Annual Health Report
2079/80

Government of Nepal
Ministry of Health and Population
Department of Health Services
Kathmandu, Nepal

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MESSAGE

Delivering the highest possible quality of healthcare to all the citizens of Nepal, has been the prime focus and commitment of Government of Nepal, Ministry of Health and Population. The Ministry is determined to translate the aspirations of the National Health Policy 2019 and the Nepal Health Sector–Strategic Plan 2023-2030, in making progress towards "Universal Health Coverage" together with all stakeholders, including public and private sectors and health development partners, also being committed to several global commitments that we have made. Over the period of nearly a decade following country's transition to a federal structure, despite numerous challenges, I am pleased to note that several outstanding achievements have been made in the health sector. The health outcomes achieved so far are the results of joint efforts from both governmental and non-governmental stakeholders. As in the previous years, I am glad to know that the Department of Health Services (DoHS) is bringing out the Annual Health Report for fiscal year 2079/80 (2022/2023), 29th report in its series. While reporting the progress and achievement over the last fiscal year, the annual health report gives a comprehensive picture on the annual performance of all components of the health care delivery system along with their reviews accomplished at different levels of governance in the country. Also I am pleased to know the timely completion of this report. The report details the data and information on service utilization, analytical trends and disease patterns in the country. Data on disease burden, service utilization, and other data related to health care delivery services are very much important for planning purposes. Timely dissemination of the data is key to making changes and timely policy and decision making.

I expect this this Annual Heath Report will be a valuable resource for policymakers, program managers, researchers, and all stakeholders involved in the health sector. I further hope this report will also be very helpful for further improvement of health services in Nepal. My sincere thanks to the DoHS and contributors for their efforts in preparing this report. I also extend gratitude to our health development partners for their consistent support in improving healthcare services in Nepal.

Thank you.

January, 2024

**Mohan Bahadur Basnet
Minister**

PREAMBLE

This gives us immense pleasure to witness the release of the Annual Health Report for the year 2079/80 (2022/2023) with a comprehensive summary of progress made by the health sector. Each year the Department of Health Services (DoHS) produces a summary of the progress and achievementthe health sector has made through its numerous programs and activities.This report serves as a snapshot of all major activities and achievements of the health sector. The report not only reports on the performance of public sector health facilities but also includes the data on health service utilization of the services delivered through private sector facilities. And at the same time, the contributions of health development partners and other non-governmental organizations are also reflected.

This report serves as the official documentation of the health services delivered and the utilization of the same within the last year in the health sector.The commitment of the DoHS to effective health management, coupled with its dedication to collaboration with provincial and local authorities, reflects our shared vision for a robust and responsive healthcare system.This report serves as a comprehensive overview of the endeavors, challenges, and achievements encountered in our collective pursuit of a healthier and safer society.The accomplishments outlined in this report underscore the significant strides we have taken to ensure that health-related activities are effectively managed and tailored to the needs of diverse communities.The report will be instrumental for all levels of government to understand the issues in the health sector and to plan for providing high quality services to their constituents in the coming year. For researchers and academicians,we hope that this report provides an opportunity to learn and identify new areas of innovation to improving the quality of health services in Nepal. This report also helps the program team to decide on replicating the good aspects of the program and at the same time take lessons from less successful ones.

We appreciate the hard work by the DoHS, all other units responsible for governing and delivering healthcare services at national, provincial, and local level governments and all health personnel including Female Community Health Volunteers working at various levels of health system for thehealth outcomes that we have been able to achieve.Without their efforts, these achievements would not be possible; they deserve heartfelt thanks for improving the health status of the Nepalese citizens.

Finally, I extend my sincere thanks and congratulations to DoHS and team and other concerned personnel who contributed to this report.

Dr. Roshan Pokhrel
Secretary

Dr. Roshan Pokhrel
Secretary

Government of Nepal
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Pachali, Teku
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FOREWORD

I am very honoured and pleased to present the Annual Health Report 2079/80 on behalf of the Department of Health Services (DoHS). This marks the 29th edition in the Annual Reports series published by the DoHS, Ministry of Health and Population. In pursuit of a healthier nation, the Department of Health Services has focused on decentralizing responsibilities, strengthening coordination with provincial and local authorities, and providing crucial support for effective implementation of health programs. This report reflects the performances of major programs and activities across all health institutions at various levels, and also outlines existing challenges and the solutions for enhancing healthcare services in the country. It also underscores our commitment to transparency, accountability, and continuous improvement in healthcare services delivery.

This report uses data from routine information systems, including the Health Management Information System (HMIS), as well as other health sector reporting sources. We have dedicated our efforts to enhance routine data quality and aim for continuous improvement. It offers comprehensive information on health activities, service coverage, and achievements across different programs in the last fiscal year, including trends over last three years for some important indicators. The facts and information presented in this report will serve as a foundation for planning of healthcare service delivery in the upcoming year. Emphasizing the importance of timely data utilization in decision-making process, we are committed to publish this report within the first half of the subsequent fiscal year for better planning and to enhance system efficiency.

We are pleased to report the successful execution of activities in various thematic areas by different Divisions and Centres. This accomplishment has been possible due to the unwavering commitment of program managers and healthcare workers at all the levels including those working at challenging remote areas. While we have achieved notable health outcomes, increased efforts are required to deliver quality healthcare aligned with the goals of the National Health Policy 2076 and the Nepal Health Sector Strategic Plan 2079/80 – 2087/88.

I sincerely appreciate the firm dedication and hard work of the entire DoHS team and support from the MoHP which has been instrumental in achieving the milestones in this report. I extend my gratitude to health partners and stakeholders for their collaboration and continuous support. I would like to specially thank Dr Shrawan Kumar Thapa, Director of the Management Division, Mr Kapil Prasad Timalsena, IHIMS chief as well as entire IHIMS team for their untiring efforts in preparing and publishing this report on time. In navigating healthcare complexities in the federal context, DoHS remains dedicated to improve health status and well-being of citizens of Nepal.

Dr Sangeeta Kaushal Mishra
Director General

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PREFACE

We are glad to present the Annual Health Report 2079/80, 29th in its series. As the Director of the Management Division, I feel proud to have worked with my team to produce this valuable report providing insights to health care service delivery and achievements over the last fiscal year. Serving as the backbone of the Department of Health Services (DoHS), the Management Division focuses on strategic planning, resource allocation, and efficient coordination to enhance the overall effectiveness of health services, as highlighted in this report.

This report reflects the annual performance of the healthcare delivery system, emphasizing the utilization of health services and achievements in the health sector over the past year. It encompasses information from both public and private healthcare facilities, highlighting trends, service coverage, and continuity of care. Additionally, the report identifies relevant issues and challenges, providing insights for improvement in the future. The data used in the report come from the Health Management Information System (HMIS) and other reliable government sources. We have in addition attempted to make this report of a scientific standard such that researchers and academicians can refer to this.

I extend my sincere gratitude to the Honourable Mr Mohan Bahadur Basnet, Minister, Ministry of Health and Population (MoHP) and the Secretaries Ms Dev Kumari Guragain and Dr Roshan Pokhrel. I also would like to express my gratitude towards additional secretaries, Dr Dipendra Raman Singh, Dr Bikash Devkota, and Dr Tanka Barakoti for their guidance and support. Special thanks to Dr Sangeeta Kaushal Mishra, Director General of DoHS, for her leadership. My sincere appreciation to the Chiefs and Directors and every personnel of different Divisions and Centres for their contribution in compiling the information required for the report. I am indebted to health workers at all levels including our grassroot health workers starting from FCHVs to central level health policymakers. A special acknowledgment to IHIMS colleagues, led by Mr. Kapil Prasad Timalsena, Chief of IHIMS, for their hard work in ensuring timely production of this report, making recent healthcare data available for policy and decision-making at various levels on time.

I extend my gratitude to everyone who tirelessly contributed to recording, reporting, compiling, processing, and analysing service delivery and progress reports. Without their efforts, the publication of this report would not have been possible. Lastly, I appreciate all relevant stakeholders and partners for their continuous support, contribution, and coordination in the collaborative efforts of DoHS and the overall health sector.

This report not just provides us with a reflection of health sector achievements but also guides the DoHS and MoHP for continuous pursuit of improvement and innovation in healthcare management.

Dr Shrawan Kumar Thapa
Director,
Management Division, DoHS

ACKNOWLEDGEMENT

The Annual Health Report 2079/80, the 29th in the series of reports produced by DoHS reflects health sector's achievements and is a product of dedicated efforts of Integrated Health Information Management Section (IHIMS) team within Management Division. This report synthesizes data from various levels, extending to community, and owes its creation to collective contribution of individuals, including health program managers and healthcare workers, and Female Community Health Volunteers.

The information system, one of the six health system building blocks, acts as a backbone for health policies and strategies. This report compiles key indicators crucial for informing national and subnational policies, strategies, and guiding documents. Released before upcoming health sector annual planning cycle, it serves as a valuable resource for evidence-informed AWPB development. Publishing within first half of current fiscal year, this report also guides monitoring and evaluation of programs and activities routinely throughout the year. This timely release supports stakeholders in informed planning, programming, and decision-making. As Government of Nepal prepares its 16th plan, this report also stands as a major source of information for health sector.

We extend our gratitude to Hon'ble Minister for Health and Population, Mr Mohan Bahadur Basnet, secretaries Ms Dev Kumari Guragain and Dr Roshan Pokhrel, and additional secretaries Dr Dipendra Raman Singh, Dr Bikash Devkota, and Dr Tanka Barakoti for their leadership and guidance. Leadership of Dr. Sangeeta Kaushal Mishra, Director General of DoHS, has been instrumental in providing necessary direction to support healthcare management in country as well as production of this report. We are grateful for the leadership and guidance of Dr Shrawan Kumar Thapa, Director, Management Division. We express our sincere thanks to Chiefs and Directors of all divisions and centers under MoHP and DoHS for their dedicated efforts in ensuring the collection, compilation, and reporting of quality data for their respective programs. I extend heartfelt thanks to all health workers, program managers, and policymakers at the federal, provincial, and local levels, as well as health service delivery units, for their invaluable contributions in recording, reporting, and processing the data and information that form the foundation of the summarized information in this report.

This year's report is crafted in a more reader-friendly, concise, and coherent format. Led by IHIMS chief and guided by the Director of the Management Division, a team, including senior IHIMS members and experts from academia conceptualized the design and developed the report template. The team subsequently organized the content received from program teams across all units under MoHP and DoHS. I extend my gratitude to the entire team for their tireless efforts in developing this report. Special appreciation goes to my IHIMS colleagues, Mr Diwakar Sapkota, Mr Chhedi Prasad Yadav, Mr Girish Kumar Jha, Ms Nabina Pradhanang, Mr Sushil Nepal, Mr Ram Chandra Chaulagain, Mr Chandra Bahadur Sunar, Mr Krishna Raj Pandey and Mr Avay Raj Shrestha for their hard work and dedication in bringing out this report.

We sincerely acknowledge the valuable contributions of our health development partners, including WHO, UNFPA, USAID/FHI360, UNICEF and INGOs, NGOs, and stakeholders for their direct and indirect contributions to the generation and compilation of routine health sector data, contributing to the production of this report.

Kapil Prasad Timalsena
Chief
Integrated Health Information Management System (IHIMS) Section,
Management Division, DoHS

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Acronym

Abbreviations	Full Forms
AHMIS	Ayurvedic Health Management Information System
AHR	Annual Health Report
ALOS	Average Length of Hospital Stay
AMR	Antimicrobial Resistance
ASRH	Adolescent Sexual and Reproductive Health
AWPB	Annual Work Planning and Budgeting
BCC	Behavioural Change Communication
BEmONC	Basic Emergency Obstetric and Newborn care
BHS	Basic Health Services
BHSCs	Basic Health Service Centers
CAPP	Consolidation of Annual Procurement Plan
CBIMNCI	Community Based Integrated Management of Newborn and Childhood Illness
CEmONC	Comprehensive Emergency Obstetric and Newborn care
CNSI	Comprehensive Nutrition Specific Interventions
COPD	Chronic Obstructive Pulmonary Disease
CPD	Continuing Professional Development
DOHS	Department of Health Services
DRTB	Drug-resistant Tuberculosis
eGP	Electronic Government Procurement
EHCS	Essential Health Care Services
eLMIS	Electronic Logistic Management Information System
EmOC	Emergency Obstetric Care
EWARS	Early Warning and Reporting System
FCHVs	Female Community Health Volunteers
FP	Family Planning
FY	Fiscal Year
GESI	Gender Equality and Social Inclusion
GoN	Government of Nepal
HCWM	Health Care Waste Management
HDPs	Health Development Partners
HMIS	Health Management Information System
HRH	Human Resources in Health
ICD	International Classification of Diseases
I/NGOs	International/ Non-Governmental Organizations

IEC	Information, Education and Communication
IFA	Iron Folic Acid
IHIMS	Integrated Health Information Management Section
IHR	International Health Regulation
IVM	Integrated Vector management
JEE	Joint External Evaluation
LBW	Low Birth Weight
LF	Lymphatic Filariasis
LLGs	Local Level Governments
MDGs	Millennium Development Goals
MDR	Multi Drug Resistance
MoHP	Ministry of Health and Population
MSS	Minimum Service Standards
MUAC	Mid Upper Arm Circumference
NBBD	Newborn Birth Defect
NCDs	Non Communicable Diseases
NDHS	Nepal Demographic and Health Survey
NEQAS	National External Quality Assessment Scheme
NHS-SP	Nepal Health Sector- Strategic Plan
NJAR	National Joint Annual Review
NMICS	Nepal Multiple Indicator Cluster Survey
NTDs	Neglected Tropical Diseases
OCMC	One Stop Crisis Management Center
O & M	Organization and management
OPD	Outpatient
PEN	Package of Essential Non-Communicable Disease
PHC	Primary Health Care
PHCCs	Primary Health Care Centers
PHD	Provincial Health Directorate
PPP	Public Private Partnership
RCCE	Risk Communication and Community Engagement
RDQA	Routine Data Quality Assessment
R & R	Recording and Reporting
SAM	Severe Acute Malnutrition
SARCs	Short-acting Reversible Contraceptives
SARI	Severe Acute Respiratory Infection
SARS	Severe Acute Respiratory Syndrome
SCM	Supply Chain Management
SDGs	Sustainable Development Goals
SDPs	Service Delivery Points
SOPs	Standard Operating Procedures
SSU	Social Service Unit
STIs	Sexually Transmitted Infections
SWAp	Sector Wide Approach

SWOT	Strength Weakness Opportunity Threat
TAS	Transmission Assessment Surveys
TB	Tuberculosis
TIMS	Training Information Management System
TTIs	Transfusion-Transmissible Infections
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
UHC	Universal Health Coverage
VBDs	Vector Borne Diseases
VPDs	Vaccine Preventable Diseases
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

Nepal, situated in the southeast Asia region, is home to more than 29 million people. It is a federal republic nation with seven provinces and 753 local level governments (LLGs). Epidemiologically, nearly three-quarters of deaths in the country are attributed to non-communicable diseases (NCDs). Historically, until 935 BS (879 AD), health services predominantly relied on traditional medicine, particularly Ayurveda. Over time, health system has undergone different significant transformations, influenced by changes in administrative divisions and people's movement. The evolution of Nepal's health system, from the commitment to primary care in 1978 to Millennium Development Goals (MDGs) and now the Sustainable Development Goals (SDGs), has been supported by comprehensive health policies and robust strategies, with the most recent health sector strategy being Nepal Health Sector - Strategic Plan (NHS-SP) 2079/80-2087/88 (2023-2030).

