nutritional status. However, higher rates of underweight children in provinces like Madhesh (2.73%), Lumbini (2.59%), Sudurpaschim (2.43%), and Karnali (2.24%) indicates ongoing difficulties in these areas. The report emphasizes the need for targeted efforts in the areas with greater underweight rates to enhance child nutrition and growth, even if there has been declining trend of underweight children across provinces.



Source: HMIS/DoHS

Figure 5.7 Percentage of underweight children registered for growth monitoring

Status of IYCF Practices

Early initiation of breast feeding

The proportions of new-borns initiated with breastfeeding within one hour of birth was 84.61% in FY 2080/81. Bagmati province had the lowest proportion (52.41%) among all provinces (table 5.1)

Exclusive breastfeeding for six months

The rate of exclusive breastfeeding among children aged 6-11 months increased at national level from 109.7% in FY 2079/80 to 150.1% in 2080/81. There is notably increment seen across the provinces. Three provinces- Gandaki (210.0%), Lumbini (192.2%), Karnali (168.9%) and Sudurpashchim (150.5%) have the exclusive breast-feeding rates above national average. (table 5.1)

Timely introduction of complementary foods

The rate of timely introduction of complementary foods increased to 101 % in FY 2080/81 as compared to last fiscal year. There is steady growth in rate of timely introduction of the complementary food across all seven provinces in last three fiscal years. (Table 5.1) However, regional disparities, especially in provinces like Madhesh and Sudurpaschim with low rate of timely introduction of complementary feeding still exist (table 5.1). This suggest that initiatives to increase breastfeeding and complementary feeding practices require more focus in these provinces.

Table 5.1 IYCF Practices' Indicators FYs 2078/79-80/81

Percentage of newborns who initiated breastfeeding within 1 hour of birth

FY	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
2080/81	84.61	84.1	89.74	52.41	95.67	96.67	98.53	98.7

Percentage of children aged 6-11 months registered for growth monitoring who were exclusively breastfed for the first six months.

FY	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
2078/79	95.0	63.8	63.6	93.7	103.2	129.7	149.0	124.0
2079/80	109.7	94.2	82.21	113.9	125.2	134.4	140.0	120.7
2080/81	150.1	124.1	123.2	145.7	210.0	192.2	168.9	150.5

Percentage of children aged 6–11 months registered for growth monitoring who received solid, semi-solid or soft foods

FY	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
2078/79	101.2	97.3	100.2	100.5	99.7	97.1	117.7	101.8
2079/80	100.1	96	102.3	97.2	99.0	100.6	107.3	100.2
2080/81	100.1	102.9	96.5	99.9	104.7	100.6	100.4	99.3

Source: HMIS/DoHS

Screening of under-five children by FCHVs

The table 5.2 shows the screening of under-five children by female community health volunteer (FCHVs) using Mid-upper arm circumference (MUAC) tape and their malnutrition status in FY 2080/81. Among 3922571 under-five children screened, 1.82% children were found to have moderate acute malnutrition (MAM), while 0.2% had severe acute malnutrition (SAM). Madhesh and Lumbini provinces showed considerably higher MAM percentages, at 2.4% and 2.54%, respectively, indicating a higher burden of moderate malnutrition in these locations. SAM rates was significantly lower in Gandaki province (0.04%). However, provinces with higher SAM rates than the national average were Madhesh (0.32%), Lumbini (0.24%), Karnali (0.22%), and Koshi (0.22%). The screening results show that MAM is a major concern, particularly in Madhesh, Lumbini and Karnali provinces necessitating focused interventions. (table 5.2)

Table 5.2 Screening of the under-five children by FCHVS using MUAC Tape and their malnutrition status FY 2080/81

Province	Normal		MAM		SAM		Total screened
	Number	Percent	Number	Percent	Number	Percent	
Koshi	412,779	98.1	6,948	1.65	917	0.22	420,770
Madhesh	825,443	97.29	20,323	2.4	2,690	0.32	848,476
Bagmati	662,224	99.12	5,201	0.78	691	0.1	668,127
Gandaki	205,145	99.4	1,158	0.56	73	0.04	206,386
Lumbini	736,691	97.22	19,231	2.54	1,821	0.24	757,750
Karnali	259,056	97.18	6,918	2.6	578	0.22	266,564
Sudurpaschim	741,764	98.31	11,597	1.54	1,060	0.14	754,498
Nepal	**3,843,102**	**97.97**	**71,376**	**1.82**	**7,830**	**0.2**	**3,922,571**

Source: HMIS/DoHS

Children newly admitted in IMAM program and NRCs

The number of children under-five years newly admitted in IMAM, and NRCs over the last three FYs (2078/79-80/81) is shown in table 5.3. A total of 21,925 children were admitted in IMAM program, indicating a significant decline in the number of cases compared to previous FY (36,350), while the number of children admitted in NRCs was increased to 2,193 in current FY compared to 1,648 in previous FY. Lumbini province showed a significant increase in the children admitted in IMAM program, and Madhesh province showed significant increase in the children admitted in NRCs. In FY 2080/81, among 2,193 children admitted in NRCs, 4 children succumbed to death: 1 in Koshi province, and 3 in Lumbini province.

Table 5.3 Children under-five years newly admitted in IMAM program and NRCs in last three FYs - 2078/79 -2080/81

Province	Total number of children newly admitted in IMAM program			Total number of children newly admitted in NRCs		
	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81
Koshi	1,099	7,121	2,695	23	210	200
Madhesh	4,976	18,049	7,361	92	153	582
Bagmati	825	1,152	1,174	18	170	339
Gandaki	517	799	610	12	110	190
Lumbini	3,625	3,506	7,018	62	362	236
Karnali	2,521	2,030	1,080	37	209	238
Sudurpaschim	4,623	3,693	1,987	80	434	408
Nepal	18,186	36,350	21,925	324	1,648	2,193

Source: HMIS/DoHS

Sphere standard and management of malnutrition

The SPHERE standards[1] are an expansion of the fundamental rights related to life with dignity. The indicators and minimum requirements are set to collectively assess the needful action for the negative impact on the population on meeting these set of indicators in different domain. One of such domains is the assessment and management of malnutrition.

Table 5.4 shows the comparison of SPHERE benchmarks and the performance of the nutrition management in FY 2080/81. The mortality of malnourished cases at national level and across provinces are within the SPHERE benchmark (<3%) which suggested that there was better management and healthcare supply, guaranteeing that patients are less likely to succumb to severe nutritional problems. The rate of defaulters, though the national average is within benchmark (<15%), it is a matter of concern in Bagmati province (24.56%) which suggests the need of appropriate intervention in Bagmati province for ensuring consistent and prolonged treatment adherence. Similarly, for recovery the national average surpasses the benchmark (>75%) while only two provinces- Bagmati (63.06%), and Gandaki (56.37%) showed that the cases stay in the treatment and recover effectively.

Table 5.4 Sphere Standards and management of malnutrition in FY 2080/81

SPHERE Benchmark	Death %	Defaulter %	Recovered %
Province	<3%	<15%	>75%
Koshi	0.22	6.86	76.38
Madhesh	0.1	8.95	80.87
Bagmati	0.39	24.56	63.06
Gandaki		3.47	56.37
Lumbini	0.25	10.4	82.16
Karnali	0.1	14.5	76.7
Sudurpaschim	0.29	5.38	85.72
Nepal	0.18	9.79	79.54

Source: FWD/DoHS

Baal vita community promotion program

The table 5.5 shows information on the use of MNP (Baal Vita) in Nepal for the fiscal year 2080/81 among children ages 6–23 months. Nationwide 53.98% of kids in this age group received at least one cycle (60 sachets) of Baal Vita, which is a notable rise over prior years. With the greatest usage rate of 78.75%, Madhesh Province was followed by Lumbini (54.77%) and Sudurpaschim (59.86%). The province with the lowest utilization rate, Karnali, reported 29.7%. In terms of full use (three cycles or 180 sachets), the highest rates were seen in Lumbini (15.96%) and Madhesh (12.4%), where 10.62% of children nationwide finished the regimen. These numbers demonstrate gains in MNP uptake and distribution, but provincial differences point to the necessity of focused approaches to improve coverage and adherence in areas that aren't reaching to the average.

Table 5.5 MNP Utilization among 6-23 months' infants in last three FYs 2078/79-2080/81

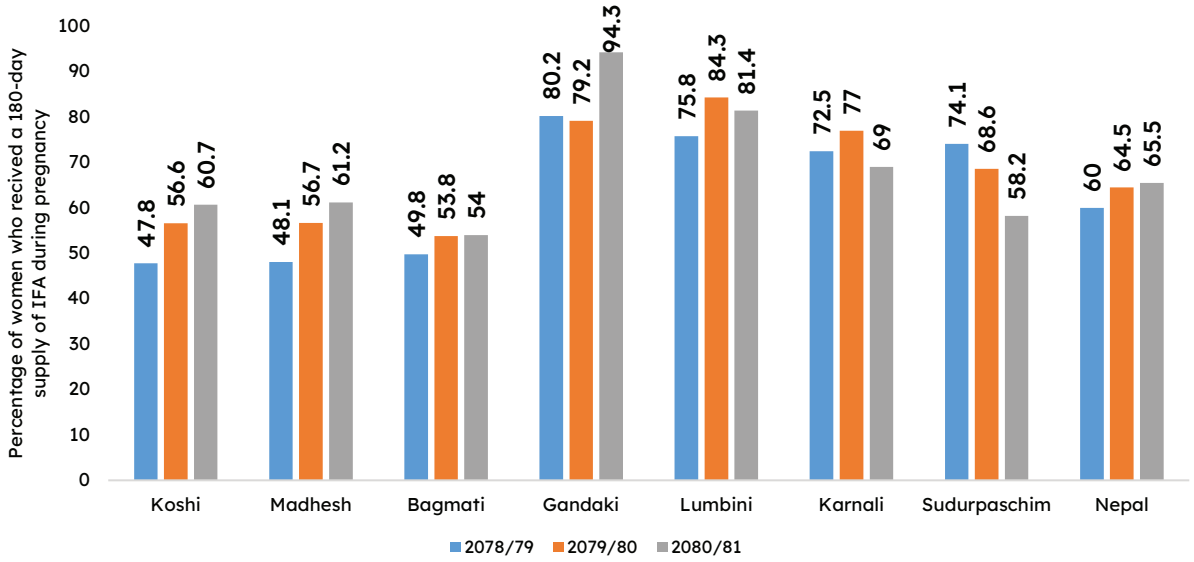
MNP Utilization Indicators	% of children aged 6-23 months who received at least one cycle (60 sachets) Baal Vita (MNP)			% of children aged 6-23 months who received 3 cycle (180 sachets) Baal Vita (MNP)		
Provinces	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81
Koshi	15.6	32	35.51	1.8	2.5	6.14
Madhesh	18.8	53.1	78.75	2.6	5.8	12.4
Bagmati	10.2	27.7	40.52	1.8	4.2	7.46
Gandaki	14.1	34.6	51.71	1.6	3.8	12.16
Lumbini	22.3	48.7	54.77	3.9	6.6	15.96
Karnali	18.2	29.5	29.7	1.6	2.7	5.75
Sudurpaschim	54	44.3	59.86	5.8	8.8	12.14
Nepal	20.5	40.9	53.98	2.8	5.1	10.62

Source: HMIS/DoHS

[1] https://handbook.spherestandards.org/en/sphere/#ch002

Coverage of 180-day supply of Iron Folic Acid during pregnancy

In the fiscal year 2080/81, the country's overall coverage of a 180-day supply of IFA during pregnancy was 65.5%, which is more than that in 2079/80 (64.5%). With the highest coverage of 94.3%, Gandaki Province showed notable improvement over prior years. Koshi (60.7%) and Madhesh (61.2%) also demonstrated consistent progress. But according to Sudurpaschim, coverage fell significantly, from 68.6% in 2079/2080 to 58.2%. In a similar vein, Karnali showed a drop from 77% to 69% over the prior year. The inequalities highlight the need for region-specific initiatives to promote equitable access to critical maternal health services, even though the majority of provinces showed encouraging trends. (figure 5.8)

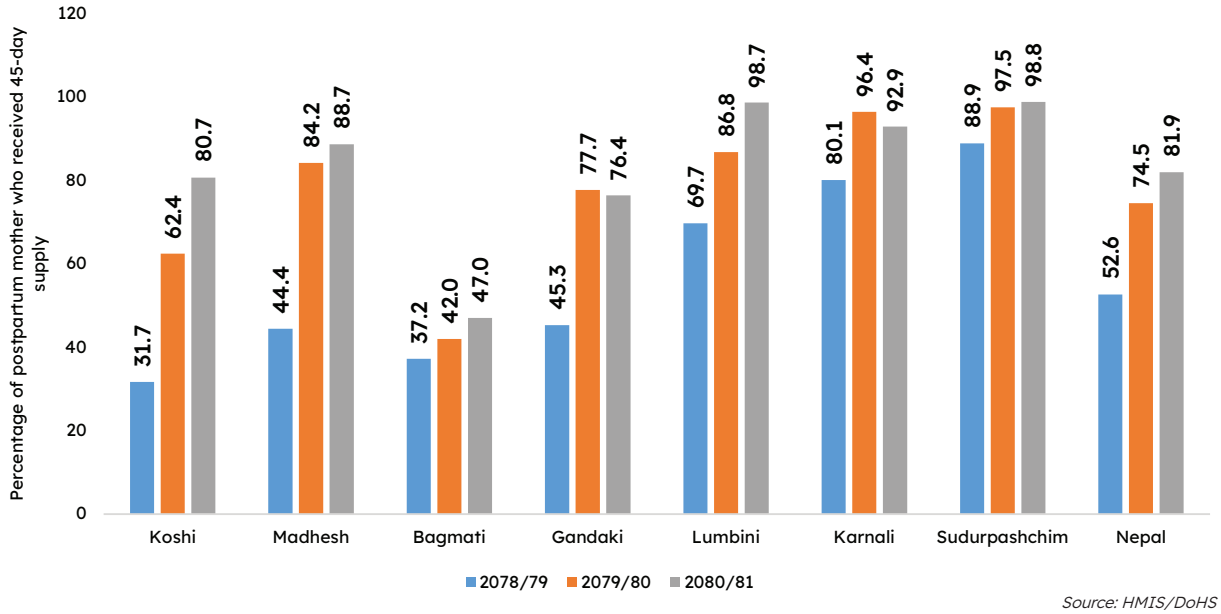


Source: HMIS/DoHS

Figure 5.8 Percentage of women who received a 180-day supply of IFA during pregnancy in FY 2078/79-80/81

Coverage of 45-day supply IFA to postpartum mother

According to the figure, nationwide 81.93% of postpartum mother received a 45-day supply of IFA in fiscal year 2080/81, which has increased significantly from 74.5% in 2079/80. Sudurpaschim Province has the highest coverage of 98.77%, closely followed by Lumbini (98.65%) and Karnali (92.89%). Madhesh made significant progress as well, achieving 88.65%. Koshi showed significant progress, rising to 80.69%. On the other hand, Bagmati's coverage increased to 47.01%, demonstrating a more moderate growth rate that suggests potential for focused intervention. Though differences between provinces show the need for fair resource distribution and targeted measures to maintain and increase coverage in underperforming areas, overall, the data shows a positive trend in postpartum nutritional supplementation. (figure 5.9)

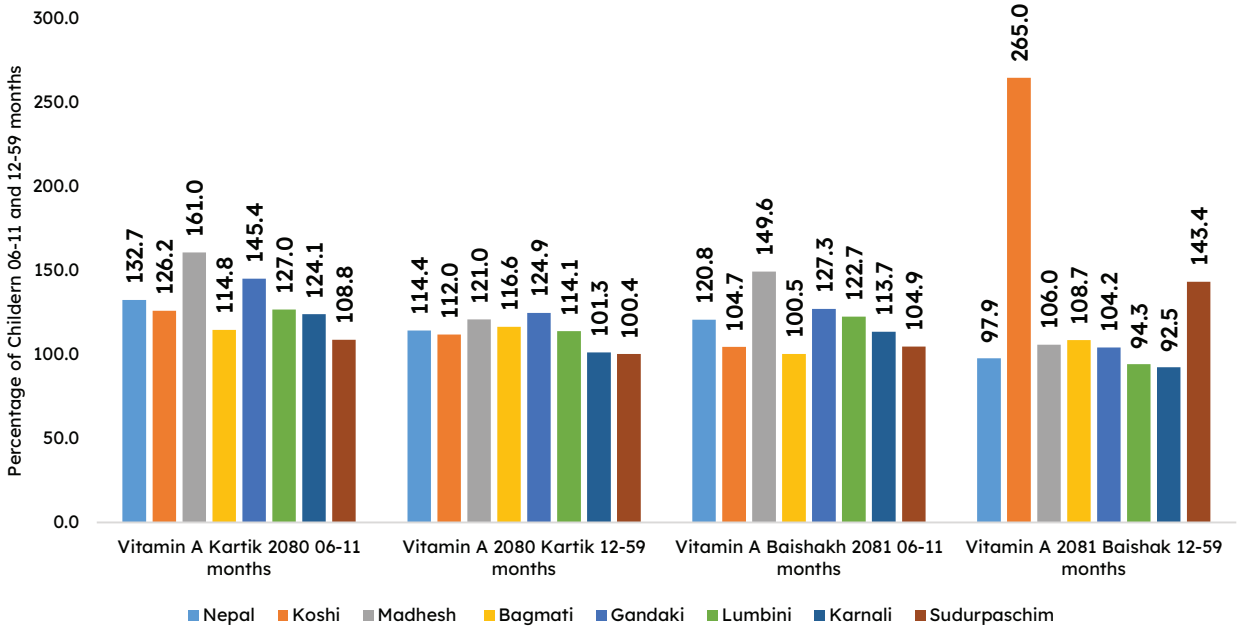


Source: HMIS/DoHS

Figure 5.9 Percentage of postpartum mother who received 45-day supply IFA in FYs 2078/79-2080/81

Control and Prevention of Vitamin-A Deficiency Disorders

The figure 5.10 shows the provincial performance of Vitamin A program for children aged 6–11 months and 12–59 months during Kartik 2080 and Baishakh 2081. Nationwide the percentage of children aged 6–11 months who received vitamin A was 132.68% in Kartik and 120.81% in Baishakh, but the percentage for children aged 12–59 months was 114.4% in Kartik and 97.89% in Baishakh. The highest coverage was seen in Madhesh Province for children aged 6 to 11 months, with Kartik having 160.99% coverage and Baishakh having 149.55%. Koshi claimed an abnormally high coverage of 264.98% for children aged 12 to 59 months in Baishakh which might be due to over-reporting or logistical irregularities. Other provinces, such as Gandaki and Lumbini, showed high coverage in both age groups, while Karnali and Sudurpaschim had relatively low rates, especially for Baishakh children aged 12 to 59 months.

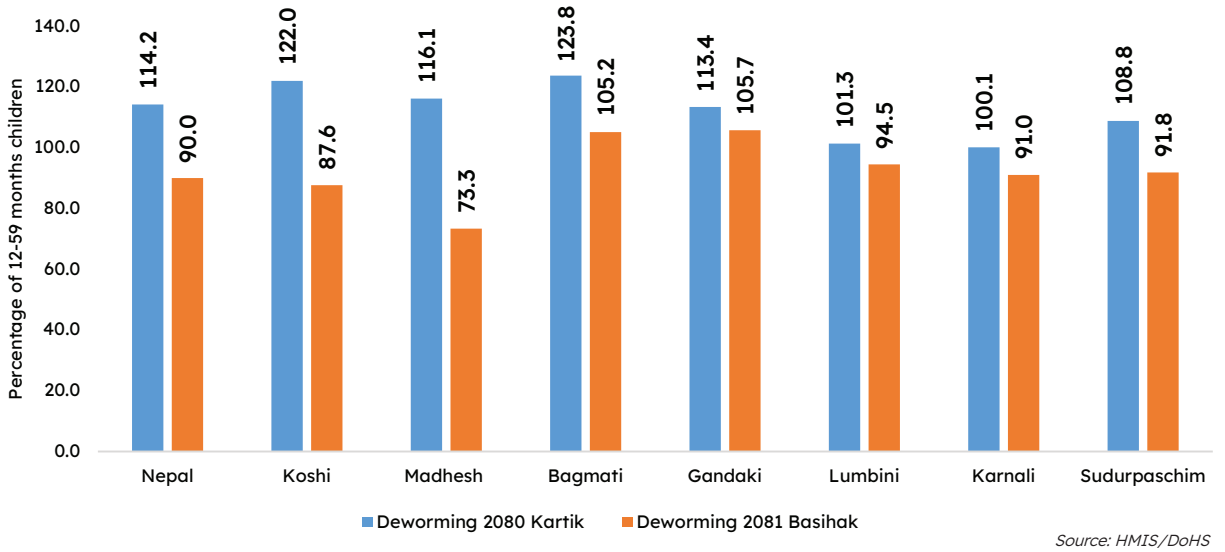


Source: HMIS/DoHS

Figure 5.10 Vitamin A mass campaign 06-11 months across provinces in FY 2080/81

Control of Intestinal Helminths Infestations

The coverage of deworming tablets during the Vitamin A and deworming tablet mass campaign for children aged 12 to 59 months in Baishakh 2080 is presented in figure 5.11. The national coverage decreased from 114.23% in Kartik 2079 to 89.96%. Gandaki (105.73%) and Bagmati (105.17%) recorded the highest coverage rates among the provinces, suggesting that the campaign was well-executed in these areas. On the other hand, Madhesh Province had the lowest coverage, at 73.3%, suggesting a possible logistical problem or outreach gap. Other provinces with coverage percentages between 87.64% and 94.52%, including Koshi, Lumbini, Karnali, and Sudurpaschim, performed moderately.

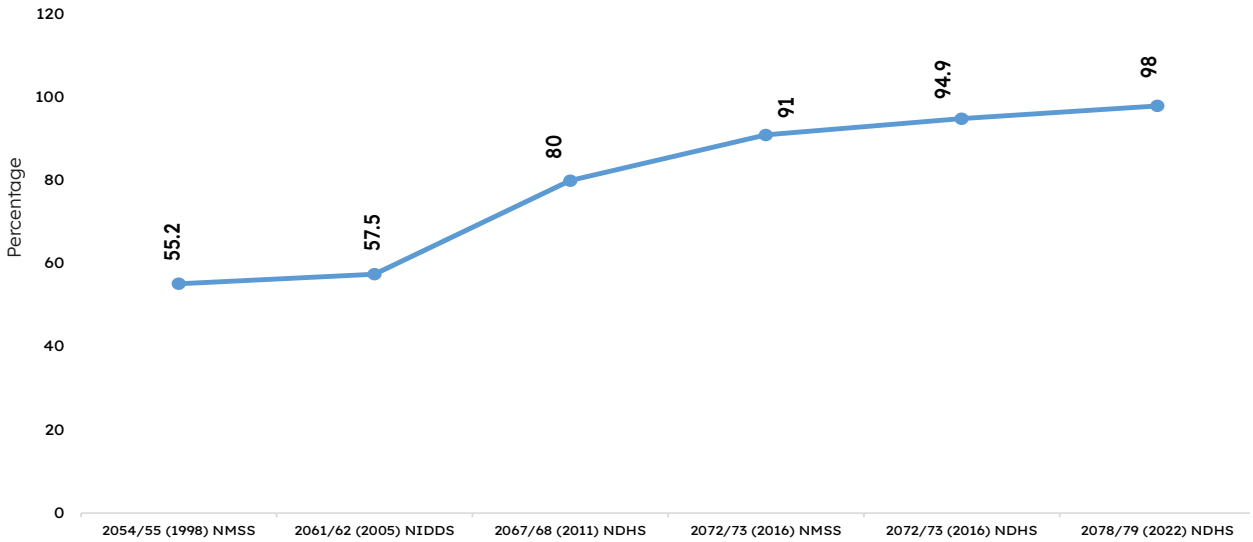


Source: HMIS/DoHS

Figure 5.11 Coverage of Vitamin A and deworming tablet mass campaign 12-59 months and deworming tablets in FY 2080/81

Control and Prevention of Iodine Deficiency Disorders

National survey reports reveal a substantial increase, with the percentage of households using adequately iodized salt rising from 55.2% in 2054/55 to 98% in 2078/79. (figure 5.12)



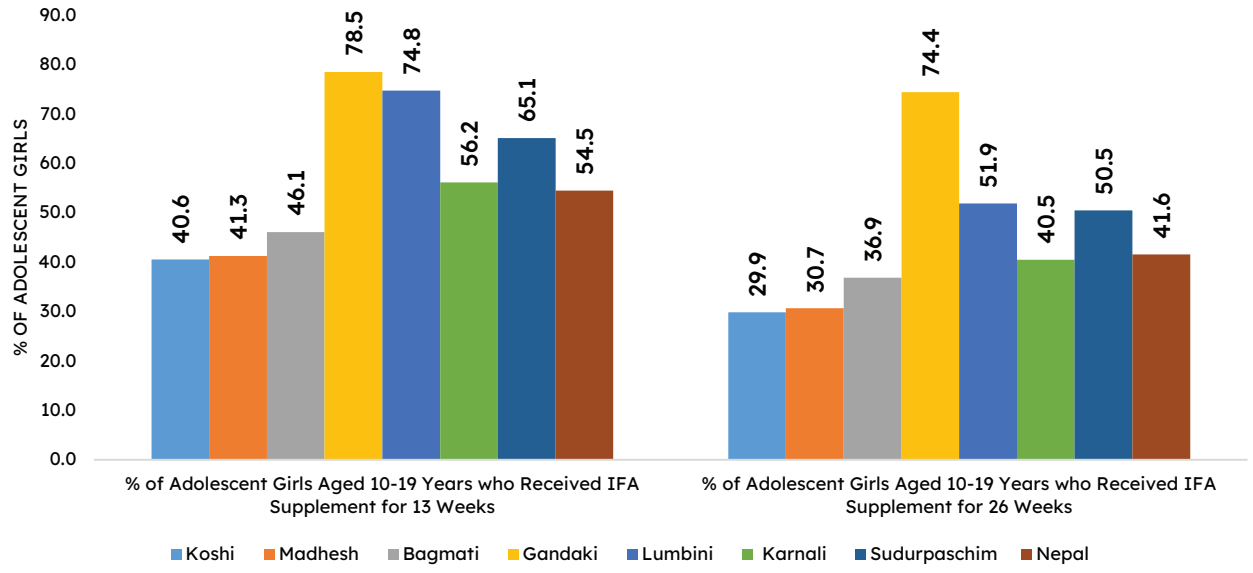
Source: NDHS

Figure 5.12 Trend in percentage of households using adequately iodized salt

This substantial improvement resulted from collaborative efforts in public health education, policy implementation, and awareness campaigns, reflecting commendable progress in combating iodine deficiency and promoting enhanced health and well-being across Nepal.

IFA distribution to adolescent girls in school

Figure 5.13 presents the percentage of adolescent girls between the ages of 10 and 19 who were given IFA supplements for 13 and 26 weeks. Nationwide only 41.59% of adolescent girls finished the 26-week regimen, despite 54.52% receiving IFA for 13 weeks, suggesting a significant decline in adherence. Given that 78.52% of the provinces received IFA for 13 weeks and 74.42% for 26 weeks, Gandaki province performed better than others in terms of program retention. The coverage in the provinces of Lumbini and Sudurpaschim was similar exceptional; for 13 and 26 weeks, respectively, Lumbini achieved 74.77% and 51.91%, while Sudurpaschim achieved 65.12% and 50.48%. Koshi and Madhesh Provinces, on the other hand, had lower rates at about 40% coverage for both periods.



Source: HMIS/DoHS

Figure 5.13 Percentage of adolescents who received supply of IFA

Box 5.5 SWOT Analysis of Nutrition Programs

Strengths	Opportunities
• Reduction in stunting, wasting, and underweight among under five children. • Training on comprehensive nutrition specific interventions (CNSI) package for health workers. • Implementation of IFA supplementation program for adolescent girls to prevent iron deficiency anemia. • Placement of nutrition volunteers at the local level under MSNP • Establishment of Comprehensive Lactation Management Center at Paropakar Maternity and Women's Hospital. • 26 NRCs functioning in different parts of the country for management of SAM cases. • Conduction of logistic management analysis and orientation.	• Integrating and coordinating with the Education sector for School Health and Nutrition is key to addressing malnutrition in adolescents. • Coverage, compliance, and relevancy of Vitamin A supplementation programs can be studied to provide factual support for the continuation of the same approach to control Vitamin A deficiency • Scaling up of comprehensive nutrition services at all levels • Advocacy to include RUTF, ReSoMal, and Therapeutic Milk (F75, F100) into the national essential drug list. • Vital financial and technical support from development partners. • Need to ensure sustainable financing from the local and provincial levels.
Weaknesses	**Threats**
• GMP, IMAM, MNP, and Adolescent IFA interventions have poor coverage, compliance, and service quality. • Early initiation and exclusive breastfeeding trends are decreasing. • Recording and reporting of nutrition program indicators in HMIS is incomplete and untimely. • Procurement and supply of nutrition commodities (RUTF, MNP, IFA) is not timely. Transportation and storage at local levels are unsatisfactory. • Limited allocation of financial resources and delay in disbursement • There's a lack of a Stadiometer and weight machine in OTC • Frequent transfer of staffs and lack of knowledge retention.	• Deep-rooted misconceptions, taboos, and harmful socio-cultural practices related to food and nutrition persist. • Emerging issues of the triple burden of malnutrition (undernutrition, overweight/ obesity, and micronutrient deficiencies) are noted. • The trend of early initiation and exclusive breastfeeding is decreasing, while the trend of bottle feeding is increasing.

6 Family Planning and Reproductive Health Program

Family Welfare Division

Family Planning and Reproductive Health Section

6.1 Family Planning and Reproductive Health

Family planning (FP) and reproductive health (RH) is a key component of Nepal's health programs which aims to improve the health and well-being of people and families by empowering them to make informed decisions regarding their reproductive health (Box 6.1). In the early 1960s, Nepal implemented a comprehensive strategy for family planning (FP) and community health that paved the path for safer childbirth and safer motherhood. It has been enshrined as a fundamental right in the constitution of Nepal 2072 B.S and included in the basic health service package under the Public Health Service Act 2075. In addition, the Safe Motherhood and Reproductive Health Rights Act 2075, Safe Motherhood and Reproductive Health Rights Regulation 2077, 16th Five-Year Periodic Plan of Nepal (2081/82 - 2085/86 BS) as well as Safe Motherhood and New-born Health Roadmap (2076-2087) emphasizes the availability and accessibility of right-based FP services.

The strategic focus involves ensuring access and utilization of high-quality, client-centered FP services, particularly targeting underserved populations and achieving Sustainable Development Goals (SDGs) targets. Efforts are directed towards reducing contraceptive discontinuation, scaling up successful innovations, generating evidence, and linking FP services with RH services. FP information and services are disseminated through government sectors, social marketing, non-government organizations (NGOs), the private sectors and academic institutions. Access to services in remote areas is facilitated through satellite clinics, visiting providers, and mobile camps. Sterilization services are available at static sites and through scheduled outreach services. Private and commercial outlets, including pharmacies clinics, and hospitals also contribute to the availability of comprehensive FP services.

Box 6.1 Objectives of FP program

The overall objective of Nepal's FP programme is to improve the health status of all people through informed choice on accessing and utilizing client-cantered quality voluntary FP.

The specific objectives are as follows:

- To increase access to and the use of quality FP services that are safe, effective, and acceptable to individuals and couples. A special focus is on increasing access in rural and remote places with focus on marginalized people with high unmet need, postpartum and post-abortion women and partner of labour migrants and adolescents.
- To increase contraceptive use, reduce unmet need for FP, unintended pregnancies, and contraceptive discontinuation.
- To create an enabling environment for increasing access to quality FP services to men and women including adolescents.
- To increase the demand for FP services by implementing strategic behaviour change communication activities.

Nepal FP 2030 Commitments

FP 2030 is the successor to FP 2020, a global initiative started after the 2012 London meeting on FP with the aim of improving the FP services to women and girls in the poorest countries. The GoN signed a commitment letter for FP2020 in March 2015 and further updated its commitment at the Family Planning Summit in London, UK on July 11, 2017. In 2023, GoN signed a commitment to FP 2030 (Box 6.2). In this commitment, GoN has set a vision as follows:

Box 6.2 Nepal's FP 2030 Commitments

Strengthen health governance for the FP program in the federalized context.

Improve equitable access to a range of contraceptives to meet the contraceptive needs of individuals and couples.

Ensure Sexual and Reproductive Health services are responsive to the need of adolescents and youth.

Ensure round-the-year availability of family planning commodities in all service delivery points.

Implement tailored demand generation and strategic behavioral change interventions.

Ensure incremental budget allocation required for FP towards access to universal health coverage.

"By the end of 2030, every individual and family will lead a healthy, happy, and prosperous life, fully exercising their sexual and reproductive health and rights."

To achieve this vision, six commitments have been identified related to health governance, equitable access to contraceptives, adolescent and youth, commodities, behavior change, and incremental budget for the FP program.

This National Family Planning Costed Implementation Plan (NFP-CIP) 2081/82 - 2087/88 is developed based on the vision and strategies set forth in the FP 2030 commitments and other existing FP strategies and plans of GoN.

The SDG targets and indicators for Family Planning and Reproductive Health (FRPH) programs in Nepal is shown in table 6.1.

Table 6.1 SDG targets and indicators for Family Planning and Reproductive Health (FPRH) programs, Nepal

Target and Indicators	2078 (2022)	Source	2082 (2025) Targets	2087 (SDG Targets-2030)
% women of reproductive age (aged 15-49 years) with FP need satisfied with modern methods	55%	NDHS 2022	76%	80%
Contraceptive prevalence rate[1] (mCPR)	43%	NDHS 2022	56%	60%
Unmet need[2] for Family Planning	21%	NDHS 2022	15.2%	10%
Total Fertility Rate[3] (TFR)	2.1	NDHS 2022	2.1	2.1
Adolescent (10-19 years) birth rate	71%	NDHS 2022	43%	30%

6.1.1 Major activities in FY 2080/81

- Provision of long-acting reversible services (LARCs-IUCD and Implant)
- Permanent FP Methods or Voluntary Surgical Contraception (VSC) camps as well as regular services through health facilities.
- Provision of regular comprehensive FP service including post-partum and post abortion FP services.
- Satellite clinic services for long-acting reversible contraceptives
- Contraceptive update for Obstetrician/ Gynecologist, nurses and; concerned key stakeholders.
- Conducted Provincial Review of family planning and reproductive health.
- Expansion of DMPA-SC (Sayana Press) up to 20 districts.
- Availability of emergency contraceptive pills (ECP) services through all public health facilities and FCHVs.
- Free Complication management of FP services and recanalization services with reimbursement up to Rs 25,000 to the clients undergoing re-canalization.
- Orientation and capacity building of health facility managers and health care workers on Disability
- Adolescent friendly SRHR guideline and services.
- Public Private Partnership for family planning services as well as strengthening post pregnancy family planning in designated hospitals and medical colleges.
- Family planning DataPro has been embedded into DHIS2 for effective monitoring of FP data
- Finalization of National family Planning Costed Implementation Plan (NFP - CIP) 2081/82 - 2087/88 BS.

6.1.2 Key Indicators of FP Programs

The key indicators for the FP program are associated with the adoption of FP methods by both current and new users. These indicators include the method mix, adoption of permanent methods for limiting family size and short acting reversible methods for spacing the family size. These indicators collectively reflect the informed, comprehensive, and voluntary choices made by users in the selection of FP methods.

Current Users of family planning methods

The use of several family planning techniques across three FYs shows that there is no major variation in the proportion of current users of family planning methods except for female sterilization which is decreased by four percentage points in FY 2080/81 as compared to previous FY.

There were differences in the adoption of family planning methods among current users in fiscal year 2080/81. The majority of users (33.13%) chose Female sterilization (FS), followed by implant users (21.26%). Least percentage of the users were found to use Sayana Press, and emergency contraceptive pills (ECP). These numbers demonstrate the preference for long-lasting and permanent solutions, particularly implants and female sterilization (table 6.2).

[1] mCPR= the percent of women of reproductive age (15-49 years) using any modern method of contraception at a given point in time.

[2] Unmet need= women with unmet need are those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child

[3] TFR= The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman

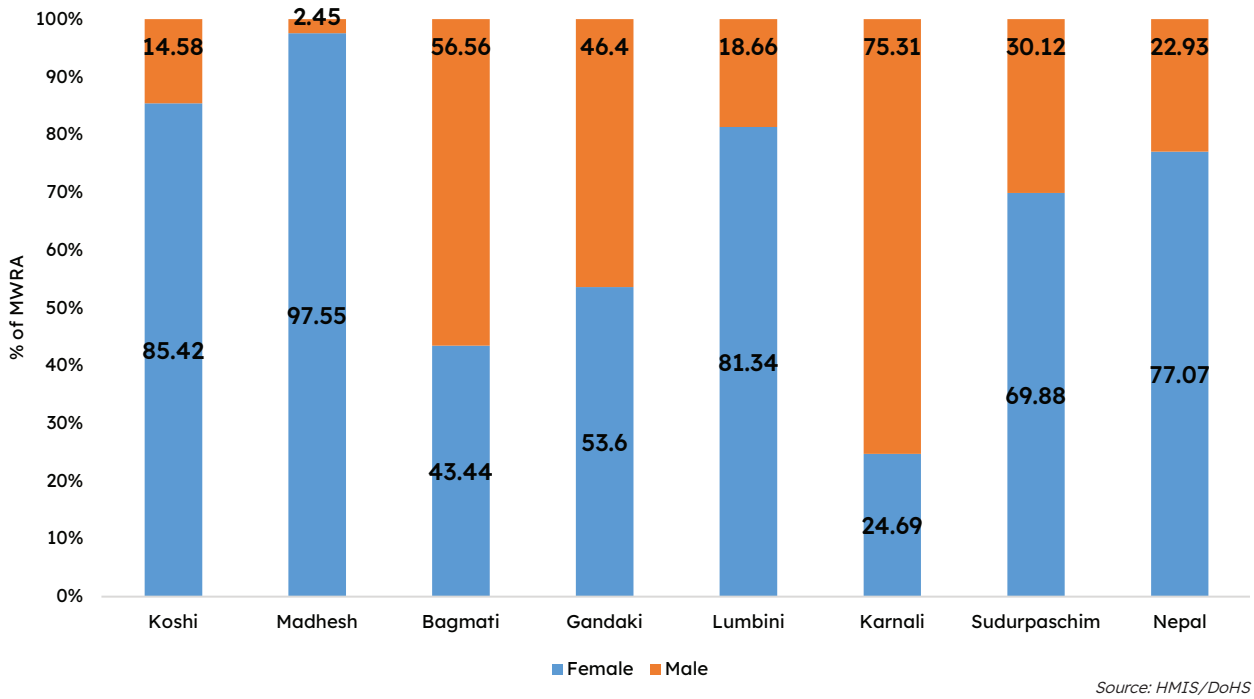
Table 6.2 Current users of family planning methods

Current user	FY 2078/79	FY 2079/80	FY 2080/81	
	%	%	Number	%
Condom	7	7	231,083	8.8
Depo	14	14	349,389	13.37
Pills	6	6	177,870	6.8
IUCD	5	5	144,264	5.5
Implant	18	20	555,712	21.26
Male Sterilization	12	11	257,555	9.8
Female Sterilization	38	37	865,862	33.5
DMPA-SC (Sayana Press)			25,425	0.9
ECP			6,331	0.2

Source: HMIS/DoHS

Proportion of FP current users using permanent methods

Nationwide data from FY 2080/81 shows that 77.1% of permanent method users were female. The permanent method users were mostly females than males in most of the provinces, except in Bagmati and Karnali, where male users were high (figure 6.1).

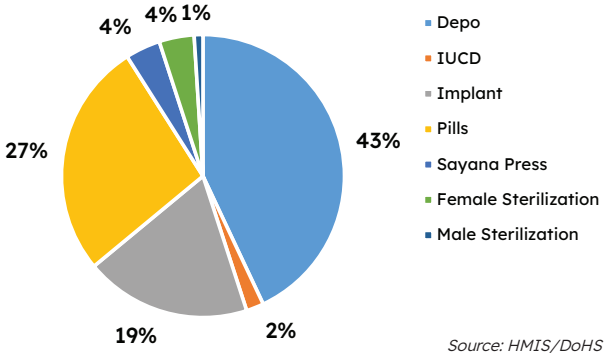


Source: HMIS/DoHS

Figure 6.1 Proportion of current users using permanent methods, FY 2080/81

Modern methods - new acceptors method mix

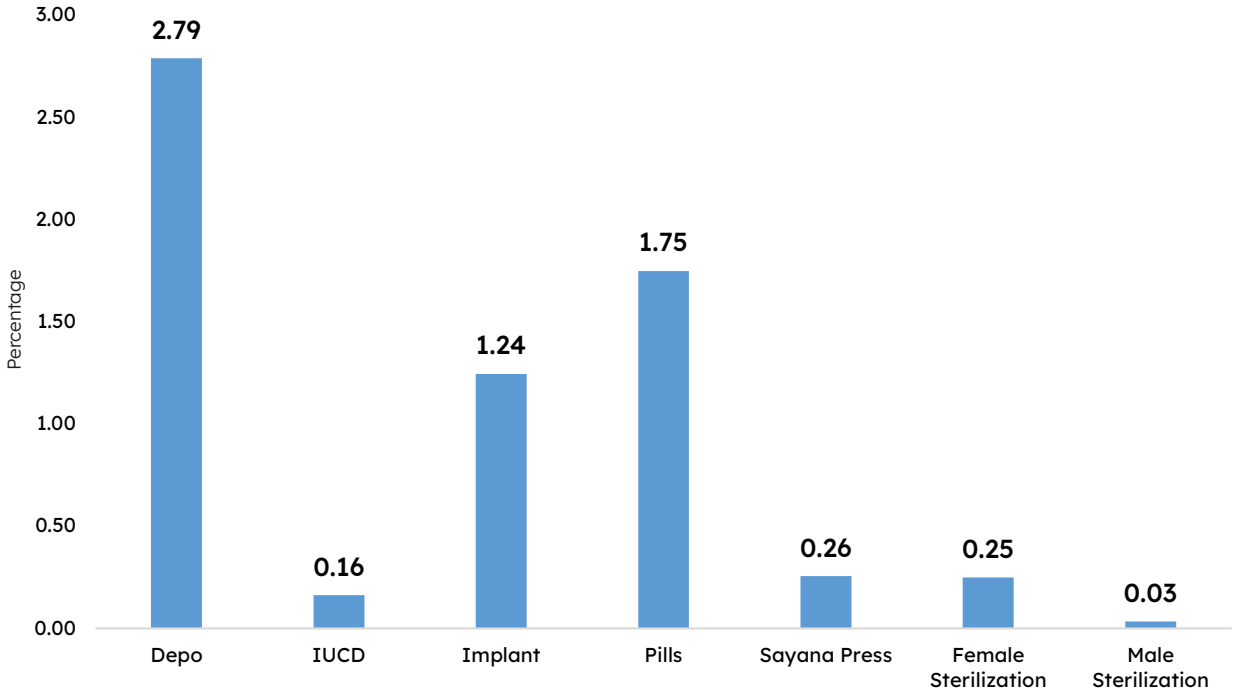
The figure 6.2 shows the number of people who used modern contraceptives for the first time during the fiscal year 2080/81. With 43% new users, Depo is the most popular type, followed by pills (27% users) and implants (19 % users). Male sterilization was the least popular, with only 1 % user, whilst Sayana Press and female sterilization were selected by 4 % users each, compared to 2 % for IUCD among the new users.



Source: HMIS/DoHS

Figure 6.2 Modern methods - new acceptors method mix FY 2080/81

The figure 6.3 represents the percentage of new acceptors of various contraceptive methods among women of reproductive age (WRA). Depo (2.79%) has the highest acceptance, followed by Pills (1.75%) and Implants (1.24%), while IUCD (0.16%), Sayana Press (0.26%), and sterilization methods have lower adoption rates. Male sterilization (0.03%) shows the least acceptance, indicating a preference for female-centered contraceptive methods.



Source: HMIS/DoHS

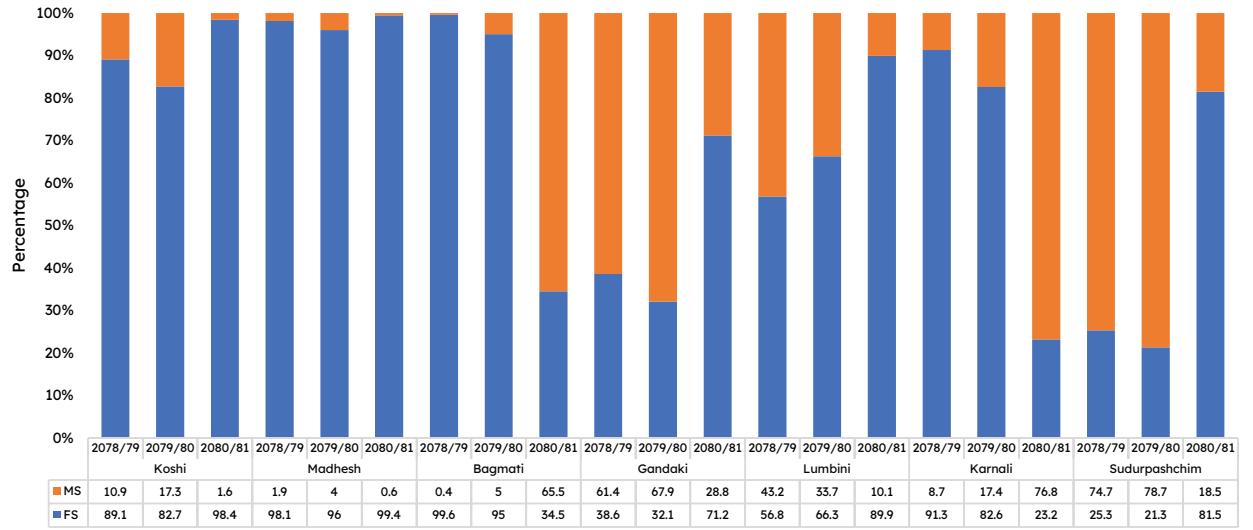
Figure 6.3 Percentage of new acceptor among the WRA, 2080/81

Table 6.3 Share of FS and MS among total sterilization new acceptors FY 2078/79 – 2080/81

FYs	Female	Male	Total	Female Proportion
2078/79	23,351	2,868	26,219	89.1
2079/80	19,708	4,109	23,817	82.7
2080/81	21,096	2,944	24,040	87.8

Source: HMIS/DoHS

FY 2080/81, the percentage of female sterilization uptake dropped to 87.8% from 89.1% in FY 2078/79 (table 6.3). The highest percentage of female sterilization was 99.4% in Madesh province, while the highest percentage of male sterilization was 76.8% in Karnali Province (figure 6.4).



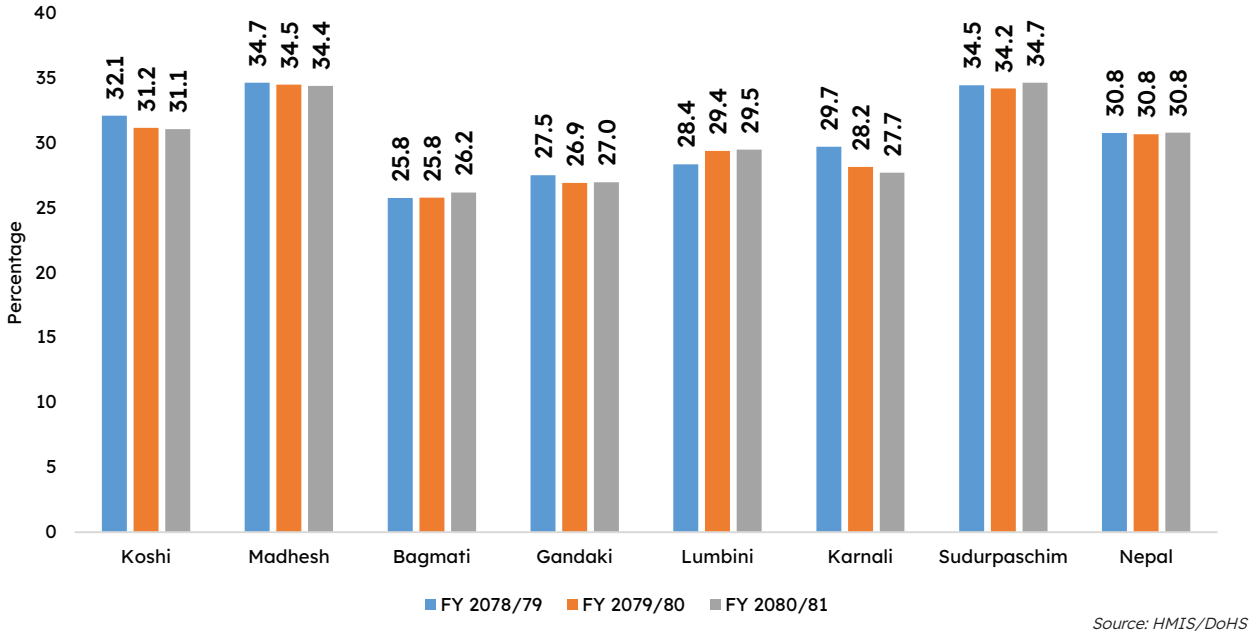
	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81
	Koshi			Madhesh			Bagmati			Gandaki			Lumbini			Karnali			Sudurpashchim		
MS	10.9	17.3	1.6	1.9	4	0.6	0.4	5	65.5	61.4	67.9	28.8	43.2	33.7	10.1	8.7	17.4	76.8	74.7	78.7	18.5
FS	89.1	82.7	98.4	98.1	96	99.4	99.6	95	34.5	38.6	32.1	71.2	56.8	66.3	89.9	91.3	82.6	23.2	25.3	21.3	81.5

Source: HMIS/DoHS

Figure 6.4 Proportion of share of FS and MS among total sterilization new acceptors across provinces FY 2078/79- 2080/81

Modern Contraceptive Prevalence Rate (mCPR)

The Modern Contraceptive Prevalence Rate (mCPR) remains almost steady in all provinces over the period of three FYs (2078/79 – 80/81). Koshi, Madhesh, and Karnali provinces have mCPR rate higher than the national average (i.e. >30.8%). (figure 6.5)



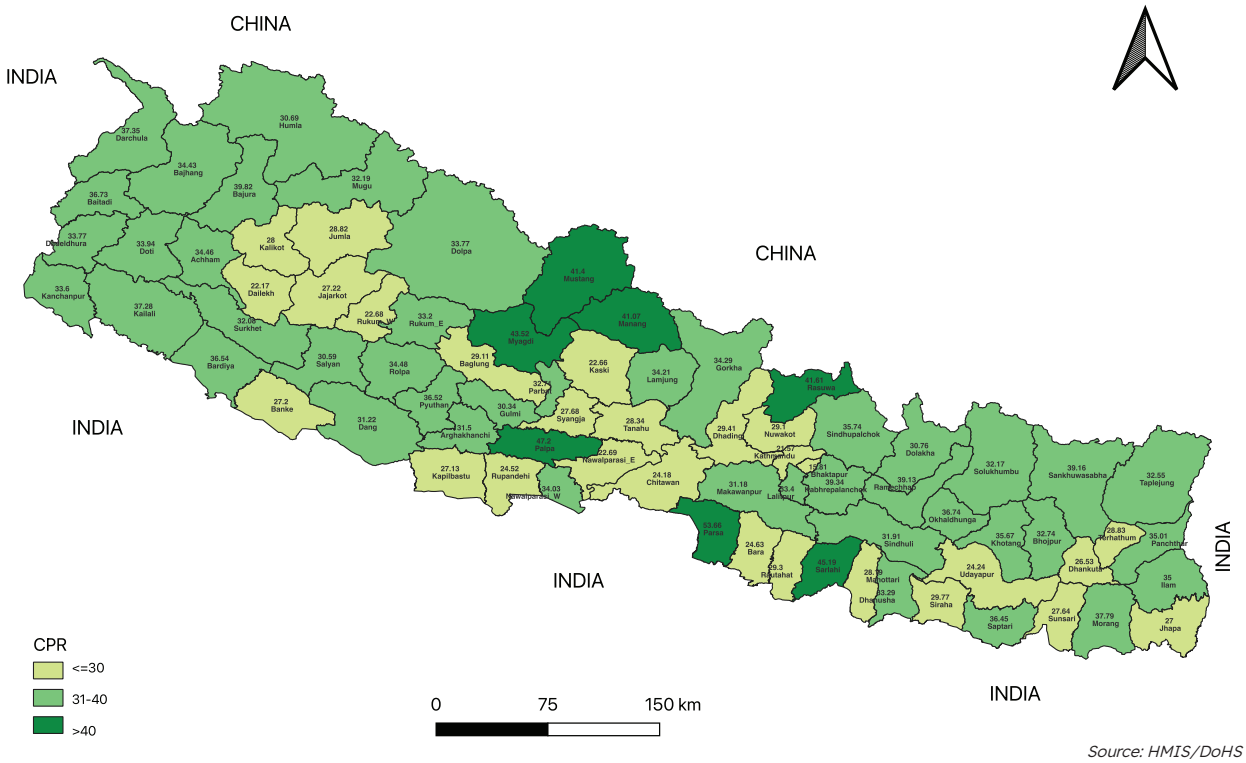
Source: HMIS/DoHS

[a]Denominator is changed from MWRA to WRA, therefore the values may differ in previous reports.

Figure 6.5 Trend of Modern Contraceptive Prevalence Rate (mCPR)

In FY 2080/81, A total of 49 districts had mCPR greater than national average of 30.80%.

Only one district (Parsa district) had mCPR greater than 50%, whereas lowest mCPR was seen in Bhaktapur district (15.81%) (figure 6.6).

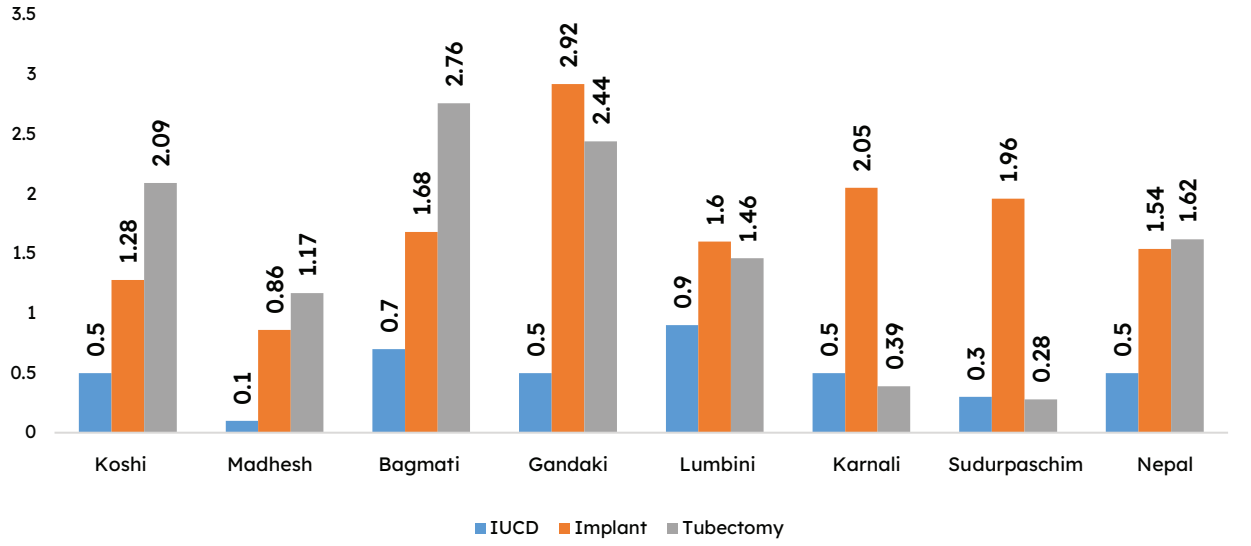


Source: HMIS/DoHS

Figure 6.6 District wise mCPR status in FY 2080/81

Post-Partum Family Planning (PPFP) uptake as proportion of institutional deliveries by province

Postpartum uptake of Family Planning (PPFP) techniques as a percentage of all institutional deliveries in seven provinces during the fiscal year 2080/81 is highlighted in figure 6.7. Adoption rates nationwide were 1.62% for tubectomy, 1.54% for implants, and 0.50% for IUCD. Gandaki Province had the highest implant uptake at 2.92%, whereas Lumbini province had the highest rates for IUCD (0.90%) but Bagmati Province had for tubectomy (2.76%). Madhesh Province, on the other hand, had the lowest uptake of IUCD, and implants at just 0.10% and 0.86% respectively, while tubectomy was lower in Karnali (0.39%) and Sudurpaschim (0.28%) provinces.

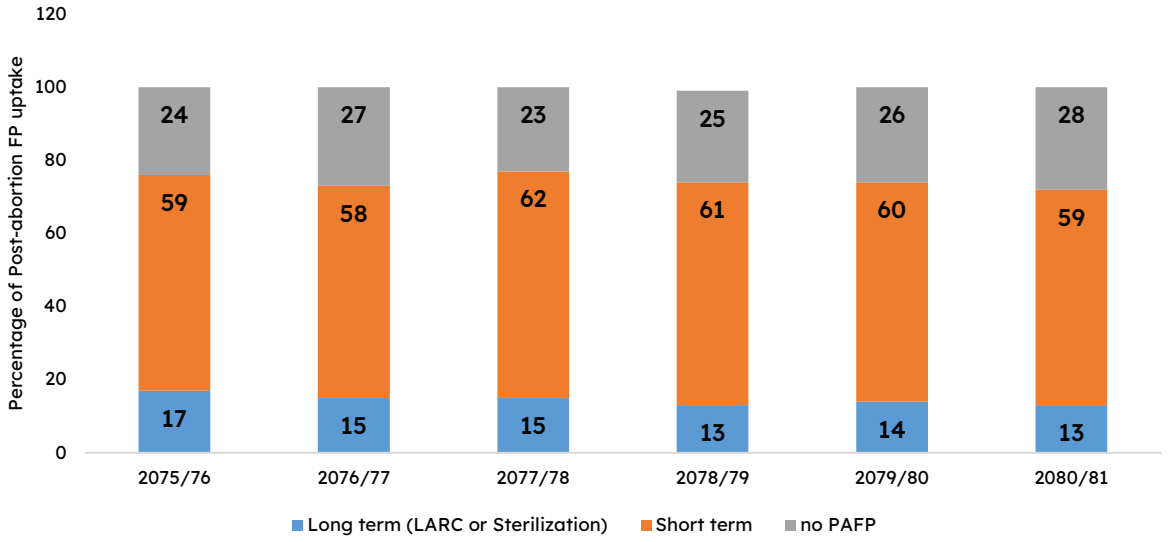


Source: HMIS/DoHS

Figure 6.7 PPFP uptake as proportion of total institutional deliveries by province, FY 2080/81

Trend of post abortion FP (PAFP) uptake

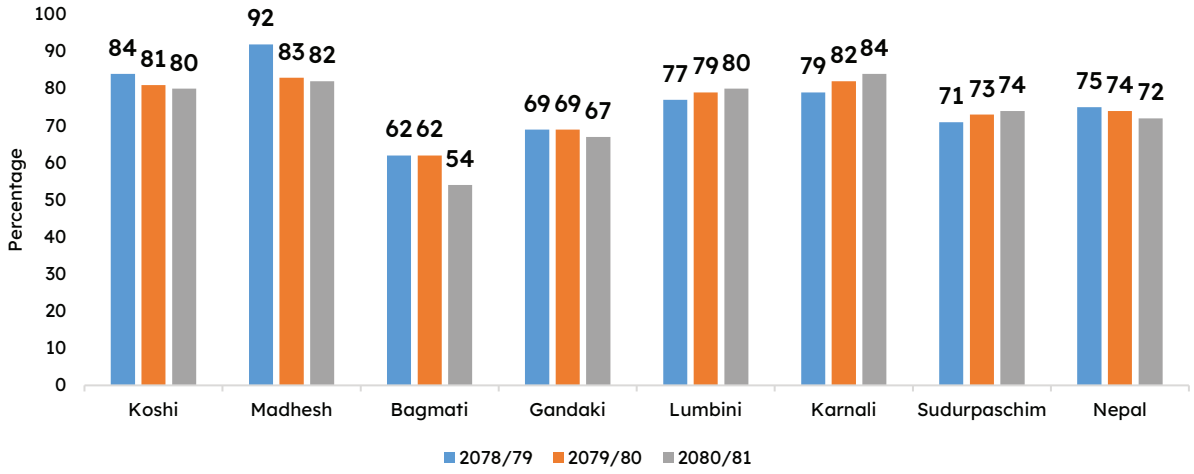
In the FY 2080/81, 13% of women choose long-term methods (LARC or sterilization) as Post Abortion Family Planning (PAFP) which was slightly less than previous FY. Non-uptake is on the rise, with the percentage of women who did not receive PAFP rising to 28% in FY 2080/81, the highest number over the six-year period (figure 6.8).



Source: HMIS/DoHS

Figure 6.8 Proportion of post abortion FP uptake by method type FY 2075/76 to 2080/81

The uptake of PAFP has gradually decreased nationwide, falling from 74 in FY 2079/80 to 72 in FY 2080/81. Koshi, Gandaki and Madhesh Province experienced a steady decline reaching to 80, 67 and 82 respectively in FY 2080/81 in comparison to previous year. With PAFP uptake falling from 62 to 54 during the same time period, Bagmati Province has the biggest drop. On the other hand, the uptake at Lumbini, Sudurpaschim and Karnali province had increased from 77 to 80, 71 to 74 and 79 to 84 respectively in FY 2080/81 from previous FY 2078/79 (figure 6.9).



Source: HMIS/DoHS

Figure 6.9 Trend of post abortion FP uptake across provinces, FY 2078/79 to 2080/81

6.2 Adolescent Sexual and Reproductive Health (ASRH)

In Nepal, addressing the special needs of adolescents through Adolescent Sexual and Reproductive Health (ASRH) is a vital part of the nation's public health agenda. Since about 25% of the population is between the ages of 10 and 19, Nepal places a high priority on ASRH through extensive initiatives that emphasize empowerment, education, and services. These programs support gender equality and rights, encourage access to adolescents-friendly health care, and offer age-appropriate information on sexual and reproductive health. Menstrual health management, STI and HIV prevention, teenage pregnancy and early marriage prevention, and mental health assistance are important elements. Among adolescent girls aged 15-19 in Nepal, 17% are either mothers or currently pregnant, while only 14.2% of married adolescents use modern contraceptives. Nepal, a pioneer in South Asia, endorsed its first National Adolescent Health and Development (NAHD) Strategy in 2000, later revised in 2018 to address evolving adolescent issues. GoN has the national strategy for adolescent health and strategy to enable and prioritize adolescent health issues including sexual and reproductive health.

6.2.1 Major activities conducted in FY 2080/81

- Expansion of adolescent friendly health service sites along with orientation of Health care providers in both public and private health facilities.
- Certification of adolescent friendly health facilities at all levels (federal, provincial and local levels)

Box 6.3 National Adolescent Health and Development (NADH) Strategy, 2018

Vision

To enable all adolescents to be healthy, happy, competent and responsible.

Mission

Developing measures to ensure the health and holistic development of adolescents, encouraging strong collaboration among stakeholders, and making the most use of the tools that are already accessible.

Goal

To promote the sexual and reproductive health of adolescents.

General Objective

By the year 2025, all adolescents will have positive life styles to enable them to lead healthy and productive lives.

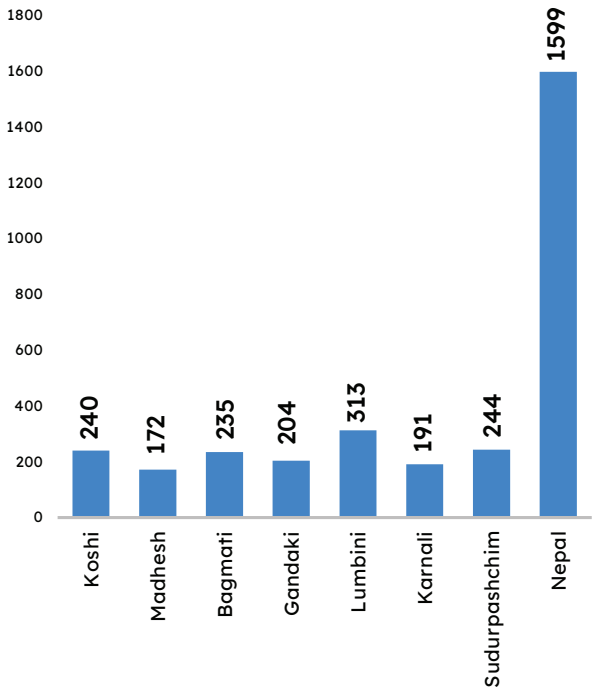
Strategic Principles and Direction

- Participation and leaderships of adolescent
- Equality and equity
- Right with responsibility
- Strategies partnerships
- Role of central, province, and local government

6.2.2 Key Indicators for Adolescent Health Services

Scale-up of Adolescent friendly service

The National ASRH program has been gradually scaled up in health facilities across the country against the target set in Nepal Health Sector Strategy Implementation Plan to expand services in 2000 health facilities. The goal of Nepal's Adolescent-Friendly Services (AFS) scale-up is to offer adolescents high-quality, easily accessible healthcare with an emphasis on nutrition, mental health, sexual and reproductive health, and drug misuse prevention. It places a strong emphasis on community outreach, youth-friendly health facilities, and capacity building to provide teenagers with the information and tools they need to make educated health decisions, so promoting their development and the future of the country. Adolescent friendly health services operation guideline has envisioned to gradually develop all health facilities as AFS sites. As per Adolescent Friendly Health Service Implementation Guidelines 2079, Adolescent Health Coordination Committees have been established in all the local levels. It regularly discusses adolescent health related issues and addresses them.



Source: HMIS/DoHS

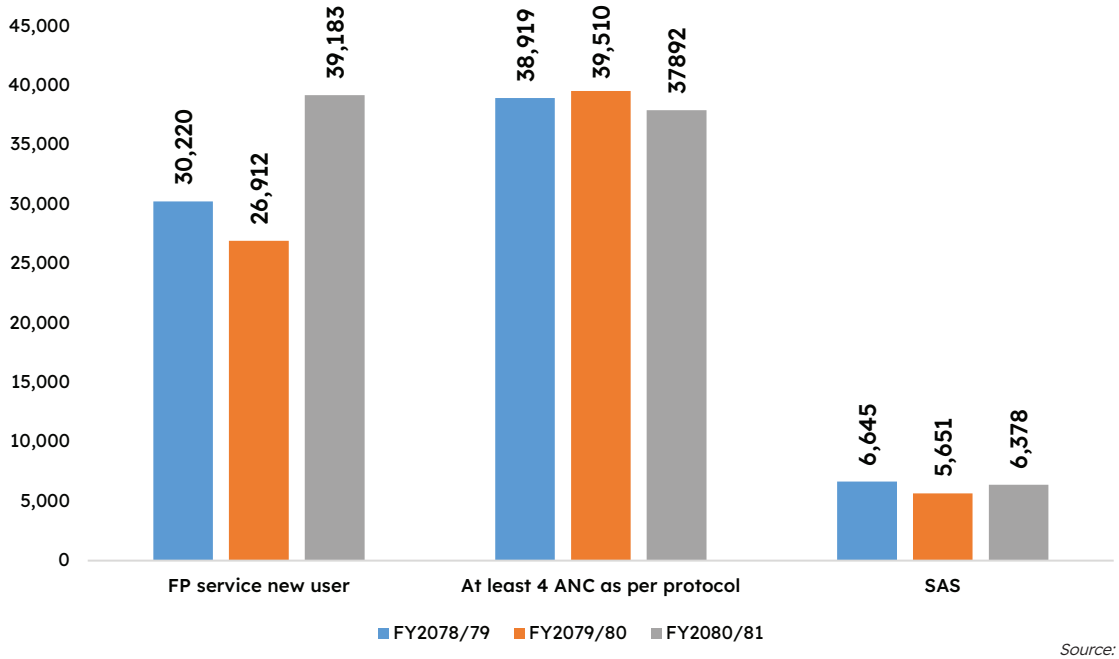
Figure 6.10 Number of adolescents friendly sites certification in FY 2080/81

Certification of Adolescents friendly service sites

In FY 2080/81, a total of 1599 health facilities were certified as adolescents friendly service sites. Highest number of certified sites were in Lumbini province (313 sites) and lowest in Madhesh province (172 sites) (figure 6.10).

ASRH Service Utilization

The number of FP service new user adolescents increased significantly in FY 2080/81, reaching 39,183, as compared to 26,912 in FY 2079/80. With at least four ANC visits as required by protocol, the use of ANC services decreased from 39,510 in FY 2079/80 to 37,892 in FY 2080/81, indicating a minor fall from the year before. In the same way, the number of adolescents using Safe Abortion Services (SAS) increased somewhat, rising from 6,645 in FY 2078/79 to 6,378 in FY 2080/81 from 5,651 in FY 2079/80 (figure 6.11).



Source: HMIS/DoHS

Figure 6.11 ASRH Service utilization by adolescents in FY 2078/79-80/81

6.3 Reproductive Health Morbidities

Reproductive Health (RH) Morbidity means any health condition adversely impacting the reproductive system as a result of reproduction, pregnancy, abortion, labor and sexual behaviour, and also refers to pelvic organ prolapse, obstetric fistula, infertility, cervical cancer, breast cancer as well as any other similar health conditions that affects the reproductive functioning[4]. Cervical cancer, breast cancer, obstetric fistula, pelvic organ prolapses, and infertility are among the prioritized RH morbidities. These disorders are exacerbated by stigma, lack of understanding, and restricted access to healthcare. They frequently have major effects on the body, mind, and society. In order to improve health outcomes and lessen gender inequities, addressing these morbidities calls for comprehensive interventions such early diagnosis, treatment, improved access to services, and health education.

6.3.1 Major Activities Conducted in FY 2080/81

- Initiated the process of revision of Pelvic Organ Prolapse guideline
- Comprehensive screening and management of Reproductive Health Morbidities
- Endorsement of infertility management guideline.
- Training for health care providers (Gynecologists, nurse and lab technologists) on infertility management
- Onsite coaching to service providers for IUI sites
- Standard Operating Procedural guidelines for HPV DNA Screening for Cervical cancer endorsed.

Around 200-400 women in Nepal develop obstetric fistula annually, directly linked to a major cause of maternal mortality—obstructed labor. Early marriage and multiple births elevate the risk of pelvic organ prolapses. In Nepal, approximately 6.4% of women experience prolapse due to factors such as strenuous physical work during pregnancy. Infertility is affecting 13-15% of couples in Nepal. Infertility can impede individuals' and couples' rights to family planning.

- HPV DNA screening programme implemented in 13 local level of selected 8 districts
- HPV DNA Screening programme started in all the Provincial Public Health Laboratories

6.3.2 Key Achievements in FY 2080/81

Reproductive health morbidities such as obstetric fistula, pelvic organ prolapse, and breast and cervical cancer were screened for in FY 2080/81. Positive results were handled as needed. About 1.93% of the 65,623 women who had breast cancer screenings had suspicions and were referred. Around 2,05,994 women between the ages of 30 and 49 and 53,465 women above the age of 50 were screened for cervical cancer; 3.29% and 2.97% of them tested positive, respectively. Of the 3,229 women who had a colposcopy, 0.64% underwent ablative treatment. 125 suspected cases of obstetric fistula were found during screening, 150 were referred, and 77 women underwent surgery. 2,742 women were referred, 12,566 received ring pessaries, 1,415 underwent surgery, and 20.22% of the 1,01,862 women who were screened for pelvic organ prolapse were found to have it. (table 6.4)

Table 6.4 RH morbidity services uptake in FY 2080/81

RH Morbidity Services		Number/% of women
Breast Cancer	Screened	65,623
	Suspected and referred	1.93%
Cervical Cancer	Women aged 30-49 Years-Screened	2,05,994
	Women aged 30-49 Years-Positive	3.29%
	Women aged 50+ Years-Screened	53,465
	Women aged 50+ Years-Positive	2.97%
	Colposcopy-Performed	3,229
	Ablative Treatment-Received	0.64%
Obstetric Fistula	Screened	20,111
	Suspected	125
	Referred	150
	Surgery done	77
Pelvic Organ Prolapse	Screened	1,01,862
	Prolapse identified	20.22%
	Referred	2,742
	Ring Pessary applied	12,566
	Surgery done	1,415

Source: HMIS/DoHS

[4] Safe Motherhood and Reproductive Health Right Act 2018

The trend of RH morbidity services – Cervical Cancer Screening over the period of two FY (2079/80 – 80/81) is shown in table 6.5. The total number of women screened for Cervical cancer were increased in this FY compared to previous year. The highest positivity rate was seen in Lumbini province (3.5%), and lowest in Koshi province (2.7%).

Table 6.5 Trend of Cervical Cancer Screening

Provinces	Cervical Cancer Screening			
	Total Screened (VIA, HPVDNA, PAP Smear)		Positivity Rate	
	FY 2079/80	FY 2080/81	FY 2079/80	FY 2080/81
Koshi	27,927	35,688	2.3	2.7
Madhesh	15,564	27,067	3.3	3.4
Bagmati	59,091	95,984	3.9	3.4
Gandaki	26,824	27,960	2.5	3.0
Lumbini	41,425	36,252	3.6	3.5
Karnali	19,583	16,110	3.2	2.9
Sudurpashchim	14,918	20,398	1.6	2.9
Nepal	**2,05,332**	**2,59,459**	**3.2**	**3.2**

Box 6.4 SWOT of the FP and RH program

Strengths

- Adoption of new and innovative approaches to address the programmatic issues: High delivery sites identification and orientation for PPFP services.
- Free or subsidized services
- Rural outreach services
- Strong coordination mechanism through different thematic committees at federal level
- Emphasis on evidence generation and practice of evidence-based planning: 3-year Implant adoption as choice

Opportunities

- Government's commitment on FP programs (FP2030 commitment)
- Integrate FP and RH services with other programs
- Private sector engagement and partnership
- Supporting partners and donors
- New technologies in screening of Cervical cancer program

Weaknesses

- Service disruption due to unavailability of program related commodities
- Delay in Procurement of Commodities.
- Weak Coordination with federal hospitals
- Inadequate monitoring of quality of services
- Inadequate e-LMIS data for commodity planning
- Integration of FP service data from private sector yet to be done
- Recording issue of all PPFP data in CYP
- Inadequate human resources at health facility
- Inadequate trained service providers
- Limited understanding of FP program investment, expenditure and return at governance level
- Inadequate regular data monitoring

Threats

- Program budget for FP and RH is continuously decreasing
- Challenges in coordination with subnational level
- Companies not submitting application in response to expression of interest notices for FP commodities
- Untimely supply of FP commodities by approved distributors
- Resistance from some communities, due to cultural and religious beliefs,
- Discontinuation of fistula care center due to shift in priority of donor/s.
- Changing Paradise of Population growth and issues regarding it.

PHC/ORC.1 About the program

In Nepal, the Primary Health Care Outreach Clinic (PHC/ORC) program was established in 2051 (1994) as a community-based effort to improve underprivileged and isolated populations' access to basic healthcare services. Family planning, immunization, maternity and postnatal care, treatment of common illnesses, and health education are just a few of the preventive, promotional, and curative services offered by PHC/ORCs, which function as extensions of primary healthcare facilities and health posts. These clinics are held monthly at set places, times, and dates to ensure that their target populations can get to them within a half-hour walk.

In order to provide services that are suited to local requirements and guarantee fair healthcare delivery, Auxiliary Nurse Midwives (ANMs), paramedics, Female Community Health Volunteers (FCHVs), and local NGOs work together. The PHC/ORC program addresses the needs of underserved communities and promotes better health outcomes by bringing healthcare closer to communities by focusing on financial and geographic barriers. This initiative is a prime example of Nepal's dedication to delivering primary healthcare at the local level.

Box PHC/ORC.1 Services of PHC/ORCs

Safe motherhood and new-born care:

- Antenatal, postnatal, and new-born care
- Iron supplement distribution
- Referral if danger signs identified.

Family planning:

- DMPA (depot-medroxyprogesterone acetate) pills and condoms
- Monitoring of continuous use
- Education and counselling on family planning methods and emergency contraception
- Counselling and referral for IUCDs, implants and VSC services
- Tracing defaulters.

Child health:

- Growth monitoring of under 2 years' children
- Treatment of pneumonia and diarrhoea.

Health education and counselling:

- Family planning
- Maternal and new-born care
- Child health
- STI, HIV/AIDS
- Adolescent sexual and reproductive health.

First aid:

- Minor treatment and referral of complicated cases.

PHC/ORC.2 Key Indicators for PHC/ORC services

Conduction of PHC/ORC

The percentage of scheduled primary healthcare outreach clinics conducted in seven provinces for fiscal year 2080/81 showed a significant increase in coverage compared to previous years. Nationwide, 93.31% of scheduled clinics were carried out in FY 2080/81. With 99.11%, Gandaki Province performed best, followed by Bagmati (94.79%) and Sudurpaschim (98.03%). Despite its improvement to 89.16%, Karnali Province still lags behind the national average, suggesting potential for improvement. (Table PHC/ORC.1)

Table PHC/ORC.1 Proportion of PHC/ORC sessions conducted out of planned in last three FYs 2078/79-2080/81

Provinces	FY 2078/79	FY 2079/80	FY 2080/81
Koshi	87.6	88.6	93.74
Madhesh	76.5	70.9	84.74
Bagmati	88.2	91.3	94.79
Gandaki	90.5	94.9	99.11
Lumbini	89.9	93.5	96.63
Karnali	78.4	81.4	89.16
Sudurpaschim	94.0	95.5	98.03
Nepal	**86.3**	**86.9**	**93.31**

Source: HMIS/DoHS

Service Users of PHC/ORC

Nationwide, the number of service users at PHC/ORC had increased from 22,89,178 in FY 2078/79 to 27,08,051 in FY 2080/81. Across provinces, the service users of PHC/ORC showed an increasing trend in all provinces, except for Karnali, and Sudurpaschim, where there was reduction in service users of PHC/ORC compared to previous years. Lumbini province had the highest service users of PHC/ORC (5,56,596 service users), followed by Madhesh province (5,40,280 service users), whilst Karnali province had the lowest PHC/ORC service users (1,48,488 service users) (Table PHC/ORC.2).

Table PHC/ORC.2 Service Users of PHC/ORC in last three FYs 2078/79-2080/81

Provinces	FY 2078/79	FY 2079/80	FY 2080/81
Koshi	3,27,822	3,48,928	3,60,589
Madhesh	4,17,532	4,59,043	5,40,280
Bagmati	2,96,196	3,32,957	4,02,833
Gandaki	2,24,688	2,96,212	3,20,371
Lumbini	4,72,822	5,31,202	5,56,596
Karnali	1,55,486	1,52,036	1,48,488
Sudurpaschim	3,94,632	3,91,733	3,78,894
Nepal	**22,89,178**	**25,12,111**	**27,08,051**

Source: HMIS/DoHS

Services Utilization from PHC/ORCs

In FY 2080/81, the number of peoples using PNC, FP method-Depo, and general treatment services from PHC/ORC had increased compared to FY 2079/80. On the other hand, the number of users utilizing services like ANC, Vitamin A for postpartum, FP method (condom, and pills) from PHC/ORCs has decreased compared to previous FY. (Table PHC/ORC.3)

Table PHC/ORC.3 Number of services utilized during PHC/ORCs in last three FYs 2078/79-2080/81

Outreach Clinic & Community Health Program	FY 2078/79	FY 2079/80	FY 2080/81
General Treatment	881,800	1,089,604	1,327,910
Antenatal Check-up	129,987	137,483	130,949
Postnatal Check-up	23,029	26,851	28,917
Vit A for Postpartum	16,799	21,495	18,561
FP Method-Depo-Number of women	100,122	92,223	424,309
FP Method-Condom-Piece	1,466,209	1,434,281	1,294,980
FP Method-Pills-Number of women	66,981	51,970	47,618

Source: HMIS/DoHS

Box PHC/ORC.2 SWOT Analysis of the PHC/ORCs

Strengths	Opportunities
• Strategic locations targeting the marginalized communities and hard to reach communities	• Partnership with local-level government
Weaknesses	**Threats**
• Targeted PHC/ORCs sessions not scheduled up to mark • Inadequate supervision and monitoring from the Province and federal level	• Not effective in urban settings

7 Nursing and Social Security Services Program

NSSD	Nursing and Midwifery Capacity Development Program	School Health Nursing Program Community Nurse Program	Female Community Health Volunteer Program	One Stop Crisis Management Center and Gender-based Violence Management Program	Geriatric Services Program	Bipanna Nagarik Aushadi Upachar Program

The Nursing and Social Security Division (NSSD) was established in 2075 B.S and is responsible for delivery of quality health services through capacity development of nursing and it's professionalism, including planning, coordination, supervision, monitoring and facilitation for various aspect of nursing, midwifery, school health and community nursing services and the evaluation of geriatric and gender based violence programme along with treatment and management facilities for selected diseases to impoverished Nepalese citizens at listed hospitals. The division is also responsible for development and revision of Female Community Health Volunteers (FCHVs) and other health related social volunteer mobilization policy, strategy, standard, protocol and guideline. There are three sections in NSSD: Nursing Capacity Development Section; Geriatric and Gender-based Violence Management Section; and Social Health Security Section.

7.1 Nursing and Midwifery Service Program

7.1.1 Nursing and Midwifery Capacity Development Programs

7.1.1.1 Skill Exchange Program for Critical Care Nurses

Nurses in critical care settings require advanced knowledge, nursing proficiency, and leadership skills. Regular practice, hands-on training, and orientation enhance these abilities. Recognizing the importance, NSSD organized a skill exchange program among critical care nurses. The skill exchange program, based on NHTC's Critical Care Nurses training package, spanned 30 days with 8 participants, four from each selected hospital (Bir Hospital, and Bharatpur Hospital). Participants, selected based on criteria of 6-12 months of critical care experience and a bachelor's degree in nursing, underwent a two-week rotation in the designated hospitals. Facilitators were critical care unit in-charges from the respective hospitals. During the four weeks, participants concentrated on developing skills and competencies outlined in two modules:

- Basic critical care and optional skills (as per hospital requirements)
- Advanced critical care and optional skills

The skill exchange program groomed nurses from selected hospitals as leaders, imparting best practices and skills for implementation in critical care settings.

1. Orientation to nursing college and private institution (1 batch) on health-related guideline and strategies.
2. NSSD organized a 14-day Midwifery Educators Training for 15 faculty members and clinical preceptors from 9 midwifery institutes and clinical sites
3. Capacity building for community health nurses 1 batch

7.1.1.2 Midwifery related activities

The NSSD took key steps to improve midwifery education and services. With support from the United Nations Population Fund, NSSD led the drafting of the first-ever National Midwifery Roadmap, outlining short-, mid-, and long-term plans for enhancing midwifery education, regulation, deployment, and professional development.

Till date, there is no provision of registration of midwifery educators in Nepal Nursing Council and six education institution and academia's are starting midwifery education programs. Therefore, there is a need for capacity building of the educators engaged in teaching and learning activities of PCL program. NSSD organized a 14-day Midwifery Educators Training for 15 faculty members and clinical preceptors from 9 midwifery institutes and clinical sites.

7.1.1.3 Bipanna Nagarik Aushadi Upachar Karyakram Capacity Building

- Hemodialysis training provided to 18 nursing staff
- To expand Continuous Ambulatory Peritoneal Dialysis services and improve access for patients undergoing peritoneal dialysis, a training package has been developed in coordination with the NHTC. As part of a pilot program, a 7-day training was conducted for 9 medical officers, and a 12-day training was conducted for nursing personnel.

7.1.2 School Health and Nursing Service Program

7.1.2.1 About the program

With an emphasis on enhancing students' academic and health status, Nepal's "School Health and Nursing Service Program" program seeks to include health services and interventions in schools at the federal, provincial, and local levels. Increasing health awareness, encouraging health-seeking behaviours, lowering absenteeism, improving academic

achievement, offering emergency medical assistance, and educating female students about sex education and reproductive health are some of the program's goals. The genesis of the school nurse program can be traced to the strategic directives delineated in the National Health Policy of 2076, specifically under Strategy 6.5.2. This strategic initiative underscores the incremental extension of school health programs and health awareness campaigns to institutions of higher secondary education. The policy advocates for the deployment of at least one health personnel in each school, operating in conjunction with the educational sector under the purview of the Ministry of Education, Science, and Technology (MoEST). Concurrently, the School Health and Nursing Service Guideline of 2076 received approval in the same period. (Box 7.1) This guideline aspires to institutionalize the pivotal role of school nurses, providing a comprehensive framework for establishing school health units at the institutional level. The school health unit is chaired by the school principal, with the appointed school nurse holding the position of member secretary of the unit. In 2076, the program was initiated as a pilot program and has been in operation. As of FY 2080/81, the program has been implemented in 1387 schools of which nearly 19 % of schools were supported by NSSD, and the remaining were owned by the provinces. (table 7.1) Few of the private schools also have implemented this program.

Box 7.1 Key objectives of School Health and Nursing service program

- Motivate adoption of healthy lifestyle by the children right away from school level
- Increase access to school health and nutrition program
- Prepare health, hygiene and learning friendly school environment
- Support to address ASRH and menstruation related problems
- Promote mental health of the school children
- Provide needful primary care and support and referral to hospital and reduce life threatening risks/ support in acute emergencies
- Provide skill-based health education
- Implement other public health programs at school

Table 7.1 School nurses supported by NSSD and Provinces

School Nurses	Supported by NSSD (Number)	Support by respective Province (Number)
Koshi	20	160
Madhesh	36	40
Bagmati	0	868
Gandaki	30	59
Lumbini	36	0
Karnali	102	0
Sudurpaschim	36	0
Nepal	**260**	**1,127**

It is encouraging for the program that during this phase of implementation, different provinces have already made their provincial level guideline and owned this program.

7.1.2.2 Key activities in FY 2080/81

- Developed social-emotional learning ToT package for School Health Nurse (SHN)
- A total of 41 school nurses from five local levels in Koshi Province, Madhesh Province, and Gandaki Province have been trained in social-emotional learning to promote the mental health of students under the School Health and Nursing Program.
- A study was conducted on assessment of effectiveness of school health and nursing service program in Nepal in coordination with national academy of medical science (NAMS)

7.1.2.3 Service delivered by school health nurse

- Providing promotive, preventive, curative and referral services
- Management of emergency room and provide first aid in schools
- Act as a leader in organizing school health program
- To create adolescent and child friendly school environment for effective learning
- Organizing awareness program for effective implementation of school health program
- Coordinating with parents to ensure health of the students
- To create healthy lifestyle and promote positive attitude among students
- Coordinate with local level
- Nutrition service support – BMI calculations, IFA distribution to adolescent, iron tablet, albendazole students, mid-day meal planning and ultra-processed food prevention
- Pyscho-social counselling -mental health such as suicide prevention, conversion disorder, stress anxiety, etc.
- Distribution sanitary pad

Box 7.2 SWOT analysis of school nurse program

Strengths	Opportunities
• Effective program for health promotion at school level remarkably supported with menstrual health, hygiene of adolescent girls • Health promotion activities on nutrition, NCD prevention, mental health and BMI calculation • Implementation of national program like Vitamin A, Deworming, IFA distribution, national immunization campaign and ASRH at school level	• Ownership of the program by provinces • Collaboration with MoEST • Absenteeism has been reduced among adolescent girl due to SHN program • Reduction of mental health issues and prevent suicide among students
Weaknesses	**Threats**
• Inadequate regular supervision and monitoring of the program. • Budget limitation for scaling up the program. • Drop out of the school health nurses • Less motivational factors for school health nurses • SHN national review was not conducted as budget was not allocated	• Sustainability of the program- both human resource and financial resources • Lack of clarity for nurses on whether they are responsible to the Ministry of Education or the Ministry of Health and Population.

7.1.3 Community Health Nursing Program

7.1.3.1 About the program

Community Health Nursing Program is an essential part of Nepal's healthcare system, and aims to promote, prevent, and treat health issues in people, families, and communities. Following the "Samudayik Swasthya Karyakram Nirdeshika, 2078" (Community Health Program Guidelines, 2078), the program was started as a pilot in FY 2078/79 in two municipalities: Bhaktapur Municipality in Bagmati Province and Bardibas Municipality in Madhesh Province and extended to Chandragiri and Waling Municipality. The program is divided into two stages: the first is baseline data collection, in which Community Health Nurses (CHNs) document each person's sociodemographic and health-related data, creating a health profile of every individual; the second phase is centered on community-based and community-directed health treatments utilizing a life cycle approach. Particularly in underprivileged and rural areas, CHNs are critical in providing vital health services and tackling public health issues at the grassroots level. In addition to preventing communicable diseases, NCDs and mental illness screening, counselling, referral and continuous follow-up, they are also responsible for promoting family planning, immunization, nutrition education, and maternal and child health care. In order to promote better habits and surroundings, CHNs also take part in health education, community engagement, and disease prevention initiatives.

CHNs continuously collect the health-related data of individuals and families using Community Health Toolkit (CHT) and are recorded and updated in the Community Health Information System (CHIS). Maintaining current health records for every member of a family and encouraging healthy lifestyles are its key goals in order to lessen the burden of both communicable and non-communicable diseases. In order to ensure equitable service delivery and close gaps in healthcare access, CHNs routinely recommend individuals of the community to medical facilities for essential treatments. Nepal's dedication to strengthening communities and improving health outcomes via an integrated and comprehensive strategy is reflected in this initiative.

Some of the roles and responsibilities of Community Health Officers (CHO) and CHNs as per the "Samudayik Swasthya Karyakram Nirdeshika, 2078" include;

- Formation and leading community health team for effective implementation of Community Health Service program
- Regular monitoring of the program to identify challenges and coordinate with different stakeholders for resolving those problems
- Regular review of the program and communicating achievements and feedback to local level, coordination committee and other stakeholders to strengthen the program
- Capacity building of community health nurses working in ward level
- CHN to work as a bridge between community and health facility and provide quality health service
- Strengthening Maternal, Neonatal, Child, Adolescent, Sexual and Reproductive health activities

The distribution of CHOs and CHNs among the four municipalities is shown in the table 7.2. A total of 53 CHNs had been serving in four municipalities (14 in Bardibas, 15 in Chandragiri, 14 in Waling and 10 in Bhaktapur. There are four CHOs in all, one in each municipality.

Table 7.2 Total Number of CHN and CHOs

Municipalities	Number of CHN	Number of CHO
Bardibas	14	1
Chandragiri	15	1
Waling	14	1
Bhaktapur	10	1
Total	**53**	**4**

7.1.3.2 Major activities during piloting in FY 2080/81

- Capacity building of CHNs on sexual and reproductive health, NCDs and mental health to implement the intervention phase of the program.
- In-service training provided to CHNs
- Annual review of the program was conducted at national level
- Household survey was done by CHNs. The outcome of this program is to prepare complete health profile of each household. Till now, health profile of a total of 66547 households is created by CHNs of which 11667 was in Waling, 14321 in Bardibas, 27696 in Chandragiri and 12863 in Bhaktapur.

Box 7.3 SWOT analysis of CHN program

Strengths	Opportunities
• Recruitment of human resource who are local with ample geographical and cultural proximity to population they serve • Digitalized system such as reminders, task generation for daily activities that leads to less chance of human error and create alertness • Accurate household data survey done by CHNs • Good coordination with local governments of implementation sites • CHNs are actively involved in Health promotion activities including NCD screening referral follow up and implementing national priority programs such as vaccinations, communicable diseases, mental health, maternal and neonatal health, etc. • Created digital health profile of every individual of each households	• Increasing interest of local levels to implement and uptake program on either cost-sharing model or full cost bearing model. • Involvement of partner organization for technical support. • Reduction of NCDs and mental health issues • Reduction of maternal and neonatal morbidity and mortality
Weaknesses	**Threats**
• Budgetary constraint • High human resources turnover • Difficulties in covering geographically challenging areas	• Scale up largely depends upon local levels of interest in taking up program.

7.1.4 Infection Prevention and Control (IPC) Program

7.1.4.1 About the program

Infection prevention and control (IPC) is crucial to providing high-quality healthcare. The establishment of a national IPC program is essential for addressing many challenges such as the high prevalence of HAIs, AMR, poor IPC practices, a lack of awareness and training, and so on in a complete and systematic manner. National antimicrobial treatment guidelines are in place, and there have been efforts in implementation of antimicrobial stewardship in a few hospitals. However, the implementation is poor.

IPC program helps to set a framework for coordinated action, lays the foundation for a safer, more resilient healthcare system that is better equipped to protect the health and well-being of all individuals. Furthermore, National IPC program is necessary to give a clear direction for the implementation of IPC program at all the national, subnational and facility levels. Moreover, it will also materialize continuous quality improvement through ongoing monitoring, evaluation and addressing the gaps in implementation of IPC program. Therefore, the development of a national IPC strategy is imperative to address various challenges like high incidence of Healthcare-associated infections (HAIs), Anti-microbial resistance (AMR), inconsistent IPC Practices, lack of awareness and training etc. comprehensively and systematically. National IPC guideline, 2079 provides a framework for establishing IPC program in national and subnational levels. Similarly the IPC manual, 2080 provides a clear guideline and structure to practice IPC during any of the procedures in the health facilities. As per the guideline, for the capacity building of the health workers, few batches of nurses, doctors and paramedics were trained in the basic level IPC training and also advanced level IPC training in collaboration with NHTC. Similarly, IPC assessment was conducted in all federal and most of the province level health facilities for identifying the

gap in the practice and strengthening IPC program at health facility level. The IPC program is aligned with the minimum service standard and clinical audit program ensuring patient and health worker safety.

7.1.4.2 Infection Prevention and Control (IPC) Strengthening and Follow-up Program

- IPC guideline development and endorsement: IPC manual 2080 was developed, disseminated at the provincial level (Butwal, Dhangadi, and Koshi Province), and implemented in the Federal Hospital
- IPC strategy drafted
- Healthcare-associated Infection Surveillance Standard Operative Procedure drafted.
- Assessment and follow-up on IPC were conducted in federal-level hospitals.
  - Assessment is done in 9 Federal Hospitals
  - Follow up in 4 Federal Hospitals

7.2 Female Community Health Volunteer (FCHV) Program

7.2.1 About the program

Female Community Health Volunteer (FCHV) program was established in 1988, and is a vital component of the nation's community-based healthcare system. The primary goal of the program was improving the quality and accessibility of primary healthcare services, especially for women and children. By 2050 B.S., the program had spread to all 77 districts after being introduced in 27 at first. It had changed from a ward-based strategy to a population-based model in 28 districts. The program's objectives are to empower women via education and skills, raise public health awareness, and involve local institutions in healthcare promotion in order to promote community health.

FCHVs are chosen by mothers' group and are essential in basic healthcare services, illness prevention, and health promotion. Initially, FCHVs used to receive 18 days (9 + 9 days) training, however, from FY 2077/78, the training has been revised to 10 days of basic training and 4 days of refresher training every four years. Following the training, to help them perform their duties, they are given essential resources such as medicine kit boxes, manuals, flipcharts, ward registers, Information Education and Communication (IEC) materials, FCHV bags, signboards and identity cards. In addition, they are provided with necessary supplies such as family planning commodities like pills and condoms, iron tables, vitamin A capsules and Oral Rehydration Solution (ORS) via health facilities.

Important public health milestones, including lower rates of maternal and infant mortality and the advancement of Millennium Development Goals (MDGs) 4 and 5, have been made possible significantly due to FCHVs effort. Likewise, FCHVs who are acknowledged as important contributors to community health are anticipated to contribute significantly to the attainment of Sustainable Development Goals (SDGs) by 2030. The latest amendment of FCHV strategy 2076 such as change in FCHVs selection criteria and institutional arrangements highlights the government dedication to strengthening FCHVs program.

There are currently about 50,396 FCHVs actively serving to health care in Nepal (figure 7.1). The crucial role FCHVs play in providing community healthcare is highlighted by these statistics, which show minor regional variations that reflect the dynamics of volunteer engagement in different provinces.

Box 7.4 Objectives of the FCHV Programme

Objectives

- Mobilize a pool of motivated volunteers to connect health programmers with communities and to provide community-based health services,
- Activate women to tackle common health problems by imparting relevant knowledge and skills;
- Increase community participation in improving health,
- Develop FCHVs as health motivators and
- Increase the demand of health care services among community people.

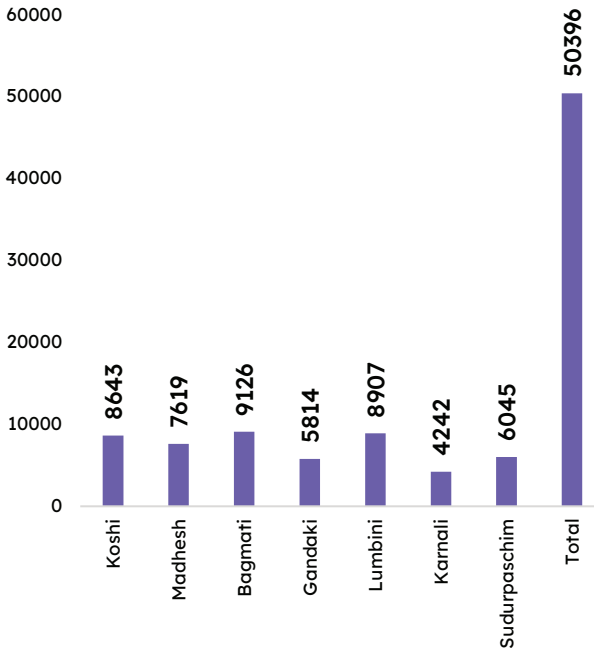


Figure 7.1 FCHV engagement in different provinces in FY 2080/81

7.2.2 Major Activities in FY 2080/81

Programmatic activities

- Audio visual aids/telefilms including FCHV role and health awareness was produced and telecasted in Nepal television
- Orientation and mobilization of FCHVs for national health programs was conducted
- FCHV review meeting was held at the province level and local level
- FCHV Day celebrated on 5th December by National, Provincial and every local levels

- Dress allowance, appreciation amount during farewell and travel allowance was distributed
- Development of FCHV's Fund Operational Guideline (Approval in-progress)
- Decision made on Free travel cost to FCHVs

FCHV's contributions in heath service delivery

- Distribution of the FP commodities (refill regular pills, emergency contraception pills, and distribute condoms)
- Conduction of the mother's health group meetings, discuss on issues and provide health education
- FCHVs support mother's and new-born's care during home visit them postnatal period (in the first week of delivery) to provide care and health counselling to postpartum mothers on breast feeding, care of mother and new born as well as danger signs of mother and new born, and encourage them for postpartum visits to institutions as per the national protocol. They also provide support to postpartum mothers in initiating breast feeding within 1 hour of birth and immediately provide Vitamin A capsule as well.
- FCHVs also play a crucial role in reducing malnutrition among children and women of reproductive age groups.
- FCHVs assess the acute malnutrition status of the children under 5 years of age by measuring the Mid-Upper Arm Circumference (MUAC) of children and then refer for further management as per their severity.

Box 7.5 Facilities for FCHVs

- A total of NPR. 10,000/- is provided to each FCHV as dress allowance every year.
- A travel allowance of NPR. 12,000/- is provided to each FCHV as transportation cost every year
- Since 2071/72, the government has allocated budget of NPR 20,000/- to each FCHVs as an appreciation for their contribution during the farewell to FCHVs over 60 years of age as recommended by health mothers' groups.
- International World Volunteer Day (5th December) is celebrated as Female Community Health Volunteer day every year
- GoN bears the 50% of premium of health insurance for individual FCHVs and also, they are one of the target groups to receive service through Social Service Unit of Health Facilities.
- Local and province level provides top up above-mentioned budget heading

7.2.3 FCHVs' Key Service Delivery Indicators

There was progressively increase in number of health mother's group meeting from FY 2078/79 to FY 2080/81 (figure 7.2).

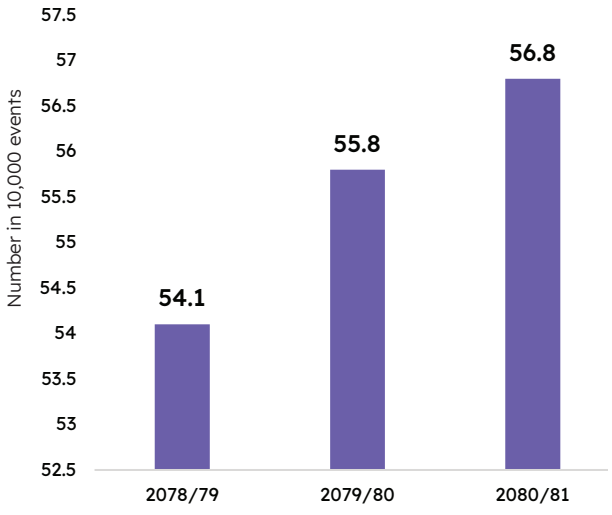


Figure 7.2 Mothers' health group meetings conducted by FCHVs FY 2080/81

Over the course of three fiscal years, from 2078–2079 to 2080–81, the distribution of commodities shows a downward tendency. Significant drops were observed in the distribution of condoms (673.3 pieces), iron tablets (29.8 tablets), and contraceptive pills (45.3) cycles) in FY 2080/81. The availability of condoms likewise gradually decreased, as did the distribution of pills. From FY 2078/79 to FY 2080/81, the distribution of iron tablets was cut in half, the most noticeable decrease. (table 7.3)

Table 7.3 FP commodity, iron tablet distribution by FCHVs in FY 2078/79 – 2080/81

Services	FY2078/79	FY2079/80	FY2080/81
Pills distribution (no. of cycles)	54.96	53.04	45.33
Condom distribution (pieces)	751.37	714.60	673.35
Iron tablet distribution	55.07	40	29.80

Source: HMIS/DoHS

There was continuation of home visits done by FCHVs focused on mothers who had delivered at home due to reasons of not being able to access the health facilities. Given their critical role in maternal and new-born care during home deliveries, FCHVs nationwide supported 28,699 skin-to-skin contact cases, 23,124 chlorhexidine applications, and 29,420 postnatal visits on the third day of birth. Madhesh Province had led in most of the interventions and Koshi Province came next, with notable contributions in every category. Moderate support was demonstrated by Lumbini, Karnali, and Sudurpaschim province. On the other hand, Gandaki and Bagmati provinces reported relatively smaller numbers in most of the interventions. (table 7.4)

Table 7.4 Support provided by FCHVs during home deliveries and postnatal visits for home-deliveries

Province	During Deliveries			Postnatal visits for home-deliveries		
	Initiating skin-to-skin contact after birth	Chlorhexidine applied on umbilicus	Ensured misoprostol tablets taken	≤24 hours of Birth	3rd day of Birth	7th day of Birth
Koshi	4,538	4,072	1,180	3,430	5,318	5,324
Madhesh	18,583	14,125	895	14,207	16,716	16,111
Bagmati	1,882	1,479	298	1,421	2,040	2,233
Gandaki	380	393	187	356	604	627
Lumbini	1,270	1,141	830	1,132	2,416	2,350
Karnali	1,491	1,400	466	1,218	1,728	1,753
Sudurpaschim	555	514	189	513	598	544
National	**28,699**	**23,124**	**4,045**	**22,277**	**29,420**	**28,942**

Source: HMIS/DoHS

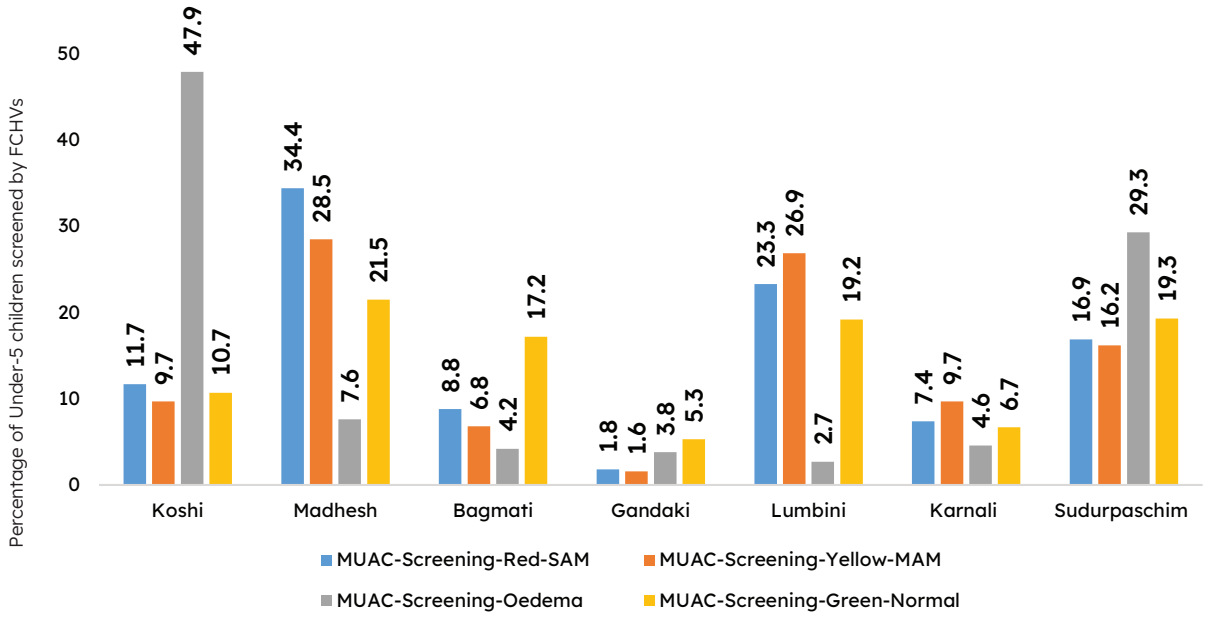
FCHVs helped in distribution of postpartum vitamin A as well as in initiating breastfeeding within the first hour of delivery. In the fiscal year 2080/81, nationwide efforts of FCHV to encourage early imitation of breastfeeding were 29,892 mothers and they distributed Postpartum Vitamin A to 71,804 mothers. FCHV's of Madhesh Province were found provided a greater number of supports in both categories. Koshi Province came next while Gandaki and Sudurpaschim displayed relatively lower numbers in both categories and Bagmati, Lumbini, and Karnali recorded moderate figures. (table 7.5)

Table 7.5 FCHVs' support in initiating breastfeeding within an hour of birth and distribution of postpartum Vitamin A in FY 2080/81

Province	Breast Feeding <1 hour of Birth	Distribution of Postpartum Vitamin A
Koshi	4,679	16,145
Madhesh	19,249	37,566
Bagmati	2,065	9,592
Gandaki	419	2,391
Lumbini	1,276	1,407
Karnali	1,613	1,759
Sudurpaschim	591	2,944
National	**29,892**	**71,804**

Source: HMIS/DoHS

The figure 7.3 highlights the critical the critical contribution of FCHVs in tracking Moderate Acute Malnutrition (MAM) and Severe Acute Malnutrition (SAM) during fiscal year 2080/81 by conducting MUAC (Mid-Upper Arm Circumference) examinations. FCHVs screened 28.5% MAM and 34.4% SAM in Madhesh Province. At Sudurpaschim Province they screened 29.3% of children with edema. They found the largest percentage of normal (green) MUAC tests was 47.9% in Koshi Province, which also had a notable percentage of children with SAM (11.7%). On the other hand, Gandaki Province had the lowest SAM (1.8%) and MAM (1.6%) rates, as well as the fewest edemas (3.8%) as identified by FCHVs. MAM was more common in Lumbini Province (26.9%) than SAM (23.3%), whereas Karnali had balanced rates of SAM (7.4%) and MAM (9.7%), but a comparatively lower frequency of edema (4.6%).



Source: HMIS/DoHS

Figure 7.3 Provincial differences in MAM, SAM and children with edema identified by FCHVs in FY 2080/81

Box 7.6 SWOT analysis of FCHV Program

Strengths	Opportunities
• FCHV program directly connects the health system to the community • Women empowerment • Regular and periodic training for the capacity building of FCHVs • Provision of additional funds for FCHVs during their farewell programs.	• Opportunity to strategic design in context of social and economic transition Creating social platforms for network of FCHVs and encouraging exchange of knowledge • Opportunities for women empowerment- many FCHVs are getting opportunities to be involved as local level representatives and parliamentarian
Weaknesses	**Threats**
• Lack of regulation of FCHV Fund • Lack of capacity building activities to update FCHVs with technical advancement and their personal growth • Loopholes in recruitment process of FCHV for example, Senior FCHVs often appoint their own family members, such as daughters-in-law or daughters, as new FCHVs, leading to nepotism. • Inequitable distribution of FCHVs according to population in Federalization context	• FCHVs are reluctant to get retired and wish to continue their service with financial benefits. • Decreasing work performance of FCHVs • Less utilization of services provided by FCHVs in metropolitan and sub-metropolitan cities • Multiple projects/programs utilizing FCHVs as field workers can be exhaustive to them • Many FCHVs are illiterate and senior citizens that impacts monthly reporting and the national data system • Some FCHVs hold dual roles, serving as both local leaders and FCHVs.

7.3 Social Service Unit (SSU) Program

7.3.1 About the Unit

The right to access free basic health services (BHS) and emergency services was reinstated in the Constitution of Nepal 2015, building on the Interim Constitution of 2063. The Social Service Unit (SSU), which began its operations in 2065 BS, was established with the primary objective of offering free or subsidized services to economically disadvantaged patients at referral hospitals. Over time, the program has expanded and is now operational in all provinces and districts.

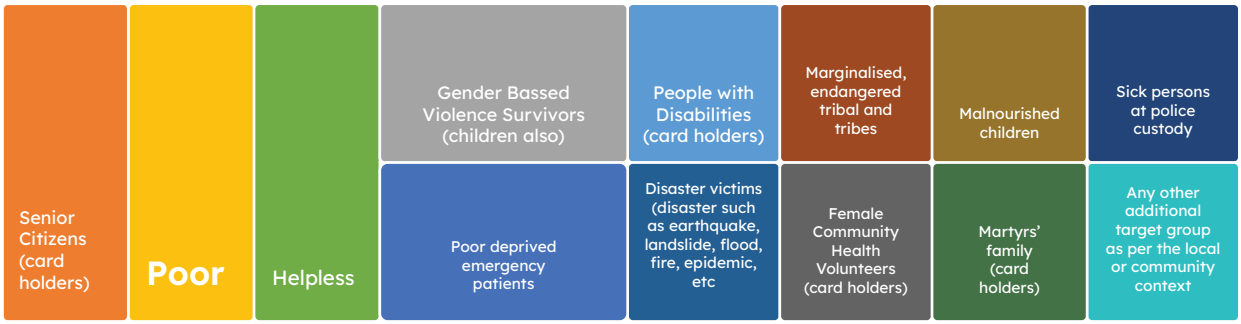


Figure 7.4 Target Population for SSU services

Source: SSU establishment and operation guideline,2078 (Revised 2079)

Box 7.7 Key Guiding Document: SSU Establishment and Operation Guideline, 2078 (Revised 2079)

Objectives of SSUs

- Enhance equitable access to and utilization of health services for targeted patient groups
- Ensure the provision of free or partially free regular or specialized health services to eligible patients
- Facilitate coordination of all social security programs, including health insurance, the deprived citizens' treatment fund, senior citizen (geriatric) health services, neonatal care, and free emergency services for vulnerable groups
- Create an enabling environment for the target group to access health services effectively and transparently

Institutional Mechanism

The SSU operates under the leadership of a hospital director, chief, or medical superintendent, with the SSU unit being led by a chief, deputy chief, and facilitators. Target group patients are provided with free or partially free services at the hospital, based on an evaluation of their financial status, identification card, and other observations. For survivors of gender-based violence (GBV), hospitals are required to provide all available services free of charge. Furthermore, SSUs play a key role in coordinating and facilitating access to various social security programs/services, such as the deprived citizens' treatment fund, social health insurance, geriatric health care, neonatal care, specialized services, and emergency health services.

Milestones in the establishment of SSUs from piloting to scale up in all districts

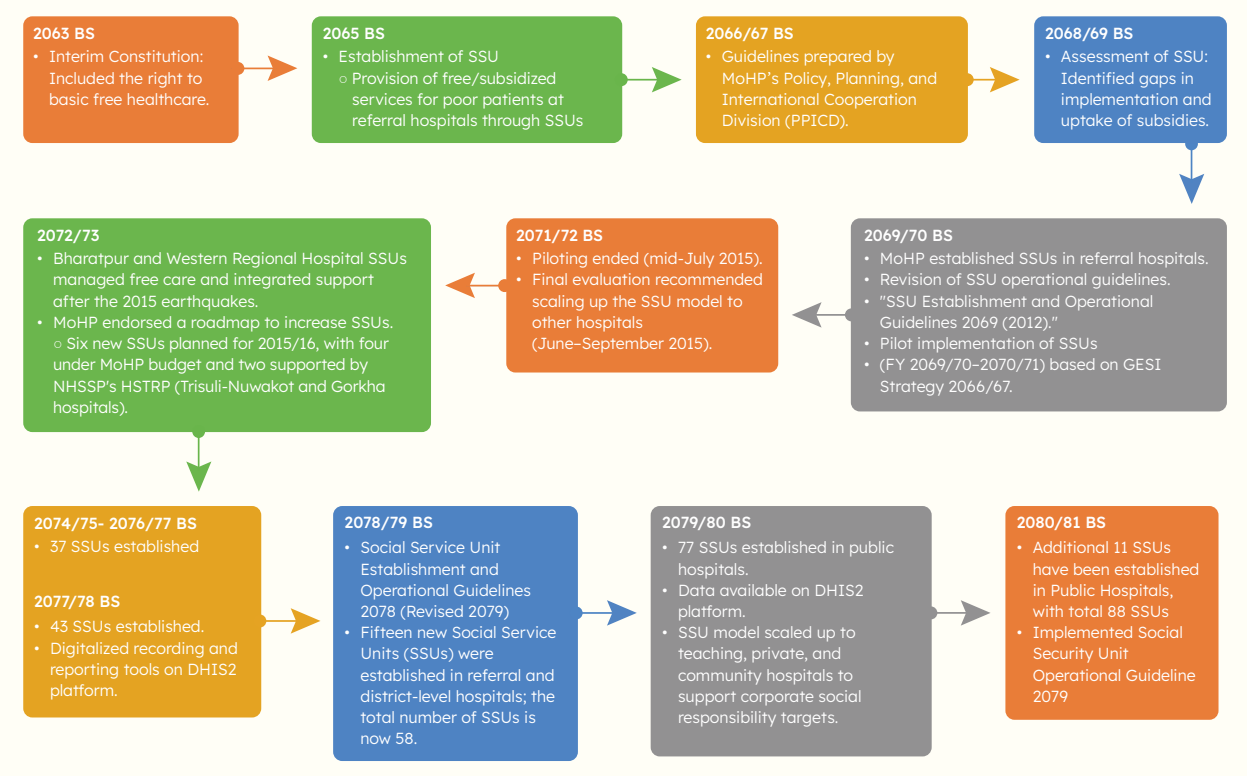


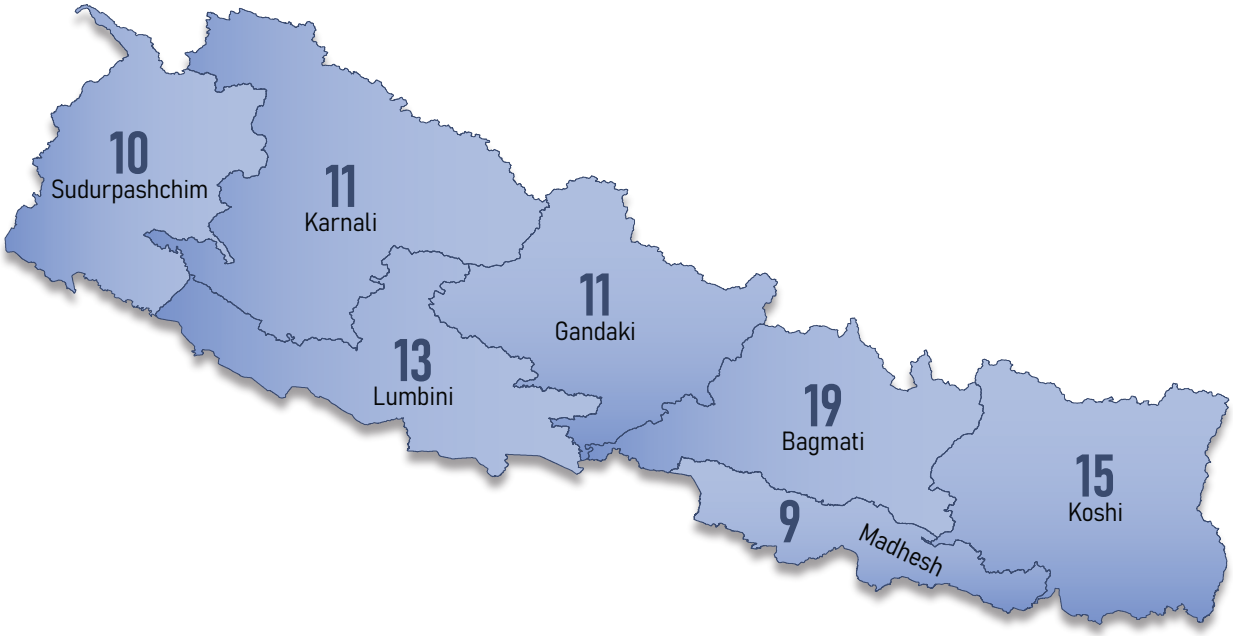
Figure 7.5 Milestones in the establishment of SSU from piloting to scale up in all district

7.3.1.1 Major Activities and Achievements in FY 2080/81

- 88 public hospitals are providing health services through SSUs
- Onsite coaching and mentorship provided to service providers of SSU, OCMC and Geriatric Service and Home-based care centres
- The guidelines for hospital reimbursement for medical treatment of Janayudha, Janaandolan, Madhesh Terai Andolan, conflict, and disaster victims has been approved
- Bir Hospital and the National Trauma Center have been reimbursed a total of NPR 593,815.46 for providing treatment to conflict and disaster victims
- The initiatives focused on enhancing healthcare access for Rautey, Musahar, Chepang, Majhi, Kusunda, Jhagar, and Satar communities

Social Service Unit Sites

As of FY 2080/81, a total of 88 Social Service Unit (SSU) sites are operating across Nepal to support patients in accessing healthcare services. Bagmati Province has the highest number of SSU sites (19), followed by Koshi (15), Lumbini (13), Gandaki (11), Karnali (11), Sudurpaschim (10), and Madhesh (9) (figure 7.6).



Source: CBS AND IMIS/HIB

Figure 7.6 Total SSU Sites (Province Wise)

Cases served through SSU

The number of cases served through SSU services has more than doubled, increasing from 37,425 in FY 2079/80 to 78,504 in FY 2080/81. The highest number of cases in FY 2080/81 was served in Sudurpaschim (17,585), followed by Bagmati (18,313) and Koshi (11,098). All provinces have seen a significant rise in SSU-supported cases, reflecting an expansion in service coverage and utilization (table 7.6).

Table 7.6 Total cases served through SSU services in FY 2080/81

Total Cases Served through SSU services	Nepal	Koshi	Madesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
FY 2079/80	37425	7791	3509	4894	2537	6296	2634	9764
FY 2080/81	78504	11098	9692	18313	7847	8991	4978	17585

Source: CBS AND IMIS/HIB

Box 7.8 SWOT analysis of SSU

Strengths	Opportunities
• Robust legal framework supporting the program • Institutional authorities have the capacity to recommend eligible populations in accordance with operational guidelines • Well-established network with SSUs at referral sites • Transparency in service delivery, with beneficiary names publicly published	• Identification of target populations and program estimates through coordination with relevant line ministries and divisions • SSUs can serve as a single-entry point for social health security and safety net programs in health
Weaknesses	**Threats**
• Complex documentation process for identifying the target population • Low awareness among the target population regarding the provisions of SSUs	• Adverse selection in identifying beneficiaries • Frequent changes in hospital leadership

7.3.2 One Stop Crisis Management Center (OCMC) and Gender-based Violence Management Program

7.3.2.1 About the program

Gender-Based Violence (GBV) is a significant human rights issue and public health concern which profoundly impacts the physical and mental health of the individual survivor and his/her children and imposes a social and economic burden to the society. It is inextricably linked to the gender norms and unequal power relations between genders in the society, predominantly affecting women and girls. Violence against Women and Girls (VAWG) is one of the manifestations of gender inequality. In Nepal, a considerable proportion of women and children still experience various types of GBV, which causes serious bodily, sexual, and psychological trauma. Efforts to address and manage GBV holistically have been hampered by the absence of consistent and efficient approaches. The MoHP has been appointed by the Government of Nepal as the principal authority to carry out Clause 3 of the National Action Plan 2010 against GBV in recognition of this difficulty. The Geriatric and GBV Management section of NSSD at DoHS is the focal point for formulating policies, strategies, guidelines and programs to combat GBV. Hospital-Based One-Stop Crisis Management Centers (OCMC) provide a secure and encouraging setting where survivors can get police services, psychosocial counselling, medical care, and legal support all in one location. By addressing the urgent need for a coordinated response to GBV, these facilities guarantee prompt and efficient assistance. OCMCs, which are found at hospitals in different districts, are crucial in lowering the obstacles survivors must overcome to obtain necessary services.



Figure 7.7 GBV Situation in Nepal, NDHS 2022

Significant progress has been achieved by the Government of Nepal (GoN) in amending laws and regulations to combat GBV in the nation. Women, children, men, and members of sexual and gender minority groups are among the survivors of violence served by these institutions. These facilities must provide GBV survivors with seven key services in accordance with OCMC Operational Guideline 2077, guaranteeing all-encompassing care and support including health services, psycho-social services, medico-legal services, safer homes initiatives, security, and rehabilitative services.

Box 7.9 Key Guiding documents for GBV programs

National Population Policy, 2071

Health sector Gender Equality and Social Inclusion (GESI) strategy, 2065/66 (2009)

Operational Guideline of OCMC, 2077

Clinical Protocol on GBV, 2077

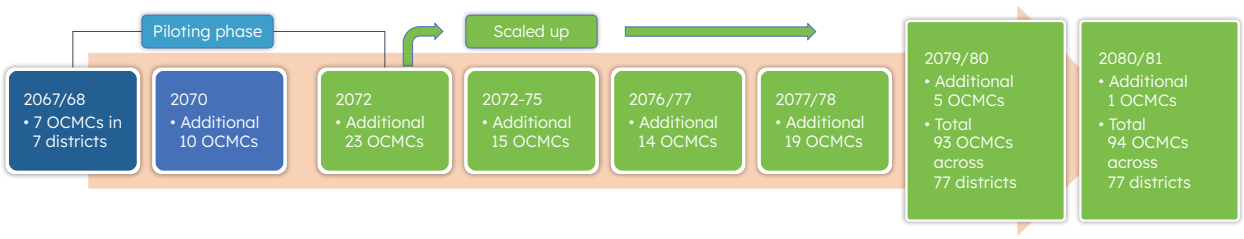


Figure 7.8 Important milestones in the establishment of OCMCs

7.3.2.2 Major Activities in FY 2080/81

- Interaction program with related ministries and stakeholders to strengthen the OCMC program.
- Orientation program for health managers to strengthen health services for GBV survivors.
- OCMC provincial review conducted in seven provinces
- Capacity building for Service provider providing service in the safe home
- Management of child abuse capacity building package drafted and piloted in Kathmandu

7.3.2.3 Key Indicators of OCMC Services in FY 2080/81

Number of cases served in FY 2080/81

At the national level OCMC, the number of reported perpetrators increased from 6,247 to 8,824, while the number of newly recorded cases increased from 9,605 to 12,861. There was a little increase in follow-up cases from 3,023 to 3,081. The number of reported perpetrators (from 1,046 to 1,647) and newly registered cases (from 1,319 to 1,901) increased significantly in Koshi Province at the provincial level. Likewise, there was a notable increase in new cases in Bagmati Province (from 825 to 2,086). In contrast to the comparatively consistent number of new cases, Madhesh Province reported a decline in the number of perpetrators (from 2,572 to 1,661) and follow-up cases (from 888 to 209). All of the provinces Gandaki, Lumbini, Karnali, and Sudurpashchim had shown a significant rise in reported cases of violence and the perpetrators, however, Gandaki Province showed the largest percentage increase in new cases, rising from 234 to 781. (table 7.7)

Table 7.7 Cases served from OCMCs in FY 2080/81

Province	Perpetrators reported (in number)		Follow-up cases (in number)		New cases (in number)	
	FY 2079/80	FY 2080/81	FY 2079/80	FY 2080/81	FY 2079/80	FY 2080/81
Nepal	**6,247**	**8,824**	**3,023**	**3,081**	**9,605**	**12,861**
Koshi	1,046	1,647	694	397	1,319	1,901
Madhesh	2,572	1,661	888	209	3,216	3,202
Bagmati	719	1,450	236	571	825	2,086
Gandaki	150	619	11	230	234	781
Lumbini	511	1,336	100	179	1,631	2,017
Karnali	274	568	527	797	825	1,006
Sudurpashchim	975	1,543	567	698	1,555	1,868

Source: HMIS/DoHS

Type of violence among new cases

The table 7.8 shows the percentage of different forms of violence among newly reported cases in Nepal and its provinces. Nationally, 19.72% of cases are emotional violence, with Bagmati having the lowest percentage (10.55%) and Sudurpaschim having the highest (28.96%). The percentage of people nationwide who are denied resources, opportunities, or services is 10.11%; Madhesh has the greatest percentage (13.84%), while Gandaki has the lowest percentage (7.17%). The percentage of harmful traditional behaviors is 2.02%, with Madhesh reporting the highest percentage at 5.62%. At 4.35%, violence against children or forced marriage is most prevalent in Lumbini (20.28%). With a countrywide prevalence of 26.82%, physical violence is the most common form, with Karnali having the highest rate at 32.5%. The greatest percentage (29.05%) is seen in Bagmati, where sexual assault accounts for 13.2%. Nationally, rape cases make up 16.8% of all instances; the highest percentage is reported in Karnali (26.44%). There are differences in the reporting and prevalence of violence between provinces, as evidenced by the overall proportion of cases reported, which varies from 86.69% in Madhesh to 99.53% in Sudurpaschim.

Table 7.8 Type of violence among new registered cases of OCMC

Type of Violence among the total new registered cases	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
Emotional violence (%)	19.72	18.88	26.76	10.55	16.13	13.44	16.1	28.96
Denial of resources/ opportunities/services	10.11	8.63	13.84	7.53	7.17	6.74	8.95	13.6
Harmful traditional practices (%)	2.02	1.42	5.62	0.34	0.26	0.35	1.49	1.18
Child/forced marriage related violence (%)	4.35	0.74	1.12	1.34	0.77	20.28	1.19	2.89
Physical violence (%)	26.82	30.77	22.02	18.02	30.6	30.64	32.5	32.07
Sexual assault (%)	13.2	12.47	10.21	29.05	20.23	6.25	9.64	7.87
Rape (%)	16.8	25.09	7.12	20.85	16.77	18.94	26.44	12.96
Total Percentage	**93.02**	**98**	**86.69**	**87.68**	**91.93**	**96.64**	**96.31**	**99.53**

[*Multiple response, total % more than 100]

Source: HMIS/DoHS

Types of Services received from OCMC by new cases

OCMC has been providing various services to individuals who suffered from any type of violence. The distribution of OCMC services by new cases across Nepal and its provinces during FY 2080/81 is shown in the table 7.9. With 29.19 percent of cases nationwide, psychosocial counseling was the most commonly offered service, with Sudurpaschim having the largest percentage (31.63%). Across the country, medico-legal services made up 10.88% of the total, with Koshi reporting the largest percentage (15.60%). In Lumbini, HIV testing and counseling were most common (13.67%), accounting for 10.54% of the total nationwide. Pregnancy testing accounted for 6.67%, with Karnali having the largest percentage (9.85%). Safe abortion services were offered in 1.05% of cases, STI treatment in 1.23%, and emergency contraception in 1.79%. Regional differences in service use are shown in the data, which also emphasizes the need of physical exams and psychosocial therapy in every province.

Table 7.9 Services received from OCMC by new cases in FY 2080/81

Particulars	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
Psychosocial counseling	29.19%	29.43%	35.81%	24.82%	28.42%	26.41%	25.92%	31.63%
Physical Examination	25.03%	25.64%	17.40%	28.16%	26.25%	27.47%	21.23%	28.92%
Medico-legal service	10.88%	15.60%	10.10%	12.51%	12.41%	8.04%	12.30%	6.78%
Injury related services	10.56%	10.34%	13.45%	9.13%	11.98%	11.23%	8.22%	8.83%
HIV testing and counseling (HTC)	10.54%	9.97%	9.90%	12.17%	11.09%	13.67%	8.83%	6.95%
Pregnancy test	6.67%	4.09%	7.97%	5.52%	4.77%	8.73%	9.85%	5.61%
Treatment of mental illness	3.05%	1.72%	0.79%	3.57%	1.82%	0.52%	8.34%	7.14%
Emergency Contraceptives	1.79%	2.04%	1.89%	1.95%	1.74%	1.58%	1.75%	1.54%
STI Treatment	1.23%	0.46%	2.13%	1.34%	0.54%	0.47%	1.53%	1.90%
Safe Abortion Service	1.05%	0.73%	0.57%	0.83%	0.97%	1.87%	2.02%	0.70%
Total Percentage	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

[*Multiple response, total % more than 100]

Source: HMIS/DoHS

Box 7.10 SWOT Analysis of OCMC and GBV Management Program

Strengths	Opportunities
• Legal framework and operational guidelines • Continuous capacity building activities • Integrated services at one location for survivors	• Establishment of good coordination mechanism among all stakeholders who have been involved the case management through OCMC • Integrated supervision and monitoring from other related sectors
Weaknesses	**Threats**
• Limited resources in government hospitals • Inadequate skilled HR • Limited awareness on gender-based violence management among community people. • Limited awareness of the availability of OCMC services in hospitals among local-level health workers and FCHVs. • Limited funding for safe homes and rehabilitation service for GBV survivors. • Inadequate readiness of centers per the OCMC establishment and operation guideline	• Frequent transfers and low retention of trained staffs • Perpetrators usually family members or intimate partner • Lack of support faced in re-integrating the survivors back to the families/communities • Funding mechanism is dependent on federal government

7.3.3 Geriatric (Senior Citizens) Services

7.3.3.1 About the program

Nepal is undergoing a demographic shift, marked by an increase in life expectancy and a growing proportion of elderly individuals within the population. As per the 2078 (2021) census, the country is home to 2.97 million elderly people, representing 10.21% of the total population. Senior citizens are defined by the Senior Citizens Act, 2063 as individuals aged 60 years or older. This definition helps shape the scope and coverage of services aimed at elderly individuals.

The Constitution of Nepal ensures that senior citizens receive special protection and social security from the state. In alignment with this commitment, the National Health Policy 2076, the Fifteenth Plan (2075/76-2080/81), and the Gender Equality and Social Inclusion (GESI) strategy within the health sector emphasize the government's dedication to creating an equitable and inclusive health system. These policies aim to improve elderly citizens' access to quality healthcare services, tailored to their specific needs.

The geriatric health service strategy, 2078/79 – 2087/88 acknowledges that senior citizens are at a higher risk of chronic conditions and multi-morbidities, often accompanied by a decline in functional capacity. It emphasizes the need for health services to address these challenges by considering the specific limitations and requirements of the elderly. The strategy includes both population-based and service delivery approaches aimed at promoting healthy aging.

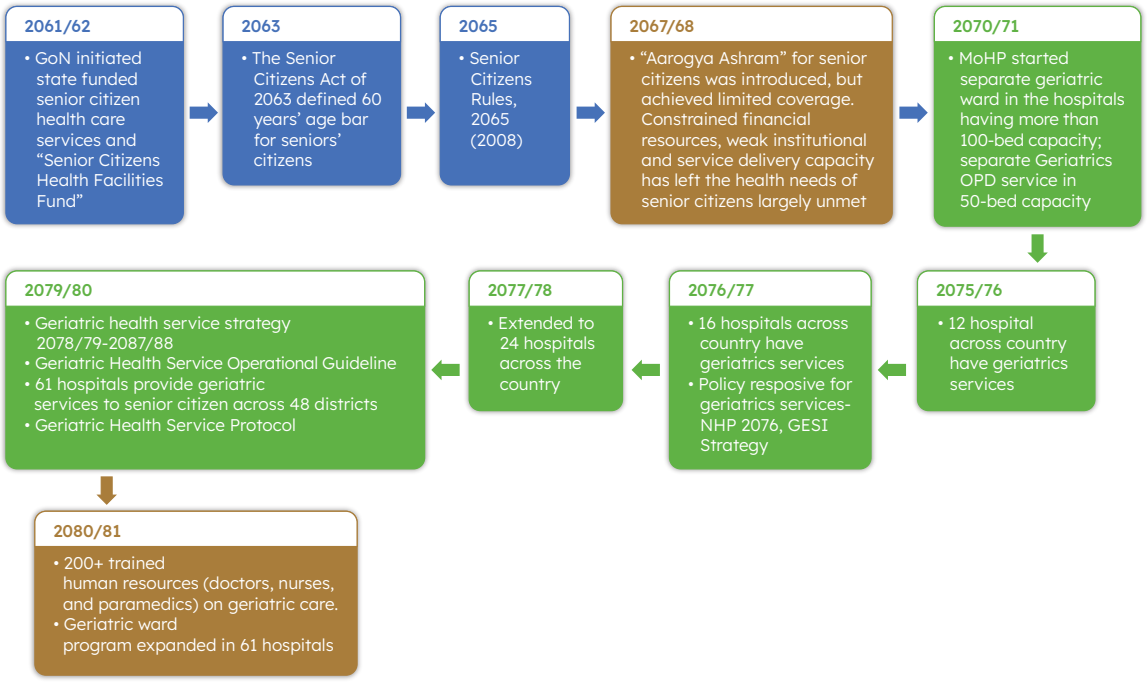


Figure 7.9 Milestone in the geriatrics health services in Nepal

Table 7.10 List of hospitals providing geriatric care across province

Koshi Province (10)	Madhesh Province (8)	Bagmati Province (11)	Gandaki Province (6)	Lumbini Province (13)	Karnali Province (6)	Sudurpaschim Province (7)
Mechi Hospital	Janakpur Hospital	Bhaktapur Hospital	Gorkha Hospital	Prithvichandra Hospital, Nawalparasi	Provincial Hospital, Surkhet	Seti Hospital
Taplejung Hospital	Siraha Hospital	Trishulli Hospital	Dhaulagiri Hospital	Lumbini Provincial Hospital	Dailekh Hospital	Mahakali Hospital
Pachthar Hospital	Kalaiya Hospital	Dhading Hospital	Damauli Hospital	Gulariya Hospital	Jajarkot Hospital	Baitadi Hospital
Illam Hospital	Sarlahi Hospital	Hetauda Hospital	Myagdi Hospital	Tamghas Hospital	Humla Hospital	Bajhang Hospital
Udaypur Hospital	Gaur Hospital	Rasuwa Hospital	Syangja Hospital	Pyuthan Hospital	Kalikot Hospital	Darchula Hospital
Dhankuta Hospital	Ram Uma Smarak Hospital	Dhulikhel Hospital	Pokhara Academy of Health Sciences	Kapilvastu Hospital	Karnali Academy of Health Sciences	Tikapur Hospital
Sankhuwasabha Hospital	Bardibas Hospital	Bir Hospital		Palpa Hospital		Dadeldhura Hospital
Bhojpur Hospital	Narayani Hospital	Bharatpur Hospital		Rolpa Hospital		
Khotang Hospital		Teku Hospital		Tulsipur Hospital		
Koshi Hospital		Nardevi Hospital		Gulmi Hospital		
		Trauma center		RAHS		
				Bheri Hospital		
				Salyan Hospital		

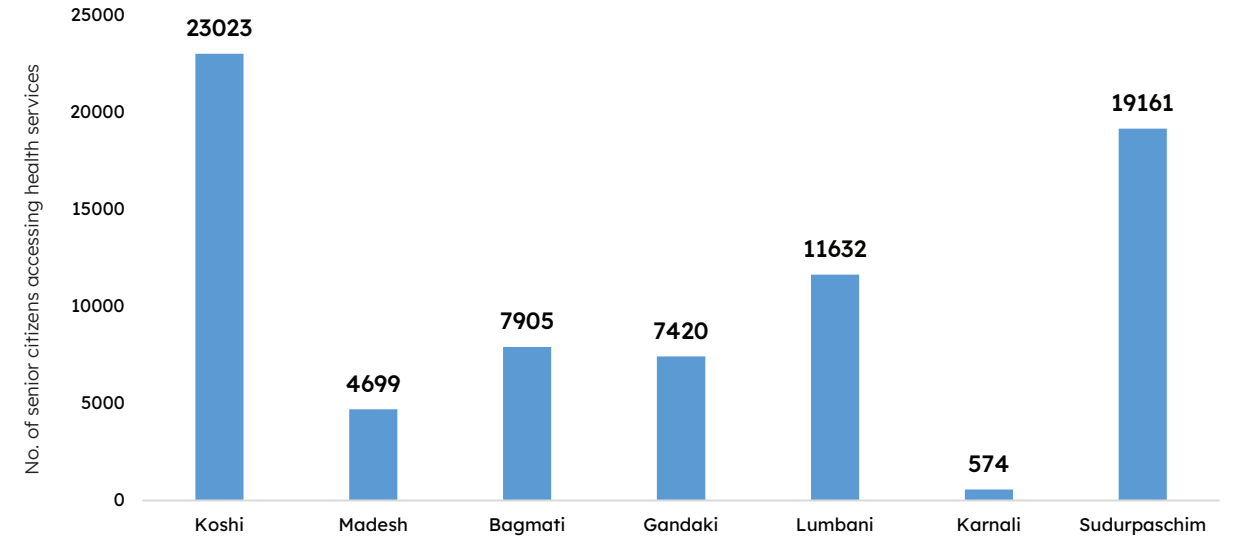
7.3.3.2 Major Activities and Achievements in FY 2080/81

- 61 hospitals provide geriatric services to senior citizens under the government geriatric ward program scheme.
- 200+ trained human resources on geriatric care.
- Conducted an interaction program on the effectiveness of geriatric and social security services across all seven provinces, involving hospital chiefs and unit in-charges from implementing hospitals.
- Organized a workshop on delivering hospital services to the geriatric population in collaboration with the Ministry of Women, Children, and Senior Citizens and other stakeholders.
- Provincial consultation workshop conducted for drafting national dementia care work plan
- Conducted orientation and advocacy program to local-level leaders and stakeholders on health insurance as well as geriatric care program for the geriatric population.
- Provincial consultation workshop conducted for drafting national dementia care work plan
- Conducted orientation and advocacy program to local-level leaders and stakeholders on health insurance as well as geriatric care program for the geriatric population.

7.3.3.3 Key Indicators of Geriatric Services in FY 2080/81

Coverage of the Senior Citizen (Geriatric) Services

The coverage of senior citizen health services across different regions in FY 2080/81. Koshi province has the highest coverage, while Karnali has the lowest. The overall national coverage for FY 2080/81 is 74,414. (figure 7.10)

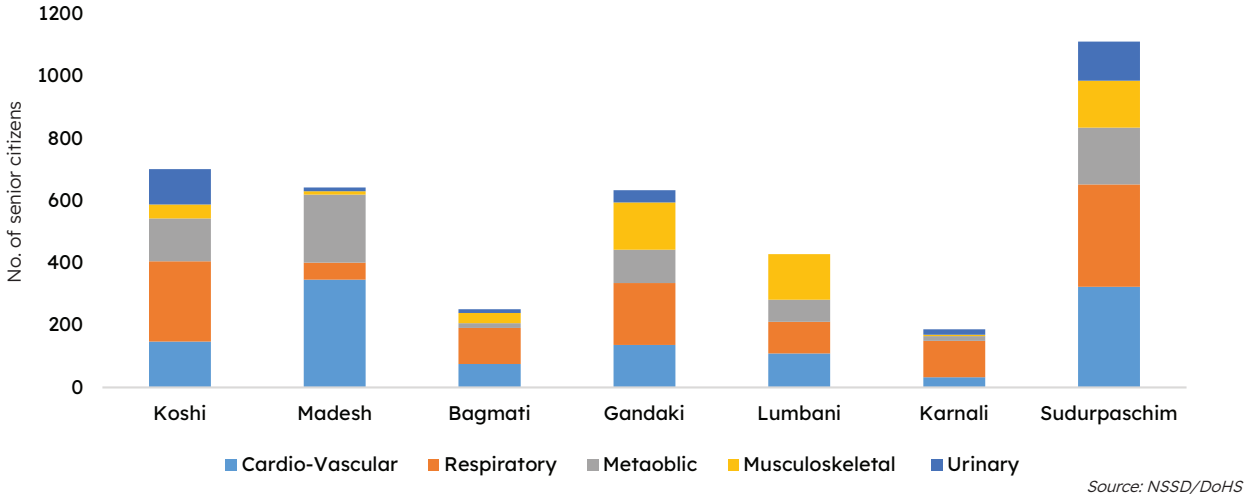


Source: NSSD/CBS

Figure 7.10 Coverage of Senior Citizen Health Services in FY 2080/81 Total Uses (60+)

Common Morbidities of Senior Citizens receiving services

The stacked bar graph (figure 7.11) illustrates common morbidities among senior citizens accessing services in Fiscal Year 2080/81 across different province. Each bar represents a province (Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali, and Sudurpaschim), and the colored segments within each bar show the number of senior citizens affected by Cardio-Vascular, Respiratory, Metabolic, Musculoskeletal, and Urinary conditions. The graph allows for a visual comparison of the prevalence of each morbidity type across the regions.



Source: NSSD/DoHS

Figure 7.11 Common Morbidities among senior citizens accessing services in FY 2080/81

Box 7.11 SWOT Analysis of Geriatric Services

Strengths	Opportunities
• Strengthens continuum of care • Our policies have prioritized geriatric population for access of health care • Budget allocation for geriatric service up to primary level hospitals	• Fellowship programs can be initiated to produce geriatric specialized human resources • Integrated supervision and monitoring
Weaknesses	**Threats**
• Insufficient allocated budget as per demand of elderly population • Scarcity of skilled human resources trained in geriatric services • Geriatrics friendly health services have not been implemented up to community level	• Frequent turnover of the trained staffs • Growing elderly population and increasing geriatric service demand

7.3.4 Other SSU Programs

7.3.4.1 Provision of Treatment for the Injured Person of Janayuddha, Jana-andolan, Terai/ Madhesh Andolan, Earthquake, and Victims of Conflicts.

Exercising the authority granted by section 64 of the Public Health Service Act, 2075, GoN has developed the procedures for Reimbursing Hospitals for Medical Treatment of Victims of Janayuddha, Jana-andolan, Terai/Madhesh Movement, Earthquake and Victims of Conflicts. According to this procedure, the government annually allocate the budget to provide reimbursement to the hospitals for the medical treatment of those victims.

The procedures have following provisions regarding medical treatment:

- The injured person will have to get medical treatment at government/community hospitals within the country
- The Government of Nepal will reimburse the expenses incurred for medical treatment of the injured person on the basis of certified bills to the concerned hospital without any duplication.
- While requesting reimbursement for medical treatment provided to the injured person, the hospital shall submit a report in the format as per Schedule-1 to the DoHS with following documents enclosed.
    - Application in the format as per Schedule-2
    - A letter of recommendation from the Ministry of Health and Population for medical treatment of the injured or an identity card revealing the identity of the injured or a letter of recommendation from the District Administration Office or the Ministry of Home Affairs
    - A certified bill from the head of the hospital.
- The treatment expenses shall be reimbursed in such a manner that the service fee rate of the concerned hospital does not exceed the rate determined by the health insurance program.

In FY 2080/81, DoHS has reimbursed NPR 593,815.46 to Bir Hospital and the National Trauma Center.

7.3.4.2 Treatment for Victims of Acid Attack

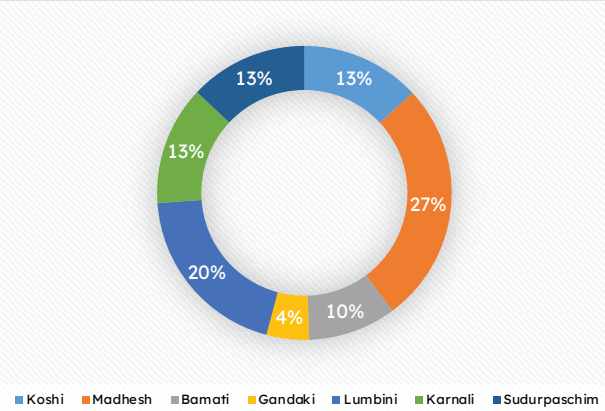
The MoHP has endorsed the procedure for treatment of Acid-Attack victims, 2078 which serves as a guidance to implement the provision of free treatment of acid-attack victims in Nepal. This procedure has enlisted four hospitals in the Kathmandu valley as dedicated hospitals for the treatment of acid-attack victims and they will provide treatment free of cost to the victims. However, the cosmetic-related treatment is not covered under this procedure. The four dedicated hospitals for treatment of acid-attack victims are:

- Tribhuvan University Teaching Hospital, Kathmandu
- Bir Hospital, Kathmandu
- Kirtipur Hospital, Kirtipur, Kathmandu, and
- Patan Hospital, Lalitpur

7.4 Bipanna Nagarik Aushadhi Upachar Program (Impoverished Citizen's Treatment Program)

7.4.1 About the program

The Bipanna Nagarik Aushadi Upachar Kosh (Impoverished Citizen's Treatment Fund) was launched in FY 2066/67 BS to enhance healthcare accessibility for marginalized populations. The program aims to support impoverished individuals undergoing treatment for selected chronic diseases. Its guidelines, formulated and implemented in 2067 BS under the title "Bipanna Nagarik Aushadhi Upachar Kosh Nirdeshika," have since undergone multiple revisions. Ministerial-level approval was granted in 2075 BS, with further updates in 2076 BS, 2077 BS and 2080 BS, and named as "Bipanna Nagarik Aushadhi Upachar Karyakram Sanchalan Nirdeshika, 2080".



Source: NMICS, 2019

Figure 7.12 Estimated proportion of poor people across the province

The guidelines enlist empanelled health facilities where eligible individuals can access treatment for conditions covered by the fund. The program primarily focuses on providing financial assistance for the treatment of eight critical diseases: kidney disease, heart disease, cancer, head injuries, spinal injuries, Parkinson's, Alzheimer's, and sickle cell anemia. By partnering with designated hospitals, the initiative seeks to ensure that impoverished Nepalese citizens receive essential medical care for these conditions.

Scheme of Bipanna Nagarik Aushadi Upachar Program

Table 7.11 Scheme of Bipanna Nagarik Aushadhi Upachar Kosh Nirdeshika, 2080

S.N.	Diseases	Details	Scheme Amount (Rs)
1	Kidney disease	Kidney transplant	Up to 4 lakhs
		Acute Glomerulonephritis, Nephrotic syndrome, Acute kidney injury	Up to 1 lakh
		Medicine after kidney transplant	Up to 1 lakh
		Human Leukocyte Antigen (HLA cross-match) of organ donor and recipient	50 thousand (maximum)
		Haemodialysis (up to 2 sessions in a week or as per the prescription of treating doctor if session is to be increased)	2500 (per session)
		Haemodialysis of seropositive patients	4000 (per session)
		Peritoneal dialysis (maximum 90 packets per patients, or maximum of 120 packets as per the prescription of treating doctor (regular update of prescription in 3 months, mandatory)	501 (per packet)
2	Heart diseases	α. Aortic surgery β. Placement of pacemaker and stent, ablation, complete damage of heart valve or treatment of heart failure	Up to 1 lakh
3	Cancer	Surgery of different types of cancer, chemotherapy, radiotherapy, medicine and medical products, bed and laboratory charges	Up to 1 lakh
4	Parkinson's	Medicine and medical products, bed and laboratory charges	Up to 1 lakh
5	Alzheimer's	Medicine and medical products, bed and laboratory charges	Up to 1 lakh
6	Spinal injury	Surgery, medicine and medical products, diagnostic services, bed charges including rehabilitative services	Up to 1 lakh
7	Head injury	Surgery, medicine and medical products, diagnostic services, bed charges including rehabilitative services	Up to 1 lakh
8	Sickle cell anaemia	Surgery, medicine and medical products, laboratory services and bed charges	Up to 1 lakh

7.4.2 Key Service Indicators

Number of Listed Hospitals

A total of 135 hospitals are enlisted to offer various medical services under Bipanna Nagarik Aushadhi Upachar Karyakram in FY 2080/81.

Number of listed hospitals by type of disease

A total of 107 hospitals provides haemodialysis services, making it the most widely available specialized service. As of FY 2080/81, haemodialysis services are provided in 42 districts and will be gradually scaled up in remaining 35 districts. Continuous Ambulatory Peritoneal Dialysis (CAPD) services are accessible in 9 hospitals, and kidney transplants services are provided by 6 hospitals. Twenty-six 26 hospitals provide treatment for heart disease, and 32 hospitals are listed for cancer care. Additionally, 15 hospitals are listed for Sickle Cell Anemia services (table 7.12). From the listed hospitals, patients can avail the schemes according to "Bipanna Nagarik Aushadhi Upachar Kosh Nirdeshika, 2080.

Table 7.12 Number of health facilities listed in Bipanna Nagarik Aushadhi Upachar Program according to different type of diseases

Disease Name	Number of listed health facilities providing Service
Haemodialysis	107
Seropositive	8
Acute Kidney Injury (AKI)	7
Chronic Ambulatory Peritoneal Dialysis (CAPD)	9
Kidney Transplant	6
Heart Disease	26
Cancer	32
Head Injury	33
Alzheimer's	13
Parkinson's	13
Spinal Injury	35
Sickle Cell Anaemia	15

Table 7.13 Enlisted healthcare institutions by province

Provinces	Hemo dialysis	Peri toneal Dialysis	Sero positive dialysis	Kidney Trans plant	Acute Kidney Infec tions/ Medi cines & Treatment	Can cer	Heart Dise ases	Head Injury	Spinal Injury	Alzh eimer's	Park inson's	Sickle cell anemia
Koshi	15	1	1	1	1	5	4	6	6	3	3	0
Madhesh	11	0	0	0	0	0	1	1	1	0	0	0
Bagmati	44	6	3	3	6	23	15	17	19	9	9	5
Gandaki	17	2	1	1	0	2	2	4	4	0	0	1
Lumbini	15	0	2	0	0	1	3	3	3	0	0	5
Karnali	2	0	0	1	0	1	1	2	2	1	1	1
Sudurpaschim	3	0	1	0	0	0	0	0	0	0	0	3
	107	9	8	6	7	32	26	33	35	13	13	15

Number of patients receiving free treatment

A total of 41,845 patients received free treatment under the Bipanna Nagarik Aushadhi Upachar Karyakram in FY 2080/81 of which Cancer patients were highest (22,153 patients) and lowest were Alzheimer's patients (34 patients). The number patients receiving free treatment showed an increasing trend from FY 2078/79 to FY 2080/81. (figure 7.13)

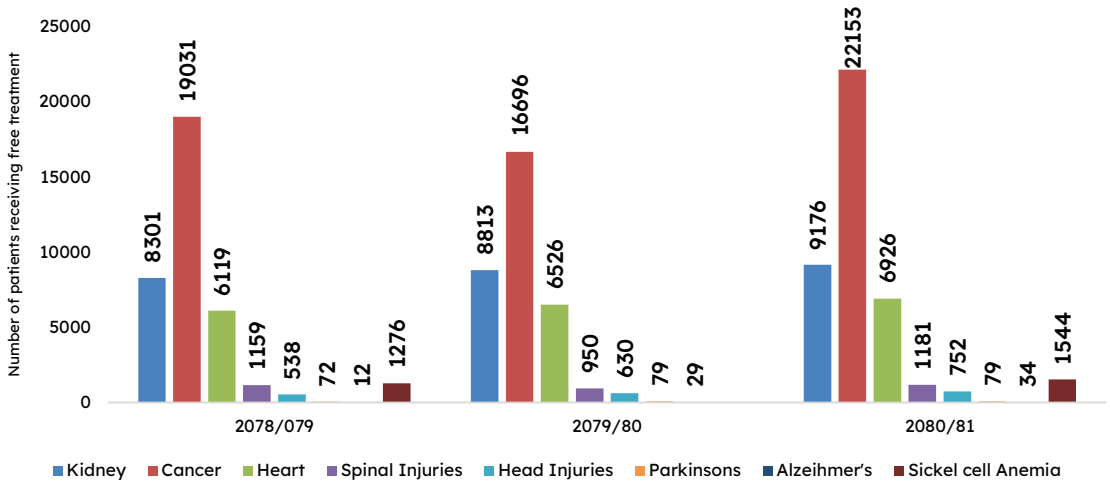


Figure 7.13 Number of patients receiving free treatment in FY 2078/79 to 2080/81

A total of Rs. 4,002,759,241 was spent to provide free treatment for the patients under the Bipanna Nagarik Aushadhi Upachar Karyakram in FY 2080/81. Majority of the funds were utilized by Kidney patients (49.92%) and lowest by Alzheimer's patients (0.02%). There were not much differences in the proportion of funds utilized by the patients in all three FYs from 2078/79 to 2080/81. (figure 7.14)

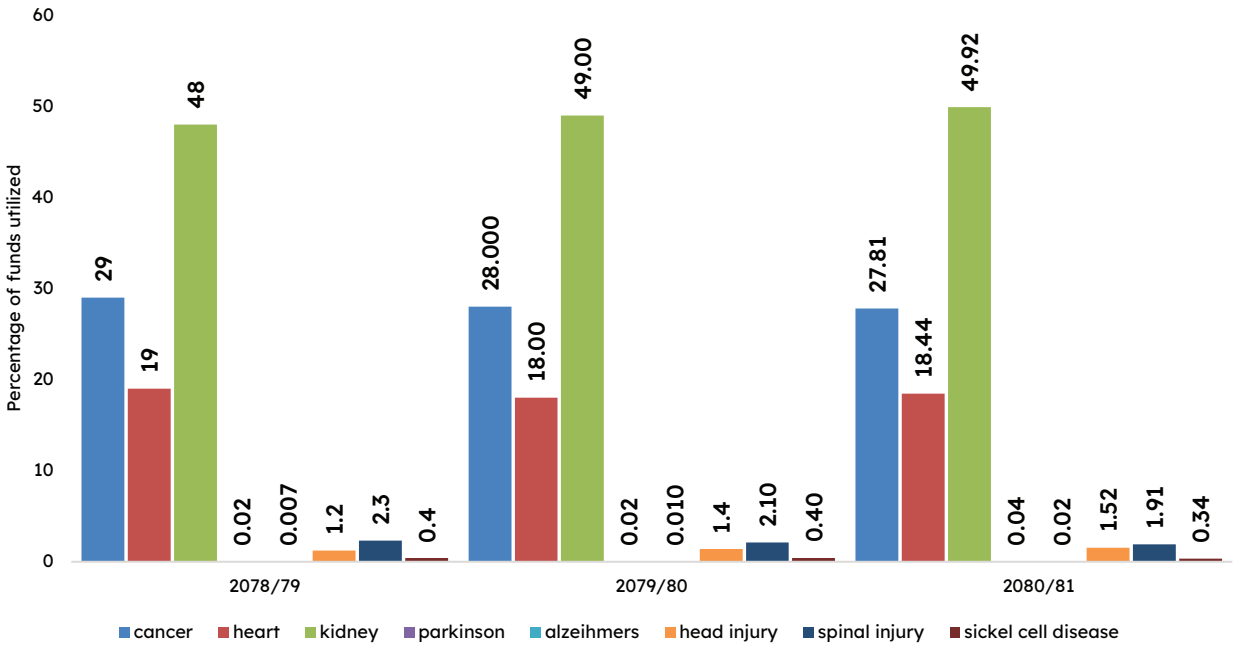


Figure 7.14 Fund Utilized by the people living with targeted chronic diseases in FY 2080/81

7.4.3 Major Activities/Achievement in FY 2080/81

- The Bipanna Nagarik Aushadhi Upachar Program has revised its checklist and criteria for eight chronic diseases, which are currently in the approval process to enhance program quality and effectiveness.
- The Bipanna Nagarik Aushadhi Upachar Program's software has been upgraded to improve functionality and efficiency.
- A comprehensive training package on Continuous Ambulatory Peritoneal Dialysis (CAPD) has been developed and introduced for doctors and nurses to enhance skills and knowledge.
- Interaction program on peritoneal dialysis was conducted for dialysis patients
- Discussion and interaction program in five municipalities (Sainamaina Rupandehi, Swargadwari Pyuthan, Mukhiyapati Dhanusha, Guras Dailekh, and Bhokra Sunsari) with stakeholders to enhance access to hospital services for marginalized, endangered communities, and service-deprived groups.

Box 7.12 SWOT Analysis of Bipanna Nagarik Aushadhi Upachar Program

Strengths	Opportunities
• Provide treatment for listed 8 chronic-. diseases. • Reduce financial burden to underprivileged citizen • Increase access to treatment facility as well as number of living years of patient with chronic kidney disease (CKD) • Improve quality of life under peritoneal dialysis patients	• Intergovernmental and inter-sectoral coordination • Advancement of treatment
Weaknesses	**Threats**
• Insufficient fund / budget to treat serious health conditions. • Limited human resources. • Lack of awareness about the program to general people • Inadequate supervision and monitoring of the program • Delay in receiving reimbursement cost	• Quality assurance of service provided through listed hospitals • Sustainability in long term due to increasing trend of NCDs • Duplication of free health services such as health insurance

8 Non-Communicable Diseases and Mental Health Programs

EDCD | NCD and Mental Health Section

8.1 Non-Communicable Diseases Prevention and Treatment Programs

8.1.1 About the program

Burden of non-communicable diseases (NCDs) has been showing increasing trend in Nepal. The deaths due to NCDs were 71.1% of total deaths in 2019 which increased form 63.7% in 2015. Cardiovascular diseases (CVDs) accounted for 24%, Chronic obstructive pulmonary diseases (COPD) 16.3% and cancer 11.1% of total deaths. Total DALYs due to NCDs was 61.2% of which CVDs shared 11.9%, cancer 11.9% and COPD 7.3%[1]. Expenditure of NCDs was also the highest among disease specific health expenditure (39.5%). Among Out-of-Pocket expenditure, NCDs accounted for 40.3% of total household OOP health expenditure[2].

Factors contributing to this rising burden include increasing life expectancy, demographic and epidemiological transitions, rapid urbanization, and lifestyle changes. The growing disease burden has been linked to a decline in quality of life, an increase in Disability-Adjusted Life Years (DALYs), and catastrophic health expenditures. The rising disease burden in Nepal is driven by increasing life expectancy, demographic and epidemiological transitions, urbanization, and lifestyle changes. This has led to a decline in quality of life, higher DALYs, and catastrophic health costs. STEPS surveys (2008 vs. 2019) show a rise in insufficient physical activity (3.5% to 6.5%), high blood sugar (3.6% to 8.5%), and elevated BMI (17.1% to 24.3%) among adults. (Fig 8.1).

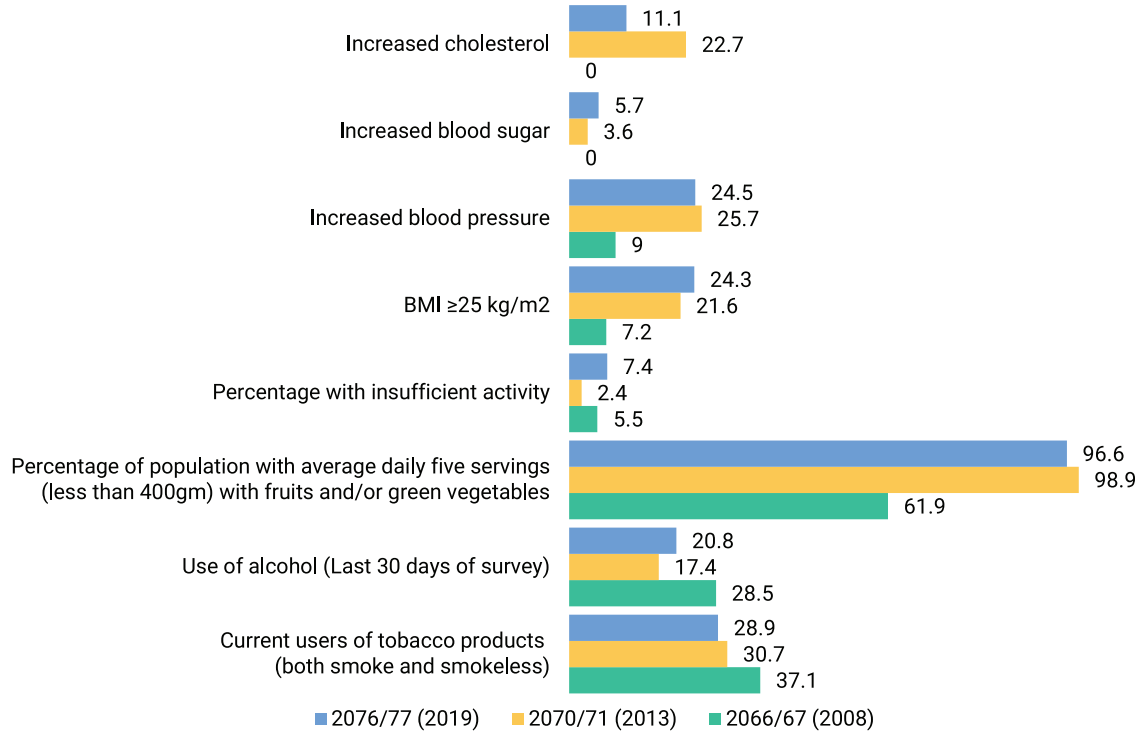


Figure 8.1 Risk factors of NCDs among adult population in Nepal, STEPS Survey

[Source: NCDs Risk Factors: STEPS survey Nepal, 2066/6, 2070/71, 2076/77]

1 Nepal Burden of Disease 2019, 2021
2 Nepal National Health Accounts 2019/20, 2023. Ministry of Health and Population.

Households spent 38.8% (2018/19) and 40.3% (2019/20) of their total out-of-pocket (OOP) expenses on NCDs, while injury-related OOP spending was 13.0% and 11.7%, respectively.

Specific objectives of Non-Communicable Diseases Prevention and Treatment Programs

- To raise the priority accorded to the prevention and control of NCDs in the national agenda, policies and programs.
- To strengthen national capacity and governance to lead multi-sectoral action and partnership across sectors for the prevention and control of NCDs.
- To reduce risk factors for NCDs and address underlying social determinants across sectors.
- To strengthen health systems through provision of people-centric, comprehensive, integrated, and equitable care for improved prevention and control of NCDs
- To establish NCD surveillance, monitoring and evaluation system for evidence-based policies and programmes.

Figure 8.2 Specific objectives of Non-Communicable Diseases Prevention and Treatment Programs

8.1.1.1 Nepal Burden of Disease

The figure (8.3) highlights the shift in disease burden in Nepal from 1990 to 2019, with NCDs becoming the leading causes of death. In 1990, infectious diseases like respiratory infections and TB dominated, but by 2019, cardiovascular diseases, chronic respiratory diseases, and neoplasms (cancers) ranked as the top three causes of death. Other NCDs, such as diabetes and kidney diseases and neurological disorders, also saw significant rises in mortality rates. This transition reflects changes in lifestyle, aging populations, and improved control of infectious diseases.

Communicable, Maternal, Neonatal and Nutritional Diseases | Non-Communicable Diseases | Injuries | same or increase | decrease

Rank by cause 1990		Rank by cause 2019	% change 1990-2010	% change 2010-2019	% change 1990-2019
Chronic respiratory diseases	1	Cardiovascular diseases	-13.4	5.9	-8.3
Cardiovascular diseases	2	Chronic respiratory diseases	-16.6	1.5	-15.3
Respiratory infections and TB	3	Neoplasms	-5.4	13	7.0
Enteric infections	4	Respiratory infections and TB	-56.9	-26.8	-68.5
Other infections	5	Digestive diseases	-31.2	-2.4	32.9
Neoplasms	6	Diabetes and CKD	15.9	27.4	47.6
Maternal and neonatal disorders	7	Enteric infections	-69.5	-32.6	-79.4
Digestive diseases	8	Unintentional injuries	-28.8	-5	-32.4
Unintentional injuries	9	Maternal and neonatal disorders	-41.2	-34.9	-61.7
Nutritional deficiencies	10	Neurological disorders	7.3	9.7	17.7
Diabetes and CKD	11	Other infections	-78.8	-26.4	-84.4
Neurological disorders	12	Other NCDs	-23.4	-6.7	-28.5
Other NCDs	13	Self-harm and interpersonal violence	-19.6	-7.5	-25.7
Self-harm and interpersonal violence	14	Transport injuries	-24.3	-0.9	-24.9
Transport injuries	15	Nutritional deficiencies	-79.8	-29.8	-85.8
NTDs and malaria	16	HIV/AIDS and STIs	398.4	-41.1	193.5
HIV/AIDS and STIs	17	Musculoskeletal disorders	15.6	25.6	45.1
Musculoskeletal disorders	18	NTDs and malaria	-63.4	-36.1	-76.6

Figure 8.3 Burden of disease 1990 to 2019

8.1.1.2 Healthcare Expenditure on Non-Communicable Diseases (NCDs)

a. Expenditure on disease/condition by provinces:

Nepal spent 64,414.2 million NPR on NCDs in FY 2019/20, accounting for 31.5% of total health expenditure. The highest spending was on Sense Organ Disorders (13,963.3 million NPR, 6.9%) and Diseases of the Digestive System (12,988.4 million NPR, 6.4%). Cardiovascular Diseases (7,113.4 million NPR, 3.5%) and Diabetes (827.8 million NPR, 0.4%) were also significant. Bagmati had the highest expenditure (17,958.6 million NPR, 33.5%), while Karnali had the lowest (4,774.5 million NPR, 31.2%). Nepal National Health Accounts 2017/18, 2022. Ministry of Health and Population.

b. Disease-Specific expenditure:

The Table 8.1 indicates that expenditure on NCDs in Nepal increased significantly from 51.7 billion NPR (0.5 billion USD) in 2018/19 to 64.4 billion NPR (0.6 billion USD) in 2019/20. Per capita expenditure on NCDs also rose from 1,741.1 NPR (15.4 USD) to 2,138.8 NPR (18.3 USD) during the same period.

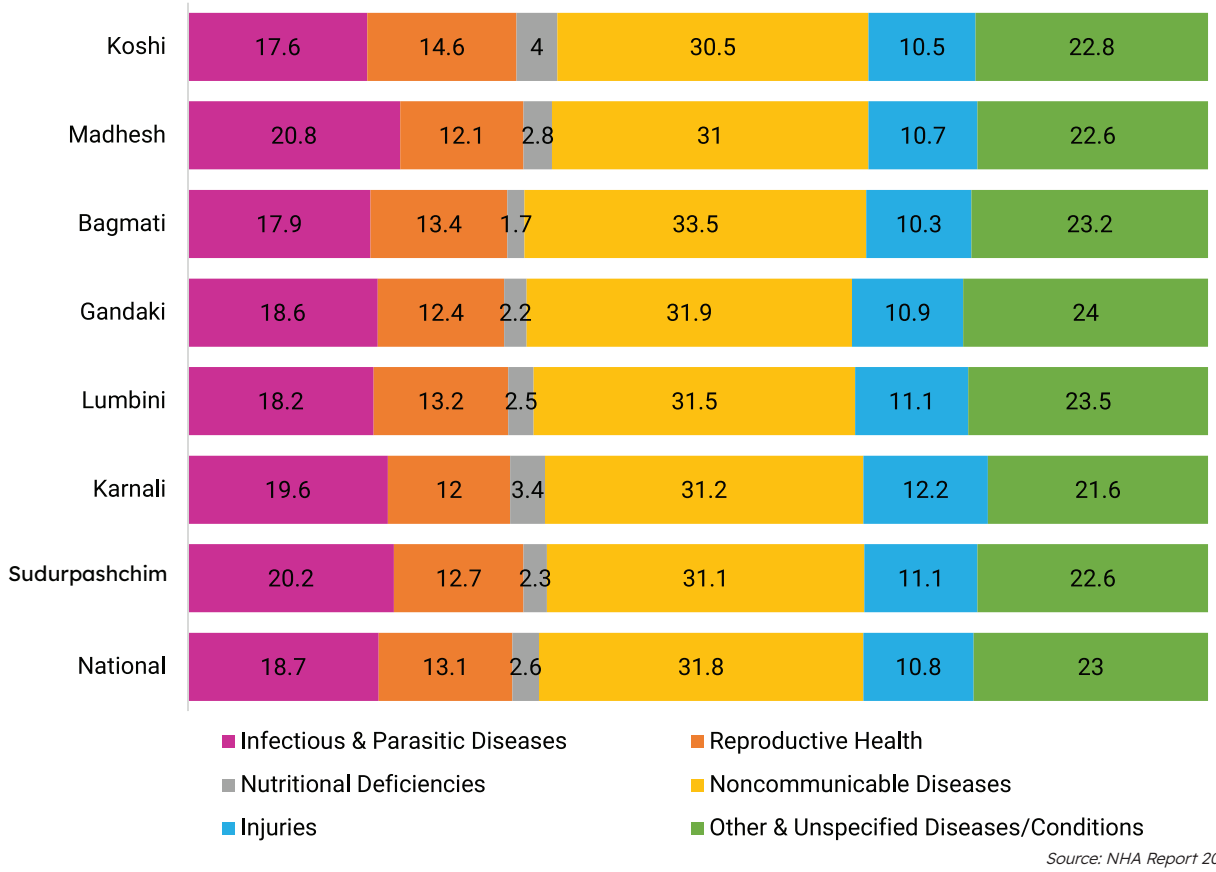
Table 8.1 Disease- specific expenditure (2019/2020)

Indicators	2018/19	2019/20
Expenditure on Non-Communicable Diseases in Billion NPR	51.7	64.4
Expenditure on Non-Communicable Diseases in Billion USD	0.5	0.6

Source: NHA Report 2023

c. Province wise distribution of healthcare expenditure by disease

The data in following figure 8.4 highlights the province-wise distribution of healthcare expenditure on NCDs in Nepal for FY 2019/20. NCDs account for a significant portion of healthcare spending, ranging from 30.5% in Koshi to 33.5% in Madhesh, with the national average at 31.5%.

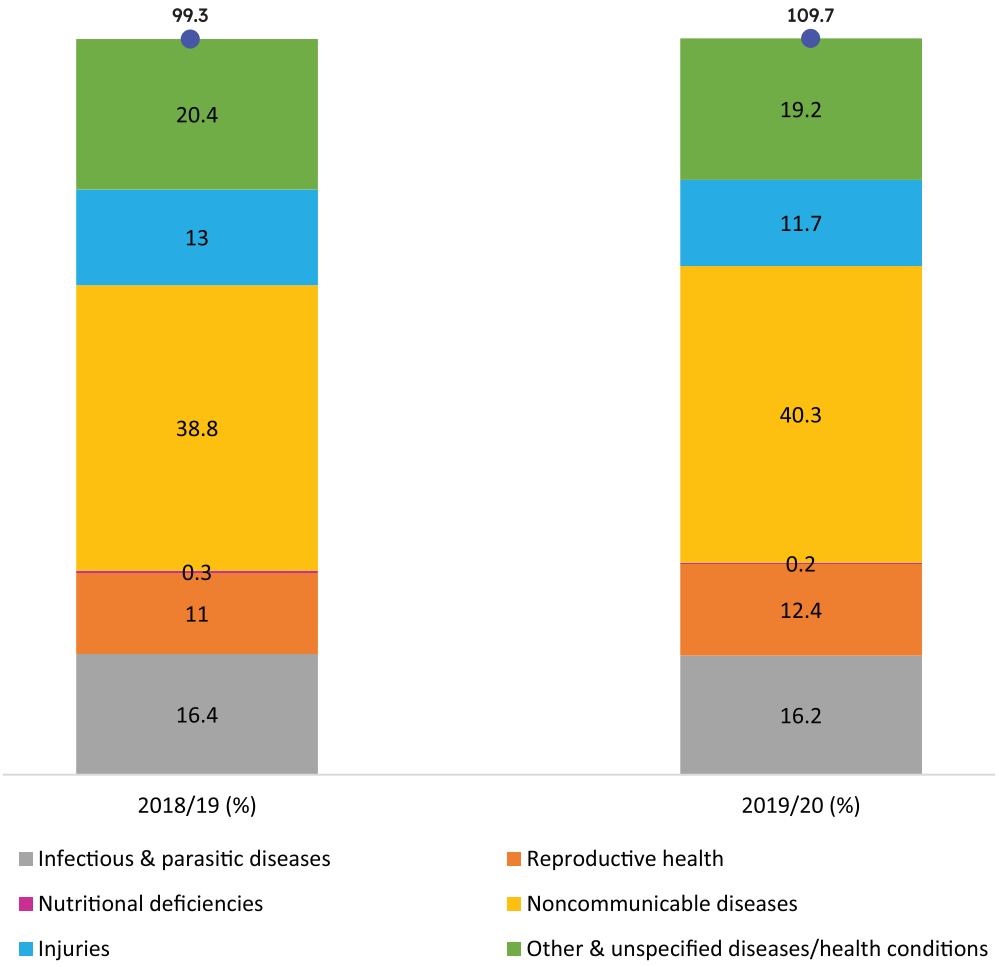


Source: NHA Report 2023

Figure 8.4 Disease- specific expenditure by province (2019/2020)

d. Household out-of-pocket (OOP) expenditure by disease/health condition:

In the following figure 8.5, it can be seen NCDs accounted for the largest share, increasing from 38.8% (99.3 billion NPR) in 2018/19 to 40.3% (199.7 billion NPR) in 2019/20. This rise highlights the growing burden of NCDs on households, emphasizing the need for preventive measures and financial protection to reduce the economic impact of these diseases.



Source: NHA Report 2023

Figure 8.5 Household OOP Expenditure by disease (2019/2020)

8.1.1.3 Multi-sectoral action plan II (MSAP II) for prevention and control of NCDs (2021-2025), MoHP, Nepal

GoN has prioritized NCDs and has strategic planning based on National Multi-sectoral action plan II (MSAP II) for NCDs (2021-2025)[3]. The goal of MSAP II is to reduce burden of NCDs through "whole of government" and "whole of society" approach. The overarching target is to reduce premature death from major NCDs by 25% by 2025 and by one third by 2086/87 (2030). The objectives of MSAP II for NCDs are to prioritize prevention and control in national policies, strengthen governance for multi-sectoral action, reduce risk factors and address social determinants, enhance integrated and equitable healthcare, and establish surveillance and evaluation systems for evidence-based policies.

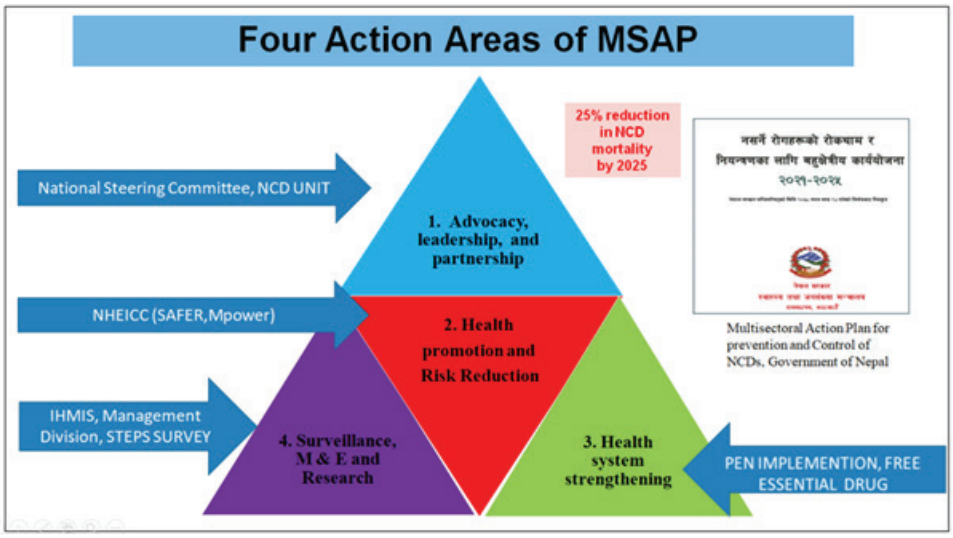


Figure 8.6 Four action areas of MSAP

3 Government of Nepal. National Multi-sectoral Action Plan II (MSAP II) for NCDs (2021-2025). MoHP, Nepal2 Nepal National Health Accounts 2019/20, 2023. Ministry of Health and Population.

8.1.2 Key programs for management of NCDs

8.1.2.1 Nepal PEN program

The Package of Essential NCDs (PEN) and HEARTS* toolkit enhances fairness and effectiveness in primary healthcare for limited-resource settings, identifying essential technologies, medications, and risk prediction tools. It outlines protocols for implementing key interventions for NCDs and establishes a technical and operational framework for integrating these interventions into primary care, evaluating their impact. WHO PEN, a cost-effective package for low-resource settings, strengthens health systems by offering prioritized interventions, optimizing limited resources, and empowering primary care through user-friendly tools. The PEN program is currently running across all seven provinces and 77 districts of Nepal.

*H= Healthy-lifestyle counselling, E= Evidence based protocols, A= Access to essential medicines and technologies, R= Risk based CVD management, T= Team based care, S= Systems for monitoring.

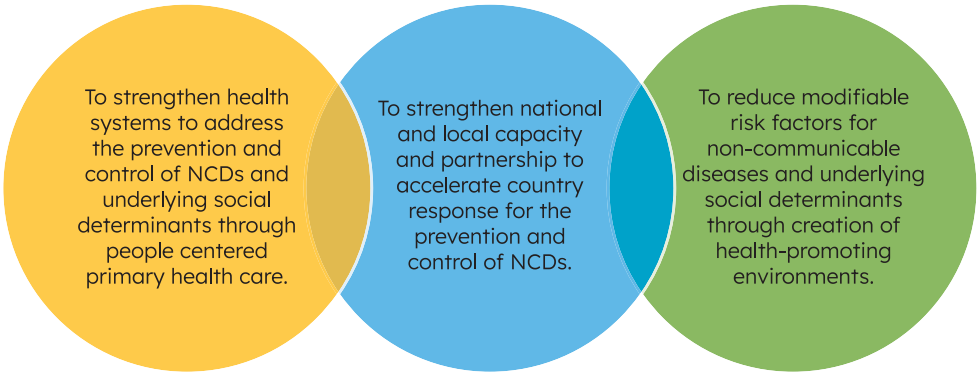


Figure 8.7 Key objectives of PEN program

8.1.2.2 Hypertension Care Cascade Initiative Nepal (HCCIN)

Hypertension is a major public health concern in Nepal, affecting over 25% of the adult population. The Hypertension Care Cascade Initiative Nepal (HCCIN) was launched to improve the screening, treatment, and follow-up of hypertension and diabetes patients. This initiative is designed to strengthen primary healthcare services by ensuring protocol-based treatment, workforce capacity-building, and sustainable local ownership.

The MoHP launched the HCCIN in Jestha 2080 (May 2023), starting from Kavrepalanchok, with support from NORAD and WHO. This initiative enhances hypertension identification and management at the primary healthcare level and involves academia and health institutions. The Government of Nepal aims to provide hypertension and diabetes treatment to 1.5 million people by 2025. The program includes screening, diagnosis, treatment, and follow-up using evidence-based protocols, along with peer coaching, supportive supervision, clinical mentoring, and an e-health strategy to strengthen services.

Box 8.1 Goals and objectives of HCCIN

Goals & Objectives of HCCIN

- Improve early detection, treatment initiation, and follow-up care for hypertension and diabetes.
- Strengthen primary healthcare systems for NCD service delivery across municipalities.
- Ensure access to dose-specific treatment protocols and essential medicines.
- Increase municipal and provincial ownership for sustainable program expansion.

Box 8.2 Key Activities & Achievements of HCCIN (2080/81)

Coverage Expansion	• Implemented in 36 municipalities of 7 districts, and 359 health facilities. • Over 31,700 patients enrolled in protocol-based hypertension management.
Health Worker Capacity-Building	• 917 health workers trained on the standardized hypertension care protocols, the HCCIN program.
Local Ownership & Commitment	• Mayors in multiple districts signed commitment declarations to sustain the initiative through local resources.
Improved Patient Retention & Service Delivery	• Follow-up rates exceeded 60% in key districts. • Enhanced medicine supply coordination with local and provincial governments.
Supervision, Monitoring, & Digital Innovation	• Regular supervision and monitoring visits conducted in Kavre, Ilam, and other districts. • Digital dashboard developed for real-time program tracking and data visualization.
Targets for the Coming Year	• Expand HCCIN coverage to additional districts and municipalities. • Strengthen digital data reporting and integrate it into the national health information system. • Achieve a 70% follow-up rate for enrolled patients. • Further enhance local government engagement for long-term sustainability.

The HCCIN is a multi-sectoral, data-driven initiative that aims to bridge the treatment gap and improve hypertension care at the grassroots level in Nepal.

8.1.2.3 PEN-Plus Program in Nepal

The Ministry of Health and Population, in collaboration with the Kathmandu Institute of Child Health (KIOCH), with technical and financial support from the NCDI Poverty Network and UNICEF Nepal, launched the PEN-Plus program in Jhapa, Bardiya, Dailekh, Bajhang, Gulmi, and Siraha districts. The program addresses the gap between chronic care services and the needs of underserved children and young adults.

This integrated health service model bridges primary and tertiary care, improving access to quality chronic care for severe NCDs at district hospitals. It focuses on conditions such as Type 1 Diabetes, Rheumatic Heart Disease, Congenital Heart Disease, Childhood Asthma, Hemoglobinopathies, Cancers, and Neurodevelopmental Disorders. The PEN-Plus initiative strengthens district hospitals by training healthcare providers, providing necessary equipment, and offering social support to patients. It aims to enhance treatment accessibility at the district level, reduce caseloads at tertiary hospitals, and contribute to Universal Health Coverage (UHC) and the Sustainable Development Goals (SDGs).

Sites	No of doctors
Gulmi District Hospital	13
Health Service Office ,Dailekh	7
Bajhang District Hospital	8
Damak Hospital	15
Bardiya Hospital, Gulariya	9
Province Hospital Lahan	7
Dolakha Hopsital (Training Site)	4



Figure 8.8 PEN-Plus Sites with details of PEN-Plus training

Capacity building through PEN-Plus training
63 doctors trained across various sites.

Case findings and enrollment at PEN-Plus clinics:
Severe NCDs diagnosed and enrolled in clinics. The clinics began in Damak and Bardiya in February 2023, and expanded to four more sites in June 2024.

Table 8.2 Details of case findings and enrollment at PEN-Plus Clinics

Conditions		Bardiya	Damak	Bajhang	Gulmi	Lahan	Dailekh
Endocrinology	T1 DM	14*	25*	-	-	1*	2*
	T2 DM	494 (on insulin-115)	1647 (on insulin-394)	5	7	1	-
Cardiology	HTN	476	1,224	3	-	-	3
	RHD	18*	107	1*	-	3*	1*
	CHD	37*	20*	1*	-	2*	-
	IHD	2	13	1	-	-	-
	Cardiac Others	114	286	4	-	-	-
Hemoglobinopathies	Sickle Cell Disease	161*	0	-	-	-	-
	Thalassemia	24*	12*	-	-	11*	-
Respiratory	Childhood Asthma	96	77	5	1	23	-
	COPD (Gold class C and D)	195	269	48	19	38	10
Neurodevelopmental	Epilepsy	21*	0	2	-	2	1
	Autism	12*	3*	-	-	3*	-
	Other	12	0	-	-	9(ID)	-
Oncology	Cancer	18	3	-	-	-	-
Total Patients		**1,694**	**3,688**	**70**	**27**	**93**	**17**

* Diagnosed and enrolled at PEN-Plus Clinic

Source: EDCD/DoHS

8.1.2.4 National Cancer Control Strategy (2024-2030)

The National Cancer Control Strategy (NCCS) envisions to progressively reduce the cancer burden and mortality in Nepal while improving the quality of life for cancer patients. For effective control of cancer, the preventive, promotive and management aspect of cancer will be made accessible and affordable to the population through collaboration with various stakeholders and will be integrated into social, economic and environmental ecosystems. The mission of NCCS is to strengthen cancer control by building adequate capacity in primary prevention, early detection, diagnosis, treatment and palliative care for equitable cancer services and that all people with cancer are cared for within a supportive and caring environment in a holistic approach, which is cost effective and efficient.

The strategy outlined in this NCCS 2024-2030 takes into account the existing cancer care scenario which is lacking in almost all areas of care and aims to fill in the gaps with early and long-term interventions as needed. The nine key strategies are outlined below.

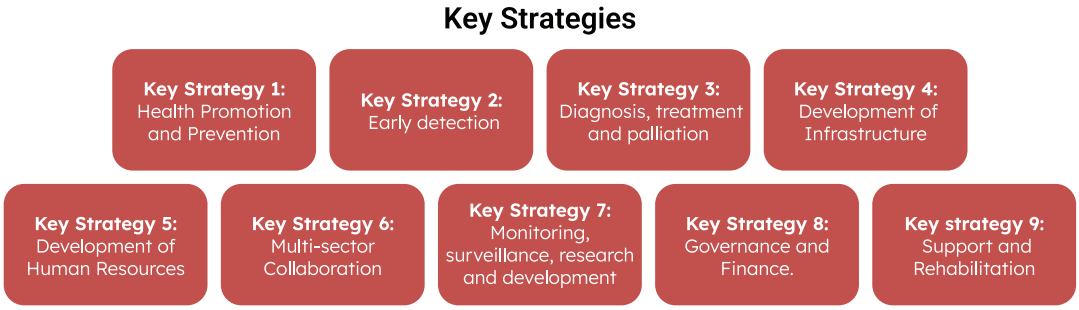


Figure 8.9 Key strategic action areas of National Cancer Control Strategy

The overall objective of this strategy is to cover the entire continuum of cancer prevention and control. It specifically aims to:

1. Reduce cancer incidence through primary prevention by addressing key risk factors and improvement of literacy on cancer prevention in the population
2. Emphasize early detection of signs and symptoms of childhood cancer and incorporation of EWSS training in childhood diseases training program.
3. Strengthening capacity for early detection including screening programs for cancers that are proven to be evidence-based and cost- effective to reduce cancer incidence and mortality

4. Build capacity for early diagnosis, treatment and palliation to reduce the delays in treatment to improve quality of life for those with cancer and family members
5. Develop cancer infrastructure to improve equitable distribution of essential treatment facilities in the country
6. Develop essential human resource to deliver high quality essential cancer control services
7. Promote multi-sectoral partnership with relevant stakeholders including private providers to improve collaborative cancer control
8. Strengthen cancer surveillance, research and development to inform cancer control implementation and policies in the country
9. Improve governance and resources for effective cancer control along its continuum.

8.1.2.5 Behavior change communication (BCC) on NCDs risk factors

Additionally, the preventive and promotive awareness raising activities on risk factors for NCDs like alcohol and tobacco are led by NHEICC. The BCC activities are covered in Chapter 18 of this report.

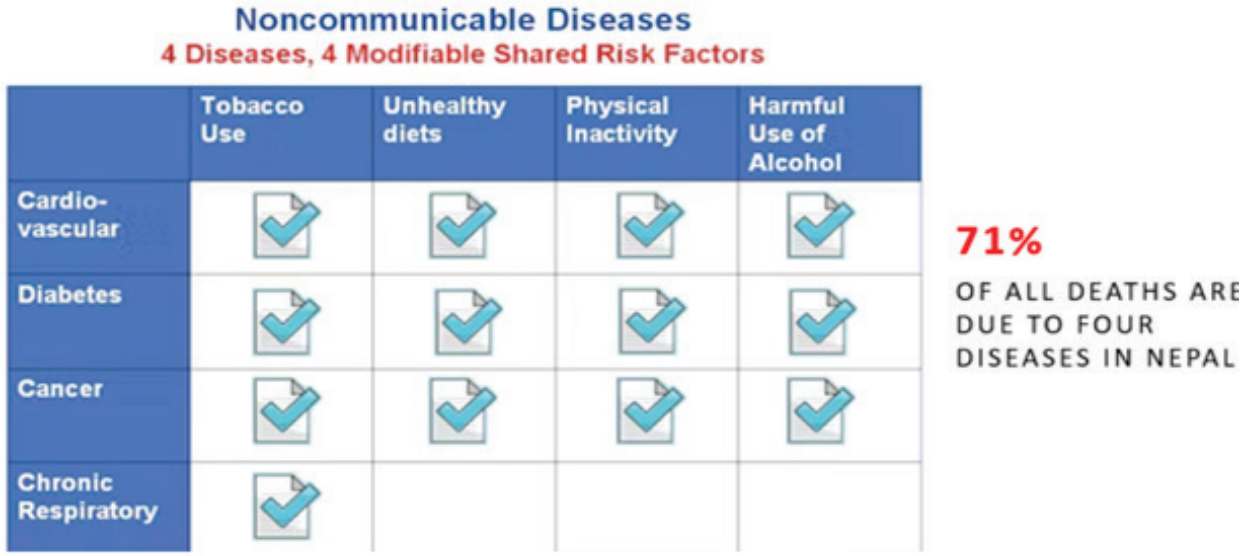


Figure 8.10 NCDs related shared modifiable risk factors

8.1.3 Key NCD prevention and treatment service indicators

Service utilization of NCDs

In FY 2080/81, a total of 11,45,926 patients of hypertension, 5,84,347 with diabetes, 2,59,110 with COPD, 97,387 with cancer and 30,330 with CVDs were on treatment for NCDs. The highest percentage of cases were seen in Koshi and Bagmati province while Karnali province reported the lowest proportion of NCDs. The details of the percentage of treatment of different NCDs by province is given in figure 8.11.

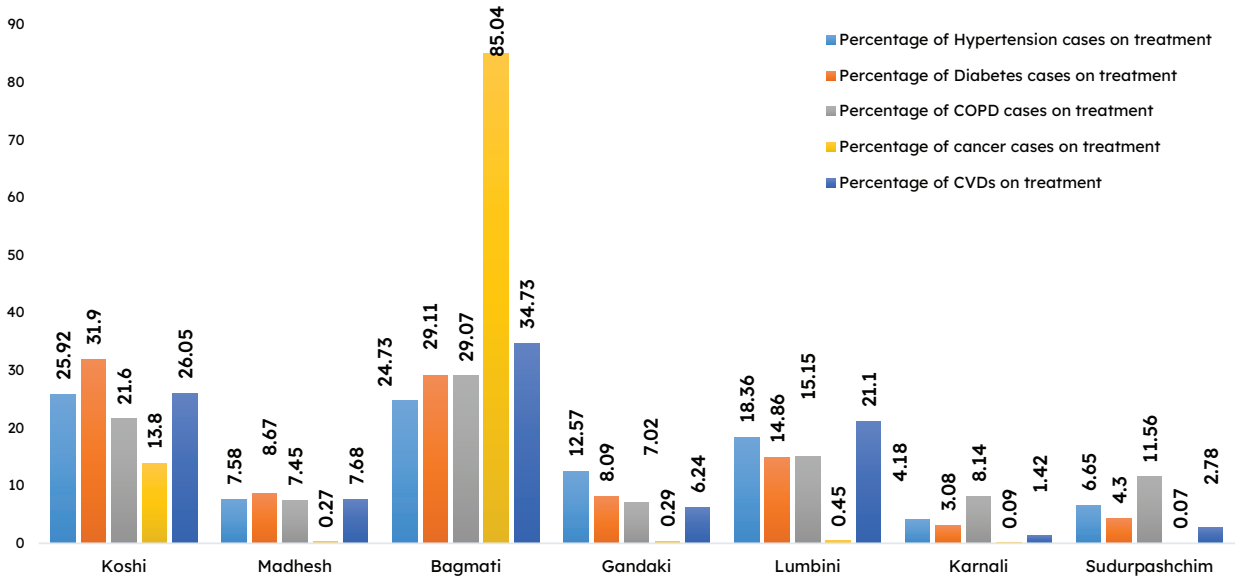


Figure 8.11 Service utilization for common NCDs

Source: HMIS/DoHS

Box 8.3 SWOT analysis of programs for management of NCDs

Strengths	Opportunities
• NCDs services accessible at grassroots level. • Prioritized capacity building activities including private sectors with database for training. • Immediate planning to address issues of provincial and national review. • Effective communication and collaboration among supporting partners. • Increased participation of NGOs, INGOs working in NCD and Mental health in the national program. • Regular meetings of steering, coordination, and technical committees.	• Resource mobilization, partnerships, and collaboration with local government and new partners. • Increased collaboration and coordination among all three tiers of government. • Public-Private Partnership initiatives.
Weaknesses	**Threats**
• Inadequate institutional setup and human resources. • Poor retention of trained human resources. • Insufficient training for newly recruited health workers and lack of refresher trainings. • Inadequate and lack of timely supply of medicine, instrument and equipment.	• Rising risk factors and new cases of NCDs • Poor motivation of health workers. • Maintaining access and quality of services in rural and underserved areas. • New NCDs are emerging which are not incorporated at all tiers of government.

8.2 Mental Health Programs

8.2.1 About the program

The history of mental health (MH) services in Nepal dates back to 2018 BS (1961 AD) when outpatient mental health services were introduced at Bir Hospital. Mental health disorders account for 18% of the total NCDs and are the fourth leading cause of disability in the country. According to the National Mental Health Survey 2077 (2020), 10% of the adult population experienced a mental disorder at some point in their lifetime, and 4.3% were living with a mental disorder at the time of the survey. Suicidality was found to be a significant concern, with 7.2% of individuals reporting suicidality, 6.5% experiencing current suicidality, 1.1% having attempted suicide in their lifetime, and 0.3% identified at risk for future attempts.

Vulnerable groups such as the poor, hard-to-reach populations, homeless individuals, those affected by conflict, survivors of violence, minority groups, non-binary gender populations, prisoners, and individuals in humanitarian settings face heightened risks for mental health disorders. Social stigma exacerbates the problem, as individuals with mental health conditions are often labeled as "crazy" and treated as sources of embarrassment.

In response to these challenges, the Government of Nepal has progressively strengthened its commitment to mental health. This includes establishing the NCDs and MH section and integrating mental health care as an essential service under the Public Health Services Act, 2075. Mental health services are now incorporated into the Basic Health Service (BHS) and Essential Health Service (EHS) Packages, as outlined in the Public Health Service Regulation.

The National Health Policy of 2019, in section 6.17.5, sets forth a strategy to expand and integrate mental health services into the broader health system. Moreover, Nepal's endorsement of the National Mental Health Strategy and Action Plan (NMHSAP) 2077 provides a comprehensive framework for planning and delivering mental health services. (Refer to Fig. 8.12 for details).



Figure 8.12 Five strategies of National Mental Health Strategy and Action Plan 2077

DoHS has been implementing WHO Special Initiative for Mental Health with a program to catalyze the implementation of National MH Strategy and Action Plan. The initiative at global level seeks to ensure universal health coverage involving access to quality and affordable care for mental health conditions. The initiative has targeted two strategic actions: advance policies, advocacy, and human rights; and scale-up quality interventions and services for people with mental health conditions. Nepal is one of seven countries implementing WHO SIMH. This has enabled a timely and long-term opportunity for Nepal's mental health system to go beyond small-scale project work and offers MoHP a chance to build significant reform.

8.2.2 Key programs/activities for mental health

8.2.2.1 Scaling up Suicide prevention with a multiprong collaborative actions

In 2019, the WHO reported 700,000 suicide deaths globally, equating to one death every 40 seconds. In Nepal, suicide prevention is a critical public health issue, with 7,223 suicides recorded in FY 2080/81, averaging 20 suicides per day. The rising suicide rate threatens Nepal's ability to meet the SDG target of reducing suicides to 4.7 per 100,000 people by 2030. Suicide is also a major cause of mortality among women of reproductive age in Nepal.

Suicide Prevention is the flagship program of Nepal's MoHP, moving beyond fragmented approaches to a multifaceted strategy aligned with WHO's LIVE LIFE initiative. In collaboration with WHO, the MoHP conducted policy dialogues with municipal representatives, including mayors and local officials, to implement community-based mental health and suicide prevention strategies. A total of 107 stakeholders participated in a suicide prevention orientation workshop.

The Government of Nepal, supported by WHO, UNDP, and local NGOs, is developing a national suicide prevention action plan, led by the National Planning Commission. The plan aims to ensure coordinated efforts, accountability, and sustained political commitment to suicide prevention.

Phasing out highly hazardous pesticides is a key suicide prevention measure in Nepal. Since 2019, Nepal has banned 26 pesticides, with research supporting no negative impact on agriculture. This move aims to reduce suicides by pesticide poisoning, following the success of similar bans in other countries.

Responsible media reporting plays a critical role in raising mental health awareness, challenging stigma, and promoting help-seeking behavior. However, sensationalized reporting can increase imitative suicides. In recognition, the National Health Education Information and Communication Centre (NHEICC) have developed national reporting guide for media persons on suicide and has trained 293 journalist on responsible reporting based on this guide.

The Government of Nepal is prioritizing early identification of suicidal behaviors and follow-up support through capacity building for primary care workers and gatekeepers. The adaptation of WHO's mhGAP has led to the development of a National Mental Health Care Program (2022), with capacity building for school staff in collaboration with WHO and UNICEF. A suicide prevention protocol is also being developed to assess and manage suicidal behavior.

A 24/7 suicide helpline, supported by WHO and local NGOs, has provided counseling to over 700 individuals. Awareness campaigns, including walkathons and dramas, promote the helpline. Additionally, the EDCD has created a suicide and self-harm case registry, currently piloted in Ilam and Kanchanpur Hospitals, to monitor trends and guide targeted interventions. 70 health workers from these hospitals have been trained on the data collection process.

8.2.2.2 National mental health programme 2079: review and recommendations for way forward

Nepal's public health system has prioritized mental health by integrating services into primary healthcare settings and expanding tertiary care through psychiatric departments in medical colleges and government hospitals. However, Mental health care in secondary care services, such as district or provincial hospitals, remains under-resourced. These services encompass regular mental health OPDs, emergency and acute care beds, and limited outreach. The inadequacies in secondary care have led to gaps in clinical mentoring and supportive supervision for primary care teams, adversely affecting the quality of integrated primary care and diminishing community trust in primary health centers. Concurrently, tertiary care services face significant patient overload, compromising the quality of care delivered at these facilities.

The National Mental Health Care Programme 2022 emphasizes district-level service development to support primary care teams and alleviate pressure on tertiary care. The program focuses on equitable, need-based care, integrating feedback from stakeholders and international reviews. It provides mental health services at primary and secondary levels, with collaboration from academic institutions, NGOs, and community groups.

The EDCD, supported by WHO Nepal, has been implementing district mental health services in 10 districts since June 2023. A dedicated psychiatrist in each district provides training, mentoring, and monthly OPD services, managing nearly 6000 OPD visits in 18 months. Additionally, 174 health workers and 44 medical doctors have been trained on mhGAP modules.

A review workshop in December 2024 identified best practices and challenges, guiding improvements. Provinces such as Bagmati and Gandaki have recruited full-time psychiatrists, while Karnali has deployed mental health nurses for child mental health. Psychosocial support is provided through social protection programs, including One Stop Crisis Management Centers for survivors of gender-based violence and migration-related counseling.

The government's focus is on implementing mhGAP at the primary care level, with a dedicated budget in each province.

The review workshop has resulted in following recommendations:

1. Set up dedicated mental health services at district hospitals, including a mental health nurse and psychiatrist. EDCD will prepare and circulate implementation guidelines to all provinces.
2. Shift focus of the mental health program from just mhGAP training to regular program reviews led by the District Health Office and Municipality Health Section. A step-by-step guide will be prepared for district health officers.
3. Encourage NGOs and development partners to implement the district care model as part of their ongoing primary care mental health initiatives.

8.2.2.3 Child and adolescent mental health (CAMH) services

Children and adolescents make up about 38% of Nepal's population, with early life stages being crucial for mental health development. Negative experiences like violence or poverty can significantly impact their mental well-being. Mental health conditions, including depression, anxiety, and suicide, are prevalent among young people globally and in Nepal, where 10-20% of children and adolescents face mental health challenges. However, many do not receive the necessary support. Many mental health conditions in adults begin early in life, with one-third emerging before the age of 14 and half before 18.

To address this, the MoHP, with partners like UNICEF, has integrated child and adolescent mental health (CAMH) services at the primary care level. program trained 39 doctors and 199 health workers across four provinces to manage mental health issues. In Karnali, 46,864 adolescents were reached with Socio-Emotional Learning (SEL) under the WHO-UNICEF helping adolescents thrive (HAT) initiative. CAMH is now part of emergency response, child protection, and school programs, with 20 experts and 20 school nurses trained to lead mental health promotion in schools.

The Government of Nepal, with support from NORAD, has established two specialized child mental health facilities in Kanti Children Hospital and Mental Hospital. Despite progress, there is a need to further develop a comprehensive, tiered mental health service system, focusing on early identification and targeted interventions.

Challenges remain, including inconsistent supply of psychotropic medications, which often leads to out-of-pocket expenses for patients. The training of health assistants in primary healthcare settings to prescribe these medications has been a step toward improving accessibility.

8.2.2.4 Psychotropic medications

Health facilities across Nepal provide various psychotropic medications free of costs including antipsychotics, anti-depressants, anxiolytics, mood stabilizers, and anti-epileptics. These medicines are Amitriptylline, Fluoxetine, Carbamazepine, Phenobarbitone, Sodium Valproate, Riseperidone, Diazepam, etc. However, due to frequent stock-outs and inconsistent supply, patients often incur out-of-pocket expenses. While registered medical doctors can prescribe these medications, health assistants in primary healthcare settings, after receiving appropriate training and following government protocols, are also authorized to prescribe them.

8.2.2.5 Integrating Mental Health into maternal health services

Women, particularly during pregnancy and postpartum, are vulnerable to mental health disorders such as anxiety, depression, and somatic issues. Anxiety, depression, and somatic problems are common in maternal mental health, with 10% of pregnant women and 13% of postpartum women globally affected, and higher rates in developing countries (15.6% during pregnancy, 19.8% postpartum)[4]. In Nepal, suicide is a leading cause of maternal mortality, with 6% of maternal deaths linked to self-harm[5]. Poor maternal mental health increases the risk of recurrence in subsequent pregnancies and contributes to maternal deaths, while also impacting the physical, emotional, and neurological health of children[6]. In Nepal, maternal suicide remains a leading cause of death among women of reproductive age, with a significant portion of maternal deaths attributed to intentional self-harm. Maternal mental health (MMH) conditions also negatively impact both the women and their children's health, with postpartum depression increasing the risk of recurrence in future pregnancies and maternal mortality.

To address this, FWD and EDCD with support from WHO has started prioritizing maternal mental healthcare. A National Maternal Mental Health Programme Implementation Framework, 2024, focusing on specialized mental health care in larger hospitals and integrating mental health services into primary care facilities.

Paropakar Maternity and Women's Hospital (PMWH), Nepal's only government tertiary maternity hospital, has been a key player, providing psychosocial counseling and, since June 2024, offering training on maternal mental health to over 194 clinical staff. In July 2024, a psychiatrist was appointed, and a dedicated maternal mental health outpatient unit was inaugurated in August 2024. This unit has already provided consultations to over 200 women by December 2024.

FWD is also planning to extend maternal mental health services to primary health care facilities in two districts, Dhading and Mahottari, with preparatory actions underway. This integrated approach aims to reduce maternal morbidity and mortality linked to mental health issues and improve the quality of life for women and children.

However, challenges remain for maternal mental health services. Stigma and misconceptions surrounding

4 McNab, S.E., Dryer, S.L., Fitzgerald, L. et al. The silent burden: a landscape analysis of common perinatal mental disorders in low- and middle-income countries. BMC Pregnancy Childbirth 22, 342 (2022).
5 Nepal Maternal Mortality Morbidity Study 2008/2009. Family Health Division, Department of Health Services, Ministry of Health and Population, Nepal
6 Gelaye B, Rondon MB, Araya R, Williams MA. Epidemiology of maternal depression, risk factors, and child outcomes in low-income and middle-income countries. Lancet Psychiatry. 2016 Oct;3(10):973-982

mental health, along with limitations in human and other resources, must be addressed. The hospital's next steps involve increasing awareness and service utilization, generating resources for appointment of additional specialized mental health professionals, enhance and capacity of existing staff to ensure the sustainability and gradual strengthening of the services.

8.2.2.6 Multi-sectoral mental health and psychosocial support (MHPSS) Preparedness during Emergences

Disaster and emergencies are a threat to both physical and mental health. Almost all people will experience disasters and emergencies pose significant risks to both physical and mental health, often leading to psychological distress such as anxiety, sadness, and irritability. These reactions are normal but can become prolonged and disabling, particularly during humanitarian crises, where the prevalence of common mental disorders like depression and anxiety can more than double. Individuals with pre-existing mental disorders, especially severe conditions like psychosis or bipolar disorder, are at higher risk of relapse.

In response, the EDCD, supported by WHO, has been working to strengthen mental health systems and services in Sudurpaschim and Karnali Provinces to better prepare for future emergencies. This initiative focuses on Rukum West and Salyan districts in Karnali and Doti and Dadeldhura in Sudurpaschim, aiming to improve mental health care readiness in these regions. The program is being implemented with the overall objective to integrate MHPSS services as cross cutting intervention in health response of the Province Government. The main objective of the program is to enhance stakeholder capacity for MHPSS planning, identify provincial priority actions, and demonstrate the National Mental Health Program in two districts per province to strengthen services.

Likewise, UNICEF along with Karnali subcluster provided mental health and psychological support to earthquake affected children and adolescent in Jajarkot and Rukum West.

Box 8.4 List of activities of MHPSS Preparedness with details

Activity	Details
Integration of MHPSS into broader emergency response plan of Provincial Government	Through consultative processes support provincial authorities in development and finalization of Standard Operating Procedure (SOP) to organize MHPSS service during preparedness and response phases of emergencies. Karanli Province already has a draft ready while Sudurpaschim Province may need one. Support province planning process to include activities on MHPSS to prepare for emergencies
Build the technical and managerial capacity of stakeholders and humanitarian actors in the province on MHPSS preparedness and response to a disaster	Orient program managers and humanitarian actors on MHPSS preparedness and response in line with national SOP and international standards such as IASC guideline. Develop a pool of trainers on Psychological First Aid at Province Level Organize capacity of humanitarian actors such as Police, frontline health workers, teachers etc on Psychological First Aid
Strengthen district health facilities to provide essential mental health care as per National Mental Health Programme 2022	Organize mhGAP trainings to one health workers from each health posts and PHCCs from identified districts Train a batch of MBBS doctors, MDGPs, Internal Medicine etc working at district on mental health Organize training on child and adolescent mental health to MBBS doctors, GPs and pediatrician working on those districts Set up dedicated mental health care at district hospital (with a dedicated human resource (MH Nurse) for Psychosocial care and a visiting psychiatrist for supervision and referral care

Furthermore, MoHP and WHO Nepal also supported with integrating mental health services into flood affected area of Kavrepalanchowk district.

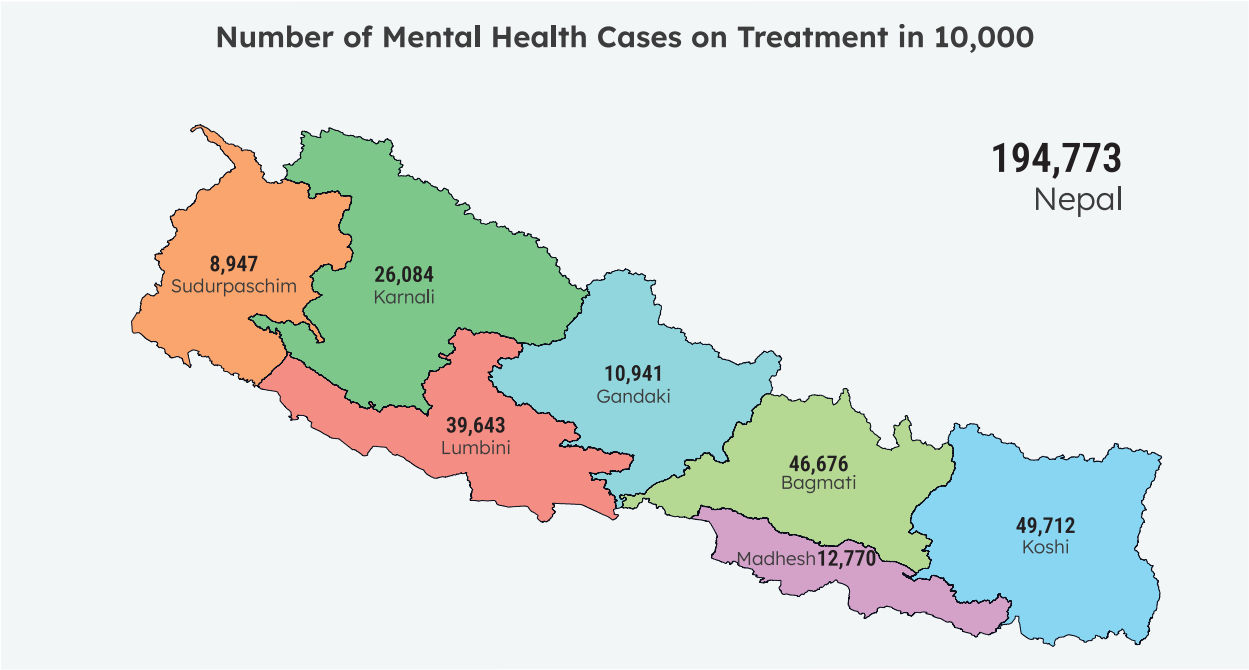
8.2.2.7 Integrating NCDs and mental disorders into the current recording and reporting of HMIS

The prioritization of mental health data within the HMIS has been lacking, with no indicators or monitoring system for mental health services. Recognizing the need for patient tracking and treatment outcomes in mental health, a separate patient registers for NCDs and mental disorders has been developed, capturing essential data elements for recording keeping at health facilities along with a robust set of indicators for periodic monitoring. As unique patient identifiers and individual case tracking aren't supported by the current HMIS so have not been kept in the tool. Additionally, a tool to submit monthly reports to HMIS has also been formed as a summarized information from the patient register. The challenge now lies in ensuring data quality, focusing on record completeness and facility enrollment.

8.2.3 Key mental health service indicators

Service utilization for mental health issues

In FY 2080/81 total 1,94,773 individuals were on treatment for mental health issues. Most of the cases were from Koshi province while Sudurpaschim province reported least of the cases. The details of number of mental health cases on treatment is given in Figure 8.13.



Source: HMIS/DoHS

Figure 8.13 Service utilization for common mental health issues

Box 8.5 SWOT analysis of Mental Health Programs

Strengths	Opportunities
• Expansion of mental health programs at grass root level. • Prioritized capacity building activities including private sectors with database for training. • Immediate planning to address issues of provincial and national review. • Effective communication and collaboration among supporting partners. • Increased participation of NGOs, INGOs working in Mental health in the national program. • Regular meetings of steering, coordination, and technical committees. • New policy guidance to galvanize resources from all levels on mental health.	• Evidence-based planning aligned with the National Mental Health Strategy and Action Plan 2020 (2077). • Resource mobilization, partnerships, and collaboration with local government and new partners. • Increased collaboration and coordination among all three tiers of government. • Public-Private Partnership initiatives. • Interest of Local levels and Provinces on Mental health.
Weaknesses	**Threats**
• Inadequate institutional setup and human resources. • Insufficient training for newly recruited health workers and lack of refresher trainings. • Low technical capacity at sub-national level on mental health program development and implementation. • Inadequate supply of medicine and equipment. • Access and quality of services in rural and underserved areas is not regulated.	• Poor motivation of health workers. • Retaining trained human resources. • Stigma and discrimination related to mental health. • Fragmentation of health and social care support targeted on mental health.

9 Epidemiological Surveillance, Research and Outbreak Management

EDCD	NTD and Vector Borne Disease Control Section	Zoonotic and Other Communicable Disease Control Section	Disease Surveillance and Research Section	Epidemiology and Outbreak Management Section	NCD and Mental Health Section	Leprosy Control and Disability Management Section

9.1 Epidemiological Surveillance and Research

9.1.1 About the Program

Disease Surveillance and Research Section at EDCD serves as a central hub for conducting surveillance and research activities within the DoHS. While its purview encompasses a wide range of both communicable and non-communicable diseases, the current emphasis is on conducting communicable disease surveillance to effectively manage early emergency outbreaks at the national level. Additionally, the section monitors routine surveillance of drinking water quality and has launched climate-sensitive disease surveillance and event-based surveillance pilots in Nepal.

Early Warning and Reporting System (EWARS)

Established in 1997, EWARS is a hospital-based sentinel surveillance system designed to promptly detect six priority diseases with outbreak potential: Acute Gastroenteritis (AGE), Cholera, Severe Acute Respiratory Illness (SARI), Dengue, Kala-azar, and Malaria. This indicator-based surveillance system operates through 118 strategically located hospitals nationwide, serving as sentinel sites that report cases immediately in the event of outbreaks or on a weekly basis. In addition to the primary six diseases, EWARS also includes reporting on other communicable diseases prone to outbreaks, such as Influenza-like Illness (ILI), Scrub Typhus, and Enteric fever. As of the fiscal year 2080/81, all designated sentinel hospitals actively contribute to EWARS reporting. This participation caters eighty-two government hospitals, twelve private hospitals, six missionary hospitals, four community hospitals, and fourteen medical colleges.

EDCD Call Center (1115) for Disease Surveillance

The EDCD call center (1115) was established on February 18, 2020, in response to the COVID-19 pandemic, initially focusing on COVID-19 risk communication and addressing public queries related to the spread of the virus, infection prevention, and vaccination information. Operating daily from 8 AM to 8 PM, the call center played a vital role in facilitating case investigations and contact tracing during the pandemic. Over time, the call center's purpose has evolved, and it has been repurposed to support routine public health surveillance. It now records and reports health and disease-related event data, verifies events, follows up on EWARS reporting, supports queries related to various health programs, and ensures timely information flow to relevant stakeholders. The strengthening of the call center has also been recommended by the Joint External Evaluation (JEE) of IHR core capacities of Nepal conducted in 2022, enhancing the country's overall surveillance system and continuing to be a critical component in the public health infrastructure.

Media Monitoring

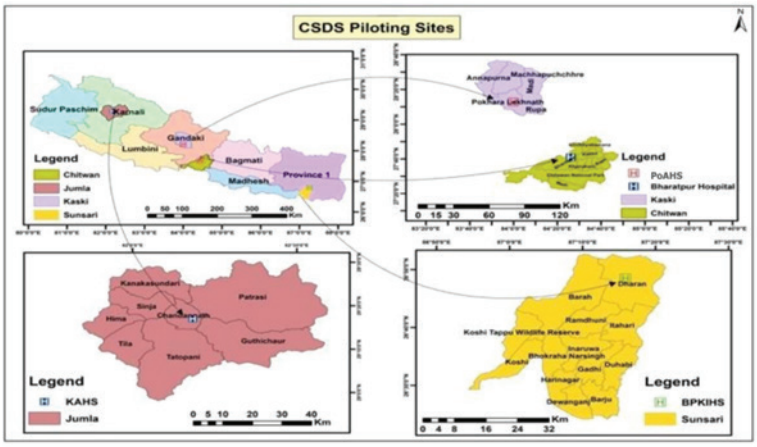
Media monitoring includes daily monitoring of news media through Epidemic Intelligence from Open Sources (EIOS) and further scanning of open-source news media to identify potential outbreaks and sensitive health events. Each day, a comprehensive report is prepared, summarizing key findings, and highlighting events requiring further verification. This report is disseminated to concerned stakeholders, also including municipal health authorities and response teams. This process supports event-based surveillance and timely response efforts.

Drinking Water Quality Surveillance

The updated National Drinking Water Quality Surveillance (NDWQS) Guideline 2076 delineates the monitoring of drinking water quality at central, provincial, and local levels. MoHP, and institutions functioning under it, is committed to ensuring that water supplied by projects complies with the National Drinking Water Quality Standard, 2079. EDCD bears the exclusive responsibility for overseeing the surveillance of drinking water quality at diverse sources and distribution sites at the central level.

Climate Sensitive Disease Surveillance

Climate-sensitive Disease Surveillance (CSDS) program is a continuous initiative strategically crafted to augment the existing surveillance system with a focus on climate change impacts. By amalgamating meteorological data (currently encompassing temperature and precipitation) with information on three vector-borne and three outbreak-prone diseases identified by EWARS, the CSDS program endeavors to scrutinize and predict the potential expansion of diseases. Presently in its pilot phase, the program is actively underway in four sentinel sites Karnali Academy of Health Sciences (KAHS), Pokhara Academy of Health Sciences (PoAHS), Bharatpur Hospital and BP Koirala Institute of Health Sciences (BPKIHS); spread across three distinct eco-regions within Nepal. (Fig 9.1)



Source: EDCD/DoHS

Figure 9.1 Climate Sensitive Disease Surveillance Piloting Sites

Surveillance Outbreak Response Management and Analysis System (SORMAS)

SORMAS is an open-source digital tool that supports disease control and outbreak management procedures. It aims to ensure the availability of real-time surveillance data for priority diseases at all administrative levels. To address the existing gaps in the event-based surveillance system of the country, especially for early detection and response of outbreaks up to the community level through real-time digital surveillance, EDCD implemented SORMAS as a pilot in FY 2079/80 in Gandaki and Sudurpaschim province.

9.1.2 Key Activities in FY 2080/81

Early Warning and Reporting System (EWARS)

- Regular cross checking for the quality, accuracy, timeliness, and completeness of real-time data received from EWARS sentinel sites.
- Verifying and triangulating data submitted through online reporting via DHIS-2 platform.
- Analyzing data collected from EWARS sites, monitoring disease trends, and promptly notifying relevant authorities in cases of suspected or predicted outbreaks.
- Publishing the electronic EWARS weekly bulletin and distributing it every Sunday to key personnel of MoHP, DoHS, provincial health authorities, all sentinel sites, and other pertinent stakeholders. Additionally, the bulletin is uploaded to the EDCD's website for wider accessibility.
- Regular identification of the outbreak signals and facilitating prompt outbreak responses.
- Forming drops down menu for reporting more than 25 diseases and the diseases are as follows:
  - AGE
  - Anthranx
  - Cholera
  - Covid 19
  - Dengue
  - Diptheria
  - Encephalitis
  - Enteric Fever
  - Hepatitis
  - ILI
  - Kala-azar
  - Leptospirosis
  - Falciparum
  - Malaria
  - Malaria-Vivax
  - Meningococcal Meningitis
  - Neonatal Tetanus
  - Pneumonic Plague
  - SARI
  - Scrub Typhus
  - Suspected Measles Like Illness
  - Rabies
  - Viral Hemorrhagic Fever
  - Yellow Fever
  - Snakebite Poisonous
  - SHAPU
  - Other

EDCD Call Center and Media Monitoring

- Responding to incoming calls from the public and stakeholders regarding health-related queries and concerns, while simultaneously documenting and communicating health events to relevant authorities for timely action.
- Assisting in monitoring and verifying data related to health events and disease outbreaks identified through media monitoring report and other sources.
- Conducting follow-up calls to verify data reported through health surveillance systems and ensuring accuracy.
- Providing accurate information and guidance on public health issues, including preventive measures and health campaigns.
- Contributing to risk communication through calls by providing accurate health risk information, addressing rumors, and managing health risks.
- Supporting emergency response efforts by relaying critical information and coordinating with response teams.
- Assisting health programs and stakeholders with information and queries related to public health initiatives.
- Tracking and analyzing call data, evaluating call center performance and implementing improvements to enhance service delivery and effectiveness.
- Preparing and distributing a detailed daily media monitoring report on outbreaks and sensitive health events to concerned authorities.
- Sharing outbreaks and significant health events identified through Epidemic Intelligence from Open -Source reports to the EDCD call center (1115) for verification, enhancing event-based surveillance.

Climate Sensitive Disease Surveillance (CSDS)

- Developed and maintained a comprehensive database integrating both retrospective and prospective data on climate-sensitive diseases and meteorological parameters. This involved collecting, organizing, and regularly updating historical and real-time data.
- Review workshop was held to review CSDS activities across four pilot sites. The review focused on conducting a SWOT analysis of the CSDS program, drafting an action plan, ensuring real-time consistency in health data, refining the CSDS tool and facilitating a learning-sharing observation visit.
- On-site support to establish digital connectivity between the medical record department and the medical, pediatric, laboratory, and emergency departments across four sentinel sites. This included hands-on training for focal persons and nursing staff on real-time data entry into a functional online spreadsheet within the respective departments at each site.
- Conducted sensitization sessions for relevant departments at sentinel sites (e.g., laboratory department) on the importance of consistent recording and reporting of climate-sensitive disease data with verification and validation of retrospective health data.
- Facilitated ongoing collaboration between the Department of Hydrology and Meteorology (DHM) and the DoHS to strengthen integrated climate-informed disease surveillance. This included coordinating data-sharing mechanisms, aligning surveillance efforts, and fostering cross-sectoral engagement to enhance early warning systems for climate-sensitive diseases.
- Installation of a dedicated server for the CSDS tool to ensure secure, efficient, and real-time data processing. This involved coordinating with technical teams for system setup, configuring server infrastructure to support data storage and analysis, and ensuring seamless integration with existing health and climate data systems for improved surveillance and decision-making.
- Established an Application Programming Interface (API) between the EWARS and the DHM to enable real-time data sharing. This integration facilitates seamless exchange of health and climate data, supporting comprehensive analysis and forecasting of climate-sensitive diseases for timely interventions and decision-making.

9.1.3 Key Program/Progress Status in FY 2080/81

Fifty two infectious diseases as prioritized infectious diseases of Nepal

On the basis of the Article 4, Section 1 of Public Health Act, 2075, Government of Nepal has published list of prioritized infectious diseases of Nepal in the Nepal Gazette. Fifty-two infectious diseases are categorized in that list as shown in table 9.1

Table 9.1 Fifty-two infectious diseases as prioritized infectious diseases of Nepal

SN	Disease	SN	Disease	SN	Disease	SN	Disease
1	Rabies	14	Rotavirus	27	Anthrax	40	Plague
2	Tuberculosis	15	Rubella	28	Poliomyelitis	41	Legionellosis
3	COVID 19	16	Leptospirosis	29	Mumps	42	Echinococcosis/ Hydatidosis
4	Measles	17	Diphtheria	30	Toxoplasmosis	43	Monkey pox
5	Dengue	18	Pneumococcal Pneumonia	31	Trachoma	44	Smallpox
6	Japanese Encephalitis	19	Hepatitis B	32	Ebola Virus Disease	45	Yellow Fever
7	Cholera	20	Malaria	33	Lymphatic Filariasis	46	Hepatitis E
8	Tetanus	21	H. Influenza	34	Salmonellosis	47	Cysticercosis/Taeniasis
9	HIV and AIDS	22	Brucellosis	35	Crimean Congo Haemorrhagic Fever (CCHF)	48	Chikungunya
10	Influenza, Zoonotic & Seasonal	23	Leprosy	36	Marburg Viral Disease	49	Zika
11	Scrub Typhus	24	Pertussis	37	SARS	50	Q Fever
12	Enteric (Typhoid/ Paratyphoid) Fever	25	Hepatitis C	38	Hepatitis A	51	Lassa Fever
13	Leishmaniasis	26	Nipah Virus Infection	39	MERS	52	Rift Valley Fever

On the basis of this list, EDCD will be able to do surveillance and provide outbreak intelligence for response management.

Early Warning and Reporting System

Round the year publication and dissemination of weekly bulletin.

EWARS reporting system has documented a comprehensive total of 21 infectious diseases between the FYs 2078/79-2080/81 (table 9.2). The table 9.2 illustrates Nepal's disease burden for the fiscal year 2080/81, highlighting serious public health issues.

Dengue had the most reported cases (25,907) among priority diseases. While the number of COVID-19 cases sharply decreased to 215, the number of cases of cholera and kala-azar, respectively, remained low at 49 and 230. Scrub Typhus was one of the diseases that exhibited a concerning rise with 6,763 cases reported. Rabies cases increased to 453. Significant numbers were also recorded for enteric fever (4,177 cases). Among other diseases, AGE had 21,555 cases, SARI) had 18,367 cases, and snakebite occurrences increased significantly to 807. Significant numbers were also recorded for viral hemorrhagic fever (547 cases).