A crucial milestone in Nepal's journey towards universal health coverage (UHC) is the constitutional recognition of basic health as fundamental right, reinforced by legal arrangements such as the Public Health Service Act 2075 (2018) and its Regulations, 2077(2020). Responsibility for health service delivery is decentralized, with each level of government tasked with specific roles. The provision of BHS is primarily concentrated at the local level, within LLGs. The healthcare pathway begins at the grassroots level with female community health volunteers (FCHVs) and progresses through Basic Health Service Centres (BHSCs), primary, secondary, tertiary, specialized and super-specialized hospitals as the outlets of service delivery. This continuum of care is supported by health sections at LLGs, health offices, provincial health directorates (PHDs), provincial ministries overseeing the health sector, as well as departments and divisions within the Ministry of Health and Population (MoHP), ensuring effective governance of the health system.

This Annual Health Report (AHR) is for fiscal year (FY) 2079/80. It serves as a comprehensive document within the health sector, fulfilling the dual purpose of monitoring progress of annual programs and providing a detailed documentation of various facets including the health scenario, guiding documents/milestones, major activities of the fiscal year (FY), program/service status and strategic analysis of the strength, weakness, opportunity, and threat for the programs and service delivery. The publication of this report is dedicated to establishing a link between service delivery and evidence-informed decision-making and planning for future programs. The report is structured into chapters covering programs across the continuum of care and the overall management of these programs. Each chapter is meticulously summarized in the subsequent sections of this report.

Department of Health Services

The Department of Health Services (DoHS) is mandated for the execution and governance of preventive, promotive, curative, rehabilitative and palliative services within the realm of modern medicine. Serving as a crucial intermediary between MoHP, Provinces and LLGs, DoHS plays a pivotal role in coordinating and implementing healthcare initiatives. 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 centers: 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). Through these organizational units, DoHS executes various functions including supporting MoHP in policy formulation, facilitating the development and capacity building of health facilities, contributing to human resources planning and development, managing personnel, overseeing procurement, facilitating program development and implementation, engaging stakeholders, fostering collaboration and coordination for international relations and aid coordination, managing data and publications, conducting surveillance and research, and managing health emergencies and disasters.

Maternal and Newborn Health (MNH) Services

Inclusion of the MNH services into BHS reflects the commitment and priority of GoN and MoHP in the sector. Over the years, MNH services have played a pivotal role in improving health outcomes, with indicators such as the maternal mortality ratio (MMR) witnessing a sharp decline from 539 in 1996 to 151 in 2021. Family Welfare Division (FWD) has spearheaded the implementation of the National Safe Motherhood Programme, aimed at reducing maternal and neonatal morbidity and mortality. This initiative focuses on improving maternal and neonatal health through preventive and promotive activities while addressing avoidable factors contributing to mortality during pregnancy, childbirth, and the postpartum period. Key activities undertaken during the fiscal year 2079/80 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).

There was a steady increase in proportion of women attending four ANC visits as per protocol, reaching 94% in FY 2079/80. However, this increase was not consistent across the provinces, with lower uptake observed in Madhesh (72%) and Sudurpaschim (74%) provinces. The proportion of institutional deliveries have increased by 13.4% reaching 83.4% in this fiscal year, with 80% deliveries attended by skilled birth attendants and skilled health personnel. Additionally, 44% mothers attended three postnatal checkup (PNC) visits. This gap from ANC to PNC service uptake is being tackled with emphasis on counselling at each point of contact and integration of PNC services with immunization and family planning (FP). Additionally, caesarian section (CS) rate in FY was 25% which is alarming, thus FWD has started monitoring CS rate using Robson criteria, which has been expanded to 38 hospitals in FY 2079/80.

MPDSR program has been extended to 108 hospitals and 52 districts, while NBBD surveillance has been expanded to 27 hospitals. There were 113 maternal deaths, 2,186 perinatal deaths and 115 newborns with congenital birth defects reported this FY. With the stagnant neonatal mortality rate (NMR) over last six years, FWD has intensified its efforts targeting vulnerable small newborns. At present there are a total of 61 Special Newborn Care Units (SNCUs) and Neonatal Intensive Care Units (NICUs) in government facilities. There were 9,237 newborn cases admitted in SNCUs/NICUs/Kangaroo Mother Care Unit (KMCU) of which 34% were due to sepsis. There were around 50 newborns per 1,000 admitted cases succumbed to deaths. FWD has already piloted level-II newborn care orientation package and country specific model of care for small and sick newborns has been developed in FY 2079/80.

Child Health and Immunization Services

This section covers two major national programs: the National Immunization Program (NIP) and the Integrated Management of Newborn and Childhood Illness (IMNCI).

Nepal is first country in the South-East Asia Region to enact the Immunization Act 2072 (2016) and the Immunization Regulations. In a coordinated effort, Nepal has introduced the Hygiene Promotion through Routine Immunization strategy since 2077/78 (2021) to enhance mothers' and guardians' hygiene behaviors and increase immunization coverage. Furthermore, to expand immunization reach, several policies and strategies have been adopted, such as Full Immunization Declaration initiative, intensifying routine immunization during immunization month, conducting annual household surveys, requiring immunization cards for under- 5 children to receive government benefits, and identifying children through campaigns, surveys, and real-time monitoring. Over the years, NIP has made significant accomplishments. Notably, Nepal has been Polio-free since 2065/66 (2010). Also,

immunization against vaccine-preventable diseases has successfully eradicated tetanus in both mother and newborn populations, controlled Hepatitis B in children, as well as Rubella and Congenital Rubella syndrome, and significantly reduced the prevalence of Japanese encephalitis. COVID-19 vaccination began in 2077 (2021) and is still ongoing. Furthermore, Nepal has established a goal of eliminating rubella and measles by 2081/82 (2026). The program also oversees VPD surveillance initiatives and works together with the MoHP, WHO, UNICEF, and other partners to conduct VPD surveillance including acute flaccid paralysis (AFP), Measles Rubella (MR), Acute encephalitis like syndrome (AES), and neonatal tetanus. Moreover, it also focuses on outbreak response and management of VPD's including outbreak response immunization campaigns, enhanced surveillance, and public awareness campaigns.

The target population for these programs for FY 2079/80 includes 620,983 expected pregnancies, 515,533 under 1-year children (surviving infants) and 516,514 children aged 12-23 months. NIP targets children under the age of two through routine immunization, missed child vaccination for up to five years, and Tetanus Diphtheria Toxoid vaccinations for mothers through more than 16,000 service delivery points, with a focus on hard-to-reach communities. During the immunization month in Baishakh 2080, a total of 40,463 children were identified, searched and vaccinated. The coverage of maternal TD is 72%, more than 100% coverage of BCG, DPT-HepB-HiB1 and OPV1 and for antigens schedule for children 10 weeks and above the coverage is more than 90% and drop-out rates for the reference antigens is below 10%. However, the antigens wastage rate is above the indicative percentages for all the vaccines. In FY 2079/80, the national average of immunization coverage was 84% declined by 7% as compared to previous FY. Considering continuum of care, there was gap in service uptake between Td vaccination of pregnant mothers and BCG uptake of the newborns and out of 100 BCG vaccinated child, 17 are likely to miss the full immunization. In terms of the surveillance efforts for VPD, national non-polio AFP rate was 2.54 per 100,000 under 15-population surpassing the required 2.0 per 100,000. There were a total of 1,022 cases of measles positive including lab confirmed, epi-linked and clinical cases, 76 cases of laboratory confirmed JE and two neonatal tetanus cases.

CB-IMNCI program is guided by vision 90 by 2030 viz. 90% institutional delivery, 90% newborn have chlorohexidine gel applied into umbilical stump, 90% under-5children with diarrhoea are treated with ORS and Zinc and 90% of the under five children with pneumonia get the treatment with appropriate antibiotics. The major activities include: comprehensive newborn care program, free-newborn care services, kangaroo mother care program, equity and access program, routine data quality assessment (RDQA), onsite coaching, early childhood development (ECD) (from lens of health sector response), capacity building of the health workers, procurement of the needful equipment and supplies and preparation/revision of the guidelines, protocols and packages for child health. For children under five, the program provides comprehensive treatment for five major ailments

such pneumonia, diarrhea, malaria, measles, and malnutrition.

In FY 2079/80, the coverage of chlorohexidine gel was 83%. A total of 42,607 newborns received treatment in health facilities of which 10 deaths were reported. Among under five children, cases of diarrhoea treated with ORS and Zinc were 96%. The national incidence rate of diarrhoea was 115 per 1,000 under five children which decreased by a three-fold compared to last FY. However, there were four diarrhoeal deaths. Furthermore, the national incidence rate of pneumonia was 55.1 per 1,000 under five children and a total of 22 deaths were reported due to acute respiratory infections.

Nutrition Program

Nepal has made significant progress in reducing severe stunting and wasting in children under five, guided by the Nutrition Strategy 2077. However, challenges persist, with a 19% prevalence of underweight children and high rates of anemia, particularly among children aged 6–23 months. The program includes: Growth monitoring and promotion, 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 2079/80, in addition to the regular activities, FWD conducted masters training of trainers on SHNP and training on nutrition in emergency. MBFHI was extended to 22 hospitals to promote and support breastfeeding practices foster strong mother-baby bonding.

In FY 2079/80, among 0-23 months' eligible children, 79% showed up for growth monitoring. The average number of growth monitoring visits in Nepal has improved, with a national average of 6 visits in FY 2079/80, although this is still far from the optimum 24 visits. Among the children registered for growth monitoring, around 3% were underweight. Among the children registered for growth monitoring, 50% were exclusively breastfed and 55% were timely introduced of supplementary foods. Among estimated live births, the national average for newborns who began breastfeeding within one hour of birth was 84%.

In FY 2079/80, a total of 3,623,283 under-five children were screened through community mobilization. Among these screenings, 0.2% were identified as suffering from severe acute malnutrition. Subsequently, 9,760 cases received treatment through outpatient therapeutic center services, while 798 cases required admission to inpatient therapeutic center. Additionally, 1,854 children received services from the nutrition rehabilitation centers. The SPHERE standard and management of malnutrition for FY 2079/80 shows that the management at national averages for death, defaulter and recovered are within the acceptable benchmarks.

Related to supplementation of the micronutrients, in FY 2079/80, national coverage of MNP use among 6-23 months' children was 40.9%, 180-day supply of Iron Folic Acid (IFA) during pregnancy was 65.4%, and 45-day IFA to postpartum mother was 74.5% and coverage for a 13-week supply of IFA for adolescents was 19.2%, and for 26-week supply it was 12.4%. The coverage of biannual distribution of Vitamin A to children aged 6-11 months was more than 100%, for children 12-59 months it was 98.3% in campaign during Kartik and 93.9% in campaign during Baishakh and that of albendazole to children aged 12-59 months was 98% during both campaigns. Additionally, the households using iodized salt have reached 98%.

Family Planning (FP) and Reproductive Health (RH) 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-centered quality voluntary FP. Unmet FP needs is at 21% and adolescent birth rate is 71% (NDHS 2079/80 (2022)). The programmatic activities of FP include ensuring the provision of the regular comprehensive FP services also covering postpartum and post-abortion situations. In FY 2079/80, in addition to the regular activities, FWD introduced provision of Emergency Contraceptive Pills (ECP) and Sayana Press and initiated drafting of FP Sustainability Roadmap and FP Costed Implementation Plan up to 2087/88 (2030).

The average contraceptive prevalence rate for modern methods (mCPR) is 39% in FY 2079/80 which is a 2% decline as compared to last FY. The method mix of current modern contraceptives method users shows that permanent methods (voluntary surgical contraception (VSC))-48%, female sterilization-37%, male sterilization-11%, and reversible methods (52%), Long-Acting Reversible Contraceptives (LARCs)-Implant- 20%, Intra-Uterine Contraceptive Device (IUCD)- 5% and remaining are on short acting methods. There were 1% users of the new method- Sayana Press. Notably, the trend of uptake of VSC is different among male and female methods across provinces with more skewed uptake of female in the three provinces- Koshi, Madhesh and Lumbini Provinces and more skewed uptake of male in Karnali Province. The uptake of postpartum family planning has slightly improved to 1.7% in this FY and uptake of post-abortion family planning is 74%.

The goal of the National Adolescent Health and Development Strategy (2075 (2018)) is to promote adolescent sexual and reproductive health. Guided by the strategy, the major activities for FY 2079/80 were expansion of adolescent friendly health facilities, certification of adolescent friendly health facilities and update in Adolescent Friendly SRH Guideline.

In FY 2079/80, a total of 287 health facilities are certified as adolescent friendly service sites. A total of 26,912 adolescents utilized FP services, 39,522 utilized ANC services and 5,651 utilized safe abortion services.

Regarding RH morbidities, notable in FY 2079/80, cervical cancer screening, prevention and treatment guideline 2079 and Disability Friendly RH and Safe Motherhood service guideline 2079 were endorsed. The

cervical screening was done in 160,497 women aged 30-49 years (3.4% positivity rate) and 44,794 women aged 50 years and above (2.4% positivity rate), breast cancer screening was done in 30,377 women (1.7% suspected and referred), obstetric fistula screening was done in 10,324 (1% suspected) and pelvic organ prolapse screening was done in 83,056 women (15.9% prolapse identified). With support from FWD, a mechanism is in place to manage thus identified cases.

Basic Health Services

The Public Health Service Act 2075 (2018) and the Regulation 2077 (2020) define the BHS package. GoN is committed to providing free BHS to all citizens across the country. The BHS package encompasses a comprehensive range of public health interventions, including promotional, preventative, 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. LLGs are constitutionally mandated to provide BHS with the necessary budget managed through fiscal transfers. At federal level, Basic and Emergency Health Service Management Section within the Curative Service Division plays pivotal role in overseeing the implementation of BHS. An institutional mechanism has been established to ensure the delivery of free BHS across all levels of government.