Table 9.2 Priority diseases and other diseases reported in EWARS in FY 2078/79-2080/81

Disease/Period	2078/79	2079/80	2080/81
Priority Diseases			
Dengue	531	25,777	25,907
Scrub Typhus	2,018	3,458	6,763
Enteric Fever	1,654	3,491	4,177
Rabies	-	207	453
Hepatitis-Acute Jaundice	136	173	271
Kala-azar	278	310	230
COVID-19	17,662	5,789	215
Encephalitis	12	141	118
Malaria vivax	37	66	88
Cholera	19	44	49
Malaria falciparum	17	38	47
Suspected Measles Like Illness	4	10	47
Leptospirosis	17	34	17
Pneumonia plague	93	7	6
Diphtheria	1	4	1
Other Diseases			
AGE	7,903	14,583	21,555
SARI	9,373	11,957	18,367
Influenza like illness	2,901	2,207	5,451
Snake Bite-poisonous	-	201	807
Viral Haemorrhagic Fever	1	18	547
Meningococcal Meningitis	32	119	77
Whooping Cough	-	11	23

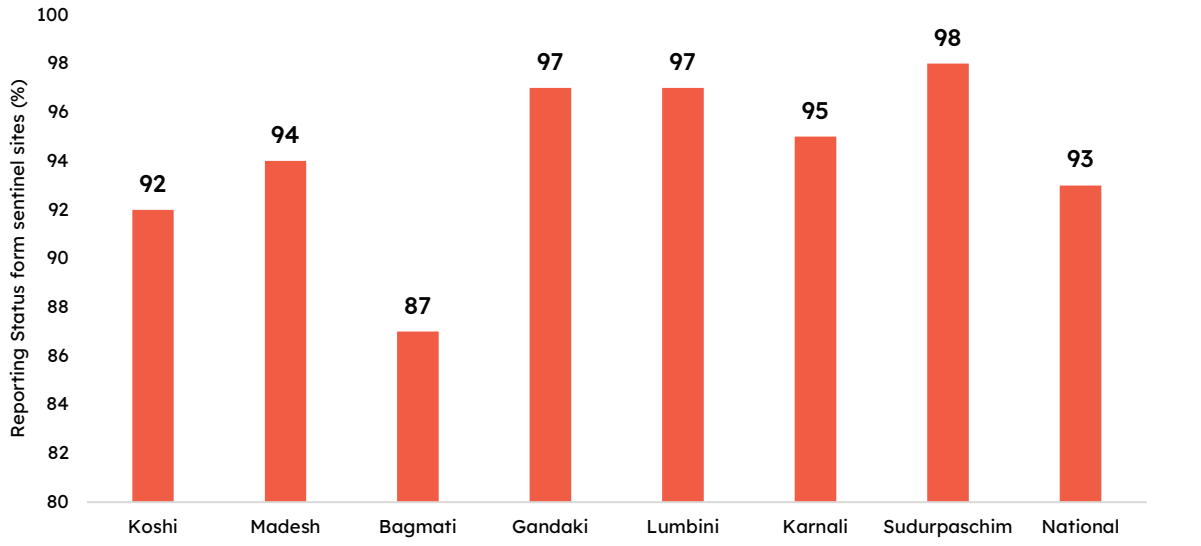
Source: EWARS/EDCD/DoHS

Note: These values may not resemble confirmatory cases as a whole, they can be suspected cases or probable cases too.

Most of the Dengue cases were reported from Bagmati (8,382), Koshi (8,102) and Gandaki province (5,846). Total 6,763 scrub typhus case were reported in Nepal of which highest case reported from Sudurpaschim province (1,768) followed by Bagmati province (1,336), Lumbini province (1,273) and Koshi province (1,204). The details of the provincial EWARS reporting of FY 2080/81 is detailed in Annex Table 9.1.

Reporting status of the sentinel site

Sudurpaschim had the highest reporting rate of 98 percentage while Bagmati had the lowest reporting rate of 87 percentage. The details of number of sentinel sites and percentage of reporting of each province is given in figure 9.2. One hundred eighteen sites consistently reported throughout every epidemiological week in the year, ensuring their sustained commitment to reporting.



Source: EWARS/EDCD/DoHS

Figure 9.2 Reporting status of sentinel sites by Province in 2024

EDCD Call Center (1115) for Disease Surveillance and Media Monitoring

During FY 2080/81, the call center received over 44,387 calls, answering 38,440 of them, which were subsequently published in weekly reports. Excluding calls with unspecified provinces, the majority of calls were received from Bagmati Province (56.0%), followed by Koshi (9.5%), Sudurpashchim (9.0%), Madhesh (8.1%), Lumbini (7.9%), Gandaki (5.7%), and Karnali (3.9%) provinces. In the recent MR campaign that took place from February 25 to March 20, 2024, the call center addressed at least 2,934 queries. Similarly, during the IPV campaign from May 26 to June 8, 2024, the call center addressed at least 659 queries. The majority of calls were related to vaccine, disease information, reproductive health, mental health, social security in health and COVID-19.

During FY 2080/81, over 2,917 news related to potential outbreaks and sensitive health events were reported through media monitoring report. The majority of news were related to dengue, COVID-19, malaria, disaster, snake bite, and food poisoning.

Climate Sensitive Disease Surveillance

Regular reporting of disease data from sentinel sites and meteorological data from the DHM is a key component of the CSDS tool. To enhance data recording and reporting, digital connectivity has been established between relevant departments within each sentinel site, ensuring seamless communication and data entry. With the recent development of a dedicated server, a robust database system has been implemented to automate data integration. This system now directly fetches data from the EWARS and DHM's server, significantly reducing the need for manual data entry and sharing. This advancement not only minimizes errors and inconsistencies but also ensures real-time availability of disease and meteorological data, improving the overall efficiency and accuracy of climate-informed disease surveillance.

Box 9.1 SWOT Analysis of Epidemiological Surveillance and Research

Strengths	Opportunities
• Functional EWARS system with the active Sentinel Sites. • Swift reception of signals/alerts from both sentinel sites and call centers. • Implementation pilots of the CSDS and SORMAS	• List of fifty-two prioritized diseases fulfilled the legal basis for executing regular disease surveillance and response management.
Weaknesses	**Threats**
• Limited coverage of sentinel sites. • EWARS sites majorly reported the data of inpatient & Emergency department only. • Poor monitoring, analysis and immediate feedback by different level. • No any digital platform for Drinking Water Quality Surveillance and Food Quality Surveillance.	• Vertical surveillance without integration is in operation. • Lack of proper means for verification and validation mechanisms poses challenges in ensuring data accuracy and reliability. • Increasing work load and multiple responsibilities of the reporting staff.

9.2 Epidemiology and Outbreak Management Program

9.2.1 About the Program

Epidemiology and Outbreak Management Section (EOMS) within EDCD is responsible for developing and implementing strategies and interventions for preparedness and response, aimed at minimizing the health impact of communicable disease outbreaks and various health emergencies across the nation. These efforts align with the borderer objective of enhancing health security by strengthening current health system and providing technical support to subnational level health systems. EDCD serves as the primary agency responsible for implementing the International Health Regulations (IHR), 2005. The EOMS section plays one of the key roles in strengthening the IHR core capacities and in reporting on progress. (Fig 9.3)

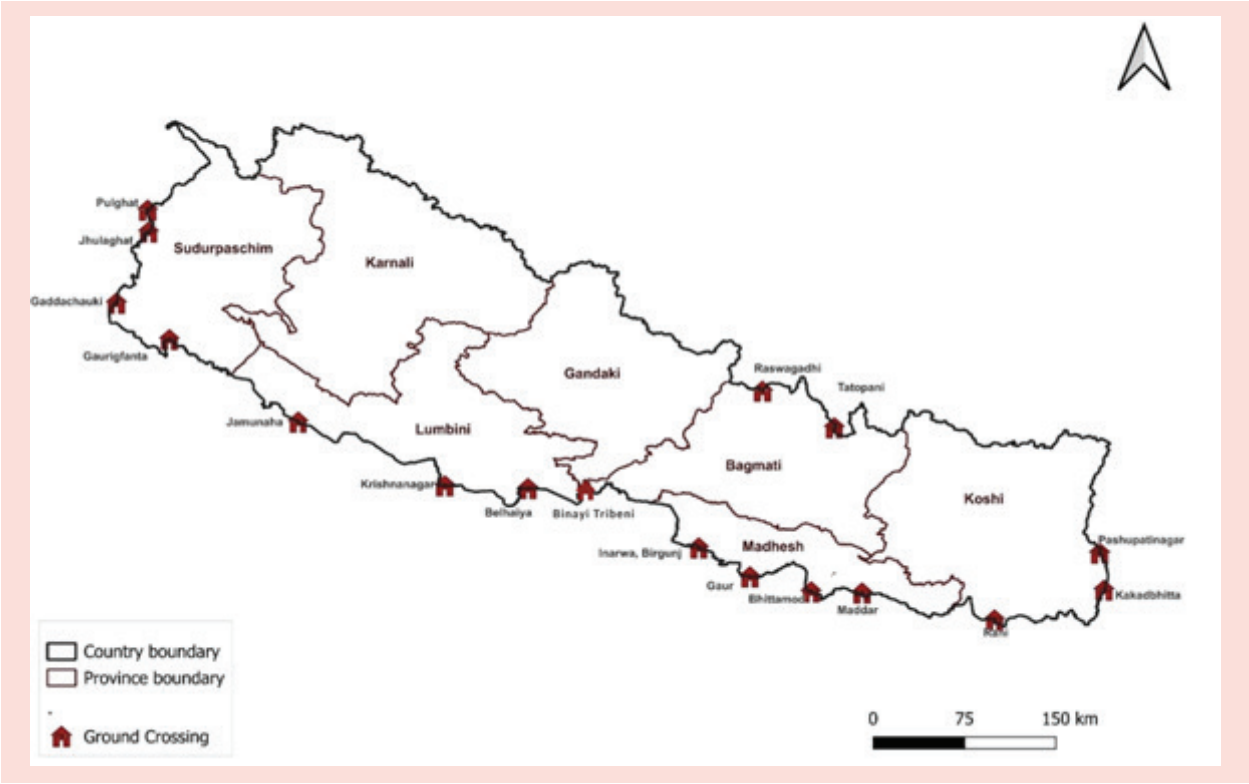


Figure 9.3 Major areas of functions/responsibilities of EOMS, EDCD

9.2.2 Major Activities in FY 2079/80

- Vaccination of Hajj pilgrims as per the requirement of Ministry of health, Saudi Arabia
- Orientation and table top exercise on Risk communication and Community Engagement at all seven provinces
- Capacity building of health/lab workers on Sample collection and transportation of outbreak prone diseases.
- Emergency response, investigation and preparedness activities to different Outbreaks.
  - Helambu food poisoining, Ashwin
  - Jajarkot Earthquake
  - Postearthquake syndromic surveillance
  - Lamjung food poisoining
- Training of trainers to Rapid response teams in all seven provinces.
- Onsite assessment and orientation to 11 health desks of Sudurpaschim, Gandaki and Bagmati provinces
- Identification and prioritization of hazards posing a threat of health emergency at provincial level by conducting Multi hazard risk assessment workshop at three provinces. (Sudurpaschim, Gandaki, Koshi)
- Conducted reviews of health desks at point of entry - ground crossings, covering 17 locations along the Nepal-India border and 2 along the Nepal-China border. (figure 9.4)

Pashupatinagar (Illam)	Kakarvitta (Jhapa)	Rani (Morang)	Bhittamod (Mahottari)	Gaur (Rautahat)	Birgunj (Parsa)	Madar (Siraha)
Belahiya (Rupandehi)	Krishnanagar (Kapilvastu)	Jamunaha (Banke)	Gaddachawoki (Kanchanpur)	Trinagar (Kailali)	Pulghat (Darchula)	Jhulaghat (Baitadi)
Gaurifanta (Kailali)	Rashuwagadi (Rasuwa)	Tatopani (Sindhupalchowk)				



Source:EDCD/DoHS

Figure 9.4 Health desks functional at ground crossing in FY 2079/80

Health desks

There are 17 Health Desks at 17 Ground Crossing Points (GCP) of Nepal out of which 15 are at Nepal-India GCP and 2 in Nepal – China GCP (Figure 9.4) As part of EDCD, they have a key role in preventing the entry of communicable disease into the country by screening various diseases like COVID – 19, Malaria and TB.

Box 9.2 SWOT Analysis of Epidemiology and Outbreak Management Programme

Strengths	Opportunities
• Endorsed guiding documents: New RRT and EMT guideline with provision of district and local level RRT. • Trained human resources RRT, RCCE, Sample Transportation and FETP • Functional health desk at 16 ground crossings points • Functional National IHR Focal Point with Term of Reference • First JEE conducted with clear actionable recommendations	• Devolved governance systems (three tier of governments) • Identified areas of improvement through Joint External Evaluations (JEE) of IHR • National and International Commitment for health emergency risk management • Lessons Learned from COVID-19 Pandemic
Weaknesses	**Threats**
• Lack of formation of district and local level RRTs • Lack of strategic prepositioning of testing kits, medicines, medical supplies for outbreak potential diseases. • Lack of important guiding documents such as • Alert and Response Framework • Sample Transport Guidelines • Outdated and old laws, plans and strategies: • Infectious Disease Act, 2020 • National Cholera Control Plan • National Action Plan for Health Security • National Multi-Hazard Health Emergency Preparedness and Response Plan • Lack of implementation of Public Health Service Act, provisions related to health emergencies.	• Poorly resourced Designated Ground Crossing Points (GCPs) • Coordination and collaboration among three tiers of governments and other sectors • Non-operationalization of contingency funds

EDCD | NTDs and VBDs Control Section | Zoonotic and Other Communicable Disease Control Section | Leprosy Control and Disability Management Section

10.1 Neglected Tropical Diseases (NTDs) and Vector Borne Diseases (VBDs) Control Programmes

10.1.1 Malaria

Malaria is a mosquito-borne disease that poses a significant public health challenge in Nepal. It is primarily transmitted to humans through bites from infected female Anopheles mosquitoes. Previously Terai region of Nepal was the most affected area, but nowadays, cases have been reported in hilly and mountainous regions. Malaria transmission in Nepal is seasonal, peaking before and after the monsoon.

To achieve the malaria elimination, Nepal adopted a micro-stratification approach in 2066/67 (2010), starting at the district level and later extending to the ward level within local level government units (LLGs). This method helps better identify and address the population at risk at the community level. The process involves analyzing recent malaria data, climate patterns, ecological factors, key vector species, and human movement vulnerabilities. Recommendations from the Epidemiology and Disease Control Division (EDCD) and the Malaria Technical Working Group (TWG) this approach has been revised and updates in 2068/69 (2012), 2072/73 (2016), and 2074/75 (2018).

In 2080/81, the updated micro-stratification categorized wards into high, moderate, low, and no risk. Lumbini province consists of 11 high risk wards out of total 25 high risk wards and Sudurpashcim have 9 wards categorized as high risk while most of the moderate risk ward fall in Sudurpashcim province (15 out of 22).

Table 10.1 Micro stratification for Malaria risk

Province	High Risk ward	Moderate Risk Ward	Low Risk Ward
Koshi	1	0	221
Madhesh	1	0	258
Bagmati	0	0	375
Gandaki	0	0	256
Lumbini	11	0	285
Karnali	3	7	410
Sudurpaschim	9	15	599
National	**25**	**22**	**2,404**

Source: EDCD/DoHS

Box 10.1 Nepal's National Malaria Strategic Plan (NMSP, 2070/71 -2082/83 (2014–2025))

National Malaria Strategic Plan (NMSP 2070/71 -2082/83 (2014 – 2025) which was developed in 2069/70 (2013) with pre-elimination focus was updated in 2076/77 (2020) based on the WHO Global Technical Strategy for malaria elimination 2072/73-2087/88 (2016 – 2030), federalization of the health system, disease epidemiology and midterm malaria program review-2073/74 (2017). Nepal is also part of the global E-2082/83 (E-2025) countries with aim to attain **"Malaria Elimination in Nepal by 2082/83 (2025)".**

Vision

Malaria Elimination in Nepal by 2082/83 (2025).

Mission

Ensure universal access to quality assured malaria services for prevention, diagnosis, treatment and prompt response in outbreak.

Goal

Ensure universal access to quality assured malaria services for prevention, diagnosis, treatment and prompt response in outbreak.

Five major strategies

- Strengthen surveillance and information system on malaria for effective decision making.
- Ensure effective coverage of vector control interventions in malaria risk areas to reduce transmission.
- Ensure universal access to quality assured diagnosis and effective treatment for malaria.
- Ensure government committed leadership and engage community for malaria elimination.
- Strengthen technical and managerial capacities towards malaria elimination.

10.1.1.1 Major activities conducted in FY 2080/81

- **Long lasting insecticidal nets (LLIN) Distribution**

  78,598 long lasting insecticidal nets (LLIN) was distributed as mass distribution at high and moderate malaria risk wards. Additionally, 17,025 LLINs were also distributed through continuous distribution to people leaving in active foci, malaria risk groups, army, police and pregnant women at their first ANC visits.

- **Malaria micro stratification up to wards level**

  Malaria Micro stratification was done in 77 districts from central and provincial level considering the risk cluster up to ward level

- **Malaria Disease Surveillance**

  Malaria Disease Information System (MDIS) is fully operational. Continuation of 1-3-7 model malaria case-based surveillance as key intervention, including web-based recording and reporting system for districts. Continuation of program orientation to district and peripheral level health workers on

- **Private sector engagement in malaria elimination**

  Malaria Continuous Medical education (CME), orientation and reorientation activities among private sectors stakeholders was the continuation activities focusing on malaria diagnosis and treatment, recording and reporting to DHIS2 on correctly and timely manner.

- **Malaria Program Mid-Term Review**

  Integrated vector borne disease review was conducted from independent external expert including WHO to identify the program progress, Gaps and Challenges

- **Vector Control Intervention**

  Indoor Residual Spray (IRS) was carried out in high and moderate risk wards of the 25 districts biannually around positive index case. In the meantime, assessment of quality of IRS was done to identify the proper vector control.

- **Malaria commodities supply chain managements**

  Regular supply of malaria diagnosis mRDT and anti-malaria drugs to Service Delivery Points (SDPs) has been assured round the year

10.1.1.2 Status of Malaria Program

Table 10.2 Malaria epidemiological information FY 2078/79–2080/81

Items/indicators	2078/79	2079/80	2080/81
Total population	1,01,40,450	1,02,99,169	2,93,33,648
Total slide examined (Slide and RDT)	2,92,893	4,68,330	4,95,768
Total positive cases	491	533	791
Total indigenous cases	38	24	24
Total imported cases	453	509	767
Total P. falciparum (Pf) cases *	114	151	173
% of Pf of total cases*	23.2	28.33	21.87
Total indigenous Pf cases *	0	4	3
% indigenous Pf cases *	-	2.64	1.73
Total imported Pf cases *	114	147	170
% imported Pf cases	100	97.36	98.27
Total P. vivax (Pv) cases+Ovale**	377	382	618
Total indigenous Pv cases+Ovale**	38	20	21
% indigenous Pv cases +Ovale**	10	5.24	3.4
Total imported Pv cases +Ovale**	339	362	597
% imported Pv cases+Ovale**	90	94.76	96.6
Annual blood examination rate	2.89	4.55	4.6
Annual parasite incidence	0.05	0.05	0.07
Annual Pf incidence	0.011	0.015	0.016
Slide positivity rate	0.17	0.11	0.16
Slide Pf positivity rate *	0.04	0.03	0.03
Death from Malaria	1	0	2
Active Foci	24	16	23
Residual Non-Active Foci	48	44	28
Cleared Foci	87	23	33

Source: HMIS/DoHS

*Pf+Pmix, (16 Pmix cases FY 2080/81) ** P. ovale (31 in FY 2080/81)

Total 791 malaria cases were detected in FY 2080/81, indicating increment compared to previous year, similarly, the total number of microscopic slide examination also increased. Most of the reported malaria cases were imported with 24 cases being indigenous. P. falciparum cases were 21.87% of total cases which had decreased compared to previous year. The number of P. vivax and ovale cases were also increased to 618 in this fiscal year. The Annual Blood Examination rate was 4.6 while Annual Parasite Incidence was 0.07. Slide positivity rate increased compared to previous fiscal year to 0.16. The details of malaria epidemiological information are given in table 10.2 and 10.3.

Table 10.3 Provincial malaria epidemiological trend 2078/79–2080/81

Province	Annual Blood Examination Rate (ABER) of malaria at risk population			Malaria annual parasite incidence per 1,000 population			% of Pf cases among the total malaria cases			% of imported cases among positive cases of malaria			Slide positivity rate of malaria		
	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81	2078/79	2079/80	2080/81
Koshi	2.48	4.52	0.71	0.01	0.01	0.00	20	50	50	100	100	120	0.02	0.03	0.04
Madhesh	2.4	2.99	0.67	0.04	0.06	0.02	13.6	29.69	19.78	100	100	82.61	0.18	0.21	0.28
Bagmati	4.64	8.10	2.02	0.02	0.04	0.01	51.2	40.63	27.47	100	96.88	150.94	0.05	0.05	0.07
Gandaki	1.08	2.64	1.64	0.01	0.02	0.01	23.1	26.92	43.75	100	100	123.08	0.11	0.09	0.04
Lumbini	3.58	5.77	2.27	0.1	0.11	0.06	38.9	37.57	21.68	97.5	99.45	95.71	0.27	0.20	0.26
Karnali	1.57	2.95	3.02	0.04	0.02	0.02	2.1	12.90	16.2	62.5	70.97	100	0.25	0.08	0.07
Sudurpaschim	3.02	3.84	3.19	0.07	0.06	0.09	11	13.33	14.47	91.2	92.67	101.32	0.24	0.16	0.29

Source: EDCD/DoHS

Box 10.2 SWOT analysis of Malaria Program

Strengths	Opportunities
• Strengthened confirmation of suspected and probable malaria cases • Prioritized capacity building activities including private sectors with database for training • Expansion of designated microscopy centers across the country. • Strategic strengthening of peripheral facilities including microscopic detection of *P. ovale* • Indoor residual spray and LLIN distribution across the all high and moderate risk areas	• Availability of the global fund support • Cross border/country collaboration regarding malaria information sharing • Collaboration with leading institutions within and outside the country on the latest advancements in malaria control. • Integration of malaria control intervention along with other vector borne diseases
Weaknesses	**Threats**
• Challenges arise in reaching and implementing 1-3-7 surveillance due to changing epidemiological shifting of diseases to mountainous and remote locations • As the number of malaria cases are decreasing, malaria testing least prioritized by the clinicians and health worker • Malaria testing by RDT kits favored over microscopy even in tertiary centers • Confusion arising from incomplete data leading to misclassification of indigenous and imported malaria • Prompt malaria disease notification processes still challenging from health institution including tertiary hospitals.	• No information sharing about peace keeping returnees from African region by the relevant body • Movement of populations across borders may contribute to the cross-border/country transmission of malaria, requiring regional cooperation • Climate change may have impact on mosquito breeding patterns and the spread of malaria • The drug resistance malaria strains in African region and influx of troops may poses a threat to the effectiveness of treatment intervention • The COVID-19 like pandemics can divert attention and resources away from malaria. • Increasing P. ovale cases in recent years • Single Indigenous Case no any travel history and epidemiological linkage may continue the community transmission

10.1.2 Scrub Typhus

Scrub typhus, caused by *Orientia tsutsugamushi*, is transmitted to humans through the bites of infected larval mites, known as chiggers' mites. These mites, measuring 0.15–0.3 mm, leave a distinctive black eschar at the bite site, which aids in clinical diagnosis. The disease is not transmitted directly from person to person. Scrub typhus exhibits a seasonal pattern,

with peak transmission occurring before and after the rainy season in Southeast Asia, although tropical regions may experience year-round cases. The areas with dense scrub vegetation are particularly infested with the infected chiggers.[1] Effective management of scrub typhus requires a robust reference laboratory equipped with Immunofluorescence Assay (IFA) and molecular facilities for accurate diagnosis, genetic characterization to detect various strains in circulation, and evolutionary analysis. Additionally, it necessitates a comprehensive surveillance system, early detection of outbreaks, and prompt response, including treatment and preventive measures.[2]

Studies in Nepal have documented the presence of scrub typhus. For example, a serological analysis of blood samples from fever patients at Patan Hospital in Kathmandu Valley during 2060/61 BS (2004 AD) identified a 3.2% positive rate. Additionally, cases of morbidity and mortality linked to scrub typhus were reported following the earthquake in 2072 BS (2015 AD). While comprehensive surveillance for scrub typhus remains limited, cases have been recorded through the Early Warning and Reporting System (EWARS) since 2072/73 BS (2016 AD). Recent study from 2023 AD reported seroprevalence of scrub typhus among acute undifferentiated febrile illness cases to be 19.31% (ranging from 5 to 40%).[1]

10.1.2.1 Major activities conducted in FY 2080/81

Capacity strengthening

Though there was no dedicated capacity-building program for scrub typhus, orientation sessions on the guidelines and sensitization on this emerging disease were integrated into other NTDs/VBDs programs.

Rapid Diagnostic Test Kits Supply

The test of scrub typhus is being provided free of cost in the government hospitals and EDCD supplies the test kits on a need basis. In the fiscal year 2080/81, more than 20,000 scrub typhus RDT kits were supplied to ensure availability of the test kits in the high burden areas.

Earthquake Response

In response to the sudden increment of scrub typhus cases reporting after the earthquake in Jajarkot in Kartik month of 2080 BS, EDCD with coordination Provincial Health Service Directorate, oriented health care workers on Scrub Typhus together with other communicable diseases.

IEC/BCC Activities

EDCD has developed and disseminated numerous Information, Education, and Communication (IEC) materials to prevent and control scrub typhus. With support from National Health Education, Information, and Communication Centre (NHEICC), 20,000 brochures were distributed to raise awareness.

10.1.2.2 Status of Scrub Typhus

In FY 2080/81, a total of 16,597 cases were reported, with cases distributed across various provinces. The highest number of cases was reported in Lumbini province (n=4,322). It's worth noting that in FY 2080/81, the number of cases increased across the provinces compared to the previous fiscal years.

Table 10.4 Province wise scrub typhus cases reported to EWARS FY 2080/81

Provinces	FY 2080/81
Koshi	2,119
Madhesh	308
Bagmati	1,838
Gandaki	1,725
Lumbini	4,322
Karnali	2,539
Sudurpashchim	3,746
National	**16,597**

Source: EDCD/DoHS

Box 10.3 SWOT analysis for Scrub Typhus

Strengths	Opportunities
• Update national guidelines on diagnosis, management, and prevention of Scrub typhus in Nepal has been endorsed • Sensitizing communities about transmission risks and prevention methods • Capacity building for health workers in timely diagnosis and management is focused	• Strengthening surveillance system for accurate recording and reporting is vital for effective response and control
Weaknesses	**Threats**
• Absence of a well-established national surveillance system for scrub typhus • The existing surveillance system, primarily reliant on the EWARS, is limited to 118 sentinel sites, which restricts the ability to capture comprehensive data across the country.	• Consistent rise in reported cases annually across various districts • Community awareness of scrub typhus remains low, contributing to delayed diagnosis and inadequate prevention efforts

[1] Epidemiology, clinical characteristics, diagnosis, and outcomes of scrub typhus infection in Nepal: a systematic review. Pratik Lamichhane, Kailash M. Pokhrel, Baraa Alghalyini, Abdul Rehman Zia Ziadi, Maied Z. Alshehery, Kapil Khanal, Madhur Bhattarai, Alisha Yadav. Annals of Medicine & Surgery. Volume 85. Year 2023

[2] Dhimal, M., Dumre, S.P., Sharma, G.N. et al. An outbreak investigation of scrub typhus in Nepal: confirmation of local transmission. BMC Infect Dis 21, 193 (2021).

10.1.3 Dengue

Dengue, a mosquito-borne illness transmitted by Aedes aegypti and Aedes albopictus, is endemic across most provinces in Nepal. First identified in 2060/61 BS (2004 AD), dengue cases have steadily increased, particularly in tropical lowland areas and subtropical hilly regions, including Kathmandu. Several outbreaks have occurred between 2062/63 BS (2006 AD) and 2078/79 BS(2022 AD), highlighting the disease's persistence and spread across various districts.

Entomological surveillance by the EDCD from 2062/63 to 2066/67 BS (2006–2010 AD) detected A. aegypti in five peri-urban areas of the Terai (Kailali, Dang, Chitwan, Parsa, and Jhapa), confirming local transmission. Between 2068/69 and 2071/72 BS (2012–2015 AD), cases were reported intermittently, followed by annual outbreaks in different districts. A major outbreak occurred in 2075/76 BS (2019 AD), affecting 68 out of 77 districts, with 17,992 cases reported.

During the COVID-19 pandemic (2076/77–2077/78 BS or 2020–2021 AD), the number of dengue cases declined, but the 2079 BS (2022 AD) outbreak was the largest recorded in Nepal, with 54,784 cases and 88 deaths. Dengue has now become a significant public health concern, with cases reported year-round in all 77 districts. Current programs aim to reduce dengue-related mortality through targeted.

A recent study by the Vector Borne Disease Research and Training Center (VBDRTC) has confirmed that both *Aedes aegypti and Aedes albopictus* mosquitoes are responsible for transmitting dengue in Nepal. Entomological surveillance conducted in three cities—Kathmandu, Lalitpur, and Ghorahi—in 2079 BS (2022 AD) found the presence of both mosquito species in Lalitpur and Ghorahi.

In 2062/63 BS (2006 AD), a collaborative study by the EDCD and NPHL identified all four dengue virus subtypes (DEN-1, DEN-2, DEN-3, and DEN-4) circulating in Nepal. However, in the 2079 BS (2022 AD) serotyping study conducted by EDCD and NPHL, the predominant virus was DENV1, followed by DENV3 and DENV2, with no positive samples for DENV4.

Box 10.4 Nepal's Dengue Control Program

Goal

To reduce the morbidity and mortality due to dengue fever, dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS).

Objectives

- To develop an integrated vector management (IVM) approach for prevention and control.
- To develop capacity on diagnosis and case management of dengue fever, DHF and DSS.
- To intensify health education and IEC activities.
- To strengthen the surveillance system for prediction, early detection, preparedness and early response to dengue outbreaks.

Strategies

- Early case detection, diagnosis, management and reporting of dengue fever
- Regular monitoring of dengue fever surveillance through the EWARS
- Mosquito vector surveillance in municipalities
- The integrated vector control approach where a combination of several approaches are directed towards containment and source reduction

10.1.3.1 Major activities in FY 2080/81

Advocacy and Coordination

A series of interactive coordination events were conducted with elected representatives, health professionals at local levels, and other stakeholders in districts identified with high potential for dengue burden: Sunsari, Sankhuwasabha, Dhading, Kaski, Tanahun, Rupandehi, Palpa, Kailali, and Kanchanpur. Additionally, separate virtual interactions were held with elected representatives at local and provincial levels in Gandaki Province.

Joint coordination meetings with external development partners and supporting organizations were convened to review ongoing support and synchronize multi-sectoral efforts. Furthermore, a series of coordination and sensitization sessions were conducted involving a wide range of stakeholders, including academic institutions, professional associations, Nepal Police, Armed Police Forces, clubs, networks, and media, aimed at fostering multi-stakeholder engagement in dengue prevention.

Disease Surveillance

The dengue situation was regularly monitored using data reported through the EWARS. Prompt notifications were sent to local levels showing unusual occurrences of dengue cases through official letters from EDCD, prompting timely vector control measures and enhancing preparedness for case management. EDCD closely collaborated with health offices in the most affected districts to gather demographic data (line-list) of dengue-positive cases and deaths, including those not captured by EWARS or reported outside sentinel sites. This disaggregated information on dengue cases, collected from province and district was compiled into comprehensive Situation Report (SITREP) of Dengue in Nepal. In FY 2080/81 alone, 78 issues of Dengue SITREPs were produced.

Vector Surveillance and Vector Control

In fiscal year 2080/81, Aedes surveillance executed through the Provincial Health Directorates and health offices covered various districts in all seven provinces. This surveillance, integrated or standalone, identified Aedes mosquito larval indices surpassing threshold values, including in hill and mountain districts like Mugu and Okhaldhunga, even before the onset of the monsoon season.

A comprehensive 'search and destroy' campaign was conducted at district and local levels, utilizing funds allocated in the Annual Work Plan and Budget (AWPB). Additional mass search and destroy efforts, coupled with awareness activities, were implemented in the severely affected districts and localities, facilitated through collaboration with supporting agencies.

Capacity Strengthening on Clinical Management of Dengue

District-level orientations on the clinical case management of Dengue were conducted in multiple high Dengue burden districts, including Sunsari, Jhapa, Morang, Dhading, Kaski, Tanahu, Rupandehi, Palpa, Kailali, and Kanchanpur. These orientations successfully trained over 300 doctors and healthcare providers from both public and private health facilities, providing comprehensive insights into various approaches to Dengue case management. The orientations focused on improving triaging and referrals, enhancing case management techniques, reducing complications, and preventing Dengue-related deaths.

Short, user-friendly dengue guidelines, including flow charts, were developed with WHO support, and distributed to major government and private hospitals nationwide, particularly those with a high incidence of dengue cases. These flow charts outlined the classification of dengue cases, detailed clinical management procedures, and provided guidance on fluid administration. Designed for display in emergency and in-patient dengue wards, these tools aimed to enhance dengue case management by offering healthcare providers an easily accessible reference.

Risk Communication and Community Engagement

To enhance risk communication, IEC materials were produced and distributed to sub-national levels through diverse channels. These materials aimed to educate the public about dengue fever, its symptoms, effective measures to prevent Aedes mosquito bites, and strategies for vector control. Dengue-related Public Service Announcements (PSAs), developed by NHEICC in Nepali and 12 other local/national languages, were broadcasted across various FM and radio channels. Dengue awareness messages were also widely disseminated nationwide through mobile ringtones broadcasted via national mobile networks.

Other activities

- A comprehensive Dengue Prevention and Control Action Plan was developed, featuring a monthly activity calendar, and clearly defining stakeholder roles and responsibilities at all levels. This action plan was formally communicated to stakeholders across federal, provincial, and local levels, with directives to implement activities as outlined.
- Rapid diagnostic test kits were procured and supplied to provincial and local governments based on assessed needs and demands.
- Dengue virus serotyping was conducted by the National Public Health Laboratory and other institutes, yielding valuable data on circulating serotypes in heavily affected areas like Dhading and Sunsari.
- Two integrated field entomology refresher training sessions were conducted in collaboration with EDCD and the VBDRTC, enhancing the capacity of sixty-five health workers in entomology.

10.1.3.2 Status of Dengue Program

The number of dengue cases slightly decreased in 2080/81 compared to previous year. The highest number of cases were reported from Koshi province (18,067) followed by Bagmati province (12,970). The details of dengue cases are given in figure 10.1.

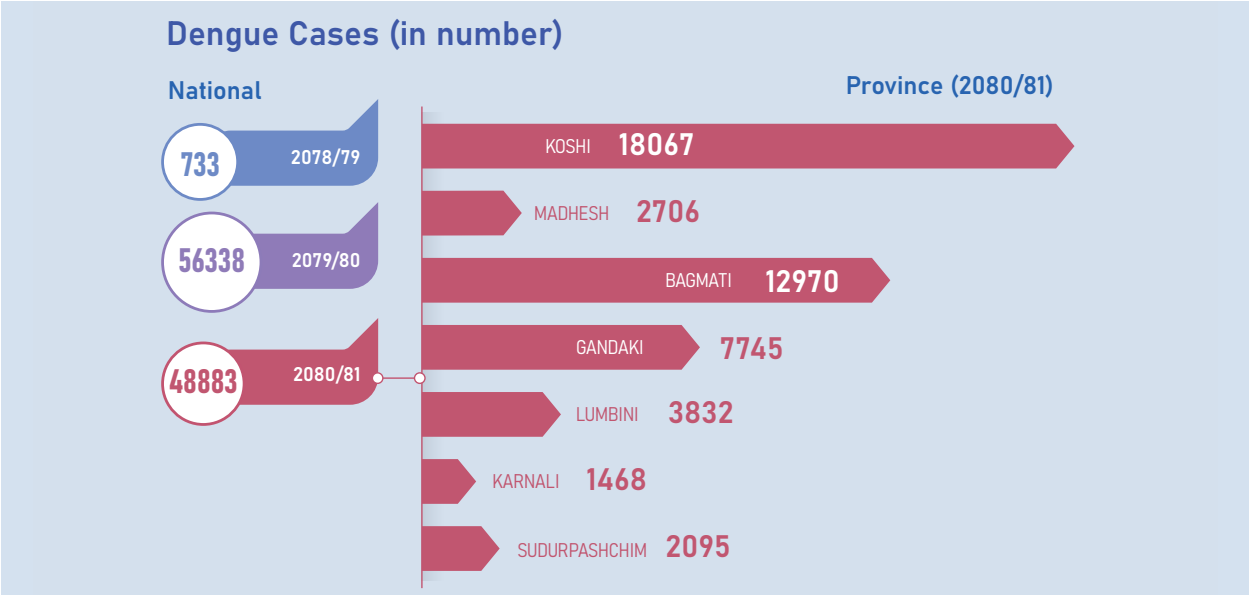


Figure 10.1 Dengue cases (OPD Morbidity) across provinces in FY 2080/81

Box 10.5 SWOT Analysis of Dengue Control Program

Strengths	Opportunities
• Availability of National Guidelines on Prevention, Management and Control of Dengue in Nepal. • Dengue Prevention and Control Action Plan, 2081, is in place. • Established online reporting system through EWARS on DHIS2 and SORMAS from selected provinces. • Development of National Guidelines on Integrated Vector Management (IVM) • Development of SOPs for Integrated Vector Surveillance. • SOPs for complementary vector control interventions, such as targeted Indoor Residual Spray and BTI use, have been developed and disseminated.	• Local governments have authority and capacity to plan and implement response activities as per the local need. • Prospects for integration of technology in surveillance and response systems, such as Epidemic Intelligence from Open Sources (EIOS) • Increased collaboration and coordination among all three tiers of government. • Growing interest from bilateral, multilateral agencies, and international partners to support preparedness and response. • Emergence of digital tools and mobile apps like Nepa Dengue presents opportunity for improving dengue awareness in digital space.
Weaknesses	**Threats**
• Low priority for the dengue control program at sub-national level. • Inadequate training and orientation for newly recruited health workers, and a lack of refresher training for focal persons and managers. • Limited entomological capacity and vector surveillance due to the unavailability of resources (trained human resources and budget) • EWARS is unable to capture a substantial number of dengue cases tested outside the designated sentinel sites, hindering the ability to generate alerts and predict outbreaks. • Underreporting, overreporting, and inconsistent, incomplete, and untimely reporting of dengue cases. • Lack of reporting on Dengue from private clinics, polyclinics, and other health institutions. • Limited human resources at EDCD, with personnel having responsibilities for multiple disease programs, affecting the focus and efficiency of dengue control efforts.	• Climate change and its impact on mosquito populations and dengue transmission, with the disease shifting from lowland regions to higher elevations. • Rapid and unplanned urbanization have created favourable breeding environments for mosquitoes, leading to increased transmission. • Limited engagement of other concerned ministries besides the Ministry of Health and Population in the prevention and control of mosquitoes. • Lack of community compliance and multi stakeholders' engagement in dengue control measures at local levels • Sudden and unpredictable outbreaks may • overwhelm healthcare systems and strain available resources. • Uncertain sustained funding for dengue control program. • Political instability and frequent turnover of political and program leadership may disrupt long-term planning and implementation of dengue control strategies.

10.1.4 Kala-azar

Leishmaniasis, caused by intracellular protozoan parasites, involves 20 Leishmania species transmitted through bites of infected female phlebotomine sandfly. The disease presents in three forms: visceral (kala-azar), cutaneous, and mucosal. Kala-azar is severe, featuring prolonged fever, weight loss, and organ enlargement, often leading to death within two years if untreated.

The government is aligned with the WHO regional strategy and has signed a memorandum of understanding with Bangladesh and India to strengthen collaborative regional elimination efforts. The activities are guided by Kala-azar elimination program. (figure 10.2) In alignment with the regional plan, the national plan is divided into three phases: Preparatory Phase, Attack Phase and Consolidation Phase. The maintenance phase will start once elimination is sustained in all areas reporting kala-azar cases. The overall goal of the plan is "to contribute to improving the health status of vulnerable groups and at-risk populations living in kala-azar endemic areas of Nepal through the elimination of kala-azar so that it no longer remains a public health problem".

Cutaneous Leishmaniasis (CL), the most prevalent form of leishmaniasis, leads to skin ulcers that can result in lifelong scars and disabilities. Mucocutaneous Leishmaniasis (MCL) affects the mucous membranes of the nose, mouth, and throat, often causing severe disfigurement. Both CL and MCL have shown an increasing trend in Nepal in recent years, with significant geographic concentrations in the Karnali and Sudurpashchim provinces.

Nepal aims to eliminate Kala-azar by maintaining an annual incidence rate of less than 1 case per 10,000 people at the district level, with a case fatality rate below 1%. This target was achieved in 2013 AD in endemic districts and has been sustained since then in program districts. However, cases have also been reported from other districts in significant numbers.

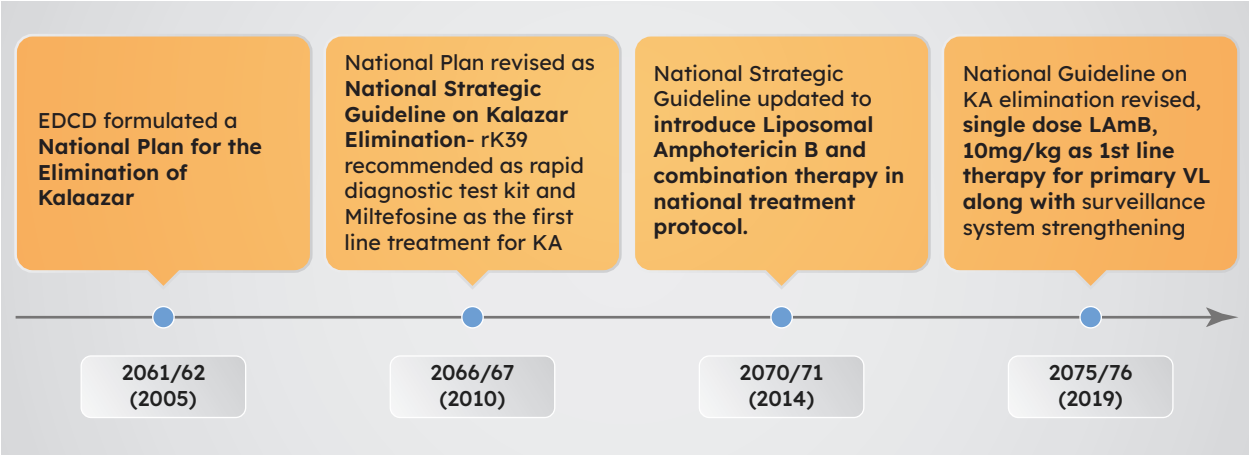


Figure 10.2 Milestones of National Kala-azar elimination program in Nepal

Box 10.6 Kala-azar elimination program

Goal

The goal of kala-azar elimination program is to contribute to mitigation of poverty in kala-azar endemic districts of Nepal by reducing the morbidity and mortality of the disease and assisting in the development of equitable health systems.

Target

Reduce the incidence of kala-azar to less than 1 case per 10,000 populations at district level.

Objectives

- Reduce the incidence of kala-azar in endemic communities with special emphasis on poor, vulnerable and unreached populations.
- Reduce case fatality rate to ZERO.
- Detect and treat Post-Kala-azar Dermal Leishmaniasis (PKDL) to reduce the parasite reservoir.
- Prevent and manage Kala-azar HIV–TB co-infections.

Strategies

- Early diagnosis and complete treatment
- Integrated vector management
- Effective disease and vector surveillance
- Social mobilization and partnerships
- Improve programme management
- Clinical and implementation research

In the last decade, Nepal has made significant progress in kala-azar diagnosis and treatment. The rK39 dipstick test kit is now available at PHCC level in affected districts, offering a rapid serological test. Essential drugs like liposomal amphotericin B, miltefosine, and paromomycin are accessible at all treatment centers. The EDCD provides free diagnostics and drugs to the patients. Additionally, treatment centers receive an incentive of Rs 5,000 per case, and patients are reimbursed Rs 2,000 to cover transportation costs.

10.1.4.1 Major activities in 2080/81

Integrated Field Entomology Refresher Training

Integrated Field Entomology Refresher Training for Control of Vectors of Public Health Importance to the health worker from all provinces which training was expected to increase the skills in field entomology and integrated vector surveillance, addressing pressing issues such as insecticide resistance and climate change impacts on vector densities.

Formulation of SOP on Integrated Vector Surveillance

EDCD hosted experts, entomologists, and stakeholders to discuss the “Standard Operating Procedure (SOP) on Integrated Vector Surveillance.” Key objectives of the meeting included sharing the SOP with experts and provincial focal persons to foster a common understanding and engaging participants in discussions on the identification of sentinel sites for vector surveillance.

Establishment of Entomological Laboratory in all seven provinces

To strengthen the entomological surveillance capacity of the country, EDCD supported entomological kits including microscopes and stereoscopes to all provinces for establishing entomological laboratory. This support

has equipped the provinces to regularly carry out the integrated vector survey in the selected sites.

Microstratification for risk of VL

The microstratification of risk for Visceral Leishmaniasis (VL) has been crucial in refining the national strategy for controlling and eliminating the disease in Nepal. By assessing districts based on disease burden, ecological receptivity, and vulnerability, the program has categorized and clustered the wards of the country from the risk prospectives.

Early Case detection and treatment

EDCD supplied medicines including Liposomal Amphotericin B (LAmB), Miltefosine and Paromomycin for VL treatment to District Hospital and above level and rK39 kits to hoispitals, health offices and in selected PHCCs of high-burden areas. In the FY 2080/81, a total of 1622 vials of LAmB, 1120 capsules of Miltefosine and around 15000 rk39 test kits were supplied throughout the country.

Active Case Detection (ACD)

Through the index case-based approach, the suspected people of areas where the index case is located, active case detection was carried out by testing the people with symptoms related to Kala-azar and Post Kala-azar Dermal Leishmaniasis (PKDL) with rK39 test kit. Out of 181 cases reported in 2080.81, 142 cases were followed-up with ACD, where 2110 suspects were tested with rK39 out of which 9 was tested positive and referred to hospitals for further diagnosis and treatment.

Global Positioning System (GPS Mapping) of All VL cases

EDCD, with technical support from WHO, has started GPS mapping of all VL cases. In 2080/81, house location of 157 cases out of 181 reported cases were registered in the system.

Establishment of Centre of Excellence for Kala-azar diagnosis and managements

As the national program is moving towards elimination of Kala-azar as a public health problem, the need for specialized treatment centers (Centre of Excellence for Kala-azar) was realized and is in process of being established in Janakapur Hospital in Madhesh province and Surkhet Hospital in Karnali Province. These hospitals will be equipped with trained human resources, advanced diagnostics and treatment facilities. EDCD has already provided training of trainers and further training programs to clinicians, paramedics and nursing staff for quality and early diagnosis, treatment and case management of Kala-azar cases.

10.1.4.2 Status of Kala-azar Elimination Program

Kala-azar Endemicity Status

Forty-seven districts were classified as endemic districts and 25 as endemic doubtful, only 5 districts of Gandaki Province were classified as non-endemic. The details of district classification of endemicity are given in figure 10.3.

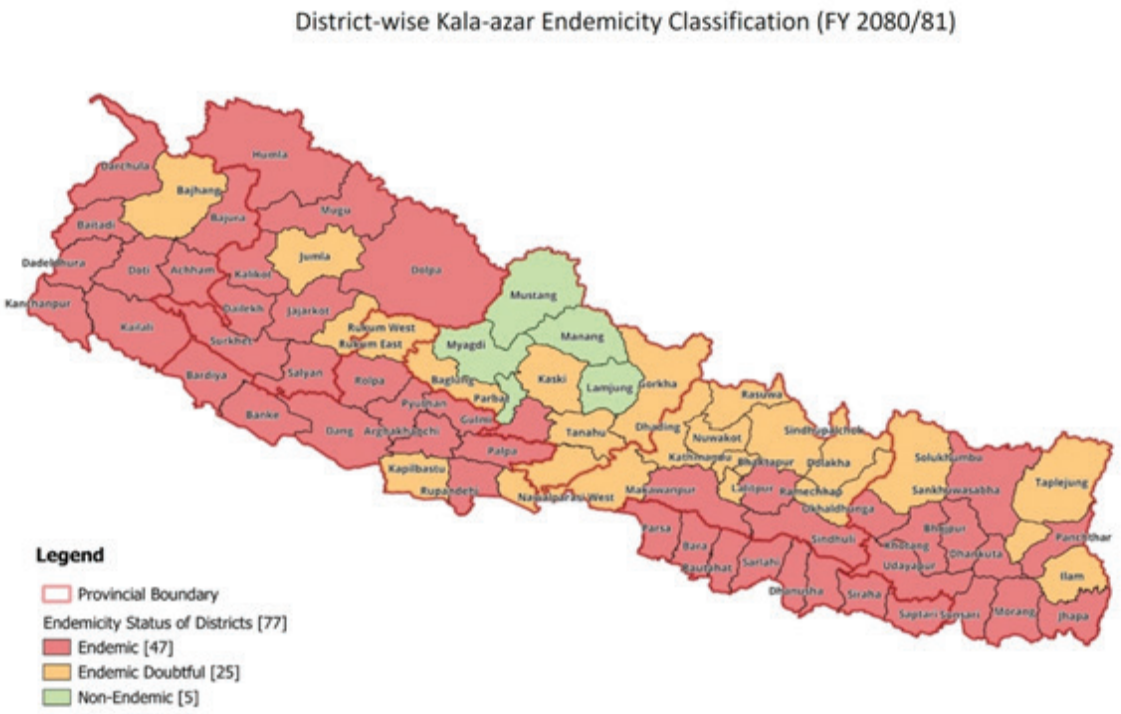


Figure 10.3 District-wise Kala-azar Endemicity Classification

The highest number of Kala azar cases were reported in FY 2078/79, which decreased to 199 in FY 2079/80. This year the cases increased to 225. Karnali province reported the most (58) cases followed by Koshi province (51) cases. The details of the Kala-azar cases is given in figure 10.4.

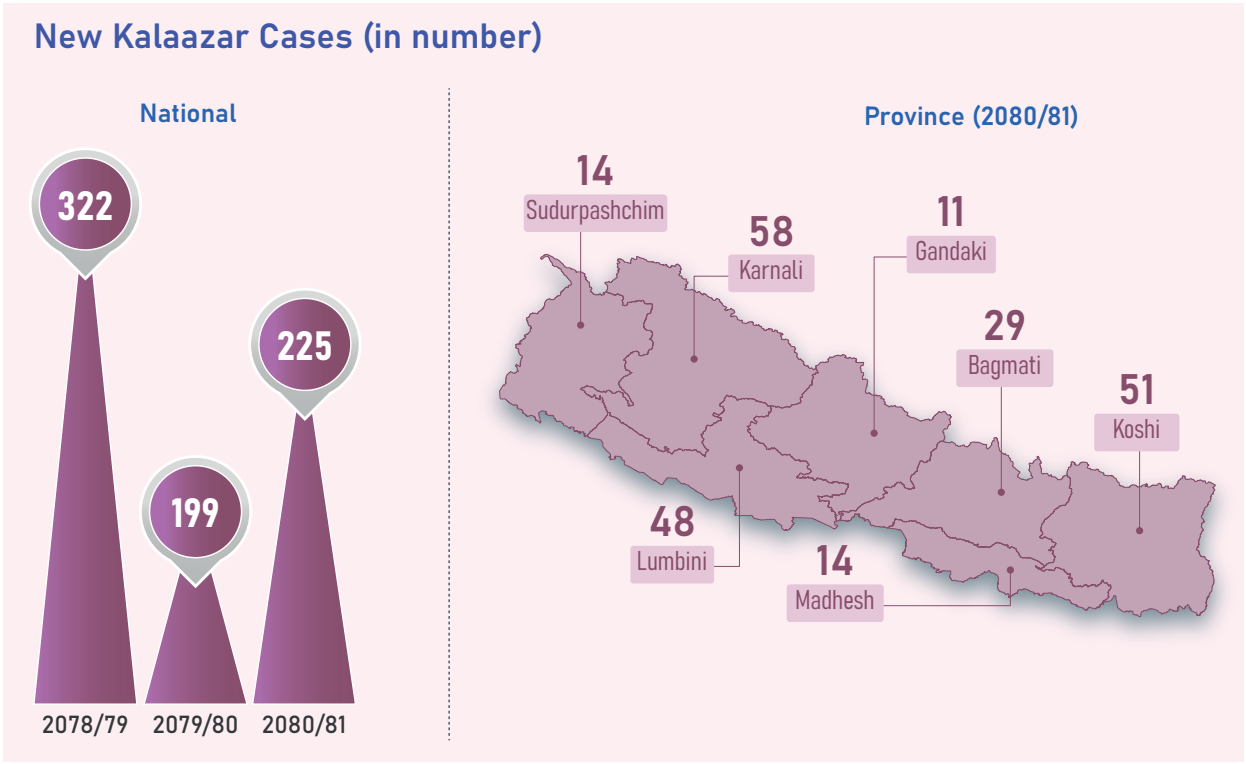


Figure 10.4 Cases of Kala-azar detected in three FYs and distribution across province in FY 2080/81

Box 10.7 SWOT Analysis of National Kala-azar Elimination Program

Strengths	Opportunities
• Free diagnostics and drugs for timely kala-azar diagnosis and treatment • Initiation of GPS mapping, case verification and validation of each reported cases. • Revised national guidelines and regular professional training • Standard Operating Procedures for ACD, IRS, and Integrated Vector Surveillance • Multi-disciplinary approach to tackle Kala-azar elimination challenges. • HMIS and EWARS for surveillance • Active case detection through the index case-based approach • Partnerships and collaboration with academics, researchers, and stakeholders • Implementation of vector surveillance at selected sites	• Expansion of clinical and implementation research efforts • Continuing collaboration with national and international institutes to facilitate knowledge exchange among health workers (clinicians, paramedics, and medical recorders) • Collaboration with international expert to capacitate human resources for insecticidal residual spray
Weaknesses	**Threats**
• Regular seasonal insecticide spray Coverage is too low at endemic and endemic doubtful district • The unavailability of diagnostic tool rk39 at all PHCC level as envisioned by national guideline • Insufficient community awareness about the disease.	• Changes in climate and environment may impact the distribution of sandfly vectors, affecting disease transmission patterns • Liposomal Amphotericin B, the 1st line drug of choice for primary visceral leishmaniasis, is expensive, limited market availability, and is available to national program only through WHO • Rising other form of leishmaniasis including cutaneous, mucocutaneous and PKDL

10.1.5 Lymphatic Filariasis (LF)

Lymphatic filariasis (LF), or elephantiasis, is a mosquito-borne parasitic disease-causing disfigurement and disability. LF is acquired during childhood through mosquito bites, with visible and more severe symptoms typically emerging in adulthood, although they can also manifest in children.

It is transmitted by various species f mosquito and is caused by filarial worms, primarily *Wuchereria bancrofti* globally. In Nepal, *Culex quinquefasciatus* is the known vector for LF infection. Adult worms disrupt lymphatic vessels, producing microfilariae circulating in the blood. Mosquitoes become infected by biting infected individuals, continuing the transmission cycle.

LF transmission is determined by factors such as infected individual numbers, microfilaria density, vector mosquito density, vector characteristics, and human-vector contact frequency. Clinical outcomes include limb lymphoedema, genital diseases like hydrocele and chylocele, and recurrent acute attacks with pain and fever. Subclinical lymphatic damage affects nearly all infected individuals, with chronic conditions leading to long-term mental, social, and financial consequences, exacerbating social stigma and poverty. The activities of the program are guided by elimination program targets and strategies. (Box 10.8, figure 10.6)

Box 10.8 National Lymphatic Filariasis Elimination Program

Goal

Elimination of Lymphatic Filariasis from Nepal by the year 2030 as a public health problem by reducing the level of the disease in population to a point where transmission no longer occurs.

Objectives

- To interrupt the transmission of Lymphatic Filariasis
- To reduce and prevent morbidity.
- To provide de-worming benefit using Albendazole to endemic communities
- To reduce mosquito vectors through application of suitable and available vector control measures (Integrated Vector Management)

Targets

- Complete MDA in all LF endemic districts by 2082/83 (2025),
- Complete post MDA surveillance to validate LF elimination by 2087/88 (2030),
- Achieve elimination of LF as a public health problem defined as <1% microfilaremia and <2% antigenemia by 2025 and sustain thereafter,
- Complete the morbidity mapping in all districts by 2083/84 (2026),
- Ensure continued essential package of care for all identified morbid cases by 2084/85 (2027),
- Validate LF elimination by 2030 and sustain thereafter.

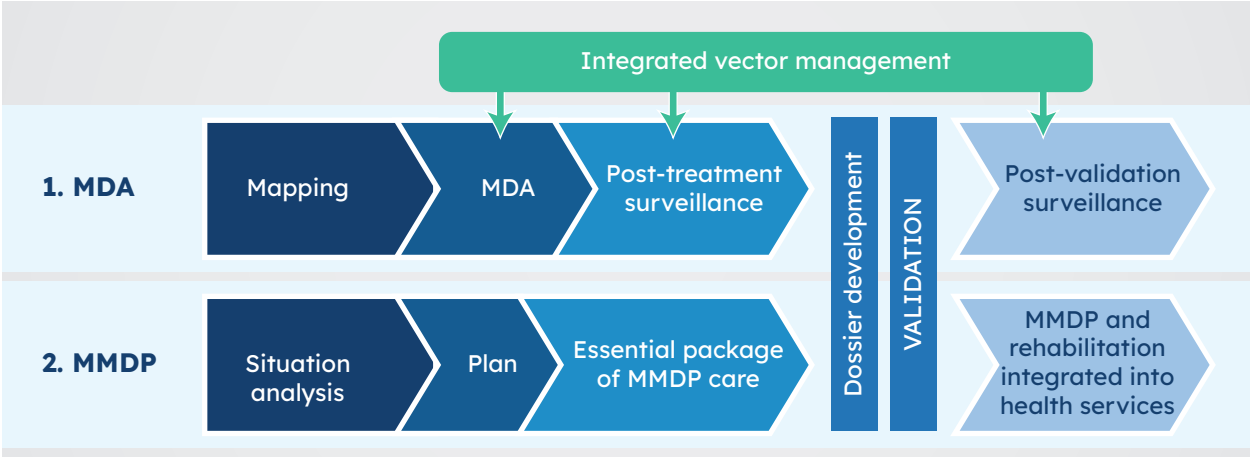


Figure 10.5 Strategies for LF Elimination

The LF elimination strategy starts with a baseline survey, followed by Mass Drug Administration (MDA) for six rounds (DA MDA) or two rounds (IDA MDA). Post-treatment surveillance (Pre-TAS/EMS and TAS/IIS) assesses MDA impact, with additional rounds if needed. Successful MDA completion and comprehensive MMDP interventions lead to validation of LF elimination. A dossier is submitted to the WHO, and after validation, Post-Validation Surveillance ensures sustained absence of LF transmission. MMDP interventions continue, seamlessly integrated with primary healthcare services.

LF Endemicity in Nepal

Nepal was identified as one of the 72 countries endemic for LF by WHO. Initially, the LF vector was believed to be present between altitudes of 300 to 5,800 feet. However, a 2070/71 (2014) study expanded this range, revealing vector presence up to 6,890 feet in Nepal. A series of LF mapping initiatives conducted from 2057/58-2068/69 (2001 to 2012), utilizing Immunochromatography Test cards (ICT), unveiled an average baseline prevalence of 13%, with variations from less than 1% to as high as 39.8% across districts. Combining ICT survey data with morbidity reporting, vector density, sanitation status, and geo-ecological considerations, 64 out of 77 districts were identified as endemic, encompassing an initial at-risk population of 25 million. (figure 10.6)



Figure 10.6 LF Endemicity Status of Nepal in 2080/81

10.1.5.1 Major activities in FY 2080/81

Implementation of Mass Drug Administration MDA Campaign

In the 2080/81, MDA was carried out across 7districts, wherein all districts implemented the triple drug therapy (IDA) regimen comprising ivermectin, diethylcarbamazine and albendazole. The MDA campaign demonstrated notable success, as all districts exceeded the recommended epidemiological coverage threshold (>65%). Among the 7 districts, 6 achieved an impressive epidemiological coverage of over 80%.

Monitoring and Evaluation of MDA program

The EDCD conducts post-MDA Coverage Surveys, Pre-Transmission Assessment Surveys, and Transmission Assessment Surveys (I, II, & III) to monitor Lymphatic Filariasis Elimination activities using WHO guidelines. TAS surveys are performed for DA (two-drug regimen) MDA activities. In districts implementing IDA (three-drug regimen) MDA, Epidemiological Monitoring Surveys (EMS) and IDA Impact Surveys (IIS) are conducted following WHO provisional guidelines. In the fiscal year 2080/81, TAS-1 Surveys were conducted in Bara, Lamjung, Parbat, and Baglung. EMS took place in Morang, Kapilvastu, Dang, Banke and Kailali. All of these districts except Kapilvastu successfully passed these surveys.

Performance-based Recognition of local Government for LF MDA campaign

Sixteen local levels were felicitated based on Performance-based Recognition from 15 MDA Districts. This recognition was based on last year's MDA performance, with scores derived from various parameters such as MDA Coverage, Spot Compliance, Daily Reporting, SCT, and other activities. These parameters ensured a comprehensive evaluation of each local level's efforts and achievements. The recognition highlights the commitment and effectiveness of these local levels in implementing MDA programs and serves as an encouragement for them in public health initiatives.

Morbidity mapping and disability prevention

The MMDP program is further strengthened by rolling out training to health workers and FCHVs in all districts in phases for continuous mapping, management, and referral of LF morbid cases. To date, 29 MMDP centers in 28 districts have been functionalized. LF cases receive additional rehabilitative and social support from self-help groups where they practice self-care and engage in livelihood activities. The morbidity data collected from mapping (SMS and paper-based approach) of 57 districts showed that 47,868 cases of LF have been identified so far, among which majority (32,659 cases) were hydrocele, 14,776 lymphoedema (Male-5,586 and Female-9190) and 431 cases were having both Hydrocele and Lymphoedema.

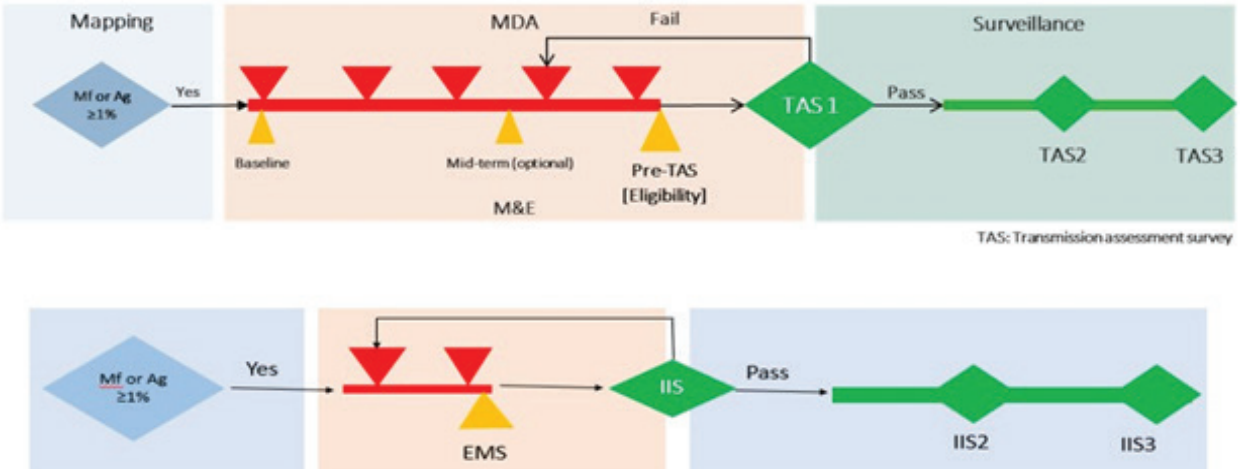
Capacity Building in MMDP Care and Support Centers

Comprehensive training in line with WHO morbidity management and disability prevention guideline and standard operating procedure (SOP) was provided to medical Doctor, Nursing staff and paramedics of 29 hospitals in 28 districts, to improve the accessibility and utilization of essential package of care. These sessions focused on two critical areas: case management and self-care practices. The training aimed to equip healthcare professionals with the necessary skills and knowledge to improve specifically prevention and treatment of acute attack, lymphedema management strategies and practice of self-care.

Monitoring and Evaluation of MDA program

The Epidemiology and Disease Control Division (EDCD) conducts post-MDA Coverage Surveys, Pre-Transmission Assessment Surveys, and Transmission Assessment Surveys (I, II, & III) to monitor Lymphatic Filariasis Elimination activities using WHO guidelines. TAS surveys are performed for DA (two-drug regimen) MDA activities. In districts implementing IDA (three-

drug regimen) MDA, Epidemiological Monitoring Surveys (EMS) and IDA Impact Surveys (IIS) are conducted following WHO provisional guidelines. In the fiscal year 2080/81, TAS-1 Surveys were conducted in Bara, Lamjung, Parbat, and Baglung. EMS took place in Morang, Kapilvastu, Dang, Banke and Kailali. All of these districts except Kapilvastu successfully passed these surveys.



IIS: IDA Impact Survey

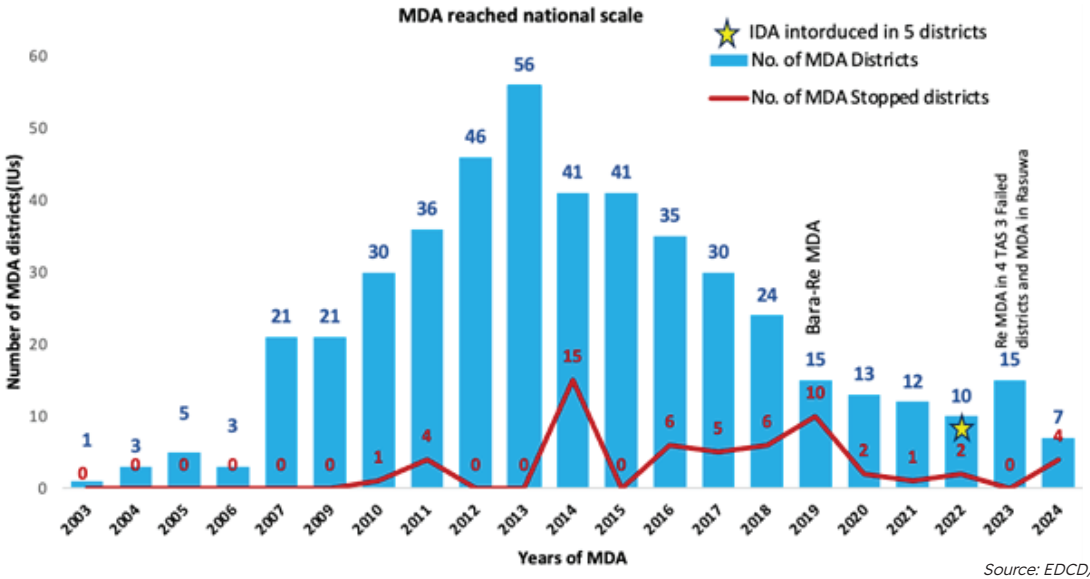
EMS: Epidemiological Monitoring Survey

Figure 10.7 Monitoring and Evaluation of MDA program

10.1.5.2 Status of Lymphatic Filariasis Program

Table 10.5 Status of MDA Implementation in 2080/081

S. N	District	MDA Round	Total Population	Total Treated	Epidemiological Coverage %	Spot coverage at 95% CI	SCT coverag at 95% CI	Rapid assessment
1	Jhapa	11DA+2IDA	1017386	841151	82.68	86.5 (82.9-89.6)	71.8 (66.5-77.0)	97/120 (80.83%)
2	Dhanusha	6DA+2IDA	879495	781413	88.85	92.3 (89.6-94.5)	86.4 (81.9-90.2)	107/145 (73.79%)
3	Mahottari	6DA+2IDA	716264	623427	87.04	97.3 (95.4-98.6)	94.1 (90.12-96.8)	65/100 (65%)
4	Sarlahi	6DA+2IDA	878191	753817	85.84	89.0 (86.2-91.5)	73.8 (67.82-79.3)	533/661 (80.63%)
5	Rautahat	6DA+2IDA	841191	685316	81.47	74.8 (71.0-78.3)	84.0 (75.3-90.6)	71/88 (80.68%)
6	Rasuwa	2IDA	45974	38457	83.65	94.0 (88.9-97.2)	84.0 (75.3-90.6)	Not done
7	Kapilvastu	13DA+3IDA	699870	543712	77.69	93.7 (90.3-96.1)	87.8 (84.2-90.8)	45/50 (90%)
Total			**5078371**	**4267293**	**84.03**			



Source: EDCD/DoHS

Figure 10.8 Year-wise Scaling up of MDA campaign

In 2024, MDA campaign was conducted in 7 districts while in 4 districts MDA campaign was stopped.

Table 10.6 MMDP Implementation Status

Mapping completed	MMDP care and support centres	Self-help group formation	Cumulative number of hydroceles operated
57 districts	28 districts (Jhapa- 2 centres, Udayapur, Morang, Sunsari, Dhanusha, Siraha, Mahottari, Rautahat, Ramechhap, Sindhupalchok, Dhading, Nuwakot, Gorkha, Lamjung, Shyanjha, Nawalparasi East, Baglung, Nawalparasi-West, Rupandehi, Kapilvastu, Banke, Bardiya, Dang, Salyan, Rukum-West, Doti, Kanchanpur, Kailali)	7 districts (Jhapa, Morang, Sunsari, Kapilvastu, Rupandehi,Nawalparasi West and Baglung)- 75 self-help groups)	13,015 (cumulative total)

Source: EDCD/DoHS

Prevention of resurgence of transmission

Targeted LF antigenemia testing done in six locations with antigen-positive cases identified during post-MDA surveillance. Notably, all localities, except Taudaha in Kathmandu, showed zero microfilaremia rates. Responding to the findings, individuals with positive LF antigen tests were promptly treated with a single dose of IDA. (table 10.7)

Table 10.7 Status of TAS positives follow-up survey

Case No.	Location	Number of persons tested around index cases	Number of antigen positives among tested	Number of microfilariae positive among tested	% of antigen positives	% of MF positives
1	Taudaha, Kathmandu	93	1	1	1.08	1.08
2	Dallu, Kathmandu	74	2	0	2.70	0.00
3	Kathmandu 18	137	3	0	2.19	0.00
4	Madhyapur Thimi, Bhaktapur	134	1	0	0.75	0.00
5	Lalitpur 11	105	2	0	1.90	0.00
6	Thulachhap, Okhaldhunga	87	1	0	1.15	0.00

Source: EDCD/DoHS

Box 10.9 SWOT Analysis of LF Elimination Program

Strengths	Opportunities
• Mosquito Xeno monitoring in respect to LF has been initiated. • Operational MMDP Centers Across the Offering Surgical and Care Services • MMDP completed in 57 districts • Hot spot identification and focal MDA has initiated in particular districts • Confirmatory survey has completed in all high mountainous and Himalia districts. • IDA implementation plan is started in all endemic units	• Establishment of self-help group and fostering of community engagement can be crucial part of LF elimination to tackle lack of resources • MMDP care and support center will play vital role even after the Transmission assessment survey
Weaknesses	**Threats**
• Funding inadequacy is always challenging for MDA and MMDP Campaign. • Systematic incompliance of MDA preventive chemotherapy especially in urban areas and particular community. • Ownership and fund allocation is challenging from subnational level.	• Urban population has significantly lower epidemiological MDA coverage than Rural populations • Fatigueless of health workers and FCHVs to implement the MDA campaign in certain district

10.1.6 National Leprosy Elimination Program

The establishment of the Khokana Leprosarium in the nineteenth century was the beginning of organized leprosy preventive services in Nepal. In 1960, the then His Majesty's Government (HMG) of Nepal, in collaboration with the World Health Organization (WHO), conducted a leprosy survey with an estimated number of 100,000 leprosy cases. Later, Dapsone monotherapy was started as a pilot project in 1966 in Nepal. This project gradually expanded as a vertical program and remained so till 1987 when it was integrated into general health services. Multi drug therapy (MDT) was introduced for the first time in Nepal in the year 1982/83 in selected few areas and hospitals. By that time the number of registered cases had come down to 31,537 (PR of 21 per 10,000). Number of districts then with a prevalence rate (PR) of over 5 was 62 and in only three districts the PR was less than 1 per 10,000. There was a gradual and steady expansion of MDT services and by 1996 MDT coverage was extended to all districts of the country. Being a member country, Nepal is committed to the elimination of leprosy in line with the global program and is an active member of the global alliance for elimination of leprosy as a public health problem. A six- year plan was developed in 1995 for strengthening the program. Accordingly, as per that plan, an estimation of leprosy prevalence was done, and all basic health staff (BHS) were provided training in Leprosy. Health Education was intensified to improve community awareness and to facilitate case detection. The first independent evaluation of the National Leprosy Control Program was undertaken during January (7th to 26th) 1996, by a group of experts representing the then HMG, WHO, and Non-governmental Organizations (NGOs). Two rounds of Leprosy Elimination Campaigns were organized in the years 1999 and 2000.

Following the continuous efforts from the Government of Nepal, Ministry of Health & Population, Leprosy Control Programme, WHO-Nepal, district health/public health office and concerned agencies, leprosy was eliminated as a public health problem at the national level in 2009 and declared in January 19, 2010 (2066 Magh 5) with a national registered prevalence rate of 0.77 cases per 10,000 population, which was below the cut-off point of below 1 per 10,000 population definition set by World Health Organization.

Box 10.10 Milestones of National Leprosy Elimination Program of Nepal

Year BS (AD)	Milestones
1913/14 (1857)	Establishment of Khokana Leprosarium
2016/17 (1960)	Leprosy survey by Government of Nepal in collaboration with WHO
2022/23 (1966)	Pilot project to control leprosy launched with Dapsone monotherapy
2038/39 (1982)	Introduction of multi-drug therapy (MDT) in leprosy control programme
2043/44 (1987)	Integration of vertical leprosy control programme into general basic health services
2047/48 (1991)	National leprosy elimination goal set
2051/53 (1995)	Focal persons (TB and leprosy assistants [TLAs]) appointed for districts and regions
2052/53 (1996)	All 75 districts were brought into MDT programme
2055 - 2057 (1999/2000–2001/02)	Two rounds of National Leprosy Elimination Campaign (NLEC) implemented
2064/65 (2008)	Intensive efforts made for achieving elimination at the national level
2065/66 (2009 and 2010)	Leprosy elimination achieved and declared at the national level
2067/68 (2011)	Developed and endorsed National Leprosy Strategy (2011–2015)
2068/69 (2012-2013)	Elimination sustained at national level and national guidelines, 2013 (2070) revised
2069/70 (2013-2014)	Mid-term evaluation of implementation of National Leprosy Strategy (2011-2015)
2070/71 (2014-2015)	Ministry of Health designated Leprosy Control Division as the Disability Focal Unit
2070/71 - 2074/75 (2015-2018)	Piloting of Leprosy Post Exposure Prophylaxis in Jhapa, Morang and Parsa
2073/74 (2017)	Policy, Strategy and 10 Years Action Plan on Disability Management (Prevention, Treatment and Rehabilitation) 2073-2082 developed and disseminated
2074 (2018)	National Leprosy Strategy 2073-2077 (2016-2020) developed and endorsed. Revised leprosy guideline in line with national leprosy strategy and global leprosy strategy.
2075/76 (2019)	In-depth Review of National Leprosy Programme and Envisioning Roadmap to Zero Leprosy
2076/77 (2020)	Development of Leprosy Post Exposure Prophylaxis Guideline
2077/78 (2021)	Endorsement National Roadmap for Zero Leprosy-Nepal 2077/78-2087/88 (2021-2030) Endorsement of National Leprosy Strategy 2077/78 – 2081/82 (2021-2025)

The National Leprosy Elimination Program of Nepal is guided by National Roadmap for Zero Leprosy (2021-30 AD) and National Leprosy Strategy (2021-25 AD).

Box 10.11 National Leprosy Strategy of Nepal

Vision

Elimination of Lymphatic Filariasis from Nepal by the year 2030 as a public health problem by reducing the level of the disease in population to a point where transmission no longer occurs.

Goal

Elimination of leprosy (interruption of transmission of leprosy) at the subnational level (municipality) (interruption of transmission is defined as zero new autochthonous child leprosy cases for consecutive five years at the municipality level)

Objectives

- To eliminate leprosy transmission at the subnational level (province, district, local level).
- To strengthen clinical case management at district and municipal levels and improve referral system.
- To enhance capacity building through training of health staff particularly at the peripheral health facilities.
- To enhance prevention of leprosy.
- Reduction of stigma and discrimination.
- To strengthen leprosy surveillance system and regular monitoring, supervision, and periodic evaluation at all levels.
- To strengthen partnerships among different stakeholders.
- To strengthen management of leprosy complications like reactions and disability prevention and rehabilitation.
- To coordinate with neighboring states of India in management, reporting and referral of cases from border areas.
- To promote research and innovations.

Four Strategic Pillars

- Implement the national leprosy roadmap for zero leprosy across all level-national, provincial, and local.
- Scale up leprosy prevention alongside integrated active case detection.
- Manage leprosy and its complications and prevent new disability.
- Combat stigma and ensure human rights are respected.

10.1.6.1 Major activities in FY 2080/81

Active Case Detection and Leprosy Post-Exposure Prophylaxis (LPEP)

Active Case Detection and Leprosy Post-Exposure Prophylaxis (LPEP) program, conducted in Kapilvastu district (3 municipalities) from 15-21 Bhadra 2080 (1-7 September 2023). The activity comprised of an Orientation Programme for health workers and FCHVs and, field activity focused on contract tracing and provisioin of single dose rifampicin to eligible contacts of leprosy index cases. The field-level efforts led to the screening of 6,130 contacts and the enrollment of 5,102 contacts in the Single Dose Rifampicin prophylaxis program for preventing leprosy transmission. Fourteen new cases were detected through the program, showcasing that early case detection and preventive measures were effective, with no G2D case identified.

Commemoration of 71st World Leprosy Day

On Magh 14, 2081 (January 28, 2024), 71st World Leprosy Day and World NTDs Day were jointly observed under the themes “Ending Stigma, Embracing Dignity” and “Unite, Act, and Eliminate” through an interaction program with Stakeholders and Media persons at National Health Training Center to raise awareness, eliminate stigma/discrimination, promote early detection, and advocate for the rights of those affected by leprosy and NTDs through multi-sectoral collaboration.

Leprosy capacity building programme

Two batches of leprosy training were successfully conducted: Basic Health Service Staff training (16–18 Jestha 2081/29–31 May 2024) and Clinical Training for Medical Officers (1–6 Asar 2081/14–19 June 2024) for total 48 participants from 24 districts. Jointly organized by EDCD and WHO, the training aimed for enhanced detection, management and reporting of leprosy cases from the pheriphery level. The training was organized at Anandaban Hospital/Training Center.

Leprosy Case Vaildation Programme

The data validation and surveillance of newly diagnosed leprosy cases was conducted in Kailali district from 21-24 Kartik 2080. The event was organized by EDCD in collaboration with the Province Health Directorate-Sudur Paschim, Health Office-Kailali, WHO, NLR-Nepal, and NNSWA, targeting 8 municipalities. The program successfully validated 36 cases, with approximately 17% of cases undergoing a change in leprosy classification.

Additionally, about 8% of cases were found to likely not be related to leprosy.

Review and planning meeting for the leprosy control and disability management program

Leprosy Control and Disability Management Program review and planning meeting was held on 25th–26th Mangsir 2080 BS (Dec 11-12, 2023 AD) at the central level. The meeting, guided by the Director General of DoHS and the Director of EDCD, engaged key stakeholders from MoHP, DoHS, and implementing partners engaged in leprosy, disability and rehabilitation sector. The discussion focused on aligning with the National Leprosy Strategy (2021-2030 AD) and the Disability Management Policy, including the 10-year strategy and implementation plan (2016-2025 AD). The meeting provided valuable insights and recommendations to guide future actions for the successful elimination of leprosy and effective disability management and rehabilitation services in Nepal.

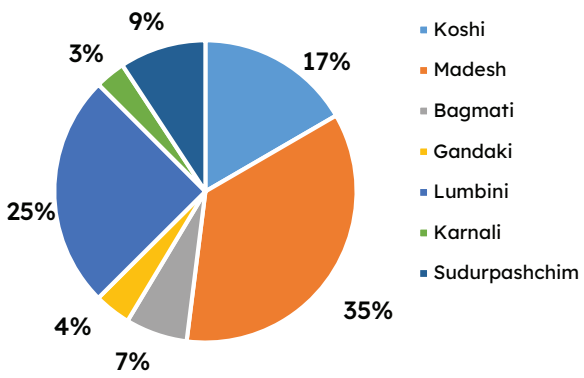
10.1.6.2 Status of National Leprosy Program

In FY 2080/81, a total of 2,472 new leprosy cases and leprosy cases on Multidrug Therapy (MDT) were reported. There had been decline in national NCDR compared to last fiscal year reporting. National NCDR was 8.41 per 100,000 population, and the prevalence rate (PR) was 0.92 per 10,000 population. Madhesh province and Lumbini province exhibited the highest NCDR and PR. Among new leprosy cases, 5.5% were children and 6.35% presented with Grade 2 Disability (G2D). Females constituted 42% of new cases.

In FY 2080/81, 18 districts in Nepal reported a leprosy prevalence rate exceeding 1 per 10,000 population, indicating continued endemicity. Kapilvastu recorded the highest prevalence at 2.43 per 10,000, followed by Nawalparasi West (2.06 per 10,000) and Banke (2.02 per 10,000).

A year-on-year comparison between FY 2079/80 and FY 2080/81 shows that 14 districts consistently had a prevalence rate ≥1 per 10,000, while four additional districts - Achham, Nawalpur, Lamjung, and Rukum West crossed this threshold in FY 2080/81.

At the provincial level, Madhesh Province (1.4 per 10,000) and Lumbini Province (1.2 per 10,000) exhibited the highest leprosy prevalence rates, highlighting priority areas for intensified surveillance and intervention. The details of Leprosy cases are given in figure 10.9 and table 10.8.



Source: HMIS/DoHS

Figure 10.9 Distribution of the new cases of the Leprosy in FY 2080/81 across provinces

Table 10.8 Status of Leprosy program monitoring indicators by province in FY 2080/81

Province	Population	New case detection rate/100,000 population	Prevalence rate/10,000 population	Percentage of MB among new	Percentage of child among new	Percentage of G2D among new	Percentage of G2D child among new	Percentage of female among new
Koshi	49,65,744	8.28	0.87	85.64	2.92	12.65	0.00	41.12
Madhesh	62,39,952	14.01	1.46	71.40	9.95	5.38	0.11	42.33
Bagmati	62,62,412	2.62	0.32	94.51	3.05	2.44	0.00	34.15
Gandaki	24,03,527	4.04	0.53	96.91	1.03	5.15	0.00	34.02
Lumbini	51,53,505	11.97	1.29	77.15	3.73	4.70	0.16	45.38
Karnali	17,04,171	4.69	0.60	92.50	0.00	1.25	0.00	31.25
Sudurpaschim	26,67,499	8.58	0.99	88.21	3.49	8.30	0.00	47.60
National	**2,93,96,810**	**8.41**	**0.92**	**79.98**	**5.50**	**6.35**	**0.08**	**42.15**

Source: HMIS/DoHS

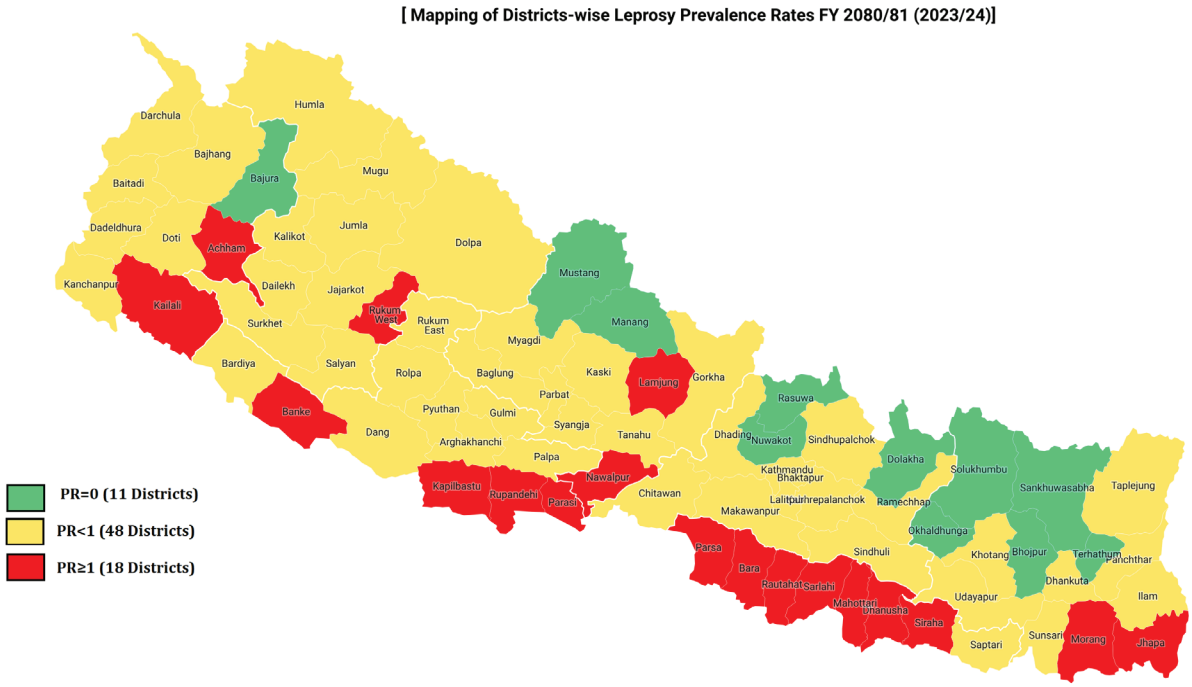


Figure 10.10 District based Leprosy prevalence rate in FY 2080/81

The highest prevalence rate of leprosy was seen in Kapilvastu district while the highest number of under treatment cases was reported in Kailali district. The details of leprosy cases with 18 highest rate are given in figure 10.11.

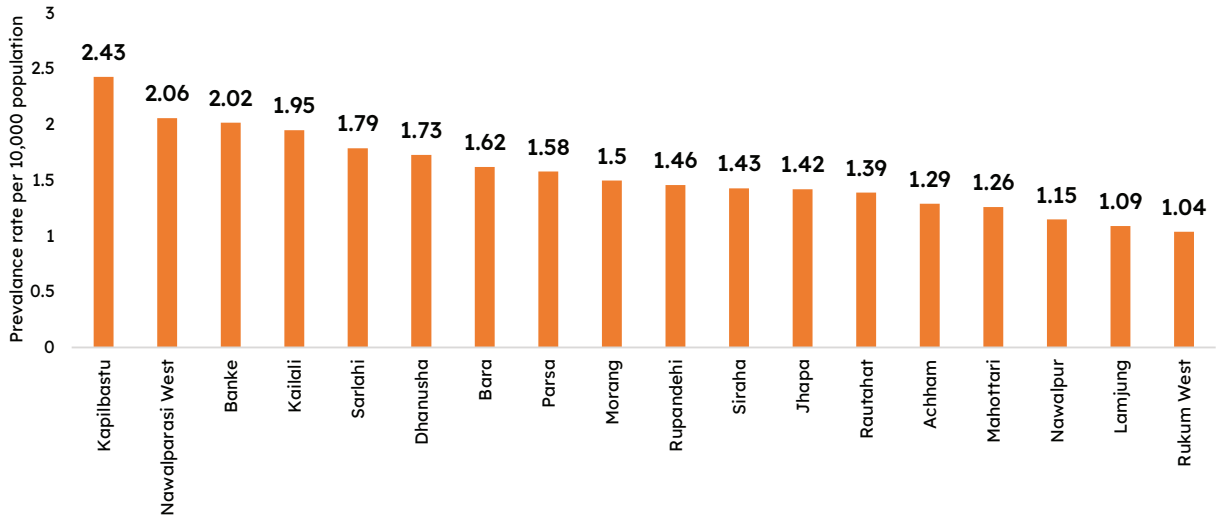
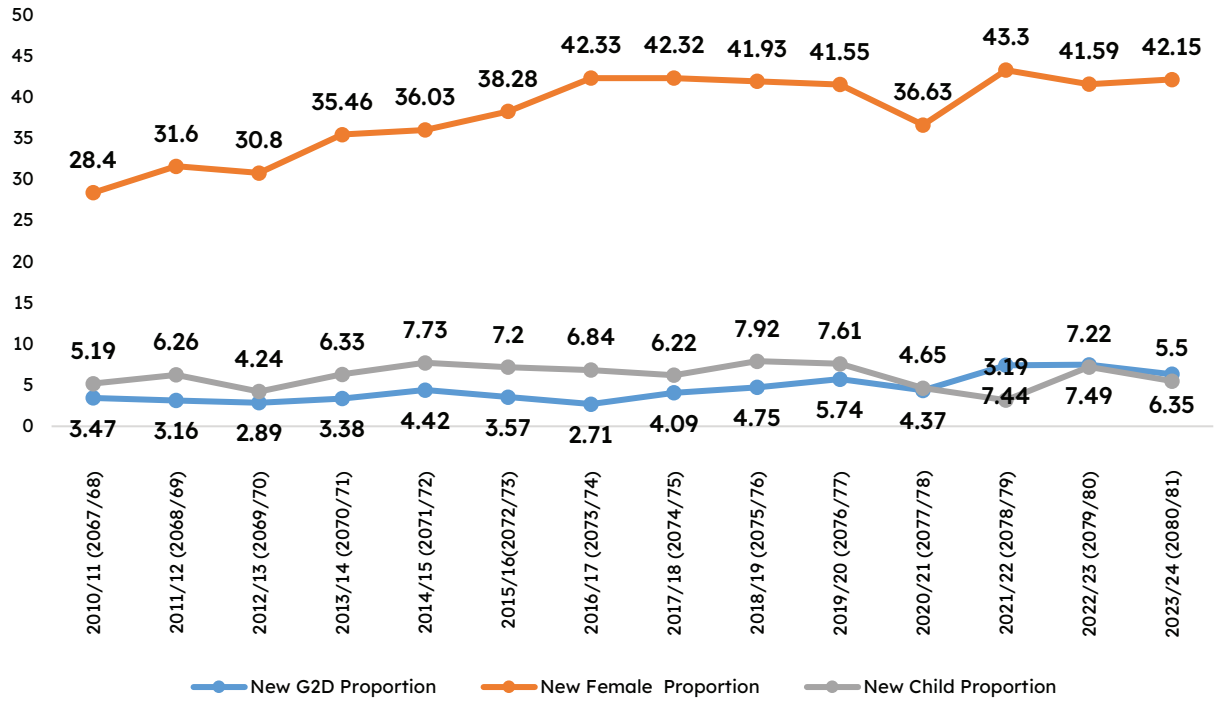


Figure 10.11 District with high prevalence rate of Leprosy in FY 2080/81

Source: HMIS/DoHS

The new grade 2 disability proportion decreased to 6.35 from previous year while new female proportion increased to 42.15 from previous year. The new child proportion also decreased to 5.5 in current fiscal year.



Source: HMIS/DoHS

Figure 10.12 Proportion of New Grade 2 Disability, Child and Female cases from 2067/68 to 2080/81

Box 10.12 SWOT Analysis of NLEP

Strengths	Opportunities
• Free MDT, transportation cost for released cases, and additional services for treating complications • Leprosy services accessible at grassroot levels • Continuous supply of MDT • Effective communication and collaboration among supporting partners • Increased participation of leprosy-affected individuals in the national program • Regular meetings of steering, technical and coordination committees • Active case detection, contact examination, and surveillance of patients, family and neighbors • Expansion and continuation of Leprosy Post-Exposure Prophylaxis in case reporting districts	• Evidence-based planning aligned with the National Leprosy Strategy 2021-2025 • Pilot of case-based reporting system • Operational research in high-endemic districts for quality services • Intensification of vocational education and income generation for people affected by leprosy • Resource mobilization, partnerships, and collaboration with local government and new partners • Ongoing Leprosy Post-Exposure Prophylaxis Programme as preventive chemoprophylaxis initiatives in high endemic districts
Weaknesses	**Threats**
• Inadequate institutional setup and human resources • Low priority for leprosy program at the periphery • Limited rehabilitation activities • Insufficient training for newly recruited health workers and lack of refresher trainings • Challenges in reaction and complication management at the periphery • Limited technical monitoring and supervision of leprosy recording/reporting and surveillance • Limited resources for expansion of contact examination and Leprosy Post-Exposure Prophylaxis (LPEP) coverage	• Significant number of foreign case reporting • Limited activities for early case detection and management, high G2D proportion • Increasing new cases of leprosy • Ongoing high community transmission, high child cases • Retaining trained human resources • Stigma and discrimination related to leprosy • Maintaining access and quality of services in low-endemic mountain and hill districts

10.2 Zoonotic Diseases and other communicable disease control

10.2.1 Zoonotic disease control

Each year, globally, five new human diseases emerge, three of which are of animal origin. Furthermore, around 80% of potential bioterrorism agents involve zoonotic pathogens. Approximately 60% of existing human infectious diseases are zoonotic in origin, and at least 75% of emerging infectious diseases, including Ebola, Zika, and influenza, etc also originate from animals. The Zoonotic and Communicable Disease Control Section focuses on implementing public health measures to address zoonotic diseases. Optimum national resources allocation is required to improve both human and animal health; and to address the following the identified ten priority zoonotic diseases through One Health.

Influenza (Avian and Seasonal)
Rabies
Coronavirus
(SARS-CoV, MERS-CoV, SARS-CoV2)
Leptospirosis
Brucellosis
Salmonellosis
Leishmaniasis
Zoonotic Tuberculosis
Toxoplasmosis
Cystode
(Cysticercosis/ Hydatidosis)

10.2.1.2 Rabies control programme

Rabies, primarily affecting warm-blooded animals like dogs, is almost always fatal but entirely preventable through vaccination and promoting awareness of human-animal interactions.

Over 96% of bite cases in Nepal are attributed to dogs, and 99% of human rabies cases result from dog bites. Approximately half of Nepal's population at high risk and a quarter at moderate risk with children representing 40% of dog bite cases. Annually, Nepal witnesses 100 human rabies cases, with the Terai region facing the highest risk. Vaccinating 70% of dogs is crucial to break the rabies transmission cycle, making it a priority at EDCD.

10.2.1.2.1 Major activities in FY 2080/81

- Capacity building of health workers on case management of dog bite.
- Specification and quantification of ARV and ERIG.
- Community engagement and risk communication activity
- Drafted National Rabies Elimination Strategy 2024-2030

10.2.1.2.2 Status of Rabies Control Program

Number of cases of dog bites increased to 1,92,402 in current fiscal year, similarly other animal bites increased to 17,899. Total fourteen deaths was reported due to animal bites. The details of bites are given in Table 10.9.

Table 10.9 Animal bites and consumption of the ARV vials in FY 2078/79–2080/81

Fiscal year	Number of cases of dog bites	Number of cases of other animal bites	No. of cases of animal bites (dog+ Other animal)	Number of ARV vials consumed	Reported Deaths
2078/79	75,562	9,921	85,483	2,46,950	13
2079/80	1,08,555	10,837	1,19,392	4,56,978	10
2080/81	1,92,402	17,899	2,10,301	3,00,000	14

Source: HMIS, e-LMIS, EWARS/DoHS

10.2.1.3 Snake bites control program

Nepal is home to 21 venomous snake species out of a total of 90 species. Each year, approximately 10,000 snakebite cases are reported, with around 14% involving venomous bites and mortality rate of 10% among those cases. The 26 Terai districts are particularly vulnerable. Since 2056 BS (1999/2000 AD), the government has distributed Indian quadrivalent anti-snake venom serum (ASVS) free of charge. Currently, 106 treatment centers across the country provides these services, operating in collaboration with the Nepal Army, Nepal Red Cross Society, and local communities. Hospitals in the Kathmandu Valley also receive ASVS supplies based on the number of snakebite cases.

10.2.1.3.1 Major activities in FY 2080/81

- Snakebite case management training to health workforce
- Accreditation and upgrading of new treatment centers across the country
- Onsite coaching in selected treatment centers in all provinces
- Social media campaign, BCC activities and IEC material development
- Ensuring uninterrupted logistic supply to treatment centers including quantification and forecasting of ASVS

10.2.1.3.2 Status of snake bites control program

Table 10.10 Snake bite cases, Nepal FY 2080/81

Fiscal year	Total cases	Non-poisonous	Poisonous
2078/79	9,346	8,420	926
2079/80	9,120	7,897	1,223
2080/81	8,181	6,693	1,488

Source: HMIS /DoHS

In FY 2080/81 the total number of cases slightly decreased from 9,120 to 8,181. However, the number of Venomous snake bite increased from previous years.

Box 10.13 SWOT analysis of Zoonotic disease programs

Strengths	Opportunities
• Free administration of ARV and ASVS across the country • Updated guidelines on rabies prophylaxis and snakebite management • Strengthening of snakebite treatment centers and ARV administration sites. • Capacity building on rabies prophylaxis and snakebite management to health workers.	• International collaboration platforms • Funding sources • Advocacy • Expansion of one health approach to address zoonotic diseases
Weaknesses	**Threats**
• Lack of trained human resources in sub national level • Inadequate domestic funding. • Updated guidelines and documents on prioritized zoonotic disease control other than rabies, snakebite not available.	• Surge in the zoonotic disease cases. • Increasing human animal conflict • Lack of political will and political instability. • Lack of ownership, cross sectoral collaboration and governance.

10.3 International Health Regulations (IHR)

The International Health Regulations (IHR) are a legally binding instrument of international law applicable to 196 countries, including the 194 WHO Member States. They establish rights and obligations for nations, such as the duty to report public health events and the criteria for determining whether an event qualifies as a "public health emergency of international concern." Under the IHR, countries commit to develop core capacities for the prevention, detection, response, and report of public health events. The updated IHR (2005) came into force on 1st Shrawan 2064 (17th July 2007). It specifies the core capacity requirements all the times and outlines key components for monitoring and evaluation to ensure compliance. (See Box 10.14, figure 10.13 for detail)

Box 10.14 Core Capacity Requirements of IHR

- Policy, Legal and normative Instruments to implement IHR
- IHR coordination, National IHR Focal Point functions and advocacy
- Financing
- Laboratory
- Surveillance
- Human Resources
- Health Emergency Management
- Health services Provision
- Infection prevention and control (IPC)
- Risk communication and community engagement
- Points of Entry and Border health
- Zoonotic Diseases
- Food Safety
- Chemical Events
- Radiation Emergencies

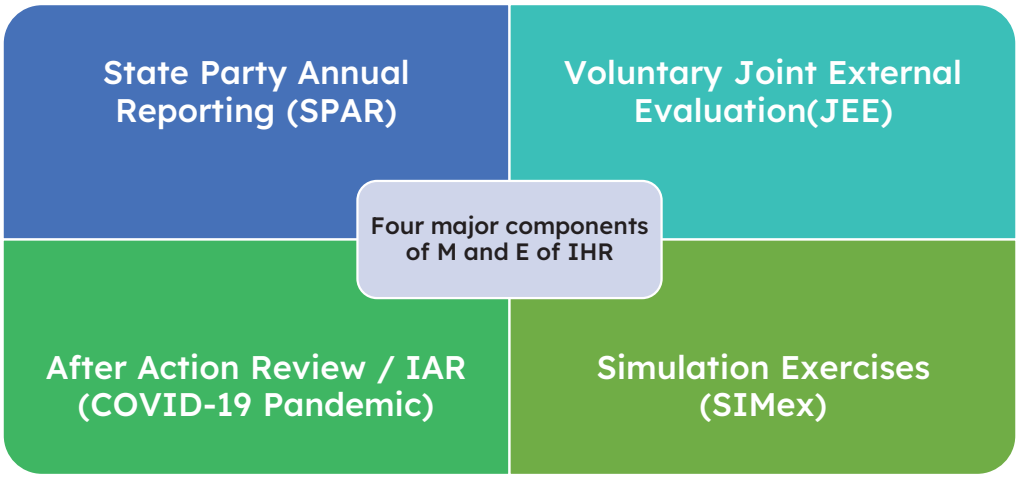


Figure 10.13 Four major components of monitoring and evaluation of IHR

The State Party Annual Report (SPAR) is a mandatory requirement under the IHR. EDCD of the Ministry of Health and Population is designated as IHR -National Focal Point and the Zoonotic and Communicable Disease Control Section acting as the alternate focal point.

EDCD collaborates with multiple ministries, eg.the Ministry of Agriculture and Livestock Development (MoALD), Ministry of Education, Science and Technology (MoEST), Ministry of Culture, Tourism, and Civil Aviation (MoCTCA) etc, to prepare the SPAR.

Provinces receive IHR core capacities orientation with multisector involvement. National workshop is conducted to achieve consensus on the final SPAR report. The finalized report is uploaded online and submitted to the World Health Assembly through WHO.

Tribhuvan International Airport (TIA) is Nepal's designated Point of Entry (PoE) under IHR, supported by health desks at three air and 17 ground crossings. EDCD oversees capacity development activities in line with IHR recommendations to ensure robust implementation.

10.3.1 Major activities in FY 2080/81

- Periodic orientation to staff of POE
- SPAR has been regularly submitted to World Health Assembly under national obligation towards IHR 2005
- Orientation on M-Pox to the Health desk, Airlines, Civil aviation authorities, Customs and immigration staffs
- Simulation exercise on mass casualty management
- Aeronautical Information and Publication (AIP) on health requirement component has been updated

For more details, please visit:

https://heoc.mohp.gov.np/guidelines-publications/joint-external-evaluation-of-ihr-core-capacities-of-nepal-mission-report-28-november-2-december-2022/detail

10.4 One Health

The One Health Approach highlights the inter-connectedness of human, animal and environmental health, advocating for cross-sectoral collaboration to address health challenges comprehensively and the future preparedness of the events that constitutes Public health emergency of national and international concerns.

The Zoonotic and other Communicable Disease Section of the Epidemiology and the Disease Control Division serves as the focal point of the Ministry of Health and Population in accordance with the One-Health Strategy 2076. This section emphasizes fostering an understanding of the relationships between human and wildlife, domestic animals, food, water, plants to combat future speculated risk. This approach encourages enhanced collaboration, data sharing, integrated disease surveillance and outbreak investigation.

Moreover, in FY 2079/80, Nepal piloted the Zoonotic Influenza Distribution Assessment and Ranking (ZIDAR) model, conducting workshops at both national and provincial levels to understand the possible hotspots. AMR is considered as one of the deeper concern for One Health Approach due to its complex and cross sectoral dimension, as it is considered as silent pandemic globally. M-Pox, Seasonal Hyper Acute Pan Uveitis (SHAPU) prevention, diagnosis, treatment and control activities are implemented under One Health approach.

Box 10.15 SWOT analysis of One Health Approach

Strengths	Opportunities
• Fostering of holistic approach on health issues • Early detection and timely intervention of emerging diseases	• Integrated surveillance and collaborative research • Platform for international collaboration and advocacy • Culture of multisectorality approach to any disease or events of public health concerns.
Weaknesses	**Threats**
• Poor judiciary allocation of the resources and trained personnel. • Inadequate allocation of funds due to competing priorities.	• Resistance to adopt a more integrated approach • Lack of supportive policies for One Health.

11 National Tuberculosis Control Program



11.1 Overview

Tuberculosis (TB) is a significant public health issue in Nepal and one of the leading causes of global mortality. It is caused by Mycobacterium tuberculosis and primarily affects the lungs but can also manifest in other body parts. Nearly a quarter of the global population carries the TB bacteria. This disease is closely linked to poverty and disproportionately impacts adults, particularly men. Despite being curable and preventable, access to diagnosis and care falls short of UHC, affecting a substantial portion of the population in Nepal. Annually, the program assesses the TB epidemic status and tracks progress in response efforts. It gathers data from multiple sources, including the National Tuberculosis Control Center (NTCC), the Health Management Information System (HMIS), the National Tuberculosis Program Management Information System (NTPMIS), and WHO country profiles.

11.1.1 TB burden estimates

Globally, an estimated 10.8 million people fell ill with TB in 2023.The disease resulted in 1.25 million deaths, while 4,00,000 people developed multi-drug resistant/ rifampicin-resistant (MDR/RR) TB. In the same year, in South-East Asia Region (SEAR), 2.5 million people were diagnosed with TB, 1,29,000 deaths occurred, and 60,000 people with MDR/RR-TB were estimated.[1]

According to the National TB Prevalence Survey Report (2076/2020), Nepal's annual TB prevalence is 1,17,000, the incidence is 69,000 and TB-related deaths are 17,000. These figures are 1.8 times, 1.6 times and 3.1 times higher than the previous estimates, respectively. (table 11.1)

Table 11.1 Comparison Between the Pre-and Post-Survey TB burden in Nepal 2075 (2018)

Year	Incidence (all forms)	Prevalence (all forms)	Mortality (HIV Neg. & Pos.)
2075 (2018) New estimates	69,000 (245 per 100k)	1,17,000 (416 per 100k)	17,003 (9,000-26,000)
2075 (2018) Prior estimates	42,000 (151 per 100k)	60,000 (215 per 100k)	5,500 (3,900 - 7,400)
Revised burden, higher by:	1.6	1.8	3.1

Although the incidence is higher than the previous estimates, the incidence rate is declining by 3% annually. An assumed 3% rate of decline in incidence over the period 2057-2075 (2000-2018) was used, supported by a steep gradient in prevalence rates over groups of increasing age, suggesting a decline in transmission, and an average 8% per year growth in Gross National Income (GNI)/capita.[2]

In 2079 (2023), Nepal faced a TB burden of an estimated 68,000 cases, with an incidence rate of 229 per 100,000 population. HIV-related TB cases totaled 430, with an incidence rate of 1.4 per 100,000 population, while 3,000 individuals were affected by Multi-Drug-Resistant/Rifampicin-Resistant (MDR/RR) TB, at a rate of 10 per 100,000 population. The mortality impact was significant, with 16,000 HIV-negative TB deaths (mortality rate: 54 per 100,000) and 200 HIV-positive TB deaths (mortality rate: 0.69 per 100,000). (table 11.2)

Table 11.2 TB Burden Estimates in Nepal 2078 (2022)

	Number	(Rate per 100,000 population)
Total TB incidence	68,000 (37,000-106 000)	229 (126-355)
HIV-positive TB incidence	430 (230-670)	1.4 (0.79-2.3)
MDR/RR-TB incidence**	3,000 (1,300-4,600)	10 (4.5-15)
HIV-negative TB mortality	16,000 (8,900-26,000)	54 (30-86)
HIV-positive TB mortality	200 (110-320)	0.69 (0.38-1.1)
Estimated proportion of TB cases with MDR/RR-TB*, 2024		
New cases	4% (3.6-4.4)	
Previously treated cases	8.8% (4.9 - 14)	

[1] Global TB Report, 2024

[2] Nepal Tuberculosis Control Center. 2020. National Tuberculosis Prevalence Survey Report 2076 (2020). Department of Health Services, Ministry of Health and Population, Government of Nepal

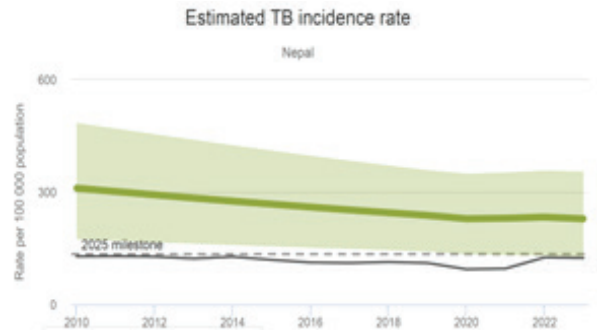


Figure 11.1 Estimated TB Incidence Rate in Nepal (2023)

Source: Global TB Report 2024, WHO

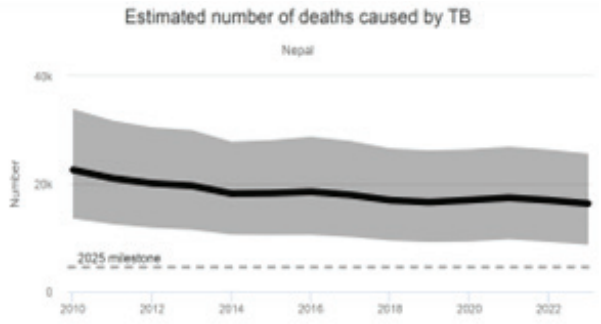


Figure 11.2 Estimated Amount of TB Deaths in Nepal (2023)

Source: Global TB Report 2024, WHO

The proportion of MDR/RR-TB cases is 4% among new cases and 8.8% among previously treated cases. These statistics highlight the significant challenges and intensified efforts needed to effectively address TB in Nepal. (figure 11.1 and 11.2).

Global and country commitments to end TB

In 2070/71-2071/72 (2014-2015), WHO and the UN Member States pledged to end the TB epidemic by adopting the End TB Strategy and the UN SDGs. These frameworks set targets for reducing TB incidence, mortality, and financial burdens on patients.

Subsequent declarations, including the Moscow Declaration (2017) and the UN General Assembly High-Level Meetings on TB (2018, 2023), reaffirmed commitments to SDGs and the End TB Strategy, introducing new elements like the Multi-Sectoral Accountability Framework and community engagement. Nepal aligned its strategies with these global commitments. The commitment to end TB in Nepal was made by Nepalese parliamentarians in December 2018, followed by the Prime-minister in March 2021. In October 2021, Nepal, along with India and Indonesia co-hosted a high-level ministerial meeting for renewed TB response in the context of COVID 19. In 2023, Nepal continued its commitment to ending TB through the Gandhinagar Declaration in India and the 2nd UN High-Level Meeting on TB in New York, United States.

Table 11.3 Comparison Between the Pre-and Post-Survey TB burden in Nepal 2075 (2018)

Vision	A world free of Tuberculosis by 2050 Zero deaths, disease and suffering due to tuberculosis			
Goal	End the global tuberculosis epidemic by 2035			
Indicators	Milestone		Target	
	2020	2025	SDG 2030	END TB 2035
Reduction in number of TB deaths compared with 2015 (%)	35	75	90	95
Reduction in TB incidence rate compared with 2015 (%)	20 (<85/1,00,000)	50 (<55/1,00,000)	80 (<20/1,00,000)	90 (<10/1,00,000)
TB-affected families facing catastrophic costs due to TB (%)	Zero	Zero	Zero	Zero

Box 11.1 Key Guiding Document - National Strategic Plan 2078/79-2082/83 (2021/22-2025/26)

Goal

Nepal aims to reduce incidence rate from 238 per 100,000 population in 2078/79 (2020/21) to 181 per 100,000 population by 2083/84 (2025/26); reduce the mortality rate from 58 per 100,000) to 23 per 100,000 within the same period; end TB epidemic by 2091/92 (2035); eliminate TB by 2107 (2050); and reduce the catastrophic costs to zero.