Primary Health Care/Outreach Clinics (PHC/ORC) were established in 2051. to improve community access to essential health services. In FY 2079/80, 87% of the planned PHC/ORC sessions were successfully conducted, representing a 0.6% increase compared to the previous FY. These set ups served a total of 2,512,111 users during this period.

Female Community Health Volunteers (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, approximately 50,665 FCHVs are actively contributing to health care in Nepal. The latest amendment to the FCHVs Strategy in 2076 focuses on context-specific revisions, including changes to selection criteria and institutional arrangement to support the FCHVs program.

The major contributions of FCHVs to health service delivery include the distribution of FP commodities, emergency contraception, and iron tablet. However, this FY saw a decrease in the distribution of FP commodities and iron tablet compared to the previous FY. FCHVs also ensure postnatal visits for home deliveries, with 33,159 mothers visiting within the first 24 hours of birth, 40,695 on the third day, and 41,772 on the seventh day. Additionally, FCHVs assisted over 50 thousand mothers and newborns in initiating breast feeding within one hour of birth and distributed postnatal Vitamin A capsules to more than 90,000 postnatal mothers this FY. Furthermore, FCHVs screened 3,623,283 children aged 6-59 months using MUAC. However, the motivation of FCHVs remains a challenge for the program, and

different approaches tailored to rural and urban areas may be necessary to address this issue effectively.

Community Health and Nursing (CHN) services program was initiated as a pilot program in two LLGs, in alignment with the community health program guidelines, 2078. 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. This program consists of two phases: the first phase involves baseline data collection, while the second phase incorporates community directed and community-based health services using a life cycle approach. There are three Community health officers and 39 CHNs in the program implementing LLGs. A total of 12,863 households were covered during the baseline assessment phase.

School Health and Nursing Service Program is implemented based on the strategic directives delineated in the National Health Policy, 2076.During this fiscal year, the program has been successfully implemented in 1,011 government schools, with 23% of these schools receiving support from the NSSD, administered by the federal government, while the remaining are owned by the provincial governments. The major achievements of this program include the promotion of healthy habits among students, particularly the avoidance of ultra- processed foods, compliance of IFA program, addressing ASRH issues, conducting health screenings for students and staff, providing first aid, and managing conversion disorders at the school level. Encouragingly, all provinces have initiated this program in at least a few schools, and some private schools have also commenced participation, indicating a broadening scope and acceptance of the program.

NCDs, Road-safety and Mental Health Programs

The burden NCDs is in the rise and was responsible for 71% of total deaths in 2075/76 (2019) with the highest out-of-pocket (OOP) expenditure (31%) reported for NCDs. The prevention and treatment programs for NCDs majorly constitute of Nepal Package of Essential NCD (PEN) interventions for PHC in low-resource settings, Kavrepalanchowk Hypertension Care Cascade Initiative, PEN Plus Project, WHO NORAD Nepal Integrated NCD Care Model, Cancer Control Strategy, Behaviour Change Communication (BCC) for NCDs risk factors. In FY 2079/80, a total of 630,299 patients with hypertension, 312,370 patients with diabetes and 185,857 patients with Chronic Obstructive Pulmonary Disease (COPD) were on treatment for their diseases.

Additionally, 4.11% of the deaths are due to road traffic accidents (RTAs). Nepal operates in multi-sectoral approach to address road safety through the five pillars- road safety management, safer vehicles, safer road users, post-crash response and safer driving environment. Health sector majorly works on the fourth pillar of post-crash response. MoHP has institutional arrangements in place for post-crash responses. In FY 2079/80, EDCD has drafted injury prevention strategy, reported to the global status report on road safety and carried out the low-cost safety pilot initiatives in

two LLGs- Tulsipur Sub-Metropolitan City and Damak Municipality.

Nepal endorsed its National Mental Health Strategy and Action Plan (NMHSAP) 2077 as an umbrella strategy to guide overall mental health programs and service delivery. Major programs for mental health include- national mental health services strengthening program 2079/80, WHO special initiative for mental health , capacity building of human resource for mental health, strengthening mental health services, child and adolescent mental health services, psychotropic medications, integrating NCDs in maternal mental health services, Integrating NCDs and mental disorders in the current recording and reporting of HMIS, "Khulla Mann": district mental health care program and suicide prevention program. There are ongoing trainings for primary care providers that incorporate suicide risk assessment and management based on mental health Gap Action Programme (mhGAP) recommendations. In FY 2079/80, a total of 119,429 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), Drinking Water Quality Surveillance, Climate Sensitive Disease Surveillance (CSDS), Surveillance Outbreak Response Management and Analysis System and a toll-free call center (1115). There are a total of 118 sentinel sites of EWARS of which 16 are consistent reporting sites. In FY 2079/80, a total of 19 infectious diseases were reported through EWARS including COVID-19. A higher number of cases of influenza like illness (ILI) (n=1,560) and Severe Acute Respiratory Illness (n=3,464) from Karnali and Koshi Province respectively compared to other provinces.

In FY 2079/80, the Epidemiology and Outbreak Management Section(EoMS) of the EDCD carried out a series of preparedness and response activities to enhance health security in Nepal. These activities included the ongoing response to COVID-19, vaccinating 1200 Haj pilgrims, and endorsing guidelines for Rapid Response and Emergency Medical Teams. The training programs resulted in the qualification of 91 RRT instructors and 60 field epidemiologists. Additionally, the EoMS organized Risk Communication and community Engagement training in six provinces. The first Joint External Evaluation of International Health Regulations in Nepal formulated five key actionable recommendations. In preparation for Monkey pox potential outbreak, 14 dermatologists were assigned across different provinces, and healthcare workers were trained. Furthermore, the 16 Health Desks at ground crossing points underwent comprehensive reviews. Notably, there were 42 cases of Cholera reported from Bagmati Province which was responded through EoMS with outbreak investigation and Reactive Oral Cholera Vaccination (OCV) among 44.64% of the target population (n= 92,815) in two phases of campaigning.

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 (2014-2025) aims to achieve malaria elimination in Nepal by 2082/83 with goal to reduce indigenous malaria cases to zero by 2078/79 (2022) and sustain thereafter. In FY 2079/80, there were 533 confirmed cases of the malaria of which there were 24 indigenous cases. A total of 97,053 long lasting insecticides nets (LLINs) were distributed through mass distribution and 20,207 LLINs through continuous distribution.

National Guideline of Diagnosis, Management and Prevention of Scrub Typhus 2079 was developed and endorsed. During capacity building activities, integration of scrub typhus and NTDs/VBDs was done and reporting of scrub typhus through EWARS and HMIS was ensured. There was a total of 9,243 cases reported in the last fiscal year.

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 was a total of 56,338 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 2079/80, there were 42 districts with endemicity of Kala-azar and there were 199 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 are 64 endemic districts for LF. In the FY 2079/80 mass drug administration campaign aiming to support interruption of transmission was done in 15 districts – in 11 districts using the triple drug therapy (IDA regimen) and in four districts sticking to the two drug-regimen regimens (DA). Thirteen out of 15 districts achieved coverage of over 80%. Targeted LF antigenemia testing was done in six locations with antigen-positive case identified during post-MDA surveillance and needful focal treatment was done. Among 41,535 cases of LF, there were 10,504 cases operated for hydrocele.

At all levels, concerted efforts are ongoing to achieve the targets and objectives outlined in the National Leprosy Strategy 2077/78- 2081/82 (2021-2025), with the overarching goal of achieving a leprosy-free Nepal by 2087/88 (2030). During the fiscal year 2079/80 (2022/23), a total of 2,523 new leprosy cases were identified, leading to a New Case Detection Rate of 8.5 per 100,000 populations. Among those cases, 189 (7.5%) were new leprosy cases with Grade 2 Disability

(G2D), 181 (7.2%) were new child leprosy cases, 8 (0.3%) were new child G2D cases and 1,049 (41.6%) were new female leprosy cases. Simultaneously, 2,510 cases remained under treatment and were receiving MDT by the end of the FY. The registered prevalence rate stood at 0.85 cases per 10,000 populations nationally, maintaining sustained elimination status at the national level. Among 77 districts, 14 reported a prevalence rate surpassing 1 per 10,000 populations, while 12 districts documented zero leprosy cases.

Among zoonotic diseases, Nepal witnesses hundred human rabies cases annually and snake bites are also commonly encountered. annually, over 96% of bite cases are attributed to dog bite and 99% of the human rabies cases result from dog bites. Vaccinating 70% of dogs is crucial to break the transmission cycle, making it a priority at EDCD. In FY 2079/80, 119,392 cases of animal bites were reported and 456,978 Anti Rabies Vaccine (ARV) vials were consumed. Also, there are a total of 110 treatment centers with free distribution of quadrivalent anti-snake venom serum (ASVS) nationwide. There were 9,120 cases of snake bites and 1,223 were poisonous.

Furthermore, International Health Regulation (IHR) came into force in Nepal from 1st Shrawan 2064. In FY 2079/80, there was a national workshop on State Party Annual Reporting (SPAR), province level SPAR preparation and IHR core capacity orientation, conduction of voluntary joint external evaluation (JEE), strengthening of the diagnostic capacity for Anthrax and orientation of IHR capacity at point of entry (PoE).

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. In FY 2079/80, the Zoonotic Influenza Distribution Assessment and Ranking model was introduced as pilot in Nepal. Nepal has also taken initiatives for AMR surveillance.

National TB Control and Management Program

Nepal has a significant burden of tuberculosis (TB), with an estimated 70,000 individuals falling ill with the disease. National Tuberculosis Programme (NTP) registered 37,447 cases of all forms of TB, with a higher proportion among males (62%) than females (38%). Of these cases, 98.3% were incident TB cases, with 57% being pulmonary bacteriologically confirmed (PBC) cases and 28% being extra pulmonary TB cases. Geographically, the terai region accounted for the majority (60%) of TB cases, with Madhesh, Bagmati, and Lumbini provinces contributing significantly to notifications. Despite efforts, drug-resistant TB remains a public health threat, with nearly 2,900 people estimated to develop multidrug-resistant or rifampicin-resistant TB (MDR/RR-TB) in FY 2079/80. Alarmingly, only 693 cases were detected, representing a 76% detection gap. Out of those diagnosed, the NTP was able to initiate treatment for 546 individuals. Preventive therapy was provided to children under the age of five who were in close contact with TB patients, with 92% of eligible children identified for TB preventive treatment (TPT). Of these, 84% were successfully enrolled in TPT during the reporting period. The TB program in Nepal continues to face challenges in achieving optimal treatment outcomes, particularly for retreatment cases. While efforts to expand diagnostics and improve treatment quality, including the introduction of new technologies like GeneXpert Ultra and oral bedaquiline-containing regimens for MDR-TB patients, have been made, gaps in case detection and treatment coverage persist. Laboratory network expansion and strengthening have played a pivotal role in improving TB diagnosis and monitoring, with extensive coverage of 113 GeneXpert sites and 786 designated TB microscopy centers across the country. Despite progress in TB/HIV co-morbidity management and the implementation of initiatives such as the TB Free Nepal Initiative to strengthen local-level governance (25 LLGs) in TB response, challenges remain in scaling up TPT services and ensuring adequate private sector and community engagement.

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 services (HTS), STIs management, elimination of Vertical Transmission (eVT), HIV treatment services, opioid substitution therapy (OST), Strengthening strategic information on National HIV Program, DHIS2 tracker, mHealth and biometrics for diagnosed HIV positive or enrollees of the ART services. In FY 2079/80, the positivity rate among tested was 0.55% with highest positivity rate in Bagmati Province (2.03%). Among 593,257 women in ANC, labor and PNC tested 73 reported positive. As of FY 2079/80, 24,232 PLHIV are on ARTs cumulatively and a total of 1,240 PLHIV are under OST.

Curative Services

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 FY 2079/80, MSS follow up was completed for a total of 127 hospitals in which national average score was 66.0%. Among federal hospitals, Bheri Hospital obtained the highest MSS score of 75.0% and Bhaktapur Hospital led the overall hospitals with an impressive score of 97.0%. Also, a total of 21 hospitals under the jurisdiction of CSD were visited for inspection/renewal.

In FY 2079/80, the percentage of the population utilizing the outpatient department (OPD) services was 76.0%. Among top ten OPD morbidities, gastritis (acute peptic disease (APD)) was the most commonly reported condition followed by upper respiratory tract

infections (URTIs). Similarly, 10% of the population utilized the emergency services and 5% utilized the inpatient services. The most common cause of hospital admissions was related to lung health (6.6%). A total of 426,404 surgeries (major plus minor) were done in the FY. The bed occupancy rate in health facilities was 51.0% and average length of hospital stay (ALOS) was 3.6 days. A total of 6,586 cases were reported brought death and 11,893 cases were received for post-mortem.

Health Academia and Federal Level Hospitals

At present, there are seven federal level medical academia which are autonomous both at administrative and financial operations and are not-for-profit viz- 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. 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 addition to the academia there are universities running health professional education and are also contributing to the production of human resources in the country. Each of the academia have their own teaching hospitals (at least one tertiary level hospitals of each academia) as guided by the criteria of the medical education policy. To date 9,000 medical doctors and nurses have been produced from these federal level health academia including specialized and super-specialized courses. Health professional courses are annually accredited by Medical Education Commission and number of seats for courses are decided in each academic year.

Among government programs, BHS is implemented in all of the federal level academia. The program of One Stop Crisis Management Center (OCMC) and Social Service Unit (SSU) are functional in all academia except NAIHS. NAIHS has its own tailored welfare system for army personnel. In FY 2079/80, PAHS received the best OCMC and PoAHS received the best SSU award. Notably, one-doctor-one- institute is implemented in BPKIHS, RAHS and KAHS and Aama Surakhsya Program is only implemented in KAHS, PoAHS and RAHS. Most of the academia have extended health services (EHS), satellite health services and tele-medicine services. EHS is not implemented in NAMS and NAIHS and satellite health service is not implemented in RAHS. NAMS has dedicated tele-medicine service for the Nepalese on foreign employment. MoHP is continuously putting its efforts to facilitate critical programs with potential to contribute to equitable access and quality of healthcare services to be implemented across all academia.

With federalization alike changes in the mandate of the level of the ministries, MoHP is mandated to take overall responsibility of functioning of tertiary and above hospitals. As of FY 2079/80, federal level hospitals include six tertiary hospitals, three hospitals dedicated for government service holders, 12 organ specific/ disease specific/age group specific hospitals, one teaching hospital and five hospitals of academia under government ownership, two hospitals of academia under ownership of academy, one hospital for prisoners and two hospitals for alternative medicines. The federal level hospitals cater country wide referred cases and almost all of them function as the clinical training sites for different capacity building activities including fellowship programs. 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.