Objectives

- To build and strengthen political commitment, sustainability, and a patient-friendly health system to end TB
- To ensure the identification of TB, diagnosis, quality treatment and prevention

Strategies

- Improve the quality of TB services and strengthen the health system for universal access to TB care. Enhance TB services and support by increasing the community engagement in TB management, and strengthen the digitalized case-based surveillance system in health care
- Strengthen laboratory services to further improve the management of TB diagnosis and treatment
- Quality Improvement of the services for TB prevention, identification and treatment

[3] https://www.who.int/news-room/events/un-general-assembly-high-level-meeting-on-ending-tb

[4] https://documents-dds-ny.un.org/doc/UNDOC/GEN/N23/306/91/PDF/N2330691.pdf?OpenElement

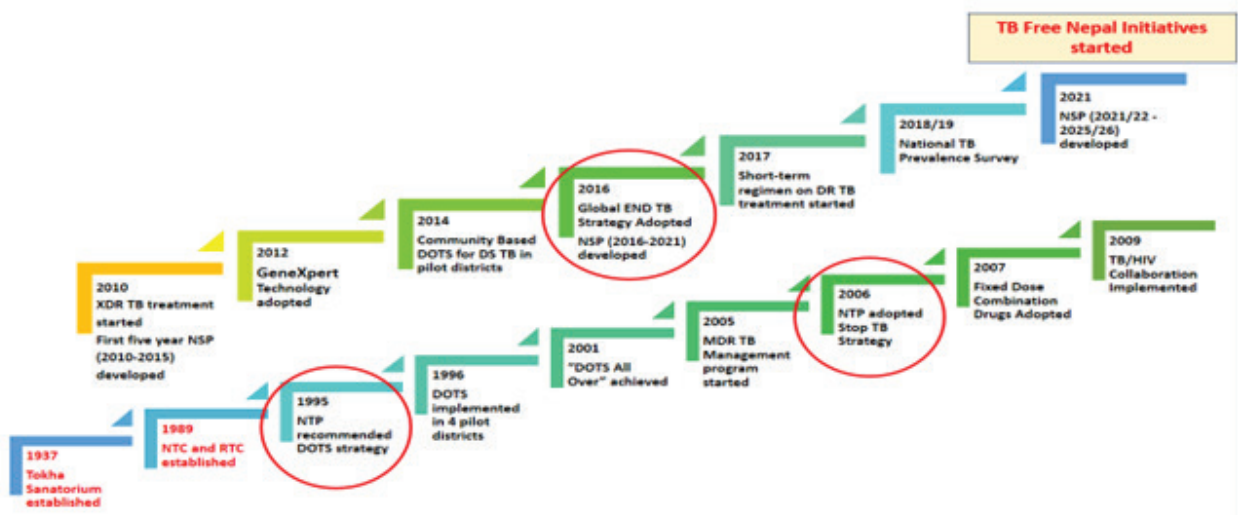


Figure 11.3 Major Milestones in GoN efforts for TB Control and Management

Within the organizational structure of the Ministry of Health and Population, NTCC is the leading entity for National TB Control Program (NTP) and is responsible for formulating policies, strategy, planning, monitoring, and quality assurance of the program. The efforts to control TB disease in Nepal started in 1937 establishment of a sanatorium at Tokha to care for TB patients. In 1951, a chest clinic was established in Kathmandu and began the formal treatment of TB patients for the first time in Nepal. Likewise, in 1965 GoN established the National TB program. Later in 1989 the clinic and the program were merged and NTCC was established as an apex body to manage the TB program in the country. Nepal initiated a TB control program adopting the DOTS TB strategy in 1996 and is renowned as a successful program in effective control of TB, setting an example at global level. In 2016, the program adopted global END TB strategy aiming to end TB epidemic by 2035 and envisioning a TB Free Nepal by 2050. The current National TB Strategic Plan NSP (2021/22 to 2025/26) is based on the burden estimates of TB prevalence survey report 2076 (2020). TB Free Initiative was started in local level since late 2021 which is a major policy action of NSP (2021/22-2025/26). Since 2024, Nepal has transitioned to an all-oral and shorter six-month BPaLM and BPaL regimen for the treatment of DR-TB.

Country Progress towards the End TB Strategy and SDGs

As per the Global TB Report 2080 (2023), Nepal showed a 15.0% reduction in TB incidence rate and 11% reduction in TB deaths between 2071/72 (2015) and 2079/80 (2023). However, Nepal is still far behind in tracking progress towards END TB targets. According to TB Patient Cost Survey 2024, 51% of the households with TB patients face catastrophic costs due to TB.

11.2 Key Performance Indicators for Nutrition Services

Expand access to Diagnostic services

- Expansion of mWRD (GeneXpert) sites to 117 and Xpert XDR to 23 sites covering 67 districts out of 77 in total.
- External Quality Assurance (EQA) on GeneXpert was conducted in four provinces (Koshi,Gandaki, Lumbini and Karnali) and planned for further expansion.
- Initiated testing of stool specimens in mWRD (GeneXpert) sites nationwide to diagnose TB in children

Quality treatment services

- Continuation of the TB treatment with quality drugs, shifting to all- oral regimens for DR-TB treatment
- Implemented a fully oral and shorter 6 months BPaLM/BPaL regimen for DR-TB treatment

Innovative approach to end TB

- TB-free initiatives continued and were strengthened in 25 local level governments (LLGs) and expanded in 99 LLGs

Strengthening monitoring and surveillance

- Continued the biometric system at mWRD (GeneXpert) and DR TB treatment sites
- Strengthened the interoperability between NTPMIS and HMIS
- Conducted the Mid-term review of TB NSP (2021/22-2025/26)
- Continued onsite coaching and mentoring in TB service delivery sites

Survey/research

- Completed the Sixth National Anti-TB Drugs Resistance Survey
- Completed the first National TB Patient Cost Survey

Capacity enhancement

- eTB training in different provinces
- TB microscopy Basic Training
- Orientation on mWRD (GeneXpert) Machine maintenance in all provinces
- Training on mWRD (GeneXpert) operation, maintenance and EQA in all provinces
- Orientation on TB free Initiatives programme to newly expanded local levels in all provinces
- Training on BPaLM/BPaL regimen including aDSM to support the implementation
- CME on DS - TB and DR - TB management at different levels in major hospitals

11.3 Key Programme Indicators

Institutional coverage of TB services

Nepal adopted the Directly Observed Treatment Short-Course (DOTS) strategy in 1996, achieving nationwide coverage by 2001. At present, DOTS centers are integrated into public health services or operated through NTP partner organizations in both public and private sectors. In FY 2080/81, 32 DOTS centers and 5 DR-TB treatment centers were added to increase coverage. Similarly, two Xpert Extended Drug Resistance (XDR) facilities were established in FY 2080/81 (table 11.4, 11.5). Additionally, partnerships with private nursing homes, polyclinics, I/NGO health clinics, prisons, refugee camps, police hospitals, medical colleges, and municipalities have contributed to increasing access.

Table 11.4 Expansion of Service Sites in last five consecutive Fiscal Years (2076/77 to 2080/81)

Number of Service Sites	Fiscal Year				
	2076/77	2077/78	2078/79	2079/80	2080/81
DOTS Center	4,955	5,503	5,971	6,209	6,241
MDR Treatment Centers	22	22	22	24	29
MDR Treatment Sub-Centers	81	81	81	98	98
DR Homes	1	1	1	1	1
DR Hostel	6	6	6	6	6
DRTB Referral Centers	-	3	3	3	3
Microscopy Centers	765	896	896	786	785
GeneXpert Facility	72	84	98	113	117
Xpert XDR Facilities	-	-	-	19	21
Culture Labs and DST	2	2	2	2	2
Line Probe Assay LPA)	2	2	2	2	2
Solid Culture	-	-	2	2	2

Source: NTP service data

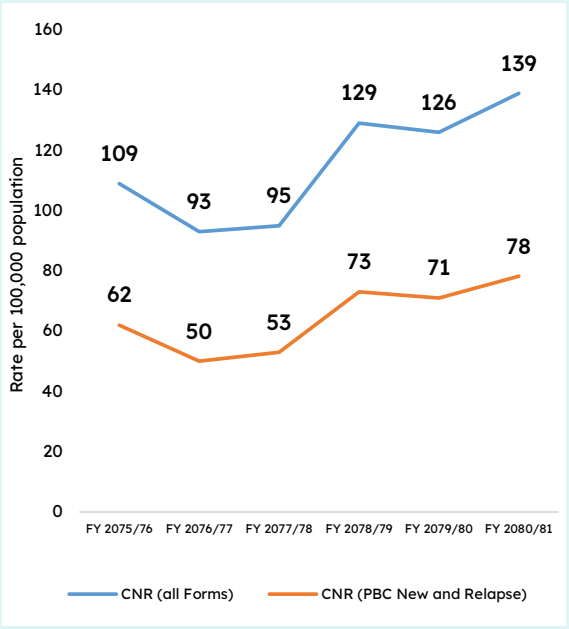
Table 11.5 Service sites across provinces in FY 2080/81

Number of Service Sites	Provinces						
	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
DOTS Center	1,117	1,006	1,227	831	922	425	713
DR TB Treatment Centers	4	5	4	3	4	2	7
DR TB Treatment Sub-Centers	17	17	23	9	14	16	2
DR Homes	-	-	-	1	-	-	-
DR Hostel	1	1	1	-	1	-	2
DRTB Referral Centers	-	-		1	1	-	1
Designated Microscopy Centers	131	74	154	101	145	57	123
mWRD (Xpert RIF) sites	19	21	25	10	21	9	12
mWRD (Xpert XDR) sites	3	2	5	3	4	1	3
Culture Labs and DST	0	0	2	0	0	0	0
Line Probe Assay LPA)	0	0	2	0	0	0	0
Solid Culture	1	0	0	1	0	0	0

Source: NTP service data

Case notification rates

In FY 2080/81,the case notification rate (CNR) of all forms of TB is 139 per 100,000 population (n=40776), and that for incident TB cases (PBC new and relapse) is 78.2 per 100,000 population. Total 98.4% incident TB cases registered (New and Relapse) among all TB cases. Additionally,72.6 % of all TB cases were pulmonary cases, and 57.2% were bacteriologically confirmed pulmonary TB cases. A total of 24077 cases were confirmed using Xpert MTB/RIF testing (table 11.6) (See figures 11.4-11.6 for disaggregation for CNR based on province, age group and sex). Among the 30 districts with high TB case notifications, 18 are in the Terai region, and the remaining 12 are in the Hilly region. (figure 11.6)



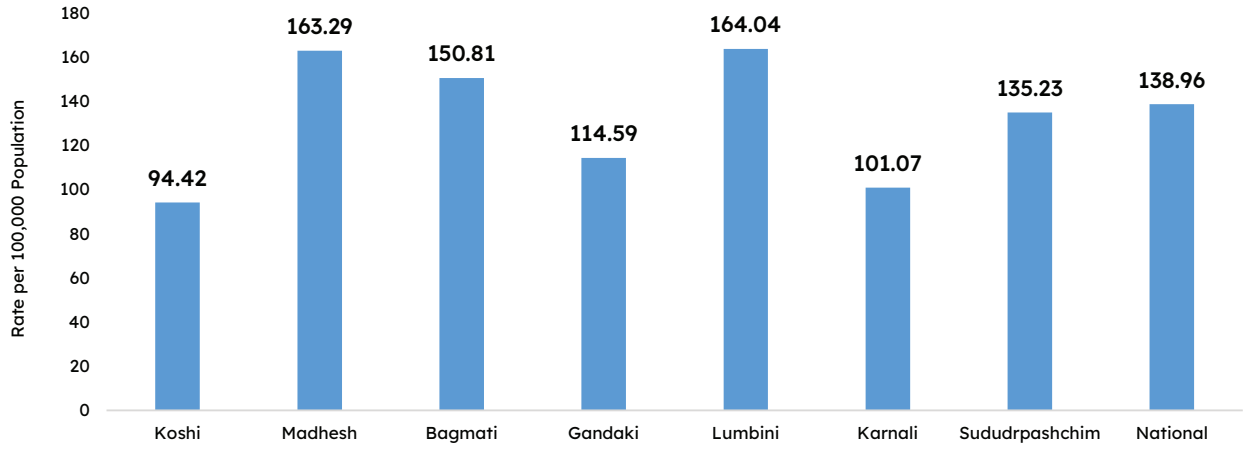
Source: NTCC/DoHS

Figure 11.4 TB case notification rate (2075/76–2080/81)

Table 11.6 TB case notification FY 2080/81

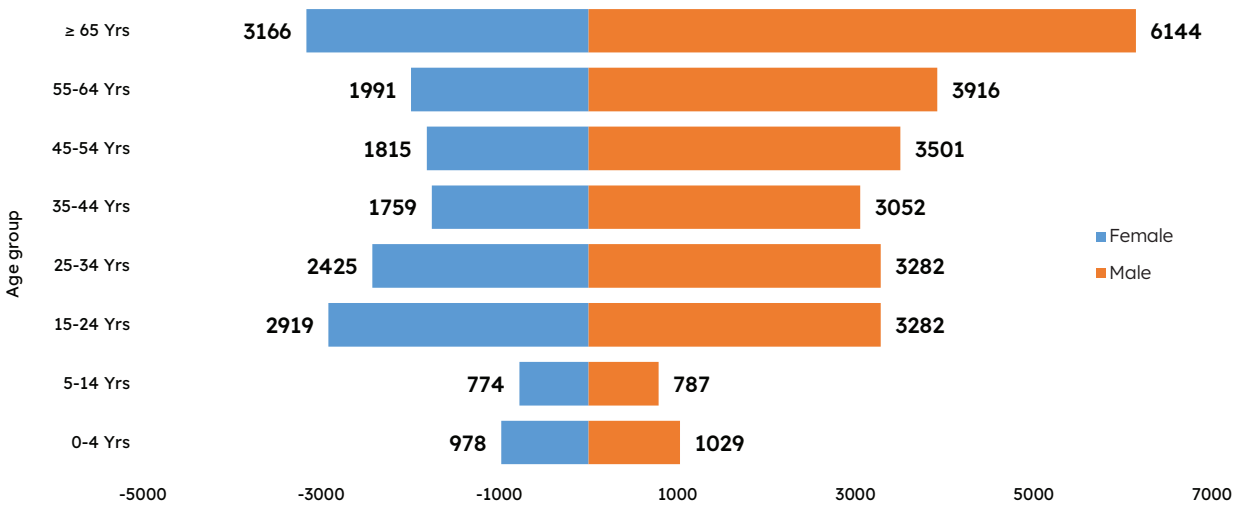
TB Case Notifications (New and Relapse), 2080/81	
Total New and Relapse	40,129
% pulmonary	72.6%
% pulmonary bacteriologically confirmed	57.2%
% children aged 0-14 years	8.8%
% women	38.94%
% men	61.16%
Total TB cases notified	**40,776**

Source: NTCC/DoHS



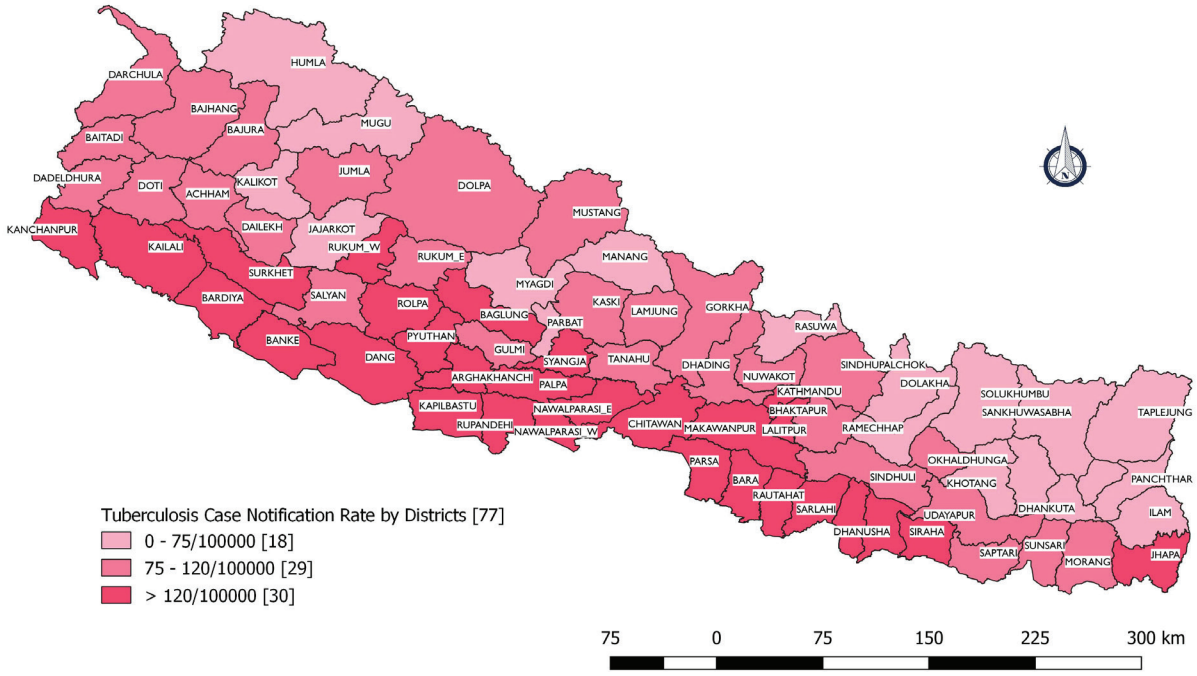
Source: NTCC/DoHS

Figure 11.5 Notified TB cases (All forms) in rates by provinces for FY 2080/81



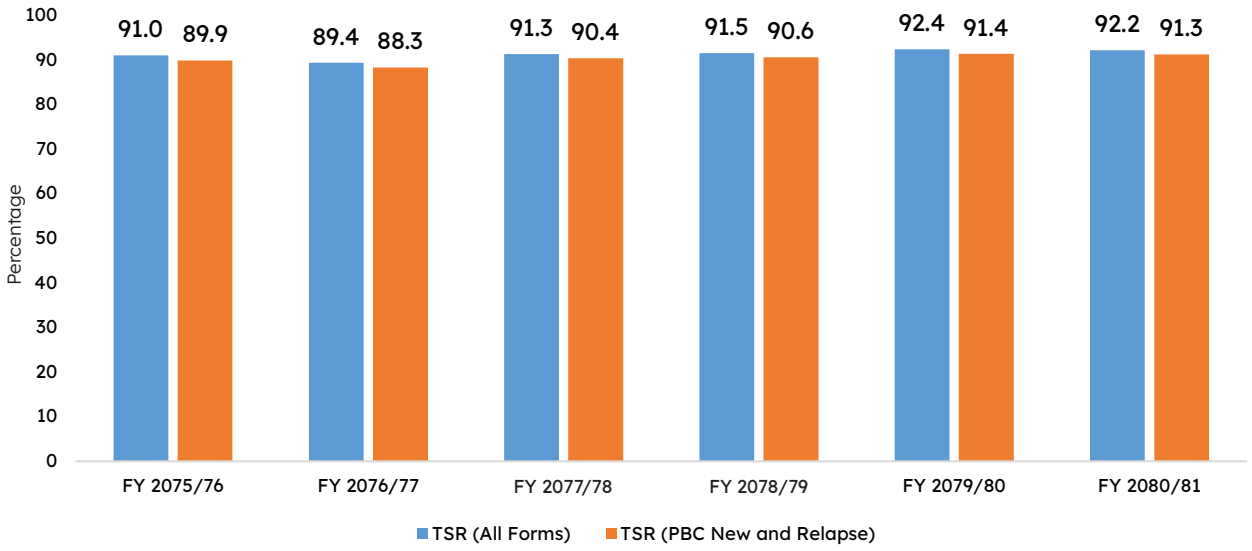
Source: NTCC/DoHS

Figure 11.6 Notified TB cases by age-group compared to the estimated incidence



Source: NTCC/DoHS

Figure 11.7 District wise tuberculosis case notification rate, 2080/81



Source: HMIS/DoHS, NTPMIS

Figure 11.8 TB Treatment Success Rate (TSR) trend (in percentage) (FY 2075/76 – FY 2080/81)

Treatment outcome

TB treatment success rates in Nepal have consistently exceeded 90.0%, except in FY 2076/77, impacted by the COVID-19 pandemic. In FY 2080/81, the overall treatment success rate (TSR) is 92.15% for all forms of TB. However, the success rates for retreatment cases (Relapse, Treatment After Failure, Treatment After Loss to Follow-up, and other previously treated) have consistently been lower than the success rates for new cases (figure 11.8). Koshi, Gandaki and Sudurpaschim provinces had an average treatment failure rate exceeding 1%, while approximately 3% of TB patients died during treatment. Additionally, Koshi and Sudurpaschim provinces reported a higher loss to follow-up (above 3%) compared to other provinces. (table 11.7)

Table 11.7 Province wise TB treatment outcomes (2080/81)

Province	Treatment Success Rate (%)	Treatment Failure Rate (%)	Mortality Rate (%)	Rate of Loss to Follow Up (%)	% Not Evaluated
Koshi	89.3	1.35	4.93	3.77	1.93
Madhesh	93.38	0.51	3.24	1.97	0.42
Bagmati	92.93	0.85	2.44	1.7	2.1
Gandaki	89.67	1.76	4.56	1.72	1.3
Lumbini	93.45	0.71	3.11	1.98	0.62
Karnali	93.6	0.7	2.54	2.47	0.7
Sudurpaschim	88.3	1.31	3.7	4.4	0.67
National	**92.15**	**0.89**	**3.31**	**2.33**	**1.13**

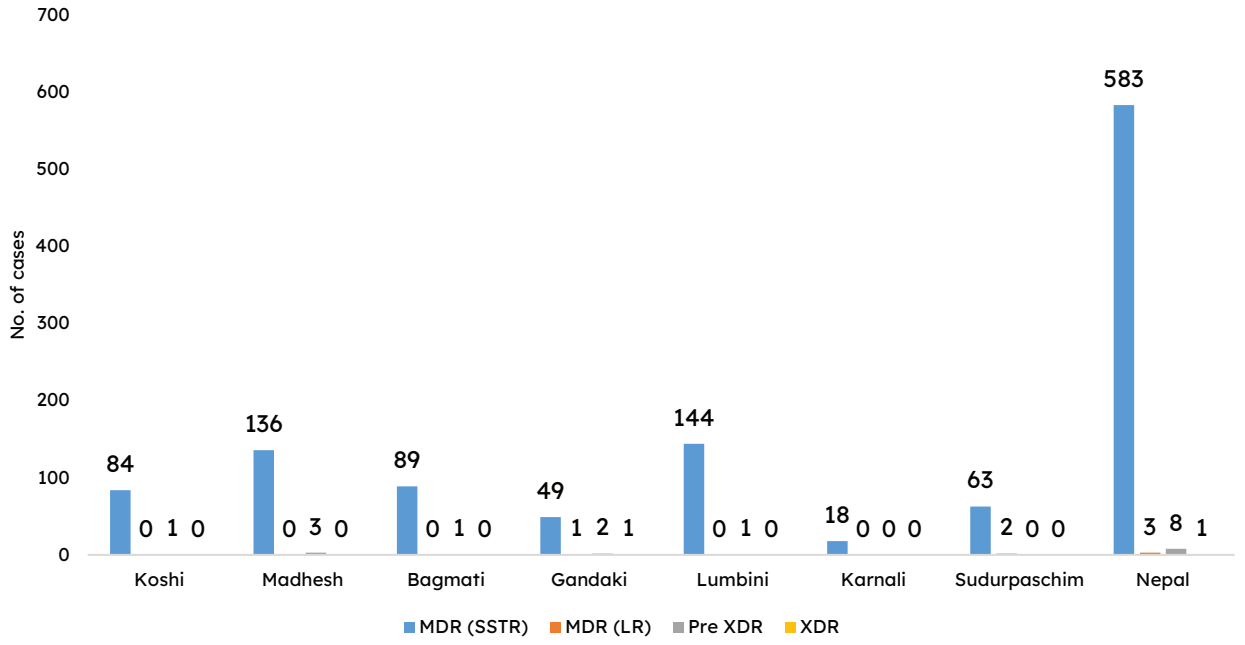
Source: HMIS/DoHS

Drug resistant tuberculosis

DR-TB is a public health challenge in Nepal, necessitating innovative approaches and increased funding for national programmatic management. The focus is on detecting and enrolling more patients in MDR-TB treatment to enhance outcomes.

DR-TB enrolled in treatment

In FY 2080/81, a total of 633 MDR/RR-TB cases were registered for treatment in Nepal. Detection methods for drug-resistant TB include Gene Xpert, Culture/DST, and LPA. Out of the 633 MDR TB cases reported, 293 (46%) were MDR (LTR), 212 (33%) were MDR (SSTR), 105 (17%) were Pre-XDR, 14 (2%) were MDR (BPaLM/BPaL) and 9 (1%) were XDR. Bagmati and Lumbini provinces have the highest reported number of DR TB patients. (figure 11.9)

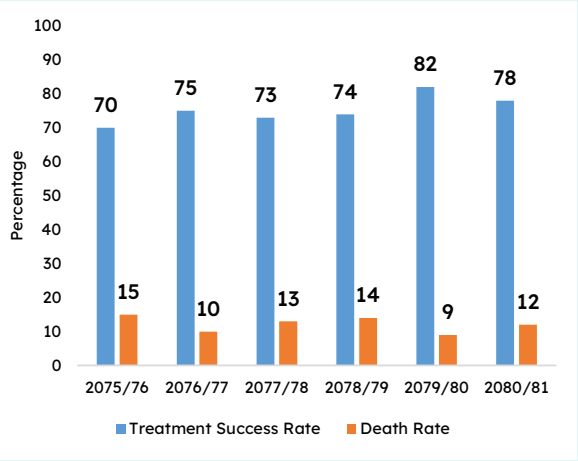


Source: NTPMIS/DoHS

Figure 11.9 DR-TB cases enrolled in treatment by provinces in FY 2080/81

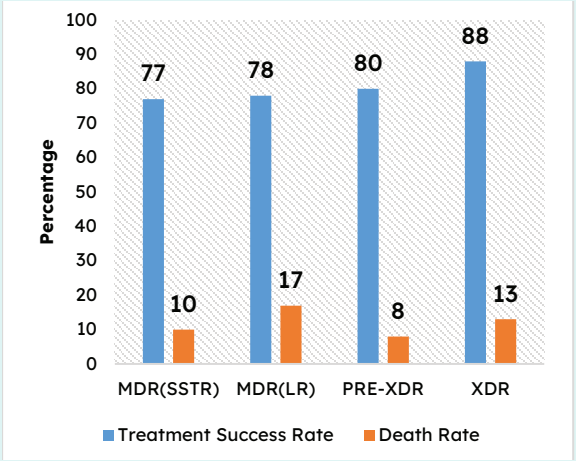
Treatment outcome of DR TB

The treatment success rate for DR-TB in this reporting period was 78%. In recent years, the treatment success rate of DR TB was consistently greater than 70%, suggesting the effectiveness of treatment regimens, quality of drugs, adherence and patient care services for managing DR-TB in Nepal. (figure 11.10).



Source: NTPMIS/NTCC

Figure 11.10 Treatment success rates (%) in FY 2075/76 - 2080/81

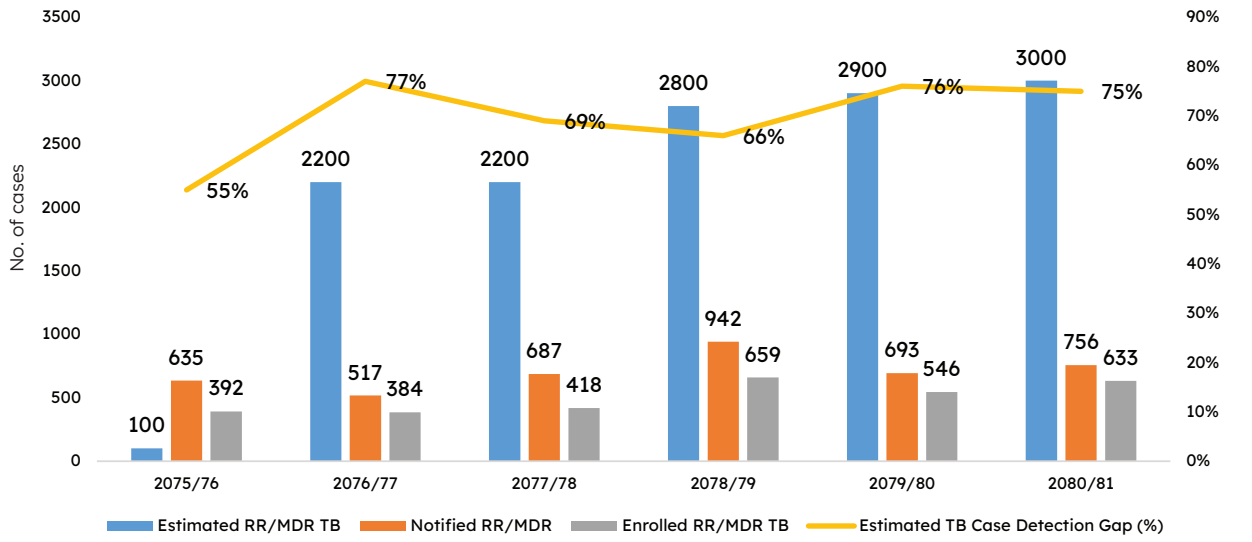


Source: NTPMIS

Figure 11.11: Treatment success rates (%) in types of DR-TB FY 2080/81

DR TB annual case finding and gap from estimates

In 2080/81 (2023), the estimated proportion of TB cases with multidrug-resistant or rifampicin-resistant TB (MDR/RR-TB) was 4% among new cases and 8.8% among those previously treated. In Nepal, around 3,000 people were estimated to have MDR/RR-TB in FY 2080/81 (2023), but only 756 were detected, resulting in a 75% detection gap. (figure 11.12) Among those diagnosed, 633 received DR-TB treatment.



Source: NTPMIS

Figure 11.12 MDR TB annual case finding and gap in fiscal year 2080/81

NTP's laboratory network

A strong TB laboratory network is essential to ensure timely and universal access to quality-assured diagnostics. Trained human resources, adequate infrastructure, equipment, a quality assurance system, a sample transportation network, a supply of commodities, and a monitoring system are key components of such a laboratory network.

The National Tuberculosis Reference Laboratory (NTRL) is an apex laboratory in TB laboratory network which works along with the PPHL and Provincial TB Laboratory present in each province to provide quality assured TB laboratory diagnostic services to the patients. There are Molecular WHO-recommend rapid diagnostic (mWRD) centers that provide diagnostic as well as universal DST services, and designated TB microscopy centers (DMCs) providing diagnostic services across the country. Sample collection centers, established under DMCs or mWRD centers, are supported by a robust sample transportation system , which is planned to enhance accessibility to TB laboratory services. External Quality Assessment (EQA) for sputum microscopy is conducted at seven Provincial bodies (PPHL or TTC) and NTRL, NTCC Bhaktapur. The Lot Quality Assurance System (LQAS) is used for EQA of sputum microscopy. The piloting of GeneXpert EQA was conducted in four provinces (Koshi, Gandaki, Lumbini and Karnali).

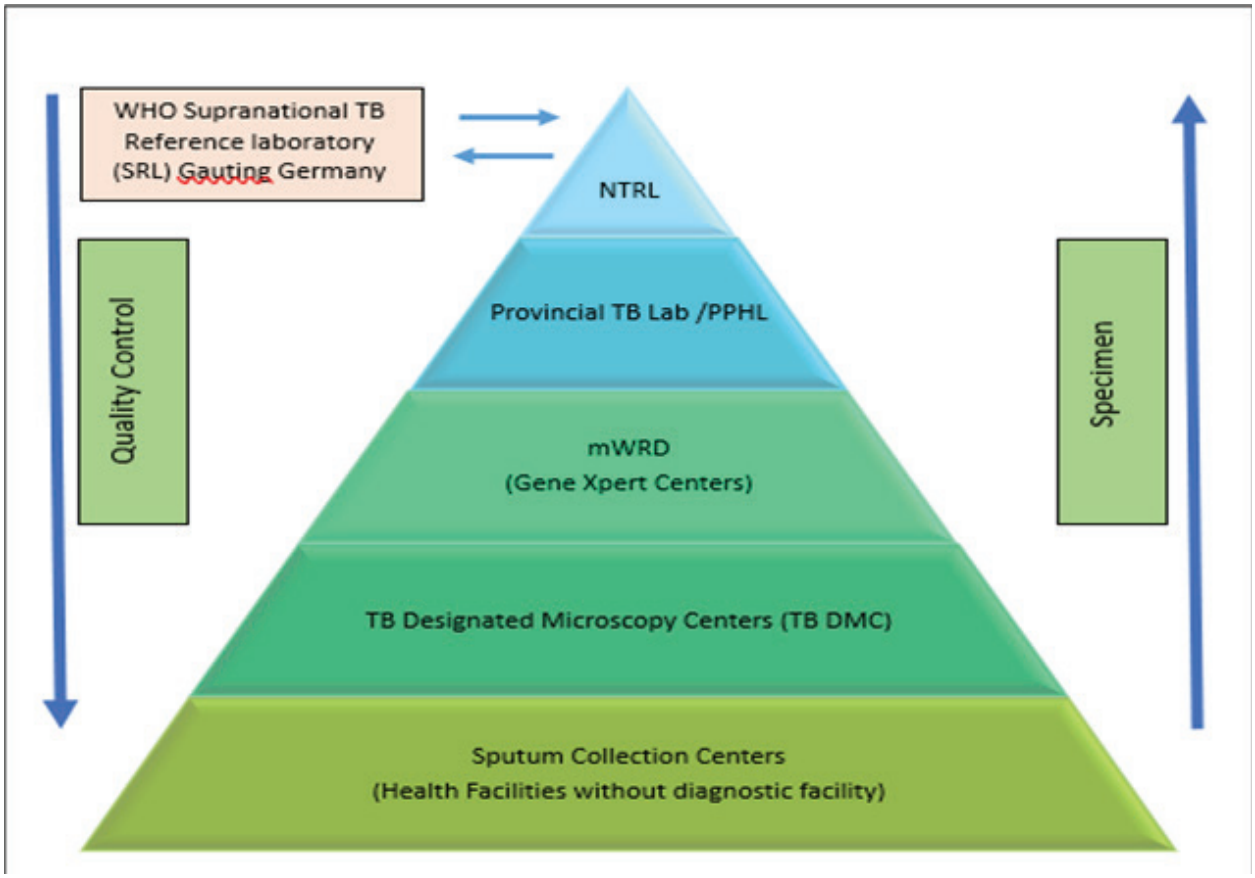
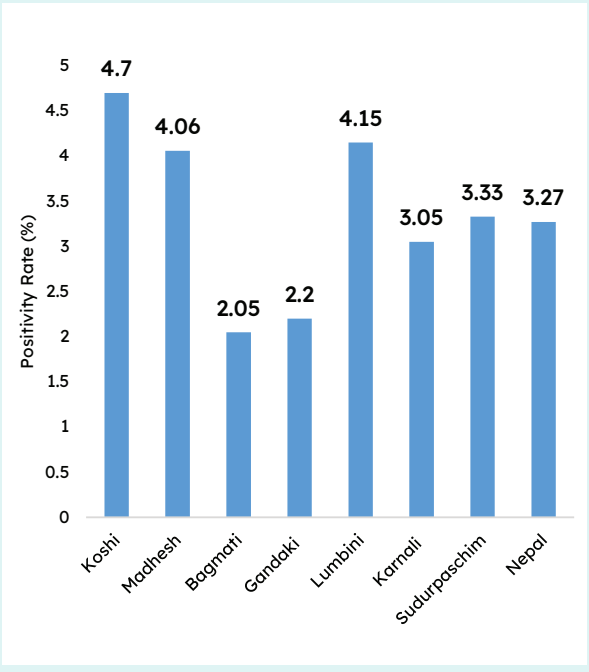


Figure 11.13 National TB Laboratory Network

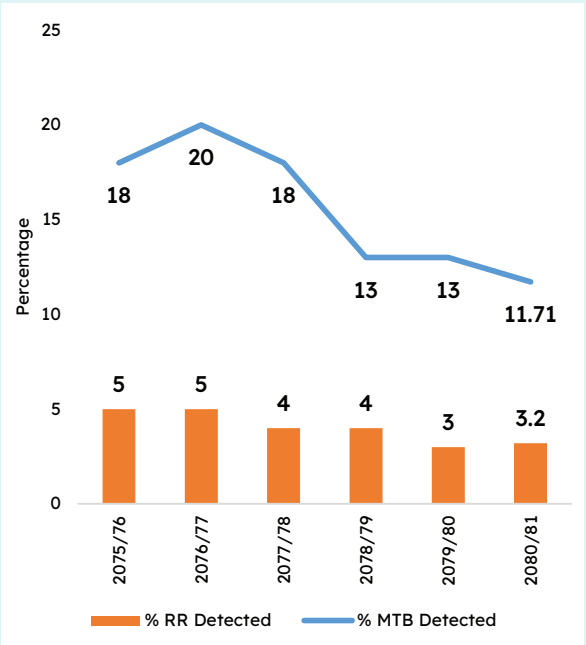
Laboratory tests for TB diagnosis

In FY 2080/81, among 3,48,385 presumptive TB cases tested, a 3.27% positivity of sputum microscopy test rate led to the diagnosis of 11,403 Pulmonary Bacteriologically Confirmed (PBC) TB cases. (figure 11.14) Additionally, in FY 2080/81, the proportion of MTB among total GeneXpert tests was 11.71%, and the proportion of RR MTB among total MTB cases decreased to 3.2%. (figure 11.15)



Source: HMIS, NTPMIS

Figure 11.14 Sputum Microscopy Positivity Rate performed in FY 2080/81



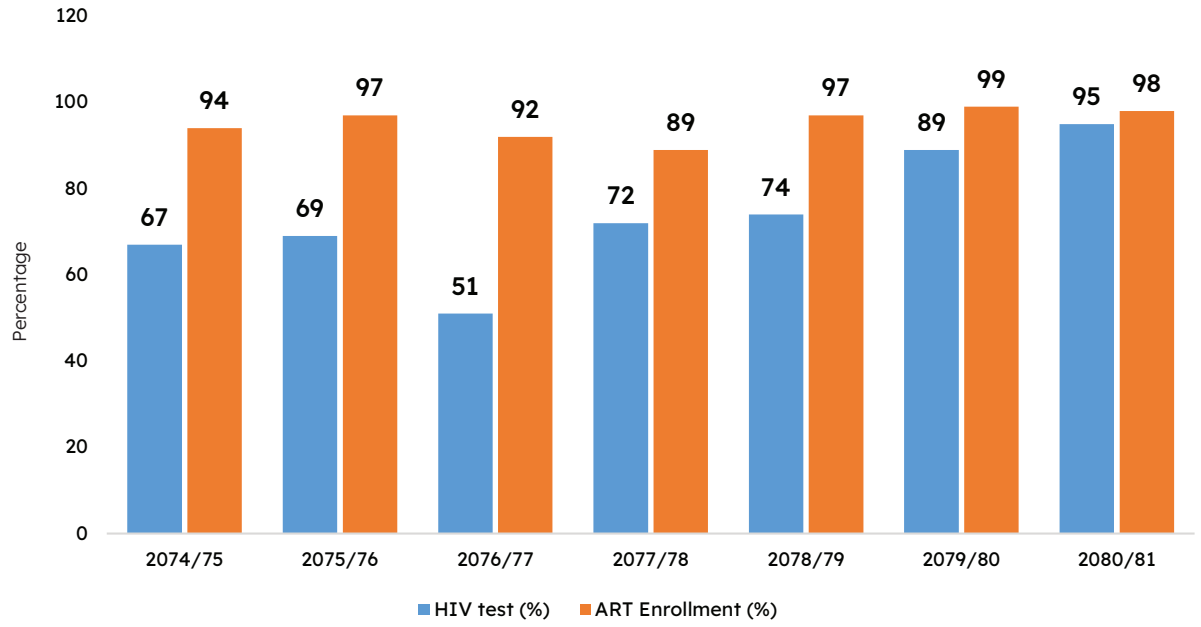
Source: HMIS, NTPMIS

Figure 11.15 TB diagnosis performed using GeneXpert test

TB/HIV co-morbidity

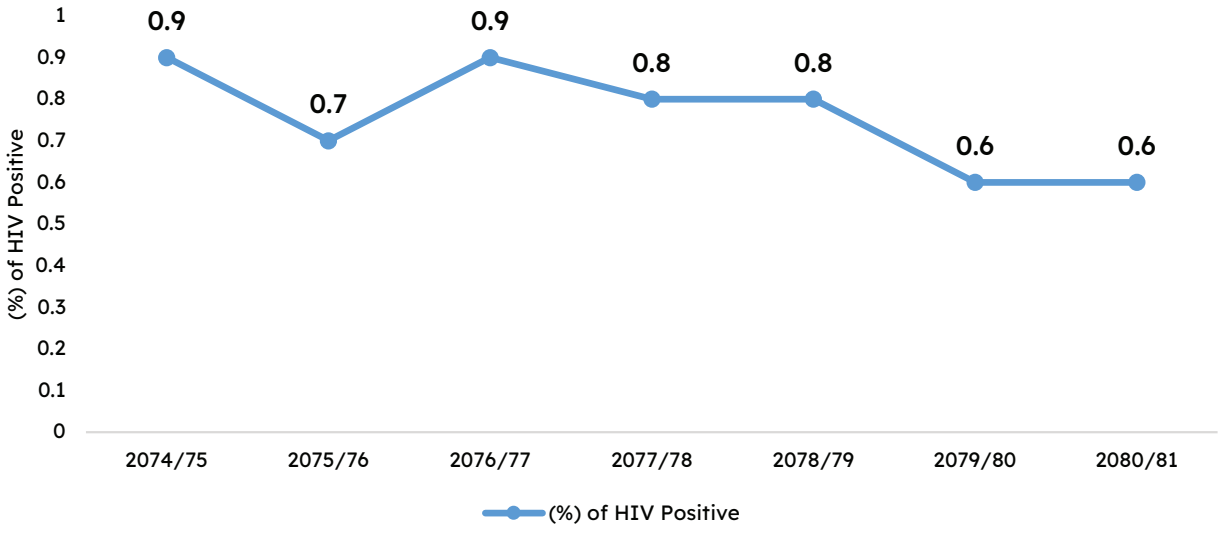
The testing proportion for HIV among TB patients has been on the rise, witnessing a significant increase from 89% in FY 2079/80 to 95.4% in FY 2080/81. Moreover, in FY 2080/81, Antiretroviral therapy (ART) enrollment decreased to 98% from 99% in the preceding year (FY 2079/80). (figure 11.16) TB-HIV comorbidity rate was 0.6 for FY 2080/81 among tested (figure 11.17)

While there is rise in the proportion of Testing of HIV among TB, the resulting lesser co-morbidity from nearly 1 % in 2074/75 to almost 0.6% HIV among TB in 2080/81 significantly highlights the improved TB and HIV program and burden management.



Source: HMIS/DoHS

Figure 11.16 Trend of HIV testing and ART enrollment proportion among tested positive



Source: HMIS/DoHS

Figure 11.17 HIV TB Comorbidity

TB preventive treatment (TPT)

The TB Preventive Treatment (TPT) is provided to the children under 5 years old who are the contacts of bacteriologically confirmed pulmonary TB cases and PLHIV in Nepal. Presently, TPT services have been successfully implemented in 42 high-burden districts across the country. In the fiscal year 2080/81, a total of 4,717 children under the age of 5 were reported to have initiated preventive treatment, marking a significant progress toward the program's objectives. The ongoing efforts underscore the commitment to scaling up TB preventive measures and expanding coverage among vulnerable populations, including PLHIV.

TB Free Nepal Initiative

In the fiscal year 2080/81, the TB-Free Nepal Initiative was implemented in 124 out of 753 local levels supported by an additional federal grant of NPR 350 million. Additionally, approximately NPR 13 million was generated from the local level budget ceiling for the initiative. The initiative, which initially covered 25 local levels in FY 2078/79, was expanded to 99 local levels in FY 2080/81. In FY 2080/81, a total of 10,773 TB patients were notified in these local levels, compared to 9795 in FY 2079/80, marking a 10 % increase following the implementation of TB free Program.

Planning, monitoring & evaluation

Data source for TB program management and review

The primary data source for NTP is the Health Management Information System (HMIS). In adherence to the NSP's directive to develop an electronic-case based data system, the NTP has invested in the development of the National Tuberculosis Program Management Information System (NTPMIS) database. This platform records individual case-based data for each patient and is accessible at https://ntpmis.gov.np/ (figure 11.8) The NTPMIS system operates as an online platform, compatible with DHIS2 platform.

NTP consistently monitors case notification, smear conversion, treatment outcomes and program management reports, conducting supervision visits across all program levels through Periodic (monthly, half-yearly, yearly) planning, monitoring, and evaluation (PME) workshops, visits and analyzing key monitoring data, involving local, provincial, and national levels.

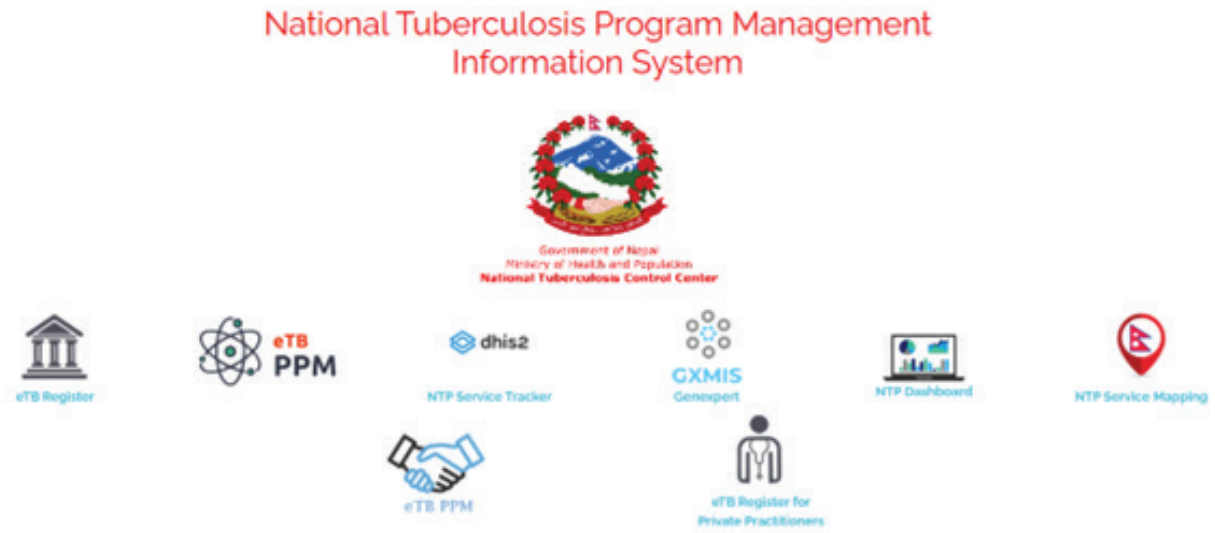


Figure 11.18 NTPMIS Home Page

Research and Survey

In 2023, Nepal conducted its sixth national drug-resistance TB survey (DRS) to determine the drug resistance patterns among bacteriologically confirmed pulmonary TB cases. This survey employed a cross-sectional stratified cluster sampling approach. The first-ever national TB patient cost survey was undertaken to evaluate the costs associated with tuberculosis illness, diagnosis, and care in Nepal.

Logistics supply management

NTP's logistics system provides anti-TB drugs and commodities every four months to designated service delivery sites, based on the number of new cases and ongoing treatments. Forecasting and quantification precede drug procurement, following PPMO rules for GoN Budget and PPM for GDF imports. All drugs are stored at NTCC Store and supplied to District Medical Stores via PHLMC every four months. Furthermore, the drugs from district medical stores, is sent to local levels every four months.

Financial progress status

In FY 2080/81, the total budget allocated for NTP was NPR 1,152 million, comprising the budgeted figure from GoN and Global Fund. (table 11.8)

Table 11.8 Financial Performance of NTP in FY 2080/81

Budget in NPR (in million)

2080/81 (2023/24)			
Source	**Budget**	**Expenses**	**Financial Progress**
GoN (NTCC)	773	634	82%
Global Fund (Redbook)	375	264	70%
WHO (Redbook)	4	4	100%
Total NPR	**1152**	**902**	

Source: NTCC/SCF-GF, GoN Redbook

The allocation made by GoN represents the budgeted figure of federal government. The major areas of investment and expenditures were on the procurement of drugs, laboratory consumables & equipment, GeneXpert cartridges, capacity enhancement, supervision & monitoring, supply chain management and Tb Free initiatives. Besides this financial support from Global fund is invested in the procurement of Cartridges, laboratory consumables & equipment, Drugs, Implementation of Case findings interventions, support to DR centers. NTP has had collaborations and support from many different organizations. WHO has been a key technical partner to NTP and Save the Children as a principal recipient of Global Fund Grant has been the key financial partner.

Key partners in NTP

The National Tuberculosis Program (NTP) collaborates with various organizations, enhancing its capacity and impact. WHO serves as a key technical partner, contributing expertise to NTP's operations and guiding NTP for best practices. Save the Children, serving as the principal recipient of the Global Fund Grant, serves as both a key financial as well and a technical partner to NTP and implementation of activities at community level through the sub-recipient partners especially in active case finding, private sector and community engagements, contact tracing, preventive, and childhood TB management. (table 11.9) These partnerships contribute to the multifaceted success of NTP, encompassing technical expertise, financial backing, and on-the-ground program implementation. The collaborative network ensures a holistic and effective approach to tackling tuberculosis within the national framework.

Table 11.9 NTP partners

Partners	Key Support Area
WHO	Main Technical Partner of NTP
Global Fund	Major Donor and Implementation partner of NTP
Save the Children International (SCI)	Principal Recipient of Global Fund Grant and key Technical Partner
NATA, TB Nepal, JANTRA, BWSN, KIDS, Trisuli +	Sub-recipient partners of Global Fund Grant
USAID (TA)	Provides Technical Support
Japan Anti TB Association support through JANTRA	Supports the Urban TB program in Kathmandu Valley
BNMT	Supports TB- related research programs
NYMAT Nepal	Promotes youth engagement in TB programs

Box 11.2 SWOT Analysis of NTP

Strengths	Opportunities
• Dedicated and well-qualified team at NTCC • Standard protocol for TB treatment and management • Wider reach of treatment service facilities (>6200) and diagnostic services (mWRD services available in 87% of districts - 67 districts out 77 in total) • Digitalization of case-based database systems (NTPMIS) and integration with national reporting system (HMIS) for TB • Well established Procurement and Supply Management (PSM) System for the TB Program • Engagement of partners in national TB program • External Quality Assurance (EQA) of Xpert MTB/Rif initiated in four provinces • Participation of Provincial Public Health Laboratories (PPHL) in the EQA of TB Sputum Microscopy	• Possibility for recruiting additional human resources based on program needs (Mobilization of HR – Scholarship Contract) • Priority one public health program; high political commitment (TB Free Initiative expanded to additional 99 local levels/Palikas, Global Fund/SR extensive interventions in 42 districts) • Participation of PPHL in the EQA of laboratory diagnosis of TB • Interoperability between HMIS and NTPMIS, including biometric systems for GX and DR sites with the support of Province and Local Levels • eLMIS system is rollout by Management division and eTB system capturing data on TB logistics supply management
Weaknesses	**Threats**
• Insufficient human resources dedicated to TB program management at all levels • Significant gap in treatment coverage (TB case notification vs. estimated incident TB cases). • Limited engagement of the private sectors and communities in TB diagnosis and management • Inadequate External Quality Assurance (EQA) system for mWRD (GX test) • Gap in quality reporting of NTP data from HMIS in terms of accuracy • Challenges in ensuring uninterrupted logistics supply and management • Inadequate onsite coaching, mentoring and supportive supervision	• Smooth implementation of NTP in emergency situation created due to natural disasters such as floods, landslides and earthquake • Inadequate coordination between provincial and local levels • High stigma and catastrophic costs • Challenges in extending warranties for GeneXpert • Frequent transfer of dedicated staffs at all levels • Dependence on external funding and issues on its sustainability. • Open border with high internal and external migration • Rising TB co-morbity rates with other infectious diseases

12 HIV and STIs Control and Management Program



12.1 Background

The first case of Human Immunodeficiency Virus (HIV) in Nepal was identified in 2044/45 BS (1988 AD). The National Centre for AIDS & STD Control (NCASC) was established in 2050 BS which marked the formal beginning of coordinated national response to HIV/AIDS and STDs. Later, the National Policy on Acquired Immunodeficiency Syndrome (AIDS) and Sexually Transmitted Diseases (STDs) Control was introduced in 2052 BS (1995 AD) which was Nepal's first policy addressing these issues. Nepal launched its first National HIV/AIDS Strategy on 2058/59 BS (2002 AD) focusing in prevention, treatment, care and support for affected populations. In 2060 BS (2003 AD) Antiretroviral therapy (ART) was introduced in Nepal, providing free treatment to people living with HIV. The National Policy on HIV and Sexually Transmitted Infections (STIs) was revised and updated on 2067/68 BS (2011 AD) to address the dynamic nature of the epidemic. Similarly, Nepal adopted the Fast Track Targets on 2072 BS (2016 AD) to end AIDS as a public health threat by 2030 AD, aligning with the global Sustainable Development Goals (SDGs).

The HIV epidemic in Nepal has evolved from low prevalence to concentrated epidemic. The prevalence of HIV infection in general population is relatively low but in specific sub populations, the prevalence is much higher. The HIV epidemic in Nepal remains largely concentrated among key populations, including People Who Inject Drugs (PWID), sex workers and their clients, Men who have sex with men (MSM) and Transgender (TG) people, Male Labor Migrants (MLM) and their spouses, and prison inmates.[1]

The NHSP 2021–2026 builds upon the achievements of the previous strategic plan and aligns with global commitments, including the Sustainable Development Goals and UNAIDS strategies. The plan emphasizes a people-centered approach, grounded in human rights and health equity, aiming to significantly reduce new HIV infections and AIDS-related deaths while improving the quality of life for people living with HIV (PLHIV).

[1] World Aids Day 2024, fact sheet, NCASC

Box 12.1 National HIV Strategic Plan (NHSP) 2021–2026

Vision:

Ending the AIDS epidemic in Nepal by 2030

Mission:

To provide an inclusive, equitable, and accessible continuum of HIV care services

Goal:

- To prevent new HIV infections
- To improve HIV related health outcomes of PLHIV
- To reduce HIV related inequalities among PLHIV and KPs

Key Targets by 2026:

- 95-95-95 Goals: Achieve that 95% of people living with HIV know their status, 95% of those diagnosed receive sustained ART, and 95% of those on treatment achieve viral suppression
- Reduction in New Infections: Significantly decrease the annual number of new HIV infections (reduce by 90%, baseline as of 2010)
- Elimination of Mother-to-Child Transmission: Achieve virtual elimination of HIV transmission from mother to child
- Achieve case rate of congenital syphilis of ≤ 50 per 1,00,000 live births

Priorities:

- Accelerating HIV prevention services among key populations
- Expanding innovative and effective testing approaches with universal access to comprehensive treatment, care, support, VL testing and suppression services
- Elimination of vertical transmission and syphilis
- Scaling up HIV-sensitive social protection services to key and vulnerable populations
- Addressing human rights and gender in HIV response
- Strengthening effective, inclusive and accountable HIV governance
- Elimination of Mother-to-Child Transmission: Achieve virtual elimination of HIV transmission from mother to child
- Achieve case rate of congenital syphilis of ≤ 50 per 1,00,000 live births

Source: National HIV Factsheet 2024, National Centre for AIDS and STDs Control

12.2 Key activities in FY 2080/81

12.2.1 HIV Testing and Counselling Services

HIV testing and counselling services (HTS) have been a central focus of Nepal's HIV response, serving as the entry point to comprehensive HIV care. These services, which began in 1995, were initially referred to as Voluntary HIV Counselling and Testing (VCT) or HIV Testing and Counselling (HTC). The first-ever HTS program used the Client-Initiated Testing and Counselling (CITC) approach. Over the years, Nepal has expanded its efforts to encourage HIV testing, particularly among key populations at higher risk, by providing services free of charge and aligning them with the 2022 National HIV Testing and Treatment Guidelines.

To further increase testing uptake, Nepal introduced a community-based testing approach for key populations, following the 2017 National Guidelines on Community-Led HIV Testing. Community-led testing connects outreach programs to testing services and is implemented by both government and non-governmental organizations. Additionally, Provider-Initiated Testing and Counselling (PITC) has been integrated into various health services, such as STI clinics, antenatal and childbirth centres, malnutrition clinics, postpartum care, family planning centres, and TB services to address TB/HIV co-infection.

HIV testing and counselling services are available across all 77 districts of Nepal, ensuring nationwide access for both key populations and the general public.

Antiretroviral therapy (ART) services began in February 2004 at Sukraraj Tropical and Infectious Disease Hospital in Kathmandu, Nepal. ART is provided free of charge to all PLHIV. As of FY 2080/81, there are 85 operational ART sites and 45 ART Dispensing centres across 76 districts in Nepal.

12.2.2 Sexually Transmitted Infections (STIs) Management

Nepal's key strategies for managing sexually transmitted infections (STIs) include targeted behaviour change communication (BCC), condom promotion and distribution, STI diagnosis and treatment (using both syndromic and etiological approaches), and referral services. These services are accessible through government health facilities and non-governmental organizations (NGOs) for both key populations and the general public.

Nepal follows the World Health Organization's (WHO) recommended approach to managing STIs in patients presenting with identifiable signs and symptoms. The first National STI Case Management Guideline was introduced in 1995 and has since been updated in 2014 and 2022 to incorporate the latest global and local evidence. The updated 2022 guidelines were developed by the NCASC.

To monitor STI prevalence and trends among key and general populations, Nepal relies on data from Integrated Biological and Behavioural Surveillance (IBBS) surveys and the Health Management Information System (HMIS/DHIS2). As part of the national HIV response, the ongoing strategy has standardize the quality of STI diagnosis and treatment, extending these services to the health post level within primary healthcare.

Addressing Nepal's concentrated HIV epidemic also involves strengthening the connections between BCC programs and HTC, as well as enhancing linkages between HTC and STI services. For key populations, STI management services are integrated into antiretroviral therapy (ART) centres to provide comprehensive care.

12.2.3 Prevention of Mother to Child Transmission of HIV for Elimination of Vertical Transmission (eVT)

Nepal launched the Prevention of Mother-to-Child Transmission (PMTCT) program, also known as eVT, in February 2005. In 2009, a Community-Based PMTCT (CB-PMTCT) program was introduced, and it now operates across all 77 districts. These programs provide HIV screening and counselling to women during antenatal care (ANC) visits at health facilities.

The National Guidelines on PMTCT have been integrated into the National HIV Testing and Treatment Guidelines 2022, ensuring that maternal and child healthcare incorporates HIV testing. Counselling and infant feeding information have been tailored to address the needs of HIV-infected and HIV-exposed infants. Alongside the CB-PMTCT program, Nepal is scaling up PMTCT services to align with ART, HTC, and STI services, ensuring a continuum of care for pregnant women living with HIV.

Linkages have been established between PMTCT services and interventions for key populations, family planning, sexual and reproductive health, and counselling services. In line with its goal to eliminate vertical transmission of HIV by 2026, Nepal adheres to a "test and treat" strategy. This approach includes rapid initiation of ART for all pregnant and breastfeeding women with HIV, regardless of CD4 count, and prophylactic treatment for their infants.

In recent years, Nepal has expanded PMTCT services, resulting in increased HIV testing and detection among pregnant women and improved access to comprehensive care.

12.2.4 HIV Treatment Services

Since 2004, the government has been providing free Antiretroviral drugs (ARV) through ART centers to improve the survival and well-being of people living with HIV (PLHIV). In 2017, the NCASC adopted the WHO's "Treat All" policy after updating the national HIV testing and treatment guidelines. To support diagnosis and treatment, infrastructure such as CD4 and viral load testing machines has been established across the country, and healthcare personnel have been trained to deliver treatment, care, and support services effectively Since February 2017, Nepal has adopted the Test and Treat approach, guided by the National HIV Testing and Treatment Guidelines of 2022. CD4 count services

are available at seven sites across seven districts and viral load testing sites has been expanded to nine sites.

Multi-month dispensing (MMD) of ARV drugs have been practiced for clinically well clients with intention to mitigate the direct and indirect cost associated with both clients and service providers to improve care and retention in treatment. NCASC has systematically monitored and analysed the status of MMD among PLHIV using data recorded in HIV care and ART Tracking (DHIS2 Tracker, mHealth and Biometric) system. Additional, eLMIS has also been expanded to all ART sites to track the real time logistics status.

12.2.5 Opioid Substitution Therapy (OST) Services

Harm Reduction includes strategies, programs, and practices aimed at supporting individuals who continue to use drugs, either before they are ready to seek treatment or during periods of relapse. It is a goal-oriented approach focused on minimizing the health risks and harm associated with substance use.

One key harm reduction initiative is Opioid Substitution Therapy (OST), which helps individuals recover from opioid dependence. OST is an effective treatment that also plays a vital role in preventing HIV and Hepatitis C. Currently, 12 OST sites operate across 10 districts in Nepal, including eight government-managed and four NGO-managed sites. However, there are no OST services available in Karnali and Sudurpaschim provinces.

12.2.6 Strengthening Strategic Information of National HIV Program

To overcome the challenges associated with aggregated data reporting, NCASC developed and implemented the HIV Care and ART Tracking System, also known as the DHIS2 Tracker. This system provides real-time data to support informed HIV response in Nepal. Previously, the recording and reporting (R&R) system relied solely on paper-based methods, which lacked individual-level data at the national level.

The HIV Care and ART Tracking System consists of three integrated components: a) DHIS2 Tracker, b) mHealth, and c) Biometrics. Currently, the DHIS2 Tracker is being used at all HIV service delivery points nationwide to record and manage information related to HIV prevention, testing, treatment, care, and support for clients.

NCASC has prepared integrated monitoring checklist with Key performance indicators focusing HIV testing and counselling, laboratory, PMTCT, ART, Logistic management, HIV care and tracking system, OST, availability and use of recording and reporting tools at district authorities and local level for FY 2080/81. Based on this monitoring checklist, regular monitoring is being carried out as per need.

Every year NCASC has been preparing HIV AIDS factsheet based on analyzed data. In FY 2080/81, 36th series of factsheet has been published.

12.2.7 Early Infant Diagnosis (EID)

Early Infant Diagnosis (EID) service is available for babies born to the HIV-positive mothers to detect HIV status among exposed baby at the earliest. DNA PCR test is done for EID and conducted among the children below 18 months. EID through DNA PCR technology is available at National Public Health Laboratory (NPHL), Teku since September 2014. The EID testing is scaled to five Provincial Public Health Laboratory (PPHL) and two remote ART centres. Dried blood spot (DBS) samples for EID are collected from all ART sites and sent for EID testing.

12.2.8 DHIS2 Tracker

The DHIS2 Tracker records all client-related information for HIV prevention, testing, treatment, care, and support services, including PMTCT, EID, and follow-up discontinuation, across all service delivery points. Once a client is registered, their details are entered into the system and can be accessed at any time. Its primary goal is to ensure real-time data recording, supporting effective treatment and program implementation. The system also facilitates the transfer and referral of client information between sites.

Integrated with a Biometric System for fingerprint scanning, the DHIS2 Tracker streamlines processes such as duplication checks and client transfers. However, some sites face internet speed challenges, which affect the system's full functionality.

The DHIS2 Tracker, a priority for NCASC and the Integrated Health Information Management Section (IHIMS), enables sites to generate monthly reports that can be uploaded directly to the aggregated DHIS2 system of the national Health Management Information System (HMIS). Since both systems operate on the same platform, individual client data can be formatted into national reporting templates for seamless integration into HMIS. This reduces data entry errors and enhances timely reporting from ART sites.

Operational across all HIV program sites in Nepal, the HIV Care and ART Tracking System consists of three interconnected components: DHIS2 Tracker, mHealth, and Biometrics. Built on the DHIS2 platform, which is also used by IHIMS under the Management Division of the Department of Health Services, the system centralizes client information, prevents duplication, and supports efficient client management.

12.2.9 mHealth (Mobile Health)

mHealth is designed to support HIV treatment and improve client retention in care. The system uses both automated and manual SMS methods to send appointment reminders and general awareness messages to clients. These targeted messages, including those directed at mothers and their babies, have significantly improved adherence to services and retention in HIV care and treatment.

The DHIS2 Tracker integrates with mHealth to deliver appointment reminders and HIV-related awareness messages to clients enrolled in the service. Structured messages are sent to the client's registered mobile number at the time of enrollment. However, health workers must regularly update the mobile numbers of PLHIV in the system, as some clients frequently change

their numbers.through targeted messages to mothers and their babies, among others. However, health workers must frequently update the mobile numbers of PLHIV in the system, as some groups frequently change their numbers.

12.2.10 Biometrics

The biometric system is utilized for clients confirmed as HIV-positive or enrolled in HIV care. It assigns each new client a unique alphanumeric identification code during registration in the HIV Care and ART Tracking System. This code helps identify whether a client is already registered at another ART center in Nepal, addressing duplication issues. It also facilitates retrieving and reviewing clients' past records, supports treatment planning, and simplifies tracking clients who transfer between sites and districts.

The system, integrated with the DHIS2 Tracker, uses fingerprint scans to determine if a client is new or already in the system. This allows for instant retrieval and updating of information, prevents double counting, and links medical records to the client's biometric data.

Lessons from the biometric system are being applied by various partners to enhance individual-level data recording and reporting for HIV prevention, care, and support components in the national HIV program. On June 9, 2022, NCASC, with support from AHF Nepal, FHI 360/EpiC Nepal, and Save The Children International, integrated HIV prevention, care, and support data managed by implementing agencies (INGOs, NGOs) into the HIV Care and ART Tracking System.

Recording registers and monthly reporting forms for HIV-related services were developed in FY 2079/80 and are now being incorporated into the national HMIS/DHIS2 system from FY 2080/081. This integration ensures real-time data generation across the entire HIV Cascade, enabling comprehensive monitoring and monthly reporting to the national HMIS/DHIS2, thus establishing a unified national HIV information system.

12.2.11 Integrated Biological and Behavioural Surveillance (IBBS) Survey

Nepal has been conducting HIV and STI surveillance particularly among key populations, namely: people who inject drugs, FSW and their clients, MSM and TG and Male Labor Migrants for more than a decade mainly to track changes in HIV and STI prevalence along with behavioural components such as condom use etc. Hepatitis-B and C screening among PWID has been started in the IBBS survey from 2015. From 2020, national level surveillance survey was conducted among people who inject drugs. In the FY 2080/81 National level IBBS for male labor migrants completed.

12.2.12 HIV Surveillance

NCASC is taking the lead in HIV surveillance activities in Nepal, in technical collaboration with WHO, UNAIDS, Save the Children/Global Fund, USAID, FHI/EpiC Nepal including the engagement of communities and people living with HIV. NCASC has developed National Consolidated Guidelines on Strategic Information of HIV Response in Nepal 2022 – 2026. The national consolidated SI guidelines aim to design an appropriate framework for measuring progress of National HIV Strategic Plan (2021 – 2026) targets and indicators at different level, i.e. impact, outcome and output level, including definitions of core indicators and specifications for data collection and provide a road map for data sources, data collection, analysis and its use for improvement of program implementation.

12.2.13 HIV Infection Estimations and Projections

Nepal updates HIV infection estimates annually using available biological and behavioural data, routine program data, key population size estimates and other relevant key information from different studies using AIDS Epidemic Modelling (AEM) and spectrum.

12.2.14 Size Estimation of Key Populations

National size estimation of key populations (FSW, PWID and MSM and transgender people) was started in 2010. In 2005, 2007 and 2009, national level size estimates were derived by updating the 2003 estimate based on population growth. In 2010 for the first time, a national level mapping exercise which used a combination of direct and extrapolated district level estimates was conducted in Nepal.

12.2.15 World AIDS Day Celebration

NCASC every year celebrates World Aids Day on 1st December. In year 2080 BS, NCASC celebrated 36th World Aids Day with the slogan "LET COMMUNITIES LEAD" (समुदायको नेतृत्वमा एड्स अन्त्य गरौं).

12.3 Key Service Status 2080/81

12.3.1 Positivity Rate Among Tested Through HTS

In FY 2080/81, the positivity rate among tested was 0.47%, showing declining trend from FY 2077/78 (table 12.1).

Table 12.1 HIV testing and counseling services for the period of FY 2075/76 to 2080/81

Indicators	Fiscal Years					
	2075/76	2076/77	2077/78	2078/79	2079/80	2080/81
Total tested for HIV	237,496	147,968	176,895	376,191	558,219	524,090
Total HIV positive reported	2,298	2,416	2,944	3,270	3,046	2,475
HIV positivity rate (%)	0.97	1.63	1.66	0.86	0.55	0.47

Source: HMIS/DoHS

In FY 2080/81 total 5,24,090 individuals were tested for HIV, out of which 2,475 tested positive for HIV. The HIV positivity rate was 0.47%. Most cases of HIV were reported from Bagmati province (802) and also it had the highest positivity yield of 1.63%. Least cases were reported from Karnali province (40) with yield proportion 0.22%. (table 12.2).

Table 12.2 HIV testing and counseling services at provinces in FY 2080/81

Provinces	Tested for HIV	Positive reported	% of Positivity Yield
Koshi	72,349	283	0.39
Madhesh	74,696	510	0.68
Bagmati	49,109	802	1.63
Gandaki	36,827	210	0.57
Lumbini	1,65,966	412	0.25
Karnali	17,985	40	0.22
Sudurpaschim	1,07,158	218	0.2
Total	5,24,090	2,475	0.47

Source: HMIS/DoHS

12.3.2 Cases Tested for STIs

The number of individuals tested for STIs increased to 46,242 in FY 2080/81 as compared to 35,278 in FY 2079/80 and 23,271 in FY 2078/79 respectively. The highest number of individual were tested in Madhesh and Bagmati province followed by Koshi and Lumbini province. Only 768 individuals were test for STIs in Karnali province. (figure 12.1).

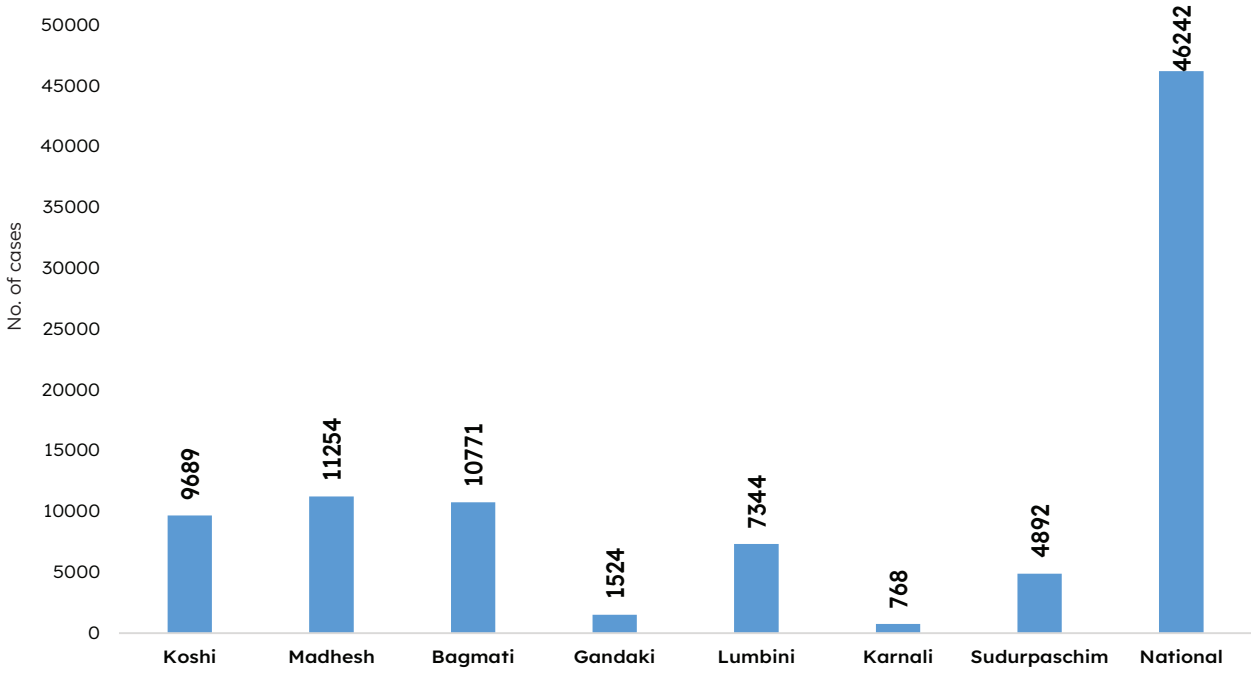


Figure 12.1 Number of cases assessed for STIs in FY 2080/81

12.3.3 eVT Service Uptake

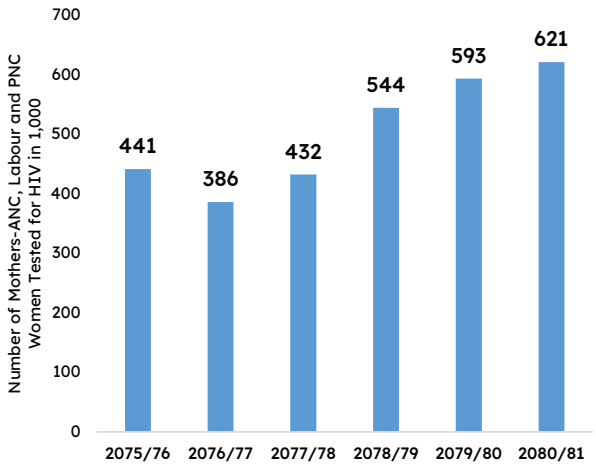
Table 12.3 Service statistics on eVT at provinces in FY 2080/81

Province/ Women in her ANC, labor or PNC	Women tested	Positive women identified
Koshi	106,744	17
Madhesh	141,804	17
Bagmati	98,141	15
Gandaki	52,668	5

Province/ Women in her ANC, labor or PNC	Women tested	Positive women identified
Lumbini	125,998	6
Karnali	40,767	1
Sudurpaschim	55,290	3
National	**621,412**	**64**

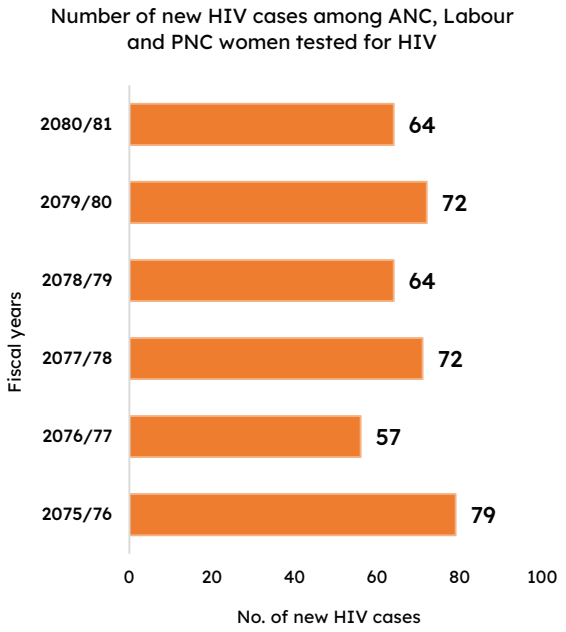
Source: HMIS/DoHS

Number of women tested in her ANC, labor or PNC was higher in Madesh province followed by Lumbini province. Number of positive cases identified was higher in Koshi and Madesh province followed by Bagmati province. (table 12.3).



Source: HMIS/DoHS

Figure 12.2 Number of Mothers- ANC, Labour and PNC women tested for HIV in FY 2075/76 to 2080/81



Source: HMIS/DoHS

Figure 12.3 Number of new HIV cases among ANC, Labour and PNC women tested for HIV

In FY 2080/81 total of 621412 women in ANC, Labor and PNC were tested for HIV, of which 64 new cases were identified. Percentage of test has been increased by 4.75% as compared to FY 2079/80 while percentage of positive cases are reduced by 11.1% as compared to last FY (figure 12.2 and 12.3).

12.3.4 HIV Treatment Services

Among 25,728 number of PLHIV on ART, highest percentage (26%) is in Bagmati province and lowest percentage (3%) in Karnali province (table 12.4).

Table 12.4 Number and proportion of PLHIV on ART

Province/ Women in her ANC, labor or PNC	Total number of PLHIV on ART	Percentage of PLHIV on ART
Koshi	2403	9
Madhesh	4332	17
Bagmati	6735	26
Gandaki	2968	12
Lumbini	4852	19
Karnali	715	3
Sudurpaschim	3723	14
National	**25728**	**100**

Source: HMIS/DoHS

12.3.5 Opioid Substitution Therapy (OST) Services

Table 12.5 Number of PLHIV enrolled in OST in FY 2075/76 to 2080/81

OST Service Status	Fiscal Year					
	2075/76	2076/77	2077/78	2078/79	2079/80	2080/81
Cases currently under Buprenorphine	165	134	139	318	270	287
Cases currently under Methadone	451	468	466	750	970	1104

Source: HMIS

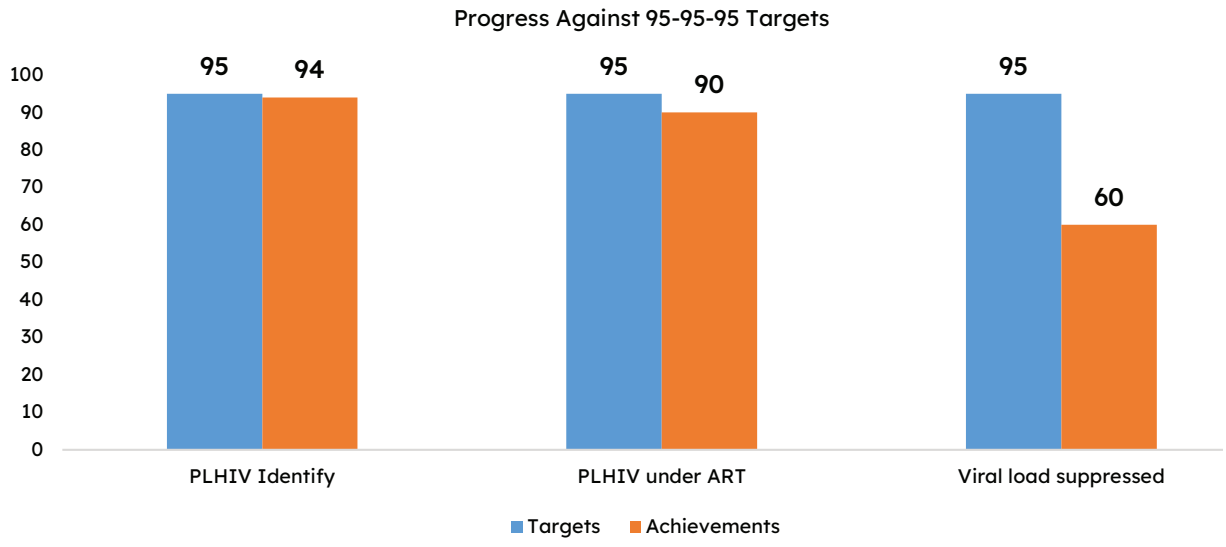
Number of PLHIV enrolled currently under Buprenorphine has been increased by 6.3% in FY 2080/81 as compared to last FY. Similarly, number of PLHIV enrolled currently under methadone has also been increased by 13.8% in FY 2080/81 as compared to last FY. (table 12.5)

Table 12.6 Number of PLHIV/AIDS enrolled in OST by province in FY 2080/81

Province	PLHIV/AIDS Currently Enrolled in Buprenorphine	Percentage Distribution	PLHIV/AIDS Currently Enrolled in Buprenorphine	Percentage Distribution
Koshi	8	2.8	228	20.7
Madhesh	24	8.4	16	1.4
Bagmati	209	72.8	721	65.3
Gandaki	38	32.2	69	6.3
Lumbini	8	2.8	70	6.3
Karnali	No Service	-	No Service	-
Sudurpaschim	No Service	-	No Service	-
Nepal	**287**	**100**	**1104**	**100**

Out of 287 PLHIV enrolled in Buprenorphine, highest (72.8%) was in Bagmati province and 65.3% of PLHIV enrolled in methadone was among 1104. Till now, Buprenorphine and Methadone services has not been expanded to Karnali and Sudurpaschim provinces (table 12.6).

12.3.6 Progress Against 95-95-95 Targets



Source: HMIS

Figure 12.4 Progress against 95-95-95 targets

Nepal is very close to achieve first and second 95 targets, while to achieve the viral load suppression target need more effort (figure 12.4).

Box 12.2 SWOT Analysis of HIV and STI Programs

Strengths	Opportunities
• High level of political leadership and commitment, Government's enhanced leadership for increased resource mobilization for sustained HIV response. • National HIV and STI Policy, National HIV Strategic Plan (2021-2026), updated Technical Guidelines and Protocols, surveillance in place. • Enhanced institutional capacity of NCASC in planning, implementation, monitoring and evaluation of HIV programs • Significant progress: 94%, 90% and 60% against 95-95-95 targets higher than Asia-pacific and world • Increased coverage of data (Government and Non-government) up to health facility and community level using tracker system for individual data and interoperable with HMIS for aggregate data. • Incorporation of recording and reporting with additional HMIS number for HIV prevention, care and support. • Innovative measures to improve HIV response– community-led monitoring, self-testing, PrEP, addressing HIV/TB, and other co-morbidities • Strengthened health systems and community systems for local response – prevention, testing, treatment, care and support	• Federal context of health governance, Increasing collaboration and engagement of relevant stakeholders for resource mobilization • Integration of HIV services in health system with other services • Promotion of eHealth information system • Combination prevention with innovative approaches and evidence based decision making practices • Continued coordination, engagement and collaboration among multiple stakeholders including Civil Society Organizations • Scaling up community led response, prevention, testing, treatment, care and monitoring • Participation of local governments, civil society, private sector and key populations to scale-up of HIV programs at each level • Strong civil society presence, community engagement and support from partners
Weaknesses	**Threats**
• Despite significant improvement on fast-track target, more effort is required to achieve third 95 target • Limited human resources for HIV response in GON settings • Inadequate VL testing services. • Inadequate engagement of Public Private Partnership • Heavy reliance on donors (EDPs) with limited government budget • Limited programs related to STIs in the national program • Limited integrated supervision approach	• Pandemics and disasters • Political instability and frequent leadership change • Implementation challenges in Federal health systems (new structures) • Persistent inequalities, stigma and discrimination • Burden of coinfections and other comorbidities • Stagnant domestic Investment for sustainability (covering the financial costs of services).

13 Curative Services and Medio-legal Services

Curative Service Division | Hospital Services Monitoring and Strengthening Section | Basic and Emergency Health Management Section | Eye, ENT and Oral Health Section | Health Facilities providing curative services | Medico-legal Services

13.1 Curative Services

13.1.1 About the Management of Curative Services

13.1.1.1 Hospital Services Monitoring and Strengthening

Hospital service monitoring and strengthening is one of the crucial functions of Hospital Services Monitoring and Strengthening Section of Curative Service Division (CSD), Department of Health Services (DoHS). Public Health Service Regulation 2077 classifies hospitals based on bed capacity and the range of services they provide. Under this framework, both public and private hospitals, particularly those with more than 200 beds, specialized and super-specialized hospitals, undergo regular monitoring and inspections. This section of CSD facilitates and oversees the registration, renewal, and upgrading processes for hospitals within its jurisdiction. It also initiates formulating policies, and standards for hospital strengthening, hospital regulation, collaboration between private and public health institutions, and ensuring continuous supervision for optimal healthcare quality.

The consistent monitoring and supervision of hospitals are crucial for ensuring that all patients receive access to high-quality health services. Additionally, it guarantees the allocation of a free 10% of beds to economically disadvantaged citizens. The section also contributes in development of the protocols and monitoring the rational use of the drugs and creating awareness regarding AMR. Beyond these responsibilities, the section has a broader mandate that includes institutionalizing new and emerging health trends like telemedicine, Electronic Health Record (EHR) / Electronic Medical Record (EMR) systems, travel clinics, health tourism, and conducting studies on antimicrobial resistance, development of the national-level study centres.

13.1.1.2 Basic and Emergency Health Management

Basic and Emergency Health Management Section is dedicated to safeguarding the constitutionally protected right to health for all citizens. Article 35 of the Constitution of Nepal, 2072 explicitly declares, “Every citizen shall have the right to free basic health services from the State, and no one shall be deprived of emergency health services.”

Access to basic health services(BHS) is ensured in Nepal by the extensive network of health posts, primary healthcare Centres (PHCCs), Urban Health Promotion Centres and community units. These services concentrate on nutrition, family planning, immunization, maternity and child health, and the prevention and management of common illnesses. All Nepali citizens are guaranteed free basic health services and local level governments (LLGs) are solely responsible for providing these services. Legal frameworks, such as the Public Health Service Act 2075 and its implementing regulations, which define BHS as inclusive and comprehensive and cover important public health activities across the continuum of care, strongly support this commitment.

The BHS package is further explained in Public Health Service Regulation 2077, which lists the service elements and health facility specifications. Public Health Regulation specifies nine essential elements for BHS. These consist of vaccination services, Integrated Management of Newborn and Childhood Illnesses (IMNCI), nutrition services, maternal, newborn, and child health (MNCH) services like family planning, abortion, and reproductive health care, infectious disease services, mental health services, geriatric health services, general emergency services, promotional health services, and Ayurveda and other traditional medical practices. These elements are further separated into 42 subcategories in to guarantee all-encompassing strategy for meeting the various health requirements of the people.

All three tiers of governments function in co-ordination and unison to oversee financial transfers, logistics, and service provision and with necessary coalition with non-government entities. The federal government provides oversight on technical, policy level and operational support, while provincial and local governments are more responsible to deliver and ensure availability of BHS in their particular jurisdictions.

To implement BHS effectively, the Ministry of Health and Population (MoHP) developed operational guidelines in 2079, covering important factors like infrastructure, service quality, waste management, etc. and highlighting on the rights of service users as well. Key institutions such as the Basic and Emergency Health Service Management Section within the CSD at the federal level, provincial health entities, and local health offices play integral roles in providing technical assistance, monitoring, logistics management, and ensuring uninterrupted delivery of essential medical supplies, vaccines, and family planning commodities. Together, these mechanisms aim to achieve universal health coverage, leaving no one behind. Additionally,

the section plays a key role in initiating policies, rules, criteria, protocols, and guidance for emergency health services, as well as contributed to the development of national policies related to referral systems. It also assists MoHP in implementing and regulating emergency service flow and referral services.

Table 13.1 Basic health service delivery units at three spheres of government

Local level	Provincial level	Federal level
Basic hospital (5, 10, 15 beds)	General Hospital (25-200 beds)	General Hospital (200 plus beds)
Basic Health Service Centres (BHSCs) Primary Health Care Centres (PHCC) Health Posts (HP) Community Heath Unit (CHU) Urban Health Center (UHC)		Specialized and Super Specialized Hospitals Teaching Hospital (Academy and others)
Ayurveda Dispensaries (Aushadhalaya)	Provincial Ayurveda Hospital Provincial Ayurveda Chikitsalaya /Ayurveda Health Centre	Central Ayurveda Hospital

Source: Public Health Service Regulation, 2020

Additionally, through RRI approach MoHP developed BHS Monitoring Framework (Aadharbhut Swasthya Sewa Anugaman Digdarshan) in 2080, which is in the process of approval. The framework has envisioned the establishment and operationalization of an integrated Basic Health Service Monitoring System (BHSMS) that monitors availability, accessibility, utilization, and quality of BHS, utilizing data from various sources.

13.1.1.3 Eye, ENT and Oral Health

Eye, ear, nose, and throat (ENT), and oral health often take a backseat in discussions about the broader healthcare system and services. However, these aspects are equally vital in ensuring the overall quality of health services. Recognizing the importance of advocating for these often overlooked elements, CSD has established its own division dedicated to managing and institutionalizing the delivery of eye, ENT, and oral health services. This section plays a crucial role in formulating national policies, rules, standards, protocols, and guidelines related to eye, ENT, and oral health. Its efforts extend to enhancing the effectiveness of these services and integrating them into the National Health Service system, along with conducting relevant research studies to further contribute to the advance healthcare practices.

13.1.2 Major Activities and Achievements in FY 2080/81

13.1.2.1 Assessment of Minimum Service Standards (MSS) of Hospitals and Health Facilities

MSS stands out as a highly successful tool for evaluating the service readiness and service availability of health institutions. Using a standardized set of assessment standards, MSS gives a percentage score that indicates the status of institutions' readiness and service availability. Initially launched in 2072 as the Hospital Management Strengthening Program, MSS initially focused on assessing the then district- level hospitals. With continuous consultation with the subject experts in different forums, over time, the tool evolved, and currently, there are distinct MSS tools tailored for Health Posts, Primary, Secondary A, Secondary B, Tertiary hospitals, and specialized hospitals (Children Hospital, Infectious and Tropical Disease Hospital, Mental Hospital, Maternity and Gynaecological Disorders Hospital, Trauma Hospitals and Cardiac Hospitals). This adaptability ensures a more precise assessment of diverse healthcare facilities. MSS has identified three core areas for assessment- governance and management, clinical service management and hospital support service management. The assessment identifying the gaps and backed up by the action plans for resource management to fulfil these gaps ensures MSS assessment to be a continuous effort towards preparing foundation for quality service provision (figure 13.1).

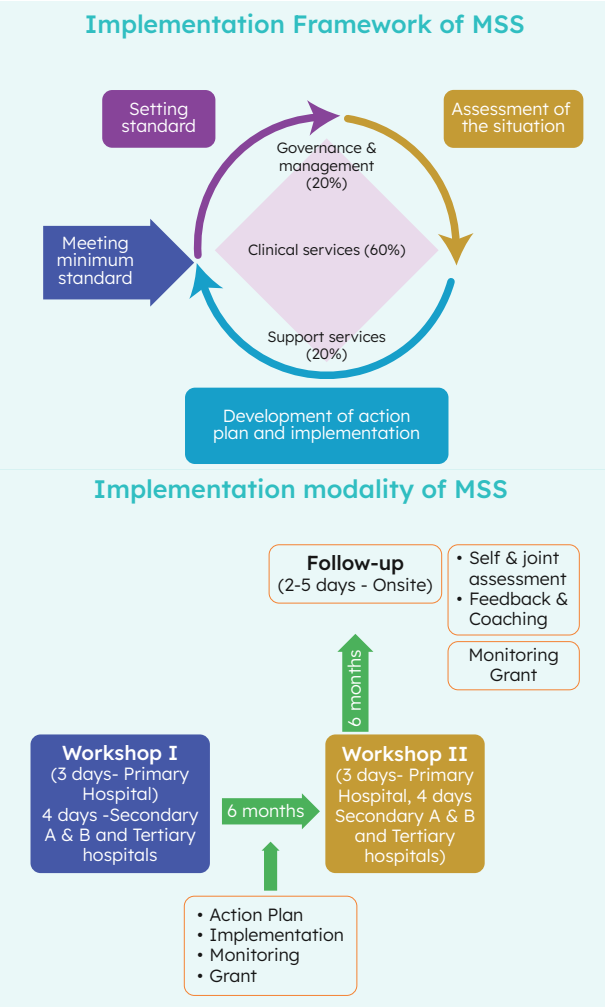
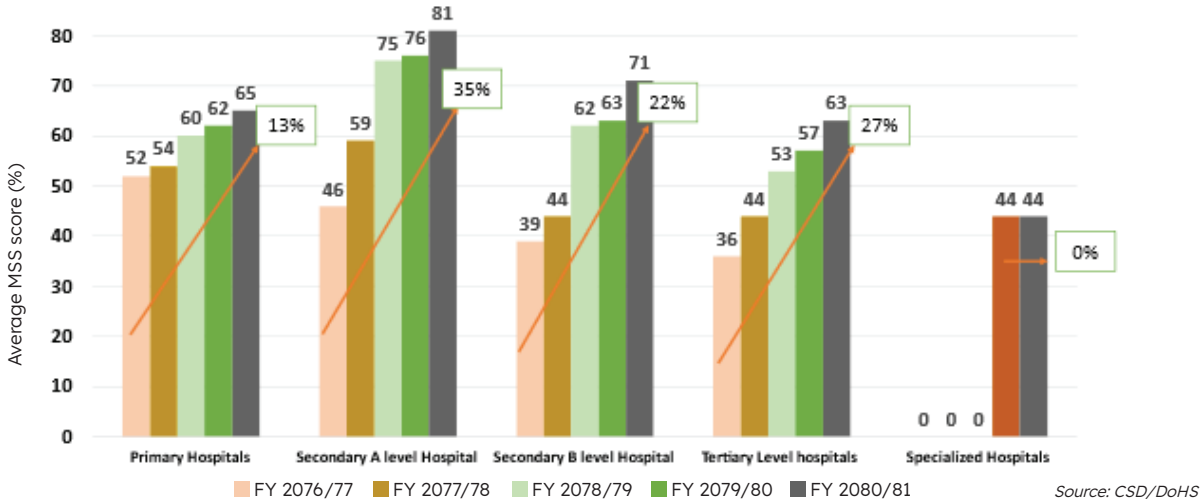


Figure 13.1 Key concept, implementation framework and implementation modality of MSS

In the fiscal year 2080/81, the MSS was evaluated across 133 hospitals. The national average scores were as follows: 65% for primary hospitals, 81% for secondary A level hospital, 71% for secondary B level hospitals, 63% for tertiary level hospitals, and 44% for specialized hospitals. The national average scores demonstrate an upward trend for all hospital levels with the exception of specialized hospitals, where the average MSS score remained consistent with the previous year (figure 13.2.).

Likewise, MSS score for primary hospitals was highest in Karnali province (75%), secondary-A hospitals in Bagmati province (93%), tertiary hospitals in Lumbini province (75%). In addition, the national average MSS score according to level of hospitals assessed demonstrates the highest scores attained by Secondary A Level Hospital (35%) followed by Tertiary level hospital (27%) and least in case Primary level Hospital (13%) respectively. (table 13.2)



Source: CSD/DoHS

Figure 13.2 National Average MSS Score Trend as per level in FY 2076/77 – 2080/81

Table 13.2 Average MSS scores of different levels of hospital assessed in FY2080/81

Provinces	MSS implemented hospitals (number)	Average MSS score (%)
Koshi	21 (Primary-11, Secondary A-7, Secondary B-1, Teritary-2)	Primary-74 %, Sec.A-78 %, Sec.B-54%, Teritary-60%
Madhesh	14 (Primary-5, Secondary A-6, Secondary B-1, Teritary-2)	Primary-62%, Secondary A-82%, Secondary B-60%, Teritary-47%
Bagmati	26(Primary-14, Secondary A-5, Secondary B-0, Teritary-3, specialized-4)	Primary-60%, Secondary A-93%, Specialized-45%, Teritary-70%
Gandaki	26 (Primary-18, Secondary A-6, Secondary B-0, Teritary-1, Specialized-1)	Primary-58 %, Secondary A-89, Specialized-42%, Teritary-69%
Lumbini	20 (Primary-4, Secondary A-13, Secondary B-1, Teritary-2)	Primary-51%, Secondary A-77%, Secondary B-88%, Teritary-75%
Karnali	12 (Primary-8, Secondary A-2, Secondary B-1, Teritary-1)	Primary-75%, Secondary A-68%, Secondary B-79%, Teritary-49%
Sudurpaschim	14 (Primary-10, Secondary A-2, Secondary B-1, Teritary-1)	Primary-71%, Secondary A-84%, Secondary B-74%, Teritary-65%
National	**TOTAL MSS - 133**	

Among the tertiary hospitals assessed in FY 2080/81, the highest score attained by Bheri Hospital (80%) followed by Bharatpur Hospital (77%). (figure 13.3)

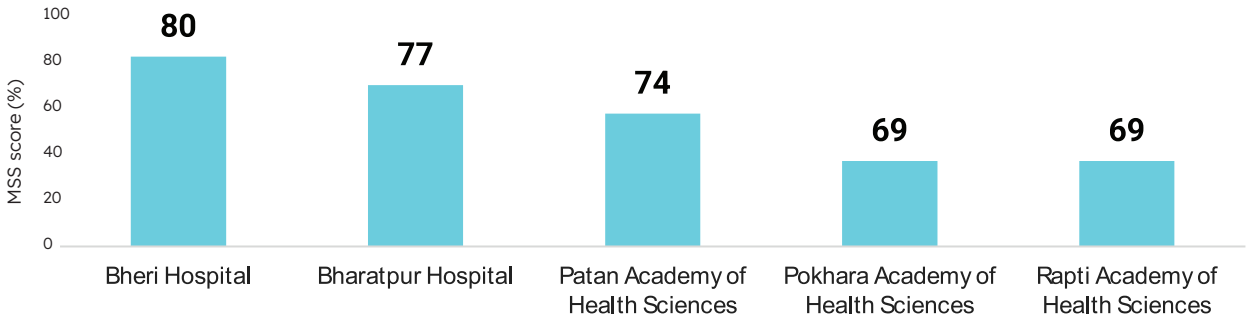


Figure 13.3 Top five tertiary level hospitals based on MSS scores in FY 2080/81

In the fiscal year 2080/81, Bhaktapur hospital in the Bagmati province achieved the highest MSS score, reaching an impressive 98%, surpassing top scorers in other provinces which is found to be same as previous FY 2079/80. Notably, among the top-performing hospitals, 41 % achieved a score within the 85-100% range, earning the green color code on the MSS score scale. Additionally, 27 hospitals scored within the 70-85% range, corresponding to the blue color code. Moreover, 44 hospital fell within the 50-70% range, indicating the yellow color code on the MSS Score category. The remaining hospitals received less than 50 % of MSS score (table 13.3).

Table 13.3 Top five MSS scores among hospitals within respective provinces

Province	Top five MSS scorers among hospitals within respective provinces				
Koshi	District Hospital Taplejung	District Hospital Bhojpur	District Hospital Terathum	Udayapur hospital	District Hospital Shankhuwasabha
	96%	91%	88%	86%	85%
Madhesh	Provincial Hospital Jaleswor	Provincial Hospital Siraha	Gaur Hospital	Bardibas Hospital	Provincial Hospital lahan
	93%	93%	89%	82%	80%
Bagmati	Bhaktapur Hospital	Trishuli Hospital	Dhading Hospital	Chautara Hospital	Hetauda Hospital Hetauda
	98%	96%	94%	92%	92%
Gandaki	Dhaulagiri Hospital	Gorkha District Hospital	Madhyabindu District Hospital	Parbat Hospital	Lamjung District Hospital
	90%	90%	90%	89%	88%
Lumbini	Bardiya Hospital	Kapilbastu Hospital	Gulmi Hospital	Arghakhachi Hospital	Bhim Hospital Bhairahawa
	96%	94%	92%	90%	90%
Karnali	Dailekh District Hospital	Salyan District Hospital	Rukum (Paschim) District Hospital	Mehalkuna Hospital	Provincial Hospital,Karnali
	89%	89%	87%	79%	79%
Sudurpaschim	District Hospital Baitadi	District Hospital Bhajhang	Mahakali Hospital	District Hospital Doti	District Hospital Achham
	93%	93%	88%	88%	87%

13.1.2.2 Other Completed Activities in FY 2080/81

- Orientation on EYE, ENT and Oral health for school nurse
- Policy dialogue on UHC with local level representatives
- Orientation and implementation of clinical audit related program
- National review of MSS
- Formulation of EMR guideline
- Formulation of National Referral Guideline
- Policy Dialogue on BHS: past and future action plans
- EHS STP orientation
- Formulation of technical specification of 98 types of basic drugs and consumables
- BHS STP orientation
- Formulation of National Oral health strategy
- Newborn Hearing screening guidelines
- HPMSS orientation

13.1.3 Status of the common curative services

13.1.3.1 Outpatient Department (OPD) service utilization in FY 2080/81

In the fiscal year 080/81, there were a total of 63,052,391 outpatient visits as reported in the HMIS. This translates to an average of 2.15 outpatient visits per person per year, which is higher than the 1.81 visits per person in previous fiscal year and the 1.13 visits per person in fiscal year 078/79 (table 13.4). The province wise data depicted by table 13.5 illustrated maximum OPD visits per person per year in Bagmati province (3.47) followed by Gandaki province (2.33) while least in Madhesh province (1.17).

Table 13.4 Population Utilizing Outpatient (OPD) Services at National Level

Fiscal Year	Total OPD visit	Target population	OPD visits per person per year
2078/79	33063292	29266472	1.13
2079/80	53833123	29685662	1.81
2080/81	63052391	29396809	2.15

Table 13.5 Population Utilizing Outpatient (OPD) Services at different provinces

Provinces	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim	Nepal
No of OPD Visit	10,587,402	7,284,643	21,755,998	5,597,276	9,940,769	3,206,981	4,679,322	63,052,391
Target Population	4,965,745	6,239,952	6,262,412	2,403,527	5,153,504	1,704,172	2,667,498	29,396,810
OPD visit per person per year	2.13	1.17	3.47	2.33	1.93	1.88	1.75	2.15

13.1.3.2 Reasons for visiting OPD in FY 2080/81

The most common reasons for OPD visits in FY 2080/81 include fever, cough, shortness of breath, abdominal pain, fatigue and weakness, chest pain, lower back pain, nausea and vomiting, general counselling and fracture respectively. (figure 13.4)

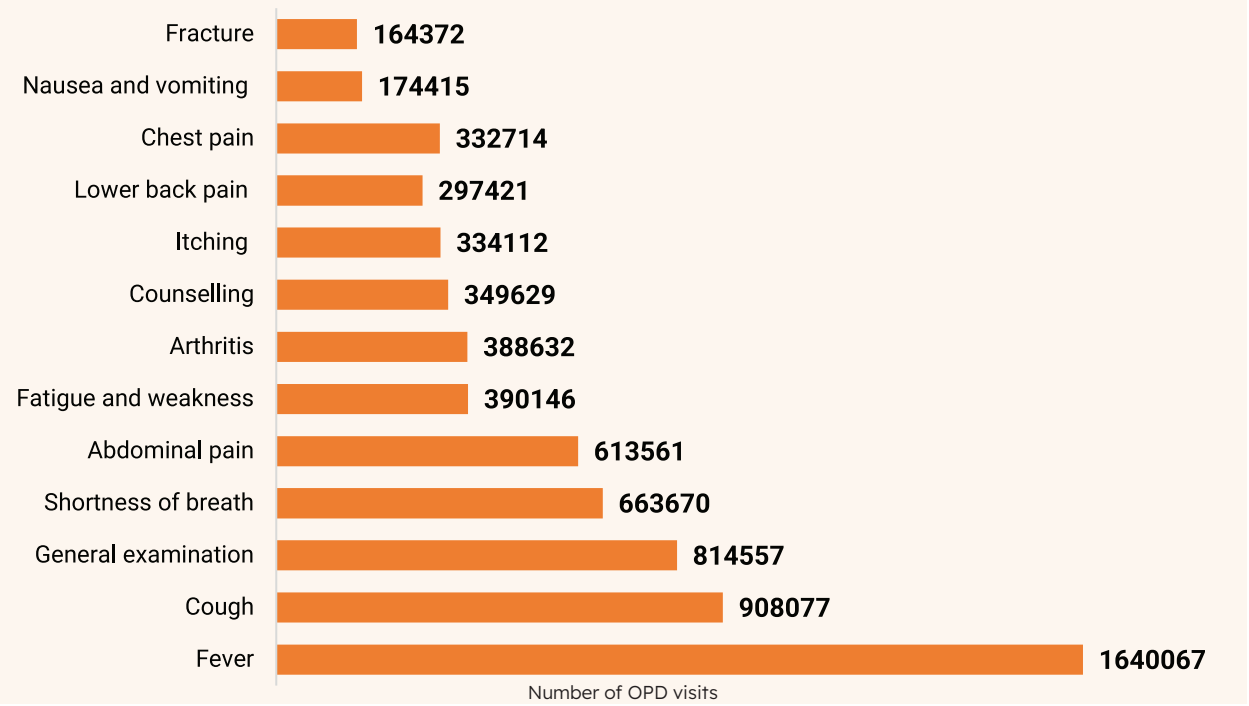


Figure 13.4 Most common reasons for visiting OPD in FY 2080/81

13.1.3.3 Utilization of Emergency and Inpatient Services

In FY 2080/81, 11.2% and 6.1% of the population utilized the hospital emergency and in patient services respectively which was slightly higher than the rate of utilization as that of FY 2080/81 (figure 13.5).

Provincial differences were observed in the hospital service utilization rates with highest emergency service utilization rate in Bagmati province (21%) followed by Gandaki province (13%) and Koshi province (11.3%). The inpatient utilization rate surpassed the national average in Koshi province (9.7%), Bagmati province (9.3%) and Gandaki (5.8%). There were least referred cases in Madhesh province for both services (figure 13.5).

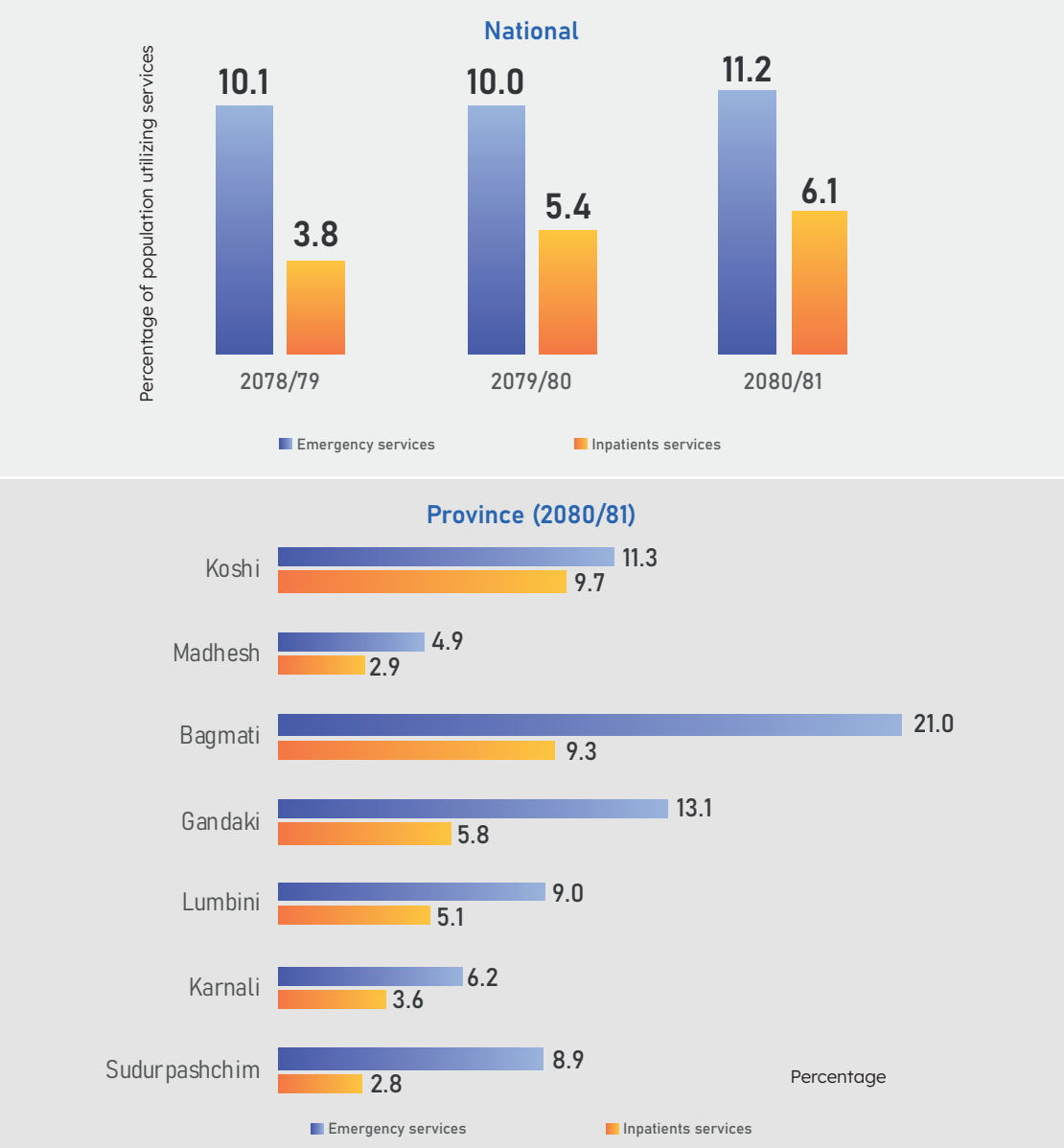


Figure 13.5 Percentage of population utilizing hospital emergency and inpatient services

13.1.3.4 Most Common Morbidities Presented at IPD

The total discharges of 1777642 cases were reported in the FY 2080/81 (table 13.6). Out of total discharge, 631921 discharge reported with ICD code (table 13.7). Therefore, only 35% of inpatient morbidity are reported with ICD code. The top 10 inpatient morbidity among 631921 discharges reported are only with ICD code, therefore it necessitates the need to capture more with ICD code. Among various cases reported through HMIS in FY 2080/81, the most common cause of inpatient admissions was related to lungs health (n=24212) which included COPD followed by Pneumonia (n=18052) (table 13.8).

Table 13.6 Inpatient Outcome

Inpatient Outcome	Female	Male	Total
Recovered/Cured	17,98,726	13,51,692	15,75,209
Stable	83,938	78,060	80,999
Referred Out	31,356	28,432	29,894
DOPR/LAMA	72,482	71,992	72,237
Absconded	2,210	1,682	1,946
Death < 48 Hours	6,332	8,378	7,355
Death ≥ 48 Hours	8,800	11,204	10,002
Total discharge			**17,77,642**

Table 13.7 Chapter wise Inpatient Morbidities based on ICD 11 in FY 2080/81

ICD 11 Chapters name	Number
Certain Infectious or Parasitic Disease [1A00- 1G8Y]	52,182
Neoplasms [2A00- 2F9Z]	25,116
Diseases of the blood or blood-forming organs [3A00-3B8Z]	10,385
Diseases of the Immune System [4A00-4B2Y]	1,073
Endocrine, nutritional or metabolic disease [5A00- 5D46]	19,275
Mental, behavioural or neurodevelopmental disorders [6A00-6E6Z]	7,430
Sleep-wake disorders [7A00-7B0Z]	168
Diseases of the nervous system [8A00-8C8Z]	12,160
Disease of the visual system [9A00- 9D9Z]	59,146
Disease of the ear or mastoid process [AA00- AB93]	1,963
Disease of the circulatory system [BA00- BE1F]	23,951
Disease of the respiratory system [CA00 -CB64]	71,512
Disease of the Digestive system [DA00-DE13]	54,791
Disease of the skin [EA00-EL73]	2,181
Disease of the musculoskeletal system or connective tissue [FA00- FB8Z]	4,587
Disease of the genitourinary system [GA00- GC7B]	48,311
Condition related to sexual health [HA00-HA6Z]	10
Pregnancy childbirth or the puerperium [JA00-JB6Z]	126,701
Certain conditions originating in the perinatal period [KA00- KD3Y]	14,847
Developmental anomalies [LA00- LD5Z]	4,102
Symptoms signs or clinical findings, not elsewhere classified [MA00- MH15]	33,446
injury poisoning or certain other consequences of external causes [NA00-NF0Z]	35,032
External causes of morbidity or mortality [PA00 -PL0Z]	7,648
Factors influencing health status or contact with health services [QA00-QF2Z]	15,836
Codes for special purposes [RA00- RA26]	68
Total	**631,921**

Table 13.8 Top Ten Inpatients Morbidities in FY 2080/81

S.N.	Inpatient Morbidity	Number of cases
1.	Chronic Obstructive Pulmonary Disease	24,212
2.	Pneumonia	18,052
3.	Cholelithiasis	14,666
4.	UTI	11,712
5.	Dengue fever	11,267
6.	Diabetes mellitus	10,815
7.	Chronic kidney disease	9,045
8.	Fracture of different body parts	8,727
9.	Typhoid fever	8,335
10.	Hernia	7,306
Note:	Cataract (Reporting from eye hospital)	53,689

13.1.4 Status of Hospital Key Performance Indicators

Annual surgical procedure

Number of surgical procedures is in upward trend, increasing from 614,634 in FY 2078/79 followed by 686,555 in FY 2079/80 to 852,748 in FY 2080/81, indicating greater utilization. Major surgeries consistently represent the largest proportion of these services. Minor surgeries are available at ER, IPD and OPD setting. The proportion of caesarean section delivers is on the rise each year, resulting a higher proportion of female surgical procedures compared to male. In FY 2080/81, the reporting of ER Major, ER

Intermediate, and Inpatient Intermediate surgeries represents improved data capture providing more granular data for analysis. The substantial volume of outpatient minor surgeries highlights the system's capacity for non-admittance procedures (table 13.9).