Furthermore, from government owned organ transplant center- Shahid Dharma Bhakta National Transplant Center (Human Organ Transplant Center (HOTC)) established in 2068 (2012), in FY 2079/80, there were 55,586 patients served in outpatient department and 1,984 inpatients served in this FY. There were 757 minor surgeries and 868 major surgeries in the FY 2079/80. A total of 186 kidney transplantations were done, among them 4 kidneys were from brain dead donors. Two liver transplants from brain dead donor were done. A total of 28,186 free and 1,647 paid dialysis services were provided.

Disability and Rehabilitation

During FY 2079/80, EDCD/LCDMS focused on creating a disability-inclusive health system in Nepal. Key initiatives included integrating disability management and rehabilitation at the PHC level and training medical officers and healthcare providers. Training efforts extended to developing a package on assistive products for healthcare providers and adapting caregiver skill training for children with developmental disabilities to the Nepali language. Healthcare workers received orientation on post-COVID-19 rehabilitation and early detection of childhood disabilities. In pursuit of public-private collaboration, guidelines for a Public-Private Partnership for rehabilitation are in development. A tele-rehabilitation protocol was established, with devices installed in nine facilities across seven provinces. Strategic initiatives encompassed the development of a preliminary draft of the National Rehabilitation Strategy and the finalization of the Guide for Rehabilitation Workforce. Furthermore, a low-cost intervention for road safety was launched in Koshi and Lumbini provinces, emphasizing a safer system approach. Rehabilitation statistics reveal a substantial use of services, with 238,628 rehabilitation services provided, including 98,210 new users of which 1,678 individuals were disability cards holders. Additionally, 7,417 assistive products were distributed.

One Stop Crisis Management Center and Medico-legal Services

Gender based violence (GBV) cuts across caste-ethnicity, religion and socio-economic status and is prevalent in all geographical setting in different forms

and magnitude, making prevention and response crucial nationwide. MoHP is tasked to provide integrated multi-disciplinary services in a single physical location to the survivors of GBV by establishing hospital based OCMCs. As of FY 2079/80 there are 93 OCMCs across 77 districts. In FY 2079/80, there were 3.3 per 10,000 population registered through OCMC services and 1.0 per 10,000 cases of follow up. The common type of the GBV included- emotional violence, child/forced marriage, denial of resources/opportunities/services, physical violence, harmful traditional practices, sexual assault and rape.

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 2079/80, a total of 35 permanent medical officers were provided medico-legal training to compensate the lack of forensic experts.

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. 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.

In the FY 2079/80 major public health related activities carried out through NPHL were laboratory-based surveillance of Japanese Encephalitis, measles, respiratory syncytial virus, rubella, polio, antimicrobial resistance of priority pathogens, influenza etc. NPHL also is a reference laboratory for Transfusion Transmissible infections, HIV and Malaria. 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. HLA typing lab for organ transplant and molecular tests like HPV DNA typing of high-risk HPV is also in full operation in NPHL.

NEQAS is operated throughout the country through this department. Established in 1997, NEQAS initially included government laboratories and has since expanded to encompass the private sector. The program involves preparing and dispatching proficiency test panels to around 600 participating laboratories, with provision for online based results entry and feedback mechanism. On, the other hand, to monitor its own service quality NPHL participates in various International External Quality Assurance Schemes. A major achievement of this year is also the physical visit for renewal of ISO 15189:2012, for which NPHL has been successful in renewing its ISO accreditation certificate for tests within the scope.

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 2079/80, notably, training material development and field test for basic research methodology for health workers training and interaction with academia for integration of the training materials in the regular academic program was conducted along with other regular training development and update initiatives. There were 43 training events of which two were long term trainings- anaesthesia assistant and diploma in biomedical engineering . The trainings were in different areas of care and service delivery including, but not limited to, intensive care, burn, operation theatre, reproductive health and safe motherhood, newborn and child health, NCDs, mental health and palliative care, emergency and pre-hospital care. Out of the 41 training events, 36.5% were training of trainers.

Similarly, from capacity building section of NSSD, in FY 207/80 infection prevention and control (IPC) training was conducted in two batches and national IPC symposium was conducted. Regular on-site clinical coaching and mentoring program was continued, skill exchange program for critical care nurses was conducted covering 16 nurses from four hospitals.

Vector Borne Disease and Research Training Center (VBDRTC) conducted training on vector-borne-diseases covering teams from all seven provinces. It also contributed in TAS, an important initiative for elimination of LF in different areas of the country.

In addition to these centers, divisions of DoHS, Nepal Health Research Council (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 (NHEICC) serves as the central authority for health promotion initiatives within the MoHP. It acts as the focal point for MoHP concerning tobacco control and regulation, alcohol control and regulation, as well as risk communication and community engagement (RCCE) efforts.

In the FY 2079/80, the NHEICC spearheaded several key initiatives. These included the finalization of SAFER implementation roadmap in Nepal for alcohol control and pilot study in two hospitals to assess the utilization, feasibility and acceptability of services for Nicotine Replacement Therapy by using nicotine chewing gum. Similarly, "Guideline for Journalist for Preventing Suicide 2080" was developed and approved on which orientation program for journalists in three provinces (Sudurpaschim, Karnali and Gandaki) was conducted. A series of meetings and workshops was conducted for the development of Learning resource package of RCCE. Review and update of health-related textbook of grade eight was done and digital library

regarding health-related IEC materials was developed. Health awareness and communication programmes for NCDs, communicable diseases, FP, MNH, child health, immunization, nutrition, tobacco control, occupational, environmental health, air pollution and climate change were done. In FY 2079/80 a total of 43,182 health education sessions were conducted reaching 1,172,570 people.

Logistics and Health Information Management Program

Management Division is tasked with responsibilities of logistics management, health information management, infrastructure development, and support in health-care waste management and water sanitation and hygiene (WASH) aspects of the health facilities. Integrated Health Information Management Section (IHIMS) plays crucial role in managing the health-related routine data and information from FCHVs to federal level. An electronic Logistics Management Information System (eLMIS) from 2075 has been expanded to 3,286 live sites. In regard to digital landscape in health, a survey showed 25 solutions actively utilized in health, MoHP is continuously putting its efforts to improve the uptake of digital solutions to obtain real time health indicators status. HMIS tools were revised to align with program requirements- 73 tools were revised including addition of 15 recording tools and five reporting tools and updates were made in the DHIS2 platform. There were regular activities of capacity building for both HMIS and eLMIS. In FY 2079/80, there was continuation of cent percent reporting from health posts and primary health care centers. As compared to last year, there was 6% increment in reporting from FCHVs (reached 96%), and 7% increment in reporting from public hospitals (reached 95%). Among 98% eLMIS reporting, 75% were done timely.

Notably, Public Procurement Strategic Framework for Management of Medicine and Medicinal Good 2079/80-2083/84 (2023/24-2027/28) was approved and rolled out. Use of standard operating procedures and technical specification bank and disposal based on directive was ensured. Regarding the logistics management, consolidation of annual procurement plan (CAPP) is in practice at DoHS since 2071/72 which was continued in FY 2079/80 as well with 93% of the procurement done against CAPP. Similarly, continuation of the standard bidding documents and electronic Government Procurement (eGP) was observed in this FY with 89.8% of the total procurement through eGP.

Update and follow up were conducted for the Planning and Management of Assets in Heath Services (PLAHMAS) and Health Infrastructure Information System. Stickers were used to facilitate continuous inventory management of bio-medical equipment.

In FY 2079/80, onsite coaching based on National Health Care Waste Management (HCWM) and National Standard for WASH in Health Facilities were conducted in 12 hospitals in Madhesh, Gandaki and Koshi Provinces. Interventions on WASH, infection prevention, provider behaviour change communication and related support were conducted in 249 facilities of Karnali Province. Training was also conducted on calculation of the Green House Gas (GHG) emission from health sector and baseline assessment of GHG emission was done in 12 diverse health facilities.

Human Resources for Heath (HRH) and Health Finance Management

Data from health professional councils shows that there are 9.04 doctors, 21.08 nurses, 20.67 AHWs, 11.81 ANMs, 10.27 laboratory personnel, and 5.97 health assistants per 10,000 populations. Currently, there is a mandatory two-year government service requirement for undergraduate/post-graduate scholarship recipients in health professional education, aimed at retaining technical health human resources for health. DoHS has been consistently working on upgrading the organizational structure of health facilities through Organization & Management surveys. In addition to regular activities of deployment, transfers, and level upgrades, DoHS has implemented digital attendance system and online operation calendar (online action plan) for the department and its divisions. In the FY 2079/80, there were 73% posts fulfilled against sanctioned positions, with no fulfilled consultant or physician/general practitioner positions in Karnali Province.

In terms of health finance management, Nepal has implemented a mixed health care financing system, comprising free BHS, health insurance, and targeted social health protection programs, with a significant portion reliant on out-of-pocket (OOP) expenditure. A total of 54% of health spending is reported to come from OOP sources. In FY 2079/80, GoN endorsed its National Heath Financing Strategy 2080-2090 (2023/34-2033/34), which outlines two primary areas of focus: ensuring equitable access to quality health services and effective management of financial resources for health. In FY 2079/80, a total allocation of 6.01 billion NPR was earmarked within the DoHS network, of which 72% was absorbed. In addition to regular operations, there were reported irregularity totalling 2,172,242 NPR, submitted to the Office of the Auditor General for clearance. Furthermore, inter-governmental fiscal transfers continued, with conditional health grant comprising 65% of the LLGs' health budget this FY.

Department of Ayurveda and Alternative Medicine (DoAA)

Ayurveda is the ancient medical system indigenous to Nepal and holds deep roots in the country's culture and traditions. DoAA with its three division viz. Herbs, Medicine and Research Division, Ayurveda Medicine Division and Alternative Medicine Division, contributes to formulating policies and guidelines for Ayurveda and alternative medicines- Naturopathy, Homeopathy, Unani health services and regulate health facilities providing the 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. In FY 2079/80, notably DoAA held programs related to NCDs prevention, control and management, lifestyle management, strengthened Ayurveda Health Management Information System (AHMIS) and

established citizens well-being centers at LLGs. A total of 2,325,175 individuals utilized the Ayurveda health services with 392,249 utilized purba-karma services, 150,560 utilized yoga services and 58,755 utilized postnatal satawari product. For strengthening health facilities' readiness DoAA has also taken the initiative of MSS tools for Ayurveda health facilities from this FY.

Furthermore, in Nepal within government system, there is only one homeopathy hospital in Bagmati Province, Pashupati Homeopathic Hospital, established in 2040 BS (1953 AD). The hospital runs only out-patient services at present. More than 39,000 users took services from the hospital in FY 2079/80 with a total of 9,497 users accessing BHS Homeopathy services.

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 2079/80, DDA actively worked on awareness on the rational use of medicines through different media, published Drug Bulletin of Nepal, conducted inspections and audit. A total of 3,393 inspections of drug retailers and wholesalers was done for quality assurance and de-registration of 1,191 pharmacies and 79 cases were filed against violation of Drug Act 2035 and 25 medicines were recalled from the market due to inferior quality. Additionally, 2,126 new registrations and 13,367 renewal of pharmacies was done in this FY.

Health Insurance and Other Social Health Protection Programs

The chapter covers health insurance program, SSUs services, geriatrics services and Bippanna Nagarik Aushadi Upachar Karyakram (Impoverish citizen treatment program).

By the end of FY 2079/80, Health Insurance Program (HIP) had been successfully implemented across all 77 districts, encompassing 749 LLGs through 440 empaneled health facilities. In FY 2079/80 HIP population coverage improved from 11.5% to 16.1% and household coverage improved from 20% to 24.7%. The cumulative population coverage, household coverage, service utilization, and renewal rates are 24.6%, 33.2%,43.4% and 61.3% respectively.

SSU service has been scaled up to all provinces in all districts. A total of 34,461 new and 2,964 follow up cases were served through SSUs of different hospitals in FY 2079/80. The target group patients are provided free or partially free services available at the hospital based on the evaluation of their financial status, identification card and other observation. But, for the survivors of GBV, the hospital should provide all the services available at the hospital for free. Additionally, SSU plays an important role in coordination, harmonizing

and facilitating access to all social security related programs.

The geriatric services along with the establishment of separate geriatric wards and OPD have been strengthened in a total 61 hospitals spanning across 48 districts. During this period, a total of 21,372 new and 2,961 follow up cases were registered in geriatric services across the country. Additionally, orientation program on healthy aging were conducted for selected civil service staff. Expanding geriatric services to all health facilities necessitates infrastructural changes and the development of academic programs to produce specialized human resources in geriatrics.

The Bippana Nagarik Upachar Karyakram covers a targeted population and reimburses treatment expenses for eight selected diseases through listed hospitals under the scheme. In FY 2079/80, a total of 41,230 patients received free treatment under the Impoverished Citizen's Services scheme through 113 enlisted hospitals.

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 2079/80, a total of 30,027 medical doctors, 4,883 dental doctors, 1,100 Ayurveda doctors, 78,948 registered nurses, 37,346 ANMs, 66 registered midwives, 1,507 specialized nurses, 6,093 pharmacists have been registered in their respective councils.

The research council 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 2079/80, a total of 571 research proposals received ethical approval, with 139 currently under review. NHRC conducted or collaborated on more than 19 research projects during FY 2079/80.

Health Development Partners

The involvement of Health Development Partners (HDPs) in Nepal is shaped by two key policies: the Foreign Aid Policy of 2058/59 (2002) and the Development Cooperation Policy of 2070/71 (2014), which are aligned with a sector-wide approach (sWAP) for aid harmonization. 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),

1 | Introduction

Nepal, situated in the Southeast Asia Region, is home to more than 29 million people.[1] Its rich tapestry comprises various ethnicities, religions, cultures, and linguistic groups coexisting harmoniously within its three distinct ecological regions: Mountains, Hills, and the Terai. Administratively, the country operates as a federal republic with a federal government, seven provinces- Koshi, Madhesh, Bagmati, Gandaki, Lumbini, Karnali, and Sudurpaschim and 753 local level governments (LLGs) (often referred to as 'Palikas').

The average life expectancy in Nepal is 71.1 years with males averaging 69.2 years and females 73.0 years. Notably, there has been a significant increase of 12.7 years (11.5 years in males and 13.9 years in females) over the last three decades[2]. The burden of disease (BoD) estimates indicates that seven in ten deaths result from non-communicable diseases (NCDs) and these account for 61% of total disability-adjusted life years[3].

Currently, Nepal is traversing a critical phase in its journey towards strengthening its health systems. It considers health systems resilience as a multifaceted concept encompassing its ability to withstand and respond to various health challenges and emergencies while maintaining essential health services and functions. As Nepal embraces federalized governance, it places great emphasis on ensuring universal access to Basic Health Services (BHS), fostering social justice, inclusion, equity, and diversity, and bolstering community health systems in both urban and rural areas. Moreover, Nepal is committed to addressing healthcare disparities across diverse population groups, including the rural and urban poor.