Table 13.9 Surgical services received at hospitals in FY 2078/79-80/81

Surgical services	FY 2078/79		FY 2079/80		FY 2080/81	
	Female	Male	Female	Male	Female	Male
Major Surgeries	190,633	136,254	200,314	156,108	218,408	171,174
ER major surgery*	NA	NA	49,244	20,738	44,762	19,867
ER Minor Surgeries	26,227	31,413	26,246	33,170	28,441	37,697
Inpatients Minor Surgeries	53,765	41,503	35,175	35,873	40,154	42,220
Inpatients intermediate Surgery*	NA	NA	23,812	25,924	31,048	34,259
ER intermediate Surgery*	NA	NA	6,274	6,123	6,648	6,740
Outpatients Minor Surgeries	65,254	69,585	65,602	64,086	85,664	85,666
Total	335,879	278,755	376,581	309,975	455,125	397,623
Grand Total	**614,634**		**686,556**		**852,748**	

** No data capture until FY 2078/79*

Bed Occupancy Rate

In FY 2080/81, the bed occupancy rate was 52%, a slight increase of 1% from FY 2079/80. The highest bed occupancy rate was reported from Gandaki province (62%), followed by 54% in both Bagmati and Lumbini, 49% in Koshi provinces, and 47% in Madhesh and Karnali provinces. (figure 13.6)

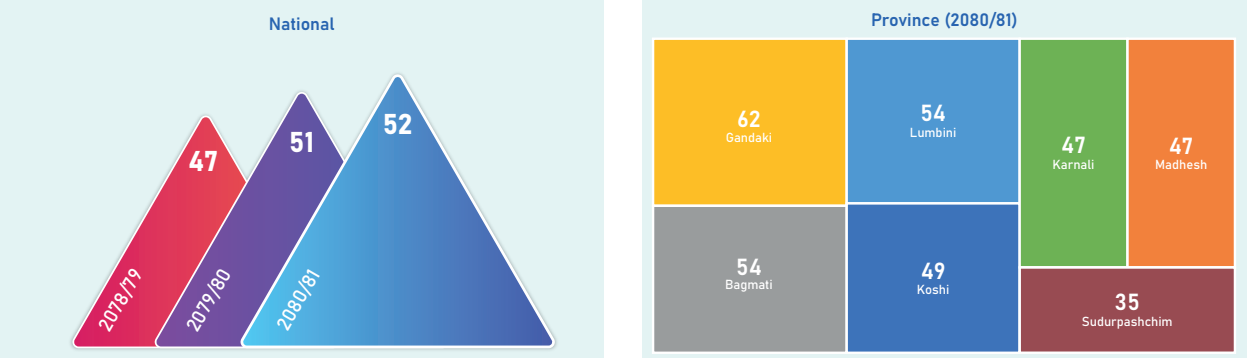


Figure 13.6 Bed occupancy rate (in percentage) in FYs 2078/79-2080/81

Average Length of Stay in Hospital (in days)

The national average length of hospital stay (ALOS) was 3.6 days, showing no change in FY 2080/81 compared to previous fiscal years. (figure 13.7). Notably, ALOS varied across provinces, with 5 days in Bagmati and Gandaki, 4 days in Lumbini, and 3 days in all other provinces except 2 days in Koshi province. ALOS serves as a proxy indicator of efficiency, influenced by factors such as the type of treatment (medical, surgical, major, minor), patient characteristics, and treatment protocols. The overarching goal is to minimize unnecessary hospital stays, ensuring that patients receive optimal and tailored care based on their specific needs.

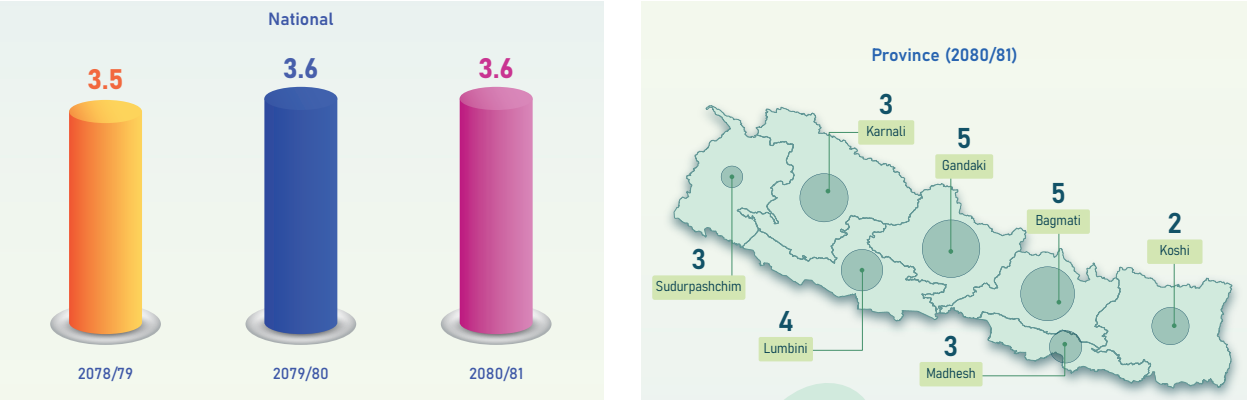


Figure 13.7 Average length of hospital stays (in days) in FYs 2078/79-2080/81 and provincial

Brought dead to health facility

In fiscal year 2080/81, a total of 8006 cases were brought dead to health facility. Males constituted a larger proportion of these cases (68%) compared to females (32%). The data was collected from 228 hospitals. There has been a steady increase in such cases over the past few years, with 6,586 cases in 2079/80 and 5,180 in 2078/79. However, the data does not specify the causes of these deaths.

Post-mortem services

Post-mortem services are available at selected tertiary hospitals and all provincial hospitals. In the fiscal year 2080/81, a total of 13,899 post-mortem cases were recorded, with males comprising 66% of these cases. This represents an increase from the 11,893 cases reported in 2079/80, though the proportion of male cases remained similar as reported 65.6%.

Box 13.1 SWOT Analysis of Curative Services

Strengths	Opportunities
• Regular monitoring and inspection of hospitals to ensure the delivery of quality health services. • Formulation, endorsement, and implementation of laws, policies, and frameworks for better alignment of private health institutions with national programs • Development of standard treatment protocols for uniform and quality healthcare services • Central oversight of the scope of basic health services • Budgetary distribution to PLGs and LLGs to facilitate procurement of BHS drugs and consumables • Central government section overseeing the management of eye, ENT, and oral health care services • Formulation of guidelines and documents to standardize eye, ENT, and oral health care services • Monitoring of eye hospitals for standard and uniform services.	• Introduce and institutionalize emerging health trends like telemedicine and medical tourism • Formulate guidelines for standardizing smaller healthcare institutions (clinics, polyclinics, nursing homes) • Conduct studies on the current status of AMR and facilitate awareness programs • Conduct research on BHS for evidence-based modification of protocols and standards • Define, ensure, and update emergency health services across various levels of health institutions • Conduct a baseline survey of eye, ENT, and oral health care services for improvement and integration with the central healthcare system
Weaknesses	**Threats**
• Inadequate human resources for effective inspection, monitoring, and program implementation • Ineffectiveness in sensitizing the public and health workers about Basic Health Services (BHS) and its scope • Absence of a formal and legal framework for reporting the expenditure of the budget from PLGs and LLGs • Lack of coordination with PLG and LLG for uniformity in monitoring and inspecting healthcare facilities • Insufficient orientation and sensitization of guidelines and protocols to healthcare workers and the public • Inadequate monitoring and evaluation of policy implementation at the ground level • Absence of guidelines for eye and dental hospitals and clinics	• Lack of interdivisional and inter-program level coordination causing delays in regulation and protocol implementation • Need for inter-ministry coordination for infrastructure development in digital health expansion • Lack of sensitization and uniform understanding of government guidelines among private health institutions • Sense of unaccountability in the private sector toward the government due to a lack of regulatory steps and framework • Budgetary restrictions hindering effective program implementation and monitoring

13.2 Medico-legal services

13.2.1 Background

Medico-legal services are intricately linked with the country's justice system. These services encompass the examination and reporting on patients involved in various scenarios such as assault, road traffic and industrial accidents, suicide, homicide, sexual assault, sexual offence, elderly, spousal, and child abuse, neglect and starvation, torture, self-infliction, criminal abortion, criminal poisoning, and intoxication by alcohol or other means. Certain areas within this domain demand highly specialized skills for accurate examination and expert opinions. Medical expertise plays a pivotal role in death investigation in addition to defining age.

Box 13.2 Policy framework and institutional basis for medico-legal services

Key guiding document for policy framework:

- Muluki Ain (National Code of Criminal Offenses), 2074
- Muluki Fauzdari Karyavidhi (Criminal Procedure Code) and Deviyani Karyavidhi (Evidence Act) of 2074
- GESI Strategy of the Health services, 2075
- Medical Legal Services Operation Directive of 2075
- Establishment and Operation Directive of Gender-Based Violence Management Center in Hospitals, 2077
- Clinical Protocol on Gender-Based Violence, 2077

In Nepal, the practice of autopsy for medico-legal purposes became usual only after 2016/17 (1960). At that time doctors working in the prisons, also called police surgeons, were appointed amongst the government medical officers who would perform autopsies at Bir Hospital, Kathmandu. Similarly, medico-legal work including autopsy was done by government medical officers in other parts with the help of trained assistant for dissection.

Constitution of Nepal has envisaged the concept of justice, including compensation, within medico-legal services for victims and affected individuals. While the constitution provides a strong foundation for obtaining justice, individuals committing crimes, meaning the perpetrators, are not brought within the legal purview until the victims, who may not feel the sense of justice, seek legal recourse through clinical medico-legal services. The ease with which victims can bring the perpetrators into the legal domain is facilitated by the research of experts, the condition of the victim, and the evidence obtained through clinical medico-legal services. This is why clinical medico-legal services are considered crucial for providing a strong foundation for social justice, including social security. It serves as a powerful mechanism to promote logical equality and social inclusion through healthcare services.

When medico-legal examination and investigations are required, a report prepared on the basis of such examination is submitted. The report, supported by the medico-legal examination, is presented in court by a doctor as an expert witness. The medical opinion, along with the forensic report and the testimonies of medical professionals, is also considered by the court. Recently, the government has prioritized the establishment and organization of medico-legal services, focusing on policy, legal, institutional, financial, and programmatic aspects, as well as simplification.

Tuberculosis (TB) is a significant public health issue in Nepal and one of the leading causes of global mortality. It is caused by Mycobacterium tuberculosis and primarily affects the lungs but can also manifest in other body parts. Nearly a quarter of the global population carries the TB bacteria. This disease is closely linked to poverty and disproportionately impacts adults, particularly men. Despite being curable and preventable, access to diagnosis and care falls short of UHC, affecting a substantial portion of the population in Nepal. Annually, the program assesses the TB epidemic status and tracks progress in response efforts. It gathers data from multiple sources, including the National Tuberculosis Control Center (NTCC), the Health Management Information System (HMIS), the National Tuberculosis Program Management Information System (NTPMIS), and WHO country profiles.

13.2.2 Major activities in FY 2080/81

- Capacity building training related to medico-legal issues to 35 medical officers

Box 13.3 SWOT Analysis of Medico-legal services

Strengths	Opportunities
• National level medico-legal service committee, which is chaired by Chief, QSRD, MoHP • Collaborating and coordinating in the integrated operation of services for victims and affected individuals in cases related to gender-based violence. • Holds a crucial responsibility for establishing social justice and social security • Facilitates easy identification of crimes and victims. • Simplified the collection of strong evidence, including compensation, for legal proceedings • Serves as a fundamental basis for promoting GESI through healthcare services.	• Development of the expertise and enrolment of more doctors in forensic medicine subject • Reporting integrated with Nepal police, MoHA
Weaknesses	**Threats**
• Limited institutional development due to temporary and contractual agreements with medical officers hinders the overall progress of medico-legal services. • Lack of collaboration, coordination, and support among all authorities and related agencies. • The absence of forensic labs and legal science testing centres in all provinces and local levels, as well as at the central level, poses a risk of losing crucial evidence and necessary materials without proper management.	• Denial and resistance to such crucial responsibilities after only a 7-day training may increase challenges. • Physicians may feel a sense of violation while acting as witnesses, during the investigative process, and in the form of court and police visits. • The risk of becoming vulnerable to injustice and security threats if evidence, reports, and research affairs are not handled promptly by the concerned parties

14 Federal Level Health Academia and Hospitals

14.1 Federal Level Health Academia and Their Services

14.1.1 Overview of health academia

Ministry of Health and Population (MoHP) and its affiliated entities have undergone significant transformation and restructuring as a part of country's federalization process. A key milestone in this journey was report of the high-level committee on health profession education policy. By now, government medical college/academy are established in six provinces.

Currently, there are seven s federal level medical academia, and one additional academia (Ramraja Prasad Singh Institute of Health Sciences) is being proposed as shown in Figure 14.1. These institutions are autonomous in terms of administration and finances and are not-for-profit. All of them all are under the authority of the MoHP, except for NAIHS, which is run by Welfare Fund of the Nepali Army under the Ministry of Defence. There are two provincial level academia one each in Madhesh Province and Bagmati Province.

This section of the chapter provides an overview of the federal level academia, listing the medical education program they offer to produce health workforce in the country. It also covers major government programs and highlighting their main challenges. In addition to the academia, universities also play a role in health professional education and contribute to the production of HRH in the country.

National Academy of Health Sciences (NAMS)

Began in 2014 (1957) as Civil Medical School

Established as NAMS in 2060 (2002)

B.P. Koirala Institute of Health Sciences (BPKIHS)

Established in 2049 (1993), and as an autonomous health sciences academia in 2055 (1998)

Nepal-India cooperation, founded under an agreement signed on Falgun 26, 2050 (March 10, 1994).

Patan Academy of Health Sciences (PAHS)

Located in Patan, it started with a School of Medicine in 2066 (2010)

Expanded in 2072 (2016) to include nursing programs and 2073 (2017) started Master's Program in Public Health

Karnali Academy of Health Sciences (KAHS)

Established in 2068 (2011)

It emerged from the Karnali Zonal Hospital in Jumla, and is dedicated to fulfill healthcare needs Karnali Province

Nepalese Army Institute of Health Sciences (NAIHS)

Established in 2069 (2012), is not-for-profit medical education endeavor of the Welfare Fund of the Nepalese Army

It is managed by the Directorate General of Directorate of Welfare Planning of Nepalese Army

Pokhara Academy of Health Sciences (PoAHS)

Established in 2072 (2015)

Established by upgrading the Western Regional Hospital, PoAHS serves as a center of hope for medical education in Nepal.

Rapti Academy of Health Sciences (RAHS)

Established in 2074 (2017)

Potential referral hospital for popualtion in Lumbini and Karnali Provinces

Ramraja Prasad Singh Institue of Health Sciences

Proposed

Provincial Level Academia

Madan Bhandari Academy of Health Sciences (MBAHS)

Established by the Provincial Act of 2018

Madhesh Swasthya Bigyan Pratisthan

Established in 2077 (2020)

Figure 14.1 Federal level academia as of FY 2080/81

Each of the academia have their own teaching hospitals with at least one tertiary level hospital for major clinical attachments, as guided by the criteria of the medical education policy. NAMS at present has three federal level hospitals for major clinical attachments- Bir Hospital, Kanti Children Hospital and Paropakar Maternity and Women's Hospital. In addition, for need based clinical posting, there are Mental Hospital, Shahid Gangalal National Heart Center, B.P Koirala Memorial Cancer Hospital, NPHL and others. The hospitals affiliated with these academies are government-owned federal hospitals, except for the Patan Academy of Health Sciences (PAHS) and B.P. Koirala Institute of Health Sciences (BPKIHS), which have hospitals owned by the academy itself.

The number of medical doctors and nursing graduates produced from federal level academia in FY 2080/81 is shown in table 14.1. A total of 219 MBBS graduates, 300 medical post graduates, and 571 nursing graduates were produced in FY 2080/81.

Table 14.1 Number of medical doctors and nurses produced from federal level academia in FY 2080/81

Academies	Number of Human Resource Produced			
	MBBS	MD/MS	DM/MCh	Nursing (BSc, BNS, MSC)
NAMS		104	17	254
BPKIHS	100	107	8	61
KAHS	50	7		34
PAHS	65	52		116
PoAHS		30		36
RAHS				70
NAIHS	100			
Grand Total	219	300	25	571

Source: NJAR 2081

Furthermore, there are different health professional education programs courses run by the health academia (table 14.2).

Table 14.2 Different courses run by federal level health academia as of FY 2080/81

NAMS	MD/MS/MDS	PAHS	MD/MS
	DM/MCh		MBBS
	Nursing		Fellowship in Emergency Medicine, Clinical Rheumatology
	Allied sciences		MPH
	Anaesthesia Assistant		Nursing
BPKIHS	MD/MS/MDS	PoAHS	MD/MS
	M.Sc. Nursing		MBBS
	MPH		Nursing
	DM/ MCh	RAHS	B.Sc. Nursing and BNS
	MBBS		MD/MS MEC inspection completed
	BDS		Infrastructure development underway for MBBS
	B.Sc. (N), MLT, MIT, BN, Midwifery	NAIHS	MD/MS
KAHS	MD/MS		MBBS
	MBBS		Nursing (MN, BSc, BN,PBBN)
	B pharma, BPH, BMS, BNS, BMS		BPH, BMLT

Source: NJAR 2081

These health professional courses are annually accredited by MEC and number of seats for the courses are decided in each academic year.

14.1.2 Major activities in FY 2080/81

Hospital Service Utilization

The hospital services utilization of different academia in FY 2080/81 is shown in figure 14.2. Highest number of average OPD visits per day was seen in NAMS (2205 OPD visits), highest average emergency visits per day in BPKIHS (217 emergency visits), and highest bed occupancy rate in PoAHS (72.7%). The lowest average OPD visits, as well as average emergency visits, and bed occupancy rate was seen in KAHS.

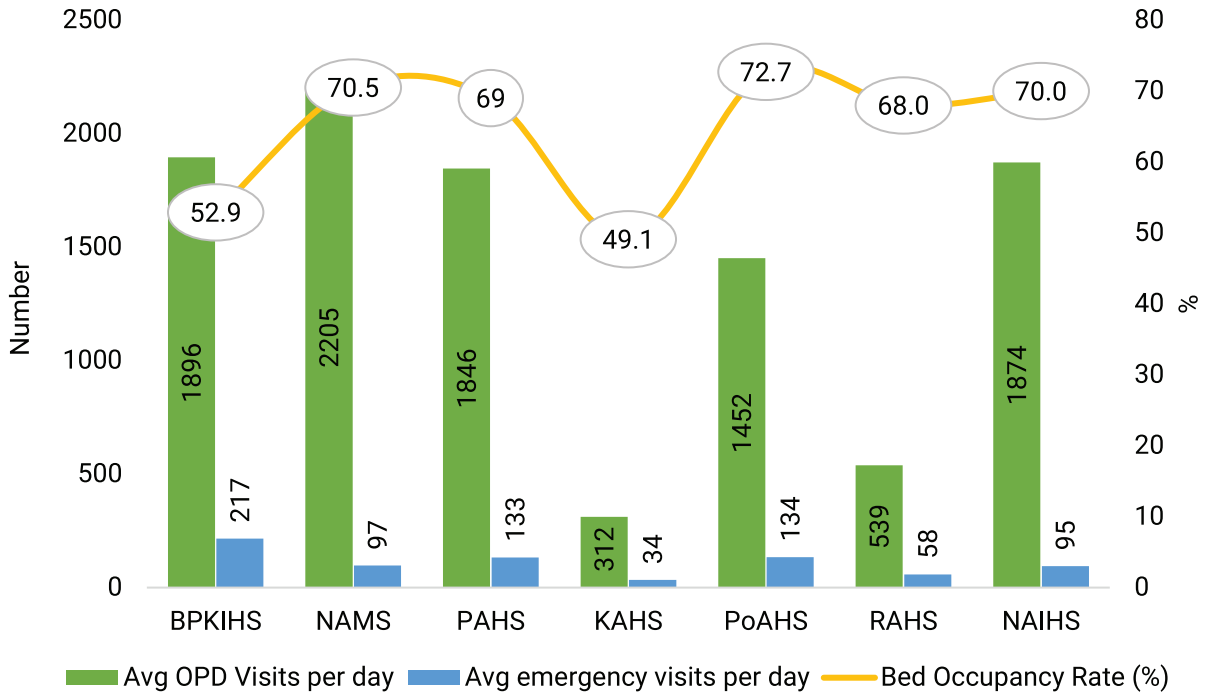
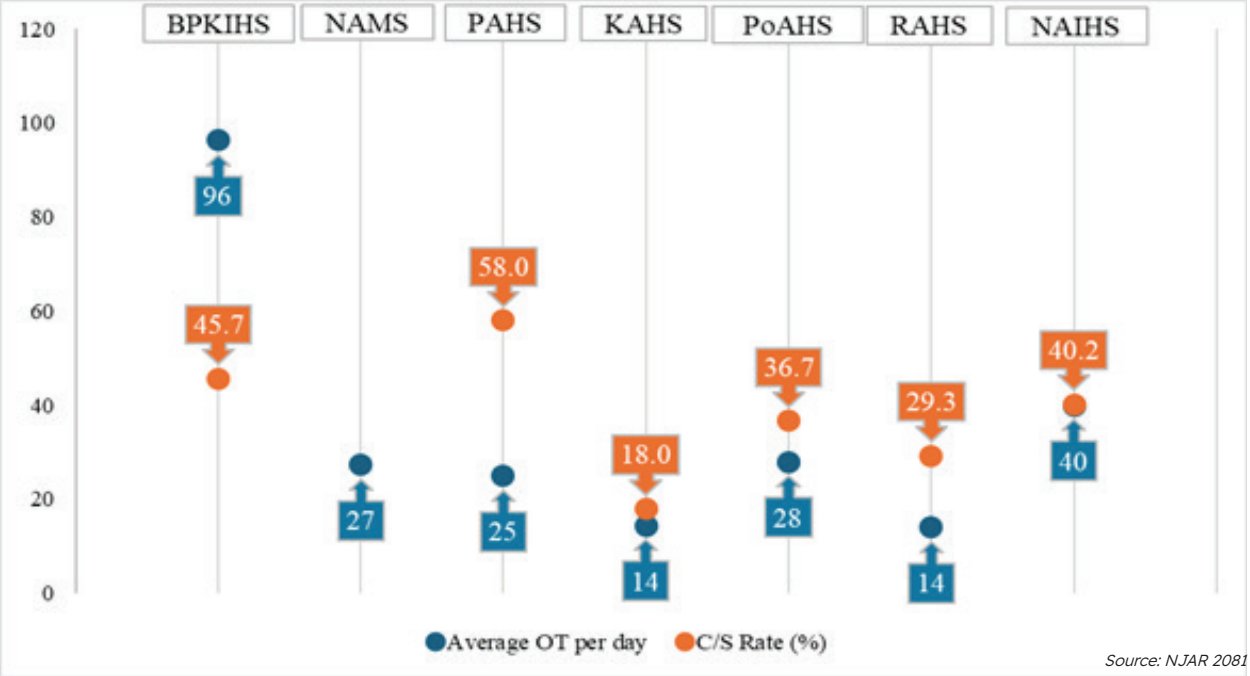


Figure 14.2 Hospital service utilization in academia

Source: NJAR 2081

Average OT per day and C/S rate

The average OT per day ranged from 14 OTs (RAHS) to 96 OTs (BPKIHS) among academia in FY 2080/81. Likewise, the rate of C/S was found to highest in PAHS (58%) and lowest in KAHS (18%). (figure 14.3)

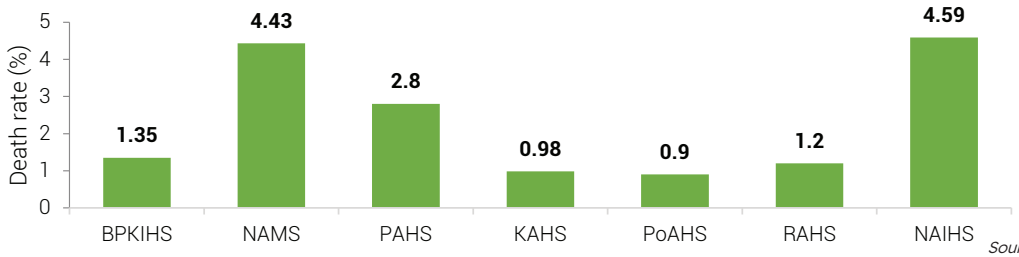


Source: NJAR 2081

Figure 14.3 Average OT per day and C/S rate among academia in FY 2080/81

Inpatient Death Rate

In FY 2080/81, among the total patients admitted, the inpatient death rate varied among different academia, highest being observed in NAIHS (4.59%) and lowest in PoAHS (0.9%) (figure 14.4)

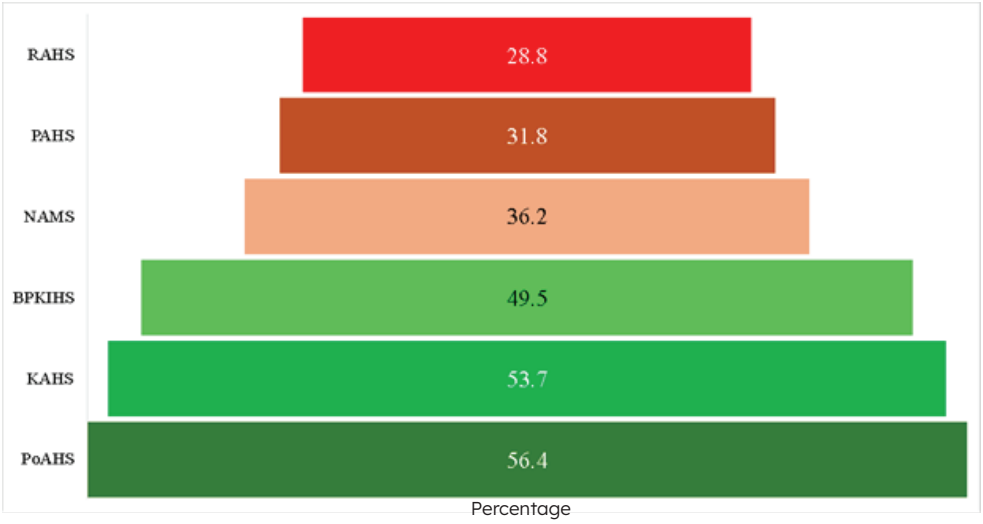


Source: NJAR 2081

Figure 14.4 Inpatient death rate

Health Insurance Service Recipient among Total Patient

In FY 2080/81, the proportion of health insurance service recipient among total patient was highest in PoAHS (56.4%) and lowest in RAHS (28.8%). (figure 14.5)

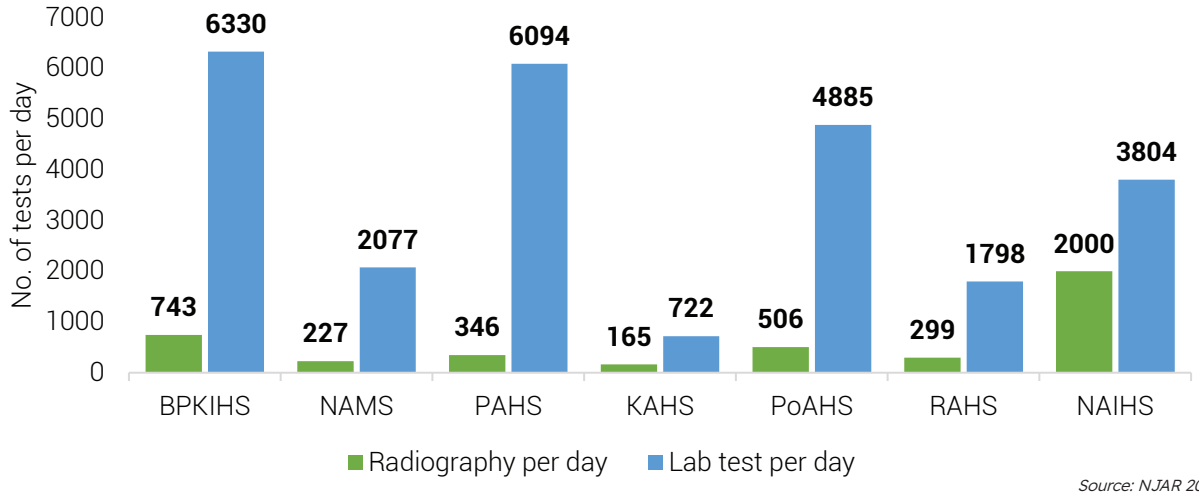


Source: NJAR 2081

Figure 14.5 Health insurance service recipient among total patient

Diagnostic Service Utilization

The measure of diagnostic service utilization includes: radiography per day; and lab tests per day. In FY 2080/81, the number of lab test in a day in different academia ranged from 722 test in KAHS to 6,330 tests in BPKIHS. Likewise, the radiography imaging per day ranged from 165 imaging in KAHS) to 2,000 imaging in NAIHS. (figure 14.6)

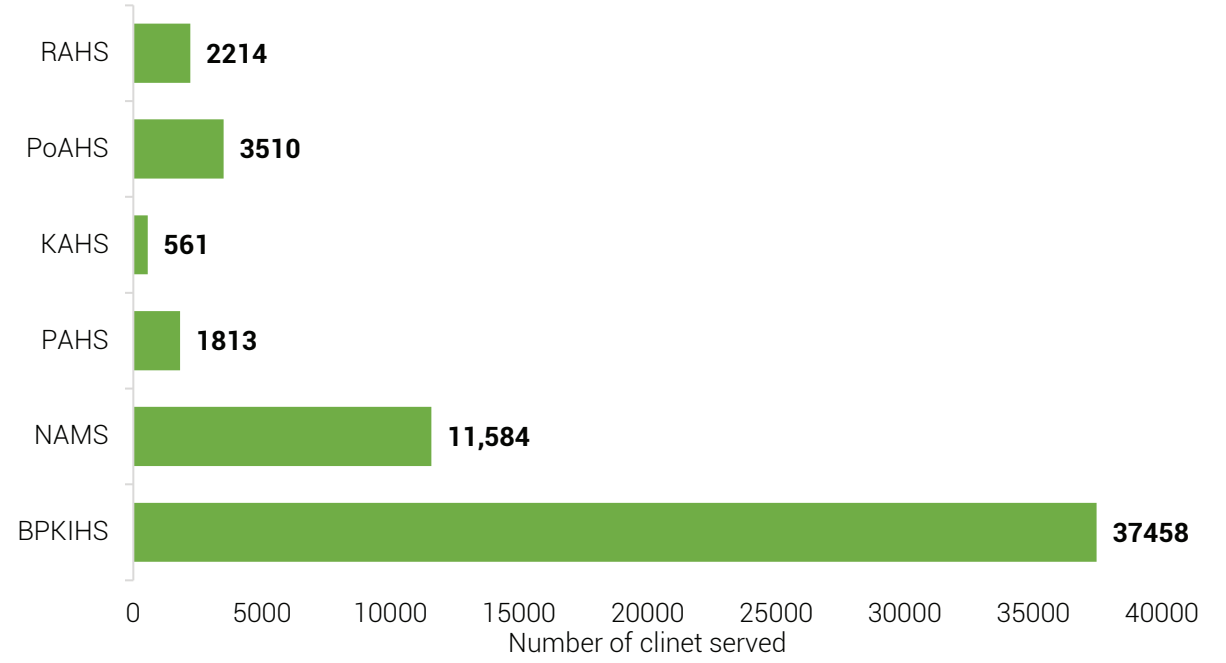


Source: NJAR 2081

Figure 14.6 Diagnostic service utilization

Total Client Served by SSU

The program of OCMC and SSU are functional in all of the federal level academia except NAIHS. NAIHS has its own tailored welfare system for army personnel. In FY 2080/81, the highest number of clients served by SSU was from BPKIHS (37,458) and lowest from KAHS (561). (figure 14.7)

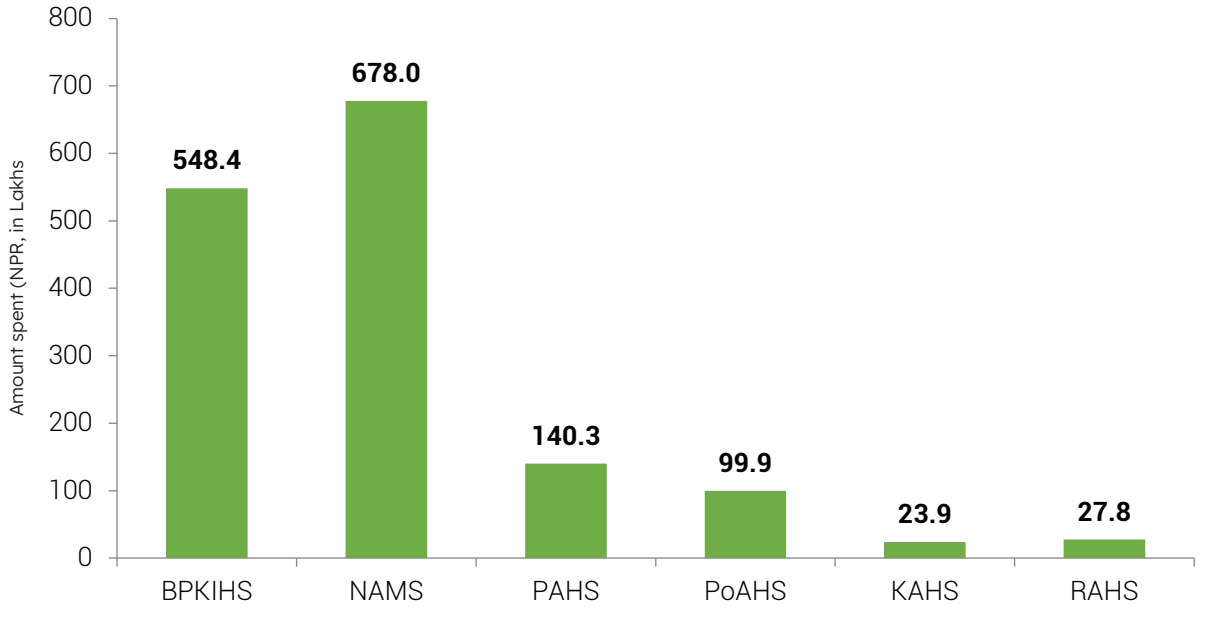


Source: NJAR 2081

Figure 14.7 Total client served by SSU

Expenditure on Free Health Services

In FY 2080/81, the amount spent by different academia on free health services ranged from highest in NAMS (678 lakhs) to lowest in KAHS (23.9 lakhs). (figure 14.8)



Source: NJAR 2081

Figure 14.8 Amount spend on free health services

Percentage of Allocated Seats Fulfilled

The table 14.3 shows the percentage of allocated seats fulfilled among different academia. Regarding postgraduate programs, cent percent of the DM/MCh allocated seats were fulfilled in BPKIHS only. Likewise, cent percent of the MD/MS allocated seats were fulfilled in NAMS, PoAHS, KAHS, and RAHS. None of the academia were able to fulfil the allocated seats for Master's nursing program. Likewise, for undergraduate programs, only BPKIHS was able to fulfil the cent percent allocated seats in MBBS, Bachelor nursing programme (B.Sc. Nursing/BN), and BDS program. Similarly, none of the academia were able to fulfil the allocated seats for BMS programme (table 14.3).

Table 14.3 Percentage of allocated seats fulfilled

Academia	Percentage of allocated seats fulfilled			
	Post Graduate Program			
	DM/MCh	MD/MS	MDS	Master (Nursing)
BPKIHS	100	89.0	100	80.8
NAMS	73.9	100.0	100	81.8
PAHS	NA	88.1	NA	90.6
PoAHS	NA	100	NA	NA
KAHS	NA	100.0	NA	NA
RAHS	NA	100.0	NA	NA
NAIHS	66.7	89.5	NA	94.4
	Undergraduate Program			
	MBBS	B.Sc. Nursing/BN	BDS	BMS
BPKIHS	100	100.0	100	55.0
NAMS	NA	91.8	NA	56.7
PAHS	100	93.8	NA	60.0
PoAHS	NA	85	NA	NA
KAHS	100	85.0	NA	NA
RAHS	NA	85.0	NA	NA
NAIHS	100	96	NA	NA

Source: NJAR 2081

Major Innovation in Different Academia

Box 14.1 Major initiatives in academia in FY 2080/81

Hospitals	Major activities/initiatives in FY 2080/81
NAMS	Burn Center Started (Dr. KD Joshi Burn Center) Extension of Office Hour from 8:30 am to 4:30 pm
PAHS	Introduction of Medical Humanities in MBBS/Nursing Program Rural Community Based Palliative Care Service/Education
BPKIHS	Expansion of ICU to 74 Beds 3D Gait Analysis Lab
PoAHS	Fully Automated Lab with Lab Information System Auto Dispatch of Report and QR Printing Scientific EHS Everyday OT day for All Department
KAHS	Courses Introduced (MPH, M. Pharm.) Ophthalmology Department Sill Lab Supported by WHO
RAHS	"Integrated care for older people (ICOPE) in Lumbini Province" a pilot model being implemented with support from WHO Fellowship in Geriatric Medicine: Process underway, awaiting NMC inspection Research in Neonatal death in Lumbini province: With support from CG foundation
NAIHS	DM Critical care/MCH Urology Fellowship Arthroscopy and sports medicine

Source: NJAR 2081

14.2 Federal Level Hospitals

14.2.1 Overview of federal level hospital

With federalization, there have been changes in the mandate of the ministries across different tiers of Government. MoHP is now mandated to take overall responsibility of functioning of tertiary and above hospitals. As of FY 2080/81, there are federal level hospitals with following categories;

- six tertiary hospitals owned by the government,
- three government hospitals under ministry of home affairs and ministry of Defence are dedicated for respective service holders,
- twelve government hospitals that are organ specific/disease specific/age group specific hospitals,
- one semi-government teaching hospital of university
- five hospitals of academia under government ownership (including Bir hospital),
- two hospitals of academia under ownership of academy and supported by government
- one hospital for prisoners and
- two hospitals for Ayurveda and alternative medicines.

These federal level hospitals cater country wide referral cases. Additionally, almost all of them function as the clinical training sites for different capacity building activities including short term trainings and long-term trainings like fellowship programs.



Figure 14.9 List of the federal level hospitals as of FY 2080/81

14.2.2 Major activities/initiatives in FY 2080/81

Government public health services in federal level hospitals

Public Health Service Act 2075 (2018) and Regulation 2077 (2020) has prescribed the type of the services to be provided through these hospitals. MoHP is continuously increasing the scope of the readiness and service availability tools to capture all the federal level hospitals. In addition to these regular services, the hospitals have some notable initiatives for others to learn and adapt (Detailed in Box 14.1).

Box 14.2 Major initiatives in federal level hospitals in FY 2080/81

Hospitals	Major activities/initiatives in FY 2080/81
Koshi Hospital	• Paediatric Oncology Day Care
Narayani Hospital	• MRI • Postnatal Ward • Oncology Ward
Paropakar Maternity and Women's Hospital	• Human Milk Bank • Maternal Mental Health • IVF services • New-born screening programme • Foetal ECHO
Bheri Hospital	• Approval of faculties for PG programme • Institutional Research Committee • Hemoglobinopathy Day Care • MRI
NTC	• Modular OT • Super Specialty Started
Sukraraj Tropical and Infectious Disease Hospital	• International Collaboration for Research • Silence Tetanus Bed
Bharatpur Hospital	• Refill Counter
Dadeldhura Hospital	• Hemodialysis • Satellite Clinic
Kanti Children Hospital	• Shared Care Center • Tele-mental Health • MRI • PICU/NICU • Bed Increament
Mental Hospital	• Child and Adolescent Unit • Mental Health Promotional Activities
Naradevi Ayurveda Hospital	• CT • Free Health Camp
National Ayurveda Research and Training Center	• Marma Chikitsha • Agnikarma • Bidhkarma Chikitsha

Source: NJAR 2081

14.3 Major areas to strengthen in academia and federal hospitals

- Strengthening of hospital waste management including liquid waste management
- Homeopathy services to be strengthened as it is included in Basic Health Services
- Need of fully digitalization of hospitals
- Healthcare workforce safety and employee wellness/assistance program
- Timely reimbursement of payment (for health insurance)
- Strengthening hospital pharmacy and emergency department
- Feedback mechanism by clinical audit and client satisfaction
- Subspecialty trainings: additional fellowship programs

15 Disability Inclusive Health, Rehabilitation Services and Road Safety

EDCD

Leprosy and Disability Management Section

15.1 Disability inclusive health services and Rehabilitation services

15.1.1 Background

An estimated 1.3 billion people approximately 16% of the global population experience significant disability. This number is rising due to factors such as population aging and the increasing prevalence of non-communicable diseases. Disability results from the interaction between individuals with health conditions, such as cerebral palsy, Down syndrome, or depression, and various personal and environmental factors, including negative attitudes, inaccessible transportation and public buildings, and limited social support. Globally, 1 in 6 people experience significant disability. Some individuals with disabilities have a reduced life expectancy, dying up to 20 years earlier than those without disabilities. Additionally, they face twice the risk of developing health conditions such as depression, asthma, diabetes, stroke, obesity, and poor oral health. Persons with disabilities encounter numerous health inequities. According to the NDHS 2022, 71% of the de facto household population aged 5 and older report no difficulty in any functional domain. Among this population, 23% experience some difficulty in at least one functional domain, 5% have significant difficulty, and 1% are unable to perform at least one functional task. Overall, 6% of the de facto household members aged 5 and older either experience severe difficulty or are unable to function in at least one domain. The most commonly reported disability among individuals aged 5 and older is difficulty seeing (15%), followed by difficulty walking or climbing steps (12%).

Rehabilitation services are a fundamental part of health services and integral to the realization of universal health coverage. It is defined as "a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions in interaction with their environment". Rehabilitation addresses the impact of a health condition on a person's everyday life by optimizing their functioning and reducing their experience of disability. Rehabilitation expands the focus of health beyond preventative and curative care to ensure people with a health condition can remain as independent as possible and participate in education, work and meaningful life roles. Anyone may need rehabilitation at some point in their lives, whether they have experienced an injury, disease, illness, or because their functioning has declined with age. Globally, an estimated 2.4 billion people are currently living with a health condition that may benefit from rehabilitation.

The Rehabilitation 2030 initiative was launched in February 2017 and introduced a "call for action," rallying stakeholders towards concerted and coordinated global actions to scale up rehabilitation. To achieve this, 10 priority areas for action were identified:

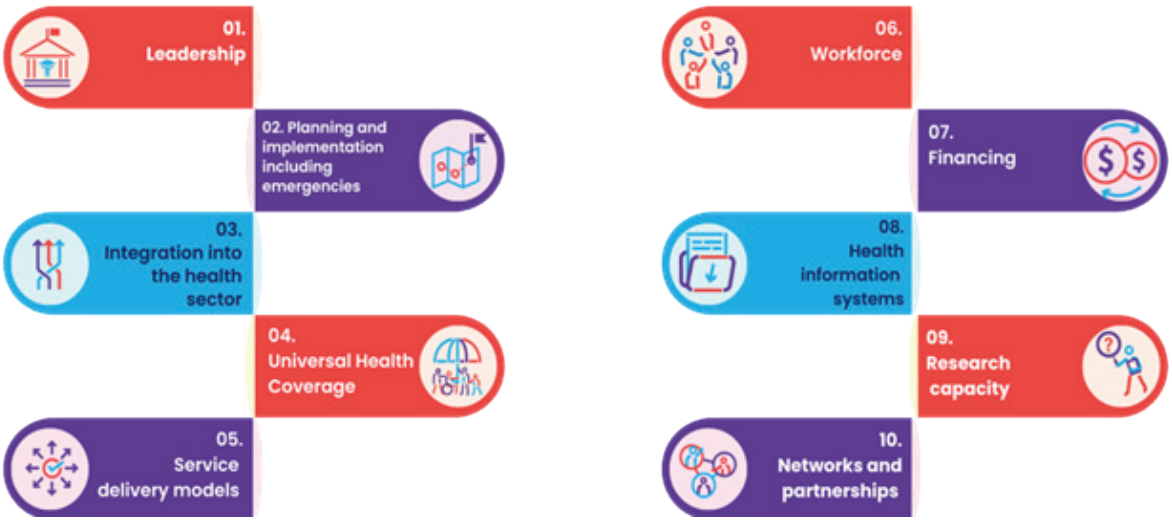


Figure 15.1 Ten Priority areas for Action of the Rehabilitation 2030 Initiatives

MoHP/DoHS/EDCD is committed to improving disability-inclusive health and rehabilitation services for all the population in need.

15.1.2 Major activities in FY 2080/81

15.1.2.1 Training for Assistive Product (TAP)

In January 2023, EDCD initiated the implementation of the Training for Assistive Products (TAP) program for health workers in the Madhesh and Sudurpaschim provinces of Nepal. TAP covers six domains, of which three Mobility (walking aids), Self-care (toilet and shower chairs), and Vision (reading glasses) were adapted and translated into Nepali. The review team comprised members from five different sections: Home and Platform, Introduction to Assistive Products, Mobility Assistive Products, Vision, and Self-care. To support the training, WHO Nepal procured 20 different assistive products.

On August 22, 2024, a ten-day TAP online training for mentors commenced, followed by a three-day in-person training from September 9–11, 2024, in Kathmandu for mentors from all provinces. This training enhanced the assistive product-related competencies of 24 mentors, including physiotherapists, optometrists, medical officers, and prosthetics and orthotics specialists. Furthermore, from September 18 – 22 and December 25 – 30, a total of 57 healthcare workers 27 from Sudurpaschim and 30 from Madesh Pradesh underwent both online and onsite training on assistive products.

The primary objective of this training is to improve access to assistive products in basic hospitals and to equip healthcare workers at the municipal and health sector levels with the knowledge needed to facilitate referrals for complex assistive product services. The training is available on the online platform.

Currently, we are monitoring the trained healthcare workers in both provinces, and they are demonstrating excellent performance by providing simple assistive products at basic health facilities and referring patients with more complex needs. In addition, advocacy efforts and local funding for disability, rehabilitation, and assistive products are expanding at the municipal level as a direct outcome of this TAP training.

15.1.2.2 Disability Management and Rehabilitation Training (DMR) for Medical Officers

EDCD is strengthening the capacity of medical officers from basic hospitals across all seven provinces to provide rehabilitation services at the primary healthcare level in Nepal.

The five-day Disability Management and Rehabilitation training for medical officers is a vital initiative aimed at enhancing healthcare quality by integrating rehabilitation services and advancing universal health coverage in Nepal. By equipping medical officers with essential skills and knowledge, the healthcare system can create inclusive environments that support rehabilitation, promote accessibility, and improve the overall quality of life for individuals of all abilities. This training is now being continued by the Provincial Health Directorates across all seven provinces, further building the capacity of medical officers to deliver effective disability management and rehabilitation services.

15.1.2.3 Basic Rehabilitation Package (BRP) for Health workers

A significant milestone toward achieving Universal Health Coverage has been reached with the successful development of a comprehensive basic rehabilitation package for healthcare workers. This initiative highlights our commitment to improving healthcare accessibility and quality, particularly for populations in need of the services through basic hospital and basic health facilities in Nepal. With the package now finalized, we are in the planning phase for its pilot implementation in select regions. This pilot will provide valuable insights into its effectiveness and adaptability in real-world settings. This effort marks a crucial step in our ongoing mission to ensure that all individuals have access to basic health services including rehabilitative care, ultimately contributing to better health outcomes across our communities.

15.1.2.4 Rehabilitation expenditure

MoHP/DoHS/EDCD developed and pilot-tested a tool to enhance the accuracy and consistency of rehabilitation spending estimates within Nepal's National Health Accounts. This initiative involved defining the scope of rehabilitation services within Nepal's health accounting framework, designing a data collection tool to capture expenditure on these services at the facility level, and conducting a pilot test in approximately 10 health facilities in Kathmandu.

15.1.2.5 Revision of Priority assistive product list (PAPL)

Considering the growing demand for assistive products and their impact on individuals' quality of life, EDCD conducted an expert consultation to support the revision of the Nepal PAPL, originally established in 2018.

The process began with a Technical Working Group (TWG) meeting on February 8, 2024, which involved over 40 participants from various sectors, including government agencies, NGOs, hospitals, and associations related to six functional domains: hearing, vision, communication, speech, cognition, and self-care. A second TWG meeting took place on May 15-16, 2024, where it was decided to use the Delphi method for the revision, involving three rounds of online surveys to prioritize assistive products, following the methodology employed by the WHO. The first Delphi survey was completed on August 6, 2024, followed by additional survey rounds on August 22 and September 22, allowing for a detailed analysis of the results. After prioritizing 40 assistive products, a consensus-building meeting was held on October 25, 2024, leading to the inclusion of additional products and a list of 54 assistive products. EDCD/LCDMS is now planning a final TWG meeting to finalize endorse and publish the revised document.

15.1.2.6 Assistive technology capacity assessment (ATAC)

The Assistive Technology Landscape Analysis (ATAC) aims to improve assistive technology services in Nepal through a comprehensive situational assessment using the Assistive Technology Capacity Assessment tool. The findings and recommendations from the assessment contributed to the development of the assistive technology section in the National Health Rehabilitation

Strategy. The initiative also focuses on creating a national priority list of assistive products and boosting public and private investments in assistive technology. The Epidemiology and Disease Control Division (EDCD) has completed the AT landscape analysis in all seven provinces, which has been endorsed following necessary steps such as validation, consensus-building, and multiple document reviews. This process helped to foster consensus among stakeholders to strengthen policies and service delivery, ensuring improved accessibility and affordability of assistive products.

15.1.2.7 Health equity for person with disability

The Global Report on Health Equity for Persons with Disabilities (Global Report) launched in December 2022 demonstrates that persons with disabilities continue to experience health inequities. EDCD with support from WHO conducted launching of Global report and assessment of feasibility to conduct the situation assessment of health equity for person with disability. The situation assessment includes reactivation of disability technical working group, KII with different section and division of MoHP, Focus Group Discussions (FGD) with OPDs and person with disabilities, field visit to provincial community hospital, maternal hospital and PHC. Following these two days of workshop was held to develop the consensus and feedback for determining entry point. The primary goal was to identify the entry point across the 10 strategic points and 40 action areas to integrate disability across health system of Nepal. With this exercise, Ministry is developing an action plan to mitigate the large equity gap on accessing health services to persons with disabilities.

15.1.2.8 National health rehabilitation strategy

The MoHP has recognized the importance of strengthening rehabilitation within the health system and pursuing universal health coverage. In response to the growing demand for rehabilitation services, based on identified priorities for Nepal, the MoHP has developed the National Rehabilitation Strategy under the authority granted by Section 64 of the Public Health Service Act, 2075. This strategy outlines six strategic objectives along with their corresponding action plans, which are expected to make a significant contribution to providing rehabilitation services for those in need. The preliminary draft was created in 2023 after consultations with stakeholders on key rehabilitation issues, recommendations, fostering health sector stewardship, integrating rehabilitation into basic hospitals and health facilities, increasing investment, and promoting integration within the health system. The Nepali version of the draft rehabilitation strategy was revised by experts among stakeholders for final validation and submitted to the EDCD director to advance the endorsement process.

15.1.2.9 Rehabilitation clinical protocol/ Standard operating procedure/National Standard on Assistive Technology orientation

In collaboration with USAID's Physical Rehabilitation Activity and Handicap International, the EDCD conducted a three-day orientation program across seven provinces of Nepal to enhance the skills of 265 multidisciplinary rehabilitation professionals. The initiative aimed to improve rehabilitation programming and service delivery through the RCP, R-SoP, and NSAT frameworks by providing training on an interdisciplinary team approach, the bio-psychosocial model, and the International Classification of Functioning (ICF) cycle. Additionally, the participants were trained as mentors who later conducted these sessions in their own provinces, promoting the decentralization of rehabilitation services and encouraging provincial authorities to incorporate these standards into their annual plans. Immediate outcomes included improved coordination among healthcare professionals, better delivery of assistive products, enhanced service quality, and increased client satisfaction.

15.1.2.10 Caregivers skill training for families of children with developmental disabilities

The WHO Mental Health Gap Action Program (mhGAP) in partnership with Autism Speaks USA, created the Caregiver Skills Training for families of children with developmental disabilities (CST) to improve support for caregivers of children with developmental disorders. This program provides caregivers with strategies to enhance child development, communication and behavior management. EDCD in collaboration with the USAID's Physical rehabilitation activity implemented by handicap international, Autism Care Nepal Society (ACNS) and WHO Nepal adapted the CST toolkit into Nepali and conducted pre piloting in Karnali province. EDCD is preparing to train facilitators across all provinces on CST. The goal is to build a network of facilitators to implement CST in their regions.

15.1.2.11 HMIS training and video

In collaboration with EDCD/LCDMS and IHIMS, USAID/ PRA developed HMIS video tutorial describing and demonstrating the detailed process of rehabilitation recording and reporting. The video covers the recording and reporting of rehabilitation data in HMIS and its online platform. The video tutorial has been proved to be very effective learning material for HMIS orientation and other such HMIS related events. In addition, the Video will serve as a useful reference material for the recording and reporting of the rehabilitation service data to all health institutions providing rehabilitation service IHIMS has made a commitment to upload and archive it in the resource folder built into DHIS2. The reporting rate has increased when comparing this fiscal year's status to last year (71% this year compared to 56% in the previous fiscal year).

15.1.2.12 Establish and Strengthen 3D Printed Orthosis and Prosthesis center to Enable Improved Participation of Children with Disabilities Preferably from Disaster Areas in Nepal

The objectives of the program were as follows: 1) to establish a digital 3D printing prosthetics lab in Karnali Province, providing continued support to persons with disabilities and potential users, 2) to offer high-quality prosthetic and orthotic support to 50 individuals with disabilities, improving their mobility, participation, and quality of life, and 3) to empower local prosthetists and orthotists through capacity-building workshops on digital prosthetics, enabling them to deliver sustainable services beyond the project's duration.

From July 17th to 21st, 2024, a 5-day training program on digital prosthetics workflow was successfully completed, with 16 prosthetics and orthotics (P&O) professionals from six provinces of Nepal participating. This training, organized by the EDCD in coordination with Center for Disable children assistance (CDCA), strengthened local capacity for implementing digital prosthetics. Additionally, from June 26th to July 4th, 2024, a comprehensive assessment was conducted for 34 persons with disabilities (PWDs) across multiple locations, which involved collecting data, taking measurements, and performing 3D scans for prosthetic provision. The assessment camp locations included: Khalanga Health Post in Salyan, Sanibheri Rural Municipality in West Rukum, Jajarkot District Hospital in Khalanga, Salli Bazar in Salyan, Karnali Province Hospital in Surkhet, INF Shining Hospital in Surkhet, and Limb Care Nepal in Kathmandu. A total of 50 individuals were identified, assessed, and scanned, with 35 assistive technology devices delivered. The remaining 15 patients have been identified and assessed, with the design completed. Fitting for these patients is expected to be completed by the first week of November or December.

15.1.2.13 Local Investment Case and Cost Analysis

A consultant meeting for the local investment case and costing analysis was held on June 19, 2024. Following that, another meeting on July 23, 2024, was conducted to clarify the methodology for the local investment case and cost analysis. After these internal meetings, several consultations with the EDCD took place on August 5, 16, 27, and 30, 2024, to finalize the methodology and select the assistive products for analysis. Based on recommendations, four products were chosen for the analysis: wheelchairs, hearing aids, prostheses, and orthoses. Between September 2-4, 2024, six FGDs were held with service providers and users to determine the costs of each assistive product. The FGD sessions were as follows:1. Wheelchairs: one user group and one producer/distributor group (September 2, 2024) 2. Orthoses and prostheses: one user group and one producer/distributor group (September 3, 2024) 3. Hearing aids: one user group and one producer/distributor group (September 4, 2024)

The first draft of the local investment case and cost analysis was completed on October 1, 2024. The final report is currently under review and is expected to be shared by March 2025.

15.1.2.14 Road safety

The deaths and the injuries due to road traffic crashes around the world is increasing against the global targets outlined by the SGDs and the goal of UN Decade of Action on Road Safety in Low-Income Country (LIC) like Nepal. The future looks more challenging than present due to continuous urbanization, expansion of road networks and increasing use of vehicles in the absence of timely interventions especially in the difficult terrains of the hilly and mountains. Owing to underdeveloped post-crash response system, the fatality rates from severe injury are dramatically higher in low- and middle-income countries than in high-income countries.

EDCD organized the joint review session with multisectoral stakeholder for development and implementation of safe helmet use, development of traffic awareness video an disseminated by general police and senior officials and other road safety initiatives like drink and drive strategies like removal of alcohol advertising boards on public places and roads. Additionally, EDCD in collaborating with non-profit organizations, community groups, and other relevant parties to raise awareness about road safety issues, implement effective measures to reduce accidents and injuries and address SDG goals and the Decade of Action Plan for road safety at the local level within the provinces. This was achieved through low-cost, high yield interventions with multisectoral collaboration in three districts: Dhulikhel, Dhading, and Dakshinkali in 2023.

15.1.3 Key program/service indicators status in FY 2080/81

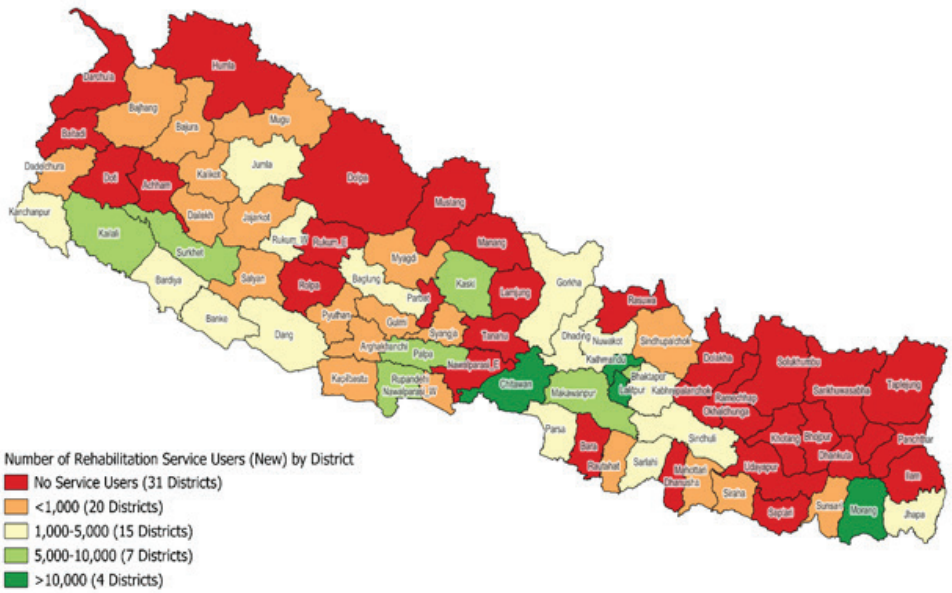
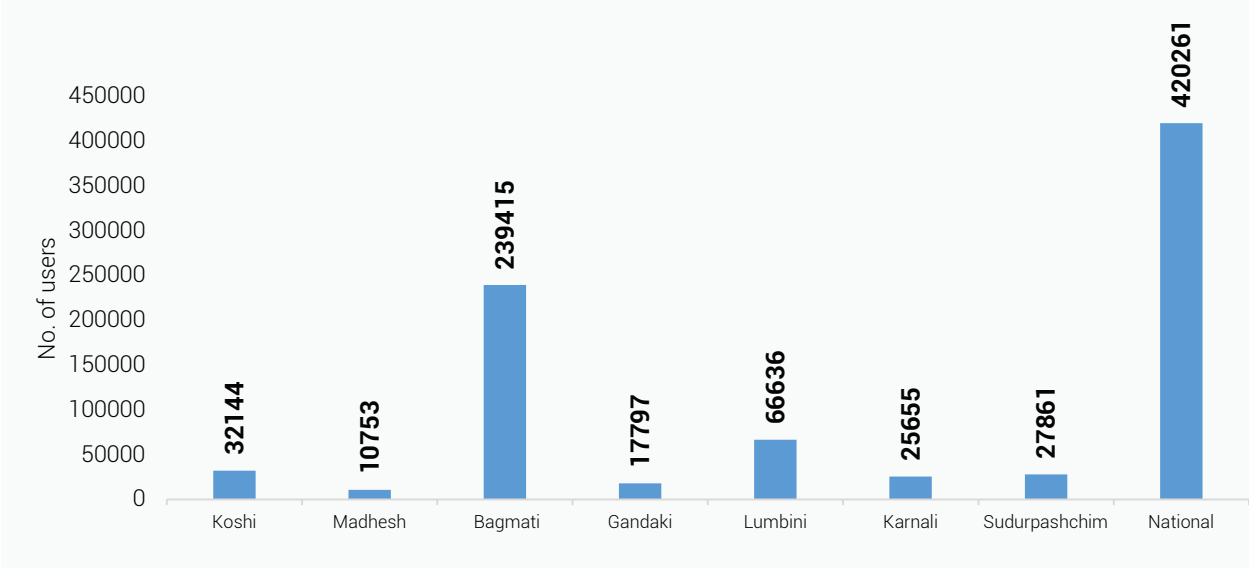


Figure 15.2 Rehabilitation services mapping based on reporting in HMIS/DHIS 2 in FY 2080/81

Source: HMIS/DoHS

In FY 2080/81, a total of 420,261 users were provided with rehabilitation services. Rehabilitation service is present across all seven provinces. Bagmati province has comparatively higher service delivery due to a concentration of rehabilitation providers; followed by Lumbini and Koshi provinces with established physiotherapy units in district hospitals (figure 15.3).



Source: HMIS/DoHS

Figure 15.3 Total number of users of rehabilitation service in FY 2080/81

A total of 223,964 follow-up users, 193,364 new users, and 2,933 foreign users of rehabilitation services has been reported in FY 2080/81 (figure 15.4).

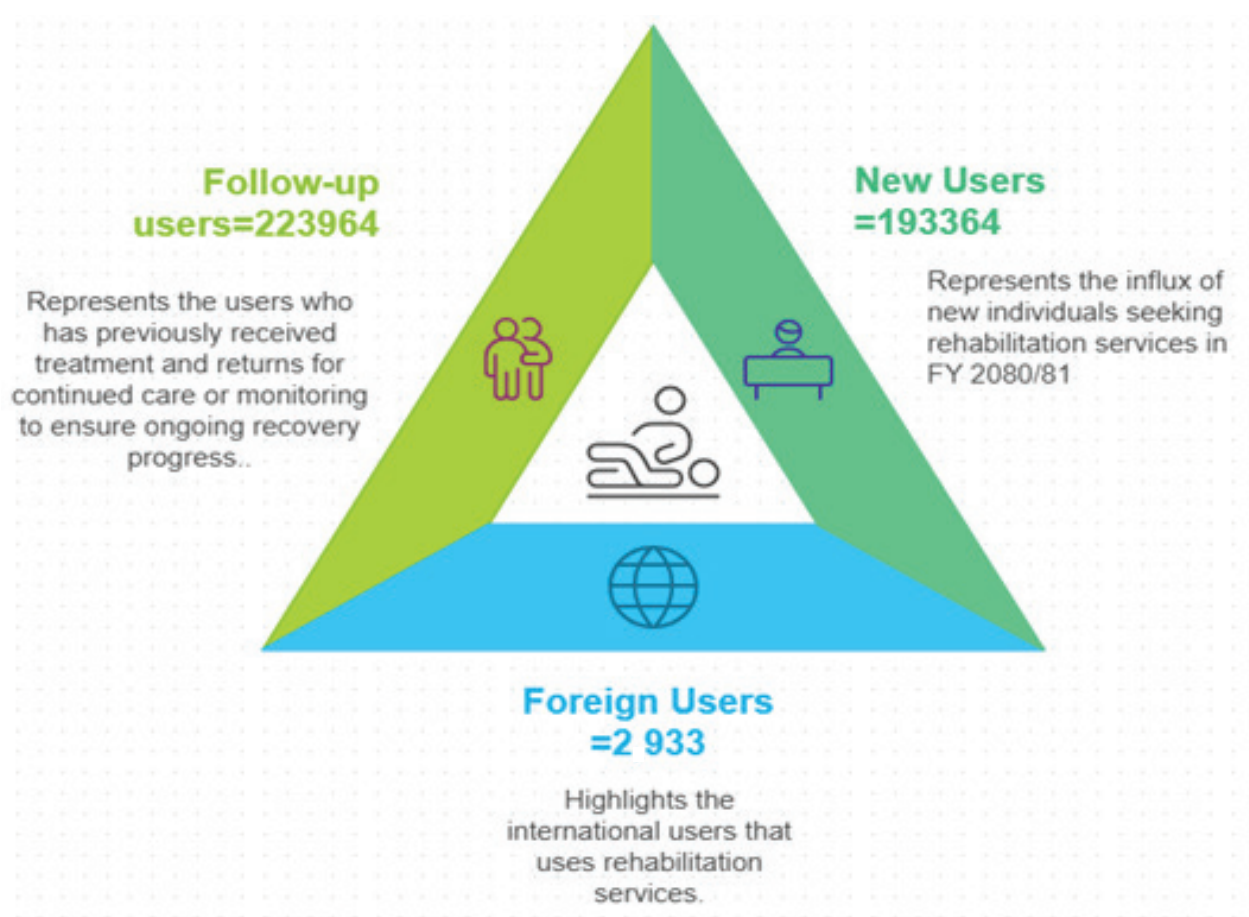


Figure 15.4 Rehabilitation services users in FY 2080/81

Source: HMIS/DoHS

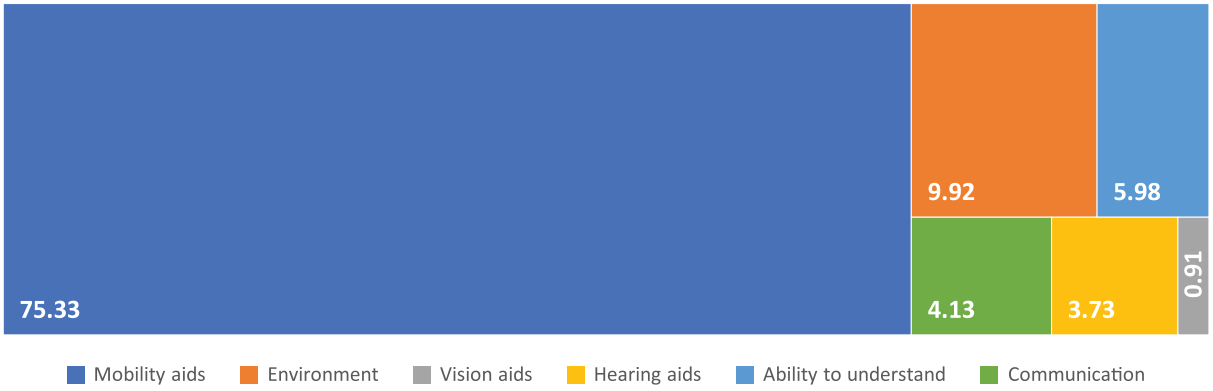


Fig 15.5 Proportion of assistive products delivered in FY 2080/81

Source: HMIS/DoHS

Assistive products are vital external devices for enhancing the optimal functioning. As a key element of rehabilitation, AP service involves assessment, prescription, product preparation, user training, and follow-up by qualified professionals. In this FY a total of 13,287 assistive products were delivered, with 75.33% being mobility aids like crutches, canes, and walkers (figure 15.6).

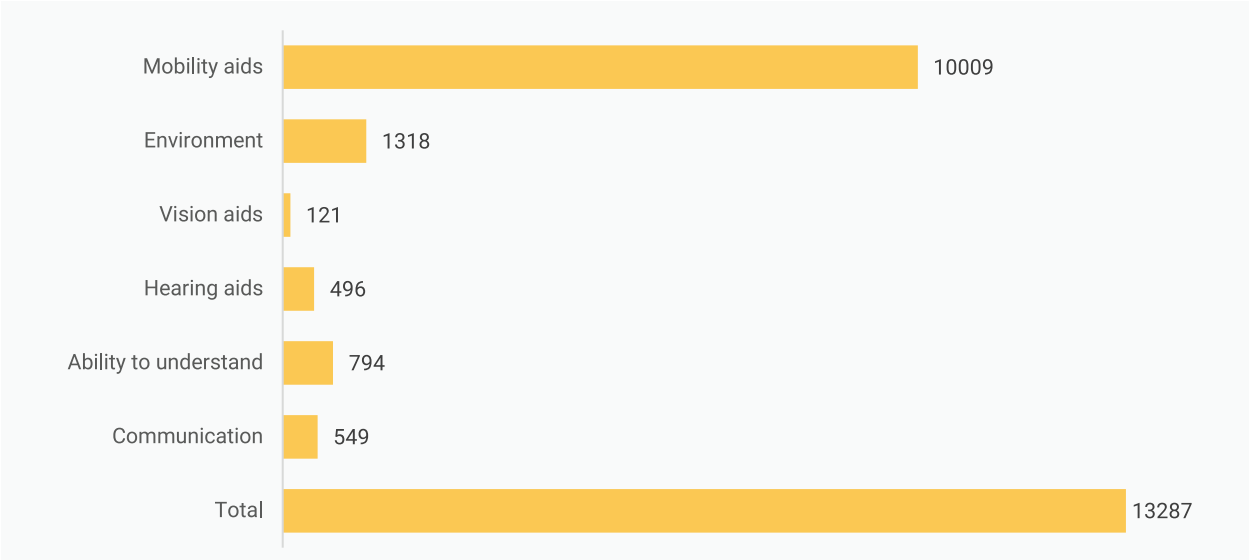
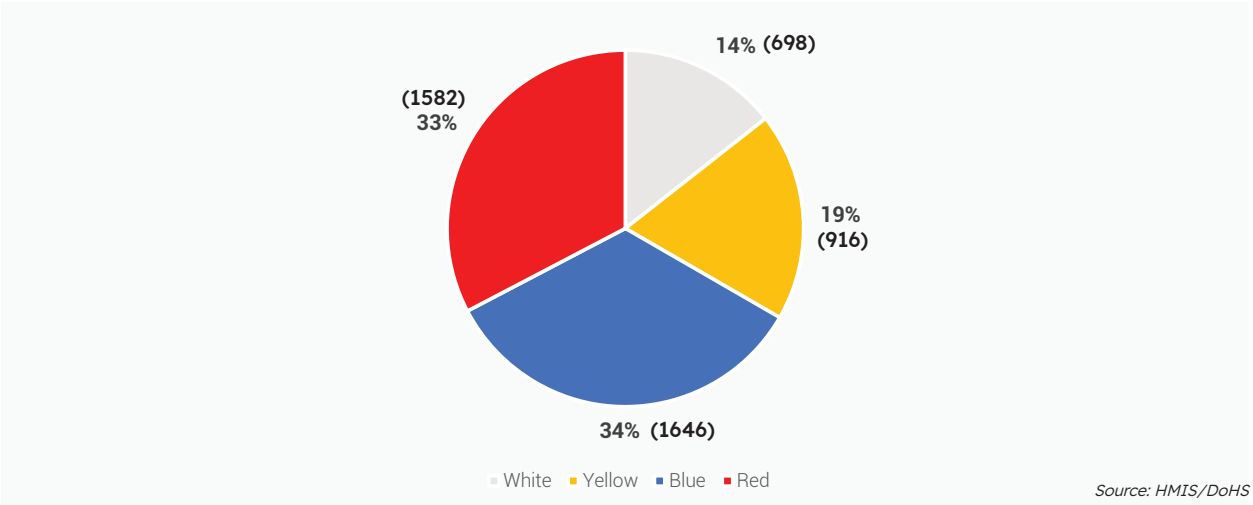


Fig 15.6 Number of assistive devices provided in FY 2080/81

Source: HMIS/DoHS

A total of 4,842 people with disabilities received rehabilitation services, and most of them receiving those services had severe or moderate disabilities (figure 15.7).



Source: HMIS/DoHS

Figure 15.7 Beneficiaries getting rehabilitation services on the basis of disability cards in FY 2080/81

Rehabilitation services utilization showed the increasing trend between 2077/78 to 2080/81. A total of 428,441 rehabilitations sessions were conducted in FY 2080/81 (figure 15.8).

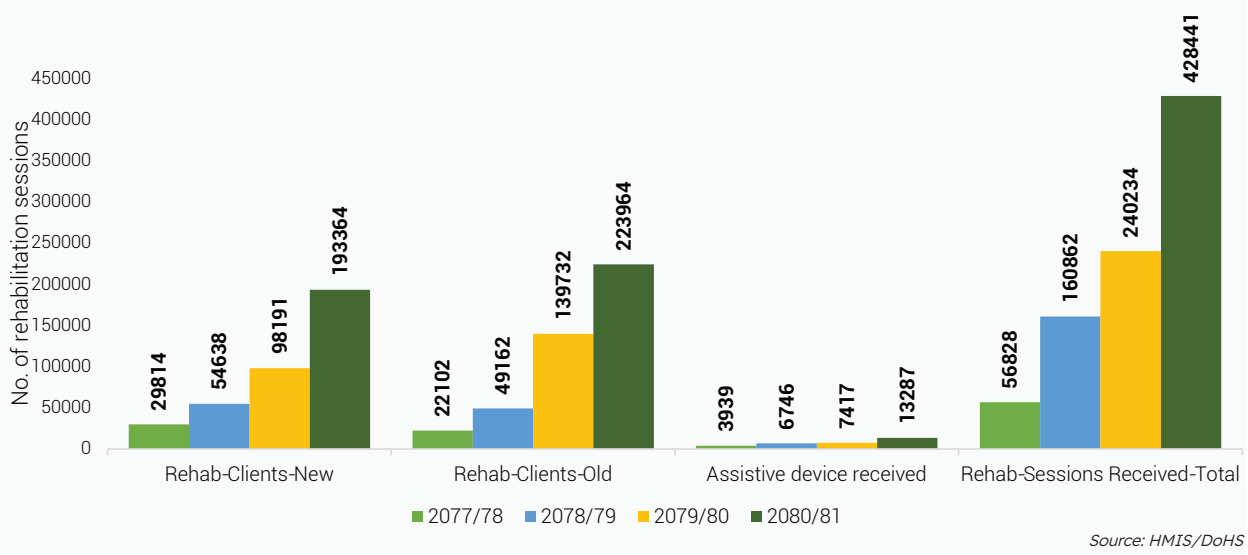


Fig 15.8 Rehabilitation services utilization in past four fiscal years

Box 15.1 SWOT Analysis of Disability Management, Rehabilitation and Assistive Technology

Strengths	Opportunities
• MoHP committed for rehabilitation integration in healthcare and all policy documents includes disability inclusive health and rehabilitation services. • Enhanced focus on sub-national and local government planning for rehabilitation support • Training programs for rehabilitation professionals across all level of health facilities. • Inclusion of rehabilitation service data in HMIS/DHIS 2 software. • Multi-sectoral mechanism for rehabilitation coordination at federal, provincial, and local levels • Ongoing development of standards for the establishment, operation, and upgrading of rehabilitation facilities • Conducting situational analysis and developing strategies for health equity for persons with disabilities	• Rehabilitation integrated into national plans • Focus on disability-inclusive health integration in all health services. • Government commitment to comprehensive rehabilitation, inclusive of persons with disabilities • Public-Private Partnership initiatives including the integration of recording and reporting of rehabilitative services • Utilization of technology, like tele-rehabilitation, to enhance access for service provision. • Stakeholder and community engagement for awareness campaigns and program implementation, fostering ownership and improving outcomes • Aging population and growing individuals with disabilities necessitate the adaptation and expansion of rehabilitation services
Weaknesses	**Threats**
• Uneven distribution of the workforce, with 98% in the private sector and 75% in Bagmati Pradesh • Insufficient availability of rehabilitation beds and facilities, exacerbating the issue. • Lack of rehabilitation integration at primary healthcare levels. Limited integration of assistive products into government healthcare	• Limited government investment for rehabilitation services. • Absence of government-owned rehabilitation centers. • Inconsistent service delivery standards may lead to varying service quality • Lack of clinical practice guidelines and professional development opportunities impacting service delivery. • Potential impact of health crises on resource allocation and attention to rehabilitation services. • Limited resources and dependence on external development partners for rehabilitation service provision raise concerns about sustainability.

15.2 Road Safety

15.2.1 About the program

Globally, road crashes kill an estimated 1.19 million people and cause countless serious injuries and disabilities each year. Road crashes are the leading cause of death for children and young adults aged 5–29, and rank as the 12th leading cause of death for people of all ages, surpassing HIV/AIDS, tuberculosis, and malaria. Road traffic fatalities and injuries impose high costs on society, especially on the poor and the working-age population. In addition to the loss of life and toll on human health, they result in lost productivity, property damage, legal and judicial costs, out-of-pocket expenses, and public healthcare expenditures. Road crashes cost low and middle-income economies the equivalent of 2-6 percent of their GDP each year. Without urgent action, road traffic crashes will keep rising as the demand for mobility in low and middle-income countries grows.1 (1-Annual Report 2024, Global Road Safety Facility, World Bank)

In 2077 (September 2020), the UN General Assembly adopted resolution A/RES/74/299, marking the Second Decade of Action for Road Safety (2077/78–2087/88 or 2021–2030). This resolution aims to reduce road traffic deaths and injuries by at least 50% by 2030 (refer to figure 15.9 for the five pillars of the action plan).

In Kartik 2078 (October 2021), the WHO, in collaboration with UN regional commissions and partners in the UN Road Safety Collaboration, launched the Global Plan for the Decade of Action. This plan aligns with the Stockholm Declaration, advocating a comprehensive approach to road safety. Key elements include improvements in road and vehicle design, stricter law enforcement, and enhanced emergency response services. Additionally, the plan promotes walking, cycling, and public transportation for their associated health and environmental benefits.



Figure 15.9 Five Pillars of road safety action plan

Road travel remains the primary means of transporting goods and people in Nepal. Population growth, urbanization, the rapid increase in vehicles, and expanding road networks have significantly influenced transportation and mobility. However, these developments bring challenges to road safety, including the rising number of vehicles and road networks, limited public awareness, frequent crashes, and inadequate enforcement of road safety measures.

According to the Global Burden of Disease (BoD) estimates, road traffic injuries accounted for 4.11% of all deaths in Nepal, representing 26.99% of injury-related mortality in 1990, which increased to 40.02% in 2017. A decade-long analysis of road traffic crashes in Nepal revealed a consistent rise in incidents, with higher casualty rates recorded between 12 noon and 6 pm.

In this context, the MoHP actively engages and contributes to various stakeholder activities on road safety, spearheaded by the Nepal Road Safety Council, Ministry of Physical Infrastructure and Transport (MoPIT), and Nepal Police. Among the multi-sectoral strategies outlined in the Nepal Road Safety Action Plan 2077/78-2087/88 (2021-2030), the primary health sector-related strategy focuses on providing timely emergency care for road crash victims. This includes establishing a comprehensive trauma care system at federal, provincial, and local government levels to ensure a prompt response to crashes, encompassing pre-hospital, hospital, and post-hospital care, along with necessary formalities.

The MoHP's efforts, aligned with the five pillars of road safety action, are systematically institutionalized across various centers and divisions to enhance road safety outcomes (figure 15.10).

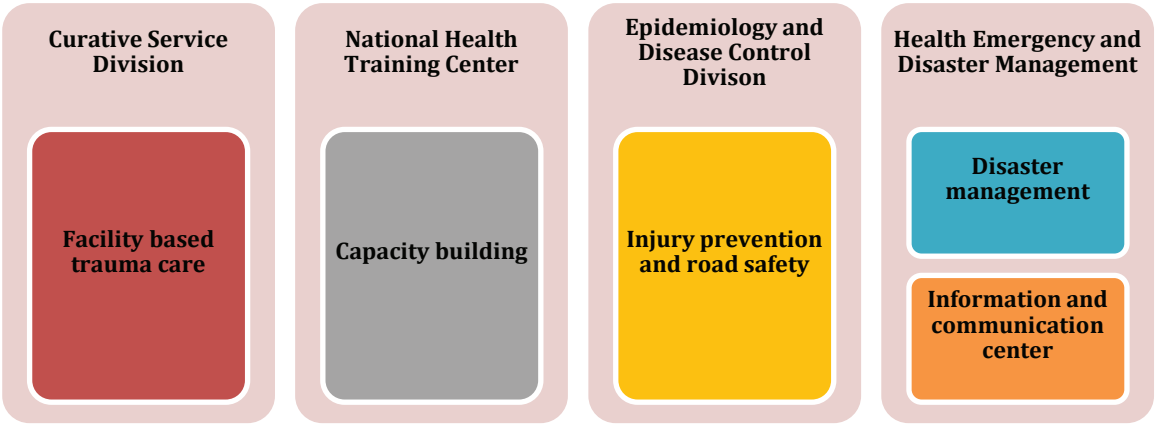


Figure 15.10 Institutional arrangements for implementation of road safety strategy for health sector

15.2.2 Major activities on Road safety

15.2.2.1 Low cost high yield intervention for Road safety

The deaths and the injuries due to road traffic crashes around the world is increasing against the global targets outlined by the SGDs and the goal of UN Decade of Action on Road Safety in LICs like Nepal. The future looks more challenging than present due to continuous urbanization, expansion of road networks and increasing use of vehicles in the absence of timely interventions especially in the difficult terrains of the hilly and mountains. Owing to underdeveloped post-crash response system, the fatality rates from severe injury are dramatically higher in low- and middle-income countries than in high-income countries.

EDCD/LCDMS organized the joint review session with multisectoral stakeholder for development and implementation of safe helmet use, development of traffic awareness video an disseminated by general police and senior officials and other road safety initiatives like drink and drive strategies like removal of alcohol advertising boards on public places and roads. Additionally, EDCD in collaborating with non-profit organizations, community groups, and other relevant parties to raise awareness about road safety issues, implement effective measures to reduce accidents and injuries and address SDG goals and the Decade of Action Plan for road safety at the local level within the provinces. This was achieved through low-cost, high yield interventions with multisectoral collaboration in three districts: Dhulikhel, Dhading, and Dakshinkali in 2023.

15.2.3 Key service indicator status in FY 2080/81

15.2.3.1 Road Traffic Injuries

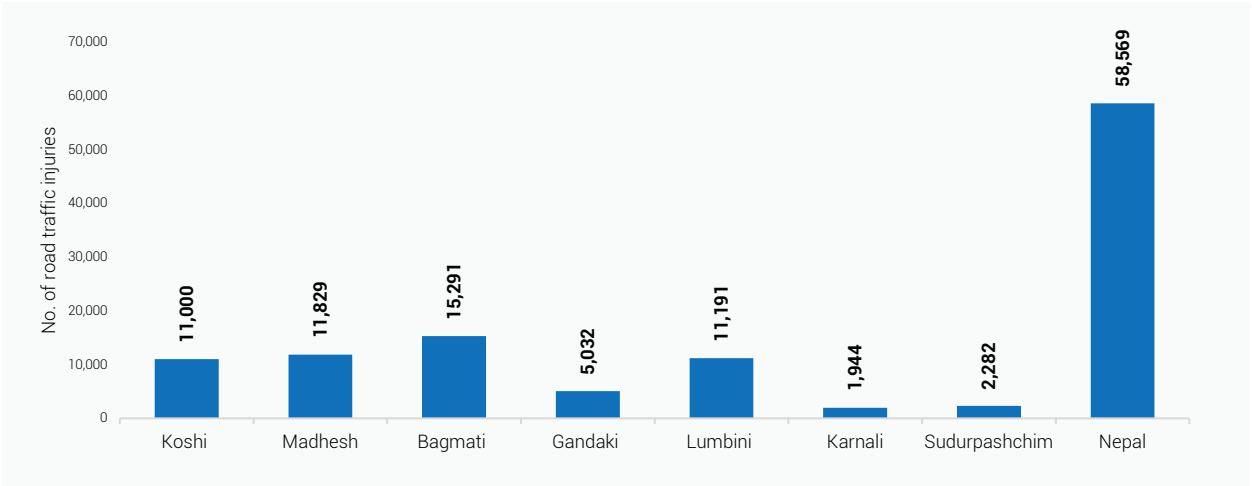


Figure 15.11 Province wise distribution of road traffic injuries.

Source: HMIS/DoHS

Total of 58,569 road traffic injuries were reported in Nepal in FY 2080/81. Highest cases were reported from Bagmati, Madhesh, Lumbini and Koshi Provinces. The detail of the number of RTI cases province wise is give in figure 15.11.

16 Public Health Laboratory Services



16.1 About National Public Health Laboratory (NPHL)

The National Public Health Laboratory (NPHL), established as the Central Laboratory in 1968 AD and renamed NPHL in 1991 AD plays a pivotal role in diagnostic testing, identifying and confirming emerging and remerging diseases, and laboratory surveillance of diseases of public health concerns. During outbreaks NPHL is integral in providing laboratory confirmation of diseases having public health threats, including those that could escalate to Public Health Emergencies of International Concern (PHEIC). It also serves as a quality assurance authority, overseeing the registration and licensing of private laboratories and blood centers, and acts as the focal institution for blood safety across Nepal.

Structured into five main sections—Non-Communicable Disease Laboratory, Infectious Disease Laboratory, Quality Control and Training, Laboratory & Blood Transfusion Services Regulation, and Administration & Supply Management—NPHL's responsibilities span a wide range of activities. Accredited under ISO 15189:2012 since 2020 for clinical chemistry, immunology, serology, hematology, and molecular testing, it is the only government laboratory in Nepal to hold this certification. Moreover, NPHL operates according to Nepal's Health Sector Strategy Implementation Plan (NHSS-IP) and has established molecular diagnostic facilities, including early HIV diagnosis for infants and genotyping of pathogens, with a BSL-3 lab designed for handling high-risk biological agents.

NPHL envisions itself as a center of excellence in diagnostics, with a mission to provide high-quality laboratory services at all levels of Nepal's healthcare system, from central to district and primary health care (PHC) centers. Its objectives include expanding services nationwide, introducing advanced technologies for specialized tests, and ensuring good laboratory practices across all institutions. The laboratory also aims to strengthen national laboratory capacities through external quality assurance schemes (NEQAS), supervision, and training, contributing to improved public health outcomes.

16.1.1 Non-Communicable Disease Laboratory (NCDs Lab)

The Non-Communicable Disease (NCD) Department of the National Public Health Laboratory (NPHL) comprises five key sections: Hematology, Biochemistry, Endocrinology, Histocytopathology, and Molecular & Immunopathology Laboratory. These sections deliver both routine diagnostic services and a range of specialized testing. The department is committed to addressing complex diagnostic needs, ensuring the availability of high-quality laboratory services to support the diagnosis and management of non-communicable diseases.

Among the specialized services offered by the NCD Department are advanced diagnostic techniques such as leukemia panel testing using flow cytometry, hemoglobin electrophoresis for detecting hemoglobinopathies, coagulation factor assays along with inhibitor analysis and immunohistochemistry for diagnosis of various solid cancers. The department also provides molecular diagnostic tests, including BCR-ABL fusion gene analysis, HPV DNA testing for high-risk Human papilloma Virus enabling precise screening and identification of various hematological and solid malignancies. Apart from this, HLA typing for Renal transplant is also one of the important services being provided.

Beyond diagnostic services, the NCD Department actively monitors sentinel sites established to track hemoglobinopathies across different regions of Nepal. These sites are located in Nepalgunj, Bharatpur, Dhangadhi, and Butwal. Through these monitoring efforts, the department ensures early detection and effective management of hemoglobinopathies, contributing significantly to the overall health outcomes in the country.

Table 16.1 Samples tested in NPHL NCD Section in FY 2080/81

Tests performed		Samples
Biochemistry Tests		4,52,683
Haematology Tests	Routine Haematology Tests	75,630
	Haemoglobinopathy Tests	17,690
Histocytopathology Tests		6,955
Immunology/Endocrinology Tests		1,25,948
Molecular & Immunopathology Tests	HPV DNA PCR	13,265
	HLA Typing	241
	ANA/IFA	682

Source: NPHL/DoHS

Table 16.2 Number of HPV DNA tests performed and their subtypes in FY 2080/81

HPV Types	Test Count
HPV 16	222
HPV 18	119
HPV other type	1,012
Negative	11,909
Total	**13,262**

Source: NPHL/DoHS

Table 16.3 HLA typing for renal transplant recipients and donors in FY 2080/81

HLA Panel	Test Count
CDC	49
DSA	64
PRA	36
HLA SSO Typing	92

Source: NPHL/DoHS

16.1.2 Infectious Disease Laboratory

In addition to conducting routine and specialized testing, this department plays an active role in various surveillance programs. The Infectious Disease Laboratory is divided into several key subunits, including the Microbiology Unit, Vaccine-Preventable Disease Surveillance Unit, National Influenza Center (NIC) & Respiratory Disease Unit, and the HIV Reference Unit. These units work collaboratively to support national efforts in identification, confirmation, monitoring and surveillance of infectious diseases of public health concern.

16.1.2.1 Microbiology Unit

The Microbiology unit at NPHL includes Routine Bacteriology, Mycology, Parasitology and Serology subunits, integrating AMR surveillance with routine microbiology activities. Designated by the Ministry of Health & Population as the National Reference Laboratory and Coordinating Centre for AMR Surveillance, NPHL has been the focal point for AMR surveillance in Nepal since its initiation in 1999, currently monitoring 12 organisms.

Four multi sectoral committees support AMR activities:

- AMR Multisectoral Steering Committee (AMRMSC) chaired by the Secretary, MoHP, for policy discussions.
- One Health National Technical Working Committee (NTWC) for overseeing implementation and making technical recommendations.
- Two Technical Working Groups (TWG-HH for human health and TWG-AH for animal health) for providing technical and operational inputs, including developing guidelines, protocols, and SOPs.

The Director of NPHL serves as the chairperson, and the Microbiology Head acts as the Member Secretary of the Human Health Technical Working Group (HH-TWG) for AMR surveillance. To combat the accelerating threat of AMR, Nepal recently endorsed the National Action Plan (NAP) on AMR. Establishing an efficient and effective AMR surveillance system is among the primary objectives outlined in the NAP-AMR for containing AMR

The AMR surveillance network, which started with nine laboratories, has now expanded to 26 laboratories (figure 16.2). NPHL organizes capacity-building training for site personnel on bacterial identification, antibiotic susceptibility testing, biosafety, biosecurity, and quality assurance in bacteriology. The sites receive regular monitoring, onsite orientation, and technical support, including logistics. AMR data are annually submitted to the international GLASS platform. Also, NPHL participates in external quality control (EQAS) programs and National External Quality assessment (NEQAS) of sites is performed on a quarterly basis.

Molecular Surveillance Lab

Currently, AMR surveillance reports are based on phenotypic detection only. With an aim to enhance and further investigate the genes conferring to AMR, Nepal has planned to start molecular surveillance of selected pathogens through PCR such as genes encoding for Extended spectrum beta lactamases (ESBLs), Carbapenem (CPM) resistant pathogens and Methicillin Resistant Staphylococcus aureus (MRSA). Currently, pilot study is being started for molecular surveillance including 5 AMR sites which involves detection of genes of MDR pathogens.

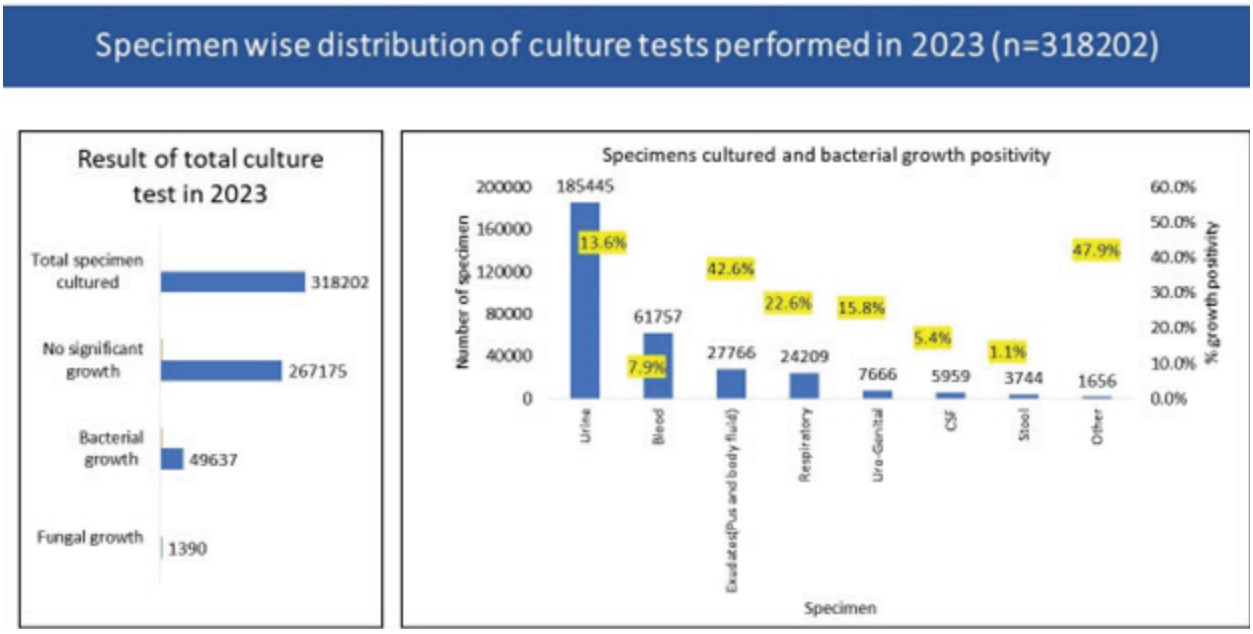
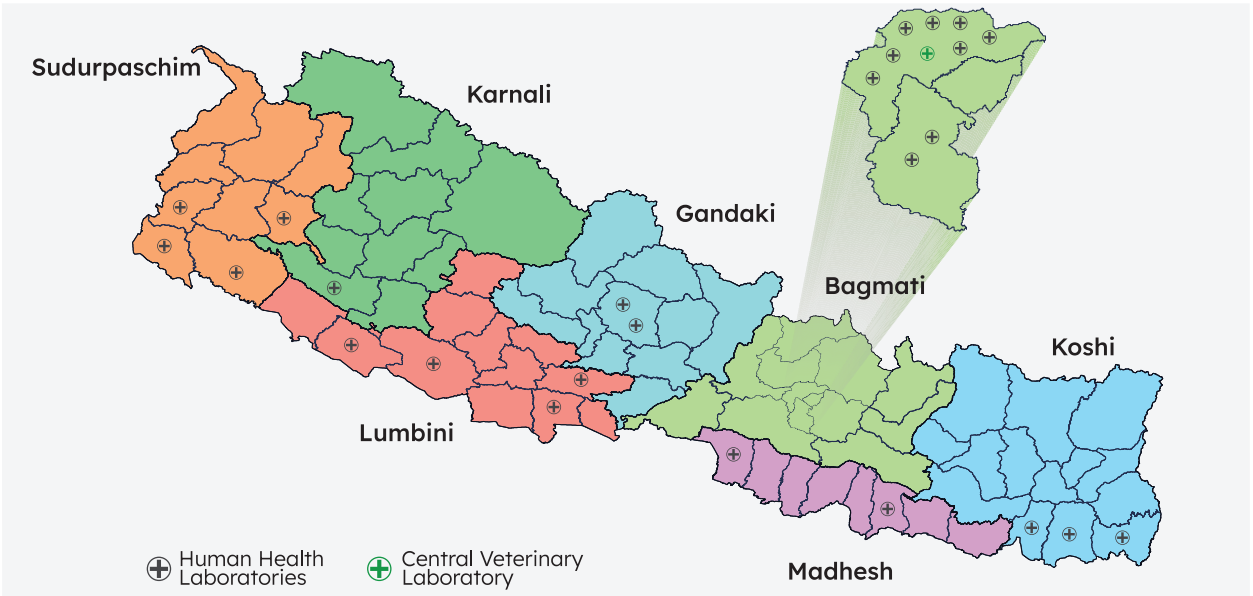


Figure 16.1 Specimen wise distribution of culture tests performed in FY 2080/81

Source: NPHL/DoHS



Koshi Province (3)

- BP Koirala Institute of Health Sciences (BPKIHS), Dharan
- Koshi Hospital (KH), Biratnagar
- Province Hospital (PHB), Bhadrapur, Jhapa

Madhesh Province (2)

- Janakpur Provincial Hospital (JPH), Janakpur
- Narayani Hospital (NH), Birgunj

Bagmati Province (10)

- NPHL, Kathmandu (National Reference Laboratory for AMR)
- Bir Hospital, Kathmandu
- Dhulikhel Hospital (DH), Kavre
- Kanti Children's Hospital (KCH), Kathmandu
- Kathmandu Model Hospital (KMH), Kathmandu
- KIST Medical College and Teaching Hospital (KISTMCTH), Lalitpur
- Paropakar Maternity and Women's Hospital (PMWH), Kathmandu
- Patan Academy of Health Sciences (PAHS), Lalitpur
- Sukraraj Tropical and Infectious Disease Hospital (STH), Kathmandu
- Tribhuvan University Teaching Hospital (TUTH), Kathmandu

Gandaki Province (2)

- JPokhara Academy of Health Sciences (PoAHS), Pokhara
- Manipal Teaching Hospital (MTH), Pokhara

Lumbini Province (4)

- Bheri Hospital (BH), Banke
- Lumbini Provincial Hospital (LPH), Butwal
- Rapti Academy of Health Sciences (RAHS), Dang
- United Mission Hospital (UMH), Palpa

Karnali Province (1)

- Province Hospital, Surkhet (PHS)

Sudurpaschim Province (4)

- Bayalpata Hospital (BYH), Achham
- Dadeldhura Hospital (DDL), Dadeldhura
- Mahakali Provincial Hospital (MkPH), Kanchanpur
- Seti Provincial Hospital (SPH), Dhangadhi

Source: NPHL/DoHS

Figure 16.2 AMR surveillance sites in Nepal as of FY 2080/81

Table 16.4 Distribution of AMR Priority Pathogens among Culture Positive Specimen in 2023 (n=49637)

Priority Pathogens	Blood (n=4898)		CSF (n=271)		Uro-genital (n=1213)		Pus and exudates/ Body Fluid (n=11822)		Respiratory (n=5468)		Stool (n=40)		Urine (n=25132)		Other (n=793)		Grand Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Acinetobacter species	666	14%	49	18%	79	7%	735	6%	897	16%	-		833	3%	59	7%	3318	7%
Enterococcus species	199	4%	16	6%	67	6%	619	5%	213	4%	1	3%	2038	8%	48	6%	3201	6%
Escherichia coli	483	10%	39	14%	369	30%	2250	19%	548	10%	1	3%	14550	58%	128	16%	18368	37%
Klebsiella pneumoniae	512	10%	32	12%	97	8%	1008	9%	1387	25%	-	-	2822	11%	84	11%	5942	12%
Neisseria gonorrhoeae	-	-	-	-	26	2%	-	-	-	-	-	-	-	-	-	-	26	0.05%
Pseudomonas aeruginosa	125	3%	23	8%	31	3%	812	7%	778	14%	0	0%	875	3%	64	8%	2708	5%
Haemophilus influenzae	-	-	-	-	-	-	-	-	21	0.4%	-	-	-	-	-	-	21	0.04%
Salmonella (non-typhoidal)	5	0.1%	-	-	-	-	-	-	-	-	9	23%	-	-	-	-	14	0.03%
Shigella species	-	-	-	-	-	-	-	-	-	-	20	50%	-	-	-	-	20	0%
Staphylococcus aureus	1011	21%	55	20%	237	20%	3597	30%	397	7%	-	-	947	4%	147	19%	6391	13%
Streptococcus pneumoniae	34	1%	3	1%	-	-	18	0.2%	194	4%	-	-	-		-	-	249	1%
Typhoidal Salmonella	511	10%	-	-	-	-	3	0.3%	-	-	8	20%	-	-	-	-	526	1%
Vibrio cholerae	-		-	-	-	-	-	-	-	-	1	3%	-	-	-	-	1	0.0%
Others	1352	28%	54	20%	307	25%	2780	24%	1033	19%	-	-	3067	12%	263	33%	8852	18%
Grand Total	4898	10%	271	1	1213	2%	11822	24%	5468	11%	40	0%	25132	51%	793	2%	49637	100%

"Others" include AMR non-priority pathogens such as Citrobacter species, Enterobacter species, Proteus species, Serratia species, Providencia species, Pseudomonas species, Klebsiella oxytoca, etc.

Source: NPHL/DoHS

Table 16.5 ESBL Producing E. coli in human Surveillance in FY 2080/81

	Total E. Coli	Presumptive ESBL E. Coli
Human Surveillance	18368	45.60 %

Note: Presumptive ESBL E. Coli is defined as E.coli resistant to 3rd generation cephalosporins. (Not confirmed)

Source: NPHL/DoHS

16.1.2.2 Vaccine Preventable Disease (VPD) Unit

To reduce the mortality and morbidity associated with vaccine-preventable diseases such as Japanese Encephalitis, Measles, and Rubella, the World Health Organization (WHO) and the Government of Nepal are working together closely. Laboratory diagnosis is an essential part of VPD surveillance. It aims to provide confirmation of sporadic cases and support rapid detection of disease outbreak. The laboratory surveillance data plays important role in identifying trends of causative pathogens, detect new or re-emerging pathogens and provide laboratory evidence on status of disease elimination/eradication.

Table 16.6 Test frequency of VPD in FY 2080/81

S. No	Tests	Total	Positive	Negative
1	Measles IgM (ELISA)	1823	70	1753
2	Rubella IgM (ELISA)	1823	28	1795
3	JE IgM (ELISA)	700	83	617
4	Rota Ag (ELISA)	1300	220	1080
5	Polio Surveillance Samples	131		No WPV, VDPV found

Source: NPHL/DoHS

16.1.2.2.1 Measles/Rubella surveillance

National Public Health Laboratory started Measles/ rubella diagnosis from 2003 and later in 2005 started laboratory diagnosis of Japanese Encephalitis as a National reference laboratory. BP Koirala Institute of Health Sciences (BPKIHS), Dharan established as a subnational VPD laboratory started testing of Measles Rubella and Japanese encephalitis from 2014. Province Public Health Laboratory (PPHL), in Sudurpaschim Province, Dhangadhi has been added as the next subnational VPD laboratory in 2024.

NPHL joined the Global Measles/Rubella Laboratory Network (GMRLN) for molecular genotype testing. WHO-SEARO provided virtual training in 2021, and after achieving scores above 95% in practice and EQAS panels, NPHL performed parallel testing with Regional Reference Laboratory (RRL) Bangkok. With a molecular test concordance of over 97%, NPHL gained approval for independent testing. In the current fiscal year, NPHL conducted molecular testing using conventional polymerase chain reaction (PCR), sending products to RRL Bangkok for sequencing.

Table 16.7 D8 genotypes with DSID in FY 2080/81

DSID	Total
2279	1
5963	0
8251	0
8318	0
8348	0
8470	0
No exact match with name strain	0
Total	**1**

Source: NPHL/DoHS

16.1.2.2.2 Environmental Surveillance for Poliovirus in Nepal

Environmental surveillance is an effective and sensitive method for detecting the Polio virus (PV) in environmental samples, widely adopted around the world. It is especially valuable in areas with high-density urban populations where Acute Flaccid Paralysis (AFP) surveillance may be insufficient or unreliable, as well as in regions with suspected persistent virus circulation or frequent re-introduction.

Nepal has not reported any Wild Polio Virus (WPV) cases since 2010. Since November 2017, the National Public Health Laboratory (NPHL), in collaboration with the WHO, has been conducting environmental surveillance for poliovirus. To date, no poliovirus, including Wild, VDPV, or Sabin type 2, has been isolated from sewage samples.

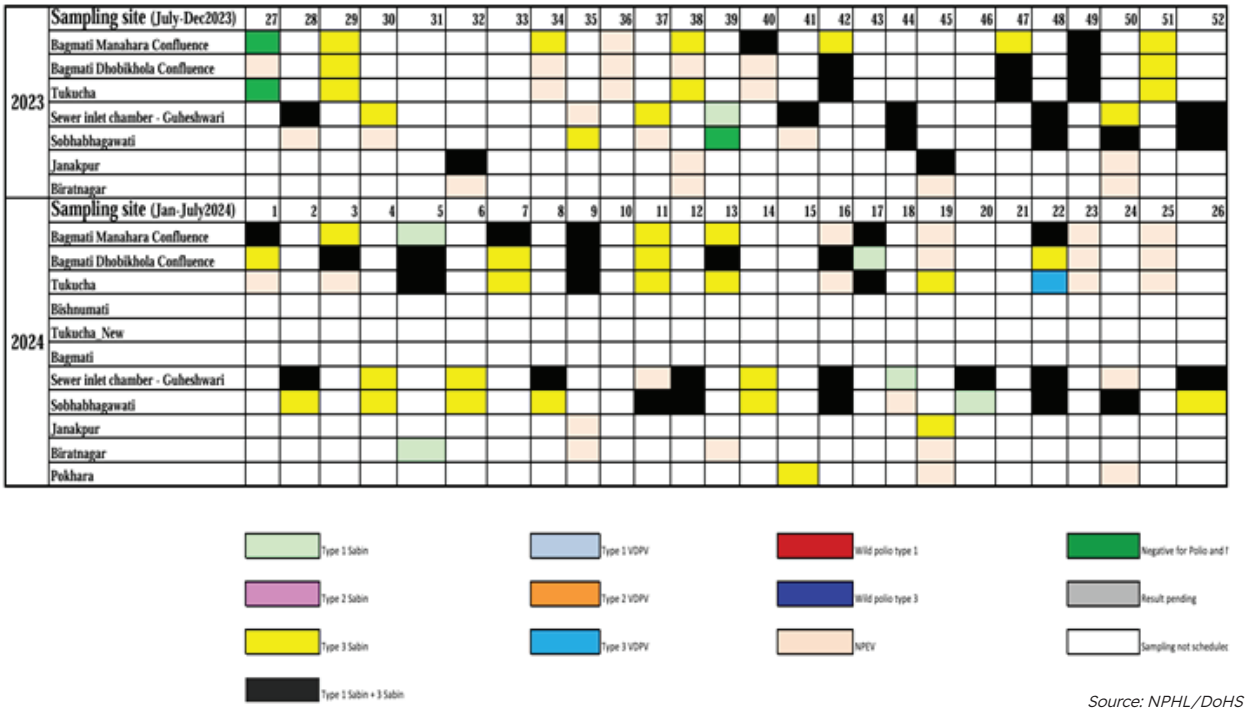
Initially limited to the five different sites within Kathmandu Valley, environmental surveillance has now been extended to Biratnagar and Janakpur of Koshi and Madhesh province respectively. In addition, one new site is expanded in Gandaki province from April 2024. NPHL has planned to expand new environmental surveillance sites in western part of the country and assessment at field level is ongoing. Laboratory staffs in these provinces have received training on proper sample collection and processing procedures.

Table 16.8 Polio Environmental Surveillance Program

Name of sites	Number of samples	Frequency
(1) B1- Sewer Inlet Chamber Chabahil, Guheswori, Mitrapark, Gokarna, Uttardhoka. (Estimated Population – 150,000)	2 samples per month	1st sample in the first week and 2nd in the third week
(2) B2 – Bagmati Manahara Confluence Bhaktapur, Madhyapur, Sankhu, Pepsikola, Kodku (Estimated Population – 300,000)	2 samples per month	1st sample in the first week and 2nd in the third week
(3) B3 – Bagmati / Dhobi Khola Confluence Kathmandu Urban, Kapan,Chandol, Baneshwor, Bijulibazar (Estimated Population -300,000)	2 samples per month	1st sample in the first week and 2nd in the third week
(4) B4- Tukucha Kathmandu Urban (Estimated Population – 150,000)	2 samples per month	1st sample in the second week and 2nd in the fourth week
(5) B5 – Shovabhagwati (Bishnumati) Kathmandu Urban (Indrachowk, Ason, Kilagol, Chhetrapati) (Estimated Population – 200,000)	2 samples per month	1st sample in the second week and 2nd in the fourth week

Source: NPHL/DoHS

From the province one sample per month is being collected and transported to NPHL for further processing. Concentration of the sewage is performed at NPHL and the concentrate is shipped to Regional polio Reference Lab, in Bangkok for further testing.

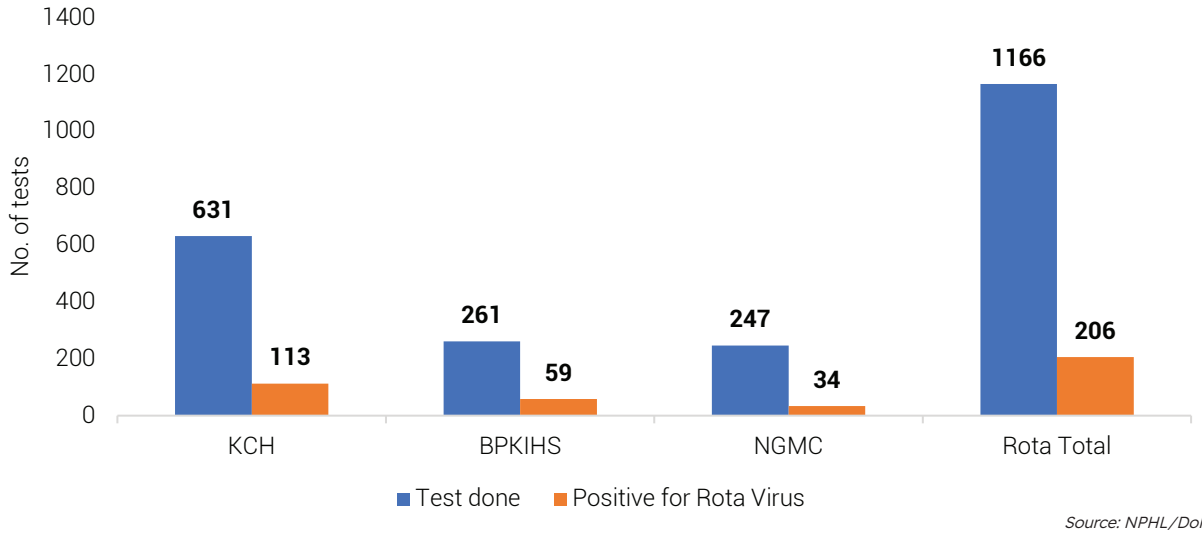


Source: NPHL/DoHS

Figure 16.3 Environmental polio surveillance from different sites and types of polio in FY 2080/81

16.1.2.2.3 Rotavirus Surveillance

NPHL is conducting rotavirus surveillance from 2021 Stool specimens are collected from Kanti Children Hospital (KCH), Kathmandu, Nepalgunj Medical College (NGMC), Nepalgunj and B.P. Koirala Institute of Health Sciences (BPKIHS), Dharan. ELISA is performed and the samples are sent to WHO regional reference laboratory.



Source: NPHL/DoHS

Figure 16.4 Tests done for Rota surveillance in FY 2080/81

16.1.2.2.4 National Malaria Reference Laboratory

To achieve the national goal of malaria elimination by 2025, and malaria-free status by 2026, national steering committee for malaria has been formed. NPHL works in close coordination with EDCD and has successfully conducted malaria QA/QC workshop in all the 7 provinces. NPHL has passed the external quality assessment of 1st lot of malaria PCR.

Activities of National Malaria Reference Laboratory in FY 2080/81

- Orientation on Promoting Quality Diagnosis of Communicable Diseases Using Rapid Diagnostic Kits
- National Malaria QA AC review meeting
- Orientation to private sector laboratory staffs on quality assured diagnosis of Malaria
- On-site monitoring supervision visit and coaching to DMCs, PPHL, in Surkhet District
- Facilitation of workshop organized by EDCD on use of RDTs for private laboratories
- Malaria microscopic slide review

- Participation of NPHL staff in External Competence Assessment of Malaria Microscopists (ECAMM).

16.1.2.3 National Influenza Centre (NIC)

The National Influenza Centre (NIC) was established on April 19, 2010, and has been recognized by the World Health Organization (WHO) as the 132nd Influenza Centre globally and the 9th in the WHO South-East Asia Region. Since its inception, NIC has been conducting molecular diagnostic assays for influenza surveillance in Nepal, guided by the National Influenza Surveillance Network (NISN), which monitors both human and animal influenza. Within the country NIC operates integrated surveillance for Influenza and SARS-CoV-2 through 16 hospital-based sentinel sites across Nepal, covering five provincial public health laboratories and 12 sentinel hospitals. In the global platform, National Influenza Centers (NIC), participates in the WHO Global Influenza Surveillance and Response System (GISRS), and maintains capacity to share specimens, clinical and epidemiologic data related to influenza circulation.

In addition to influenza and SARS-CoV-2, NIC has expanded its testing services to include PCR for Respiratory Syncytial Virus (RSV) in children under 2 years, as well as tests for Adenovirus, Monkeypox, Dengue, Zika, Chikungunya, and Rabies viruses, all provided free of charge. Also, NIC has been performing outbreak investigations of emerging and re-emerging respiratory viruses in the country. NIC has developed capacity for whole genome sequencing of SARS CoV-2 and Influenza A and routinely performs genomic surveillance in the country.

Table 16.9 Tests performed at NIC in FY 2080/81

S. No	Total Samples Tested	3623
1	Influenza H1N1 (pdm09) Positive	318
2	Influenza A/H3 Positive	174
3	Influenza B (Victoria) Positive	174
4	SARS-CoV-2 Positive	145
5	Influenza Positivity Rate	18.5
6	SARS-CoV-2 Positivity Rate	4.2

Source: NPHL/DoHS

Table 16.10 Tests performed at NIC in FY 2080/81

S. No	Tests	Frequency
1	Influenza Test (Uniplex) *	131
2	Dengue Virus Test (RT PCR)	3
3	Respiratory Syncytial Virus	737
4	Trioplex Test	7
5	Adeno Virus Test	95
6	Varicella Zoster Virus Test	3
7	Zika Virus Test	1
8	Chikungunya Virus RT-PCR	6
9	Influenza-SARS-CoV-2 Multiplex RT-PCR	3623
10	Monkey Pox RT-PCR	5
11	MUMPS RT-PCR	33
12	Rabies Virus (RT-PCR)	12
13	Herpes simplex Virus (HSV1 and HSV2)	65
14	Entero Virus RT-PCR	239
15	Nipah Virus RT-PCR	2
16	Mycoplasma RT-PCR	12
17	SARS-CoV-2 PCR (Gene Expert)	528
	Total	**5502**

Source: NPHL/DoHS

16.1.2.3.1 Integrated Influenza and SARS COV2 Laboratory Surveillance

NPHL has been conducting Integrated Influenza & SARS CoV-2 Sentinel Surveillance in Nepal since 2022. It has 15 sentinel hospitals and 8 testing laboratories. In fiscal year 2080/81, NIC has tested 3,623 samples by Influenza and SARS CoV-2 RT PCR for presence of Influenza and SARS CoV-2 in SARI & ILI cases.

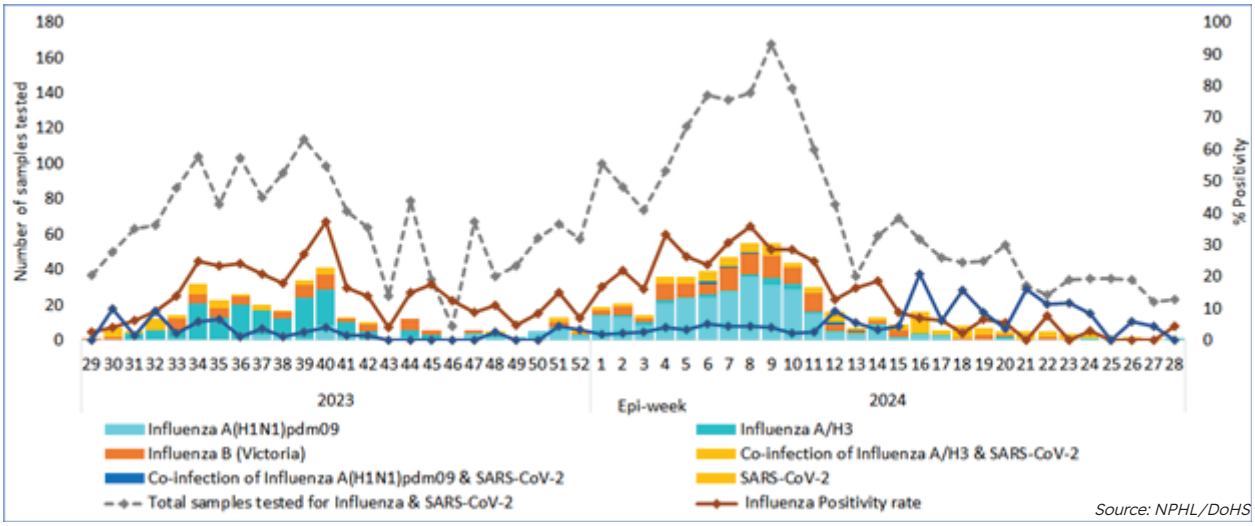


Figure 16.5 Status of Influenza A and Influenza B in FY 2080/81

Whole Genome Sequencing of SARS CoV-2

NIC has been performing whole genome sequencing of SARS CoV-2 since 2021 by using Oxford MinION mk1c platform and Illumina MiSeq platform. In Fiscal Year 2080/81, NIC performed whole genome sequencing of 154 SARS CoV-2 samples and detected different lineage and sub lineage of Omicron and helped the country to understand the variant of concern(VOC) and variant of interest(VOI).

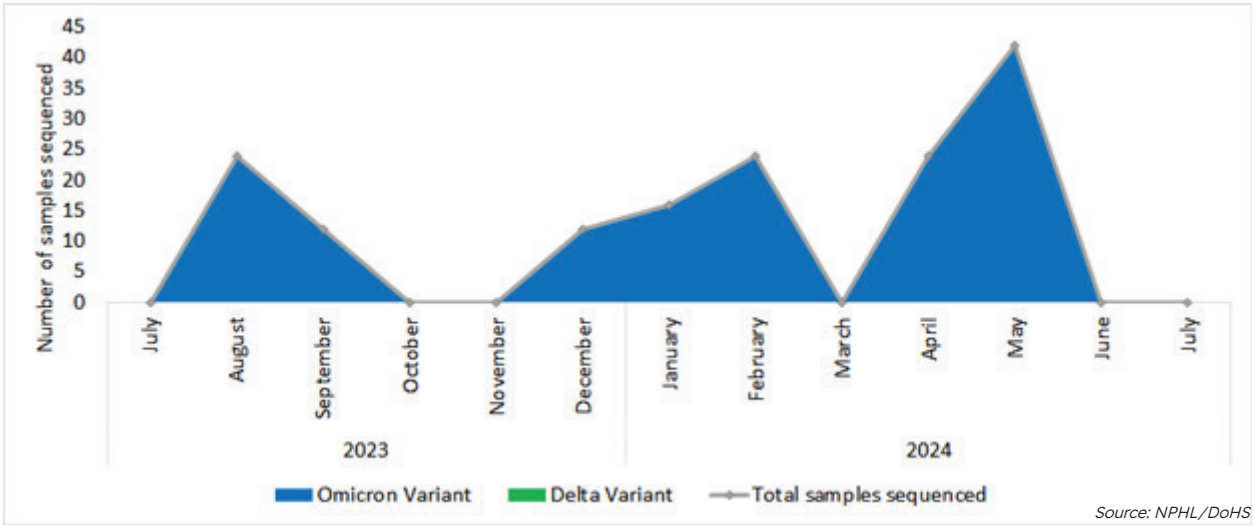


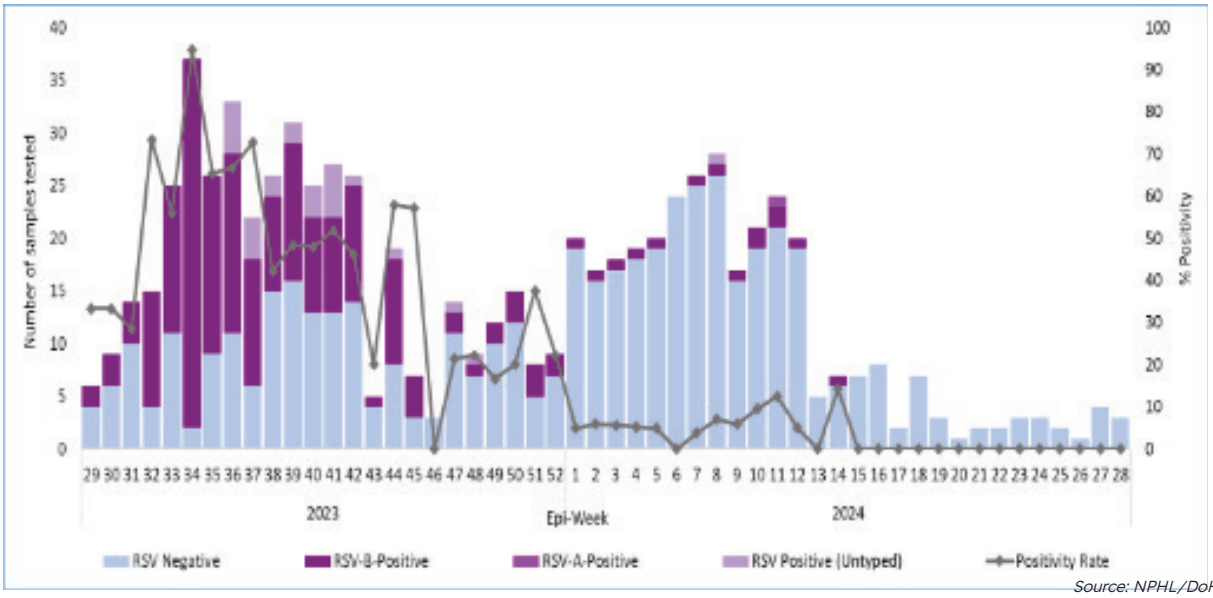
Figure 16.6 Whole Genome Sequencing of Influenza A

NIC has been performing whole genome sequencing of Influenza A since 2022 by using Oxford MinION Mk1c platform and in fiscal year 2080/81, NIC performed 28 WGS of Influenza A (H1N1 pdm09 & H3N2) using Oxford Nanopore technology and submitted result in GISAID

Respiratory Syncytial Virus (RSV) Surveillance 2080/81

NIC has completed the Inception meeting of Respiratory Syncytial Virus Surveillance on May 22, 2024. In fiscal year 2080/81, NIC performed 502 RSV RT PCR tests from samples received from sentinel hospitals.

A total of 737 (Both ILI and SARI) samples of children aged below 2 years have been tested for Respiratory Syncytial Virus (RSV) from Epi Week 1-52 (January 1-December 29, 2024)



Source: NPHL/DoHS

Figure 16.7 Number of tests done for RSV in FY 2080/81

Table 16.11 New Tests Introduced in FY 2080/81

Tests / Instruments (methodology- platform)	Introduced date
1. Illumina platform- COVID-19 Sequencing (can be considered as new technology)	3 Shrawan, 2080
2. West Nile Virus RT PCR	1 Falgun, 2080
3. Q fever RT PCR	19 Chaitra, 2080

Source: NPHL/DoHS

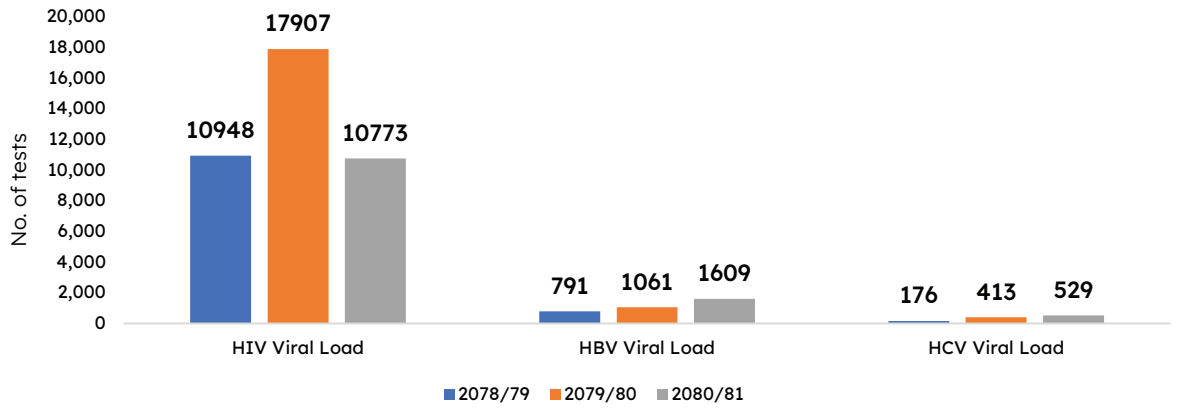
16.1.2.4 HIV Reference Laboratory Unit

The laboratory primarily concentrates on testing and monitoring activities and programs related to HIV and Hepatitis. It is divided into two main units: the Molecular Unit and the Immuno-Serology Unit. This unit is involved in supporting the preparation of policy documents regarding HIV programs in close coordination with National Centre for AIDS and STD Control (NCASC). Specifically, HIV reference laboratory at NPHL has supported scaling up HIV testing initiatives, such as the test and treat policy, community-based testing (CBTs) performed by lay providers, and the introduction of HIV self-testing (HIVST). Furthermore, NPHL plays a crucial role to strengthen HIV viral load testing services to monitor disease and improve the quality and coverage of HIV care. The tests performed for the diagnosis of HIV infection are Rapid test and Enzyme Immunoassay (EIA) for the detection of antibodies, Electro Chemiluminescence immunoassay (ECLIA) for detection of antigen/antibody. In addition, for monitoring purposes PCR (quantitative test: for the detection of Viral load (VL)) and CD4 test are performed.

Early infant diagnosis (EID) of HIV for the mother-to-child transmission in cases below 18 years of age and confirmation of HIV inconclusive cases is also done by qualitative PCR for HIV-1. For the diagnosis of hepatitis B and C, Rapid test, EIA and ECLIA for the detection of antigen/antibody are done. PCR tests for the detection of viral load for hepatitis B and C are also performed in the laboratory.

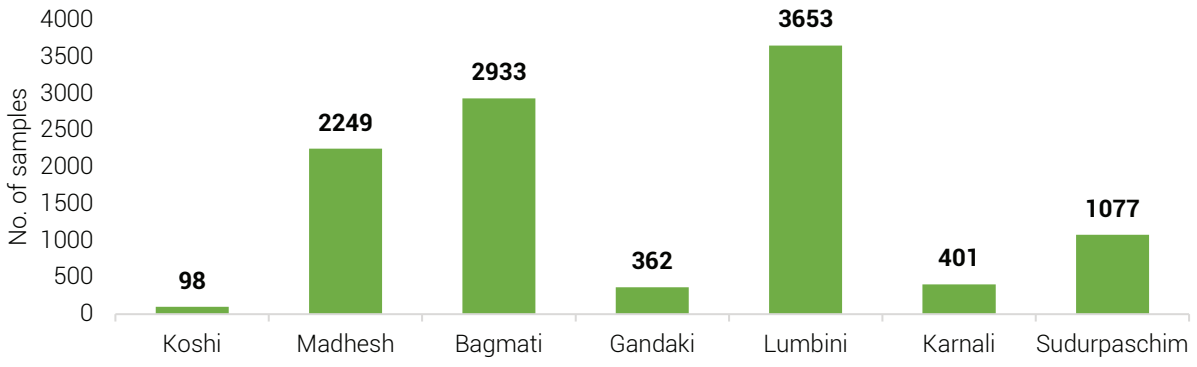
In the FY 80/81, as a part of expansion of HIV viral load testing services, PPHL Koshi, PPHL Lumbini, PPHL Karnali, PPHL Sudurpaschim and Bheri Hospital Passed the HIV viral load validation and are ready to perform the test using a manual platform.

To maintain its commitment to quality, NPHL actively participates in several international External Quality Assurance (EQA) programs. These include HIV Viral Load and Early Infant Diagnosis (EID) testing with the Centers for Global Health CDC in the USA, HBV and HCV viral load assessments with the National Reference Laboratory (NRL) in Australia, CD4 testing through Siriraj Hospital in Bangkok, and Serology and Molecular EQAS with both CMC Vellore and NRL, Australia.



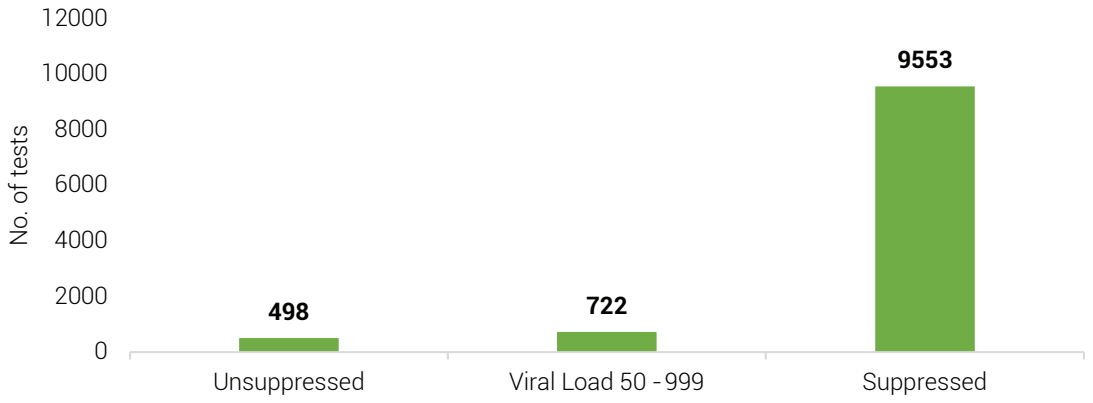
Source: NPHL/DoHS

Figure 16.8 HIV, HBV, HCV Viral Load Tests done in FY 2078/79-2080/81



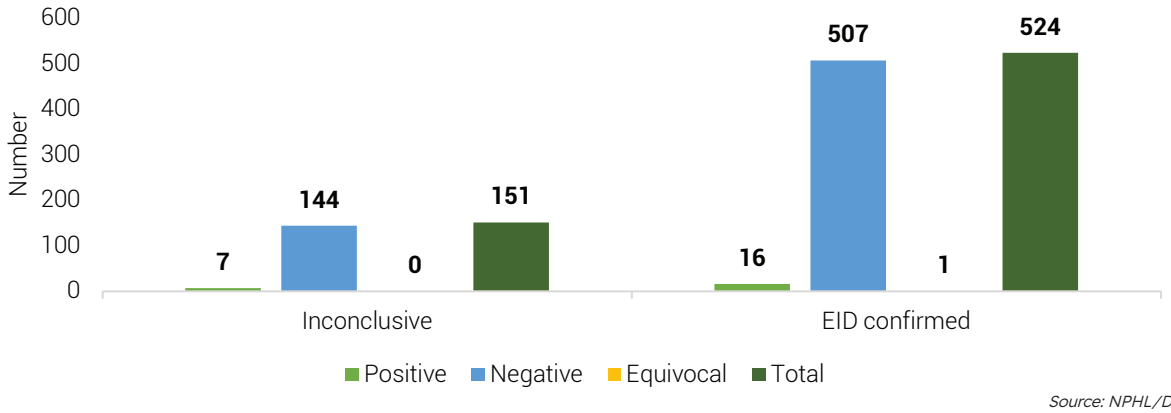
Source: NPHL/DoHS

Figure 16.9 HIV Viral Load Sample from Provinces in FY 2080/81



Source: NPHL/DoHS

Figure 16.10 Total HIV Viral Load Tests Done and Viral Load Suppression Rate FY 2080/81



Source: NPHL/DoHS

Figure 16.11 Early Infant Diagnosis (EID)

16.1.3 Laboratory Regulation & Blood Transfusion Service Regulation Department

National Public Health Laboratory is a focal point for blood safety, where the National Bureau for Blood Transfusion Service (NBBTS) section within this unit works on all the National Blood Transfusion policy related activities. The unit also carries out Licensing and Monitoring of Laboratory and Blood Bank as per the "Health Institute Establishment Standard 2077".

Table 16.12 Total number of A and B category lab in FY 2080/81

Lab Category	Total
Registered 'A' category Labs in the Country	17
Registered 'B' category Labs in the Country	87

Source: NPHL/DoHS

Table 16.13 Details of Laboratory inspection in FY 2080/81

	Activity	Type of Health Institute	Outcome
Laboratory Inspection (51)	Onsite inspection of Laboratory	• B grade: 18 (New:11; Renewal: 7) • Branches B-Grade: 7 (New) • Collection unit: 8 (New)	Licensing, Renewal
	Onsite inspection of Laboratory	• A-Grade Laboratory: 1 • B-Grade Laboratory: 17	Follow-up visit

Source: NPHL/DoHS

National Bureau for Blood Transfusion Services (NBBTS)

The National Bureau for Blood Transfusion Services (NBBTS), located at the National Public Health Laboratory (NPHL), oversees the National Blood Programme (NBP). It ensures a safe and sufficient blood supply, develops policies and standards for blood transfusion services, and acts as the national reference laboratory for transfusion-transmissible infections (TTIs), handling confirmatory testing of inconclusive results. NBBTS also manages the National Hemovigilance Program, provides training for BTSC staff, supervises and licenses BTSCs, conducts motivational programs, and supplies equipment to enhance their services.

Table 16.14 Details of Blood Bank inspection in FY 2080/81

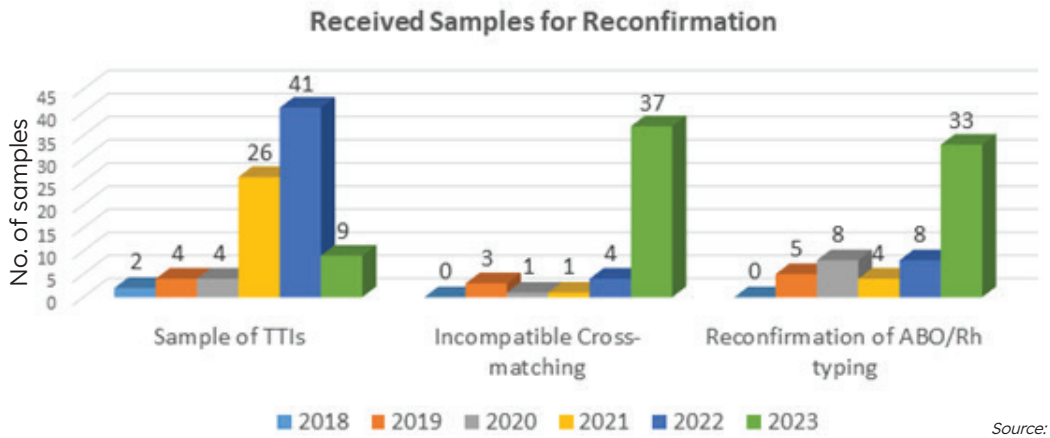
	Activity	Type of Health Institute	Outcome
Blood Bank Inspection (10)	Onsite inspection of Blood Bank	• C grade Blood Bank: 3 (New:1; Renewal: 2) • D Grade Blood Bank: 1 (New) • E Grade Blood Bank: 2 (New)	Licensing, Renewal
	Onsite inspection of Laboratory	• D Grade Blood Bank: 4	Follow-up visit

Source: NPHL/DoHS

Table 16.15 Hemo-vigilance site reports in FY 2078/79-2080/81

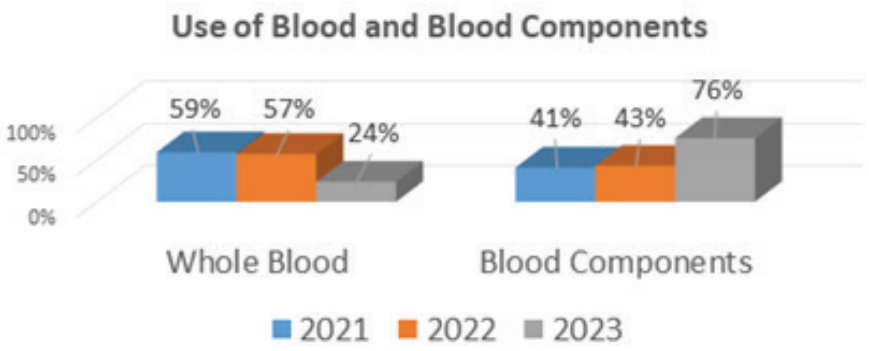
Hemo-vigilance sites report	2078/79	2079/80	2080/81
Blood Transfused Recorded Data	18,696	28,080	59,601
Minor Transfusion Reactions	53	177	1,345
Major Transfusion Reactions	0	1	0

Source: NPHL/DoHS



Source: NPHL/DoHS

Figure 16.12 Number of sample received for reconfirmation in FY 2076/77 - 2080/81 (2018-2023 AD)



Source: NPHL/DoHS

Figure 16.13 Proportion of blood and blood component used in FY 2078/79 - 2080/81 (2021-2023 AD)

16.1.4 Quality Control (QC) and Training Department

16.1.4.1 Quality control unit

NPHL is an ISO 15189: 2012 accredited laboratory. Many qualities related activities and training are conducted under this section. Various National External Quality Assurance programs (NEQAS) are being operated throughout the country through this department.

Table 16.16 NEQAS Program in NPHL

NEQAS from NPHL	Targeted lab	Frequency of cycle	Started
General/Basic NEQAS program • Basic clinical Biochemistry • Basic Hematology • Gram's stain • Peripheral blood smear (PBS morphology)	All lab /hospital/ clinic/ polyclinic/ of government, semi-government & private sectors	3 times of years	2053/54 (1997)
Dried tube specimen (DTS) EQA program • HIV 1 & 2 rapid test & ELISA	HIV testing sites only	Twice a year	2077/78 (2021)
EQA program for bacteriology • Bacteria Identification • Antimicrobial Susceptibility Testing (AST)	AMR SITES	Three times a year	2061/62 (2005)
TTIs serology for blood transfusion service centre (NEQAS –TTIs) • HIV 1 & 2 • Hepatitis B Virus Surface Antigen (HBsAg) • Anti HCV antibody • Syphilis Antibody	For all Blood Transfusion service center of Nepal.	2 times of Year	2068/69 (2012)
COVID-19 PCR EQAS proficiency test	For all COVID-19 PCR Sites	4 times of year	2076/77 (2020)
COVID-19 PCR EQAS Retesting	For all COVID-19 PCR Sites	Monthly	2076/77 (2020)

Source: NPHL/DoHS

Table 16.17 General/Basic NEQAS program in FY 2080/81

Lot Number	Fiscal year	Number of labs enrolled (samples dispatched)	Results obtained from (Number/%)	Number of labs with Score based on SDI range (%)			
				+/- 0-1	+/-1-2	+/-2-3	+/->3
54	2080/2081 BS	680	47%	50	30	19.5	0.5
55	2080/2081 BS	680	52%	55	28	16	1
56	2080/2081 BS	685	58%	50	31	17.5	1.5

Source: NPHL/DoHS

Result Interpretation is based on as follows:

SDI Range	Interpretation
Within -1.0 to +1.0	Excellent
Between ± 1.0 to ± 2.0	Good
Between ± 2.0 to ± 3.0	Accept with caution. Warning signal
Beyond ± 3	Unacceptable performance, action signal

Table 16.18 NEQAS-TTI Program in FY 2080/81

Lot Number	Date of Dispatch	Number of Labs where samples were dispatched	Results obtained from	Average score in %
NTQ 2080/081-1st	2080/Ashoj	129	68 (53%)	99.50%
NTQ 2080/081-2nd	2081/Jestha	124	70 (57%)	98%

Source: NPHL/DoHS

The average performance score of TTI NEQAS in FY 2080/81 was 99.5%. The score is calculated from the obtained results of the participating laboratories and evaluated in the given manner below:

Scoring 100% in NEQAS- Excellent. Score between 90-100%- Need to improve performance (Action required to troubleshoot the underlying problem). Score below 90%- Unacceptable performance (Urgent action needed to review the technical competency of the BTSC and upgrade the quality of performance).

Table 16.19 NEQAS-HIV Program: HIV DTS PT-05 in FY 2080/2081

Site	Batch	Performance				
		Excellent (100%)	Need to Improve (90-100%)	Unacceptable (<90%)	Total Participants	Total sample sent sites
Koshi	2023-PT 05	4	1	5	10	10
Madhesh	2023-PT 05	7	0	15	12	12
Bagmati	2023-PT 05	14	0	1	15	16
Gandaki	2023-PT 05	9	0	0	9	10
Lumbini	2023-PT 05	12	0	2	14	15
Karnali	2023-PT 05	5	0	1	6	6
Sudurpaschim	2023-PT 05	12	0	5	17	17

Source: NPHL/DoHS

Table 16.20 NEQAS-HIV Program: HIV DTS PT-06 in FY 2080/2081

Site	Batch	Performance				
		Excellent (100%)	Need to Improve (90-100%)	Unacceptable (<90%)	Total Participants	Total sample sent sites
Koshi	2023-PT 06	3	0	6	9	10
Madhesh	2023-PT 06	7	0	3	10	10
Bagmati	2023-PT 06	15	0	0	15	16
Gandaki	2023-PT 06	8	0	0	8	10
Lumbini	2023-PT 06	11	0	4	15	15
Karnali	2023-PT 06	6	0	0	6	6
Sudurpaschim	2023-PT 06	12	0	1	17	17

Source: NPHL/DoHS

Table 16.21 NEQAS-HIV Program: HIV1 VL PT FY 2080/81

Total Sites	No of sample sent	Responded	% of Report responded	Excellent Performance	% of Excellent	Need to improve performance	% of need to improve	Unacceptable performance	% of unacceptable
4	4	3	75	3	100	0	0	0	0

Source: NPHL/DoHS

Table 16.22 AMR- NEQAS Program in FY 2080/81

Batch	Total sample sent	Total Participant	Excellent >80%	Satisfactory 60-79%	Unsatisfactory <60%
2023-2nd AMR NEQAS	26	23	74%	22%	4%
2023-3rd AMR NEQAS	26	26	85%	15%	0
2024-1st AMR NEQAS	26	26	62%	23%	15%

Source: NPHL/DoHS

Table 16.23 COVID-19 PCR PT in FY 2080/81

SN	Total sites	Number of sample sent	Responded	% of Report response	Concordant/ match: 5/5/ (100%)	% of excellent	discordant/ not match (1/5)	% of Need to improve	discordant (up to 2/5)	% of unacceptable
1	21	5	20	95.2	14	70.0	6	30	0	0.0

Source: NPHL/DoHS

Table 16.24 Multiplex Influenza/COVID-19 PCR PT round 02 NEQAS in FY 2080/81

SN	Total sites	Number of sample sent	Responded	% of Report response	Concordant/ match: 5/5 / (100%)	% of excellent	discordant / not match (1/5)	% of Need to improve	discordant (up to 2/5)	% of unacceptable
1	7	7	7	100.0	1	14.3	5	71.43	1	14.3

Note: EQA schemes are in function for COVID-19 PCR labs by retesting, Proficiency testing and onsite supervision.

Source: NPHL/DoHS

16.1.4.2 Training unit

Table 16.25 Training & Orientation Program in FY 2080/81

AMR meeting with stakeholders	Training for local government regarding inspection of 'C' grade laboratories
AMR workshop	Workshop on RSV and Integrated Influenza and SARS CoV-2 surveillance
Training on spillage management	Hands on Training on AMR (Use of revised SOP)
AMR SOP in Bacteriology training	In House training on use of TAPE station 4150.
Hands on training on Serological Diagnosis of Measles and Rubella	Application Training on CoVAS 5800
Orientation on HIV Viral Load, Sample collection, Storage, Transport and Data management	In House training on Laboratory Quality Control and Statistics
Workshop on Health Facility Survey	Training for local government regarding inspection of 'C' grade laboratories
Infectious Substance Shippers Training	User Training for BSL-3 laboratory
Lab Placement training on Bacteriology	ISO 15189: 2022 Standard Orientation Training
Biosafety Training (IN house)	Biosafety Risk Assessment Training
Meeting on Genetic surveillance of AMR	Immunofluorescence Assay Training
Meeting on validation of Invitro Diagnostic Kits	Bioinformatics Training with commander for CoVID and Flu Genomics

16.1.5 Biorepository Unit

The NPHL established a Biorepository unit in 2023, marking a significant step forward in healthcare and research. This unit is designed to securely and efficiently store biological samples and organisms for long-term use, primarily to support future research and studies. The types of samples stored include clinical specimens, microorganisms, and other relevant biological materials.

The Biorepository unit at NPHL plays a crucial role in preserving these valuable biological materials for future scientific studies, medical research, and public health investigations. It is responsible for collecting, cataloguing, and storing a wide range of samples from various departments within the organization.

This storage system enables researchers, scientists, and healthcare professionals to access a diverse collection of biological samples for in-depth studies, epidemiological research, diagnostics, and the development of new medical treatments. By preserving these samples, NPHL is contributing to efforts to address emerging health challenges, improve disease detection and treatment, and enhance the overall well-being of the community it serves.

Major Activities

Currently, samples from the Infectious Unit are being transferred to the biorepository for storage. These include samples related to COVID-19, RSV, Influenza, Japanese encephalitis, measles, rubella, rotavirus, polio, and more. Each sample is assigned a unique code and is systematically stored using specialized software, which helps track the sample's location within the storage system, including the specific freezer, compartment, rack, tray, and box position.

16.2 Highlights of NPHL in FY 2080/81

- New equipment like Fluorescent In-Situ Hybridization System, Miseq Sequencer were introduced.
- New Tests like Immunofluorescence Assay for Anti-Nuclear Antibody, Allergy Panel, Stool antigen tests for H. pylori, Antifungal susceptibility test for Candida species, HCV viral load by GeneXpert (for HIV coinfected people) have been added.
- Memorandum Of Understanding (MOU) Signed for test that are not available at the Instituitions like Nardevi Ayurveda Hospital, Central Jail Hospital, Sushil Koirala Cancer Prakahar Hospital

Box 16.1 SWOT analysis of NPHL

Strength	Opportunity
• Internationally accredited • Runs routine and specialized laboratory tests alongside other responsibilities • Strengthening laboratories with proper and needful HR comparable to international standards. • Capacity building for proper biosafety and biosecurity is essential in all laboratories • Proper waste management of hazardous/ infectious material • Increased penetration with PPHL	• Strengthen NPHL as referral center with prevention of out sourcing clinical sample outside country • Strengthen diagnostic as well as research activities in government based federal, provincial and district level hospitals. • Register all government hospitals-laboratory in NPHL • Strengthen country capacity in diagnostic services to combat epidemics and pandemics. • Development of referral mechanism between public and private laboratories within the country
Weakness	**Threat**
• Inadequate laboratory mapping • Poor implementation of NEQAS • Lack of scholarships for higher education and advance level trainings for laboratory personnel	• Lack of country's law and bylaws most needed for laboratory standardization and accreditation • Insufficient budget allocation for quality assurance activities of medical laboratories

17 Human Resource Capacity Building

NHTC			BMET Unit	
	Training material development section	Skill Development Section		Vector Borne Disease Research and Training Center
	Training Accreditation and Regulation Section	Administration Section		

17.1 National Health Training Center (NHTC)

17.1.1 Overview of NHTC

A competent, motivated healthy workforce forms the core of a high quality, effective and efficient health system. In line with the national policies, plans and programs of the Ministry of Health and population (MOHP), National Health Training Centre (NHTC), established in 2050 BS, runs as a federal body for coordination and management of all health training in Nepal. It is primarily responsible for policy formulation, planning/budgeting, need assessment, curriculum design, implementation, monitoring and evaluation (M&E), follow up and overall quality assurance related to the training system. It is also responsible for accrediting clinical training sites and Clinical and public health related training courses to maintain the standard of health training so as to strengthen the capacity of health service providers across the country. The training network includes seven provincial health training centers and 66 clinical training sites.

17.1.2 Strategies of NHTC for Capacity Building of HR

- Assessing, standardizing and accrediting training sites
- Development, standardization, and revision of training
- Institutional capacity development of all levels of training sites
- Conduction pre service, in service, short term and long term training as per national requirements
- Integration and institutionalization of training activities
- Developing links with professional career development
- Strengthening TIMS and developing the trainer's roster at all levels
- Interaction with academic health institutions regarding integration of training materials on the regular academic programs
- Training material development and field test of new trainings
- Revise/update and publicizing training materials as required and demanded by the centers and the program divisions and development partners
- Health Training Need Identification (along with local level and province level)

Box 17.1 Vision, goal and objectives of NHTC

Vision:

Effective health training system for the development of skilled and accountable health workforce to provide quality health services

Goal:

To enhance the technical and managerial capacity of health care service providers at all levels to deliver quality health care services towards attainment of the optimum level of health status of Nepali citizens

Objectives:

- To standardize the training Learning Resource Packages (LRP) of different trainings
- To organize and conduct in service trainings to address the need of the country and to support the quality of care by enhancing the service provider's competency
- To ensure the quality of training activities by different mechanisms in adherence to national standards and to enhance the capacity of different training sites
- To adopt and promote innovative training approaches
- To strengthen mechanism and capacity for post training follow up, enhancement and support

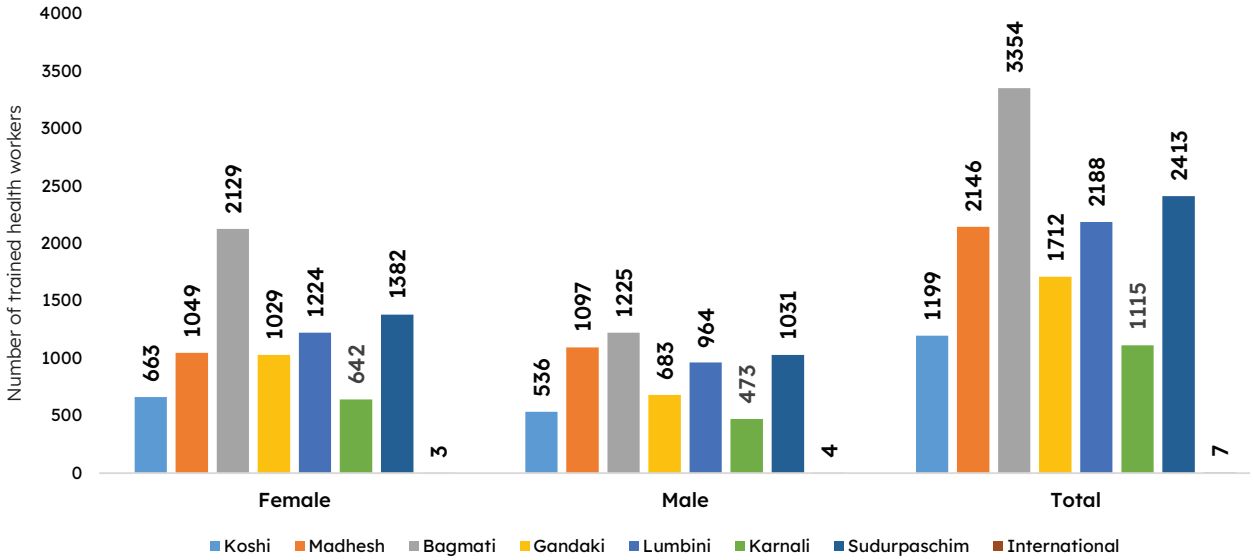
17.1.3 Major activities/achievements in FY 2080/81

Training Material Development

- Started 15 new Learning Resource Packages for training programs like Cold chain equipment repair and maintenance, healthcare waste management operation and maintenance of autoclave/microwave, General training skills, infection prevention and control (advanced, blended approach), supplementary course for psychosocial counseling, continuous ambulatory peritoneal dialysis, health management modular training for local level, Basic burn care, PEN plus training for doctors, basic emergency care, SBA SHP modular training module one to five, advanced cardiac life support, community first health responder, brief tobacco intervention and water quality surveillance.
- Drafted National Health Training Strategy 2081 (2024)

Skill Development

- In FY 2080/81, a total of 14,134 participants were trained in different training programs nationally and internationally. The major cadre groups trained was nursing (5,779), HA and AHW (5,092), Medical Officer (1,567) and Public Health officer and administrator (195).
- International Training-Basic Training on Operation and Maintenance of Medical Oxygen System (7 participants from Bhutan)
- Field Epidemiology Training Program-Frontline's-126 field epidemiologist developed from 57 districts
- Hemodialysis-Total 336 nursing staffs are trained on Hemodialysis till FY 2080/81

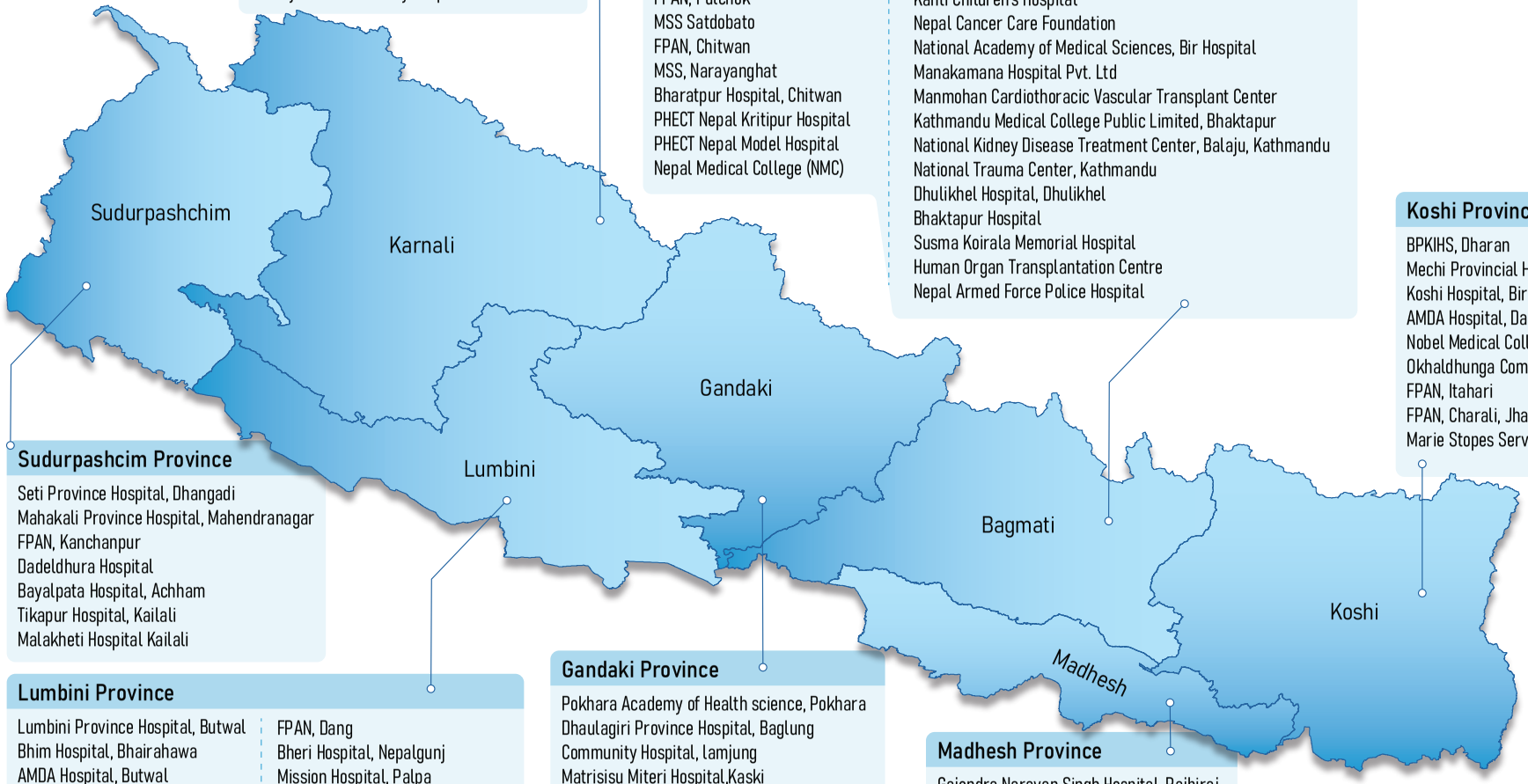


Source: NHTC/DoHS

Figure 17.1 Number of trained health worker in FY 2080/81 (province wise)

Training Accreditation and Regulation

- Total 66 clinical training sites accredited till FY 2080/81 (in FY 2080/81, one new i.e. Sushma Koirala Memorial Hospital accredited for burn care training and CNBC Level II training program is added in Seti Provincial Hospital Dhangadhi, Province Hospital Karnali, Surkhet and Lumbini Province Hospital
- Safe Abortion Services pre-service training started from 11 medical colleges
- Provincial simulation lab established in all seven provinces i.e. Koshi province-Koshi Hospital Biratnagar, Madhesh Province-Janakpur Province Hospital, Bagmati Province-Bharatpur Hospital Chitwan, Gandaki Province-Pokhara Academy of Health Science, Lumbini Province- Lumbini province Hospital Butwal, Karnali Province- Province Hospital Surkhet and Sudurpaschim Province- Seti Province Hospital, Dhangadhi



Karnali Province

Karnali Province Hospital, Surkhet
Karnali Academy of Health Sciences, Jumla
Chaurjahari Community Hospital Western Rukum

Bagmati Province

PMWH, Kathmandu
CFWC, Chhetrapati, Kathmandu
FPAN, Pulchok
MSS Satdobato
FPAN, Chitwan
MSS, Narayanghat
Bharatpur Hospital, Chitwan
PHECT Nepal Kritipur Hospital
PHECT Nepal Model Hospital
Nepal Medical College (NMC)
Army Hospital, Chauni
TUTH, Maharajgunj
Kanti Children's Hospital
Nepal Cancer Care Foundation
National Academy of Medical Sciences, Bir Hospital
Manakamana Hospital Pvt. Ltd
Manmohan Cardiothoracic Vascular Transplant Center
Kathmandu Medical College Public Limited, Bhaktapur
National Kidney Disease Treatment Center, Balaju, Kathmandu
National Trauma Center, Kathmandu
Dhulikhel Hospital, Dhulikhel
Bhaktapur Hospital
Susma Koirala Memorial Hospital
Human Organ Transplantation Centre
Nepal Armed Force Police Hospital

Koshi Province

BPKIHS, Dharan
Mechi Provincial Hospital, Jhapa
Koshi Hospital, Biratnagar
AMDA Hospital, Damak, Jhapa
Nobel Medical College, Biratnagar
Okhaldhunga Community Hospital
FPAN, Itahari
FPAN, Charali, Jhapa
Marie Stopes Service Pvt Ltd, Biratnagar

Sudurpashcim Province

Seti Province Hospital, Dhangadi
Mahakali Province Hospital, Mahendranagar
FPAN, Kanchanpur
Dadeldhura Hospital
Bayalpata Hospital, Achham
Tikapur Hospital, Kailali
Malakheti Hospital Kailali

Lumbini Province

Lumbini Province Hospital, Butwal
Bhim Hospital, Bhairahawa
AMDA Hospital, Butwal
FPAN Butwal
MSS, Chandrauta, kapilvastu
Lumbini Medical College, Palpa
FPAN, Dang
Bheri Hospital, Nepalgunj
Mission Hospital, Palpa
Nepalgunj Medical College, Banke
Rapti Provincial Hospital, Dang

Gandaki Province

Pokhara Academy of Health science, Pokhara
Dhaulagiri Province Hospital, Baglung
Community Hospital, Lamjung
Matrisisu Miteri Hospital,Kaski
Sisuwa Hospital, Kaski
Gandaki Medical College

Madhesh Province

Gajendra Narayan Singh Hospital, Rajbiraj
FPAN, Janakpurdham, Dhanusha
Province Hospital, Janakpur
Narayani Hospital, Birgunj
Siraha Povince Hospital

Figure 17.2 Number of trained health worker in FY 2080/81 (province wise)

Source: NHTC/DoHS

BMET unit

- Diploma in Biomedical Equipment Engineering (DBEE) Training (for 24 new participants and continuation of the FY 2079/80)
- Ninety biomedical equipments have been repaired and maintained

17.1.4 Planned Activities for FY 2081/82

Training Material Development

- Development of New Learning Resource Packages for training programs
- Learning Resource Package development in coordination and collaboration with different supporting organizations
- Onsite coaching on utilization of the Learning Resource Packages at different training centers and training sites
- Revision, update and publication of Learning Resources Packages as per requirement
- Standardization of learning resource packages from different division and center
- Workshop on integration of Learning Resource Packages in existing pre-service academic curriculum at various medical colleges, academia, universities and MEC
- Field testing of newly developed Learning Resource Packages
- SHP/SBA Modular training piloting and roll out
- Training profile update
- Leadership and Management related in-service training package development and piloting for senior officers/administrators of health services
- Workshop to develop SBA/SHP modular training implementation plan
- Program to integrate Medico-legal training on Post Mortem Examination and Clinical Forensic medicine in pre-service education

Skill Development

- Pediatric Nursing Care Training
- TOT on Packages of Essential Non-Communicable Diseases (PEN) for Doctors/Health workers
- Induction training for the newly recruited health officers through the process of Public Service Commission
- Medico-legal training on Post Mortem Examination and Clinical Forensic medicine
- Operation Theater Techniques and Management (OTTM) Training for nursing staffs
- Comprehensive New Born Care (CNBC) - Level II for Physician/Nursing staffs
- TOT on Burn Care and management for Physician/ Nurses and health workers
- Hemodialysis Training for Nurses and health workers
- Clinical Training Skills (CTS) or General Training Skills (GTS) for trainers of different trainings
- Pediatric Essential Critical Care Training
- Basic Critical Care Training for Nurses (BCCT-N)
- Field Epidemiology Training Program (FETP)-frontiers
- Integrated RH morbidities screening training
- Geriatric care training for health workers
- TOT on Occupational health and safety for health workers
- Basic research training for health workers
- TOT on mental health-module 2
- TOT on Mental Health- module 6
- First trimester abortion standardization training for ObGyn/MDGP
- TOT on Acute Respiratory Distress Syndrome (ARDS)
- TOT on Ambulance Driver
- Training on Hospital Preparedness for Emergencies (HOPE)
- Psychosocial counselling training for health workers working at OCMC/Mental Hospital
- Palliative care training
- TOT on Adolescent Sexual and Reproductive Health (ASRH)
- Comprehensive NSV/Minilap blended training for MDGP/OBGYN
- More than 30 working days in-service training for senior officers of health service at Nepal Administrative Staff College
- Burn care and management training for physician/ nurses/health workers
- Advanced infection prevention and control training for physician/nurses/health workers
- Trainer's development workshop for management related modular training for the health coordinators at local level

Training Accreditation and Regulation

- Accreditation, renew and regulation of different clinical training sites
- Orientation and support program for internship/ field practicing students
- Annual report preparation and publication
- Follow up and Enhancement (FEP) of different training programs
- Quality monitoring, feedback and regulation of different training activities
- Update and expansion of Training Information Management System (TIMS)
- Guideline preparation for Follow up and Enhancement (FEP) program
- Review and follow up of Field Epidemiology Training Program (FETP)

- Coordination, review and planning workshops with provincial training centers and training sites
- Training site development and strengthening program (equipment, materials, halls, furniture, laptop, anatomical models and others support to different clinical training sites)
- A study on "Effectiveness and implementation of ROUSG training program in Nepal"

Biomedical Equipment Training (BMET) Unit

- Diploma in Biomedical Equipment Engineering (DBEE) Training (for 24 new participants and continuation of the FY 2079/80)

Box 17.2 SWOT Analysis of NHTC

Strengths	Opportunities
• Development of more competency (Skill) based training packages and learning resource packages (LRP's) using blended approach • Revision and update of the existing training packages • Standard operating procedures (SOPs) and guidelines for training packages and training sites • Operation of TIMS at all provincial health training centers • Profile of trainers and trainees are maintained in each province • Coordination, collaboration and partnership with province health training centers, External Development Partners, Bilateral and Multilateral Agencies for quality health training management and conduction • Expansion and prior arrangements of training sites and training materials	• Annual increment in the number of trained health workforce • Competent and skilled health workforce • Incentives and accommodation facilities to trainers as well as training participants • Support from government as well as various External Development partners
Weaknesses	**Threats**
• Shifting into one door trainings however, multi-door trainings persist • Lagging to shift into technology-based education such as self-paced learning, online learning platform as well as web-based learning • Inadequate training follows up mechanism • Inadequate skilled technical human resources to operate TIMS at all levels • Improper recording and inadequate reporting mechanism between province and federal health training center • Lack of systematic coordination mechanism with province governments and local level for training management and quality control. • Gaps in accreditation, renewal and accountability of training sites • Challenging to manage a separate pool of trainers from various disciplines • Lack of need-based selection of participants • Lack of training needs assessment for institutionalizing need-based training. • Many health professionals lack access to continuing education opportunities, which can hinder their ability to stay up-to-date with the latest developments in their field. • Health training often focuses on theory rather than practical skills. • Lack of training on prevention and promotion. Majority of trainings provided are focused on curative service.	• Delayed revision of the training related policies, strategies and guidelines • Inclusion of participants from remote and backward districts • Inadequate accommodation facilities for training participants • Limited sites for special training • Inadequate training materials • Inadequate budget allocation for training monitoring and quality assurance • Inadequate incentives for trainers and participants who travel from distant districts • High demand of training and limited resources

17.2 Vector Borne Disease Research and Training Center

17.2.1 About the program

VVector Borne Disease Research and Training Center (VBDRTC) was established in 2035 (1979) as Malaria Research and Training Center under the Nepal Malaria Eradication Organization. On 30th Jestha 2053 (12th June 1996), the center was named as VBDRTC. The key objective of VBDRTC is to build capacity and conduct research for better understanding of VBDs' etiology, transmission intensity, and interventions program implemented for VBDs by Government including, Malaria, Kala-azar, Dengue, Chikungunya, Lymphatic filariasis, Scrub typhus and Japanese encephalitis.

17.2.2 Major activities in FY 2080/81

- Early Warning and Reporting System (EWARS) on site coaching in hospital basis
- With financial support from USAID-RTI, the Transmission Assessment Survey (TAS) was carried out for the elimination of Lymphatic Filariasis
  - TAS-I - 4 districts (Baglung, Parbat, Lamjung and Bara)
  - EMS - 5 districts (Morang, Kailali, Banke, Dang and Kapilvastu)

17.2.3 Key achievements in FY 2080/81

Physical and financial achievement of program activities

In FY 2080/81, financial achievement was 96.74 % and physical achievement was 100%. The total budget absorption rate was 96.74% in FY 2079/80 (table 17.1)

Table 17.1 Budget absorption rate of VBDRTC in FY 2080/81

Items	Budget (Nrs in millions)	Expenses (Nrs in millions)	Budget absorption rate %
Administrative cost	8.92	8.62	96.63
Programmatic cost	0.20	0.19	95
Total	9.12	8.81	95.81

Source: VBDRTC

17.2.4 Challenges of VBDRTC

- Dissolution of VBDRTC development committee
- Inadequate human resources
- Financial limitations and funding gaps in research and training programs
- Duplication of activities with EDCD

18 Health Education, Information and Communication

NHEICC	Health Education and Material Development Section	Health Communication Coordination Section	Health Promotion and Tobacco Regulation Section	Administrative Section

18.1 About the Program

National Health Education Information and Communication Center (NHEICC), established in 2050 (1993), is the federal body for health promotion activities. It plans, implements, monitors, and evaluates diverse health promotion programs, including advocacy, health education, communication, community engagement, and research. Guided by the National Health Communication Policy 2069 (2012), National Health Policy 2076 (2019) and other relevant policies, NHEICC supports national health programs to address the health policies and to achieve SDGs. Employing key approaches like advocacy, social mobilization, and SBCC, NHEICC has four sections namely Health Promotion, Non-communicable Disease and Tobacco Regulation Section, Health Education and Material Development Section, Health Communication Coordination Section, and Administrative Section. The NHEICC is the focal point of Ministry of Health and Population (MoHP) for tobacco and alcohol control and regulation along with Risk Communication and Community Engagement (RCCE).



Figure 18.1 Health promotion strategies of NHEICC

Box 18.1 Vision, goal and objectives of NHEICC

Vision:

Healthy, conscious and responsive citizens concerned with happy life

Goal:

To promote health, prevention and control of diseases and increase the maximum utilization of available health care services

Objectives:

To promote health of the people by raising health awareness and preventing diseases through the efforts of the people themselves and full utilization of available health services

Specific objectives of NHEICC:

- To assist the MOHP to formulate national acts, policies, strategies and guidelines related to health promotion and health communication
- To regulate the marketing of alcohol and tobacco products as well as harmful health products in coordination with the relevant agencies
- To strengthen, expand and implement health promotion programmes and RCCE at all levels
- To facilitate related stakeholders to make healthy settings like "healthy palika", health promoting schools, health promoting workplaces, health promoting hospitals etc. with support and coordination of relevant stakeholders
- To generate, collect and mobilize resources to implement health promotion and communication programmes
- To develop and update SBCC materials in coordination with relevant stakeholders
- To provide technical support for health promotion, education and material development at all levels
- To mobilize and use modern and traditional health education methods and media to increase health literacy and promote healthy behaviour among the general public
- To prevent the inappropriate and unauthorized dissemination and duplication of messages or information and IEC materials on different health related issues.

Each of the section of the centre works in close coordination with MoHP and DoHS related divisions and centres for the needful SBC program tailoring based on the health promotion strategies of NHEICC (figure 18.1).

Box 18.2 Tobacco control programme legislation and strengths

Tobacco Control Programme

The NHEICC is the focal point for tobacco control and regulation in Nepal. Annually, over 37,529 individuals in 2024, in Nepal succumb to diseases linked to tobacco use. So, the government of Nepal has established a tax fund from which the programmes of tobacco control, cancer and non-communicable disease prevention and care are organized. This will help both to reduce the consumption of tobacco products and also to raise the revenue for health sector. Besides this we have strong civil society and media engagement in tobacco control programmes. Furthermore, the policy instruments so far endorsed are highly comprehensive.

Roadmap to Tobacco Control & Regulation related Legislations

- Tobacco Products (Control and Regulation) Act, 2068 (2011) is the principal legislation overseeing tobacco control in Nepal. It covers various aspects, including smoking regulations in public areas, workplaces, and public transport, as well as tobacco advertising, promotion, sponsorship, packaging, and labelling.
- Tobacco Products (Control and Regulation) Rule, 2068;
- Tobacco Product Control and Regulatory Directive, 2071; and
- Directive on Printing Warning Messages and Pictures on Tobacco Product Boxes, Packets, Cartons, Parcels and Packaging Materials, 2081.
- There is a SAFER Initiatives as a measure to reduce consumption of Alcohol. SAFER Initiative is a measure advocated by World Health Organization and adopted by many countries around the world.

18.2 Major Activities in FY 2080/81

Health Education and Communication	Advocacy/Orientation	Other Program
Broadcasting of health-related messages and information through National Televisions	Advocacy and communication on antimicrobial resistance	Research has been completed regarding the Utilization of health education materials on Family Planning, safe motherhood, New born care.
Airing of health messages and public health radio programme through Radio Nepal	Advocacy and communication on Breast Cancer	Monitoring of newspaper and awareness program regarding epidemic and communicable diseases.
Publication of health messages, information and press release in national newspapers	Interaction Program to Journalist about the different health issues	Capacity building program on Social Behaviour Change Communication (SBC) for health
Production and Broadcasting of health messages, and public health dialogue *(Janaswasthya Bahas)* through Nepal television	Advocacy and Communication Program on Safe Abortion	Quit Tabacco Cessation Program
Communication Program through on online media	Advocacy and Communication Program on BMS (Breast Milk Substitute) Act and Nutrition	Health Promotion School Program
Health message exhibition on assembly, event, sports, health camp musical and cultural programme	Advocacy and Communication program on Adolescent Health and Reproductive sickness (rugnata)	Risk Communication and Community Engagement (RCCE) Program
Health education and communication programme for disable Friendly	Advocacy and Communication program on Child Health and Regular Immunization	Coordination Program to social media and Telecommunications
Health education and communication programme for marginalized and deprived community or group	Advocacy and Communication Program on Mental Health	Program on occupational, environmental health
Health education and Communication programme on SMART couple promotion and reproductive health	Advocacy and Awareness Program for the Prevention of Adolescent health on Risk Factors eg. Alcohol, Smoking and Tobacco	Monitoring, prevention and control program for Smoking and Tobacco
Health awareness and communication program on Organ transplant	Provincial advocacy Workshop on Tobacco Control	Monitoring and Facilitation of Health Promotion and education program
Communication program on Acid Attack, Burn, accident and injuries		SAFER Initiatives Program
Awareness and Communication program on Senior Citizens, Eye and Oral Health		
Health Communication program on Tuberculosis, neglected tropical, zoonotic and vector borne diseases		

Health Education and Communication	Advocacy/Orientation	Other Program
Awareness Program on Prevention and Control of Non-communicable Diseases, Trans-fat and Sweeten Beverages		
Awareness Program on Basic Health and Social Security		

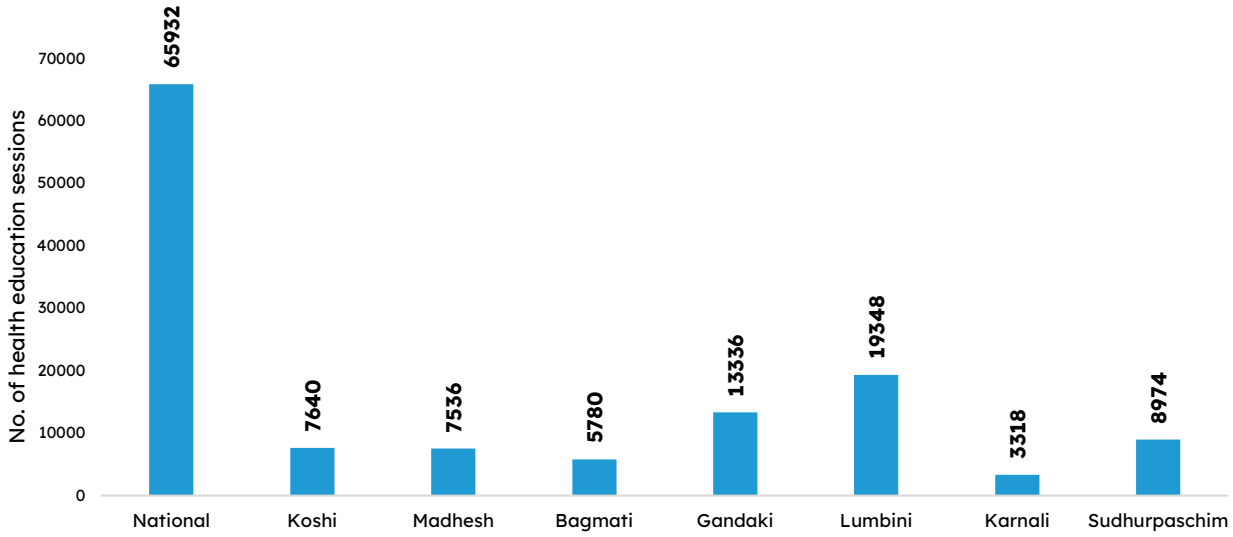
18.3 Key Program Indicators and Achievements FY 2080/81

18.3.1 Number of health education sessions conducted

In FY 2080/81 total of 65932 health education sessions were conducted in which maximum were conducted in Gandaki and Lumbini Provinces and minimum in Karnali Province. (figure 18.2)

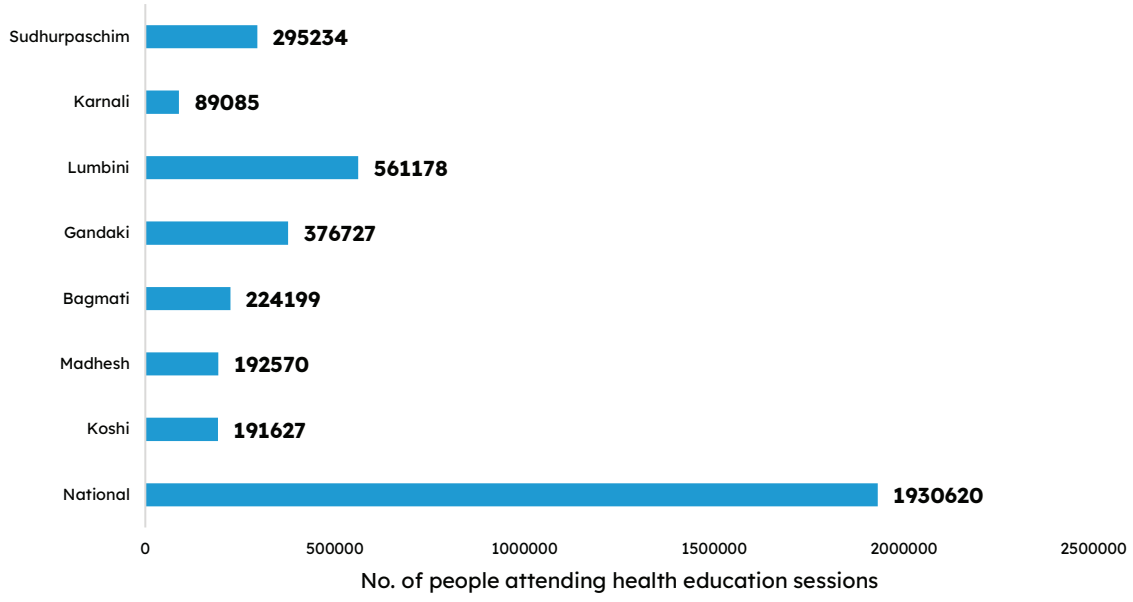
18.3.2 Number of people attending health education sessions

In FY 2080/81 total of 1930620 people had attended health education sessions that were conducted in Nepal. Similar to number of sessions, attendees are highest in Lumbini Province and least in Karnali Province. (figure 18.3)



Source: NHEICC

Figure 18.2 Coverage of Health Education Sessions Conducted in FY 2080/81



Source: NHEICC

Figure 18.3 Reach of Health Education Sessions Conducted in FY 2080/81

18.3.3 Federal level physical and financial achievement of program activities

In FY 2080/81, financial achievement was 71.16 % and physical achievement was 78.05 % of NHEICC at federal level. (table 18.1)

Table 18.1 Physical and financial achievement of NHEICC at federal level in 2078/79 to 2080/81

Programme	FY 2078/79		FY 2079/80		FY 2080/81	
	Physical	Financial	Physical	Financial	Physical	Financial
Federal Level	89	81	82	79	78.05	71.16

Source: NHEICC

Box 18.3 SWOT Analysis of NHEICC Program

Strengths	**Opportunities**
• National health communication policy in place. • Formulation of Nepal Health Promotion Strategies 2081-2085 • RCCE guidelines in place • SAFER Initiative roadmap under implementation	• Interest of different stakeholders in RCCE activities • Initiation of digital technology in health • New initiations such as anti-alcohol control advocacy programme, Health Promoting school programmes • Penetration of mobile phone and internet in communities (Uses of Social Media) • Disaggregated capture of the data to produce thematic indicators for HEICC activities.
Weaknesses	**Threats**
• Limited human resources for health promotion at federal, province and local level • No organizational structure including human resources for health promotion at all province and local levels • Preparedness mechanism during emergencies is need to be stronger and strengthen • Insufficient control mechanism for mis-advertisement of unhealthy products	• Multi-door health communication activities • Mis-advertisement of unhealthy products • Inadequate allocation of budget for communication programme as per health policies, strategies and directives • Continuous change of behaviour pattern/continuous change of lifestyle of people • Low health literacy • Resistance to change • Interference by companies who produce unhealthy commodities • Less emphasis on health promotion activities as per the international declaration and changing patterns of diseases and health case scopes • Misinformation about health campaigns in social media

19 Logistics and Health Information Management Program

MD	Integrated Health Information Management Section (IHIMS)	Environmental Health and Health Related Waste Management Section	Health Infrastructure Development Section (HIDS)	Logistic Management Section (LMS)

Management Division (MD) administers comprehensive management functions within Department of Health Services (DoHS) and functions as secretariat to Director General (DG), DoHS. It synchronously aids as the vital nexus for health-related information management. Health Management Information System (HMIS), Logistics Management Information Systam (LMIS), and Health Infrastructure Information System (HIIS) are the three vital systems being smoothly implemented. The MD is tasked with a wide range of responsibilities, including planning, coordination, supervision, forecasting, quantification, procurement, and distribution of health commodities to healthcare facilities, infrastructure development, equipment, instrument, support in the waste management and water sanitation and hygiene (WASH) aspects of the health facilities. Additionally, MD ensures the functionality of all the information systems for ensuring timely availability of routine data including ensuring their quality. Furthermore, MD supports MoHP in monitoring and evaluation of health programs and formulating policies, guidelines, directions, and standards. The division plays a pivotal role in overseeing the construction and maintenance of public health institution structures, providing support for the maintenance of medical equipment, and meticulously managing the inventory of biomedical equipment, instruments, and transportation vehicles.

19.1 Health Information Management System

19.1.1 About the program

Integrated Health Information Management Section (IHIMS) plays a crucial role in managing health-related routine service data and information from FCHVs to federal level. It serves as a foundation for monitoring, evaluation, and planning across all three tiers of government: federal, provincial and local. IHIMS coordinates among all three tiers of government, ensuring integrated platform available for collecting, collating, analyzing, visualization, dissemination and storage of health information derived by the national health system. (figure 19.1)

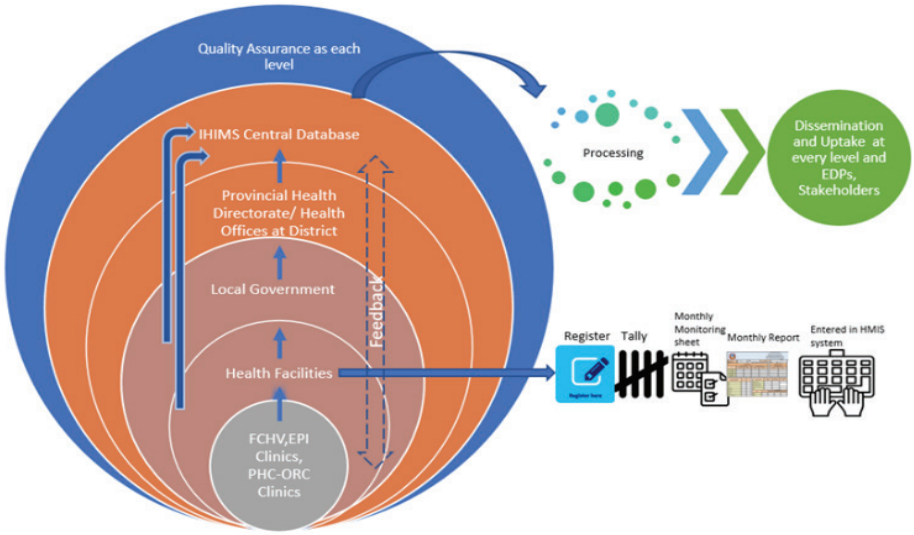


Figure 19.1 IHIMS information flow

A primary mandate entrusted to IHIMS is to lead and coordinate the systematic generation of periodic and annual health reports, with subsequent dissemination of findings to the stakeholders. These reports hold paramount significance in the ongoing monitoring and evaluation processes within the health sector including health sector progress, contributing to evidence based AWPB.

Health Management Information System

The HMIS operating on District Health Information System 2 (DHIS2), an ICT friendly platform with highly scalable features, manages health sector information in an integrated and comprehensive manner through one door system. To reach its current state, HMIS has come through several significant milestones (figure 19.2). Revision of the HMIS tool in FY 2078/79 was the massive effort in history of tool revision by IHIMS. The tool revision was based on covering the additional health related issues such as mental health, health education information etc. There are now 68 HMIS recording tools and five reporting tools. The recording tools are completely paper based whereas, reporting is directly done through online HMIS built in DHIS2 platform which is maintained in paper-based reporting forms (tools) in HFs and entered online. (figure 19.3)

Milestone on HMIS tool development

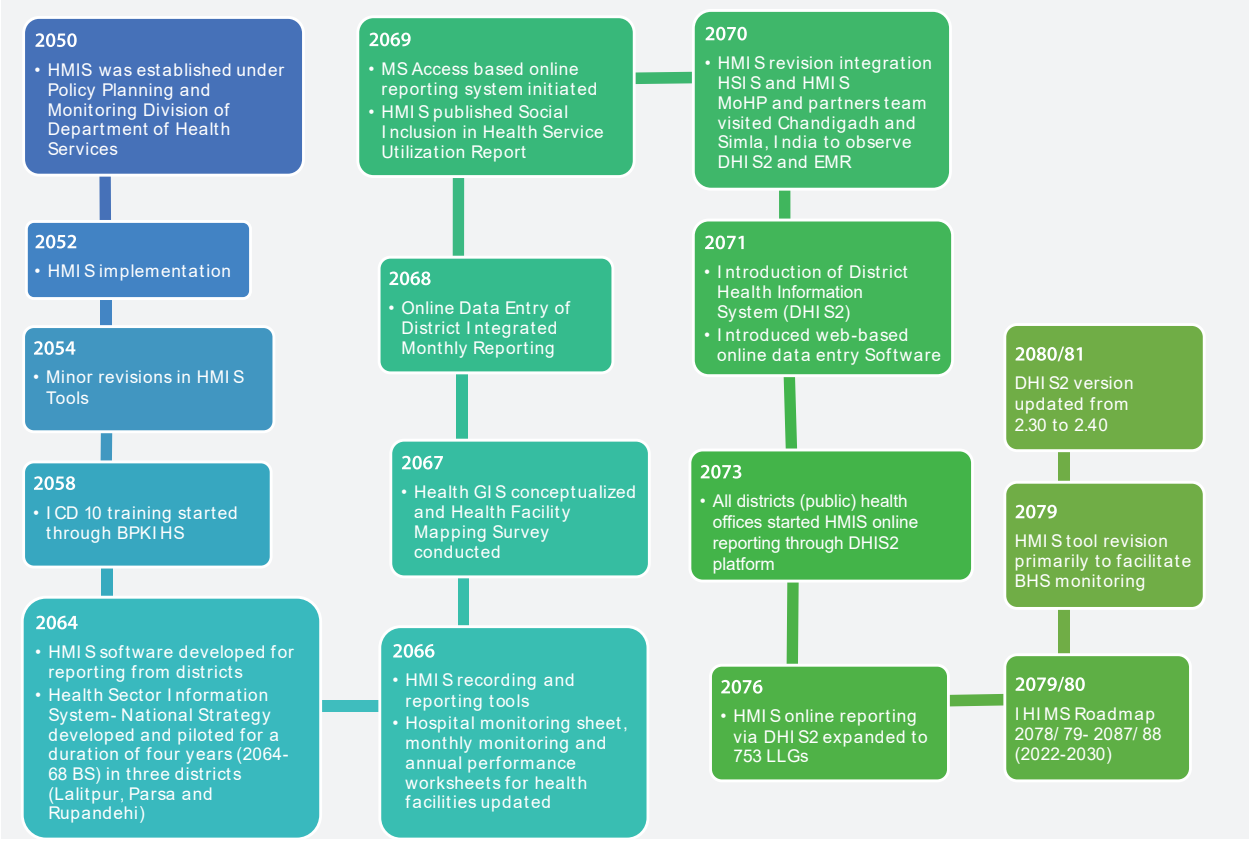


Figure 19.2 Milestone on Development of HMIS Tools

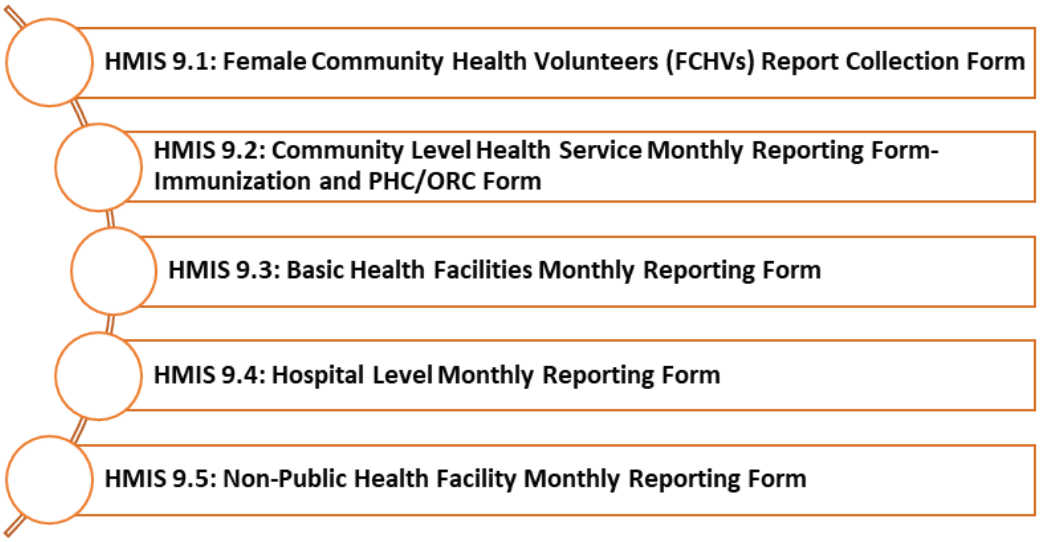


Figure 19.3 Current reporting tools being used in HMIS

IHIMS Roadmap 2078/79- 2087/88 (2022-2030) has been crucial to drive key improvements in health data management. In FY 2080/81, efforts focused on strengthening HMIS by enhancing infrastructure, software, and processes. Training programs aimed to improve user proficiency and ensure meticulous data handling. Ongoing monitoring facilitated prompt issue resolution, contributing to sustained system improvement. These initiatives sought to establish a reliable HMIS foundation, enhancing data quality for informed healthcare decision-making.

Logistic management information system

To streamline logistics management, LMIS unit was established within the Logistic Management Division (LMD) in fiscal year 2050/51 (1994), now under MD. The LMIS unit introduced a web-based LMIS in fiscal year 2065/66 and later implemented an online Inventory Management System (IMS) in fiscal year 2073/74 for store management. Management Division transitioned to an electronic Logistic Management System (eLMIS) from Baishakh 2075 to strengthen supply chain management processes and enhance LMIS data entry and visualization, aiding informed decision-making. The eLMIS now covers all local Level stores with plans for extensions to all service delivery points (SDPs) based on operational requirements. As of Ashad 2081 there are a total of 5,425 live sites, comprising 4,504 SDPs, 753 LLGs, 77 Health Offices, and 7 provincial and 7 federal stores. In cases where SDPs await eLMIS implementation, LMIS forms are submitted to LLGs for data entry. Since fiscal year 2079/80, the reporting cycle for LMIS has shifted from a quarterly basis to a more granular monthly reporting system. eLMIS provides a dashboard that visualizes the stock status, consumption of health commodities and reporting status. The digitalization of inventory management activities such as handover takeover form *(Hastantaran Faram)*, entries in Health Facilities' Supply Registration Book *(Dakhila Register)*, and stock books through eLMIS has significantly reduced the paper-based workload for providers and staffs. Additionally, eLMIS ensures the safety of data, providing a secure platform for managing inventory information. Information flow of the logistic management information system is depicted in figure 19.4.

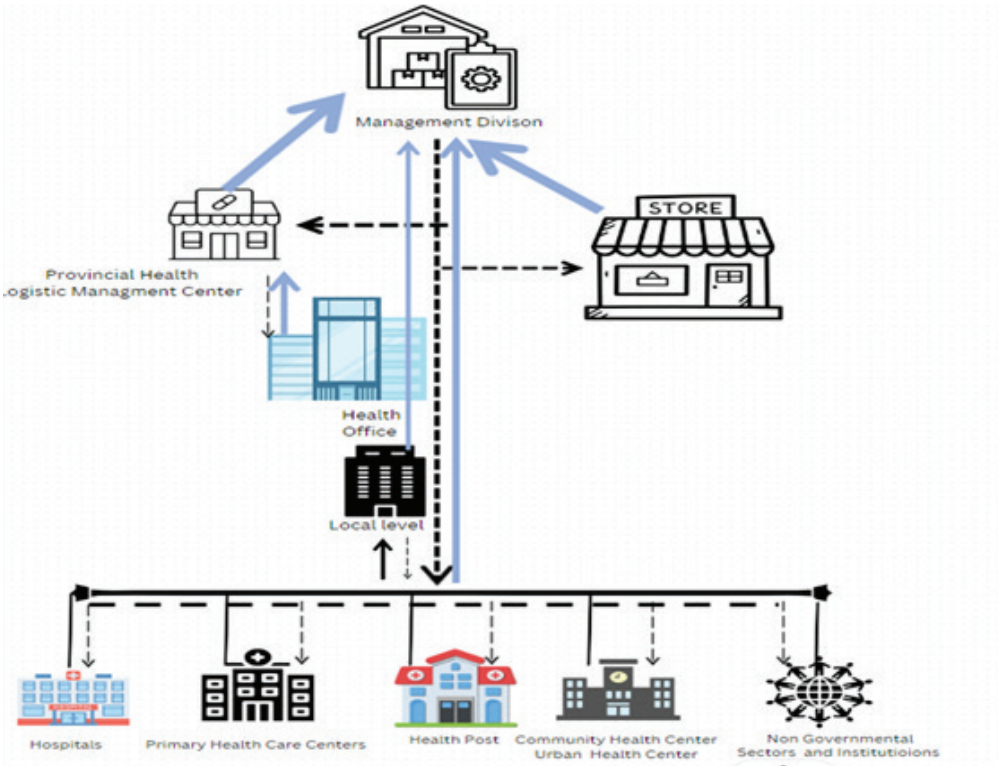


Figure 19.4 Logistic Management Information Flow

Digital Health Landscape

Distance, geography, cost and time are one of major factors that limit the service access and utilization in Nepal. The recent survey in FY 2079/80, NDHS 2022, showed that a large majority of women travel to the nearest health facility by walking (83%). There are still 9% of the survey population who reported that the nearest health facility is at more than an hour distance and 23% reported that it takes more than 30 minutes to reach the nearest facility. Penetration of the Information Communication Technology (ICT) in health has been seen as one of the alternatives to increase access and reduce travel time and contribute substantially to UHC.

eHealth was conceptualized and agreed by world health leaders to consider drawing up a long-term strategic plan for developing and implementing eHealth services to develop the infrastructure for ICT for health to promote equitable, affordable and universal access to their benefits. Recently, the term digital health was introduced as, a broad umbrella term encompassing eHealth as well as emerging areas, such as the use of advanced computing sciences in 'big data', genomics and artificial intelligence. In Nepal, Information Technology (IT) penetration was observed in health around 2054 (1997) when HMIS was in the process of development.

Current availability of communication equipment in the health facilities for health service purpose is 26%, and 55% of health facilities have computers with internet facilities. Similarly, at the population level 15.4% households have computer and 51% households have internet access at home. It is evident that the use and expansion of ICT is rapidly growing and in year 2078/79, internet penetration has reached to 38% in the public in Nepal. The focus of digital health is on strengthening health systems and public health programs, increasing equity in access to health services, strengthening health information systems and increasing the efficiency of health care delivery.

Digital health in Nepal is guided by laws, regulations, Digital Nepal Framework and health sector strategies and policy. MoHP has been implementing the eHealth Strategy 2017 and eHealth Roadmap 2019. Several efforts are under way to develop digital health platforms that expand the reach of health services and support self-care. Digital health interventions are expanding in the public and private health sectors further boosted by the COVID-19 situation in the country.

Global reference documents are available to set strategies, strengthen digital governance and support the interventions. In addition, there are national acts, regulations, frameworks, guidelines and policies in place in the health and ICT sector to govern digital health. Some national documents guiding the digital landscape are:

- Electronic transaction act 2063 (2008) and rules 2064 (2009)
- Information Communication Technology Policy 2072 (2015)
- Public Health Service Act 2075 (2018) and Regulation 2077 (2020)
- eHealth Strategy 2073/74 (2017) and Roadmap (FY 2076/77-2080/81) (2019-2024)
- The Privacy Act, 2075 (2018)
- Digital Nepal Framework 2076 (2019)
- National Health Policy 2076 (2019)
- The Fifteenth Plan (FY 2076/77-2080/81 (2019/20 – 2023/24))
- Electronic Governance Commission (Formation and Operation) Act 2079 (2022)
- Nepal Health Sector Strategic Plan (NHS SP) 2079/80-2087/88 (2023-2030)
- Integrated Health Information Management System Roadmap (2078/79-2087/88) (2022-2030)
- Nepal Health Facility Registry Procedure 2081
- Procedure for Nepal Health Workforce Management Information System 2024

The IT infrastructure is expanded to all the local levels and health facilities with varied strength of network and hardware resources. In the IT human resource, there are four positions in the federal MoHP, three in DoHS, one in DDA, one in NPHL, one in NHEICC, and none in DoAA. However, the availability of ICT related permanent staffs in federal level is very low than required to keep pace with advancement of technology and cope with it. There is high and growing demand of such cadres from the agencies at all levels.

Health, ICT and market sectors are collaborating formally and informally to advance the digital health interventions in Nepal. Digital solutions are produced by MoHP and market-based innovators. Collection of digital health interventions for inventory development exercise in 2078/79 (2022) has explored the existence of following digital solutions prevailing in Nepal, though the inventory is based on limited reporting. (Table 19.1)

Table 19.1 Major digital health related domain of services and their platforms as of FY 2080/81

Domain of services	Major platforms/ Solutions
Health Management Information System	DHIS2
Maternal and Perinatal Death Surveillance	MPDSR
Hospital based Death Registration Management System	MCCoD
Facility based Birth Registration Management System	BRMS
Health promotion	Hamro swasthya
Community based maternal and child care	Ama ko Maya, Community Health Toolkit
COVID Information Management	IMU Nepal, COVID-19 Dashboard, CCMC portal, Vaccine certification service, GoData, ComCare
Telemedicine services	Danfe care, Ncell
Logistic Management	eLMIS, mSupply
Health service management in the facilities	Nepal EHR, Okhati, Dolphine, MIDAS, Dcode, Bahmni EMR, Mero Upachar OpenMRS, MediPro, Cogent, etc.
Public health surveillance	SORMAS
Integration of HISs	OSCARS
Early warning and reporting for notifiable diseases	EWARS
Health Facility Registry	Frontend/ ANGULAR BACKEND: MYSQL, JAVA
Digital Health Inventory Management	Digital Health Atlas

Domain of services	Major platforms/ Solutions
Immunization services	eIRS
TB case management	GxAlert, eTB register
HIV and NTD case tracker	DHIS Tracker
Management of Human Resources for Health	iHRIS
HIV/AIDS Service Delivery Programs	ORA
Planning and Management of Assets in Health Services	PLAHMAS
Inventory management of health infrastructure	HSIS
Diarrheal and Respiratory disease management	SIM App
Social Health Insurance Management	Open IMIS
Nepal Health Workers Management Information System	Frontend/ ANGULAR BACKEND: MYSQL

The list (table 19.1) is not exhaustive and there is a need to prepare inventory of all digital solutions and ensure the compliance to the standards.

In this backdrop, MoHP is continuously putting its efforts to improve the uptake of digital solutions and obtain real-time health service uptake and related health status indicators and strengthen reliability of routine reporting.

Box 19.1 SWOT analysis of digital health

Strength	Opportunity
• Existence of plan and policies for foundation of digital health • Penetration of digital devices in the market • Increasing global and regional support environment • Availability of global resources • Dedicated IT team in the MoHP • MoHP initiation to establish the Standard and Interoperability Lab (SIL) • Readiness of HF Registry, ICD11 and Geo-codes for interoperability	• Reducing cost of technology • Increasing awareness and demand of digital health • Increasing engagement of academic institutions • Private sector development and competitive market • Demand for higher efficiency in health • Emerging solutions for financial transactions • Availability of global public goods
Weakness	**Threat**
• Poor governance mechanism to support adoption, authentication, validation and use of digital health tools and technologies. • Variation in the capacity at different levels and rural and urban settings • Uncertain investment in the ICT infrastructure • Absence of proper institutional mechanism at all levels of health including HR provisions • Lack of organized support system • Lack of systematic and enterprise architecture for digital health	• Growing silos, sporadic and sub-standard products in the market • Lack of ICT friendly health facility building architecture • Poor inter-sectoral coordination mechanism • Skill mixed and IT friendly cadres are not sufficiently provisioned in the organogram at all levels • Unregulated digital health products

19.1.2 Major Activities for Health Information Management in FY 2080/81

HMIS related activities

- Data verification and validation were conducted in 60 health facilities.
- Onsite coaching was provided at two hospitals.
- Routine tasks included generating population projections at the ward level and publishing the Nepal Health Factsheet for FY 2080/81.
- The Management Division led annual reviews and contributed to the NJAR, particularly in producing health fact sheets.
- Online self-reporting through DHIS2 covered 65.7% of all health facilities.

Dashboard related activities

IHIMS Roadmap 2022-2030 emphasized the establishment of a comprehensive dashboard for all local, provincial, and federal levels. This initiative aimed to facilitate easy and high-quality access for citizens to their personal and public health information, as well as contribute to the formulation of national plans and policies. In collaboration with UNICEF, the following major activities were conducted:

- Health information dashboard review meeting for LLGs at three different sites (Chitwan, Dhangadi and Nepalgunj)
- Health information dashboard orientation program to the staffs of LLGs at three different sites (Pokhara, Butwal and Biratnager)
- Regular supervision, monitoring and technical support of dashboard program to different LLGs of Gandaki, Bagmati, Madhesh, Lumbini and Koshi province.

eLMIS related activities

- IHIMS provides eLMIS support to users across nationwide sites across the country.
- The eLMIS Helpdesk, situated at Management Division, and eLMIS coordinators in each province, offer comprehensive user assistance. The Helpdesk logs calls/emails, assigning support tickets.
- User support services encompass a toll-free helpline, trouble-shooting guidelines, on-site coaching, and training.
- eLMIS training initiatives have been executed at various SDPs which enables them to proficiently use the eLMIS platform for the recording and reporting of logistics-related information.
- MD and Public Health Logistics Management Committees (PHLMCs) conducted various forecasting and quantification workshops at central and provincial levels, utilizing eLMIS data. These workshops enhanced the technical skills of PHLMC, Health Offices, LLGs and hospital staff, facilitating the institutionalization of health commodity quantification. This exercise played a crucial role for both Central and Provincial Governments in determining procurement quantities and developing procurement plans for fiscal year 2081/82, aiming to avoid shortages and wastage of health commodities.

19.1.3 Status of Key Reporting Indicators in FY 2080/81

Status of HMIS reporting

Reporting from grassroots levels (FCHVs) have gradually increased to 99.66% in FY 2080/81. There is consistent percent reporting from health posts and PHCCs. In FY 2080/81, reporting from public hospitals decreased by 4.6% as compared to last FY. (figure 19.5)

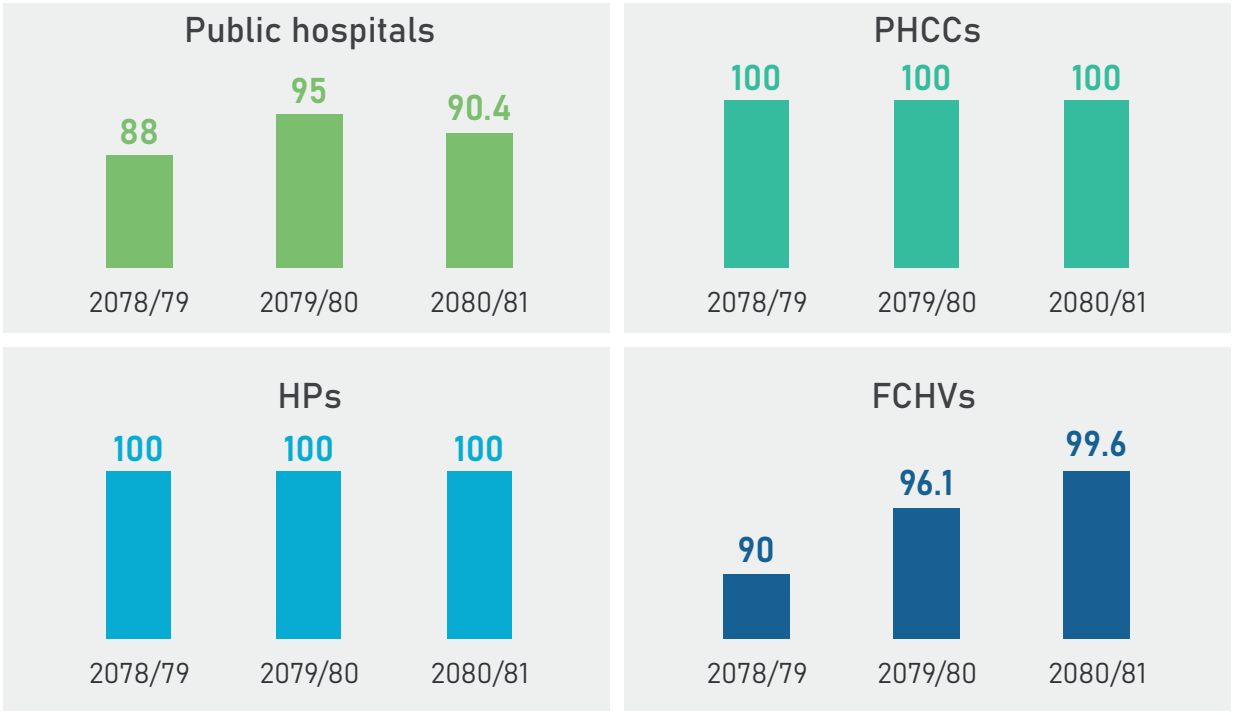
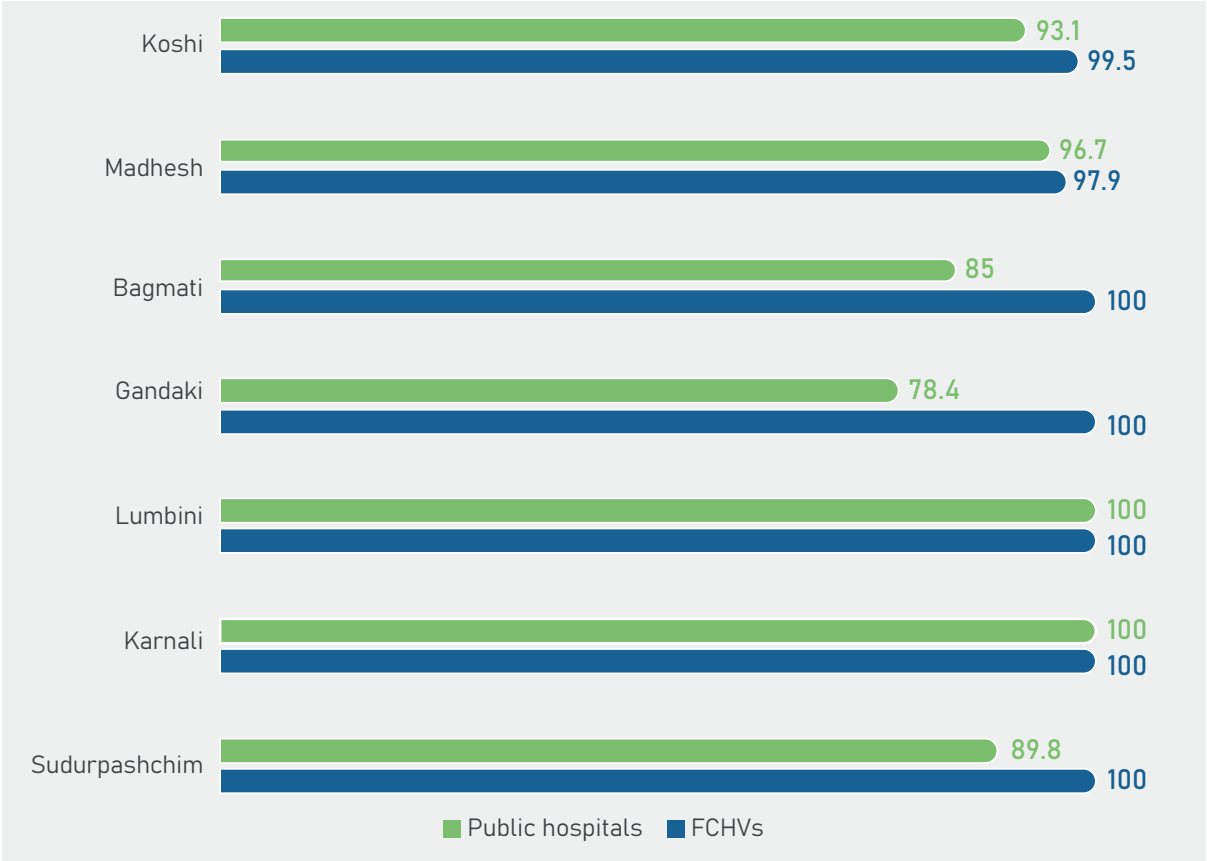


Figure 19.5 Reporting status from FCHVs and public health facilities in FY 2080/81

The reporting from FCHVs was cent percent from other provinces other than Koshi and Madhesh. The reporting from public hospital was cent percent in Lumbini and Karnali province. The lowest public hospital reporting rate was in Gandaki (78.4%) and Bagmati province (85%).

It has been observed through the years that reporting is consistently incompletely from tertiary or referral centers in the country specifically that of OPD services due to overcrowding and lack of appropriate digital infrastructure. MoHP has been putting its efforts along with the support from the partners' in establishment of the electronic medical record (EMR) systems across public health facilities. With the development of a standardized EMR systems, it is expected to have improved reporting of the services provided through the tertiary and referral centers.

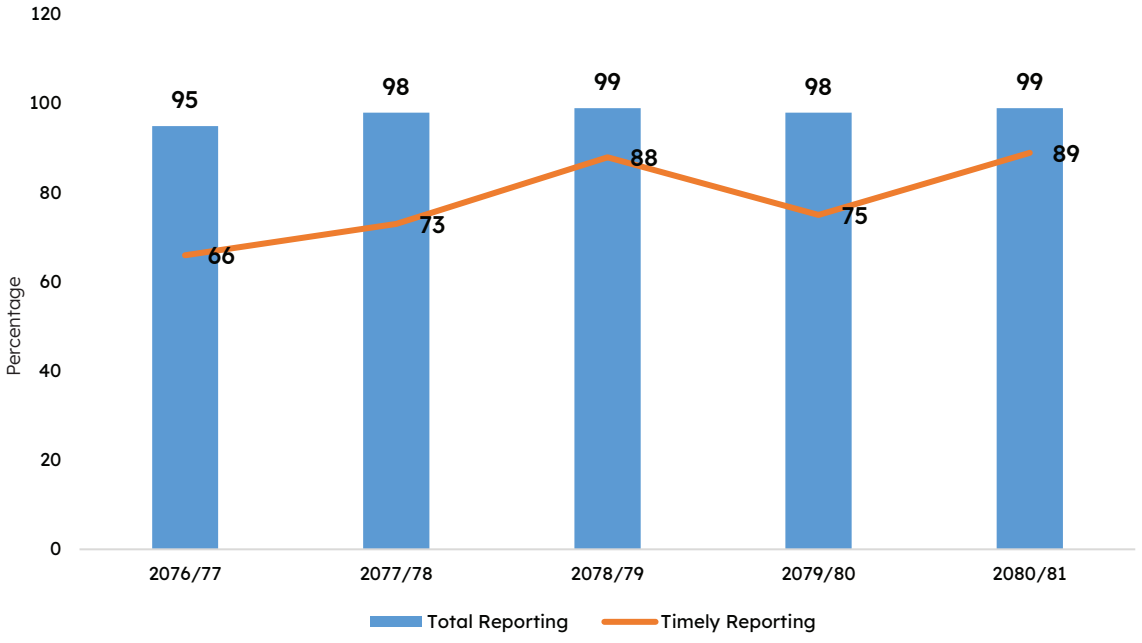


Source: HMIS/DoHS

Figure 19.6 Provincial reporting status of HMIS 2080/81

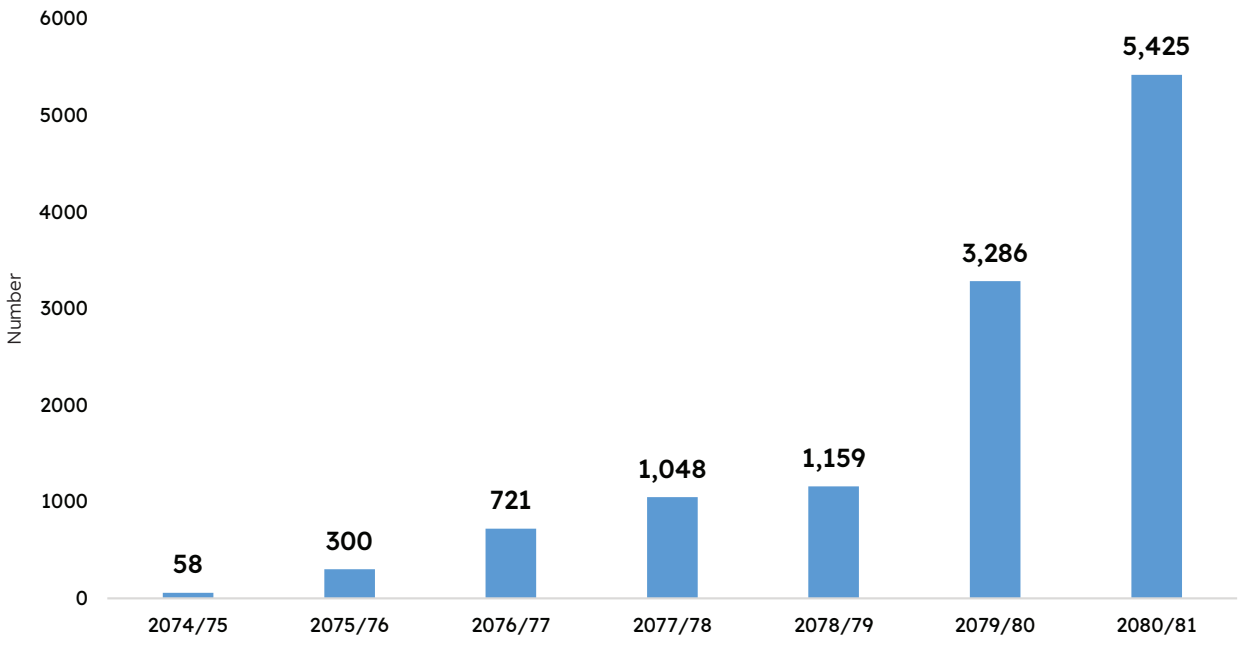
Status of eLMIS reporting

There were a total 7,749 health facilities reporting through e/LMIS. The total reporting percentage as well as timely reporting percentage increased from the previous year in FY 2080/81. A substantial increase has been reported in timely reporting, from 75% last year to 89% the current year (figure 19.7).



Source: eLMIS/DoHS

Figure 19.7 National LMIS and Timely reporting trend from FY 2076/77 – 2080/81



Source: eLMIS/DoHS

Figure 19.8 eLMIS Rollout and Expansion Status

eLMIS online sites and LMIS Data Entry sites

Health Facility wise eLMIS sites

Health Facility Type	Count
Central Warehouse	7
PHLMC	7
PHLMC Cold Chain	8
Health Offices	77
Health Offices Cold Chain	69
Local Level Government	753
Hospitals	103
Health Post/Primary Health Care/Basic Health Unit/ Community Health Unit/others/ Ayurvedic Health Center	4,323
ART Sites	78
Total	**5,425**

Province wise eLMIS Live sites

Province Name	Count
Koshi	809
Madhesh	580
Bagmati	1,181
Gandaki	784
Lumbini	921
Karnali	532
Sudurpashchim	618
Total	**5,425**

Province wise LMIS Data Entry Reporting sites

Province Name	Count
Koshi	709
Madhesh	788
Bagmati	341
Gandaki	282
Lumbini	334
Karnali	398
Sudurpashchim	393
Total	**3,245**

- LMIS reports from all SDPs on monthly basis are entered from Local Level Government.
- eLMIS is the only source of LMIS data for all tiers of Supply Chain in Nepal

Source: eLMIS/DoHS

Figure 19.9 eLMIS and LMIS Data entry sites by Provinces, 2080/81

Operational Status

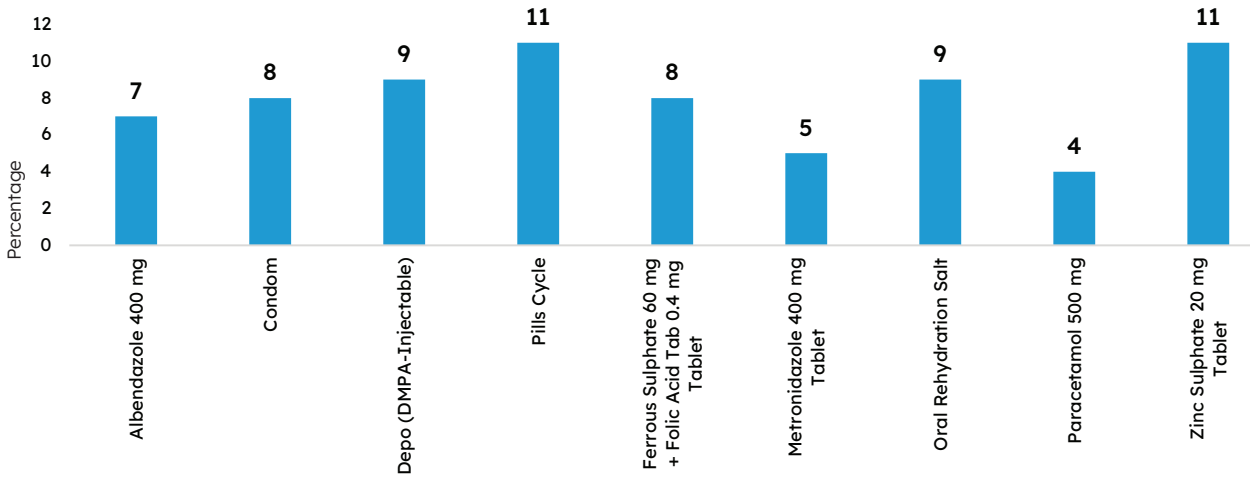
eLMIS is implemented at all federal, provincial, health offices, and local level stores. LLGs have realized the importance of supply chain processes and the necessity of real time information for the SDPs within their catchment areas. As a result, they have initiated gradual expansion of eLMIS sites at their SDPs, with 92% of SDPs operational on the system. (table 19.2)

Table 19.2 Operational Status of eLMIS by health facilities in FY 2080/81

Health Facility Type	Total number of eLMIS Sites	Operational	Non-Operational	eLMIS Utilization (%)
Federal (Central) Store	7	7	0	100%
PHLMC (Provincial) Store	7	7	0	100%
PHLMC Cold Chain	8	8	0	100%
Health Office	77	77	0	100%
Health Office Cold Chain	69	65	4	94%
Local Level Government	753	702	51	93%
Laboratory	8	7	1	88%
Hospital	236	205	31	87%
Health Post/Primary Health Care/Basic Health Center/Urban Health Center/ Community Health Unit/ART Sites	4,260	3,936	324	92%
National Utilization	**5,425**	**5,014**	**411**	**92%**

Source: eLMIS/DoHS

The eLMIS and LMIS reports provides data visibility regarding stock status of key health commodities at the health facility level and essential medicines for basic health services on a quarterly basis. Among common essential commodities, FP commodities, Depo (DMPA injectable) and Pills have displayed the average stock out rate of 9% and 11% in the FY 2080/81. Among MNCH and essential commodities, paracetamol has the lowest stock out rate at 4%, whereas Zinc Sulphate shows a stock out of 11%. (figure 19.10).



Source: eLMIS system

Figure 19.10 Average Stock-Out Percentage of some essential medicines (FY 2080/81)

Box 19.2 SWOT Analysis of Health Information Management Program

Strengths	Opportunities
• Provision of public health act and regulations for recording and reporting. • Health policy with statement on information system modernization. • Long experience and expanded network up to the community level. • HMIS roadmap in place. • Revised HMIS tools implemented nationwide. • Provincial, health office level and LLGs staffs oriented/ trained on revised HMIS tools. • Major program indicators can be calculated through the platform • Data management in DHIS2 platform. • PHA guidelines and tools for data use. • Adaptation of ICD11. • Online reporting • Dashboard • Strengthened inter-agency coordination	• Representation of Secretary of Health in National Statistical Council. • Increased digital literacy. • Increased demand for data. • Existence of data management committees. • Federal and provincial M & E mechanism. • EHR and EMR in expansion • Partnership for data at global, regional and country level. • Maintaining regular updating of DHIS2
Weaknesses	**Threats**
• Lack of technical support team for DHIS and server management. • Late dissemination of target population. • Low use of GIS/data visualization. • Inadequate data quality assurance mechanism. • Inadequate guidelines for data management and sharing. • Inadequate skilled staff at federal level. • Lack of IT and Medical Recorder personnel at federal and provincial levels • Problem in defining catchment area and target population for the health facilities	• Incomplete recording and reporting in the Hospitals, especially OPD. • Multiple software without standardization and interoperability. • Inaccurate target population in some places at local levels. • Chain of command and communication is not maintained • Lack of policy framework for managing data in EHR (confidentiality, security, storage). • Inadequate posts of medical recorders in the hospitals • Sustaining the System and Server Management • Lack of Statistical Literacy in the public. • Less resourceful in the Statistical & Technical Infrastructure and Capacity Building.

19.2 Logistic Management Program

19.2.1 About the program

Procurement of health commodities in the public sector is regulated by the Public Procurement Act (2063) and its Regulations (4th revision, 2073). Following the devolution in the fiscal year 2075/76 (2018/19), the oversight of federal-level procurement has been entrusted to the Logistics Management Section (LMS), with a predominant role on acquiring and supply of key health commodities and equipment.

The Consolidation of Annual Procurement Plan (CAPP) has been a standard practice at the DoHS since the year 2071/72 (2014/15). CAPP Monitoring Committee (CAPP-MC), chaired by the DG, DoHS, is a team-oriented approach to monitor the execution of CAPP. In operation since 2017, the committee monitors the progress of procurement, addresses issues, and tackles challenges related to procurement execution. The CAPP-MC meetings, held on various dates, contribute to expediting the procurement processes of DoHS.

Adoption of the Standard Bidding Document (SBD) and Electronic Government Procurement (e-GP) has significantly improved efficiency, transparency, fairness, and competition. The initiation of the Single Stage Two Envelope (1S2E) bidding method in the procurement of goods, following the 12th amendment of the Procurement Procedures Regulation (PPR) in 2078/79 (2022), marks a notable development. The use of SOPs, established in previous years, plays a crucial role in facilitating the procurement process. The integration of e-GP and quality assurance measures for procuring medicinal goods contributes to the overall quality of the procurement output. Additionally, the use of standard technical specifications from the Technical Specifications Bank (TSB) is pivotal in ensuring the quality assurance of medical goods. Directives for the

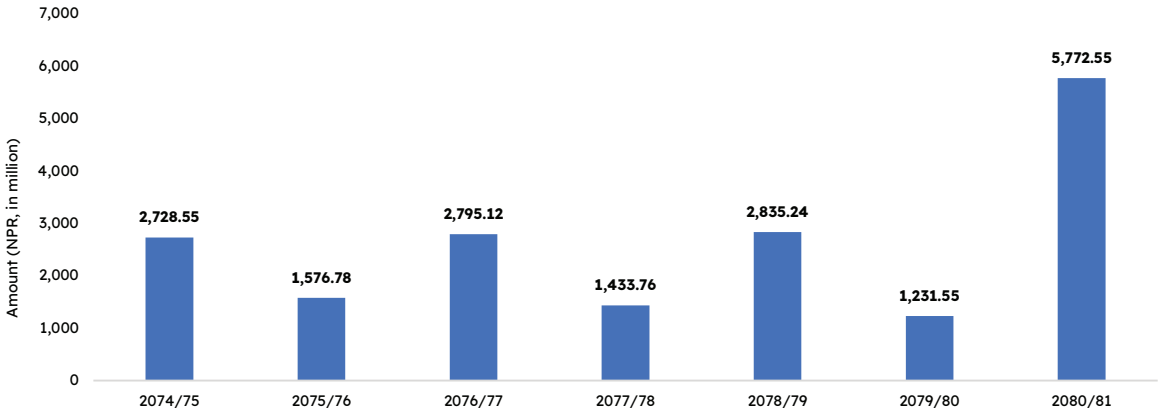
disposal of expired medicines and medical waste guide procuring entities and stores in maintaining quality in logistics management.

Furthermore, the implementation of the new e-GP Operation Guideline in 2079/80 (2023) aligns with the directives of the Public Procurement Monitoring Office (PPMO). Nevertheless, there is an ongoing effort to develop and endorse a separate SBD for the health sector and a framework agreement under the guidance of PPMO.

Similarly, at the federal level, the Supply Chain Management Working Committee (SCM-WG) within the MD convenes periodic meetings to address specific supply chain performance issues, such as storage, reporting, and stock levels. These sessions involve discussions on key performance metrics, leading to the determination of remedial actions for improving SCM. The committee engages in evidence-based conversations covering policy, SOPs, strategies for enhancing supply chain performance, and capacity development of health workers, resulting in plans for remedial actions.

Simultaneously, the implementation of the Procurement Improvement Plan (PIP) 2074/75- 2078/79 (2017-2022) has played a crucial role in strengthening the MoHP's procurement framework, focusing on critical aspects of the procurement process. This initiative evolves into the comprehensive Public Procurement Strategic Framework for the Management of Medicines and Medical Goods (2079/80–2082/83), aiming to establish a coherent structural framework across health institutions. Additionally, in 2079 second edition of the handbook for medicinal goods procurement and supply was publicly available for synchrony. Under the IDA's credit for the COVID-19 Emergency Response and Health Systems Preparedness Project, MoHP is strategically planning health system strengthening and capacity building at hospitals and health facilities in Nepal.