Central to Nepal's health sector strategy is the provision of high-quality BHS, ensuring accessibility and availability for all citizens. This approach is underscored by a commitment to gender equality and social inclusion (GESI), equity, and diversity, tailoring healthcare services to meet the distinct needs of various demographics and thereby reducing disparities in access and outcomes. Additionally, Nepal is prioritizing the advancement of local health systems and the strengthening of community health interventions, empowering local communities to take charge of their health and well-being. This promotes self-reliance and fortifies the resilience of the overall health systems at every level.

The concerntrated efforts of the Government of Nepal (GON), Ministry of Health and Population (MOPH) to strengthen foundational pillars for resilient health system ultimately gears improvement in health and well being of its population and movement towards universal health coverage (UHC)

For evidence based planning and policy making, there exists a requisite to enhance the accessibility, comprehensiveness, and accuracy of empirical data pertaining to the health status and advancements within the country. The present Annual Health Report (AHR) marks a significant stride in this direction, consolidating ongoing initiatives aimed at augmenting the availability and quality of data in Nepal.

1.1 Health System in Nepal

1.1.1 Before the Primary Health Care (PHC) Movement

Until 935 BS (879 AD), Nepal's health system predominantly relied on traditional medicine, particularly Ayurveda. 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.

During the Rana period (1766-2007 BS), efforts were made to fortify the traditional medicine system, and there was an integration of modern medical interventions. The year 1872/73 (1816) saw introduction of smallpox vaccination, and efforts were initiated to establish modern hospitals and Ayurveda health facilities for accessible services. The first allopathic service hospital (Bir Hospital) was established in 1947 (1889/90). The formalization of modern health services took place with the establishment of the Department of Health Services (DoHS) in 1989/90 (1933).

The first General Health Plan in Nepal was introduced in 2012/13 (1956) as part of the First Five-Year Developmental Plan. From 2014/15 (1958), one health center was established per electoral constituency, and in 2031/32 (1975), an announcement was made for the establishment of 1462 health posts across the country. Vertical public health programs were continuously implemented alongside the establishment of the health facilities for curative services (Box 1.1).

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1 National Statistics Office, National Population and Housing Census 2021, Office of PM and Council of Ministers, Government of Nepal

2 Institute for Health Metrics and Evaluation (IHME). GBD Compare. Seattle, WA: IHME, University of Washington, 2015. Available from http://vizhub.healthdata.org/gbd-compare. (Accessed)

3 Nepal Health Research Council (NHRC), Ministry of Health and Population (MoHP), Institute for Health Metrics and Evaluation (IHME), Monitoring Evaluation and Operational Research (MEOR). Nepal Burden of Disease 2019: A Country Report based on the 2019 Global Burden of Disease Study. Kathmandu, Nepal: NHRC, MoHP, IHME and MEOR; 2021 Nepal

Box 1.1 Important milestones in the health system of Nepal before 1978[4]

Year BS (AD)	Major Milestones
935 (879)	Traditional medicine based
1698-1731 (1641-1674)	Ayurveda dispensary in Hanuman Dhoka Royal Palace complex
1872/73 (1816)	Introduction of smallpox vaccine
1906/07 (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
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
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, the first eye hospital in the country
2031/32 (1975)	Declared to establish 1462 health posts throughout the country

Over the time during the second development plan from 2018/19 (1962) to 2021/22 (1965), there was an increased emphasis on both preventive and curative medicine. Subsequently, the third development plan from 2021/22 (1965) to 2026/27 (1970) prioritized on preventive and promotive health care services. In 2027/28 (1971), there was initiation of integrating all vertical health programs and were ran under one umbrella as District Health Office (DHO). In 2028/29 (1972), Nepal witnessed the establishment of its first medical school, marking significant strides in the evolution of its healthcare landscape. Notably, the First Long Term Health Plan 2031/32- 2046/47 (1975-1990) was developed with the objective of ensuring consistent and effective functioning of the health services.

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 (1978-1990), the GoN committed to the PHC approach in 1978. This commitment facilitated community engagement and participation. In the same year, the first cohort of medical doctors enrolled at the Institute of Medicine (IoM), marking the commencement of domestic medical training, and a health training center for in-service education was established. By 2039 (1982), IoM had its teaching hospital, and in 2045 (1988), GoN initiated the Female Community Health Volunteers (FCHVs) program with a focus on family planning in

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

communities, targeting to lower the total fertility rate (TFR) to less than six.

In 2048 (1991), amidst the People's Movement, the first National Health Policy (NHP) was promulgated, formalizing preventive, promotive, and curative aspects of healthcare. This policy also delineated various levels of health facilities, aimed to enhance rural accessibility through establishment of health posts, and included private sector involvement. The National Drug Policy was formulated in 2052 (1995). The National Health Policy aimed for Health for All by 2057 (2000). Subsequently, a new perspective plan was formulated and endorsed as the Second Long-Term Health Plan 2053/54-2073/74 (1997-2017), focusing on providing quality essential health care services (EHCS) and ongoing restructuring of health services, strengthening then district health system.

Aligned with the Poverty Reduction Strategy Paper, MDGs and Tenth Five-Year Plan 2058/59- 2063/64 (2002-2007), GoN formulated the Health Sector Strategy: An Agenda for Reform 2060/61- 2065/66 (2004-2009) to provide an equitable, high-quality healthcare. The implementation of a sector-wide approach (SWAp) under the Paris Declaration and joining the International Health Partnership (IHP+) in 2063/64 (2007) addressed coordination challenges, fostering establishment of health facilities nationwide, including multispecialty centers and domestic health workforce production.

The mass movement *(Jana Andolan)* in 2062/63 led to revolutionary changes, a peace agreement, and the formation of an interim government, making Nepal a Federal Democratic Republic. The interim constitution of Nepal 2063 (2007) promoted BHS free of cost, further enabling health sector development. As a result, Nepal went on track to achieve MDGs related to child health (MDG4) and maternal health (MDG5). The health sector efforts resulted in effectively controlling communicable diseases and country's progress towards MDG6 (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 newborn care, community-based nutrition care, and support. NHSP-II also included a NCD 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 (2000) to 33 per 1,000 live births in 2071/72 (2015), achieving the MDG target early. U5MR declined from 91 in 2000 to 38 in 2071/72 (2015). Maternal health achievements were notable, with a decline in maternal mortality ratio (MMR) from 850 in 2047 (1990) to 258 in 2071/72 (2015).[5] 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, newborn 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.

In 2071 (2014), a new national health policy was formulated focused on free BHS, effective and accountable healthcare, accessible and equipped services, and community participation and ownership. Amidst a gradual, steady and notable progress in health outcomes, additional challenges such as natural disaster crippled the health system, impeding to progress in health status of the country. Nepal faced a powerful earthquake in Baishak 2072 (April 2015). The Health Emergency Operations Center (HEOC), established in 2071 (2014), played a crucial role in disaster response, ensuring coordinated delivery of health services. The earthquake resulted in 8,962 deaths, 22,302 injuries[6], 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 (1990 and 2014), Nepal witnessed significant strides 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. Furthermore, in 2072 (2015), Nepal adopted its new constitution for institutionalizing federalism. It guarantees inclusive socio-political and economic development, along with a broad range of basic and fundamental rights. The Constitution also sparked to institutionalize significant political, social, and economic changes in the country and sectoral mandate of providing free BHS. This is further guided by Public Health Service Act 2075 and Public Health Service Regulation 2077 that defined the detail BHS package (covered elaborately in Chapter 7 in section 7.1 of this report). Nepal's equity-based approach and aspirations for rapid and sustainable development resonate strongly with the SDGs.

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5 Nepal Planning Commission.2017. National Review of Sustainable Development Goals. Government of Nepal

6 Nepal Health Research Council. 2017. Review of Effectiveness of the Foreign Medical Team Deployment in Nepal Earthquake, 2015. Kathmandu: Nepal Health Research Council.

Nepal Health Sector Strategy (NHSS) 2071/72-2077/78 (2015-2020) was endorsed under the National Health Policy 2071 (2014), alongside insights from the 2072 (2015) earthquake and alignment with the newly promulgated constitution of Nepal in 2015, marked a pivotal milestone in healthcare development. This strategy focused on ensuring UHC through equitable access, quality health services, health systems reform, and multi-sectoral approaches. It established the framework for outcomes aimed at enhancing health systems, promoting evidence-based decision-making, and realizing an accountable and equitable health service delivery system. In advancing UHC, NHSS delineated service delivery arrangements, accentuating BHS and social health protection. The initiation of the social health insurance program in Chaitra 2072 (April 2016) by the GoN further streamlined this process to offer social protection beyond BHS needs. The strategy aligned with the government's commitment to progressively fund BHS internally. Concurrently, the restructuring of MoHP and legislative measures like the Public Health Service Act 2075 (2018) set the stage for progressive realization of UHC by creating the avenues for ensuring the aspirations (BHS, Emergency Health Services) of the Constitution. Additionally, the 14th Plan 2073/74-2075/76 (2016/17–2018/19) was the first periodic plan to mainstream and internalize the SDG 2030 Agenda. The 15th Plan 2075/76-2080/81 (2019/20-2023/24) continued to align and mainstream the SDGs.

The resilience of Nepal's health sector was rigorously tested during the COVID-19 pandemic. The response, characterized by the rapid activation of the 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.

Under the leadership of MoHP, a comprehensive National Action Plan on SDG3-Global Action Plan 2076/77- 2078/79 (2020-2022) was formulated and presented at the United Nations in September 2019. 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). Additionally, there were initiatives taken amidst pandemic, from the government to establish basic hospitals in each LLGs to ensure access and availability of basic 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. In these difficult times, MoHP developed National Health Financing Strategy (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.

Amid the backdrop of the COVID-19 pandemic, the timeline for NHSS was extended until Paush 2080 (December 2023). During this extension, the Nepal Health Sector Strategic Plan (NHS-SP) for the period 2079/80-2087/88 (2023-2030) was meticulously crafted in accordance with the strategic direction of the National Health Policy 2076 (2019). The strategy was endorsed by the cabinet in the fiscal year 2079/80. The articulated objectives and targets within this strategic plan are envisaged to delineate the trajectory of the nation's efforts in attaining the SDGs. Notably, the SDG index score for the year 2078/79 has been registered at 64.47, indicative of the nation's commendable progress in aligning healthcare strategies with broader sustainable development imperatives.

The NHS-SP is underpinned by five overarching strategic objectives:

- enhancement of efficiency and responsiveness within the health system,
- comprehensive addressing of determinants influencing health,
- promotion of sustainable financing and social protection in health,
- ensuring equitable access to quality health services, and
- adapt management of population dynamics and migration.

As the nation embarks on the journey towards graduation from its least developed status, the NHS-SP is poised not only to sustain but also to advance the progress achieved in the health sector while proactively addressing pertinent health issues. The progress of the SDGs in Nepal is reported through report of National Planning Commission (NPC).

1.2 Health Services Delivery in Nepal

Nepal's health system is distinguished by a comprehensive and inclusive approach that incorporates accessibility, quality assurance, and responsiveness to emerging health challenges. The ongoing commitment to UHC and alignment with global development goals positions Nepal's healthcare system on a trajectory of continuous improvement and resilience.

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, levels adapting to exercise authority and fulfil constitutional mandates at each level of government.

At the federal level, five divisions (Policy, Planning and Monitoring division, Health Coordination Division, Quality Standards and Regulation Division, Population Management Division) and HEOC unit operating under the MoHP, are responsible for managing the policy framework, planning, setting standards, coordination, monitoring, and supervision. Immediate implementation and further planning are conducted through departments- DoHS, Department of Ayurveda and Alternative Medicine (DoAA), and Department of Drug Administration (DDA). These departments, through their respective deconcentrated 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 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, Ayurvedic and alternative medicine health service provisions, extending beyond curative aspects to include promotive, preventive, rehabilitative and palliative dimensions. Furthermore, 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, HDPs 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 ongoing pilot programs for community health nurses. Moreover, there is an expansion of the health insurance program to cover services beyond BHS, aiming to reduce out-of-pocket (OOP) expenses and protect against catastrophic health expenditure. This comprehensive network, 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 (Fig 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), Logistics Management Information System (LMIS/electronic LMIS (eLMIS), Financial Management Information System (FMIS), Health Infrastructure Information System (HIIS), Planning and Management of Assets in Health Care System (PLAMAHS), Human Resource Information System (HuRIS), Training Information Management System (TIMS), 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.
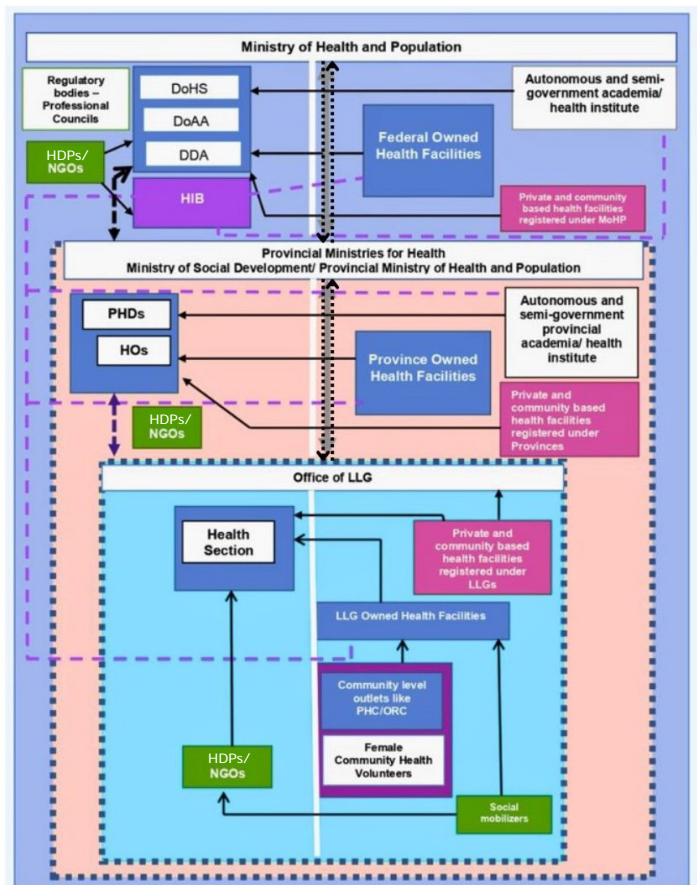
Figure 1.1 Organization of healthcare delivery system in Nepal

1.3 Rationale for the Report

The annually compiled comprehensive health sector report stands as a pivotal document, serving as a thorough monitoring and evaluation tool for the progress of planned programs, analysing shifts in coverage and utilization statistics. This indispensable record not only offers a snapshot of the sector's advancements but also traces its evolution over time. It is imperative to note that Clause 41 of the Good Governance Act, 2008, and the Right to Information as a fundamental right in the constitution mandate the preparation of annual reports by each department.