In the initial year of devolution, sub-national levels encountered challenges in procuring certain items, such as nutrition commodities. The surge in the procurement budget for the 2076/77 fiscal year was attributed to the re-centralization of nutrition commodities procurement and the initiation of multi-year procurement for vaccines. The impact of the COVID-19 pandemic was evident in the procurement budget for the fiscal year 2077/78. Drawing from the lessons learned during the pandemic, an additional budget for procurement was allocated for hospital upgrading in 2078/79. However, the budget was reduced to 1231.55 in the FY 2079/80. In FY 2080/81, the procurement budget was increased by more than 4 folds (5,772.55 million) compared to FY 2079/80. (figure 19.11)



Source: CAPP Execution Data, DoHS

Figure 19.11 Procurement Budget of DoHS in FY 2074/75 to FY 2080/81

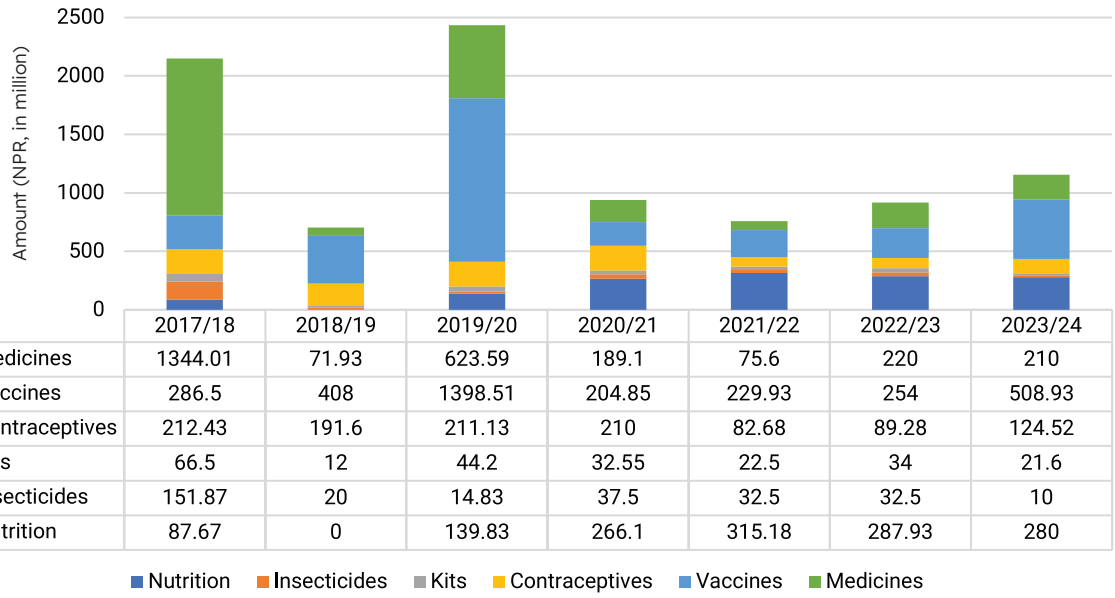
Table 19.3 DoHS Procurement Budget for FY 2074/75 to FY 2080/81

Figures are in NPR Million

Fiscal Year	Procurement Budget (PB)	Goods					Civil Works	Consulting Services	Other Services
		Total Goods	Drugs	Medical Equipment	Vehicle	Other Goods			
2074/75	2,728.55	2,641.80	2,148.98	328.97	81.10	82.75	45.10	9.85	31.80
2075/76	1,576.78	1,473.16	703.53	581.54	25.00	163.09	32.00	10.00	61.62
2076/77	2,795.12	2,745.33	2,432.09	279.61	1.00	32.63	4.09	8.50	37.20
2077/78	1,433.76	1,335.23	940.10	354.55	-	40.58	77.70	5.00	15.83
2078/79	2,835.24	2,778.56	758.39	1,950.15	-	70.02	6.80	31.50	18.38
2079/80	1,231.55	1,194.17	917.71	163.88	-	112.58	3.20	9.30	24.88
2080/81	5,772.55	5,505.43	2,757.23	2,688.86	-	59.34	7.5	17.5	44.2

Source: CAPP Execution Data, DoHS

Apart from changes with devolution of authority, over the years the portion of budget in nutrition commodities is increasing while that procurement of contraceptives is in decreasing trend. (figure 19.12)



	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Medicines	1344.01	71.93	623.59	189.1	75.6	220	210
Vaccines	286.5	408	1398.51	204.85	229.93	254	508.93
Contraceptives	212.43	191.6	211.13	210	82.68	89.28	124.52
Kits	66.5	12	44.2	32.55	22.5	34	21.6
Insecticides	151.87	20	14.83	37.5	32.5	32.5	10
Nutrition	87.67	0	139.83	266.1	315.18	287.93	280

Figure 19.12 Distribution of Drugs Procurement Budget for FY 2074/75 to FY 2080/81

Source: CAPP Budget Analysis of Table 19.3

19.2.2 Major Activities/ Progress in FY 2080/81

- Conduction of the workshop for the preparation of annual procurement plan, forecasting and quantification of health commodities, coordination meeting with the Province health directorate and province health logistics management center for the planning of hospital equipment procurement and strengthening the supply chain management.
- As per the consolidated annual procurement plan; DOHS has done multiyear contract for the vaccine for national immunization program such as BCG vaccine and Td vaccine. For MR vaccine single year contract was done.
- From the support of the IDA budget under the COVID-19 response and preparedness project, several hospital equipment's were procured and distributed. The details of the procured equipment's are presented in table 19.4.

Table 19.4 Details of equipment procured at several hospitals

S.N.	Item	Quantity
1	Hospital Bed (General)	1000
2	Delivery Bed	200
3	Transport Trolley	200
4	BP Set With Stethoscope	2,000
5	ENT Set	25
6	Otoscope	200
7	Delivery Set	200
8	Post-mortem Set	100
9	Foetal Doppler	200
10	Nebulizer	300
11	Suction Machine	150
12	Wheelchair	400
13	Axillary Crutch	500
14	Elbow Crutch	500
15	Walker	500
16	Walking Stick	150
17	Catheters for continuous intermittent catheterization	1,000
18	Urine Bag	1,000
19	ECG Machine 3 lead	150
20	ECG Machine 12 lead	50
21	Hot Air Oven	75
22	Water Bath	75
23	Centrifuge Machine	100
24	Microscope	100
25	Incubator	25
26	Hematology Analyzer (5 part)	20
27	ABG Machine	15
28	Integrated Biochemistry and Immunoassay analyzer 2000 Throughput.	1
29	Integrated Biochemistry and Immunoassay analyzer 1500Throughput	4
30	Fully Automatic Biochemistry Analyzer	20
31	Automatic Urine Analyzer	20
32	Electrolyte Analyzer	50
33	Fully Automatic Electrolyte Analyzer	35
34	POCT Analyzer	100
35	Rotational Thromboelastometry	7
36	C-Arm Machine	10
37	Portable USG	200
38	3D Mammography Machine	5
39	Video Stroboscopy System for ENT	1
40	ENT High End Microdebrider System	2

S.N.	Item	Quantity
41	ENT Microscope	1
42	High End ENT Operating Microscope	1
43	Endoscopic USG	2
44	Colposcope	10
45	Thermocoagulator	400
46	Extracorporeal Membrane Oxygenation Machine	4
47	Anesthesia Workstation with 7 parameter Patient Monitor	20
48	Patient Monitor 5 parameter	80

S.N.	Item	Quantity
49	Defibrillator Biphasic	35
50	CTG	50
51	Electrosurgical Unit	25
52	Intra-cytoplasmic Sperm Injection with microscope	1
53	Laminar Air Flow Bench, Vertical Type	5
54	Digital Heating Block	5
55	Maklar Chamber	5
56	Binocular Microscope (LED)	5
57	Thermoregulated Centrifuge	5

19.2.3 Key progress in FY 2080/81

DoHS achieved 90% procurement against the CAPP of 2080/81 (table 19.5).

Table 19.5 Efficiency of CAPP Execution

Fiscal Year	2078/79		2079/80		2080/81	
(NPR 100 Million)	Value	%	Value	%	Value	%
Total Planned Budget	28.3		12.3		57.72	
Procurement Initiated against Planned Budget	28.3	100	12.3	100	57.70	100
Planned Budget of Contract Signed	24.5	86	11.4	93	52.12	90
Actual Value of Contract Signed	19.3	68	9.5	77	43.74	90.05

Source: Annual Progress Report of CAPP Execution, DoHS

Similarly, continuation of e-GP became an institutionalized standard practice at the DoHS. (table 19.6)

Table 19.6 Use of e-GP in Procurement

Fiscal Year	2021/22		2022/23		2023/24	
Value in NPR Million	Value	%	Value	%	Value	%
Contract Value	1932.97	100	954.37	100	4375.90	100
Use of e-GP	1913.89	99.01	857.28	89.83	4330.7	98.96
Non e-GP	19.08	0.99	97.09	10.17	45.2	1.04

Source: Various Years CAPP Data of DoHS

Procurement and Distribution of Medical Equipment by the Department of Health Services, Management Division (FY 2080/81)

The Department of Health Services (DoHS) Management Division purchased more than 50 types of medical equipment in the fiscal year 2080/81. The required medical devices were distributed to more than 600 hospitals and health institutions across the country. The procurements were based on the individual requirements of hospitals and health institutions to enhance services and expand the provision of healthcare. Through the procurement and strategic distribution of a number of medical equipment, the division has been at the forefront in enhancing and expanding healthcare services in hospitals and health institutions nationwide. They are aligned with the overall goals of the Ministry of Health and Population in terms of expansion of services, implementation of programs, and improved patient care.

Targeted Procurement for Service Expansion: The procured medical equipment was to reinforce and enhance healthcare services within government-endorsed programs. The areas of priority were:

1) Safe Motherhood Program: Distribution of portable ultrasound machines to rural areas to enhance maternal and fetal health care services.

2) Breast Cancer Screening: Acquisition of mammography machines for the early detection and screening of breast cancer, bringing diagnostic services within reach.

3) Cervical Cancer Prevention: Distribution of thermocoagulators to facilitate cervical cancer prevention and treatment.

Strengthening Healthcare Institutions: Most of the equipment procured was supplied in package form to more than 25 new hospitals at the local level. Central, provincial, and local hospitals, along with academic institutions, also received medical equipment to upgrade existing services. Some notable highlights include:

- Upgrade of ENT surgery services at Bir Hospital.
- Revival of mammography services at BP Koirala Institute of Health Sciences, BP Koirala Memorial Cancer Hospital, and Civil Service Hospital after many years of inactivity.
- New establishment of mammography services at Narayani Hospital and Lumbini Provincial Hospital.
- Expansion of surgical services by supplying C-Arm and electrosurgical units.
- Expansion of gastroenterology and hepatology departments by supplying a high-end endoscopic ultrasound system at Bir Hospital and Bharatpur Hospital.

Ensuring Effective Utilization through a Tripartite Agreement: In order to ensure the optimum utilization of the distributed medical equipment, a tripartite agreement among DoHS, the recipient institution, and the equipment supplier was signed. This agreement prioritized:

1) Commitment to Maximum Service Delivery: Ensuring that the equipment is put to maximum use to benefit the smooth flow of clinical service.

2) Proper After-Sales Service and Maintenance: Ensuring that the equipment is kept functional and properly maintained during its life span.

3) Optimum Use of Warranty Periods: Getting the best out of warranty cover in order to reduce long-term maintenance costs.

4) Re-allocation of Underutilized Equipment: In case equipment is not in use for a particular period of time, there are arrangements to get it transferred to institutions where it will be properly utilized.

Through these procurement and distribution program, DoHS has made an effort in developing healthcare infrastructure of Nepal. The Management Division remains committed to fulfilling the evolving needs of health institutions for delivering quality health care services across the country.

The performance of the Management Division during FY 2080/81 has been a significant contribution to the growth and enhancement of healthcare services across Nepal. By matching the specific requirements of hospitals and health institutions, the department has not only improved service delivery but also harmonized its programs with national health priorities. Strategic procurement and distribution of medical equipment, coupled with robust accountability mechanisms, is expected to support a firm foundation for sustainable healthcare development.

Box 19.3 SWOT Analysis of Logistics Management Program

Strengths	Opportunities
• Standard Bidding Document for the procurement makes efficient procurement of medical goods. • TSB can save time in the procurement process. • Ongoing enhancing of warehouses capacity to ensure effective storage and regular supply of medical goods • Guidelines for inventory management, transportation, forecasting, and quantification available • Quality assurance of medicines and equipment is prioritized • Prioritizing training aligned with the PPMO manual, develop a roster of trainers and environment to encourage peer-to-peer learning	• There is several information systems used in the health sector like: AWPB, CAPP, TSB, e-LMIS, PAMS etc. But the linkage between the systems is inadequate. There is a need of a compatible linkage and interoperability between the systems avoiding duplication of work and enhancing efficiency in reporting • Guidelines development/alignment for provincial and local level • Federal and provincial governments work together to create a transparent contract management system • DDA can be on board to facilitate quality assurance of procurement of medicines by province and local levels • The online Biomedical Equipment Management System (BEMS) can be expanded to all seven provinces and include all the hospitals and health facilities in Nepal. • Framework agreement
Weaknesses	**Threats**
• The existing LMIS/e-LMIS is not comprehensive enough to inform the quantification and forecasting of all medicines and equipment. • Inadequate skilled human resource in procurement and supply chain • Inadequate staffing in stores and warehouses	• Poor capacity of bidders and suppliers at sub-national level

19.3 Health Infrastructure Development Program

19.3.1 About the program

Infrastructure Development Section (IDS) oversees the enhancement of health infrastructure by developing guiding documents and maintaining updated records of biomedical equipment and health infrastructure of health institutions. Key functions include supporting national policy development, managing health infrastructure information through HIIS, aiding health facilities in creating infrastructure plans, coordinating with authorities for basic infrastructure management, overseeing hospital code of conduct, supervising health infrastructure, managing medical equipment data, and collaborating with stakeholders for maintenance and mobilization of human resources including biomedical engineer.

19.3.2 Major Activities in FY 2080/81

A total of 19,187 medical equipment surveyed. More than 50% were either procured or donated during COVID-19 pandemic.

- 71% of the equipment is in good working order.
- 6% is in good condition but not in use.
- 9% is out of order.
- 14% is not installed

Box 19.4 SWOT Analysis of Health Infrastructure Development Program

Strengths	Opportunities
• Availability of records of medical equipment (electronic) and health infrastructure present in health facilities supports evidence-based planning of procurement of medical equipment and health infrastructure • On site monitoring of developmental and program management activities enhances the coordination between the inter level of governments • Real time information about the ongoing activities is obtained • Inventory and proper labelling reduce risk of loss of medical equipment	• Real time data used for advocating development of program and infrastructures • Information about quality of health projects concluded under conditional grants can help in further planning • A sticker with barcode can be used in near future
Weaknesses	**Threats**
• Lack of technical human resources in most of the health facilities for providing data increase higher risk of data inaccuracy • Paper work for data collection • Risk of duplication of inventories due to unawareness while relabeling of equipment	• The recommendations provided during monitoring are not implemented • Multiple information management system of inventory • Lack of experts during monitoring visits can provide myopic view on issues to be addressed. • The chances of losing data due to natural disasters. • The current specification of stickers can be outdated due to technological advancement

19.4 Environmental Health and Healthcare Waste Management Program

19.4.1 About the program

Environmental Health and Healthcare Waste Management Section serves as a focal point for development of quality standards for WASH in healthcare facilities and healthcare waste management. It also facilitates building climate resilient health facilities and prepare plans of action to reduce greenhouse gas emission from health facilities. Similarly, this section is also responsible to facilitate carrying out regular surveillance and studies related to impact and drinking water, air and overall environmental on health status and support for environmental pollution control.

It is unlikely to attain SDGs 3 and 6 without proper WASH facilities as well as effective healthcare waste management in healthcare facilities. Joint Monitoring Programme (JMP) report estimates essential WASH services in healthcare, including water, sanitation, hygiene, waste management, and environmental cleaning, aligning with the targets set by SDG 6.1, 6.2, and 3.8. The JMP 2019 report indicates inadequate WASH services in Nepalese healthcare facilities with nearly 2 million individuals using health facilities without access to water and sanitation. Merely 389,000 people have access to healthcare facilities with basic waste management. While water sources and functional toilets have improved in most facilities, universal access to

hygiene amenities is lacking. Additionally, Nepal generates 0.99 to 1.73 kg of healthcare waste per bed daily, with 0.33 to 0.59 kg being hazardous. COVID-19 hub hospitals produce an average of 1.1 kg waste per active bed.

MoHP aims to improve healthcare waste management through revised National HCWM Standards and Operating Procedures (2020). Nepal has also approved National Standard on WASH in healthcare facilities as an effort to improve WASH services aligning with the Public Health Service Act 2075 (2018). The NHS-SP also highlights the importance of HCWM and WASH while providing quality health services. National Health Care Waste Management Standards and Operating Procedure 2020 is the guiding document for the safe management of health care waste in health facilities which also includes proper way of collection, transportation and the disposal of waste in health facilities. (Box 19.5) National Standard on Water, Sanitation and Hygiene for Health Service providers-2078 sets out the standards for WASH services for different level of health facilities. (table 19.7)

Box 19.5 Key areas of National HCWM Standards and Operating Procedure, 2020

- Definition, sources and categorization of Health care waste
- Environmental and public health impacts of health care waste
- Health care waste management planning and role of different level of Governments
- Legal framework, commitments and principles
- Different steps of health care waste management system including waste minimization, treatment and management of hazardous health care waste
- Health and safety practices, training and raising awareness

Table 19.7 Standard of WASH in Healthcare Facilities

		Types of Health Facilities				
Area	Required standard	Category-1	Category-2	Category-3	Expanded Service	Mobile camps
Drinking Water	Basic				√	√
	Adv. Level 1			√		
	Adv. Level 2	√	√			
Sanitation	Basic			√	√	√
	Adv. Level 1		√			
	Adv. Level 2	√				
Hygiene	Basic				√	√
	Adv. Level 1			√		
	Adv. Level 2	√	√			

Note: The classification of health facilities is provided in Schedule 3

This table categorizes health facilities based on the **National Standards on Water, Sanitation, and Hygiene for Healthcare Facilities 2021.** The table classifies facilities into five types:

1. Category-1 Health Facilities
2. Category-2 Health Facilities
3. Category-3 Health Facilities
4. Expanded Service Facilities
5. Mobile Camps

Each type of facility is assessed against three key WASH components (Drinking Water, Sanitation, and Hygiene) at different levels of service: Basic, Advanced Level 1, and Advanced Level 2.

1. Drinking Water Standards in Health Facilities

- **Basic Level:** Required in expanded service facilities and mobile camps, ensuring that water is available from an improved source on the premises.
- **Advanced Level 1:** Applied in Category-3 facilities, ensuring water distribution for drinking, handwashing, and medical purposes. All standards mentioned in the National Drinking Water Quality Standards must be met.
- **Advanced Level 2:** Required in Category-1 and Category-2 health facilities, ensuring water distribution for special situations (e.g., hemodialysis, intensive care unit, newborn intensive care unit, neurology-related, heart-related procedures, operations, and plastic surgery). Drinking Water Quality Guidelines must align with World Health Organization (WHO) standards and the specific needs of each medical device.

2. Sanitation Standards in Health Facilities

- **Basic Level:** Applied in Category-3 health facilities, expanded service facilities, and mobile camps, ensuring that improved sanitation facilities are usable, with dedicated staff toilets, sex-separated toilets with menstrual hygiene facilities, and accessible toilets for people with limited mobility.

- **Advanced Level 1:** Implemented in Category-2 facilities, ensuring sanitation facilities are designed according to different locations/settings for all people as specified in Schedule 11.
- **Advanced Level 2:** Required in Category-1 facilities, ensuring sanitation facilities meet location-based and service-user requirements as specified in Schedule 11.

3. Hygiene Standards in Health Facilities

- **Basic Level:** Required in expanded service facilities and mobile camps, ensuring that a handwashing basin with soap and water or alcohol-based hand sanitizer is available at service points and in toilets.
- **Advanced Level 1:** Applied in Category-3 facilities, with hygiene standards specified based on different dimensions and sub-dimensions in Schedule 12.
- **Advanced Level 2:** Required in Category-1 and Category-2 facilities, ensuring compliance with the standards specified in Schedule 12.

This table serves as a guideline for ensuring that different types of health facilities meet appropriate WASH standards to promote safe and effective healthcare services.

19.4.2 Major Activities in FY 2080/81

- Conducted onsite coaching sessions at 10 different hospitals based on the National Healthcare Waste Management Standard and Operating Procedure 2020 and the National Standard for WASH in Healthcare Facilities.
- Conducted interaction and orientation workshops in three major cities of Nepal-Nepalgunj, Pokhara, and Chitwan-targeting private healthcare facilities and other stakeholders to support the implementation of HCWM standards SOPs, and national WASH standards in HCFs.
- Conducted interaction programs in three hospitals to facilitate a study on liquid healthcare waste, with the aim of developing a national framework and ultimately formulating the National Guideline for the Management of Liquid Healthcare Waste.
- Conducted a WASH FIT capacity development program for healthcare workers from Karnali and Lumbini Provinces.
- Carried out monitoring visits to Dhaulagiri and Gaur hospitals to assess activities related to climate-resilient healthcare facilities.
- Activities Conducted with Support from ADB and Water Asia International Pvt. Ltd., Nepal:
  - One-day orientation program (10 batches) for healthcare workers and support staff on Healthcare Waste Management in 10 major cities: Kathmandu, Dhangadhi, Lalitpur, Janakpur, Birgunj, Biratnagar, Damak, Butwal, Bhairahawa, and Bhaktapur/Lalitpur.
  - Two-day training sessions on the operation and maintenance of healthcare waste treatment technologies (autoclaves and microwaves).
  - Development of a Healthcare Waste Management Facilitation Booklet, summarizing key content from the National Healthcare Waste Management Standard and Operating Procedures 2020.
  - Production of a Public Service Announcement (PSA) video on healthcare waste management, aimed at raising awareness and promoting proper segregation of healthcare waste among the general public.
  - Development of a Healthcare Waste Management Demonstration Documentary Video, designed for educational purposes, outlining the key steps involved in effective HCWM.
- Conducted Interaction and orientation workshop in three major cities of Nepal namely Nepalgunj, Pokhara, and Chitwan targeting private healthcare facilities and other stakeholders for implementing HCWM standards and SOP and national standards for WASH in HCF
- An interaction program has been conducted in 3 hospitals in order to carry out the study pertaining to liquid healthcare waste with the aim of formulating the framework and finally to prepare the national guideline for the management of liquid healthcare waste.
- Conducted one batch WASH FIT capacity development program targeting healthcare workers from Karnali and Lumbini Province.
- Conducted monitoring visits to Dhaulagiri and Gaur hospitals to observe the activities related climate resilience healthcare facilities.
- With the support ADB and Water Asia International Pvt. Ltd. Nepal conducted following activities as;
  - One day orientation in 10 batches targeting healthcare workers and support staffs on Healthcare Waste Management in ten major cities (Kathmandu, Dhangadhi, Lalitpur, Janakpur, Birgunj, Biratnagar, Damak, Butwal, Bhairahawa, Bhaktapur/Lalitpur).
  - Two days orientation on operation and maintenance of healthcare waste treatment technologies (autoclaves and microwave)
  - Prepared healthcare waste management facilitation booklet by summarizing the content of National Healthcare Waste Management Standard and Operating Procedures 2020.
  - Prepared short PSA video on healthcare waste management targeting the general public with the aim of improving the proper segregation of healthcare waste.
  - Prepared Healthcare Waste Management (HCWM) Demonstration Documentary Video, which has been prepared for learning purposes, outlining the key steps of HCWM.

Progress of WASH in Healthcare Facilities According to the 2024 JMP Report.

In 2024 (FY 2080/81), the Joint Monitoring Programme (JMP) of WHO and UNICEF published global report on Water and Sanitation Status of Nepal. The report published data on water, sanitation, hand hygiene, healthcare waste management and environmental cleaning sector in line with sustainable development

goal indicators. The full report is available at Water, sanitation, hygiene, environmental cleaning and waste management in health care facilities: 2023 data update and special focus on primary health care | JMP and data for regions and country can be found in the link Downloads index | JMP.

In comparison to the previous years' report, Nepal's progress in 2024 is good where there are less data gaps in all service levels. Nepal is amongst the 29 countries in the world who have estimates for all five basic WASH indicators. Nepal is the country where hand hygiene facilities at point of entry and waste segregation is highest (99%). To be specific, Nepal is one of the 73 countries with basic water supply (water available from improved sources, e.g. tube-well, pipe and protected well/spring in premise) coverage of 83%, 52 countries with basic sanitation (improved toilet that is usable, dedicated to staff, male/female and person with disability) coverage of 21%, 48 countries with basic hand hygiene (water and soap or alcohol based hand rub available) available service of 70%, 67 countries with basic healthcare waste management (safely segregated into bins, sharp and infectious waste treated and disposed safely) service of 13% and 40 countries with environmental cleaning (cleaning protocol available and all staff with cleaning responsibility trained) service of 4%. The access to environmental cleaning is least (84%) where persons responsible for cleaning have not received training and lacks cleaning protocol followed by 12% in healthcare waste management, 7% in hand hygiene and 5% in sanitation (figure 19.13).

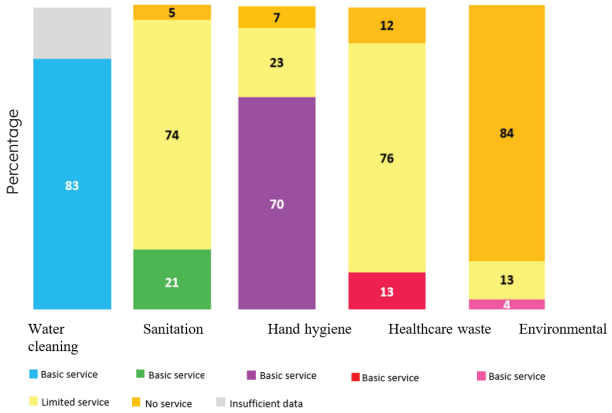


Figure 19.13 WASH Facilities in HF

Access to basic water supply is relatively better in urban (84%) than rural (82%), better in hospital and non-government (98%) than non-hospital (78%). Access to basic sanitation is better in urban (20%) than rural (13%), much better in hospital (45%) than non-hospital (13%). The situation of basic hand hygiene is relatively better off in Nepal- highest in non-government setting (88%) and lowest (64%) in non-hospital setting. The situation of basic waste management service is poor in general- higher in urban (16%) than rural (4%), and highest in non-govt (58%) and lowest in non-govt (8%). The situation of environmental cleaning is poorest in Nepal in general with higher coverage in urban (5%) than rural (2%) setting, and better off in non-government (11%) than hospital/non-hospital (2%). Almost three quarter of healthcare facilities have limited sanitation (absence of disability friendly toilet) and healthcare waste management services (lack of waste treatment and disposal) which is the challenge to meet the sustainable development goal (SDG) target of 2030.

Nepal's effort to improve WASH service in healthcare facilities are highly encouraged by global team. Nepal delegates have participated in many international forum and shared our experiences which have been highly appraised. Nepal's case study has also been published in global report 2024 showing commitment of HCF staff improving WASH services. The details can be accessible at https://www.washinhcf.org/wp-content/uploads/2024/12/Global-status-of-WASH-FIT-2024_final-web.pdf.

Box 19.6 Key Findings of GHG Emission Study 2079/80

This study estimates Nepal's health sector GHG emissions at 0.002% of global GHG emissions (1,164,719 tCO2e), constituting 4.1% of Nepal's GHG emissions and 0.05% of global health sector emissions. (table 19.8, table 19.9)

Table 19.8 Type of Emissions covered in GHG emission study 2079/80 (2023)

Scope 1	Scope 2	Scope 3
Stationary/mobile combustion, fugitive emissions (cooling/fire suppression, medicinal/ anesthetic gases), and waste (solid waste disposal, composting, incineration of non-hazardous/ general healthcare waste, clinical mix, hazardous waste).	Purchased electricity and steam/ heat/ cooling.	Indirect emissions involve business trips, employee computing, patient commuting, inhalers (MDI, DPI), extra supply chain, electricity transmission/ distribution losses, and waste (solid waste disposal, composting, incineration, mirroring direct emissions).

Table 19.9 Key Findings from baseline assessment of GHG emission of Nepal's health sector operations 2079/80 (2023)

Scope 1 Direct Emissions	474,846.91	40.77%
1.1 Stationary Combustion	104,151.89	8.94%
1.2 Mobile combustion	39,788.49	3.42%
1.3 Fugitive Emissions and Cooling & fire suppression	326,048.02	27.99%
1.4 Medicinal/Anesthetic gases	4,858.51	0.42%
Scope 2 (Emissions from purchased electricity)	11,555.40	0.99%
2.1 Purchased electricity	11,555.40	0.99%
Scope 3 (Indirect emissions)	678,316.57	58.24%
3.1 Extra Supply Chain	587,102.03	50.41%

Additionally, analysis of Nepal health facility survey 2021 was carried out to monitor the progress toward SDG 2030 with technical collaboration of UNICEF. (See Key Findings in Box 19.7)

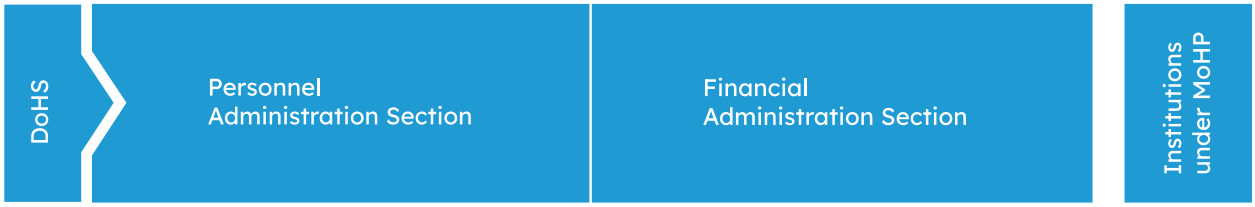
Box 19.7 Key Findings of NFHS 2012 Further Analysis

Over 80% of healthcare facilities in Nepal have access to basic improved water supply (figure 19.13) with highest percentage in Gandaki province and the lowest in Madhesh province. Similarly, more than 60% of health facilities offer basic hygiene facilities, with Bagmati and Gandaki provinces having the highest percentages and Madhesh province the lowest. However, basic hygiene, healthcare waste management, and environmental cleaning facilities are grossly inadequate both at national and at sub-national levels emphasizing the urgent need for improvement (See Annex table 19.1 for details).

Box 19.8 SWOT Analysis of Environmental Health and Waste Management Program

Strengths	Opportunities
• Dedicated section after restructuring of DoHS • Diagnostic assessment of almost all hospitals up to district level completed • Equipment available at most of the hospitals for health care waste management • Standard and SOP are available for healthcare waste management and WASH in healthcare facilities	• Engagement of Department of Water Supply and Sewage Management in terms of preparing NWASH which also includes WASH service data of healthcare facilities • Chances to tap the climate financing resources • Supports available from partners during COVID 19
Weaknesses	**Threats**
• Inadequate trained/dedicated human resource for environmental health and WAS H services at different levels of healthcare facilities • Gap in infrastructure in terms of WASH in healthcare facilities • Problem in co-ordination specifically between municipality and health facilities for ultimate disposal of healthcare waste • No national system for collection and reporting of WASH services data in healthcare facilities	• Uncertain sustained efforts from both government and non-government sector • Increasing number of health facility with increasing complex waste to manage • LLGs do not have the capacity to monitor the implementation of standards and SOPs related to WASH in healthcare facilities yet

20 Human Resource in Health and Health Finance Management



20.1 Human Resource in Health (HRH) Administration and Management

20.1.1 Overview of HRH administration and management

Human resource in health (HRH) is an essential component of health system building block. WHO defines HRH as all people engaged in actions whose primary intent is to enhance health. The umbrella of HRH includes both technical and non-technical human resources required for operation from grassroots to policy making. Indeed, Health service providers constitute about two thirds of the HRH and remaining third is composed of health management and support workers.[1] WHO 2006 report acknowledged the need of accelerating the progress and sustain achievements in health sector and called for a launch of Global Health Workforce Alliance. Furthermore, HRH agenda in health system need to be at the centre of political and policy agenda for country to address the HRH crisis.[2] HRH administration and management involves the spectrum of planning, deployment, capacity building and continuous professional development, promotion, transfer and training of employees. The proper placement and use of human resources is crucial for effective quality health care delivery. As per the health service providers registered in the respective health professional councils in Nepal, there are 9.04 doctors, 21.08 nurse, 20.67 AHWs, 11.81 ANMs, 10.27 laboratory personnel and 5.97 Health Assistants per 10,000 populations.[3] However, these are only registered numbers and do not capture the picture on availability and enrollment in the health system of Nepal- private/ public.

Key guiding documents

In Nepal, one of the important milestone for management of HRH is promulgation of Nepal *Health Service Act 2053 (1997)*, which included provision, among many of its provision, of need of remote area for at least two years for promotion and that such health workers are prioritized in nomination for scholarship and training opportunities. And to ensure the remoteness be well defined, the act in its schedule enlisted the then districts in five categories. Additionally remote allowances were introduced as financial incentives for health workers in remote posting.[4] This started the government initiatives dedicated to redistribution of the HRH in the remote areas which was further strengthened at the level of implementation with the Health Service Rules 2055 (1999).[5] The act and rules through its series of amendments remain functional till date to manage HRH in health system. In all major policy, strategy and guiding documents, HRH has been pronounced as an important component and the realization of needful retention of the young medical education graduates in the country led the decision of GoN to instill a two-years bond service program to the medical education students from reservation quotas/scholarship for undergraduate studies in 2060/61 (2004). The bond was further expanded to all level of courses taken in the medical education and is guided by Medical Education Policy 2080 (2023)[6], this is further attached with the provision of the certificate from Nepal Medical Council (NMC).

In due course of time, MoHP has been putting its efforts to address the HRH planning, projection and management through its broader sector strategic plans as well as strategies dedicated for HRH- Nepal Strategic Plan for Human Resources for Health 2059/60-2073/74 (2003–2017), Human Resources for Health Strategic Plan 2067/68- 2071/72 (2011–2015) and Nepal Strategic Plan for Human Resources for Health 2077/78-2086/87 (2021–2030). In addition to these strategies, MoHP has put on its efforts to need of dedicated HRH for functionality of the health facilities also through MSS tools elaborating on the functional organogram based on services envisioned to be provided through the respective health facilities.

1 World Health Organization. The World Health Report 2006. Working together for health. Geneva: World Health Organization; 2006.

2 Fronteira, I., Buchan, J., Poz, M.R.D. et al. 2022. Leadership in HRH: remembering the future? Human Resource Health 20, 38 (2022). https://doi.org/10.1186/s12960-022-00738-9

3 Ministry of Health and Population. 2021. Nepal Strategic Plan for Human Resources for Health 2077/78- 2086/87 (2021–2030). Government of Nepal.

4 Nepal Law Commission. 1997. Nepal Health Service Act, 2053 (1997) and its amendments. Government of Nepal.

5 Nepal Law Commission. 1997. Nepal Health Service Rules, 2055 (1999) and its amendments. Government of Nepal.

6 Medical Education Commission. 2023. Medical Education Policy 2080 (2023). Government of Nepal.

20.1.2 Major Activities in FY 2080/81 in DoHS network

HRH administration and management is an important function carried out by DoHS Personnel Administration Section (PAS). The major responsibilities and objective of the PAS involve, but not limited to:

- Provide routine and programmatic administrative functions of handling day-to-day administrative requirements of the offices and programs including management and updating of personnel information of all levels and institutions under DoHS
- Support and conduct organization and management (O&M) survey focused to review existing structure against the scope of work and propose an organizational structure that best fits for the attainment that scope of work/objectives of the organization
- Manage the posting and transfer of medical officers and other health workers who completed their studies under scholarships through Medical Education Commission (MEC).
- Deployment, transfers, promotions, recommendations and retention of the HRH within jurisdiction of DoHS
    - DoHS can deploy, level upgrade and transfer up to 7th level of HRH under MoHP
    - DoHS can recommend to MoHP for approval of special leave and education leave requested by health workers under its jurisdiction
- Support in legal affairs to DoHS
    - Provide legal opinion and advice on the questions of legal dilemma.
    - Prepare reply to defence on the cases filed against the DoHS
    - Provide assistance and opinion on legal documents as well as on the procedure & guidelines to be prepared.

Routine activities

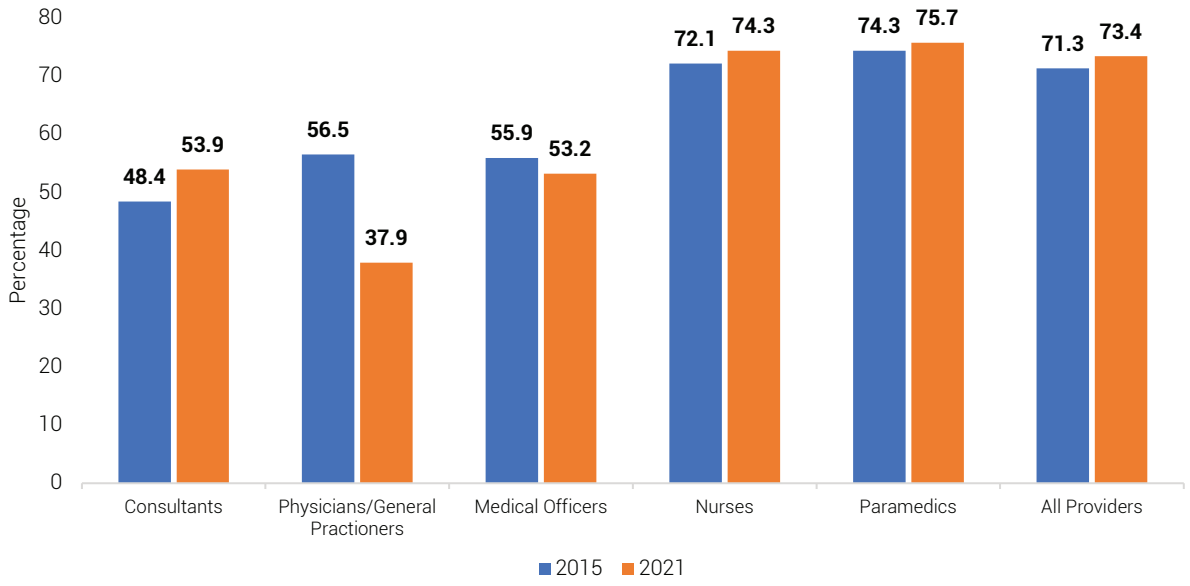
- Maintain the professional discipline of its employees
- Approval of leaves including issuing letter of recommendations to MoHP for the approval of special and education requested by employees up to the 7th level
- Manage internal promotion up to 7th level. This is done twice annually based on batches of entry and fulfilment of the criteria for internal promotion including the review of the performance of the employee (Karya Sampadan Mulyankan (Ka. Sa.Mu.))
- Manage transfers of the health workforce under jurisdiction of DoHS
- Manage the retirement of staff including the mandatory retirement based on age limit as per government guideline
- Approval of resignations of staffs under the jurisdiction of DoHS
    - Below 7th level,
    - 7th and above is done through MoHP.

Furthermore, each entity under MoHP/DoHS are liable for the capacity building, regular supervision and monitoring, mentoring and coaching of HRH under their jurisdiction to ensure quality of care the point of service delivery.

20.1.3 Status of HRH Administration and Management

Status of fulfillment of sanction post

There were 73.4% fulfilled posts against the sanctioned posts within the MoHP. There were consistent gaps in the fulfilment across all cadres with marked decline in the fulfilment in the positions of the physicians/ general practitioners (figure 20.1) (See Annex table 20.1 for the status of fulfilment of sanction post in DoHS network). It is worrisome that there are no consultants or physicians and no general practitioners in Karnali Province (table 20.1).



Source: NHFS 2015 and NHFS 2021

Figure 20.1 MoHP sanctioned posts filled with cadre of HRH

Table 20.1 Sanctioned posts filled across provinces and heath facility type

Background characteristics	Consultants	Physicians/general practitioners	Medical officers	Nurses	Paramedics *	All providers**
Facility type						
Federal/provincial-level hospitals	53.9	42.3	58.5	78.2	73.4	68.8
Local-level hospitals	-	22.7	30.7	59.8	81.8	69.7
PHCCs	-	-	44.4	52.6	81.9	74.7
BHS centres	-	-	0	0	75.2	75.1
HPs	-	-	0	0	76.8	76.7
Urban Health Centres	-	-	-	-	18.7	18.7
CHUs	-	-	-	-	7.8	7.8
Province						
Koshi	23.4	50	33.3	73.3	67.5	65.2
Madhesh	34	44.4	65.9	62.3	85.2	82.7
Bagmati	77.2	50	71.8	88.6	83.5	82.6
Gandaki	52.1	37.5	36.6	57	59.2	57.2
Lumbini	48.8	33.3	32.4	53.2	73.6	68.8
Karnali	0	0	23.8	58.6	71.8	69.7
Sudurpaschim	16.7	12.5	32.8	69.9	68.8	65.5
Total	53.9	37.9	53.2	74.3	75.7	73.4

Source: NHFS 2021

*Includes health assistant, auxiliary health worker, senior auxiliary health worker, public health inspector, public health officer, auxiliary nurse midwife, laboratory technologist, laboratory officer, laboratory technician, laboratory assistant, radiographer, and dark room assistant

** Includes consultants, physicians/general practitioners, medical officers, nurses, and paramedics

These gaps in the fulfilment are majorly due to lack of timely call for vacancies from the public service commission (PSC) to fulfill the vacant positions, relying on the contract based staffs, decreased retention of the HRH and increasing emigration of the HRH to global spheres. MoHP/DoHS is serious to address this issue and is putting its continuous efforts to ensure timely call for vacancies and regular O & M based upgrading of the organizational structure and its approval.

Box 20.1 SWOT Analysis of HRH administration and management

Strengths	Opportunities
• Human resource placement in rural and remote facilities guided by legal framework • Placement of scholarship doctors and other health workers in remote	• Electronic personnel database for real time status of the HRH gaps
Weaknesses	**Threats**
• Weak coordination between MoHP, department and districts for personnel management • Weak management of staff on long leave • Lack of functional database of DoHS personnel • Remedial for vacant positon through temporary/ contract staffs	• Insufficient information for strategic placement and transfers, evident to be more political • Delayed approvals even for the evidence-based positions under MoHP by Ministry of Finance (MoF) • Very low basic scale of payment of the health service providers

20.2 Health Finance Management

20.2.1 Overview of health finance management

Heath financing is an important building block and an essential strategic component to ensure UHC and achievement of SDGs. Evidence suggests that countries should strive to spend 5% of their gross domestic product (GDP) and low and middle income countries to spend USD 86 per capita to promote access to primary care services.[7] Despite the fact that the return of investment in health comes back in many folds as that of the investment, political willingness and commitment have been observed to be crucial in terms of the allocation of the sufficient funds for health financing. Sources of health financing at federal level include domestic revenues, internal borrowing and foreign aid. Health development partners support directly through earmarked funding or indirectly through non-government organizations. The details on the support of the major health development partners is elaborated in Chapter 25 of this report.

At present, Nepal has adopted a mixed health care financing system with free BHS, health insurance, targeted social health protection programs and out-of-pocket expenditure for services not covered through the safety nets in both public and private spheres. A total of 54.2% of the health spending is reported to be from out-of-pocket expenditure.[8]

Key guiding documents

In addition to the regular finance management documents and guidelines, GoN has approved a dedicated strategy for health financing - NHFS 2080-2090 (2023/24-2033/34) guiding the health sector investments in two major areas ensuring equitable access to quality health services and reducing financial hardship of the population and managing financial resources for health and their effective financial management. The five major strategies adopted are:

- Expansion of fiscal space for health
- Strengthening health financing governance
- Ensure social health protection by risk pooling and procurement of the services through health insurance for quality service delivery
- Manage resources for each unit of basic health services based on population, geography and burden of disease
- Manage financial resources for strengthening emergency health service system.

20.2.2 Major activities in FY 2080/81 in DoHS

In DoHS, the financial administration section and its division work in coordination to fulfil the aspects of health financing. An effective financial support system is imperative for efficient health service management. the preparation of annual budgets, the timely disbursement of funds, accounting, reporting, and auditing are the main financial management functions needed to support the implementation of health programs. Financial Administration Section (FAS) is the focal point for financial management for all DoHS programs. The major responsibilities and objective of the FAS involve, but not limited to:

- Support all programs, divisions and centers for preparing annual budgets
- Obtain and disburse programme budgets
- Keep books of accounts and collect financial reports from all related health institutions
- Prepare and submit financial reports
- Facilitate internal and external auditing
- Provide financial consultations
- Clear and response the audit findings

Target - To achieve 100 percent expenditure of all budgets in accordance with programme works plans within a specified time as per financial rules and regulations of the government and to maintain the recording, accounting and reporting system accurately and on time.

Furthermore, in between different tiers of the government, there is flow of funds from federal to provincial level to LLGs in health in forms of revenue sharing, internal resources, internal borrowing and conditional grants.

20.2.3 Achievements in the fiscal year 2080/81

Absorption of budget in DoHS Network

In FY 2080/81, out of total national budget, NRS. 12,389,026.50 was allocated for the execution of programs under the DoHS Network (table 20.2). The total absorption rate was 81.62%. The share of the budget in DoHS network was highest for the Family Welfare Division programs (28.44%) with 86% absorption rate and 80% physical progress. Remarkably, the absorption rate for NPHL was 93.12% with 100% physical progress (table 20.2)

7 NHRC. 2022. Towards Universal Health Coverage: Addressing Financial Hardship and Improving Access to Healthcare in Nepal (Policy brief). Kathmandu. Nepal Health Research Council.

8 MoHP (2023). Nepal National Health Accounts 2018/19 – 2019/20, Ministry of Health and Population, Government of Nepal, Kathmandu, Nepal

Table 20.2 Health Budget in DoHS Network in FY 2080/81

Code	Institution	Budget allocated (NPR In'000)	Proportion of allocated budget	Expenses (NPR In'000)	Absorption Rate (%)	Physical Progress (%)
37001011	Department of Health Services	257,564	2.24	203,133	78.87	99.95
37001103	Family Welfare Division	3,522,900	28.44	3,011,522	86	80
37001105	Epidemiology and Disease Control Division	298,200	2.41	140,088	48.97	75.44
37001115	Nursing and Social Security Division	2,570,500	20.75	2,524,609	98.21	83.47
37001107	Management Division	223,400	1.8	67,036	30.01	56.54
37001112	Curative Service Division	29,800	0.24	13,418.7	45.03	80.48
37001101	National TB Control Centre	1,133,900	9.15	903,296	79.2	96.1
37001109	National Health Education Information and Communication Centre	138,062.5	1.11	98,238	71.16	78.05
37001102	National AIDS and STDs Centre	521,800	4.21	420,714	80.63	86.08
37001110	National Health Training Centre	64,300	0.52	50,700	78.84	90.38
37001111	National Public Health Laboratory	212,700	1.72	198,058	93.12	100
37001118	COVID 19 Prevention and Control	3,395,900	27.41	2,480,700	73.05	84.21
Total		12,389,026.50	100	10,111,512.70	81.62	

Source: Finance Administration Section, DoHS

Status of clearance of irregularity in DoHS network

In 2080/81 the irregularity amount could not be cleared because of legal issues (table 20.3).

Table 20.3 Irregularity clearance status of last three years FY 2078/79-2080/81 (NPR In'000)

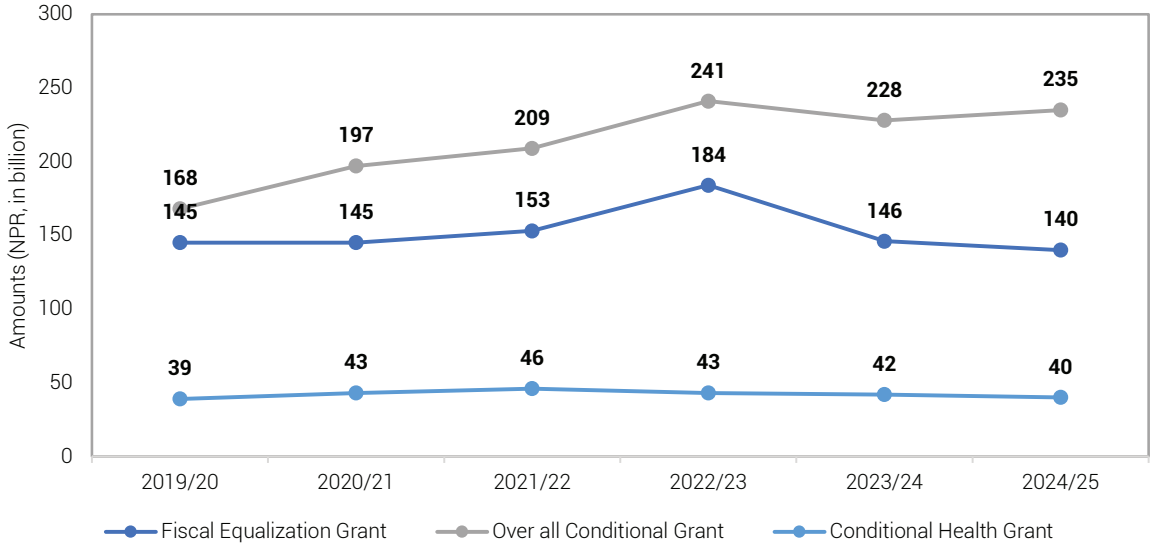
Fiscal year	Total Irregularity amount	Irregularity clearance	clearance %
2078/79	5484.2	2217.7	32.0
2079/80	5332.4	2172.2	
2080/81	NA	NA	NA

Source: Finance Administration Section, DoHS

*submitted to Office of the Auditor General to clear the irregularity

Status of inter-governmental fiscal transfer

The overall conditional grant increased from 228 billion to 235 billion rupees in current fiscal year. The fiscal equalization decreased to 140 billion also conditional grant decreased to 40 billion. (figure 20.2 In 2080/81, the share of the conditional heath grant was 65% of the budget for health of LLGs. (figure 20.3)



Source: Finance Administration Section, DoHS

Figure 20.2 Trend of inter-governmental fiscal transfer for health sector from Federal FY 2076/77 - 2080/81 (2019/20-2024/25)

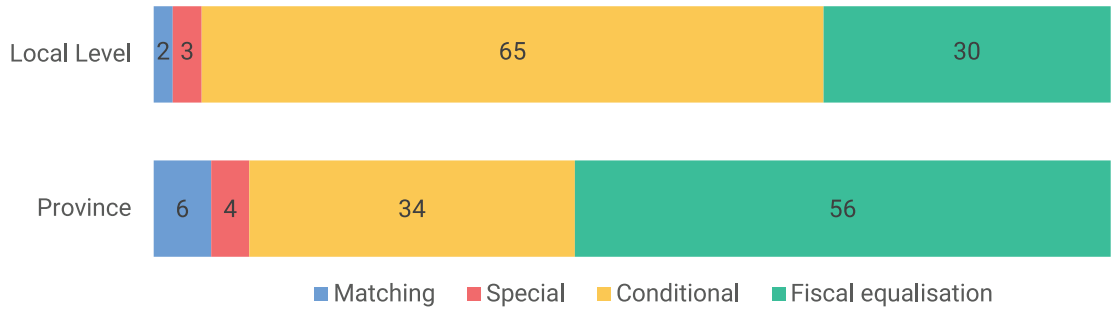
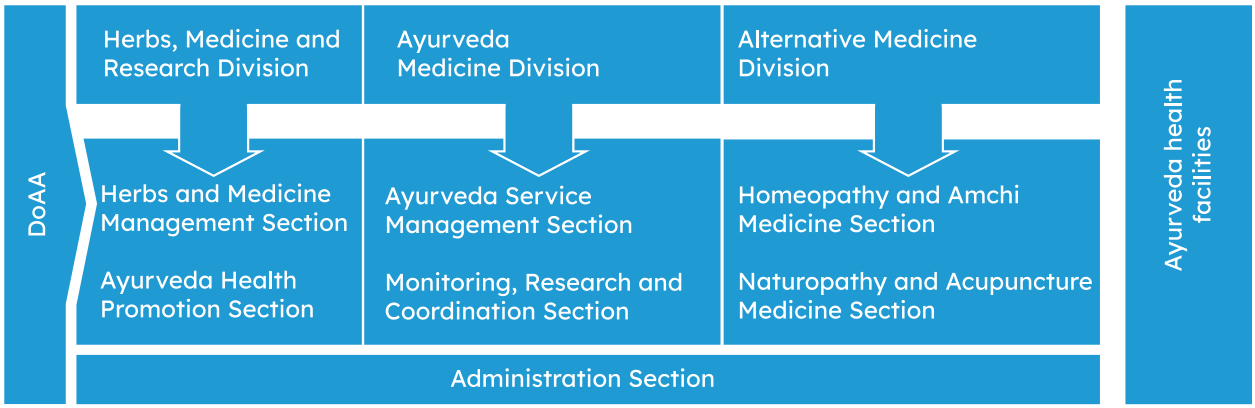


Figure 20.3 Composition of inter-governmental fiscal transfer for province and LLGs for FY 2080/81

Box 20.2 SWOT Analysis of Financial Management

Strengths	Opportunities
• Legal, operational guidelines and robust government software TSA, CGAS, EGP etc for health financing and its management	• Restructuring organizational structure as per demand, demographic and epidemiological transitions • Mobilizing earmarked taxes to increase fiscal space for health • SDG priorities, governments commitments • Robust system and competent human resources
Weaknesses	**Threats**
• Mismatch in the allocation of health budget to the LGs in the certain levels • No legally tangible interlinkage between federal, provincial and local levels in human resources and fiscal data • Follow ups needed to get data related to development partner funded programs • Not able to track out duplicate program done by different levels	• Non-release of committed HDPs budgets in time. • To retain trained human resources • Global politics may affect health financing

21 Department of Ayurveda and Alternative Medicine (DoAA)



21.1 Department of Ayurveda and Alternative Medicine (DoAA)

Ayurveda, an ancient medical system indigenous to Nepal, is deeply ingrained in the country's customs and culture. A significant portion of the population relies on traditional practices for primary healthcare due to factors such as accessibility, affordability, and cultural alignment. With over 400,000 traditional medicinal practitioners practicing various modalities, including ritualistic and spiritual practices, diet, and self-healing, including medicinal herbs, minerals, and animal products. Ayurveda plays a pivotal role in the healthcare system with its interventions ranging from promotive, preventive, curative and rehabilitative services.

The DoAA is the apex body of Ayurveda and Alternative Medicine under Ministry of Health and Population (MoHP) and is responsible for planning, programming, coordination, supervision, monitoring, and evaluation of Ayurveda and Alternative Medicine service programs. DoAA is predominantly liable for providing Ayurveda and alternative medicine amenities to the population. It is working to make available in an effective manner the quality Ayurveda health services, ensuring easy access within the reach of all citizens of basic health services at free of cost. It plans to produce, acquire, develop, and utilize necessary human resources to make Ayurveda and Alternative Medicine services affordable and effective. Its major task is to develop the Ayurveda medicine system through the systematic management and utilization of available herbs in the country as well as safeguarding and systematic development of other existing Alternative/complementary/Traditional medicine systems. It plans to promote public health by giving high priority to life style modification to reduce communicable and non-communicable diseases through Yoga, Meditation, Ayurveda, usage of quality herbs and other alternative medical practice. It conducts awareness on public health related Ayurveda practices.

The value of Ayurvedic services in basic healthcare and Non-communicable Disease (NCD) prevention is acknowledged by both national and international policies. The Constitution of Nepal specifically calls for the protection and promotion of traditional Ayurveda medicines, along with naturopathy and homeopathy. It plans to increase the investment in the Ayurveda and Alternative medicine sector by state to ensure quality and accessible health services. DoAA has developed Ayurveda Health Management Information System (AHMIS).

In line with the federal structure, there is a need to restructure the Ayurveda system, as outlined in the National Health Policy 2076 (2019) and its strategy 6.7.1. The sixteenth plan (2081/82 – 2085/86), transformative strategy no. 5 aims to develop quality, reliable and integrated health system. Particularly, it envisions to develop and expand modern, ayurvedic, natural and other traditional health service system and deliver them through an integrated health system.

Key areas of focus on planned development and expansion of Ayurveda, Naturopathy, Homeopathy, and other alternative medicines include:

- **Structural development:** This involves creating a framework suitable for the identification, prevention, collection, and promotion of locally available medicinal herbs, minerals, and animal-origin medicines.
- **Management and regulation:** The plan emphasizes the need for managing and regulating other alternative medicines based on standards and norms.
- **Establishment of centers:** This includes the establishment of Ayurveda, Yoga, and Naturopathy Centers, with a particular emphasis on utilizing Ayurveda, Yoga and Naturopathy systems of medicine for the promotion of health tourism.

The outlined strategies reflect a comprehensive approach to integrate traditional medical practices into the broader healthcare system, addressing both the healthcare needs of the population and the preservation of traditional knowledge and practices.

Box 21.1 Objectives and strategy of DoAA

Objectives of DoAA

- To expand and develop functional and physical infrastructure of Ayurveda and Alternative health institutions.
- To prepare and implement plan and policies related to Ayurveda and alternative medicine.
- To conduct and coordinate the necessary programs to achieve the goal of a healthy Nepal.
- To conduct and coordinate the citizen wellbeing campaigns.
- To research Ayurveda, Herbal and mineral of medicinal value.
- To prepare a policy and operational plan for achieving the national goal of development and expansion of Ayurveda and alternative medicine.
- To improve the quality of Ayurveda & Alternative medicine services delivered through all institutions of all levels and to ensure easy access of these services.
- To develop and manage the required human resources;
- To promote community participation in the management of the health facility & utilization of local herbs;
- To promote a healthy lifestyle through Ayurveda and Yoga.
- To promote health status & sustainable development of Ayurveda and Alternative System using locally available medicinal plants;
- To promote positive attitudes towards health care & awareness of health issues;

Strategies

- Provide preventive, promotive & curative health services in the rural areas;
- Establishment & development of Ayurveda and Alternative institutions;
- Strengthen & expand the Ayurveda and Alternative health services;
- Develop skilled manpower required for various health facilities;
- Strengthening of monitoring & supervision activities;
- Development of information, education & communication center in the Department;
- Develop inter sectoral coordination with Education Ministry, Forestry, Local Development Sector & other NGOs & INGOs;
- Establishment of regional Ayurveda and Alternative Hospitals & Ayurveda Dispensaries;
- Strengthening & expansion of research & training center of international level;
- National & International level training for the capacity enhancement of its human resources

Furthermore, the BHS package includes *pancha-karma*, *yoga and satawari* for postnatal women from Ayurveda services and treatment of wart, allergy, tonsillitis, gastritis, vitiligo and arthritis from Homeopathy services which further strengthens GoN's commitment towards encouraging utilization of the Ayurveda and Alternative Medicine services.

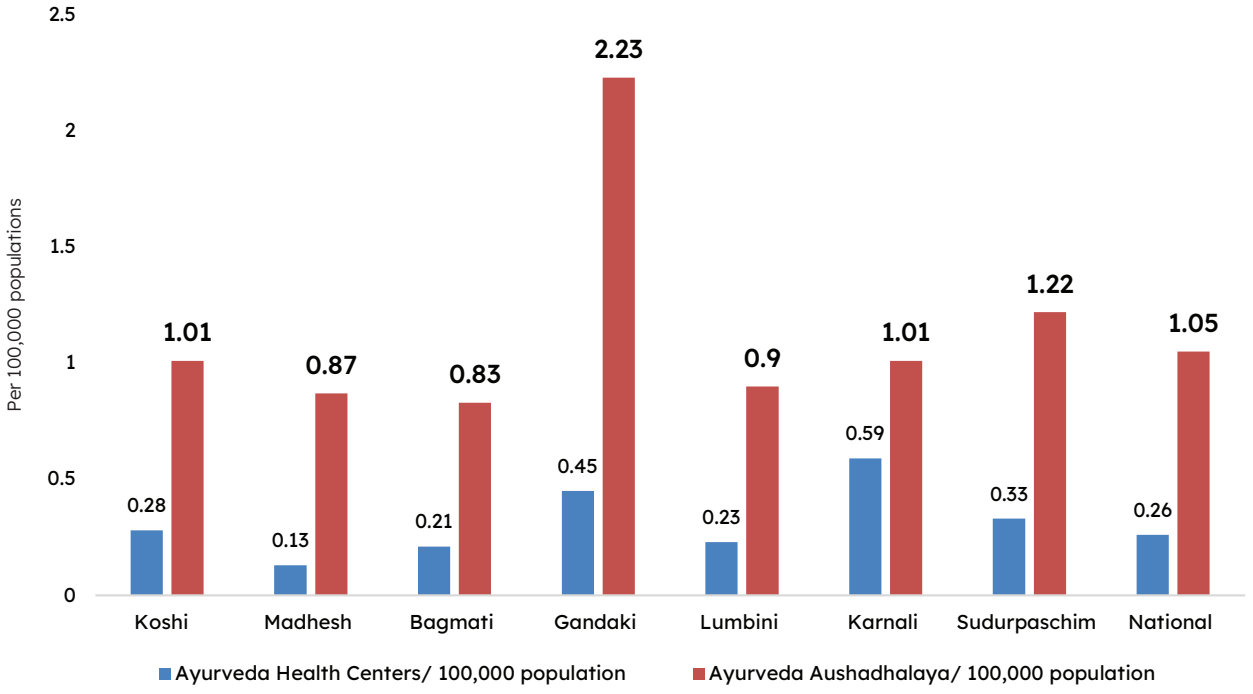
Box 21.2 Organization of Ayurveda and Alternative Medicine Services

Federal Level	• Department of Ayurveda and Alternative Medicine • Ayurveda Hospital, Naradevi • National Ayurveda Research & Training Center (NARTC) • Singhadurbar Vaidhyakhana Vikas Samitee • Nepal Ayurveda Medical Council (NAMC) • Pashupati Homeopathy Hospital
Provincial Level	• Provincial Ayurveda Hospital- (Koshi- Jhapa, Lumbini – Dang, Butawal, Karnali – Surkhet, Sudurpaschim –Kailali) • Provincial Ayurveda Chikitsalaya/ District Ayurveda Health Centers/Hospitals /Ayurveda and Alternative Chikitsalaya
Local Level	• Ayurveda Dispensaries (Aushadhalaya) • Nagarik Arogya Sewa Kendra

21.1.1 Institutional coverage of Ayurveda and Alternative Medicine Services

There are Ayurveda health facilities from local to federal level across the nation. There are six Ayurveda health facilities at federal level and five at provincial level. There are no provincial level Ayurveda hospitals in Madhesh and Gandaki provinces. There are a total of 74 district level District Ayurveda Health Centers/ Hospitals /Ayurveda and Alternative Chikitsalaya and 305 Ayurveda Aushadhalaya across the country.

Gandaki province has the highest number of Ayurveda Aushadhalaya (2.23 per 100,000 population), while Bagmati province has the lowest (0.83 per 100,000 populations). Similarly, Karnali province has highest number of Ayurveda Health Centers (0.59 per 100,000 populations) and Madhesh province has the lowest (0.13 per 100,000 populations) (figure 21.1).



Source: AHMIS/DoAA

Figure 21.1 Institutional coverage of Ayurveda Health Center and Ayurveda Aushadhalaya per 100,000 population

21.1.2 Major activities in FY 2080/81

Federal level

- Guidelines, Protocol, Manual development of Nagarik Aarogya/Lifestyle management/NCD prevention and control through Ayurveda/Kshar-sutra service regulation guidance program.
- Establishment and development of Ayurveda Health Management Information System (AHMIS)
- Strengthening of National Ayurveda, Pancha-karma and Yoga Center in Budhanilkantha. (Under Construction)
- Strengthening of Provincial Ayurveda Hospital at Kailali, Surkhet, Jhapa, Dang, Butwal, Kaski, etc..
- Strengthening program of Naturopathy, Yoga, Homeopathy, Unani, Aamchi (Sowa Rigpa)
- Monitoring of services provided by private Ayurveda & Alternative Medicine institutions.
- Annual review meetings.
- Evaluation, monitoring and co-ordination with province and local level
- National/International Yoga Day; International Meditation Day; National Naturopathy day; National Arogya Diwas & Dhanwantari Jayanti celebrations
- Establishment of open Gym in different places of all seven Provinces.
- Implementation of MSS for Central, Provincial and local level Ayurveda health institutions.

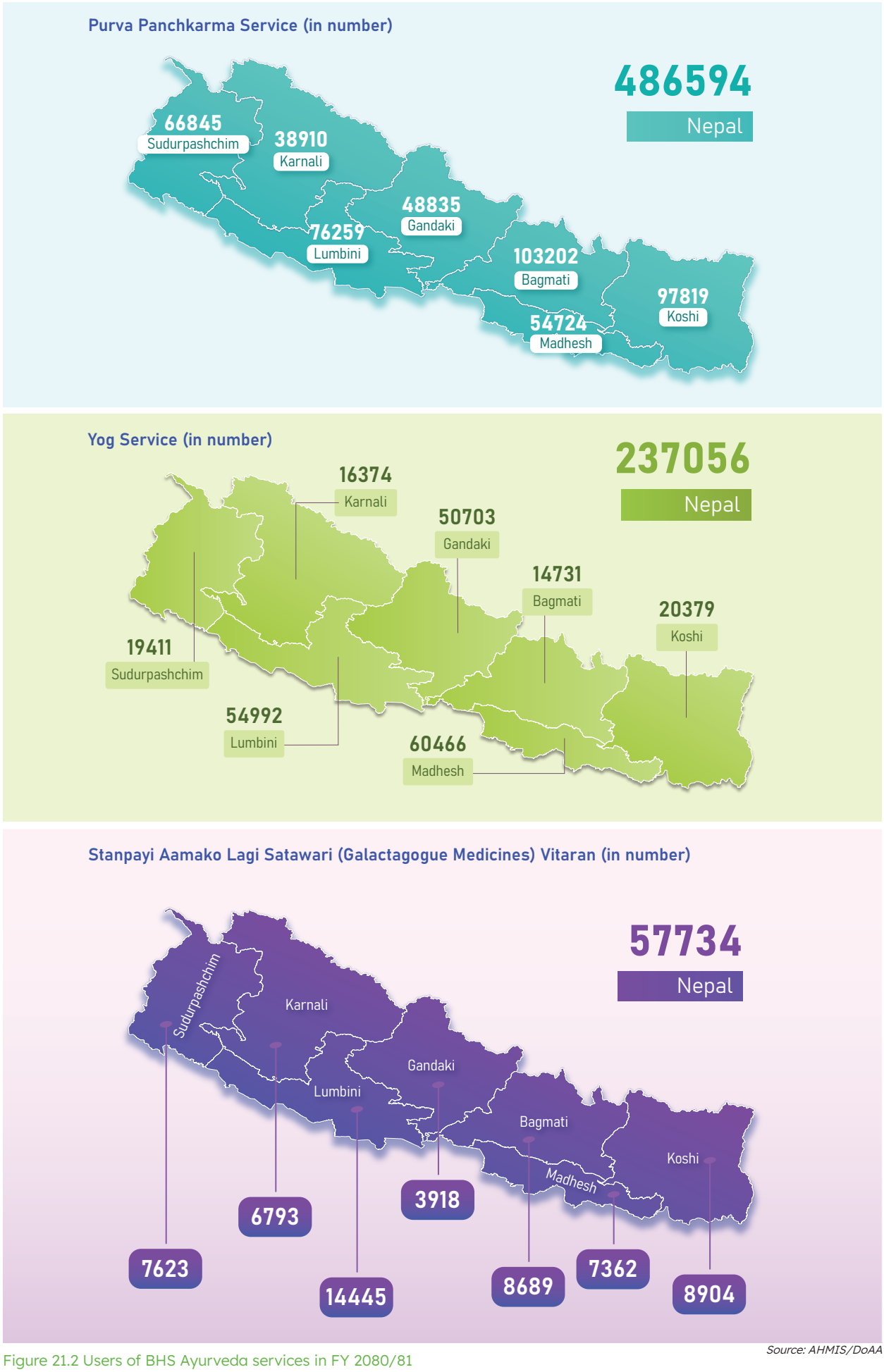
Province and Local Level

- Yoga and Lifestyle Management Training Program
- Workshop and Discussion with Local Traditional Healers
- Preparation of IEC Materials on Ayurveda
- School Ayurveda Health Program
- Promotive Health Program for Senior Citizens
- Awareness Program on Medicinal Plants
- Program for Lactating Mothers, distribution of Satawari (Galactagogue Medicine)
- Ayurveda Health Promotion and Public Awareness Program through Nagarik Aarogya Program
- Skill Development/Empowerment Program
- Prevention, Reduction, and Management of NCD
- Ayurveda Health Information Management Training Program
- Citizen Wellbeing (Nagarik Aarogya) Program
- Yoga/Skill Development Training for Ayurveda Personnel
- Training on "Operation & Management of Ayurveda Programs" for Ayurveda Personnel
- Free Health Camps
- Citizen Health Campaigns and Community Health Education Programs through Citizen Wellbeing Group
- Information Communication -Materials Development and Broadcasting
- Swastha Jivan Shaili Karyakram (Healthy Lifestyle Program)
- Vidhyalaya Ayurveda tatha Yoga Shiksha Karyakram (School Ayurveda and Yoga Education Program)
- Nagarik Arogya Clinic for NCDs
- Healthy Life (Swastha Jeevan) Program
- Establishment of Citizen Wellbeing (Nagarik Aarogya) Centers at the Local Level
- National/International Yoga Day; international Meditation Day; National Arogya Diwas & Dhanwantari Jayanti celebrations
- Purva Pancha-karma Sewa (Purva Pancha-karma Service)

21.1.3 Key Service Indicators

Users of BHS Ayurveda services in FY 2080/81

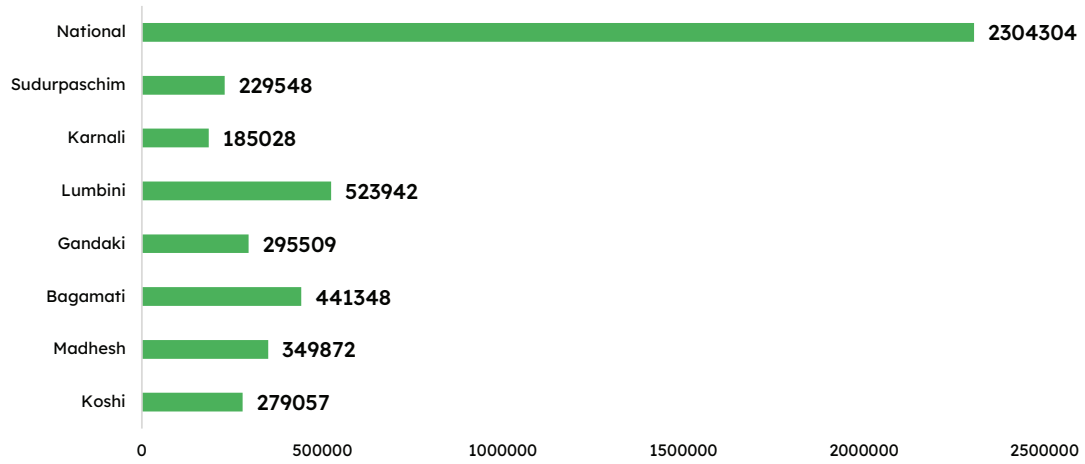
In FY 2080/81, the users of Purva-pancha karma were 486,594, yoga services were 237,056, and Satawari (Galactagogue medicines) was distributed for 57,734 postnatal women. There was provincial variation in the number of the users of BHS ayurveda services. (figure 21.2) This utilization of Ayurveda services across the provinces demonstrates that there is attraction towards therapeutic Ayurveda practices and Yoga services. Understanding the preferences in healthcare and tailoring strategies to ensure equitable access and promotion of province specific relevant traditional and alternative medicine systems will be crucial.



Source: AHMIS/DoAA

Figure 21.2 Users of BHS Ayurveda services in FY 2080/81

In addition to basic health service utilization there are a range of the Ayurveda services available, in FY 2080/81, an impressive total of 2,304,304 individuals availed themselves of Ayurveda services, indicating a remarkable level of user engagement. However, the number of patients served is slightly lowered than previous year (figure 21.3).



Source: AHMIS/DoAA

Figure 21.3 Total Users of Ayurveda Services in FY 2080/81

Morbidity among users of *Ayurveda services*

The most frequently reported morbidities included acute peptic disease, musculoskeletal and nervous disorders, respiratory disorders, abdominal disorders, anorectal disorders, rheumatoid arthritis, cardiovascular diseases, gynecological disorders, and geriatric problems. (table 21.1)

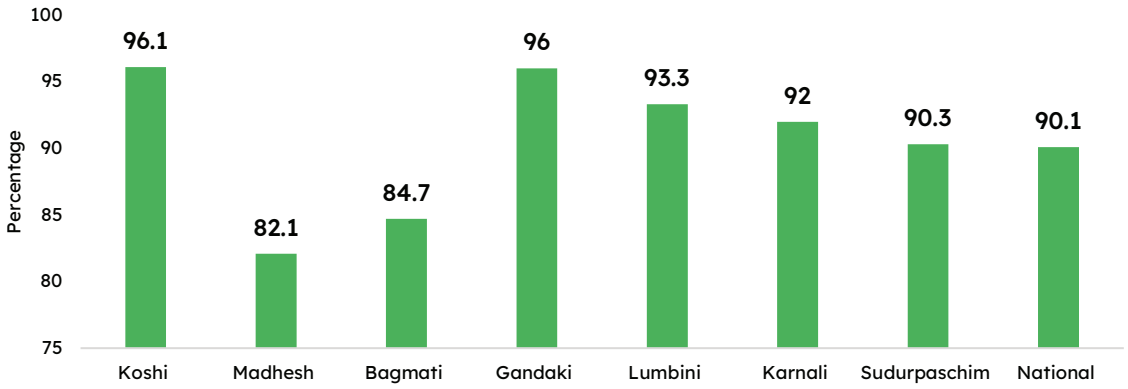
Notably, there is a discernible trend wherein users with non-communicable and chronic conditions exhibit an increasing preference for Ayurveda services. This shift in preference underscores the growing recognition and acceptance of Ayurveda as a viable and effective healthcare option for addressing enduring health challenges especially those related to NCDs control and management. The data suggests a significant role for Ayurveda in catering to the healthcare needs of individuals with persistent health issues, highlighting its relevance and effectiveness in managing a diverse range of morbidities. District-wise Model School for "School Ayurveda and Yoga Program" has been selected to conduct "My health, my responsibility" campaign to prevent non-communicable diseases (including mental disorders).

Table 21.1 Common morbidities reported among Ayurveda service users

Top 10 Morbidities among Ayurveda service users in FY 2080/81
Acute Peptic Disease
Musculo-skeletal and Nervous Disorder
Abdominal Disorder
Respiratory Disorder
Gudavikar-Haemorrhoids
Rheumatoid Arthritis
Hypertension
Asthma and COPD
Geriatric Problem
Pediatric Disorder

Source: AHMIS/DoAA

In FY 2080/81, overall, 90.1% have reported their data to DoAA; and province wise, the reporting rate from *Ayurveda* health facilities is highest in Koshi (96.1%), and lowest in Madhesh (82.1%) (figure 21.4).



Source: AHMIS/DoAA

Figure 21.4 Reporting rate of Ayurveda Health Facilities in FY 2080/81

Minimum service standards of Ayurveda health facilities

Leveraging insights gained from the implementation of the Minimum Service Standards (MSS) for health facilities under DoHS, DoAA developed and endorsed from MoHP, the MSS tailored for Ayurveda Health Facilities. MSS for four different level of the Ayurveda Heath Facilities have been developed – MSS for Ayurveda Aushadhalaya, MSS for District level Ayurveda Health Centers, MSS for Province Level Ayurveda Hospital and MSS for Federal Level Ayurveda Hospital. (figure 21.5) There are three major components of MSS- leadership and governance, support service management and clinical service management with clinical section focused on the Ayurveda services. This achievement by DoAA signifies a noteworthy milestone, laying a strong foundation for delivery of quality Ayurveda services. The MSS for Ayurveda Health Facilities is poised to boost operational efficiency, and streamline management processes, and ultimately contribute to the exemplary Ayurveda services. The MSS for Ayurveda has been conducted at 43 provincial and district level Ayurveda health facilities for the provision of exemplary Ayurveda healthcare services.

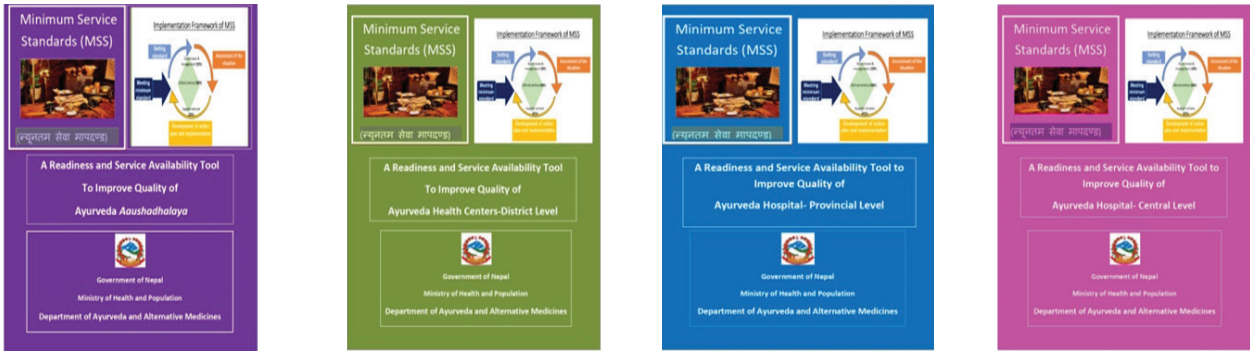


Figure 21.5 MSS for different level of Ayurveda health facilities

Box 21.3 SWOT Analysis of DoAA

Strengths	Opportunities
• Rich unbroken source of Knowledge, Everlasting fundamentals and concepts. • Renewed worldwide interest in Ayurveda and Alternative systems. • Preventive and Adjunctive role of Ayurveda in Chronic Non-Communicable Diseases (CNCD) and Lifestyle diseases. • Dedicated leadership and DoAA team. • Approval of MSS for all level of Ayurveda health facilities, its implementation will help evidence-based budgeting and planning for strengthening readiness and service availability • Biodiversity and huge natural resources. • Deep rooted tradition, strong cultural support & centuries old history • Panchakarma and Yoga as an essential and widely popularized for NCDs.	• Enabling policy environment for Ayurveda services • Strengthen the process of integration of AHMIS to HMIS • Establishment of Ayurveda Institutions in each local level & Ayurveda unit in each basic hospital. • Integrated expansion of alternative medicine systems through existing and upcoming health service delivery units. • Implementation of research alongside clinical practice to promote evidence-based development of Ayurveda and Alternative Medicine. • Long tradition of using natural resources (as medicines or economic resources)
Weaknesses	**Threats**
• Limited opportunities for Ayurvedic HR in terms of employment (both in Govt. and private sector) and limited entry into diversified education fields. • Allocation of insufficient Budget for sustainable development of Ayurveda Institutions • Insufficient evidence generation and research. • Insufficient production, broadcasting and dissemination of health-related messages and materials for publicity of Ayurveda • No provision of health insurance in Ayurveda services	• Quackery in Ayurveda • Commercial exploitation of Panchakarma as Spa • Lack of Awareness about the strengths of Ayurveda among general public, allied healthcare professionals, bureaucrats, corporates, politicians etc.,

21.2 Homeopathic Services

21.2.1 Overview of Homeopathy Services

Homeopathy was discovered by Dr. Samuel Hahnemann of Germany in (1796 AD). This is based on the fixed principle of *"similia similibus curentur"*. Medicine is proved on healthy human beings and symptoms are recorded in Homeopathic pharmacology i.e. **MateriaMedica.** Medicine is prescribed on the basis of sign and symptoms and other laboratory investigations obtained from patients as necessary.

Pashupati Homoeopathic Hospital is the only one federal level Homoeopathic Hospital providing homoeopathic health services to the people of Nepal in the public sector. The homoeopathic system is economic, reliable and has very few adverse effects. The hospital provides OPD service only. However, the Hospital is planning to provide Inpatient service in near future. The inpatient services are not in function due to resource constraints majorly on allocation of the human resources based on the organization and management survey of 2076 and 2078, and budget allocation.

The number of patients is increasing day by day. Some of the referred cases are also treated here like allergic rhinitis, urticaria, laryngeal papilloma, PCOS and other skin diseases.

Box 21.4 Strategies adopted for increasing coverage and reach of homeopathic services

Awareness raising on Homeopathy services	Seminars and health camps for reaching out to the users on successful treatment of certain problems seen effective through homeopathic services like- warts, corn, allergic rhinitis, urticaria, piles, etc.
Preventive Services	Counselling and awareness raising
Curative Health Services	Medicines are distributed for free of cost. Nominal charges are applied for OPD tickets.
Modality of delivery	Hospital based Health camps run in different parts of the country by the hospital
Cost-effectiveness of Homeopathy services	Government has to bear minimum cost for medicine

21.2.2 Key service indicators

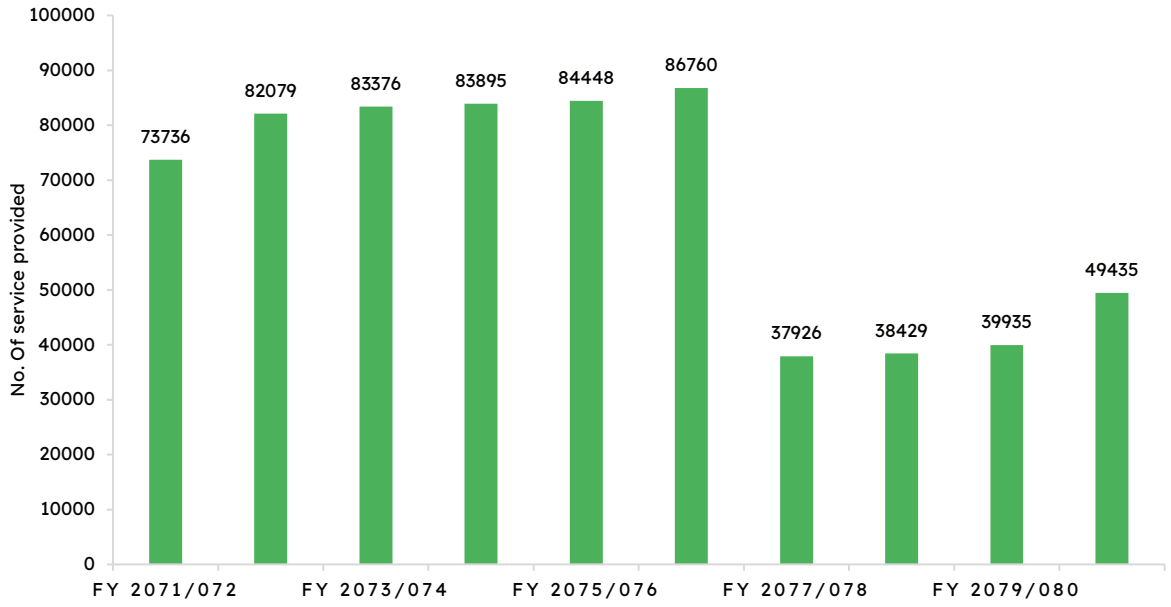
Users of BHS Homeopathy services in FY 2080/81

A total of 16,304 users accessed BHS Homeopathy services. The most common homeopathy services utilized by the users was treatment of arthritis (5,949 users) (table 21.2). Similarly, Pashupati Homeopathy Chikitsalaya provided clinical health services to 49,435 users in FY 2080/81 and the number of users has been increased compared to past three years. (figure 21.6).

Table 21.2 Users of BHS Homeopathy services in FY 2080/81

BHS Homeopathy Services	Total users (16,304)
Warts/Corn Treatment	3,753
Skin Allergy Diagnosis and treatment	1,470
Tonsillitis Diagnosis and Treatment	418
Acidity/Gastritis Diagnosis and Treatment	3,767
Leucoderma/Vitiligo Diagnosis and Treatment	947
Arthritis Diagnosis and Treatment	5,949

Source: Homeopathy Hospital/DoAA

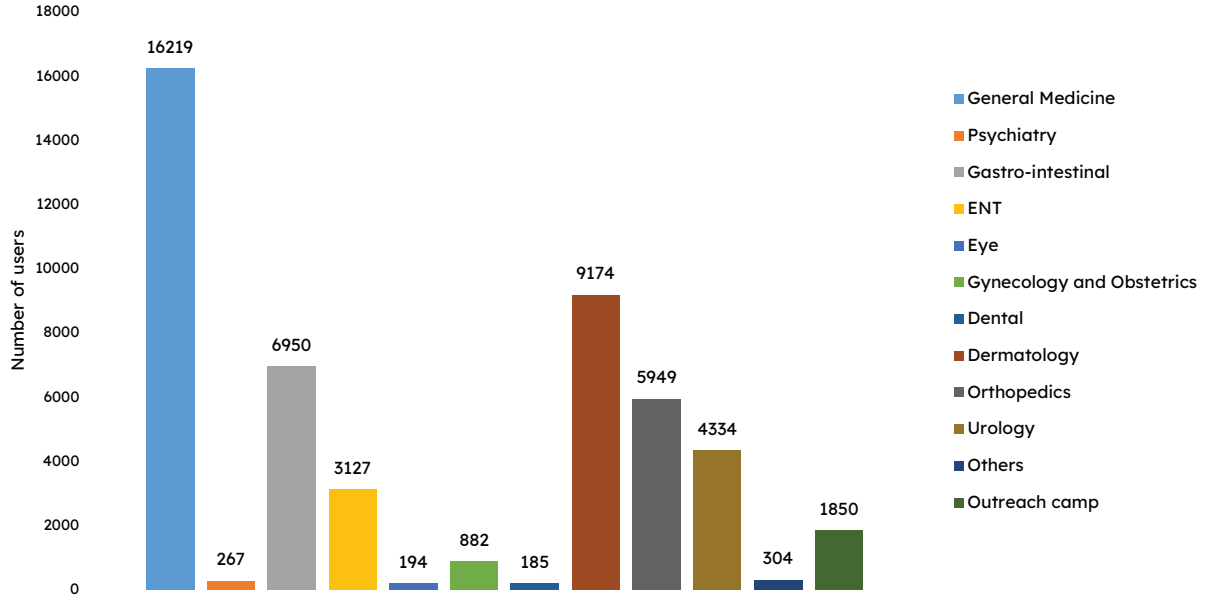


Source: Homeopathy Hospital/DoAA

Figure 21.6 Clinical Health Service Provided by Pashupati Homeopathy Chikitsalaya during last 10 years

Common services accessed by users of Homeopathy services

In FY 2080/81, a total of 49,435 users accessed homeopathy services, a slight increment compared to previous FY. The users presented in the hospital mostly accessed general medicine services (16,219 users). In addition to this there are a notable number of users for skin-related (9,174 users) and gastrointestinal problems (6,950 users). Some cases with dental problems (185 users) also have been noted. Likewise, health camps were organized and a total of 1,850 users were served through the camps. (figure 21.7)



Source: Homeopathy Hospital/DoAA

Figure 21.7 Services commonly assessed by users of homeopathic service

Financial allocation and expenditure for homeopathic services

In FY 2080/81, a total of 260 lakhs was allocated for homeopathic services, of which only 242 lakhs were utilized, contributing to 93% expenditure rate. Similarly, a total of 30 lakhs were allocated for conducting health camp, achieving 100% expenditure rate (table 21.3).

Table 21.3 Summary of Financial Allocation/Expenditure

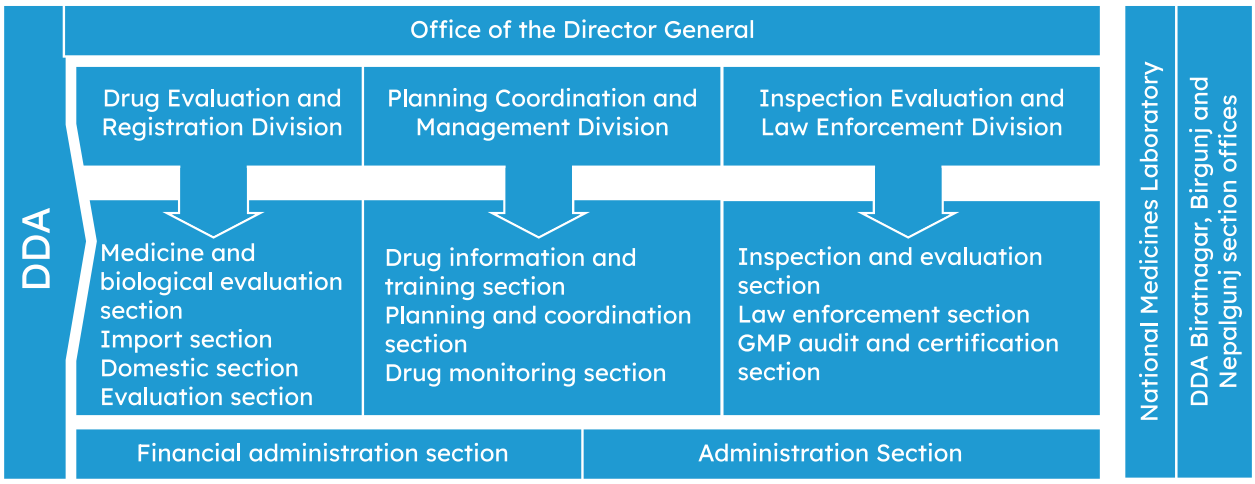
Fiscal Year	Regular Budget in Rs (In lakhs)	Development Budget Rs (In lakhs)	Total Budget Allocation Rs (In lakhs)	Expenditure Rs (In lakhs)	Expenditure (percentage)
2080/081	250	10	260	242	93%
2080/081	Total Financial Allocation of Health Camp		30	30	100%

Source: DoAA

Box 21.5 SWOT Analysis of Homeopathy services

Strengths	Opportunities
• Homeopathic hospital is providing service to outdoor patients free of cost (All medicines) • Annual health camps to increase coverage	• O & M survey report submitted to MoHP for strengthening and expansion of homeopathy services • Expansion of the services in all seven provinces • Increasing interest of people and stakeholders
Weaknesses	**Threats**
• Limited budget to manage medicines as per demand • Due to unavailability of diagnostic services including USG, X-ray etc. patients need to be referred only for investigations • Indoor service is not in service despite 25 bedded approved federal Hospital. • Lack of MSS and Health Insurance Program.	• Limited opportunities for the HR in homeopathy including career ladder in government services

22 Department of Drug Administration (DDA)



22.1 An Overview of DDA

The Department of Drug Administration (DDA) was established on Kartik 1st, 2036 B.S. as the central body responsible for implementing the provisions of the Drug Act 2035 (1978). Its primary aim is to ensure public access to quality medicines, prevent pharmaceutical misuse, regulate misinformation, and oversee all drug-related activities, including production, marketing, distribution, export, import, and storage. DDA prohibits the use of medicines that fail to meet quality, safety and efficacy standards. The government, non-governmental organizations, and private institutions work in coordination to implement drug regulations in line with the National Drug Policy 1995.

Box 22.1 Drug Act 2035 (1978) and supporting tools

Under the Drug Act 2035 (1978), the following regulations and codes have been implemented as supporting tools for its active enforcement:

- Drug advisory committee and consultative council regulation, 2037
- Drug registration regulation, 2038
  Inquiry and inspection regulation, 2040
- Drug standard regulation, 2043
- Drug donation guidelines have been implemented for the quality assurance of donated drugs
- Drug sales and distribution codes, 2071
- Good practice codes for drug production, 2072
- Medicine registration guidance, 2073

The National Drug policy outlines strategies and actions on various aspects of medicine-related activities, including production, import, export, storage, supply, sales, distribution, quality assessment, regulatory control, rational use, prudent use of antimicrobials and information flow. The DDA's primary goal is to supervise and regulate allopathic, ayurvedic, Homeopathic, veterinary, and traditional medicines. This includes preventing the misuse and abuse of medicines and their raw materials, curbing false and misleading advertisements, and ensuring the availability of safe, efficacious, and high-quality medicines to the public. The DDA oversees the entire spectrum of medicine-related activities, including the biological clock of pharmaceutical and biological products in a country. It operates through three major divisions: Drug Evaluation and Registration, Planning, Coordination and Management, and Inspection, Evaluation and Law Enforcement, one laboratory i.e. National Medicine Laboratory (NML). Additionally, it has three branch offices at Biratnagar, Birgunj and Nepalgunj. However, the current number of regional offices is insufficient to fulfill all of roles, functions and responsibilities. Establishing at least one regional center at each Pradesh is deemed necessity for proper management, inspection and drug regulatory functions. In addition, it is necessary to regulate health technology products and cosmetics which are currently not regulated.

Box 22.2 Vision, Mission and Quality Policy

Vision

To protect and promote public health, ensuring access to safe, effective, and quality-assured medicines and allied products.

Mission

To provide regulatory oversight and evidence-based decisions for medicines and allied products, ensuring availability of safe, effective and quality medicine at affordable prices through the proper implementation of internationally adopted good practices, as well as reliance and recognition.

Quality Policy

The DDA is committed to protecting and promoting the health of Nepalese people through good governance and evidence-based decisions, ensuring equitable access to safe, efficacious, and quality-assured medicines and allied pharmaceutical substances in accordance with the Drugs Act, Regulations, and Guidelines.

The DDA shall work through an efficacious, transparent, impartial, credible, and timely manner, ensuring the implementation of a continuously improved Quality Management System.

To meet our commitment, we must:

- Foster a team approach.
- Emphasize appropriate training for all employees.
- Ensure compliance through integrated and harmonized approaches of good practices.
- Recognize each employee's responsibility.
- Develop and achieve quality improvement goals.
- Review and renew this quality policy on regular basis.

Office of the Director General

The office plays a crucial role in implementation of drug codes, laws, regulations and the National Drug Policy. The Director General, as Administrator of the Drug act, is responsible for all regulatory functions, including personnel management, administration, financial management, approval of clinical trials, and overseeing imports and exports. The Director General also enforces Law and take actions against violations of Drug Act, as defined in the Drug Investigation and Inspection Rule 2040. Many functions of the Director General are delegated to various divisions, section offices and the National Medicines Laboratory. The Director General also serves as a secretariat for the Drug Consultative Council and Drug Advisory Committee.

Drug Evaluation and Registration Division

The Drug Evaluation and Registration Division includes the Import and Export Section, Industry Section and Pharmacy Registration Section. This division conducts rigorous scientific evaluations of new medicines and allied products their relevance in manufacturing, import, export, and marketing. It also evaluates vaccines and biologicals to ensure their suitability for manufacturing, export, import, and marketing. Additionally, the division engages in Research and Development (R&D) efforts for new medicines, manages clinical trials, and coordinates with experts to ensure a comprehensive assessment of new medicines.

Import Section:

Facilitates the import of pharmaceutical products by maintaining standard operating procedures and protocols. It approves foreign manufacturers for importing medicines, ensuring quality and safety of imported pharmaceuticals. The section also oversees registration process for products intended for export and import.

Industry Section:

Regulates national pharmaceutical industries to ensure compliance with established standards. It issues recommendation letters for the establishment of pharmaceutical industries, including issuance and renewal of Product Manufacturing Licenses. The section also approves layout of pharmaceutical industries and registers new pharmaceutical products.

Pharmacy Registration Section:

Responsible for registration and issuance of certificates for retail and wholesale pharmacy outlets. It also issues certificates to individuals authorized to sell medicines and maintains an updated record of pharmacies.

Planning, Co-ordination and Management Division

This Division includes the Drug Information and Training Section, Planning Section and Administration section.

Drug Information and Training Section:

Disseminates information about medicines and ensures continuous education of medicine sellers. It conducts refresher training sessions and publishes the Drug Bulletin of Nepal (DBN). The section also revises the National List of Essential Medicines and the Nepalese National Formulary list. The section also maintains consumption of narcotic, psychotropic, and precursor substances, and communicates with the International Narcotic Control Board. It also conducts activities related to Pharmacovigilance and Adverse Drug Monitoring Reporting and acts as a National PV center.

Planning section:

Prepares yearly planning for activities conducted by DDA and regional offices. It coordinates with Ministry, other department, government and non -government organizations.

Administration section:

Manages human resources, including recruitment, posting, promotion, transfer. It also handles financial aspects, procurement and monitoring of regional offices

Inspection, Evaluation and Law Enforcement Division

This Division includes the Law section, Import/ export section and Audit section. It ensures regulatory standards are maintained and promotes compliance

and safety in the pharmaceutical sector. The division conducts inspections of drug industries, wholesale and retail pharmacies, and hospital pharmacies. It also coordinates Good Manufacturing Practice (GMP) audits within and outside the country.

Law Enforcement Section:

Filing cases in court against violations of the Drug Act and provides legal assistance to the Department. It also conducts training sessions for Drug Inspectors and engages in surveillance related to pharmacy practice.

Audit section:

Conducts WHO GMP certification and recertification related activities. It prepares work plans for national and foreign industry audits and takes necessary actions in cases of non-compliance.

Financial and administration section:

This section manages the entry and dispatch of letters, handling human resources matters, and oversees financial management, including revenue collection and audit processes. It also manages premises, buildings and the library.

Branch Offices

DDA has its branch offices in Biratnagar, Birgunj and Nepalgunj. These offices carry out the delegated responsibilities including investigation, inspection, and Pharmacy registration and renewal.

National Medicines Laboratory (NML)

Established in 2020 (1964), the National Medicine Laboratory (NML), formerly known as the Royal Drug Research Laboratory (RDRL), acts as the principal drug regulatory laboratory in the country which is responsible for pre and post market testing of medicine, analysis, and validation of analytical method and advises Department on matters like standard, quality and efficacy of medicines, vaccines and biologicals.

Designated as a National Drug Control Laboratory, NML comprises sections dedicated to chemical analysis, microbiology, pharmacology, and instrumental analysis. The samples are tested and analyses for drug quality as per the Drugs Act, 2035 (1978), the medicines having substandard quality are recalled or withdrawn or banned. However, can also provide Lot Release Certificates for vaccines imported into Nepal with standard, quality and efficacy of medicines. In addition, the laboratory is also responsible for review and validation of analytical methods of non-pharmacopeial products, conduction of training on Good Laboratory Practices and audit of laboratories of National Pharmaceutical industries.

Box 22.3 Major Strategies of DDA

- Selection of essential medicine to promote rational use of medicines.
- Establishment of offices at all provinces for effective regulatory activities.
- Strengthening of NML as National reference Laboratory on medicines.
- Medicine registration based on scientific evidence.
- Promotion of rational use of medicines.
- Development of an efficient drug information system to disseminate the relevant information.
- Encouragement to promote and establish pharmaceutical industries to achieve self-reliance in the production of essential medicines.
- Effective inspection to ensure the quality of marketed medicines.
- Prevention of antibiotic misuse to combat antimicrobial resistance.
- Strengthening national industry to comply with WHO-GMP standards.

22.2 Major Activities in FY 2080/81

Awareness on the rational use of medicines by different media.
Regular publication of Drug Bulletin of Nepal (DBN).
Audit/inspection of domestic drug industries for WHO Good Manufacturing Practice (GMP) compliance.
Inspection of retail & wholesale pharmacies for compliance.
Post marketing quality analysis of drugs available in market.
Inspection of Foreign Manufacturers before registration of products.
Conducting veterinary drug sellers' training in co-ordination with Department of Livestock Services and Livestock Service Training Centers.
Audit of domestic manufacturer laboratory for compliance of Good Laboratory Practice (GLP).
Take legal and administrative action for violation of regulatory standards.
Recall of medicine from market those failed to quality standard.
Interaction program with stakeholders to discuss Medicine Shortage issue and developed action plan to prevent and manage medicine shortage.

22.3 Status of Activities in FY 2080/81

In FY 2080/81, DDA conducted 3,100 inspections of the drug retailers and wholesalers for quality assurance. The targeted information to public by different media was disseminated more than targeted in the FY 2080/81. There were missing data in fulfilling the targeted activities on number of the drug sample analysis. In addition, there were gaps in fulfilling the targeted activities in inspection of domestic pharmaceutical industries and publication of bulletin. (table 22.1)

Table 22.1 DDA key activities targets and achievement in FY 2080/81

S. N	Activities	Target	Achievement in FY 2080/81	
			Number	%
1	Drug information to the public by different media	30	51	170
2	Publication of Drug Bulletin of Nepal	3	3	100
3	Inspection of domestic Pharmaceutical Industries	111	81	72.97
4	Inspection to drug retailers & wholesalers	2,800	3,100	110.71
5	Drug sample Analysis	NA	575	NA
6	Audit of Pharmaceutical Analytical Laboratories	30	26	86.67

Source: DDA

In FY 2080/81, there were remarkable regulatory activities like de-registration of 1,245 pharmacies, 101 cases filed against violation of Drug Act 2035 and 39 medicines were recalled from the market due to inferior quality. (table 22.2)

Table 22.2 Major regulatory activities of DDA in FY 2080/81

Activities	Number of events
Registration of new foreign pharmaceutical industry	81
Registration of new medicine (import)	354
Renew of import license	4,138
Issue of marketing license	847
Issue of product license	704
Import license for raw material for domestic industry	1,879
Registration of new pharmacy	2,418
Renew of pharmacy	13,846
Renew of *Vyawasayi Mananyata Pramanpatra*	1,055
De-registration of pharmacy	1,245
Filing of legal case against the violation of Drug Act 2035	101
Recall of medicine from market due to inferior quality	39
No. of samples tested by NML	575

Source: DDA

Performance of Drug Regularity

Maturity Level of National Regulatory Authority

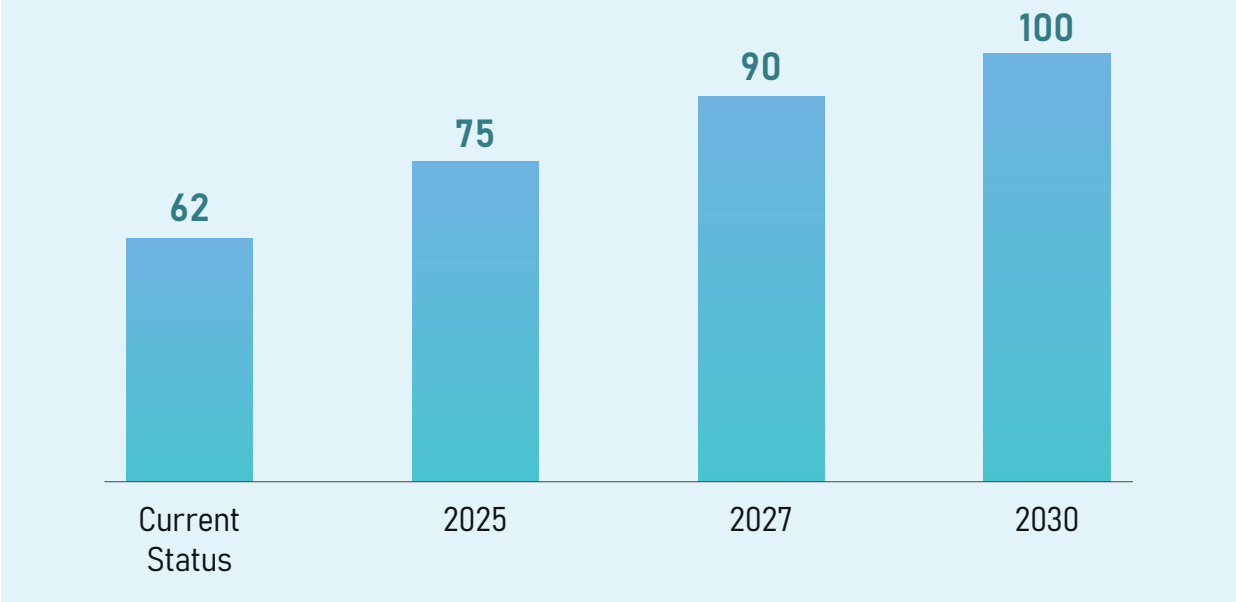


Source: DDA

Figure 22.1 Maturity level of national regulatory authority

Currently, the maturity of the national regulatory authority is ML-1, and projected to achieve ML-2 by 2025, and ML-3 by 2027 (figure 22.1).

% of WHO GMP Certified Domestic Manufactures of Drugs



Source: DDA

Figure 22.2 Percentage of WHO GMP certified domestic manufactures of drug

Currently, there are 62 WHO GMP certified domestic pharmaceutical industries and it has been forecasted to be 100 by 2030 (figure 22.2).

Domestic Production of Essential Medicines

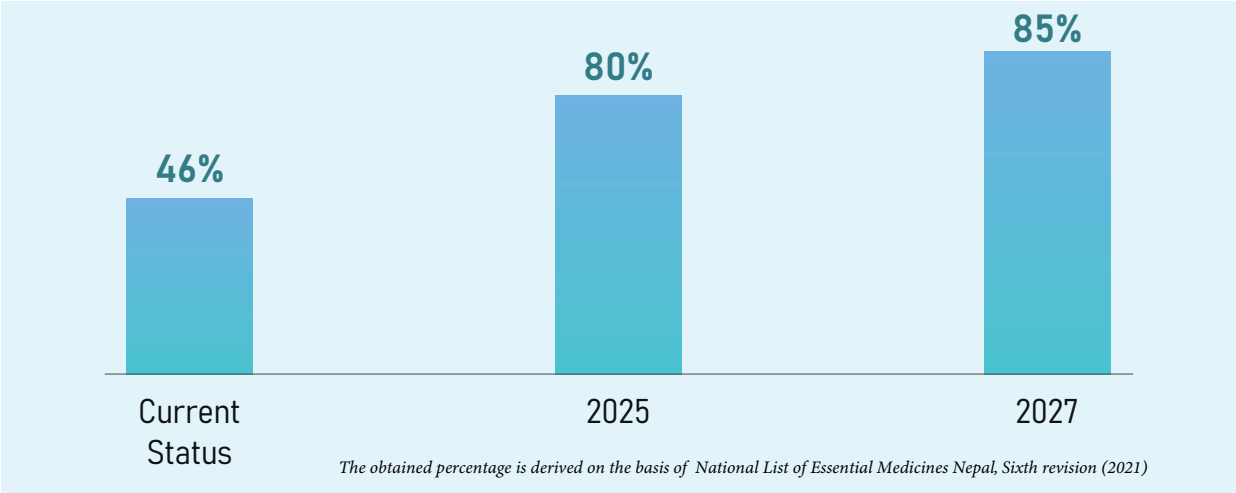


Figure 22.3 Domestic production of essential medicines

Source: DDA

The production of Essential medicine is below 50% i.e. 46% which shows greater dependency on imports of medicine (figure 22.3).

Box 22.4 SWOT Analysis of DDA

Strengths	Opportunities
• Presence of a legal framework • Clinical trial oversight • Collaborative registration procedures • Risk-based inspection and surveillance • Pharmacovigilance strengthening	• Revised Drug Act for effective regulation • Pharmaceutical waste management guidelines • Regulation of HTP, nutraceuticals, and cosmetics • Accreditation of NML as per ISO 17025 • Ethical drug promotion guidelines • Incorporation of GMP in Ayurvedic medicine
Weaknesses	**Threats**
• Weak legal and infrastructure for market surveillance • Lack of organizational structure as per federal provision • Insufficient laboratory testing capacity • Lack of dynamic price regulation mechanism • Inadequate interdepartmental coordination	• Open border/cross-border issues • Lack of control over online pharmacy and advertisement • Lack of resources for clinical trial oversight

23 Health Insurance Program

23.1 Overview of the Program

The Health Insurance Program (HIP) in Nepal, implemented by the Government of Nepal (GoN), aims to enhance access to quality healthcare services while reducing out-of-pocket expenses and the financial burden of catastrophic health expenditures. Initiated in fiscal year 2072/73 under the Social Health Security Development Committee, the program is now managed by the Health Insurance Board (HIB) as an autonomous entity, in line with the Health Insurance Act, 2074 and Health Insurance Regulation, 2075. The ultimate goal of HIP is to contribute to achieve Sustainable Development Goals (SDGs) target 3.8, a commitment for universal health coverage (UHC), financial risk protection, and access to quality essential health services for all.

Box 23.1 Key Objectives of HIP

- Ensure access to quality health services
- Protecting against financial hardship and reducing out-of-pocket costs.
- Building the capacity of health service providers & fostering ownership among health service provider

23.2 Major Activities in FY 2080/81

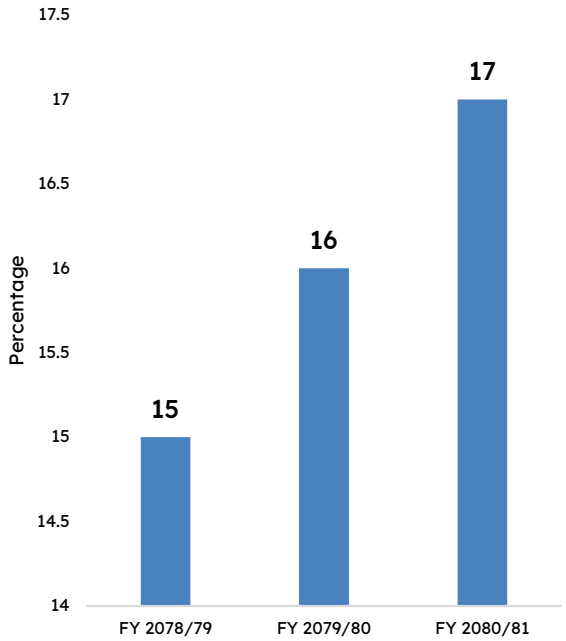
In FY 2080/81, the Health Insurance Program undertook significant activities, including:

- Reimbursement of NPR 12,620,074,546.00 for the claim valuated in FY 2080/81
- Revision of Benefit Package and Costing
- Training of Insurance Management Information System (IMIS) to service providers
- Monitoring and capacity building of Service providers
- Provision of Real Time Claim
  - Implementation of Co-payment system
  - Capacity building of Enrollment officer and Enrollment assistant
- Approval of: Procedure for inclusion of children of juvenile home, 2081; Procedure related to referral system, 2080; Procedure related to implementation of co-payment system, 2080; Procedure related to data sharing, 2081; Procedure related to real time claim, 2080, etc.

23.3 Key Program Indicators for HIP

Active Population Coverage of Health Insurance

The figure 23.1 depicts the percentage of active insuree coverage over the past three fiscal years. The national enrollment status of active insuree has risen from 15% in FY 2078/79 to 17% (5,012,213 people) in FY 2080/81, reflecting a collective commitment to achieving comprehensive coverage for the population. This progress highlights the efforts to extend health insurance benefits across all provinces.

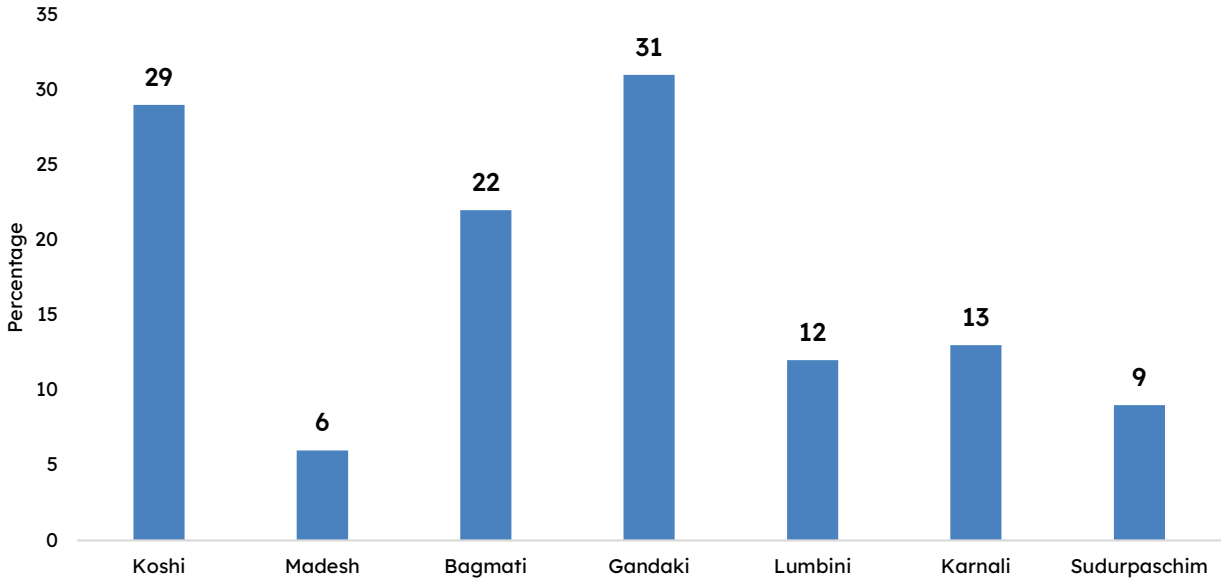


Source: NSO and IMIS/HIB

Figure 23.1 Active Population Coverage by Health Insurance in FY 2078/79 - FY 2080/81

Note: Population from census 2078, used as denominator

The figure 23.2 represents the percentage of active insuree coverage at province level. In FY 2080/81 Gandaki province has the highest percentage of active insuree i.e. 31% of total population of Gandaki province while it is lowest in case of Madhesh province (6%).