In alignment with these regulatory provisions, MoHP has diligently crafted the AHR for the fiscal year (FY) 2079/80 (2022/23). This marks the 29th consecutive publication of its kind and the 7th Annual Report since the reorganization of MoHP.

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 2079/80: 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 strength, weakness, opportunity, and threat (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 and action.

2 Department of Health Services (DoHS)

DoHS	Family Welfare Division (FWD)	Epidemiology and Disease Control Division (EDCD)	Curative Service Division (CSD)	Nursing and Social Security Division (NSSD)	Management Division (MD)	NHTC NHEICC NPHL NCASC NTCC	Allopathic health facilities
	Personal Administration Section (PAS)			Finance Administration Section (FAS)			

2.1 Overview of Department of Health Services

Department of Health Services (DoHS) is mandated for the execution and governance of preventive, promotive, curative, rehabilitative and palliative services within the domain of modern medicine. DoHS thus has been instrumental in ensuring health service delivery through development and facilitation in the implementation of the service delivery standards from the service delivery outlets across the country. Simultaneously, DoHS has been advancing noble public health initiatives to meet the health service needs of the people to ensure well-being of the population. Serving as the overarching authority, DoHS is structured with five divisions and five centers tasked to collaborate with each other and facilitate the provincial health ministries and entities.

Furthermore, it functions as a vital intermediary between the MoHP (Federal) and all spheres of government (Province and Local Level), facilitating the implementation of policies, rules, regulations, strategies, plans, programs and service delivery. DoHS also plays a crucial role in collaborating with provincial authorities and providing additional technical support to LLGs for the effective management of health-related activities.

DoHS has the responsibility of ensuring functional viability and coordination of all health systems building blocks[1], with the overarching objective of guaranteeing delivery of high-quality services to the public (Fig 2.1).

Figure 2.1 Health system building blocks

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[1] Paulo Ferrinho, Cláudio Tadeu Daniel-Ribeiro, Rosa Ferrinho, Inês Fronteira, Building-blocks to develop one health systems, One Health, Volume 17, 2023, 100624, ISSN 2352-7714, https://doi.org/10.1016/j.onehlt.2023.100624.

Since its establishment in 1933, DoHS has undergone multiple augmentations and restructuring processes, influenced by concurrent political, administrative, and policy changes within the country. These adjustments have collectively shaped the department into its present configuration. Significant historical events contributing to this evolution is depicted in Fig 2.2.

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)]

Figure 2.2 Some major milestones in evolution of DoHS

[Sources: Publications on history of health system[2] and annual reports of different fiscal years]

2.2 Major Functions of DoHS[3]

Policy formulation and health institution/ facilities development:

- Provide technical advice to the 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 of MoHP with 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.

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 staffs working under DoHS.

- Facilitate inter-directorate transfers, initiate departmental actions, and provide rewards.

[2] Marasini B. Health system development in Nepal. JNMA: Journal of the Nepal Medical Association. 2020 Jan;58(221):65.
[3] Department of Health Services. Available at: http://dohs.gov.np/about-us/department-of-health-services/

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.
- 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 relations and aid coordination

- Establish functional collaboration and coordination with HDPS to enhance the health care delivery and program development and implementation.
- Identify the priorities and inform the MoHP for foreign aid mobilization.

Stakeholder engagement

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

Data management and publication

- Maintain and update data, official declarations, and information regarding health services.
- Integration of technology or functionalizing the existing MIS, building interoperability among the systems and its technological advances in health system
- Utilization of evidence to programmatic update and policy making
- 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 need of the program.
- Carry out operational 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 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.

- **FWD:** National Immunization Program (NIP), Nutrition and Integrated Management of Newborn Childhood Illness (IMNCI) and Maternal and Neonatal Health, Family Planning (FP) and Reproductive Health (RH)

- **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, IHR, 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

- **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

- **NSSD:** Capacity building of nursing and midwifery personnel, management of geriatric health services and gender-based violence programme, One Stop Crisis Management Center (OCMC), provision of treatment and management facilities for selected diseases to impoverished Nepalese citizens at enlisted hospitals and also for management of FCHVs Programme

- **MD:** Integrated Health Information Management, Infrastructure Development, Environmental Health and Logistics Management and procurement; also works as secretariat to DoHS

- **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.

- **NHEICC:** All information, education and communication (IEC) and behavior change communication (BCC) activities are delivered and coordinated at federal, provincial and local level

- **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

- **NCASC:** Human Immunodeficiency Virus (HIV)/AIDS and Sexually Transmitted Diseases (STDs) related control, prevention and management programs and activities are delivered and coordinated at federal, provincial and local level

- **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 and its network

The subsequent chapters of the AHR from Chapters 3-13, Chapters 15-21, section 24.2-24.4 of Chapter 24, delineate the progress of programs and activities within the divisions/centers/sections of DoHS during FY 2079/80.

Maternal and Newborn Health Services

Family Welfare Division	Maternal and Newborn Health Section	Child Health and Immunization Section	Nutrition Section	Family Planning and Reproductive Health Section

3.1 About the Program

Government of Nepal, is committed and prioritizes the agenda of maternal and newborn health (MNH), and has included MNH services in the BHS package. The long journey of investment in MNH started with the milestone in 2054/55 (1998) when the government's Safe Motherhood Policy[1] supplemented by National Policy on Skilled Birth Attendants (SBAs) 2062/63 (2006)[2] adopted two key strategies to improve maternal health: ensuring that a selected health facilities have emergency obstetric care services that are available 24 hours a day and the presence of health personnel with midwifery skills who can competently provide safe and effective delivery care.

In 2001, only 9% of Nepali women gave birth in a health institution and two in three women reported that inadequate money for treatment to be barrier in accessing health care.[3] There were huge differences in access to health facilities across Nepal's geographic terrain with only 41% of rural households living within 30 minutes travel time from a health institution, compared to 89% of urban households and differences in wealth, with only 29% of the poorest quintile living within 30 minutes of a health institution compared to 57% of the rich.[4] Given this situation, encouraging women to give birth at a health institution was considered by GoN an important part of the strategy to improve maternal health. Nepal has significantly reduced maternal mortality ratio (MMR) from 539 in 1996[5] to 151 in 2021[6] (Fig 3.1).
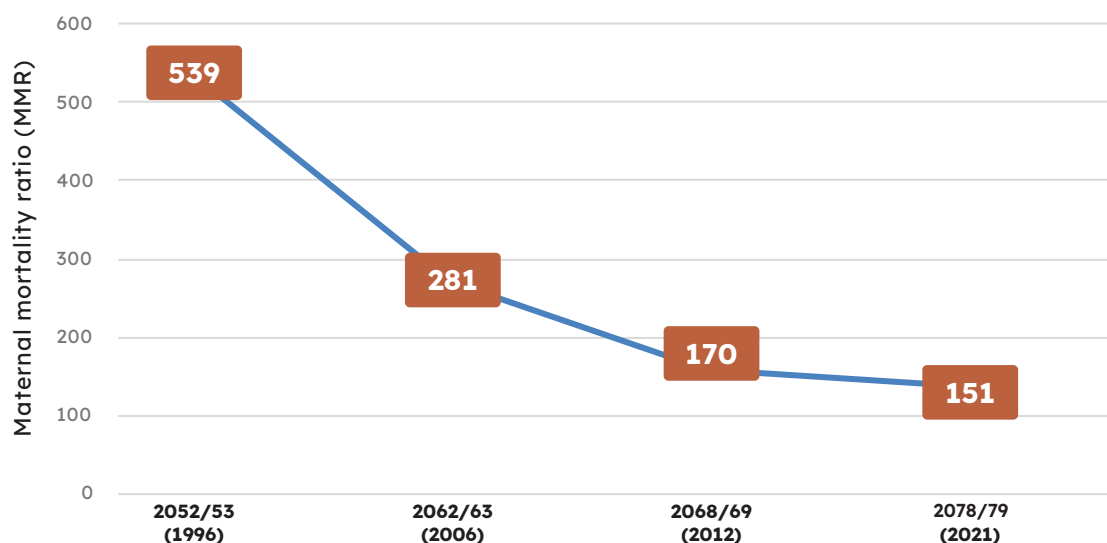
Figure 3.1 Trend of MMR in Nepal 2052/53-2078/79 (1996-2021)

The achievement is attributed to the implementation of progressive policies, strategies, and guidelines to ensure accessible, affordable, and quality maternal health services, particularly for the unreached population. (Fig 3.2) Despite this progress, accelerated efforts are needed to meet the SDG targets by 2030—aiming for a MMR below 70 per 100,000 live births and Neonatal Mortality Rate (NMR) below 12 per 1,000 live births.

Furthermore, FWD has given continuity to budget allocation for human resource support for MNH services. In FY 2079/80, a significant share of FWD's

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[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, New ERA, and ORC Macro. 2002. Nepal Demographic and Health Survey (NDHS).

[4] Central Bureau of Statistics and World Bank. 1996.Nepal Living Standards Survey Report.

[5] Ministry of Health, New ERA, and ORC Macro. 1996. Nepal Demographic and Health Survey (NDHS),

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

budget was invested for recruiting human resource-staff nurses at hospital, Auxiliary Nurse Midwives (ANMs) for Basic Health Service Centers (BHSCs)-Primary Health Care Centers (PHCCs) and Birthing Centers (BCs) and skill mixed human resource need for Comprehensive Emergency Obstetrics and Newborn Care (CEmONC) sites, public hospitals with infrastructure but lacking human resources, to ensure 24x7 MNH services (Fig 3.3).
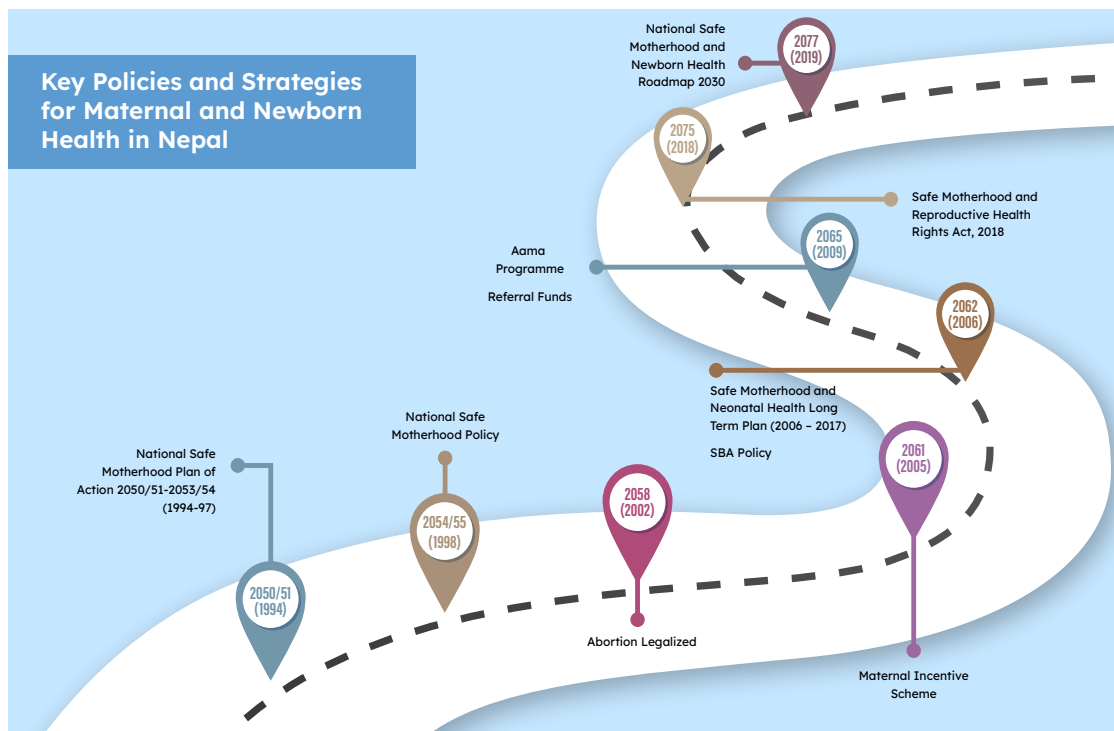
Figure 3.2 Key policies and strategies for maternal and newborn health in Nepal

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

- Increase the availability of high-quality maternal and new-born health services leaving no one behind.
- Increase the demand for and utilization of equitable maternal and new-born health services.
- Improve governance and ensured accountability of maternal and new-born health services.
- Improve monitoring and evaluation of maternal and new-born health services.
- Strengthen 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.
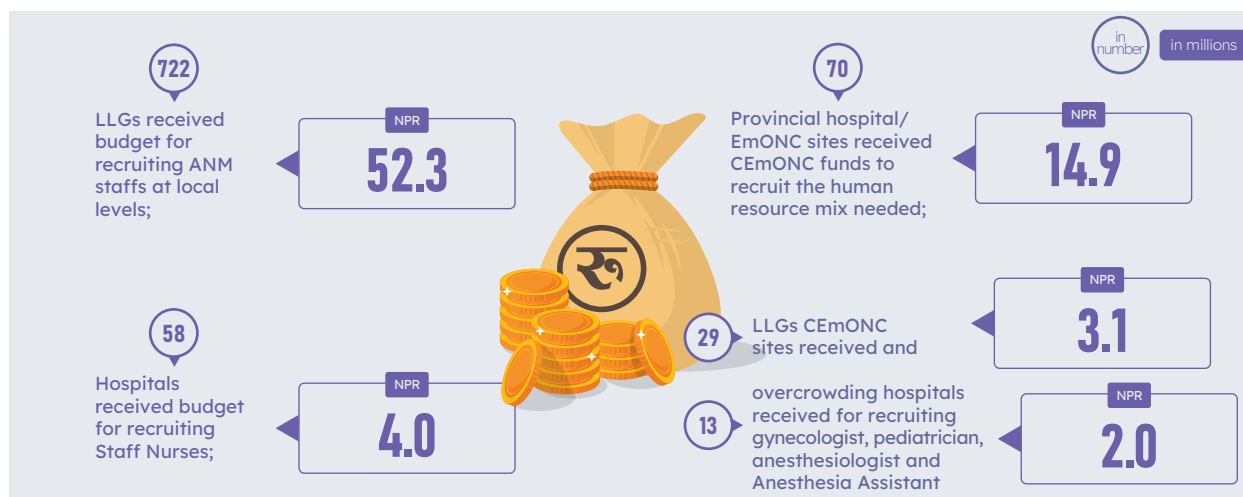
Figure 3.3 HR support for MNH services from FWD in FY 2079/80

Additionally, capacity building of HR is coordinated with NHTC and National Academy of Medical Sciences (NAMS) for pre-service and in-service training. NHTC/PHTC covers SBA, ASBA (Advanced SBA), OT (Operation Theatre) management, FP methods, Safe Abortion Services (SAS) and rural obstetrics ultrasound, and NHTC and NAMS cover Anesthesia Assistant. FWD monitors doctors (Medical Generalist (MDGP), Obstetricians and Gynecologist (OBGYN), ASBA and Anesthesia Assistant deployment, informing DoHS and MoHP for transfers, enhancing CEmONC service functionality. However, placement challenges persist, especially for ASBAs and AAs.functionality. However, placement challenges persist, especially for ASBAs and AAs.

3.2 Major Activities in FY 2079/80

Community level maternal and newborn health interventions

Matri Suraksha Chakki (MSC): GoN initiated post-partum hemorrhage (PPH) prevention and distribution of MSC [misoprostol for the prevention of PPH] in FY 2066/67. The program involves training FCHVs to distribute 600 mcg of MSC (three 200 mcg tablets) to pregnant women during their 8th month of pregnancy. The women are advised to take the tablets orally immediately after childbirth and before placenta expulsion to prevent PPH during home deliveries. In FY 2079/80, FWD provided budget to PHD and some health offices for procurement and management of MSC.

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

Expansion and quality improvement of service delivery sites

FWD continued to expand 24/7 service delivery sites like birthing centres, BEmONC and CEmONC sites at health facilities. The expansion of service sites is possible mostly due to the provision of funds to contract short-term staff locally. 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. It is prudent to conduct a mapping exercise for EmOC 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,[7] 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 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.

- EmOC 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)

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

Onsite clinical coaching and mentoring

Since the inception of the program, a total of 405 SBA clinical mentors; 74 trained in FY 2079/80; have been trained across the 77 districts (hospitals, BHSCs, selected HPs) covering all provinces. In FY 2079/80, total 594 clinical coaching and mentoring sessions were conducted at BHSCs/BC/BEmONC and CEmONC sites across all seven provinces. PHD/PHTC are responsible for developing the coach and budget for mentoring and coaching has been allocated at LLGs. In coordination with district and CEmONC sites, LLGs have conducted mentoring and coaching session in the selected BHSCs/BC/BEmONC as per the need. Clinical mentors report their visits using ODK tools. Quality Improvement (QI) dashboard of FWD also incorporates coaching and mentoring data easily accessible through FWD website (www.fwd.gov.np).

MNH readiness of hospital and BC/BEmONC for quality improvement

Piloted from Taplejung and Hetauda hospitals in 2071/72, hospital quality improvement process (HQiP) involving self-assessment, infection prevention demonstration, and action plan implementation was seen to effectively enhance QoC. From FY 2072/73, HQiP was initiated in the health system through AWPB in the hospitals and PHCCs where CEmONC services were available and expanded gradually. It is now expanded to BCs integrated with SBA. onsite clinical coaching/mentoring process. In FY 2079/80, HQiP was conducted in 349 BC/BEmONC sites. FWD dashboard incorporates the HQiP data as well. In FY 2079/80, among BC/BEmONC signal function, readiness of neonatal resuscitation was poor in 88% of the facilities and that for manual removal of placenta was poor in 74% facilities. (Fig 3.4) In terms of quality domain, patient dignity was good in 53%, family planning (FP) was good in 67% of the health facilities. Notably, management is poor in 48%, drugs domain is poor in 29% and infection prevention was poor in 16% (Fig 3.5).
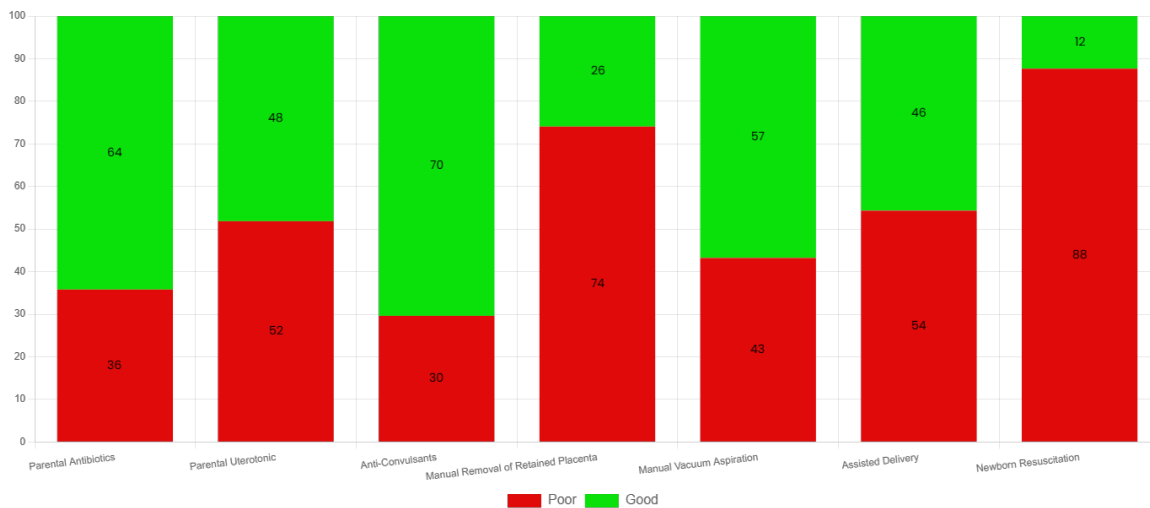
Figure 3.4 Signal function readiness at the BC/BEmONC sites

Source: FWD/DoHS
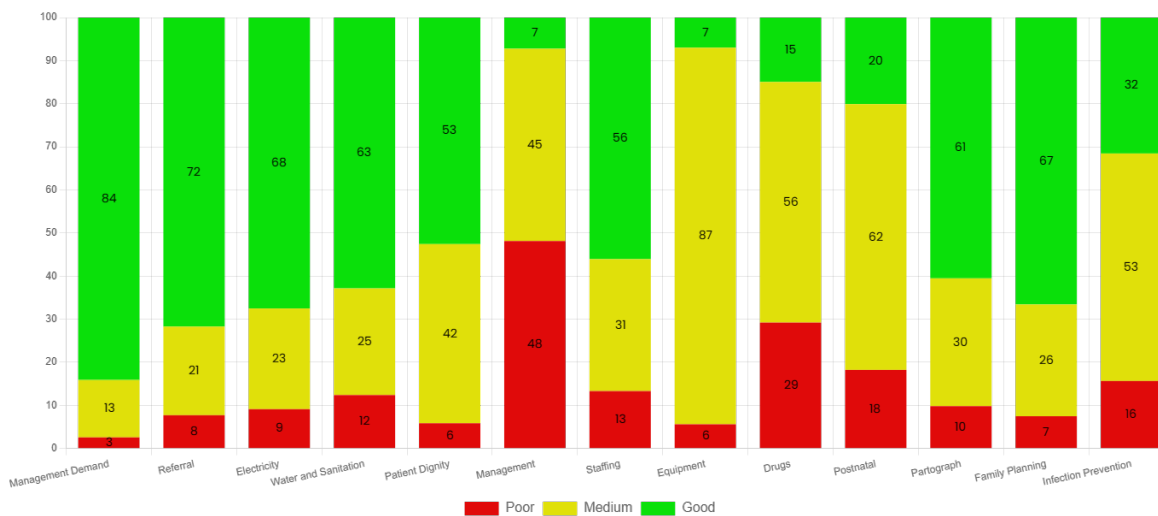
Figure 3.5 Quality domain scores at BC/ BEmONC sites

Source: FWD/DoHS

Emergency referral funds

Around 15% of pregnant women will develop potentially life-threatening complications that needs skilled health care.[8] Women may need immediate referral from BC/BEmONC to nearby hospitals where CEmONC services are available. 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). In FY 2079/80, FWD allocated NPR 60,000 in each local level for referral. From FY 2079/80, the air lifting support for immediate transfer to higher centre is implemented by Presidential Women Uplifting Programme through Ministry of Women, Children and Senior Citizens.

Aama surakshya program and free newborn programme

Initiated as Maternity Incentive Scheme in 2061 (2005) by providing transport incentives to women to deliver in health facilities, the program gradually covered user fees of all types of delivery care in 25 low human development index (HDI) districts in 2062 (2006) and was expanded nationwide as the Aama Programme in 2065 (2009). In 2068 (2012), separate 4 ANC incentives programme was merged into it and in 2074 (2017) free newborn programme was also merged with Aama Programme. The program incentivizes the women and the health facilities for health service utilization covered by the program. Health facilities get reimbursement by unit cost; NPR 2,500 for normal delivery, NPR 4,000 for complicated delivery, NPR 10,000 for caesarean section, NPR 5,000 for Anti-D and NPR 7,000 for Molar pregnancy. And for newborn care, the health facility gets additional reimbursement based on unit cost for providing free newborn services based on level of case.

Maternal and perinatal death surveillance and response (MPDSR) and newborn birth defect surveillance program

As per the Maternal and Perinatal Death Surveillance and Response (MPDSR) guidelines, the National MPDSR Committee chaired by the DG, DoHS and MPDSR Technical Working Group (TWG) chaired by Director, FWD are functional. In addition, there are MPDSR committees formed at PHD, Health Office, health facility level and LLGs. The committee meeting has to commence within 72 hours of every maternal death. The national committee and TWG meet on quarterly bases and as per need.

In FY 2079/80, MPDSR is being implemented in 52 Districts and 108 Hospitals spread over seven provinces. MNH section conducted several batches of orientation for capacity building and strengthening of the MPDSR system with focus on formulating and implementing response activities to improve quality of care and reduce maternal and newborn morbidity and mortality.

Under the leadership of FWD, community based MPDSR program has been expanded in 11 new districts and 10 new hospitals in 2079/80. The team from MNH section also conducted onsite monitoring and supervision for MPDSR implementing hospitals in Madhesh province to identify gaps and enhance capacity of service providers. In FY 2079/80, training for community based MPDSR program is ongoing in additional 18 districts. In the community based MPDSR program, maternal deaths are reviewed, and response activities are planned and implemented. The government has allocated budget in all LLGs to conduct verbal autopsy of maternal deaths.

Newborn birth defect surveillance

The surveillance for newborn birth defect (NBBD) was initiated in 2071/72 in 10 hospitals and has now been expanded to 27 hospitals in FY 2079/80 (Fig 3.6).

2071/72
- NBBD Initiated in 10 hospitals
- Paropakar Maternity and Women's Hospital was the nodal hospital & National coordinator
- NBBD Database with support from WHO-SEARO

2072/73
- Birth Defect Surveillance Prevention & Control Implementation guideline and plan

2073/74
- Government of Nepal took ownership
- Expanded to 16 hospitals

2075-2078/79
- Expanded to 17 hospitals, 2020 - 9 were reporting, 2021- 10 were reportitng

2079/80
- Expanded to 27 hospitals in October 2022; 18 are reporting

Figure 3.6 Important Milestones of NBBD Surveillance in Nepal

Special newborn care unit

Despite continuous efforts of the GoN, the NMR in the country has been stagnant over the last six years. Acknowledging the heightened vulnerability of small newborns to mortality and morbidity, GoN has launched targeted programs to offer specialized care through three levels - newborn corners at the delivery rooms/operation theatres, special newborn care units (SNCUs) and neonatal intensive care units (NICUs). There are a total of 61 SNCUs and 13 NICUs currently functioning in the country.

In FY 2079/80, FWD introduced a pilot initiative focusing on enhancing the capacity of service providers in SNCUs. This program, implemented in four hospitals of Bagmati province, involves on-the-job mentoring and coaching. Complementing these efforts is the development and implementation of a Nepal-specific care package model, aimed at standardizing services for the well-being of small and sick newborns.

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8 World Health Organization (WHO), United Nations Population Fund (UNFPA), United Nations Children Emergency Fund (Unicef). 2017. Managing complications in pregnancy and childbirth - 2nd edition

Additionally, FWD is prioritizing to bring swift changes in the business as-usual for newborn care. Some pertinent steps being - SNCU Level II Care Facilities; Orientation Package and Nepal Specific Model of Care for small and sick newborns (SSNBs) at Level II Health Facilities.

FWD piloted a targeted mentoring approach for all health workers in SNCU level II care facilities with a focus on major clinical skills essential at every point of contact for newborns focused on SSNBs. While the rollout of the national comprehensive newborn care training package continues, this orientation package serves as a complementary, shorter, and more focused tool for essential information and rationale decision-making through mentoring. This orientation package will be pivotal to sensitize all health workers at level II health facility to manage common conditions and complications in SSNBs.

Furthermore, Nepal's model of care for SSNB has been developed based on the ten-component model developed by WHO and UNICEF which includes- vision, political commitment, financing, human-resources, infrastructure and design, equipment and commodity, robust data system, functional referral system, linkage of maternal and newborn care, family and community involvement a support and post-discharge follow-up systems at facility and at home. Through a series of consultations and workshops, after synthesizing the inputs for each component of the model of care, all of the components have been adapted to Nepali context. Also, findings of series of consultations and workshops in terms of existing provisions, gaps and challenges and interventions required for the scale up of each component of the model is developed. Currently Nepal Specific Model of Care for SSNB is being piloted in level II Health Facilities namely, Dhading Hospital, Trishuli Hospital, Sindhuli Hospital and Hetauda Hospital of Bagmati Province.

3.3 Key Indicators of MNH Programs

3.3.1 Percentage of Pregnant Women who Attended ANC Visits

In FY 2079/80 there was a marginal decline in the number of the women with ANC first visit as compared to previous years. A total of 476,221 women had their 4-ANC visits as per protocol. There was a steady increase in the proportion of women who had 4-ANC visits as per protocol in last three FYs with 94% in FY 2079/80 (Fig 3.7).