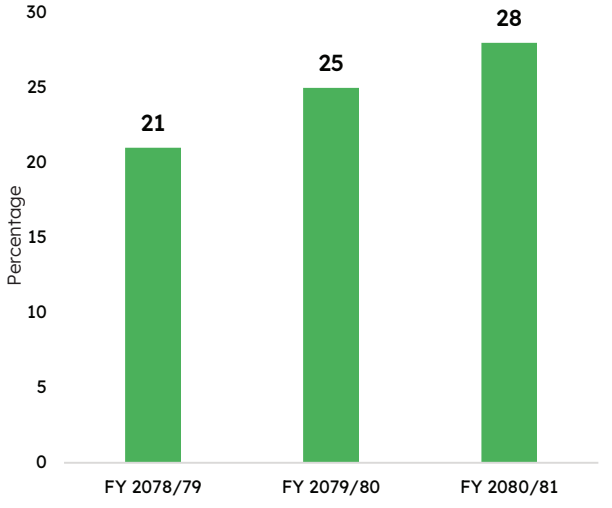
Source: NSO and IMIS/HIB

Figure 23.2 Percentage of active population across provinces in FY 2080/81

Note: Population of province from census 2078, used as denominator

Active Household Coverage of Health Insurance

The figure 23.3 depicts the percentage of household coverage for the active household across the last three fiscal years. In 2078/79, the percentage of active households was recorded at 21%. This percentage increased to 28% (1,874,228 household), in FY 2080/81 reflecting a notable rise. Overall, the graph demonstrates a steady growth in household coverage over the three fiscal year.

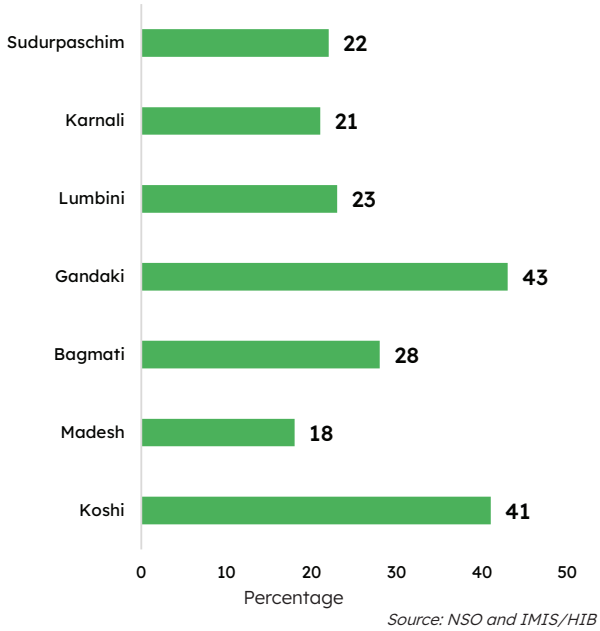


Source: NSO and IMIS/HIB

Figure 23.3 Active Household Coverage by Health Insurance in FY 2078/79 - FY 2080/81

Note: Household from census 2078 used as denominator

The figure 23.4 represents the percentage of active households at province level. In FY 2080/81 Gandaki province has the highest percentage of active households i.e. 43% of total household of Gandaki province while it is lowest in case of Madhesh province (18%).



Source: NSO and IMIS/HIB

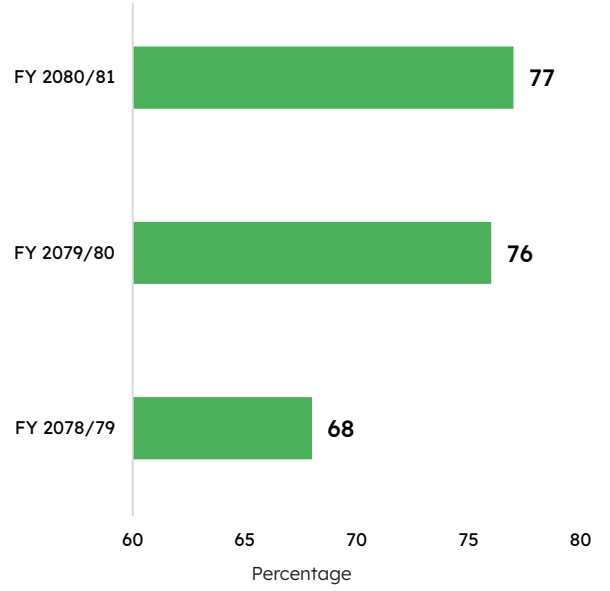
Figure 23.4 Percentage of active households across province in FY 2080/81

Note: Household of province from census 2078 used as denominator

Percentage of insure renewing the policy

The percentage of insuree renewing policy among the total active insuree of the respective years of Health Insurance (HI) from fiscal year 2078/79 to 2080/81 is shown in figure 23.5. The percentage of insuree renewing the policy was 68% in 2078/79, increases to 76% in 2079/80, and then reaches 77% in 2080/81. In FY 2080/81 total number of active insuree was 5,012,213, and among them 3,860,608 has renewed the policy.

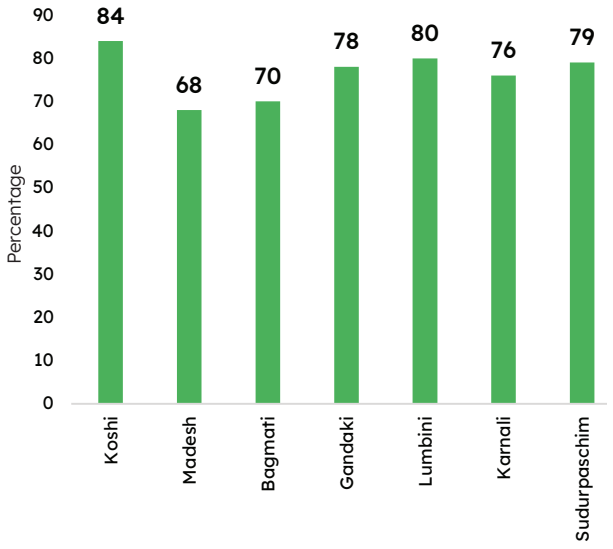
This indicates a positive trend in the proportion of individuals who are renewing their health insurance policies, suggesting increasing satisfaction and perceived value of the insurance coverage.



Source: IMIS/HIB

Figure 23.5 Percentage of insuree renewing the policy of HI in FY 2078/79-2080/81

The figure 23.6. represents the province wise status of insuree renewing the policy in FY 2080/81. Among the total active insuree of the respective province the percentage of insuree renewing the policy was highest in Koshi province and lowest in Madhesh province.

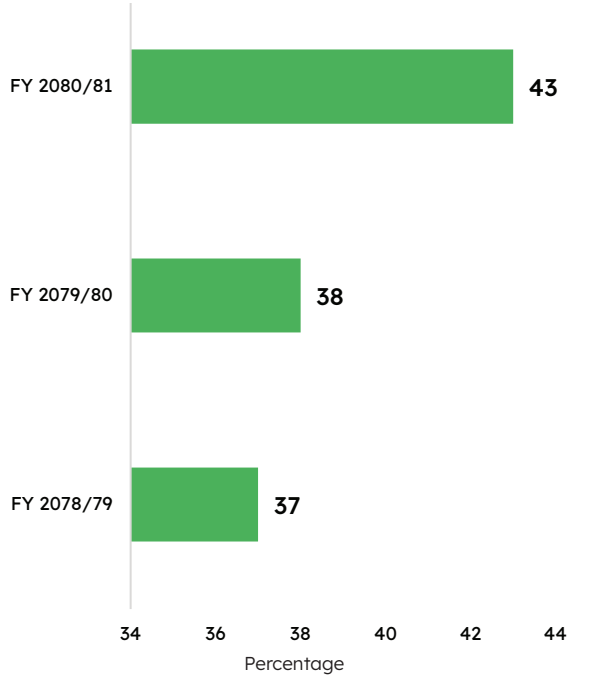


Source: IMIS/HIB

Figure 23.6 Percentage of insuree renewing the policy across province in FY 2080/81.

Service Utilization

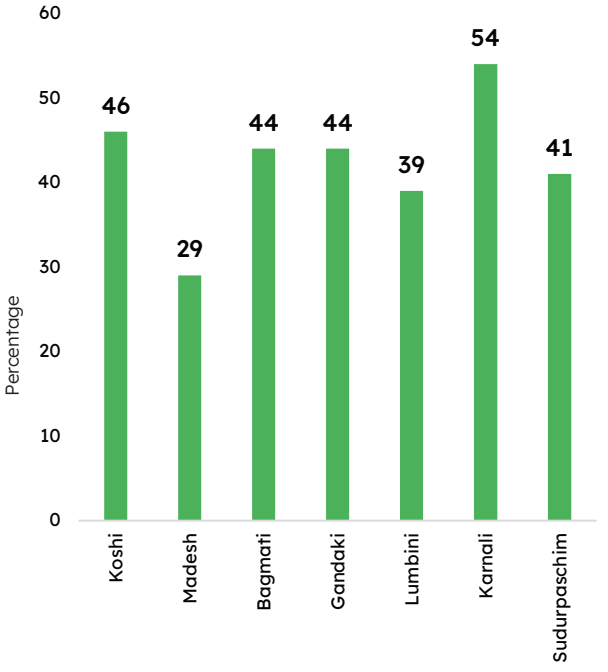
The figure 23.7 represents the service utilization of active insuree in Health Insurance (HI) across the fiscal years 2078/79, 2079/80, and 2080/81. Service utilization among the total active insuree of the respective year shows an upward trend. In 2078/79, the utilization was at 37%, which increased to 38% in 2079/80, and then significantly rose to 43% in 2080/81. Among the total active insuree of 5,012,213 in FY 2080/81, the number of insuree utilizing the service was 2,154,550 (43%). This suggests increasing adoption and use of health insurance services during this time.



Source: IMIS/HIB

Figure 23.7 Service Utilization of HI in FY 2078/79-2080/81

The figure 23.8 represents the percentage of insuree utilizing the service among total active insuree of respective province in FY 2080/81. In FY 2080/81 Karnali province has highest percentage of insuree utilizing service while Madhesh province has lowest among the total active insuree of respective province.



Source: IMIS/HIB

Figure 23.8 Percentage of insuree utilizing the service across province in FY 2080/81.

Cumulative Health Insurance Coverage for FY 2080/81

The table 23.1 provides a summary of cumulative coverage indicators related to insurance, detailing both numerical figures and percentages for four key categories. A total of 2,608,139 families/household, representing 39% of the total families/household in the region are insured. In terms of the total population, 8,292,141 individuals (28%), have insurance coverage, indicating significant potential for expanding access.

Likewise, 38,75,025 individuals (47%) have accessed service among the total insured population till FY 2080/81. It demonstrates that nearly half of those insured have utilized the benefits provided. Additionally, 5,404,936 individuals (65%) of the insured population have renewed their insurance till FY 2080/81, reflecting a high level of satisfaction or perceived value among policyholders. Overall, the data highlights a strong foundation of insurance coverage and service utilization, with a notable renewal status suggesting sustained trust and engagement in the insurance program. However, the relatively low percentage of the total population insured (28%) points to opportunities for further expansion and outreach.

Table 23.1 Cumulative coverage of health insurance till FY 2080/81

Cumulative Coverage Indicators	Number	%
Total Families Insured	2,608,139	39
Total Population Insured	8,292,141	28
Insured People accessing services	3,875,025	47
People renewing Insurance	5,404,936	65

Source: IMIS/HIB

Empaneled health service providers for health insurance

As of FY 2080/81, a total of 454 health facilities are empaneled under the health insurance program, an increase from 440 in FY 2079/80. These include 394 government hospitals and 26 Community hospitals, and 34 private hospitals across all provinces. Koshi (108) and Bagmati (107) have the highest number of empaneled facilities, followed by Gandaki (59), Lumbini (58), Madhesh (56), Karnali (33), and Sudurpaschim (33) (table 23.2).

Table 23.2 Empaneled Health Service Providers for Health Insurance till FY 2080/81

Province	Community	Government	Private	Total
Koshi	5	86	17	108
Madhesh	3	48	5	56
Bagmati	10	92	5	107
Gandaki	1	54	4	59
Lumbini	3	53	2	58
Karnali	3	30	0	33
Sudurpaschim	1	31	1	33
Total	**26**	**394**	**34**	**454**

Source: IMIS/HIB

Box 23.2 SWOT Analysis of HIP

Strengths	Opportunities
• Strong legal framework supported by the Constitutional mandate, Health Insurance Act, 2074 and Health Insurance Regulation, 2075 • Expanded coverage across all districts • Increasing population coverage • Strong government commitment and prioritization of health insurance • Equity based program	• Inter-governmental coordination • Inclusion of a large formal sector in the health insurance program • Increasing public participation in health insurance schemes • Greater inclusion of low-income and vulnerable populations • Strong international commitment to Universal Health Coverage (UHC) • Opportunities for collaboration with external development partners in the health sector • Digitalization of the programme
Weaknesses	**Threats**
• Lack of permanent organizational structure • Unfilled permanent staff positions • Insufficient budget allocation	• Inadequate rationale for the selection of health services • Increasing drop-out • Limited understanding of the concept of solidarity • Fragmented social health protection programs

24 Councils for Health Professionals and Health Research

Nepal Medical Council	Nepal Ayurveda Medical Council	Nepal Nursing Council	Nepal Pharmacy Council	Nepal Health Professional Council	Nepal Health Research Council	Medical Education Commission

Ministry of Health and Population has five councils for health professional and one health research council as autonomous bodies dedicated to ensure best treatment and services to its citizens from the professionals maintaining their integrity and ethics in practices. These councils are mandated to regulate their respective practitioners/professionals for quality assurance of the services that they provide including health research. The major principles abiding these councils being- justice, autonomy, non-maleficence and beneficence. In addition to these councils, for regulation of the health professional education in Nepal, Medical Education Commission (MEC) has been established in 2076 (2019) guided by Nepal Medical Education Act 2075. The commission is mandated for the quality assurance in the process of the production of the health professionals, prior to the establishment of MEC respective councils were mandated for quality control of their related health professional education. This chapter covers the details for each council, key guiding documents/important milestones, major activities, achievements and challenges of the respective councils.

24.1 Nepal Medical Council

24.1.1 About the council

The Nepal Medical Council (NMC) is a regulatory body established under NMC Act 2020 B.S. to protect public health by ensuring efficient and ethical medical practice by the practitioners licensed to it. The act came into function with the endorsement of Nepal Medical Council Regulation 2024 BS (1968 AD). At present NMC has the mandate to regulate the practitioners, their capacity building, standardization and advancing of practices and ensuring ethical practices. The decisions of NMC in regards to the patients or professionals can also be challenged in the court. The details on NMC and its structure are available to its stakeholders including the public through its website: https://www.nmc.org.np/. All the services provided by the council are provided through online portal and provision of and written application has been halted.

24.1.2 Rights, Duties and Responsibilities of the Council

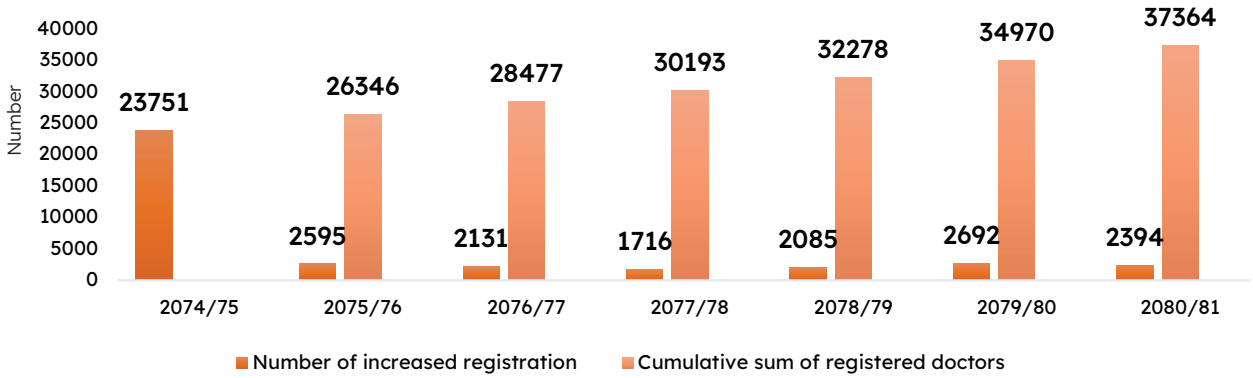
Following are the rights, duties, and responsibilities of the NMC.

- **Licensing Examination**
  The NMC conduct licensing exams for MBBS and BDS graduates, as well as special exams for postgraduates.
- **Registration**
  The NMC certifies medical/dental professionals after they pass licensing examinations.
- **Policy Formulation**
  The NMC sets polices and standards for the regulation and functioning of the medical professions.
- **Ethical Investigations**
  The NMC formulate a code of conduct and investigate ethical violations. Likewise, any registered practitioners and doctors later identified with fake documents are deregistered for the council.
- **Continuing Professional Development**
  The NMC strengthens the Continuing Professional Development (CPD) program based on the need of medical practitioners. NMC uses an integrated data management system called CPD database as an official repository for the information on the continued evidence-based education of licensed doctors.
- **Certifying for Good Standing**
  Good standing certificate is required for registration of Nepali medical practitioner in the specified country's medical practice regulating authority. The NMC issues a good standing certificate upon a request of the registered doctors.

24.1.3 Key achievements in FY 2080/81

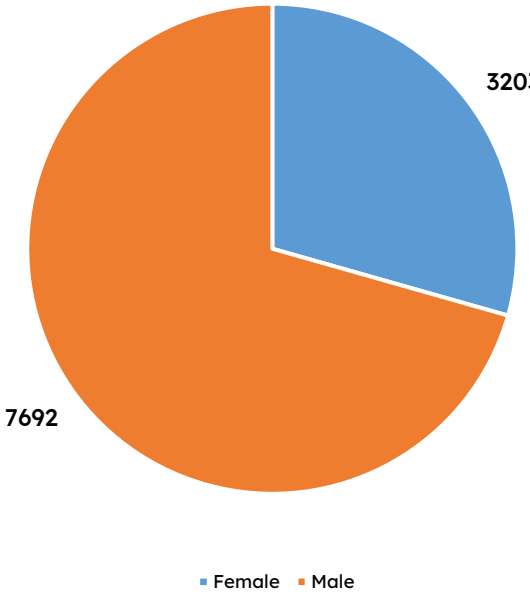
Cumulative status of NMC registration

As of FY 2080/81, a total of 37,364 medical practitioners are registered in NMC). In FY 2080/81, a total of 2,394 doctors (bachelor level and post-graduate level) were registered in NMC. (figure 24.1). Likewise, as of FY 2080/81, a total of 10,895 doctors are registered as specialist. (figure 24.2)



Source: NMC/MoHP

Figure 24.1 Status of cumulative NMC registration

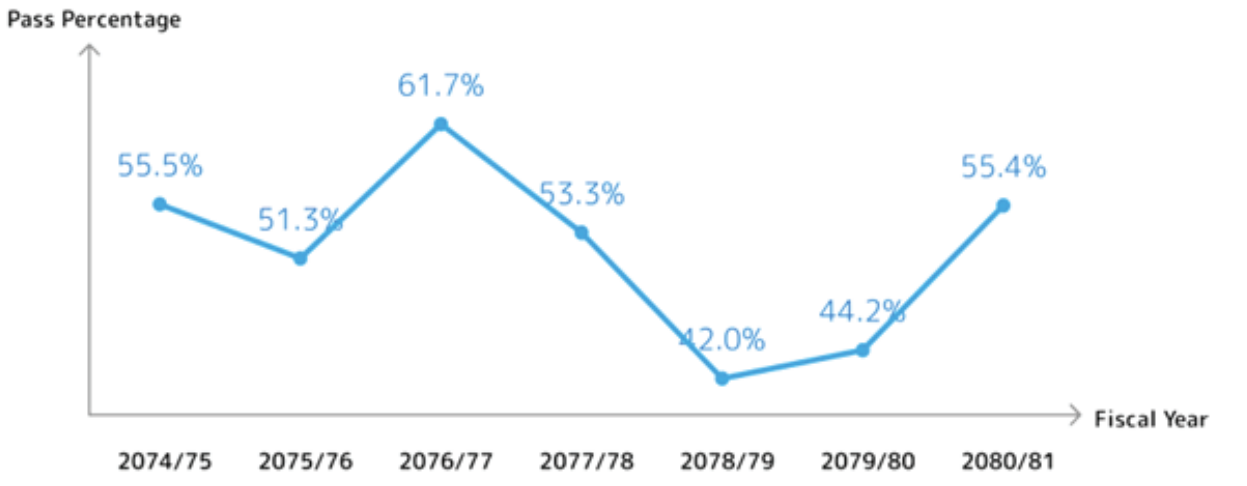


Source: NMC/MoHP

Figure 24.2 Status of cumulative NMC specialist registration

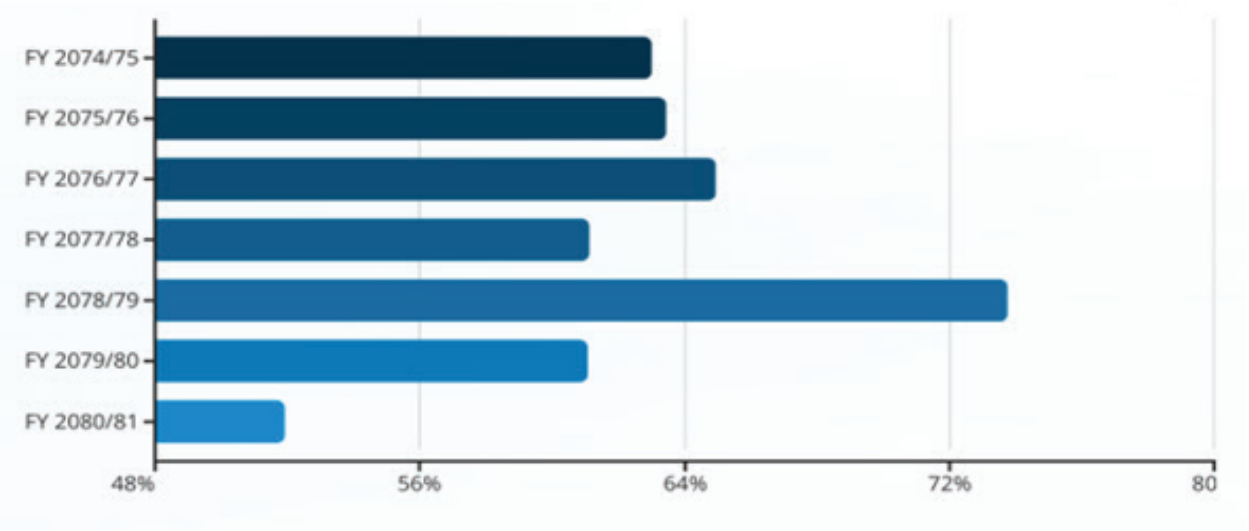
Pass rates of licensing examination for doctors

The pass rates for bachelor level licensing examination and special license examination were around 55%% and 52%, respectively. (figure 24.3 & figure 24.4) There is fluctuation in the pass rates in last six years in both the examination.



Source: NMC/MoHP

Figure 24.3 NMC licensing examination result: pass percentage (2018-2024)

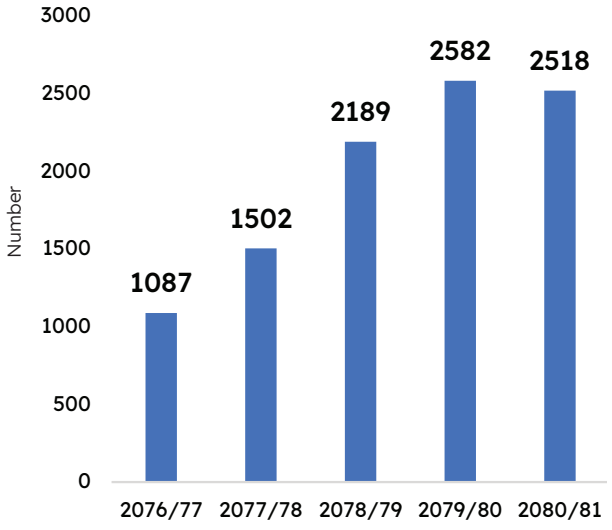


Source: NMC/MoHP

Figure 24.4 NMC licensing special examination result: pass percentage (FY 2074/75 – 80/81)

Issuance of good standing certificates

The council issued 2,518 good standing certificates to the registered doctors in FY 2080/81. (figure 24.5)



Source: NMC/MoHP

Figure 24.5 Status of good standing certificate issued

Status of complaints on ethical investigations

In FY 2080/81, a total of 70 complaints were registered for ethical investigations, of which 6 complaints were withheld, and 47 complaints are in active trials. Verdict is issued for 17 cases.

Challenges of NMC

- The continuous and increasing migration of the medical professionals both undergraduate level and postgraduate level from the country to abroad has increased further shortage in the availability of the medical doctors in the country
- Frequent incidents of manhandling of medical doctors and security threats to the medical doctors and no remarkable changes felt even after the endorsement of the Ordinance on the Safety and Security of Health Workers and Health Institutions (First Amendment) Ordinance, 2079 B.S. under Article 114 (1) of the Constitution of Nepal from honorable President.
- Increasing incidence of the suicidal deaths among medical doctors and lack of strategic move from government to address the causes of poor mental health among medical doctors.
- NMC has been continuously advocating for the increase in the minimal wages for medical doctors but no tangible changes from government to address it.

24.2 Nepal Ayurveda Medical Council

24.2.1 About the council

Nepal Ayurveda Medical Council (NAMC) was established under the act, Ayurveda Medical Council Act, 2045 BS (1988 AD). NAMC also has the mandate to regulate practitioners, their capacity building, standardization and advancing of practices and ensuring ethical practices. In addition to the avenues of practitioners, the act also incorporates the Ayurveda Medicine production and control and perception-based sell of the ayruveda medicines. The council ensures the values of Ayurveda, ancient system of medicine, are practiced safely and effectively. The details on NAMC and its structure are available to its stakeholders including the public through its website: https://namc.org.np/.

24.2.2 Rights, Duties and Responsibilities of the Council

Registration of practitioners

The NAMC conducts licensing examination for registration of the Ayurveda practitioner, periodically. One can practice only after passing the licensing

examination. The Ayurveda practitioners include doctors with postgraduate in Ayurveda (MD), Bachelor of Ayurveda & Modern Medicine & Surgery (BAMMS), Bachelor of Ayurveda Medicine & Surgery (BAMS), Ayurveda Health Assistant (AHA) and Auxiliary Ayurveda Health Workers (AAHW). The first three categories (doctors) are registered in AMAC. Foreigners who wish to practice Ayurveda Medicine in Nepal are provisionally registered with NAMC for one year at a time.

Continuing Professional Development

At present NAMC has worked in the formation of committee for CPD for strategic planning and activities for CPD for Ayurveda professionals.

24.2.3 Key achievements in FY 2080/81

Registration of the Ayurveda professionals

As of FY 2080/81, a total of 3 PhD, 157 MD/MS/G, and 1028 BAMS/equivalent doctors in Ayurveda have been registered in NAMC. In FY 2080/81, a total of 5 MD/MS/PG, and 83 BAMS/equivalent doctors were registered in NAMC (table 24.1)

Table 24.1 Registered Ayurveda Health Professionals in NAMC cumulative FY 2080/81

Category	Number in FY 2080/81	Total Number
Ph.D.	0	3
MD/MS/PG	5	157
BAMS/equivalent	83	1,028
AHA/Equivalent	75	1,917
AAHW/TSLC	132	3,324
Traditional healers	0	19
Ayurveda Bachelors in Pharmacy	0	11

Source: NAMC/MoHP

Pass rates of licensing examination

The pass rates for BAMS licensing examination were 55.78%, showing an increasing trend compared to previous licensing examination. (table 24.2)

Table 24.2 Pass rate of BAMS licensing examination

BAMS Licensing examination	Pass %
2081/06/12	55.78%
2080/12/17	41.25%
2080/06/27	41.37%

Source: NAMC/MoHP

Challenges of NAMC

- Lack of infrastructure
- Lack of amendment of laws of council as per the need
- Difficulty in verification of doctors
- Difficulties in registration of various specialties other than ayurveda
- Unable to develop data management software regarding registered practitioners
- Lack of human resources required tor the council
- Difficult to manage funds required for routine activities after the establishment of MEC and phase out of non-academic course

24.3 Nepal Nursing Council

24.3.1 About the council

Nepal Nursing Council (NNC) was established under NNC Act 2052 (1996). It came into operation on 2053-03-02 (16 June 1996). NNC is an autonomous body formed to maintain quality nursing and midwifery education for the provision of quality nursing and midwifery services to the public. The main functions of NNC are to register the nurse and midwife through licensing examination and manage the registration of the qualified nursing/midwifery professionals, formulate policy required to operate these professions smoothly and provide better care to the public. NNC further monitors the quality of care, formulate professional code of conduct and regulate the professional practices. The council develops scope of practice for nursing and midwifery professionals. NNC also publishes the annual journal. The details on NNC and its structure are available to its stakeholders including the public through its website: https://nnc.org.np/.

24.3.2 Rights, Duties and Responsibilities of the Council

Registration of practitioners

The NNC conducts licensing examination for registration of nurses and midwives. These examinations work as the barrier for nurses and midwives to be deployed in the clinical arena. NNC registers both nationals as well as international nurses.

Code of Conduct

The NNC has endorsed its Code of Ethics and Professional Code of Conduct for Registered Nurses and Midwives in Nepal 2076 (2019). All registered nurses and midwives should abide by the professional code of ethics and conducts.

Continuing Professional Development

The NNC is strengthening the CPD and Continuing Nursing Education (CNE) based on the need of nurses and midwifes. Likewise, CPD/CNE software development in on progress and has been initiated.

Certifying for Good Standing

Good standing certificate is required for registration of Nepali nurses in the specified country's nursing practice regulating authority. The certificate is requested for promotion, residency training, fellowship training and employment.

24.3.3 Key achievements in FY 2080/81

Status of nursing workforce registered

As of FY 2080/81, a total of 72,550 nursing workforce are registered in NNC, of which 37, 454 are ANMs, 4,015 are PCL nursing, 1,381 are B.Sc. nurses, 91 are Bachelor level midwifes, and 1,695 are specialist nurses (MN/M. Sc.). A total of 40,335 nursing workforce have been renewed as registered nurses. (table 24.3)

Table 24.3 Status of nursing workforce registered

Nursing Categories	New registered number in 2080/81	Total Registered Number till 2080/81 (Cumulative)	Re-registration/ renewal status till 2080/81 (Cumulative)
ANM	243	37,454	21,076
PCL NURSING	4,015	4,015	-
B.SC. NURSING	1,381	1,381	-
Bachelor of Midwifery Science (BMS)	25	91	-
Specialist Nurses (MN/M.Sc.)	188	1,695	-
Registered Nurse	-	72,550	40,335

Note: Nepal Nursing Council initially registered nursing professionals in two categories: Auxiliary Nurse Midwives (ANM) and Registered Nurses, based solely on application. Later, starting from May 11, 2012, the Council began administering exams for nurses to facilitate their registration. This same examination process applies to both B.Sc. and PCL nurses, allowing them to be registered as Registered Nurses.

Specialist registration commenced in 2021 with application-based registration, and from July 2023, computer-based examinations were introduced. The validity of the license is six years, meaning that renewal and re-registration records will only be available after this period has elapsed. Similarly, B.Sc. and PCL Nursing examinations began separately in December 2022, so their renewal and re-registration statuses will also be available after six years.

Source: NNC/MoHP

Pass rate of licensing examination

In FY 2080/81, a total of 7484 PCL nurses, 2019 B.Sc. nurses, 27 bachelor level midwifes, and 506 master level nurses appeared for licensing examination. The pass rates for PCL level nursing were 53.65%, B.Sc. nurses were 78.65%, bachelor level midwifes were 92.60%, and master level nurses were 67.78% (table 24.4)

Table 24.4 Pass rate of licensing examination in NNC

Level	Number of candidates appeared	Passed Number	Pass (%)
Masters level	506	343	67.78%
Bachelor level	• B.Sc.-2019 • BMS-27	• B.Sc. 1381 • BMS-25	• B.Sc. 78.65% • BMS 92.60%
PCL Level	7,484	4,015	53.65%

Source: NNC/MoHP

Status of good standing certificate issues

In FY 2080/81, a total of 9944 good standing certificates were issues from NNC, of which highest certificates were issued for USA (6000 certificates).

Other achievements

- Computerized examination for Master's level and BMS level
- Initiation of hospital service quality assessment
- Initiation of CNE/CPD software

Challenges of NNC

- Difficulties in conducting licensing examinations due to the lack of a designated exam hall
- Potential risk of shutdown of online system due to the lack of support and maintenance for the government-owned server
- Lack of amendment of the Nursing council act
- High failure rate of candidates in licensing examination

24.4 Nepal Pharmacy Council

24.4.1 About the council

The roots of establishment of Nepal Pharmacy Council (NPC) lies in the National Drug Policy 2051 (1995) Section 4.4c which stated aiming to promulgate legislative measures to register pharmacy manpower engaged in the pharmacy profession. Nepal Pharmacy Council (NPC) was established in 2058 (2001). NPC is mandated to register the pharmacists and pharmacy assistants and regulate their practices ensuring right person available for dispensing the medicines at the pharmacy as well as development of the pharmaceutical products. The details on NPC and its structure are available to its stakeholders including the public through its website: https://nepalpharmacycouncil.org.np/.

24.4.2 Rights, Duties and Responsibilities of the Council

Registration of personnel

The NPC conducts licensing examination for registration of the pharmacists and pharmacy assistants, periodically. The examination activities are strengthened with inclusion of thumb and bar code for applicants similar to NMC license examination. The examination process is further complemented by the skill test before registration of the personnel to the council.

Code of Conduct

All professionals registered in the council are to abide by the code of conduct. In addition to the practitioners, NPC also furnishes the code of conduct for pharmacy that they need to abide by.

Continuing Professional Development

The NPC conducts AMR training for pharmacist.

Issuance of No-Objection Letter

The NPC issues No-Objection letter for the students applying for studies abroad for diploma level.

Cancellation of registration

The NPC also works on de-registration of pharmacist and pharmacy assistant

Hospital pharmacy directives

The NPC contributed in revision of Hospital Pharmacy Directive.

24.4.3 Key achievements in FY 2080/81

Registered human resources in NPC

As of FY 2080/81, there are a total of 6677 registered pharmacists, and 13826 registered pharmacy assistants. Also, there are a total of 16 foreign pharmacist registered in NPC.

Status of no-objection certificate issued

In FY 2080/81, about 300 no-objection certificate was issued for studying diploma in pharmacy abroad.

Other achievements

- Initiation of Know Your Pharmacist (KYP) program
- Continue Pharmacy Education in association with PQM+ at provincial level throughout Nepal
- Conducted training on AMR
- Online Certification and validation
- Old Pharmacist/Pharmacy Assistant hard copy data Digitization and online validation
- All update & New Certification in with compulsory Barcode
- Online registration and MIS developed and digitized.
- Played vital roles in Drafting hospital pharmacy directive 2080.

Challenges of NNC

- Lack of own infrastructure
- Regular monitoring of pharmacy on operation based on code of ethics

24.5 Nepal Health Professional Council

24.5.1 About the council

Nepal Health Professional Council (NHPC) was established under Nepal Health Professional Council Act 2053 (1997). All allied health courses, health personnel other than the one registered in the five aforementioned councils, are registered through NHPC. It is the umbrella organization for regulation of all the allied medical sciences/ allied health professionals. The details on NHPC and its structure are available to its stakeholders including the public through its website: https://nhpc.gov.np/.

24.5.2 Rights, Duties and Responsibilities of the Council

Registration of personnel

The NHPC conducts subject specific licensing examinations for 37 categories of health professionals registered in NHPC.

Code of Conduct

The NHPC has endorsed the code of conduct for various health professionals that they need to abide by

Continuing Professional Development

The NHPC realizes that there is need of initiating CPD in the respective fields.

Issuance of Good Standing Certificate

The NHPC issues good standing certificate for the students applying for studies abroad, promotions and other purposes.

24.5.3 Key achievements in FY 2080/81

Status of health professionals registered

As of FY 2080/81, a total of 161727 health professionals are registered in NHPC, of which 3091 are registered under specialization level, 17400 under first level, 48873 under second level, and 92363 under third level.

Pass rates of licensing examination conducted by NHPC

In FY 2080/81, a total of 17326 candidates appeared for licensing examination, of which the pass percentage was only 44%. The highest pass percentage was among master's level (51%) and lowest among bachelor level (37%). (table 24.5)

Table 24.5 Pass rates in licensing examination conducted by NHPC in FY 2080/81

Licensing examination	Appeared	Passed Number	Pass (%)
Certificate level	13,683	6263	46%
Bachelors' level	3,248	1,191	37%
Masters' level	395	202	51%
Total	**17,326**	**7,616**	**44%**

Source: NHPC/MoHP

Other achievements

- Improvement of information system
- Strengthened financial capacity of council

Challenges of NHPC

- Lack of own examination hall
- Inter council coordination and collaboration
- Diverse set of programs and require contextual health personnel to represent them in the council

24.6 Nepal Health Research Council

24.6.1 About the council

Nepal Health Research Council (NHRC) is the national apical body for promoting health research across the country. NHRC was established in 2048 (1991) under Nepal Health Research Council Act. It was mandated to promote and coordinate health research regulation, evidence generation, translation of evidence into policy and practice, and capacity building of national scientists in the areas of health research and evidence. NHRC also serves as the main national institution

responsible for technical and ethical review of proposals submitted by individual health researchers, national authorities, NGOs, INGOs and universities. After review, Ethical Review Board (ERB) of NHRC approves these proposals. ERB is accredited by Forum for Ethical Review Committee in the Asian and Western Pacific Region. The details on NHRC and its structure are available to its stakeholders including the public through its website: https://nhrc.gov.np/. Also refer to https://nhrc.gov.np/about/nhrc-milestone/ for the major milestones of its journey from its establishment.

24.6.2 Rights, Duties and Responsibilities of the Council

Research activities

The NHRC carries out research on its own on national health issues aligning with the national health priorities.

Capacity building

The capacity-building roles of NHRC encompass providing education, organizing training on various aspects of health system research to national scientists with special emphasis on promoting the research competency of young researchers.

Research Grants

Additionally, NHRC has been providing health research grants to the researchers in order to enhance the research activities throughout the country.

Workshops/Seminar

The NHRC conducts workshops and dissemination programs to facilitate uptake of research findings by the policymakers into health system policies and practices.

NHRC Journal

Similarly, NHRC facilitates access to research finding from different research reports, journals, books, magazines through the library digital database and the NHRC Journal. The detail of the NHRC journal and process of publication is available at: http://jnhrc.com.np/index.php/jnhrc.

24.6.3 Key achievements in FY 2080/81

Completed Research projects/activities in FY 2080/81

- Understanding The Availability and Utilization of Oxygen and Its Supply System with A Focus On Newborns and Pediatric Oxygen Delivery Equipment at Various Level of Health Facilities in Nepal
- Utilization of Health Education Materials On Family Planning, Safe Motherhood, And Newborn Care in Nepal
- Baseline Study On Rice Fortification Programme in Nepal
- Study On Hemoglobinopathies and G6PD Deficiency in Terai Districts of Nepal
- Cancer Incidence and Mortality Rate in The Kathmandu Valley and Rukum District
- Risk Factor for Breast Cancer in Nepal: A Case Control Study

Ethical Review Board (ERB)

The ERB of the NHRC received 678 health research protocols for ethical clearance in FY 2080/81, of which a total of 550 protocols were approved. For the review of submitted protocols, 73 ERB meetings/expedited meeting were conducted.

Institutional Review Committees (IRCs)

There is a total of 63 IRCs established across the country to promote health research at the institutional level, especially in health science universities, institutes, colleges, and hospitals. Of the total 63 IRCs, 56 IRCs are active and 7 IRCs are inactive. Every year, a team from NHRC inspects the Institutional Review Committees approved by NHRC. During Fiscal Year 2080/81, 11 IRCs were visited for monitoring and evaluation. Likewise, 2 training workshops were conducted for ERB members and 3 training workshops for IRC members.

Other achievements

- Development of the web-based NEPMED health journal repository system with new features
- Publication of six issues of the journal

Challenges

- Recognizing and addressing critical research priorities in Nepal
- Retention of qualified and trained human resources of expertise
- Inadequate availability of laboratories for research sample analysis
- Barriers to effective coordination and communication from evidence generation to translation into actions
- Research initiatives constrained by the limited budget hindering the ability to generalize at national levels
- Safety of the researchers and enumerators during research activities
- Inadequate funding from the government, national and international partners to support national level research initiatives and infrastructures.

24.7 Medical Education Commission

24.7.1 About the commission

As per provision of the National Medical Education Act 2075, in the context of the essence and spirit of the reports of the commission, committee and task force formed to improve medical education at different times; Medical Education Commission (MEC) has been established to:

- increase the investment of the state in the field of medical education,
- develop medical education in line with the national needs of Nepal,
- regulate medical education in integrated and efficient way,
- organize the work related to the establishment and operation of medical institutions,

- maintain quality, professionalism, institutional accountability, geographical balance and social justice in medical education,
- ensure equal access of all students including the deprived.

The Act defines medical education as education of all disciplines and levels related to the health profession (Health Professional Education).

It is chaired by the Prime Minster of Nepal, and co-chaired by the Health Minister and Education Minister of Nepal. It conducts entrance examination for undergraduates and post-graduates medical and health sciences degree. The details of MEC and its structure can be found publicly through its website: https://www.mec.gov.np

24.7.2 Rights, Duties and Responsibilities of the Commission

Primarily, confined to the National Medical Education Act, 2075, and National Medical Education Regulations, 2077 (with amendments), and various procedures such as Medical Education Commission Fund Operation Procedure, 2077, National Board of Medical Specialties Program Operation Procedure, 2077, and Quality Assessment Procedure of Reputable Institutions Teaching Medical Education, 2077, MEC has the following rights, duties and responsibilities.

- To determine the national policy to be adopted in the field of medical education
- To determine the policy standards and criteria related to medical education
- To organize and manage integrated entrance exam for the students of bachelor, postgraduate or higher levels who wants to study in Nepal and abroad
- To develop and implement matching system for the selection of student's based on priority of pass results
- To construct an integrated annual educational calendar for medical education programs
- To provide letter of intent, recommend affiliation, accreditation, determine tuition fees and seat for educational institution providing medical education
- To formulate polices for academic upgrading and research to improve quality of medical education
- To coordinate and collaborate with national and international bodies working in the field of medical education
- To determine the curriculum, teaching methods and degree standards related to medical education
- To issue eligibility letter to those who wants to pursue medical education abroad
- To make the plans related to periodic assessment, projection and supply of manpower required for national health service and medical education system
- To perform the activities related to the National Board of Medical Specialties Program
- To direct universities, health sciences academies and institutions, and CTEVT on areas related to medical education

24.7.3 Key achievements in FY 2080/81

Trend on Seat Allocation and Enrollment

For DM/MCH programs, allocated seats increased in 2079 but slightly decreased in 2080, while enrollments remained stable between 66–70 students yearly, indicating a gap between available seats and student uptake. Likewise, for MD/MS program, allocated seats decreased from 1218 in 2078/79 to 1178 in 2080/81, while enrollments decreased from 1109 to 1104 in three years' time. Similarly, seats allocated decreased from 8520 in 2078/79 to 7606 in 2080/81, and enrollments rose from 6012 to 6342, with enrollment rates improving from 71% to 83% in three years' time. Regarding PCL programs, the data was obtained from CTEVT and shows rise in enrollments from 9,669 in 2078/79 to 14,018 in 2080/81, but the percentage of filled seats declined from 96% to 79% in three years' time. (table 24.6)

Table 24.6 Trend in Seat allocation and enrollment

Programs	Seat Allocation and Enrollment (2078/79 – 2080/81)					
	2078/79		2079/80		2080/81	
	Allocated	Enrollment	Allocated	Enrollment	Enrollment	Enrollment
DM/MCH	87	66	116	70	100	67
MD/MS	1,218	1,109	1,152	1,068	1,178	1,104
Undergraduate Programme	8,520	6,012	7,659	6,166	7,606	6,342
PCL Programs (CTEVT)	10,074	9,669	12,993	11,266	17,824	14,018

Source: MEC

Other achievements

- Implementation of undergraduate medical education curriculum framework
- Expansion of government medical institutions in six provinces of the country
- Establishment of the Medical Education Management Information System (MEMIS) for data management
- Projection of human resource for health up to 2030
- Medical Education Policy, 2023: Drafted and implemented to enhance educational standards
- System innovation in entrance exam
- Introduction of electronic logbooks in the National Board of Medical Sciences (NBMS) program

- Steps taken towards obtaining World Federation for Medical Education (WFME) membership
- Coordination with universities to implement an annual academic calendar for all programs
- Initiation of mapping of the institution to identify the need of Health Institution in the country
- To ensure that the designated seats for educational institutions do not remain vacant, the initiation of an alternative matching process after the wrap-up matching has begun
- Online system for issuing eligibility letters for foreign study permits

Challenges

- Improving the quality and relevance of medical education
- Coordination and collaboration with universities and academy to strengthen competency based medical education as per the need of twenty first century
- Explore model of offering scholarships for the deserving candidates and make it sustainable
- Develop national qualification framework for medical education
- Develop scientific process in determining tuition fees for medical programs.

25 Health Development Partners

25.1 Aid Harmonization in Health Sector

Since 2058/59 (2002), the Government of Nepal (GoN) has implemented key policies to support the Sector-Wide Approach (SWAp) in the health sector, aiming to achieve Universal Health Coverage (UHC) in alignment with the Sustainable Development Goals (SDGs). The Foreign Aid Policy (FAP) 2002 and Development Cooperation Policy (DCP) 2014 provide a foundational framework for effectively implementing SWAp, ensuring better coordination of external funding.

Nepal's Health Sector Strategies play a crucial role in SWAp implementation by requiring Health Development Partners (HDPs) to align their support with national policies, strengthening government ownership. Under the leadership of the Ministry of Health and Population (MoHP), HDPs are jointly accountable for implementation, performance monitoring, and achieving health sector goals.

The Nepal Health Sector Strategic Plan 2023-2030 and the Annual Work Plan and Budget (AWPB) have guided health sector investments, ensuring alignment through Joint Financial Agreements between the Ministry of Health and Population (MoHP) and Health Development Partners (HDPs). This chapter highlights key contributors, their areas of investment, geographical coverage, and the financial commitments made in the health sector for FY 2080/81, as reported by HDPs.

25.2 Mapping of HDPs based on Major Programs of Investment

Based on information received from Health Development Partners (HDPs), divisions, and centers, a mapping of development partners has been conducted according to their major program investments. The thematic areas are primarily aligned with the chapters of this report, while additional common themes, identified from annual reports, have also been included. (Table 25.1)

Table 25.1 Mapping of Development Partners based on Major Programs of Investment

Thematic areas	Development Partners Contributing in the area
Maternal and Newborn Health	UNICEF, UNFPA, WHO, ADRA Nepal, CARE Nepal, FAIRMED Foundation Nepal, Medic Mobile, Nick Simons Foundation International, One Heart Worldwide, Save the Children, PHASE Nepal, USAID's Strengthening Systems for Better Health (SSBH)
Child Health and Immunization	UNICEF, WHO, CARE Nepal, Save the Children, United Mission to Nepal, PHASE Nepal
Nutrition	UNICEF, WHO, USAID, ADRA Nepal, World Vision International Nepal, Nepali Technical Assistance Group, PHASE Nepal
Sexual and Reproductive Health and Rights (Family planning)	UNFPA, WHO, USAID, GIZADRA Nepal, CARE Nepal FHI 360 Nepal, Ipas Nepal, Nepal CRS Company, USAID's Strengthening Systems for Better Health (SSBH)
Primary Health Care	UNICEF, UNFPA, WHO, CARE Nepal, FAIRMED Foundation Nepal, FHI 360 Nepal, Medic Mobile, One Heart Worldwide, Save the Children, United Mission to Nepal Nepal CRS Company, PHASE Nepal
Non communicable disease	WHO, UNICEF, FHI 360 Nepal
Mental health	UNICEF, WHO, UNFPA, United Mission to Nepal
Surveillance	WHO, FHI 360 Nepal Office
Communicable disease including Tuberculosis and HIV	WHO, Global Fund, IoM, FAIRMED Foundation Nepal, Save the Children, USAID, Japan Anti TB Association support, Damien Foundation, BNMT, TB Nepal, BWSN, KIDS, Trisuli +, NATA, JANTRA, INTERPID Nepal, BNMT, NYMAT Nepal
International Health Regulation	WHO, USAID
Curative services	WHO, ADRA Nepal, Nick Simons Foundation International, One Heart Worldwide
Disability and rehabilitation	WHO, USAID, FAIRMED Foundation Nepal
Gender based violence prevention and response, OCMC and medico-legal services	UNFPA, WHO, British Embassy Kathmandu, FAIRMED Foundation Nepal, Ipas Nepal
Strengthening public health laboratories	WHO, FHI 360 Nepal, Nick Simons Foundation International

Thematic areas	Development Partners Contributing in the area
Health education information and communication	UNICEF, UNFPA, WHO
Logistics management	UNFPA, WHO, British Embassy Kathmandu, ADRA Nepal, FHI 360 Nepal
Health information management	WHO, UNFPA, GIZ, ADRA Nepal, FHI 360 Nepal, Medic Mobile, USAID's Strengthening Systems for Better Health (SSBH)
Health infrastructure management	WHO, British Embassy Kathmandu
Healthcare waste management	WHO, GIZ, UNFPA, FHI 360 Nepal
Water, sanitation and hygiene (WASH)	WHO, UNICEF, GIZ, USAID, USAID's Health and Hygiene Activity (Swachchhata) implemented by DevWorks International, ADRA Nepal, United Mission to Nepal (UMN)
Digital health	WHO, GIZ, CARE Nepal, Medic Mobile, Nick Simons Foundation International
Health insurance and social protection	WHO, GIZ
Community mobilization and awareness program	WHO, CARE Nepal, PHASE Nepal
Private sector quality health care delivery	CARE Nepal, FHI 360 Nepal, Nepal CRS Company
Resilient Livelihood	World Vision International Nepal
Health System Strengthening	WHO, UNICEF, UNFPA, World Bank, British Embassy Kathmandu, GIZ, USAID, ADRA Nepal, CARE Nepal, FAIRMED Foundation Nepal, FHI 360 Nepal, Nick Simons Foundation International, Save the Children, United Mission to Nepal, USAID's Strengthening Systems for Better Health (SSBH)
Disaster response	UNFPA, UNICEF, WHO, World Bank, Ipas Nepal, World Vision International Nepal, Nepali Technical Assistance Group

Source: Annual report submitted by divisions/centers, health development partners

The details of the areas covered, geographical coverage and budgetary allocation and absorptions of the major health development partners are detailed in Table 25.2.

Table 25.2 Health Development Partners Major Programs, Geographical Coverage and Budget in FY 2080/81

Organization (Alphabetical order)	Major Program Focus	Geographical Coverage Provinces Districts/LLGs	Budget* for Health Sector FY 2080/81 *Currency conversion factors used [1 USD= NRs.138.49; 1£ = NRs.179.58, 1 Euro = NRs. 150.62	
			Total allocated budget (NRs in million)	Budget absorption rate (%)
Multi-lateral agencies/ organizations				
United Nations Children's Fund (UNICEF)	Maternal and newborn health	77 Districts	**638.9**	**100%**
	Child Health including immunization	77 Districts		
	Child and adolescent Mental health	77 Districts		
	Health System Strengthening including emergency response	77 Districts		
	Nutrition - Holistic landscape focused on children	77 Districts (753 LLGs)	**84.58**	**100%**

Organization (Alphabetical order)	Major Program Focus	Geographical Coverage Provinces Districts/LLGs	Budget* for Health Sector FY 2080/81 *Currency conversion factors used [1 USD= NRs.138.49; 1£ = NRs.179.58, 1 Euro = NRs. 150.62	
			Total allocated budget (NRs in million)	Budget absorption rate (%)
United Nations Population Fund (UNFPA)	**Sexual and Reproductive Health and Rights Program** - Holistic landscape **Family Planning and Adolescents Sexual and Reproductive Health** focused eLMIS, capacity building **Maternal Health** - Holistic landscape **Health sector response to GBV** - Holistic landscape **Population and development:** Support for review of national population policy and population perspective plan, technical support for national review of ICPD 30, support maternal mortality study report and dissemination	Nation-wide with provincial offices in Madhesh, Lumbini, Sudurpaschim, Koshi and Karnali Provinces. Ongoing project/ programmes: Koshi (3 districts), Madhesh (8 districts), Lumbini (5 districts), Karnali (2 districts) and Sudurpaschim (7 districts)	**345**	**100%**
	Family Planning/Reproductive health commodities support	Nation-wide	**276**	**100%**
	Health System Strengthening including emergency response	Nation-wide		
World Health Organization	Support to strengthen health systems capacity through policy, strategy, plan, guideline and protocol development, implementation and monitoring including focused area of GPW13, SDGs, UHC and Nepal Health Sector Strategic Plan 2022-2030. Further support to strengthen evidence generation and digital health. VPD surveillance and technical support to strengthen national immunization programme. Strengthen prevention, detection, and response capacities to health emergencies and disasters as IHR following an all-hazard and Multisectoral approach. Strengthen Disease Control & Elimination interventions including end the epidemic of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis and other priority communicable diseases. Support prevention and control of non-communicable diseases and strengthen mental health programs by supporting policy development and multisector coordination Maternal and Child Health programme	Nation-wide	**689.76**	**77.9%**

Organization (Alphabetical order)	Major Program Focus	Geographical Coverage Provinces Districts/LLGs	Budget* for Health Sector FY 2080/81 *Currency conversion factors used [1 USD= NRs.138.49; 1£ = NRs.179.58, 1 Euro = NRs. 150.62	
			Total allocated budget (NRs in million)	Budget absorption rate (%)
Bilateral Agencies/ Organizations				
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	The project, **Support to the Health Sector Strategy (S2HSS)** supports the Ministry of Health and Population (MoHP) to implement the Nepal Health Sector Strategy (NHSS) (2015-2020), which was extended until June 2022. It focuses on four fields of activity: • **Social health protection:** improving core processes of the Health Insurance Board (HIB) and the Social Security Fund (SSF) • **Subnational health management :** strengthening health management capacities of subnational governments in five municipalities (Bidur, Nilkantha, Nepalgunj, Dhangadi and Godawari) and Sudurpaschhim Province, and improving waste management and infection prevention & hygiene in 13 hospitals • **Integrated Health Information System:** improving access to digital data and information for health sector management and improving the interoperability of various systems. • **Reproductive Health:** institutionalization of selected approaches for the improvement of reproductive health services, which includes the training of birth attendants and menstrual health services	Nation-wide with focus on Sudurpashchim province and 5 selected municipalities: Bidur (Nuwakot), Neelkantha (Dhading), Nepalgunj (Banke), Dhangadhi (Kailali) and Godawari (Kailali)	**368**	**100%**
International Non-government Organization (INGO)				
ADRA Nepal	Family Planning & Adolescent Sexual and Reproductive Health program, Supply Chain Management, eLMIS, HMIS/DHIS2 and End Child Marriage including mobile SRH camps in earthquake affected districts	District number: 15 districts of Madhesh, Lumbini and Sudurpaschim Provinces		
	Health system Strengthening on Pelvic Organ Prolapse, Cervical Cancer screening through VIA and HPV/DNA, infrastructure development and equipment and instrument supply in Janakpur and district Hospitals and Health facilities	District number: 4 (Madhesh and Koshi Provinces)		
	Integrated Nutrition and WASH program	District number:2 (Madhesh and Lumbini Provinces		
	Health System Strengthening related to Maternal, Newborns Health Program including Maternal Mortality Survey			
	Health System Strengthening related to Child Health Program	District number:2 (Madhesh province)		

Organization (Alphabetical order)	Major Program Focus	Geographical Coverage Provinces/ Districts/LLGs	Budget* for Health Sector FY 2080/81 *Currency conversion factors used [1 USD= NRs.138.49; 1£ = NRs.179.58, 1 Euro =150.62	
			Total allocated budget (NRs in million)	Budget absorption rate (%)
Nick Simons Foundation International	Training In-service and academic	77 Districts	**786.63**	**94%**
	Curative Service Support program (CSSP)- Human Resource of different cadres, and equipment/Supplies	40 Hospitals		
	Hospital Strengthening Program (HSP)- System Strengthening, MSS implementation.	127 Hospitals (77 districts)		
	Research and advocacy	Need based research		
One Heart Worldwide	Capacity building of local government Birthing center renovation and equipment support Clinical training (SBA, RUSG, clinical mentor, implant, FB-IMNCI) Quality improvement (MSS, onsite coaching and mentoring) BPP/miso training Community level awareness activities	Koshi province- 2 Districts Madhesh province- 4 Districts Bagmati province- 1 Districts Gandaki province- 2 Districts Karnali province- 6 Districts	**261.32**	**100%**

Note: This is not the exhaustive, there are many federal, provincial and LLGs level registered NGOs and private companies that are contributing in health sectors.

DoHS acknowledges its partnership with the health development partners' organizations and their large contributions to Nepal's health sector. The partners have also provided technical assistance in their areas of expertise.

Annex for Family Planning and Reproductive Health Program (Chapter 6)

Annex Table 6.1 Adjusted current user of FP permanent method

At the end of FY 2080/81			
Org. Unit	Female	Male	Total
Nepal	865,860	257,555	1,123,415
1 Koshi Province	**172,525**	**29,453**	**201,978**
101 TAPLEJUNG	26	1,551	1,577
102 SANKHUWASABHA	288	1,967	2,255
103 SOLUKHUMBU	132	600	733
104 OKHALDHUNGA	541	1,544	2,085
105 KHOTANG	209	1,644	1,853
106 BHOJPUR	205	1,809	2,014
107 DHANKUTA	1,410	1,257	2,667
108 TERHATHUM	109	1,209	1,318
109 PANCHTHAR	411	1,507	1,919
110 ILAM	5,134	1,211	6,344
111 JHAPA	44,417	5,833	50,250
112 MORANG	75,912	4,055	79,967
113 SUNSARI	40,548	2,723	43,271
114 UDAYAPUR	3,184	2,542	5,726
2 Madhesh Province	**387,437**	**9,745**	**397,181**
201 SAPTARI	45,567	446	46,012
202 SIRAHA	41,164	1,320	42,484
203 DHANUSA	62,714	1,214	63,928
204 MAHOTTARI	37,086	636	37,722
205 SARLAHI	60,791	2,022	62,812
206 RAUTAHAT	41,083	705	41,788
207 BARA	30,232	1,146	31,379
208 PARSA	68,801	2,256	71,056
3 Bagmati Province	**75,194**	**97,898**	**173,092**
301 DOLAKHA	2,232	3,044	5,276
302 SINDHUPALCHOK	1,501	4,702	6,203
303 RASUWA	454	1,348	1,802
304 DHADING	1,174	6,490	7,664
305 NUWAKOT	4,805	4,794	9,599
306 KATHMANDU	26,001	13,939	39,940
307 BHAKTAPUR	6,681	2,445	9,126
308 LALITPUR	7,586	14,630	22,216
309 KAVREPALANCHOK	7,587	6,218	13,805

At the end of FY 2080/81			
Org. Unit	Female	Male	Total
310 RAMECHHAP	194	2,357	2,551
311 SINDHULI	4,237	3,217	7,454
312 MAKWANPUR	3,076	15,156	18,231
313 CHITAWAN	9,665	19,559	29,225
4 Gandaki Province	**45,476**	**39,370**	**84,846**
401 GORKHA	4,878	4,679	9,557
402 MANANG	-2	122	120
403 MUSTANG	199	208	407
404 MYAGDI	929	2,309	3,238
405 KASKI	11,034	9,396	20,430
406 LAMJUNG	1,688	4,207	5,895
407 TANAHU	4,777	5,190	9,967
408 NAWALPARASI EAST	11,382	3,053	14,435
409 SYANGJA	6,878	2,883	9,760
410 PARBAT	804	2,959	3,764
411 BAGLUNG	2,909	4,364	7,272
5 Lumbini Province	**120,605**	**27,667**	**148,272**
501 RUKUM EAST	74	474	547
502 ROLPA	290	2,216	2,505
503 PYUTHAN	1,941	1,746	3,687
504 GULMI	4,394	2,344	6,738
505 ARGHAKHANCHI	2,438	2,197	4,635
506 PALPA	7,187	3,890	11,077
507 NAWALPARASI WEST	15,024	2,981	18,006
508 RUPANDEHI	28,010	2,604	30,613
509 KAPILBASTU	12,022	173	12,195
510 DANG	14,536	2,923	17,460
511 BANKE	12,381	3,790	16,170
512 BARDIYA	22,309	2,330	24,639
6 Karnali Province	**9,761**	**29,771**	**39,532**
601 DOLPA	12	690	702
602 MUGU	26	1,252	1,278
603 HUMLA	53	1,719	1,772
604 JUMLA	97	4,860	4,957
605 KALIKOT	24	2,374	2,398
606 DAILEKH	101	3,492	3,593
607 JAJARKOT	291	2,947	3,238
608 RUKUM WEST	129	1,413	1,542
609 SALYAN	613	3,553	4,165
610 SURKHET	8,415	7,471	15,887
7 Sudurpashchim Province	**54,864**	**23,651**	**78,515**
701 BAJURA	1,075	2,751	3,826
702 BAJHANG	399	3,618	4,017

At the end of FY 2080/81			
Org. Unit	Female	Male	Total
703 DARCHULA	617	1,704	2,321
704 BAITADI	2,062	2,388	4,449
705 DADELDHURA	1,128	1,835	2,963
706 DOTI	1,807	2,919	4,726
707 ACHHAM	759	2,227	2,987
708 KAILALI	30,825	3,339	34,165
709 KANCHANPUR	16,191	2,869	19,060

Annex for Non-Communicable Diseases and Mental Health Programs (Chapter 8)

Annex Table 8.1 Service utilization status by province FY 2080/81

Indicators	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim
Number of Hypertension cases on treatment	1,145,926	297,057	86,873	283,377	144,060	210,426	47,890	76,243
Number of mental health cases on treatment	194773	49,712	12,770	46,676	10,941	39,643	26,084	8,947

Annex for Epidemiological Surveillance, Research and Outbreak Management (Chapter 9)

Annex Table 9.1 Disease reporting in EWARS in FY 2080/81

Disease	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	Total
AGE	3179	4160	5176	1732	3731	1597	1980	21555
SARI	4534	1433	4958	1369	3404	1100	1569	18367
Cholera	5	10	24	1	3	1	5	49
Dengue	8102	419	8382	5846	1781	310	1067	25907
Kala azar	24	9	80		47	40	30	230
Enteric Fever	753	1486	588	162	539	240	409	4177
Scrub Typhus	1204	86	1336	726	1273	370	1768	6763
COVID-19		1	200	4	3	3	4	215
Anthrax						1		1
Diphtheria				1				1
Encephalitis	87		11		18	1	1	118
Hepatitis-Acute Jaundice	19	2	83	1	118	3	45	271
Influenza Like Illness	192		2686	48	62	125	2338	5451
Leptospirosis			9		1		7	17
Meningococcal Meningitis	39	6	10	8	10		4	77
Neonatal Tetanus		1						1
Pneumonic Plague		1	2		3			6
Suspected Measles Like Illness	2	2	22	4	4	10	3	47
Rabies	5	22	424			2		453
Viral Haemorrhagic Fever	3					544		547
Whooping Cough	5	6			1	11		23
Snake Bite - Poisonous	3	6	365	124	189	3	117	807

Disease	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	Total
SHAPU			142	2				144
Malaria Vivax	2	2	12	3	15	6	48	88
Malaria Falciparum	3	5	10	7	8	2	12	47
Other	93		229	30	187	70	154	763

Note: These values may not resemble confirmatory cases as a whole, they can be suspected cases or probable cases too.

Source: EWARS/EDCD

Annex for Communicable Diseases, IHR and One Health (Chapter 10)

Annex Table 10.1 District-wise morbidity mapping of Lymphatic Filariasis for FY 2080/81

SN	District	Hydrocele	Lymphodema		Both	Total
			Male	Female		
1	Panchthar	134	17	39	3	193
2	Jhapa	1207	400	412	45	2064
3	Bhojpur	9	10	0	0	19
4	Terathum	29	2	3	0	34
5	Dhankuta	96	20	18	1	135
6	Sunsari	649	129	222	1	1001
7	Morang	1911	362	720	25	3020
8	Okhaldhunga	85	12	28	1	126
9	Udaypur	186	75	124	2	387
10	Siraha	572	112	152	6	842
11	Saptari	1183	148	271	15	1617
12	Dhanusha	525	200	311	32	1068
13	Mahottari	935	212	395	2	1544
14	Sarlahi	1475	499	0	7	1981
15	Bara	706	55	148	8	917
16	Parsa	1035	218	404	33	1690
17	Ramechhap	115	47	44	2	208
18	Sindhupalchok	396	205	311	26	938
19	Kavrepalanchok	345	57	192	0	594
20	Nuwakot	1562	210	487	0	2259
21	Dhading	1342	194	630	28	2194
22	Kathmandu	281	156	497	10	944
23	Lalitpur	115	52	204	6	377
24	Bhaktapur	126	119	345	4	594
25	Chitwan	247	55	44	3	349
26	Makawanpur	247	34	85	7	373
27	Kaski	249	71	202	0	522
28	Lamjung	172	12	31	2	217
29	Tanahun	6	0	2	0	8
30	Syangja	64	11	29	0	104
31	Gorkha	171	12	25	1	209
32	Nawalpur	25	10	14	0	49
33	Baglung	158	29	56	0	243
34	Myagdi	32	8	17	0	57
35	Parbat	48	9	0	0	57
36	Nawalparasi	313	27	98	5	443
37	Rupandehi	830	88	221	17	1156
38	Kapilvastu	1855	265	578	29	2727
39	Arghakhachi	70	10	27	3	110

SN	District	Hydrocele	Lymphodema		Both	Total
			Male	Female		
40	Palpa	196	52	75	2	325
41	Rolpa	268	39	85	4	396
42	Rukum East	81	6	32	4	123
43	Pyuthan	167	1	4	0	172
44	Dang	1614	132	298	16	2060
45	Banke	1850	127	243	13	2233
46	Bardia	2524	141	323	30	3018
47	Rukum West	100	11	14	1	126
48	Salyan	46	13	3	0	62
49	Bajhang	54	9	16	7	86
50	Achham	25	4	11	0	40
51	Bajura	0	2	0	0	2
52	Doti	145	37	87	0	269
53	Kailali	3362	248	482	14	4106
54	Darchula	43	1	8	0	52
55	Baitadi	62	13	47	2	124
56	Dadeldhura	36	6	17	0	59
57	Kanchanpur	2580	180	471	14	3245
Total		**32659**	**5586**	**9190**	**431**	**47868**

Source: EDCD/DoHS

Annex Table 10.2 Comparison of leprosy indicators

Indicators	2068/69 (2011/12)	2069/70 (2012/13)	2070/71 (2013/14)	2071/72 (2014/15)	2072/73 (2015/16)	2073/74 (2016/17)	2074/75 (2017/18)	2075/76 (2018/19)	2076/77 (2019/20)	2077/78 (2020/21)	2078/79 (2021/22)	2079/80 (2022/23)	2080/81 (2023/24
New cases	3,481	3,253	3,223	3,053	3,054	3,215	3,249	3,282	2,044	2,173	2,285	2,522	2,472
New case detection rate	12.2	11.9	11.18	11.01	10.67	11.23	11.2	11.2	6.22	7.2	7.81	8.5	8.41
Under Treatment cases at the end	2,430	2,228	2,271	2,461	2,559	2,626	2,882	2,921	1,853	2,197	2,373	2,510	2706
PR/10,000 population	0.85	0.82	0.83	0.89	0.89	0.92	0.99	0.99	0.69	0.73	0.81	0.85	0.92
No. new child cases	218	136	204	236	220	220	202	260	141	101	73	181	136
Proportion child cases	6.26	4.24	6.33	7.73	7.2	6.84	6.22	7.92	7.61	4.65	3.19	7.2	5.50
New G2D cases	110	94	109	135	109	87	133	156	101	95	170	189	157
Proportion G2D cases	3.16	2.89	3.38	4.42	3.57	2.71	4.09	4.75	5.45	4.37	7.44	7.5	6.35
New G2D Child cases	N/A	N/A	N/A	N/A	N/A	N/A	2	2	6	1	4	8	2
Proportion G2D Child cases	N/A	N/A	N/A	N/A	N/A	N/A	0.06	0.06	0.32	0.05	0.18	0.3	0.015
New female cases	1,100	1,004	1,143	1,100	1,169	1,361	1,375	1,376	770	796	989	1,049	1042

Indicators	2068/69 (2011/12)	2069/70 (2012/13)	2070/71 (2013/14)	2071/72 (2014/15)	2072/73 (2015/16)	2073/74 (2016/17)	2074/75 (2017/18)	2075/76 (2018/19)	2076/77 (2019/20)	2077/78 (2020/21)	2078/79 (2021/22)	2079/80 (2022/23)	2080/81 (2023/24
Proportion female cases	31.6	30.8	35.5	36	38.3	42.3	42.3	41.9	41.6	36.6	43.3	41.6	42.15
Released from treatment	3,190	3,374	3,187	2,800	2,902	3,040	2,852	3,221	2,817	1,855	2,086	2,261	2107
No. Defaulters	24	43	24	38	44	57	93	142	153	62	79	95	124
No. relapse cases	25	14	11	8	12	15	21	36	19	16	28	19	37

Annex Table 10.3 Service utilization of VBDs and zoonotic disease status by province FY 2080/81

Indicators	Nepal	Province						
		Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim
Number of blood sample collected for malaria diagnosis	493,410	34,436	41,328	125,808	38,936	116,840	50,755	85,307

Annex for National Tuberculosis Control Program (Chapter 11)

Annex Table 11.1 DR TB treatment sites

Province	Districts	Palika	DRTB Treatment Center
Koshi	Sunsari	Dharan Sub-Metropolitan City	BPKIHS, Dharan, Sunsari
Koshi	Jhapa	Bhadrapur Municipality	Mechi Provincial Hospital, Jhapa
Koshi	Morang	Biratnagar Metropolitan City	Nepal Anti Tuberclosis Association (NATA), Morang
Koshi	Okhaldhunga	Siddhicharan Municipality	Okhaldhunga Community Hospital, Okhaldhunga
Madhesh	Rautahat	Chandrapur Municipality	Chandranigahapur Hosptial, Rautahat
Madhesh	Sarlahi	Lalbandi Municipality	Lalbandi PHC, Sarlahi
Madhesh	Dhanusa	Mithila Municipality	Lalgadh Hospital, Dhanusa
Madhesh	Siraha	Mirchaiya Municipality	Mirchaiya Hospital, Siraha
Madhesh	Parsa	Birgunj Metropolitan City	National Medical College Hospital, Parsa
Bagmati	Sindhuli	Kamalamai Municipality	District Hospital, Sindhuli
Bagmati	Kathmandu	Kathmandu Metropolitan City	GENETUP, Kathmandu
Bagmati	Bhaktapur	Madhyapur Thimi Municipality	National Tuberculosis Centre, Bhaktapur
Bagmati	Nuwakot	Bidur Municipality	Trishuli Hospital, Nuwakot
Gandaki	Baglung	Baglung Municipality	Dhaulagiri Hospital, Baglung
Gandaki	Nawalparasi East	Kawasoti Municipality	Madhyabindu District Hospital, Nawalpur
Gandaki	Kaski	Pokhara Metropolitan City	Tuberculosis Treatment Centre, Pokhara
Lumbini	Kapilbastu	Shivaraj Municipality	Basic Health Service Hospital, Chandrauta
Lumbini	Rupandehi	Butwal Sub-Metropolitan City	Provincial Hospital Lumbini, Rupandehi
Lumbini	Dang	Ghorahi Sub-Metropolitan City	Rapti Academy of Health Science
Lumbini	Banke	Nepalganj Sub-Metropolitan City	TB-Nepal, Banke
Karnali	Jumla	Chandannath Municipality	Karnali Academy of Health Science, Jumla
Karnali	Surkhet	Birendranagar Municipality	Province Hospital, Surkhet, Karnali
Sudurpashchim	Achham	Sanphebagar Municipality	Bayalpata Hospital (Nyaya Health), Achham

Province	Districts	Palika	DRTB Treatment Center
Sudurpashchim	Dadeldhura	Amargadhi Municipality	Dadeldhura Hospital
Sudurpashchim	Bajura	Badimalika Municipality	District Hospital, Bajura
Sudurpashchim	Doti	Dipayal Silgadhi Municipality	District Hospital, Doti
Sudurpashchim	Kailali	Godawari Municipality	Laxmi Narayan Tuberculosis Treatment and Research Center, Shreepur, Kailali
Sudurpashchim	Kanchanpur	Bhimdatta Municipality	Mahakali Provincial Hospital
Sudurpashchim	Kailali	Dhangadhi Sub-Metropolitan City	Seti Provincial Hospital, Kailali

Annex Table 11.2 Three-years case notification trend of TB Free Initiative LLGs

Province	Districts	Palikas	TB Case Notification (Trend)		
			Shrawan 2078 - Asar 2079	Shrawan 2079 - Asar 2080	Shrawan 2080 - Asar 2081
Koshi	Dhankuta	Chaubise Rural Municipality	5	7	8
Koshi	Jhapa	Mechinagar Municipality	182	205	205
Koshi	Morang	Kerabari Rural Municipality	50	42	42
Koshi	Sunsari	Itahari Sub-Metropolitan City	233	205	222
Madhesh	Dhanusa	Laxminiya Rural Municipality	54	124	123
Madhesh	Sarlahi	Hariwan Municipality	120	119	135
Madhesh	Bara	Nijagadh Municipality	111	95	131
Bagmati	Kathmandu	Shankharapur Municipality	39	54	32
Bagmati	Bhaktapur	Changunarayan Municipality	52	71	53
Bagmati	Kavrepalanchok	Dhulikhel Municipality	39	57	50
Bagmati	Makwanpur	Thaha Municipality	21	34	88
Gandaki	Kaski	Rupa Rural Municipality	11	2	7
Gandaki	Tanahu	Bhanu Municipality	31	33	43
Gandaki	Syangja	Walling Municipality	79	84	79
Lumbini	Rupandehi	Butwal Sub-Metropolitan City	396	429	443
Lumbini	Kapilbastu	Banganga Municipality	174	159	183
Lumbini	Banke	Kohalpur Municipality	191	189	194
Karnali	Dailekh	Dullu Municipality	29	31	36
Karnali	Salyan	Kapurkot Rural Municipality	40	39	31
Karnali	Surkhet	Gurbhakot Municipality	77	65	84
Sudurpashchim	Bajhang	Jayaprithbi Municipality	32	28	33
Sudurpashchim	Dadeldhura	Ajayameru Rural Municipality	10	9	12
Sudurpashchim	Dadeldhura	Ganyapdhura Rural Municipality	10	8	15
Sudurpashchim	Kailali	Tikapur Municipality	168	176	182
Sudurpashchim	Kanchanpur	Krishnapur Municipality	83	78	108
Koshi	Taplejung	Phungling Municipality	15	14	20
Koshi	Sankhuwasabha	Makalu Rural Municipality	7	3	8
Koshi	Okhaldhunga	Chishankhu Gadhi Rural Municipality	1		1

Province	Districts	Palikas	TB Case Notification (Trend)		
			Shrawan 2078 - Asar 2079	Shrawan 2079 - Asar 2080	Shrawan 2080 - Asar 2081
Koshi	Khotang	Halesi Tuwachung Municipality	8	17	12
Koshi	Khotang	Diktel Rupakot Majhuwagadhi Municipality	10	18	16
Koshi	Dhankuta	Dhankuta Municipality	26	19	15
Koshi	Terhathum	Phedap Rural Municipality	3	4	7
Koshi	Terhathum	Menchhayayem Rural Municipality		1	4
Koshi	Panchthar	Phidim Municipality	13	9	27
Koshi	Ilam	Ilam Municipality	25	24	41
Koshi	Jhapa	Shivasatakshi Municipality	76	67	77
Koshi	Jhapa	Birtamod Municipality	141	143	135
Koshi	Morang	Biratnagar Metropolitan City	280	278	322
Koshi	Sunsari	Ramdhuni Municipality	75	88	87
Koshi	Udayapur	Triyuga Municipality	114	120	90
Madhesh	Saptari	Kanchanrup Municipality	60	60	49
Madhesh	Saptari	BodeBarsain Municipality	29	34	41
Madhesh	Siraha	Mirchaiya Municipality	54	46	86
Madhesh	Dhanusa	Bateshwor Rural Municipality	51	43	109
Madhesh	Dhanusa	Shahidnagar Municipality	73	70	61
Madhesh	Dhanusa	Janakpur Sub-Metropolitan City	309	287	345
Madhesh	Mahottari	Gaushala Municipality	165	186	171
Madhesh	Mahottari	Ekadara Rural Municipality	76	43	29
Madhesh	Sarlahi	Lalbandi Municipality	157	154	140
Madhesh	Rautahat	Chandrapur Municipality	116	138	138
Madhesh	Rautahat	Gaur Municipality	73	60	74
Madhesh	Bara	Kolhabi Municipality	88	76	95
Madhesh	Bara	Mahagadhimai Municipality	69	97	110
Madhesh	Parsa	Jirabhawani Rural Municipality	31	25	28
Madhesh	Parsa	Chhipaharmai Rural Municipality	18	16	36
Bagmati	Sindhupalchok	Helambu Rural Municipality	8	14	13
Bagmati	Sindhupalchok	Choutara Sangachowkgadhi Municipality	29	36	42
Bagmati	Sindhupalchok	Bahrabise Municipality	34	25	41
Bagmati	Dhading	Nilkhantha Municipality	55	58	78
Bagmati	Nuwakot	Bidur Municipality	71	65	63
Bagmati	Nuwakot	Belkotgadhi Municipality	14	25	26
Bagmati	Kathmandu	Kageshwori Manahara Municipality	172	184	173
Bagmati	Kathmandu	Budhanilkhantha Municipality	242	209	298
Bagmati	Bhaktapur	Madhyapur Thimi Municipality	216	216	234
Bagmati	Bhaktapur	Suryabinayak Municipality	146	174	173
Bagmati	Lalitpur	Mahalaxmi Municipality	181	161	189

Province	Districts	Palikas	TB Case Notification (Trend)		
			Shrawan 2078 - Asar 2079	Shrawan 2079 - Asar 2080	Shrawan 2080 - Asar 2081
Bagmati	Lalitpur	Godawari Municipality	146	137	194
Bagmati	Kavrepalanchok	Bhumlu Rural Municipality	12	15	23
Bagmati	Kavrepalanchok	Banepa Municipality	61	76	70
Bagmati	Ramechhap	Manthali Municipality	22	31	33
Bagmati	Sindhuli	Dudhouli Municipality	70	71	94
Bagmati	Sindhuli	Kamalamai Municipality	103	114	91
Bagmati	Makwanpur	Bagmati Rural Municipality	68	56	74
Bagmati	Chitwan	Ratnanagar Municipality	118	108	106
Bagmati	Chitwan	Khairahani Municipality	123	90	103
Gandaki	Gorkha	Palungtar Municipality	25	25	38
Gandaki	Gorkha	Gorkha Municipality	41	41	60
Gandaki	Lamjung	Besishahar Municipality	42	41	37
Gandaki	Tanahu	Byas Municipality	72	80	97
Gandaki	Tanahu	Myagde Rural Municipality	21	20	16
Gandaki	Nawalparasi east	Gaidakot Municipality	108	129	116
Gandaki	Nawalparasi east	Devchuli Municipality	96	84	99
Gandaki	Syangja	Bhirkot Municipaity	23	22	26
Gandaki	Syangja	Galyang Municipality	54	37	62
Gandaki	Parbat	Kushma Municipality	15	33	18
Gandaki	Parbat	Phalebas Municipality	10	10	4
Gandaki	Baglung	Badigad Rural Municipality	56	86	152
Gandaki	Baglung	Galkot Municipality	25	15	15
Lumbini	Rolpa	Rolpa Municipality	65	55	53
Lumbini	Pyuthan	Sarumarani Rural Municipality	48	33	40
Lumbini	Gulmi	Musikot Municipality	57	44	51
Lumbini	Arghakhanchi	Chhatradev Rural Municipality	25	25	29
Lumbini	Palpa	Tansen Municipality	75	56	67
Lumbini	Nawalparasi west	Ramgram Municipality	85	77	86
Lumbini	Rupandehi	Suddhodhan Rural Municipality	48	55	77
Lumbini	Rupandehi	Tilottama Municipality	232	260	271
Lumbini	Kapilbastu	Buddhabhumi Municipality	91	102	107
Lumbini	Kapilbastu	Maharajganj Municipality	82	84	83
Lumbini	Dang	Tulsipur Sub-Metropolitan City	383	367	371
Lumbini	Dang	Gadhawa Rural Municipality	53	57	65
Lumbini	Banke	Khajura Rural Municipality	151	130	135
Lumbini	Banke	Nepalganj Sub-Metropolitan City	299	335	321
Lumbini	Bardiya	Rajapur Municipality	88	59	90
Karnali	Jumla	Chandannath Municipality	19	26	14
Karnali	Kalikot	Khandachakra Municipality	18	31	30
Karnali	Dailekh	Naumule Rural Municipality	15	9	15

Province	Districts	Palikas	TB Case Notification (Trend)		
			Shrawan 2078 - Asar 2079	Shrawan 2079 - Asar 2080	Shrawan 2080 - Asar 2081
Karnali	Jajarkot	Bheri Municipality	18	35	29
Karnali	Jajarkot	Nalagad Municipality	25	32	39
Karnali	Rukum west	Aathabisakot Municipality	60	52	76
Karnali	Rukum west	Musikot Municipality	42	45	52
Karnali	Salyan	Sharada Municipality	27	35	34
Karnali	Surkhet	Birendranagar Municipality	249	245	250
Karnali	Surkhet	Panchapuri Municipality	62	39	45
Sudurpashchim	Bajhang	Thalara Rural Municipality	12	10	12
Sudurpashchim	Darchula	Malikarjun Rural Municipality	9	14	9
Sudurpashchim	Baitadi	Puchaundi Municipality	27	30	27
Sudurpashchim	Baitadi	Surnaya Rural Municipality	6	11	15
Sudurpashchim	Dadeldhura	Amargadhi Municipality	28	18	32
Sudurpashchim	Doti	Jorayal Rural Municipality	22	19	18
Sudurpashchim	Achham	Bannigadhi Jayagadh Rural Municipality	15	9	14
Sudurpashchim	Kailali	Ghodaghodi Municipality	127	103	116
Sudurpashchim	Kailali	Lamki Chuha Municipality	148	143	164
Sudurpashchim	Kanchanpur	Dodharachadani Municipality	105	116	114
Sudurpashchim	Kanchanpur	Laljhadi Rural Municipality	64	63	51

Source: NTCC/DoHS

Annex for HIV and STIs Control and Management Program (Chapter 12)

Annex Table 12.1 Number of HIV patients treated for opportunistic infection among TB patients

Number of HIV patients treated for opportunistic infection	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	Nepal
FY 2080/81	2167	620	531	95	755	97	1258	5523
FY 2079/80	1666	630	1130	163	739	86	1350	5764

Source: NCASC/DoHS

Annex for Curative Services and Medio-legal Services (Chapter 13)

Annex Table 13.1 Inpatient Outcome detail (Age-group wise)

Age Group	Recovered/ Cured		Stable		Referred Out		DOPR/LAMA		Absconded		Death < 48 Hours		Death ≥ 48 Hours	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
0-7 Days	24116	30015	1430	1732	575	847	1287	1696	29	31	221	360	156	294
8-28 Days	11923	14680	541	709	204	261	515	760	9	11	37	84	64	140
29 Days - <1 Yr	17727	26249	1121	1501	458	789	1041	1646	49	43	66	98	78	109
01 - 04 Yrs	27865	38850	1704	2324	589	830	1502	2213	47	50	46	54	41	68
05 - 14 Yrs	36959	55581	2330	3091	818	1113	1765	2444	56	53	66	81	69	87
15 - 19 Yrs	48727	35697	2520	2692	889	614	1986	1643	57	50	73	62	65	76
20 - 29 Yrs	244206	74247	7408	4803	3163	1239	6607	3550	232	95	185	201	185	251
30 - 39 Yrs	146097	76086	6116	4509	1904	1390	4164	3707	153	115	211	319	286	377
40 - 49 Yrs	90610	78123	5048	4596	1374	1468	3341	3761	112	108	311	464	425	579
50 - 59 Yrs	88328	82214	4947	4395	1622	1545	3653	4191	97	80	409	663	610	850
60-69 Yrs	86645	87697	4215	4142	1720	1690	4191	4247	122	85	570	690	825	972
≥ 70 Yrs	76160	76407	4589	4536	2362	2430	6189	6138	142	120	971	1113	1596	1799
Total	**899363**	**675846**	**41969**	**39030**	**15678**	**14216**	**36241**	**35996**	**1105**	**841**	**3166**	**4189**	**4400**	**5602**

Annex Table 13.2 Curative Services utilization according to provinces, FY 2080/81

Indicators	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim
Acute gastroenteritis cases	360,628	59,175	71,767	76,338	36,743	54,710	33,776	28,119
Measles	514	156	49	218	36	10	11	34
Mumps	61,991	13,437	5,879	16,592	7,282	9,356	3,050	6,395
Rubella	181	44	25	63	4	31	6	8
Intestinal worms infected	543,454	98,378	229,480	72,788	29,027	56,378	30,102	27,301
Patients treated for Lower Respiratory Tract Infections(LRTI)	844,355	160,278	177,419	146,769	79,584	130,251	66,978	83,076
Number of patients treated for Upper Respiratory Tract Infection(URTIs)	1,488,614	238,867	245,276	253,833	154,302	277,377	154,389	164,570

Annex for Disability Inclusive Health, Rehabilitation Services and Road Safety (Chapter 15)

Annex Table 15.1 Diagnosis of the rehabilitation service among new users

Diagnosis	Percentage of Clients
15 Diseases of the musculoskeletal system or connective (FA00-FC0Z)	65.12
08 Diseases of the nervous system (8A00-8E7Z)	10.6
14 Diseases of the skin (EA00-EM0Z)	6.1
12 Diseases of the respiratory system (CA00-CB7Z)	5.2
22 Injury, poisoning or certain other consequences of external causes (NA00-NF2Z)	5.1
11 Diseases of the circulatory system (BA00-BE2Z)	2.18
06 Mental, behavioural or neurodevelopmental disorders (6A00-6E8Z)	0.96
21 Symptoms, signs or clinical findings, not elsewhere classified (MA00-MH2Y)	0.83
02 Neoplasms (2A00-2F9Z	0.48
01 Certain infectious and parasitic diseases (1A00-0Z)	0.44
05 Endocrine, nutritional and metabolic diseases (5A00-5D46)	0.36
16 Diseases of the genitourinary system (GA00-GC8Z)	0.36
20 Developmental anomalles (LA00-LD9Z)	0.31
09 Diseases of the visual system (9A00-9E1Z)	0.31
04 Disease of the immune system (4A00-4B4Z)	0.26
13 Diseases of the digestive system (DA00-DE2Z)	0.24
17 Conditions related to sexual health (HA00-HA8Z)	0.22
18 Pregnancy, childbirth or the puerperium (JA00-JB6Z)	0.18
07 Sleep-wake disorders (7A00-7B2Z)	0.17
10 Diseases of the ear and mastoid process (AA00-AC0Z)	0.16
03 Diseases of the blood or blood-forming organs (3A00-3C0Z)	0.14
23 External causes of morbidity or mortality (PA00-PL2Z)	0.13
19 Certain conditions originating in the perinatal period (KA00-KD5Z)	0.06
26 Supplementary chapter traditional medicine conditions (Module I (SA00-SJ3Z)	0.05
24 Factors influencing health status or contact with health services (QA00-QF4Z)	0.04
Total	**2,19,070**

Annex for Logistics and Health Information Management Program (Chapter 19)

Annex Table 19.1 SDG monitoring indicators for WASH services based on the analysis of Nepal health facility survey

Parameter	Nepal	Province						
Water		**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpaschim**
Basic: with water available from an improved water supply located on premises	83.07	82.43	69.86	91.1	93.85	79.68	81.29	80.09
Limited: an improved water source is within 500 meters of the facility, but not all requirements for basic service are met	13.44	12.4	28.18	6.43	5.98	15.74	15.53	12.41
No service: water is taken from unprotected dug wells or springs, or surface water sources; or an improved source that is more than 500 m from the facility; or the facility has no water resources	3.49	5.17	1.96	2.47	0.17	4.58	3.18	7.5
Sanitation	**Nepal**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpaschim**
Basic: with improved toilets which are usable, sex-separated, provide for menstrual hygiene management, separate for patients and staff, and accessible for people with limited mobility	14.66	9.53	7.56	19.19	16.85	18.45	21.38	11.25
Limited: At least one improved sanitation facility, but not all requirements for basic service met	79.87	87.34	75.16	77.36	82.57	77.35	77.24	82.38
No service: Toilet facilities are unimproved (pit latrines without a slab or platform, hanging latrines and bucket latrines), or there are no toilets or latrines at the facility.	5.47	3.13	17.28	3.45	0.58	4.2	1.38	6.37
Hygiene	**Nepal**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpaschim**
Basic: with hand hygiene facilities at point of care with water and soap and/or alcohol hand rub available and handwashing facilities within 5 meters of the toilets with water and soap available	67.5	53.9	49.3	79.9	79.5	72.6	71.1	62.8
Limited: Functional hand hygiene facilities are available at either points of care or toilets, but not both	31.4	44.1	47.3	20.2	20.3	27.1	27.5	36.6
No service: No functional hand hygiene facilities are available at either points of care or toilets	1.1	2	3.4	0	0.2	0.3	1.4	0.7
Health Care Waste Management	**Nepal**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpaschim**
Basic: with waste correctly segregated in the consultation area and infectious and sharps waste safety treated/disposed	10	8	8.3	17.4	9.3	10.3	4	6.2
Limited: There is limited separation and/or treatment and disposal of sharps and infectious waste, but not all requirements for basic service are met.	72.3	70.2	62.1	72.3	80.5	75.5	80.5	70.1
No service: There are no separate bins for sharps or infectious waste, and sharps and/or infectious waste are not treated/disposed of.	17.7	21.8	29.6	10.3	10.2	14.2	15.5	23.7
Environmental Cleaning	**Nepal**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpaschim**
Basic: Basic protocols for cleaning available, and staff with cleaning responsibilities have all received training.	2.88	3.28	1.79	4.89	1.71	3.3	0.22	2.77
Limited: There are cleaning protocols, or at least some staff have received training on cleaning.	20.29	16.68	12.64	27.41	17.17	18.87	29.31	23.14
No service: No cleaning protocols are available, and no staff have received training on cleaning.	76.83	80.04	85.57	67.7	81.12	77.83	70.47	74.09

Source: Analysis of Nepal health facility survey 2021, MD/Unicef

Annex for Human Resource in Health and Health Finance Management (Chapter 20)

Annex Table 20.1 Type and number of DoHS workforce, fiscal year 2080/81

SN	Types of human resources	Grade/level	Sanctioned	Fulfilled
1	Director General	12th (Additional Secretary)	1	1
2	Director	11th (G.H.S.)	2	2
3	Director	11th (PHA)	1	1
4	Director	11th (HI)	1	1
5	Director	11th (G.Nur.)	1	1
6	Senior/Sub Health Administrator	9/10th (PHA)	1	1
7	Senior General Nursing	9/10th (GN)	1	1
8	Senior Community Nursing Administrator	9/10th (PHN/CN)	1	1
9	Senior Public Health Administrator	9/10th(H.I)	3	2
10	Chief Medical Officer/Medical Superintendent	9/10th(G.H.S.)	2	2
11	Senior/Consultant Medical Generalist	9/10th(MG)	3	3
12	Senior/Consultant Dermatologist	9/10th(D&V)	1	1
13	Senior/Consultant Gynaecology and Obstetrics	9/10th (G/O)	1	1
14	Senior/Consultant Psychiatric	9/10th (Psy)	1	0
15	Senior/Sub-Health Administrator	9/10th (Integrated Chikitsak)	2	2
16	Chief Nutrition Officer	9/10th(H.I)	1	1
17	Senior/Consultant Dental Surgeon	9/10th(Denti.)	1	1
18	Director/Deputy Director/Senior Demographer	Gazetted II (Stat.)	1	1
19	Under Secretary	Gazetted II	1	1
20	Under-Secretary (Finance)	Gazetted II	1	1
21	Section Officer	Gazetted III	7	7
22	Account Officer	Gazetted III	2	2
23	Legal Officer	Gazetted III	1	1
24	Statistics Officer/Demographer	Gazetted III	5	5
25	Pharmacist	7/8th (Phar)	2	1
26	Senior/Public Health Officer	7/8th(H.I)	8	8
27	Nutrition Officer	7/8th(H.I)	1	1
28	Medical Officer	8th	7	7
29	Senior/Medical Lab Technologist	7/8th(G.M.L.)	1	0
30	Senior/Community Nursing Officer	7/8th(PHN/CN)	7	7
31	Senior/Nursing Officer	7/8th(GN)	5	5
32	Entomologist	7/8th(HI)	1	1
33	Veterinary Doctor	Gazetted III(Agri/Vet.)	1	1
34	Computer Officer	Gazetted III	3	3
35	Mechanical Engineer	Gazetted III	1	1
36	Biomedical Engineer	7/8th (Bibi.)	2	2
37	Architect Engineer	Gazetted III	1	1
38	TB/leprosy Officer	7th (HI)	1	0
39	Nayab Subba	Non gazetted I	8	8
40	Health Assistant/Public Health Inspector	5/6th(HI)	6	6
41	Cold Chain Assistant	4/5th(HI)	0	0
42	Lab Assistant	4/5/6th (G.M.L.)	2	2
43	Light Vehicle Driver	Not classified	7	7
44	Office Assistant (Peon)	Not classified	8	8
Total			**114**	**109**

Annex for Trend of Health Services Coverage, MoHP

Trend of Health Service Coverage FY 2078/79 to 2080/81 (AD 2021/22 to 2023/24)												
Indicators	**Nepal**			**Province (FY 2080/81 or 2023/24 AD)**							**SDG Target 2030**	**Source**
	2078/79 (2021/22)	2079/80 (2022/23)	2080/81 (2023/24)	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim		
Number of Health Facilities												
Public hospitals	192	215	234	56	20	56	23	27	33	19		HMIS
PHCCs	188	187	184	33	32	39	25	29	11	15		HMIS
HPs	3775	3778	3769	629	740	643	484	567	331	375		HMIS
Non-public facilities	2155	2551	2178	170	182	1426	484	172	55	65		HMIS
Basic Health Service Center	NA	7582	7651	1385	1222	1328	937	1063	803	913		HMIS
Basic Hospitals (5 - 15 Beds)	NA	246	249	92	23	58	13	20	23	20		HMIS
General Hospitals (25 - 50 Beds)	NA	333	305	39	50	76	57	52	14	17		HMIS
General Hospitals (100 - 300 Beds)	NA	79	69	7	13	24	9	12	3	1		HMIS
Specialized Hospitals (100 beds and Above)	NA	28	27	5	2	12	1	3	0	4		HMIS
Super Speciality Hospitals (50+ Beds)	NA	22	24	1	0	18	1	3	0	1		HMIS
Academy and Teaching Hospital (300+ Beds)	NA	29	29	3	3	13	3	6	1	0		HMIS
Other Type of Health Facilities (Ploy clinic, Diagnostic center, clinics, dialysis center, Eye center etc.)	NA	2164	1892	6	133	1396	59	178	65	55		HMIS
Reporting Status												
Public hospitals (%)	88	95	90.4	93.1	96.7	85	78.4	100	100	89.8		HMIS
Non public hospitals (%)	66.3	66.6	64.5	89.7	65.2	53.7	98.8	99	100	90.3		
PHCCs (%)	100	100	100	100	100	100	100	100	100	100		HMIS
HPs (%)	100	100	100	100	100	100	100	100	100	100		HMIS
FCHVs (%)	90	96.1	99.6	99.5	97.9	100	100	100	100	100		HMIS
Immunization Programme												
BCG coverage (%)	103.5	102.2	95.2	85.0	103.5	104.1	88.6	101.0	83.0	77.9		HMIS
DPT-HepB-Hib3 coverage (%)	95.2	98.6	96.2	88.2	104.2	97.4	109.4	99.4	87.5	80.2	95	HMIS
MR2 coverage (12-23 months) (%)	92.8	94.7	100.7	91.5	103.9	107.3	118.3	105.4	90.7	85.6		HMIS
Fully immunized children (%)	91.2	84.1	95.9	85.6	98.7	95.8	115.9	104.3	88.6	85.2	95	HMIS
Dropout rate DPT-Hep B-Hib 1 vs 3 coverage (%)	3.7	2.0	-0.6	-1.8	1.6	-3.0	-3.9	0.1	-0.6	-0.6		HMIS
Pregnant women who received TD2 and TD2+ (%)	71.7	72.0	68.2	58.8	78.2	60.4	70.3	75.6	63.9	59.9		HMIS

Trend of Health Service Coverage
FY 2078/79 to 2080/81 (AD 2021/22 to 2023/24)

Indicators	Nepal			Province (FY 2080/81 or 2023/24 AD)							SDG Target 2030	Source
	2078/79 (2021/22)	2079/80 (2022/23)	2080/81 (2023/24)	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim		
Nutrition Programme												
Children aged 0-11 months registered for growth monitoring (%)	104.1	109.2	102.6	97.9	100.9	99.0	129.9	110.2	102.9	92.4		HMIS
Average Number of visits among children aged 0-23 months registerd for growth monitoring	NA	6.0	8.9	6.8	7.1	6.3	11.1	11.9	12.0	12.9		
Underweight children among new GM visits (0-23 month) (%)	3.2	3.0	2.1	1.8	2.7	1.2	0.9	2.6	2.2	2.4		HMIS
Pregnant women who received 180 tablets of Iron (%)	60.0	64.5	65.5	60.7	61.2	54.0	94.3	81.4	69.1	58.2		HMIS
Postpartum mothers who received vitamin A supplements (%)	76.3	79.1	83.2	80.3	84.3	54.7	75.4	100.8	97.4	99.1		HMIS
Integrated Management of Neonatal & Childhood Illness (IMNCI) Programme												
% of children U5 years with Pneumonia treated with antibiotics (Amoxicillin) (%)	109.0	102.0	100.8	99.9	103.3	100.5	100.8	100.1	99.9	102.0		HMIS
% of severe pneumonia cases among new cases	0.18	0.14	0.09	0.07	0.06	0.08	0.05	0.03	0.16	0.21		
Incidence of diarrhea per 1,000 under five years children	365.0	115.1	127.1	86.0	140.5	79.6	90.4	135.3	250.8	160.8		HMIS
% of children under 5 with diarrhea treated with ORS and zinc	94.5	95.8	97.0	91.4	96.2	96.3	99.4	100.0	98.9	98.3		HMIS
Safe Motherhood Programme												
% of Pregnant women who attended four ANC visits as per protocol	79.2	93.5	88.4	87.9	77.2	107.7	160.5	85.5	76.8	61.3	90	HMIS
% of Institutional deliveries	79.0	83.4	77.9	79.3	63.1	91.1	74.5	93.1	72.1	72.9	90	HMIS
% of Deliveries conducted by skilled health attendant + skilled health personnel	75.0	79.8	74.0	75.5	60.4	88.8	72.4	87.7	65.2	66.9	90	HMIS
% of pregnant women who had at least eight ANC visits as per protocol	NA	43.0	60.9	44.2	42.4	118.8	88.7	58.2	47.3	39.9		HMIS
% of Mothers who had three PNC check-up as per protocol	40.8	44.2	49.5	39.4	40.2	42.4	52.0	71.2	53.4	60.3	90	HMIS
% of Mothers who had four PNC check-ups as per protocol	NA	26.5	37.8	25.7	33.0	28.2	38.6	56.1	46.0	48.0		HMIS

Trend of Health Service Coverage
FY 2078/79 to 2080/81 (AD 2021/22 to 2023/24)

Indicators	Nepal			Province (FY 2080/81 or 2023/24 AD)							SDG Target 2030	Source
	2078/79 (2021/22)	2079/80 (2022/23)	2080/81 (2023/24)	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim		
Family Planning Programme												
Contraceptive prevalence rate (CPR Adjusted) (%) among MWRA	39	38	40	40	42	36	35	39	36	47		HMIS
Contraceptive prevalence rate (CPR Adjusted) (%) among WRA	31	31	31	31	34	26	27	30	28	35	60	HMIS
% of modern contraceptives new acceptors among WRA	7.0	6.9	6.6	6.6	6.8	5.2	5.5	6.1	10.9	8.4		HMIS
Curative Services												
% of OPD service utilization	91.0	100.9	116.2	126.5	97.5	120.5	134.1	109.9	135.1	114.7		HMIS
% of population utilizing Emergency services at hospitals	10.1	10.0	11.2	11.3	4.9	21.0	13.1	9.0	6.2	8.9		HMIS
% of population utilizing inpatients services at hospitals	3.8	5.4	6.1	9.7	2.9	9.3	5.8	5.1	3.6	2.8		HMIS
Bed occupancy rate (%)	46.6	50.5	52.1	49.2	46.9	54.3	61.7	54.3	47.0	35.1		HMIS
Average length of stay at hospital	3.5	3.6	3.6	2.3	3.0	4.6	4.5	3.7	3.3	2.9		HMIS
Leprosy Control Programme												
New case detection rate (NCDR) per 100,000 population	7.8	8.5	8.4	8.3	14.1	2.6	4.0	12.0	4.7	8.6	0	HMIS
Prevalence rate (PR) per 10,000 population	0.80	0.81	0.92	0.87	1.46	0.32	0.53	1.29	0.60	0.99	0	HMIS
NCD Programme												
Number of Cardiovascular Disease	NA	19262	30330	7900	2330	10535	1893	6400	430	842		HMIS
Number of Diabetes Mellitus	NA	312342	584347	186387	50635	170126	47297	86808	17978	25116		HMIS
Number of COPD	NA	185857	259110	55959	19308	75330	18191	39261	21095	29966		HMIS
Number of Cancer	NA	67382	97387	13435	259	82822	280	439	83	69		HMIS
Zoonotic Disease Control												
Cases of Animal Bites (in number)	94829	128512	218482	36027	24667	90789	14307	33153	8109	11430		HMIS
Cases of Snake Bites (in number)	9346	9120	8181	1932	1987	989	1289	1393	269	322		HMIS

Trend of Health Service Coverage FY 2078/79 to 2080/81 (AD 2021/22 to 2023/24)												
Indicators	**Nepal**			**Province (FY 2080/81 or 2023/24 AD)**							**SDG Target 2030**	**Source**
	2078/79 (2021/22)	2079/80 (2022/23)	2080/81 (2023/24)	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim		
Malaria, Kalaazar and Dengue												
Annual Blood Examination Rate (ABER) (%)	2.9	4.6	1.7	0.7	0.7	2.0	1.6	2.3	3.0	3.2		HMIS
Annual parasite incidence (API) per 1,000	0.050	0.050	0.030	0.003	0.020	0.010	0.010	0.060	0.020	0.090		HMIS
Total Malaria positive Cases	486	533	818	13	118	82	16	307	36	246		HMIS
Dengue Cases (in number)	733	56338	48883	18067	2706	12970	7745	3832	1468	2095	0	HMIS
New Kala-azar Cases (in number)	322	199	225	51	14	29	11	48	58	14	0	HMIS
Nursing and Social Security												
Number of new registered cases in OCMC	NA	9597	12861	1901	3202	2086	781	2017	1006	1868		HMIS
% of physical violence among the total new registered cases	NA	31.2	26.8	30.8	22.0	18.0	30.6	30.6	32.5	32.1		HMIS
Number of schools having health and nursing services	228	233	1387	180	76	868	89	36	102	36		NSSD
Tuberclousis Control Programme												
Case notification rate (all forms of TB)/100,000 population	129.0	126.0	139.0	94.4	163.3	150.8	114.6	164.0	101.2	135.2	20	HMIS
Treatment success rate (%)	91.5	92.4	92.1	89.3	93.4	92.8	89.7	93.4	93.6	88.3		HMIS
HIV/AIDS and STI Programme												
HIV Positivity rate (%)	0.8	0.5	0.5	0.4	0.7	1.6	0.6	0.2	0.2	0.2		HMIS
Percentage of HIV positive pregnant women attending antenatal clinics (ANC), delivery and post-natal care (PNC)	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.00	0.00	0.01		HMIS
HIV new cases	3180	3046	2475	283	510	802	210	412	40	218		HMIS
Percentage of people living with HIV currently receiving antiretroviral therapy among estimated PLHIV	74	81	85	83	90	81	83	87	83	87	95	
Ayurveda and Alternative Medicine												
No. of Health Facilities (Ayurveda)	388	388	388	65	61	67	66	59	27	43		DoAA
Public Ayurveda Hospitals (Number)	6	6	6	1	0	3	0	1	0	1		DoAA
District level Ayurveda Health Centre (Number)	77	77	77	14	8	13	11	12	10	9		DoAA
Ayurveda Aushadhalaya Number)	305	305	305	50	53	51	55	46	17	33		DoAA

Trend of Health Service Coverage
FY 2078/79 to 2080/81 (AD 2021/22 to 2023/24)

Indicators	Nepal			Province (FY 2080/81 or 2023/24 AD)							SDG Target 2030	Source
	2078/79 (2021/22)	2079/80 (2022/23)	2080/81 (2023/24)	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim		
Ayurveda Basic Health Services												
Purva Panchkarma service (Number)		392249	486594	97819	54724	103202	48835	76259	38910	66845		DoAA
Yog Service (Number)		150560	237056	20379	60466	14731	50703	54992	16374	19411		DoAA
Stanpayi Aamako lagi Satawari (galactagogue medicines) Vitaran (Number)		58755	57734	8904	7362	8689	3918	14445	6793	7623		DoAA
Health Insurance Coverage												
Population Coverage (%) (Cumulative)	20.5	24.7	28.4	48.5	10.4	31.4	44.5	23.0	28.1	21.5		HIB
Household coverage (%) Cumulative)	27.5	33.2	39.1	59.2	22.9	36.0	55.7	33.5	35.6	33.0		HIB
Percentage of Active Population (%)	14.7	16.1	17.2	29.0	6.0	22.3	30.7	12.4	12.6	9.0		HIB
Percentage of Active Household (%)	26.4	24.7	28.1	40.6	17.8	27.7	42.8	23.0	20.9	21.8		HIB
Household renewable rate (%)	68.2	76.2	77.0	83.9	68.3	70.4	77.5	79.5	76.2	79.0		HIB
Service utilization (%)	36.8	38.0	43.0	45.5	29.3	44.0	43.9	38.9	53.9	40.9		HIB
LMIS												
LMIS Reporting Status	99.0	98.3	98.7	98.4	97.0	98.5	99.7	99.1	99.7	99.5		eLMIS
eLMIS live sites	1159.0	3286	5425	809	580	1181	784	921	532	618		eLMIS
Province wise LMIS Data Entry Sites		4839.0	3245	709	788	341	282	334	398	393		eLMIS
Total Number of Impoverished Patients Provided with Treatment Support for Serious Diseases, 2080/081			Kidney Patient	Cancer Disease	Heart Disease	Head Injury	Spinal Injury	Parkinson's	Alzheimer's	Sickle Cell Anemia		NSSD
			9176	22153	6926	752	1181	79	34	1544		

Annex for Contributors of the Annual Health Report 2080/81

Advisory Committee for Annual Health Report 2080/81

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Member	Dr Bibek Kumar Lal, Director, Family Welfare Division
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Member	Dr Shree Ram Tiwari, Director, National Tuberculosis Control Center
Member	Dr Chandra Bhal Jha, Director, Epidemiology and Disease Control Division
Member	Ms Hira Kumari Niraula, Director, Nursing and Social Security Division
Member	Dr Ranjan Raj Bhatta, Director, National Public Health Laboratory
Member	Ms Yeshoda Aryal, Director, National Health Training Center
Member	Mr Keshav Raj Pandit, Director, National Health Education Information and Communication
Member	Mr Mohan Prasad Koirala, Undersecretary (Administrative), Department of Health Services
Member	Mr Bhim Devkota, Undersecretary (Account), Department of Health Services
Member Secretary	Dr Pawan Jung Rayamajhi, Director, Management Division

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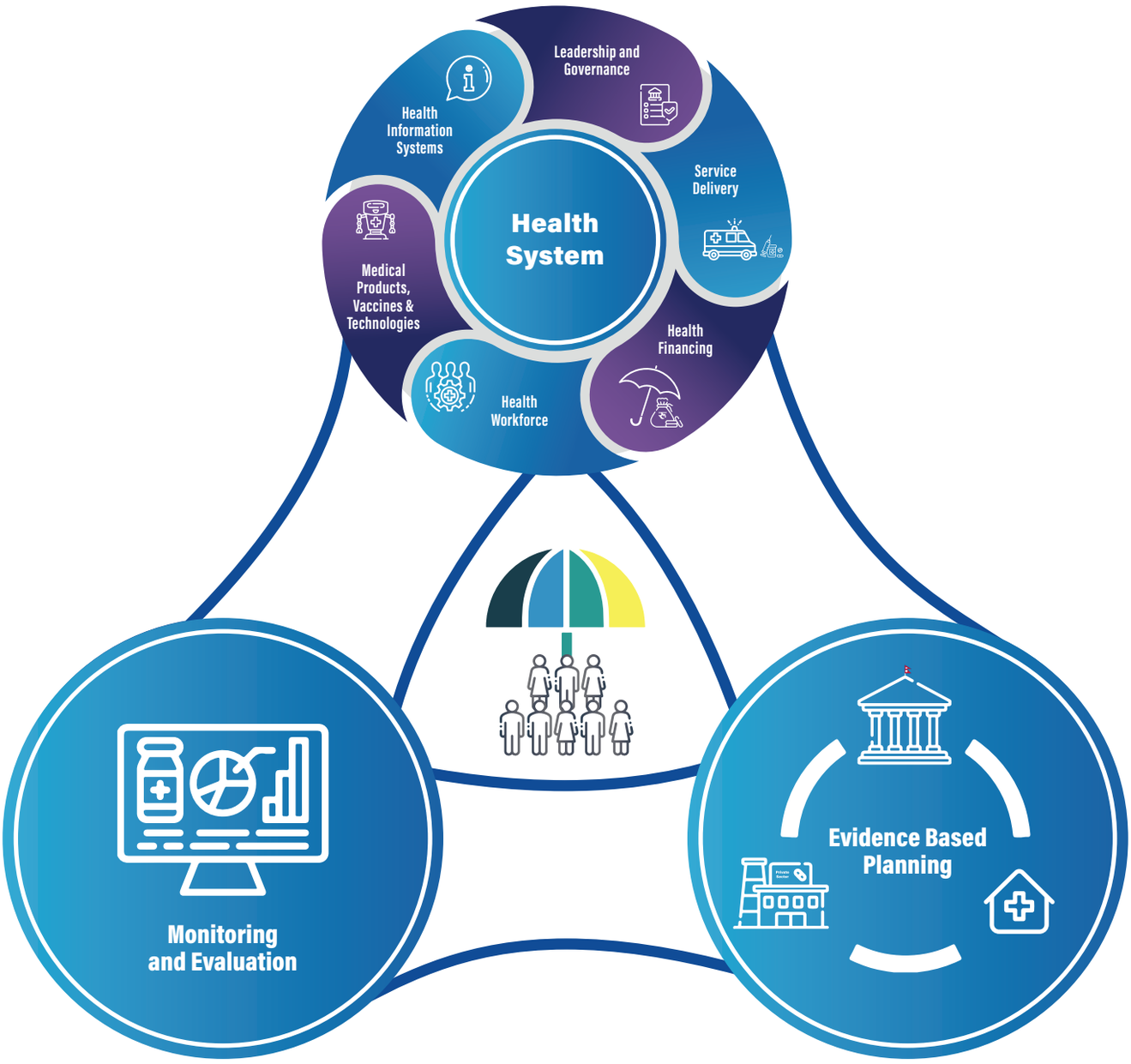
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Nepali Fiscal Years and the corresponding Gregorian Years

Nepali Fiscal Year	Gregorian Year
2060/61	2003/04
2061/62	2004/05
2062/63	2005/06
2063/64	2006/07
2064/65	2007/08
2065/66	2008/09
2066/67	2009/10
2067/68	2010/11
2068/69	2011/12
2069/70	2012/13
2070/71	2013/14
2071/72	2014/15
2072/73	2015/16
2073/74	2016/17
2074/75	2017/18
2075/76	2018/19
2076/77	2019/20
2077/78	2020/21
2078/79	2021/22
2079/80	2022/23
2080/81	2023/24
2081/82	2024/25
2082/83	2025/26
2083/84	2026/27
2084/85	2027/28
2085/86	2028/29



Government of Nepal

Ministry of Health and Population

Department of Health Services

Kathmandu, Nepal

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