However, this increment is not consistent across provinces. There is relatively low coverage in Madhesh and Sudurpaschim provinces (Fig 3.7). This emphasizes the need of additional effort and effective counselling and addressing the barriers to utilization of services during the antenatal period in these two provinces.
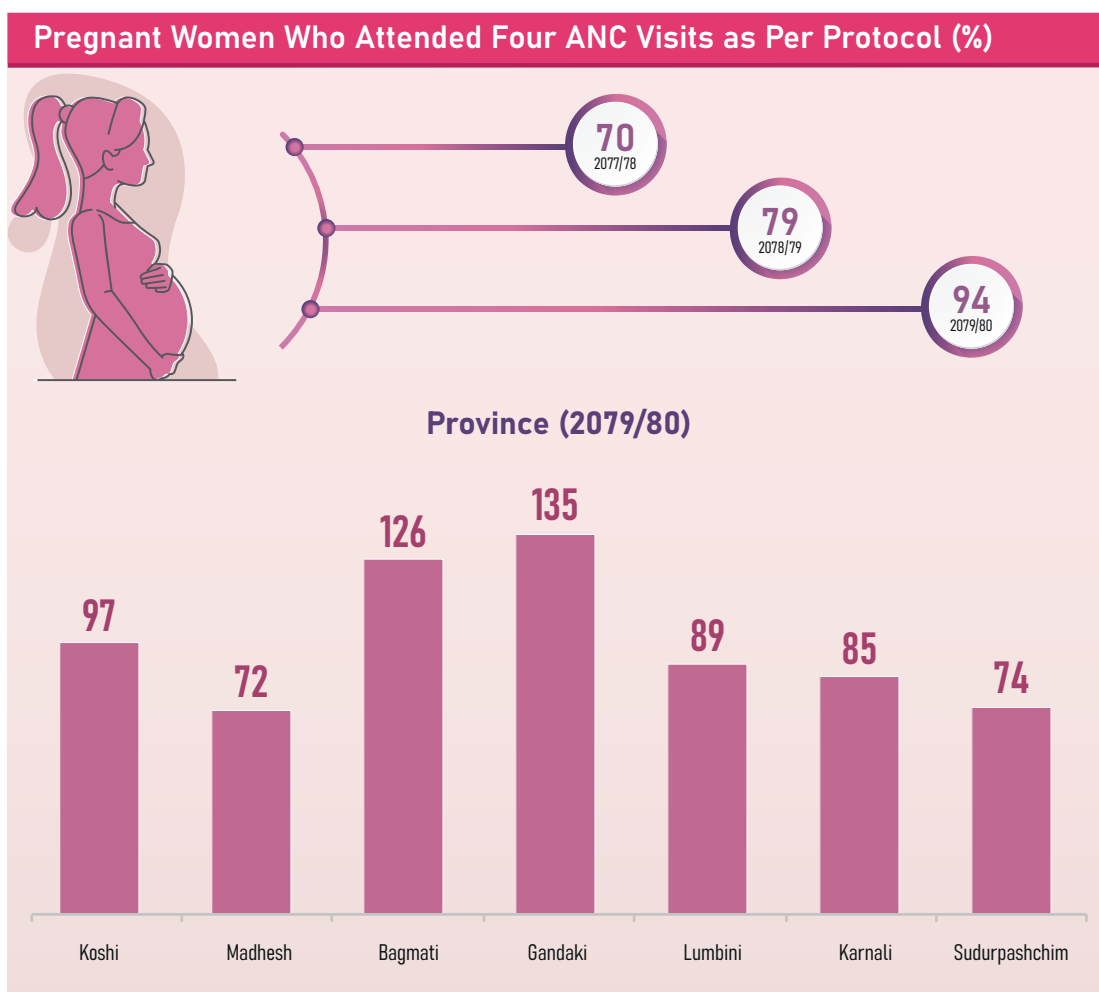
Figure 3.7 Percentage of pregnant women who attended 4 ANCs as per protocol

Source: HMIS/DoHS

3.3.2 Delivery Care Services

- SBA/skilled health personnel provider (SHP) at facility-based deliveries

- Early detection of complicated cases and management or referral (after providing obstetric first aid) to an appropriate health facility where 24 hours' emergency obstetric services are available; and

- Registration of maternal death and neonatal birth and death

The percentage of pregnant women delivering at the health facilities has shown a steady increase over the past three FYs with 83.4% institutional deliveries in FY 2079/80. Madhesh and Gandaki provinces have lower coverage as compared to national average over the period of the three years (Fig 3.8).
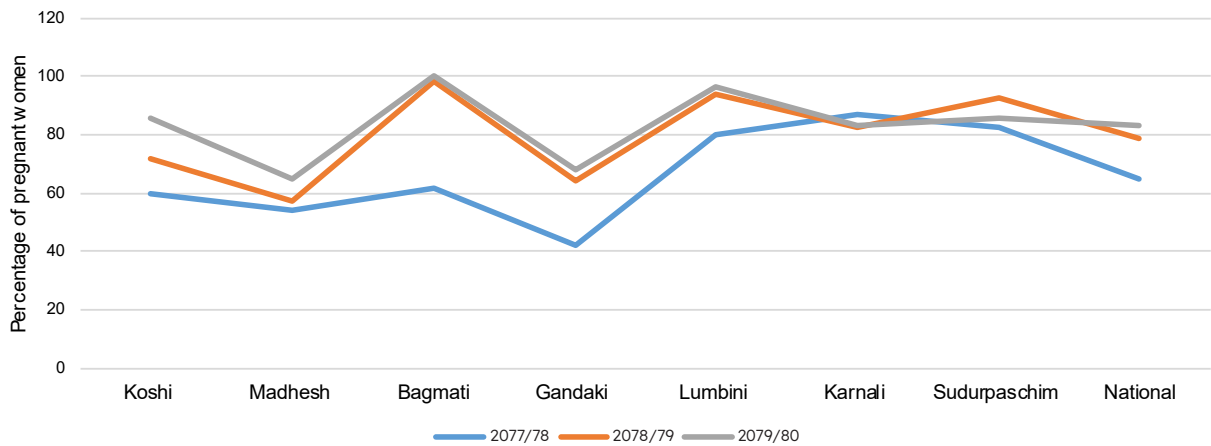
Figure 3.8 Percentage of pregnant women delivering at the health facilities in FYs 2077/78-79/80

Deliveries Conducted by Skilled Birth Attendant and Skilled Health Personnel (%)

National

61 — 2077/78
75 — 2078/79
80 — 2079/80

Province (2079/80)

75 Karnali
66 Gandaki
99 Bagmati
83 Koshi
78 Sudurpashchim
93 Lumbini
63 Madhesh
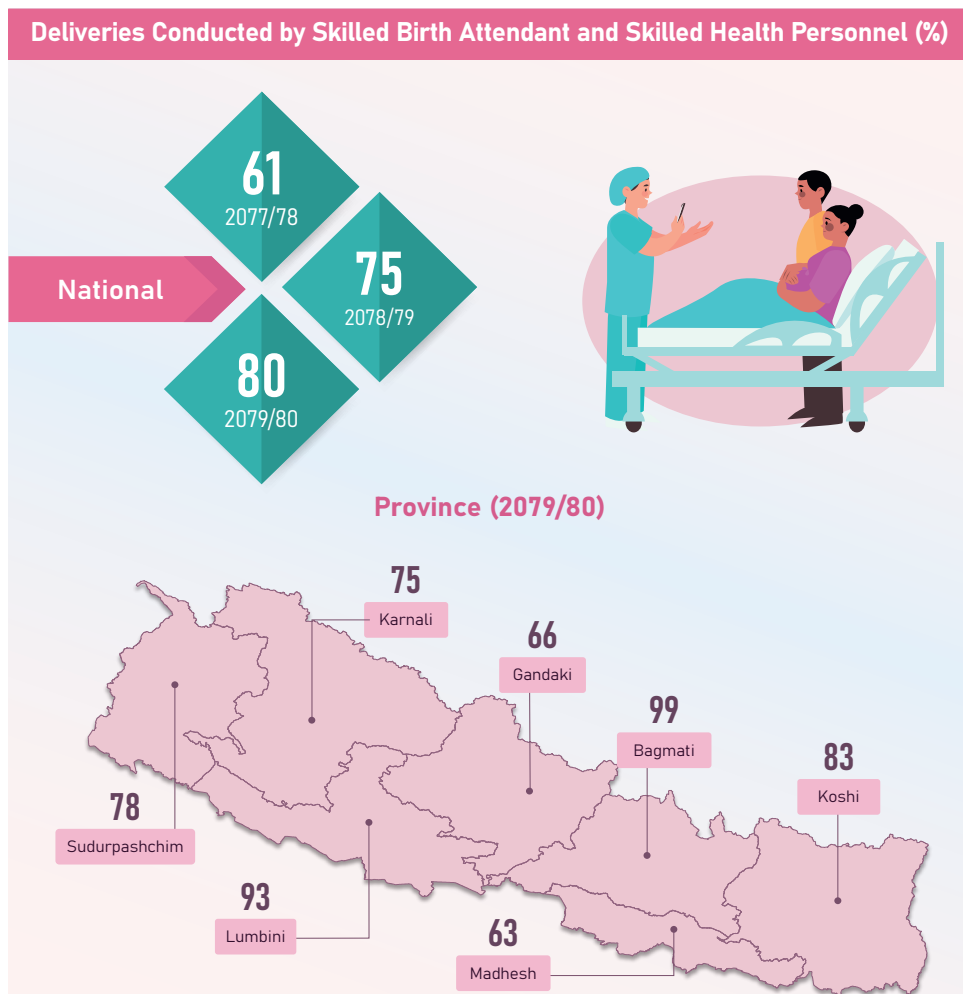
Figure 3.9 Deliveries conducted by Skilled Birth Attendant and Skilled Health Provider

In FY 2079/80, 79.8% of the deliveries were attended by SBA/SHP. Three provinces- Bagmati (98.5%), Lumbini (92.7%), and Koshi (82.7%), have higher percentage of deliveries attended by SBA or SHP than national average. Notably there is consistent improvement in Karnali, Madhesh and Gandaki provinces but these changes are lower than the national averages (Fig 3.9). Though from FY 2079/80, there are two set of indicators sub-categorized as SBA (registered ANMs who have got SBA training) and SHP (nurses and doctors), they have been combined for ease of comparison. In previous years, both were jointly reported as one indicator. In years ahead, the disaggregated data on SBA and SHP deliveries can be compared.

In FY 2079/80, improvement in the unmet need of Emergency Obstetric Care (EmOC) was seen. The met need has swiftly increased by 42.3% as compared to the FY 2078/79. However, it is notable that there is still 47.6% of the women with unmet EmOC. This unmet need can result in maternal and new-born morbidity and mortality. Though there is improvement in Sudurpaschim province as compared to previous FYs, the state of unmet need (71.1%) is worrisome (Fig 3.10).

Furthermore, most of the cases managed for obstetric complications were of obstructed labor followed by hemorrhage (Table 3.1).
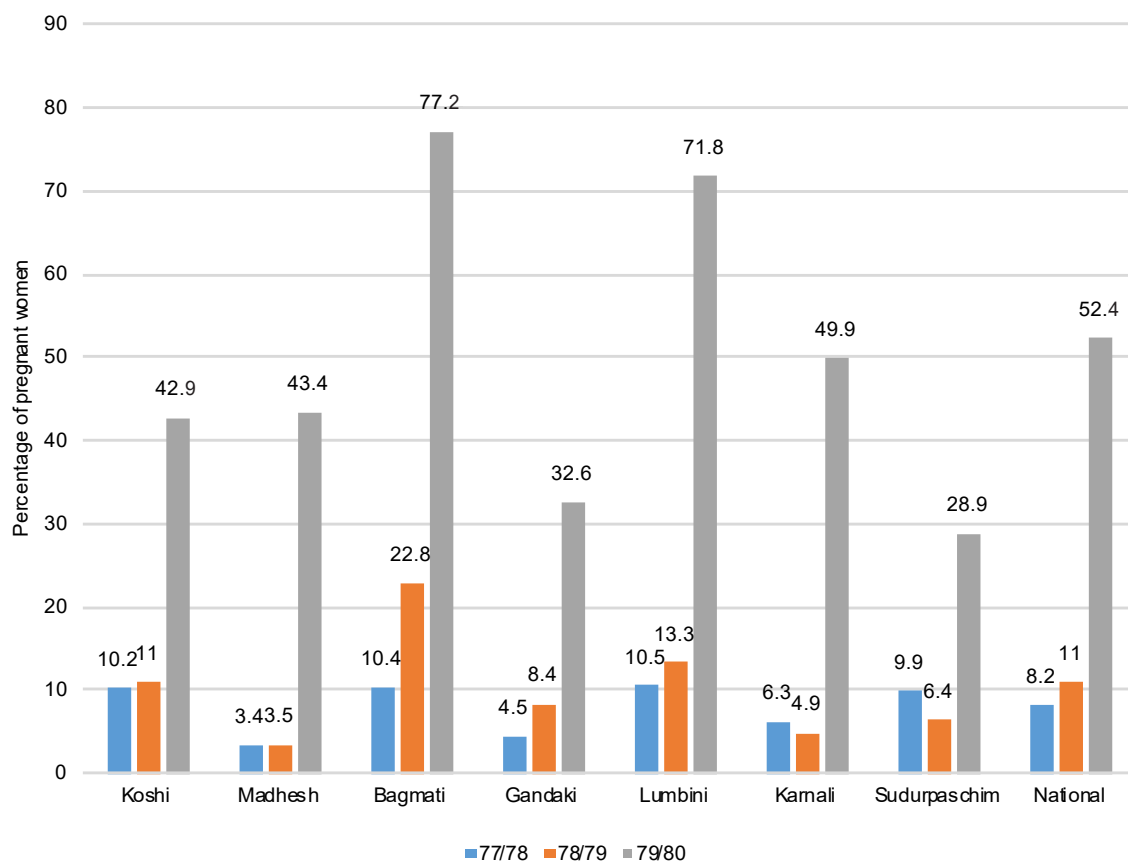
Figure 3.10 Met need of EmOC across provinces in last three FYs

Source: HMIS/DoHS

Table 3.1 Percentage of cases managed for obstetric complications among estimated pregnancies in FY 2079/80

Data Name	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
Eclampsia	0.21	0.29	0.15	0.17	0.29	0.09	0.10	0.21
Severe/Pre-eclampsia	0.20	0.43	0.72	0.23	0.45	0.16	0.17	0.39
Puerperal Sepsis	0.15	0.34	0.09	0.04	0.08	0.08	0.12	0.16
Hemorrhage	1.09	0.94	2.16	0.64	1.47	1.02	1.04	1.26
Obstructed Labor	0.57	1.27	0.59	0.53	2.42	0.91	0.39	1.09
Retained Placenta	0.64	0.30	0.40	0.31	0.37	0.46	0.50	0.42
Ruptured Uterus	0.04	0.04	0.04	0.00	0.03	0.01	0.00	0.03

Source: HMIS/DoHS

FWD has also been investing in making the CEmONC services more accessible and available. In FY 2079/80, the national average CS was 25% among of the reported deliveries which has increased by 3% and 5% points compared to the last two fiscal years. Provincial distribution is skewed with higher percentages of CS in Koshi and Bagmati provinces consistently above national average and as high as 40.6% and 40.4%

in these two provinces respectively in FY 2079/80. The CS rates below 10% consistently over three FYs in the Karnali and Sudurpaschim provinces are more indicative towards access to CEmONC services and functionality of CEmONC sites (Fig 3.11). There are multiple factors for higher percentage of the CS

deliveries at Bagmati province and Koshi provinces as they have hub hosptials and specialized hosptials for maternal care and services. Additionally, Bamati has the only maternity and women's hosptal in the country which takes all the referral cases even from other facilities including secondary and tertiary level hospitals.
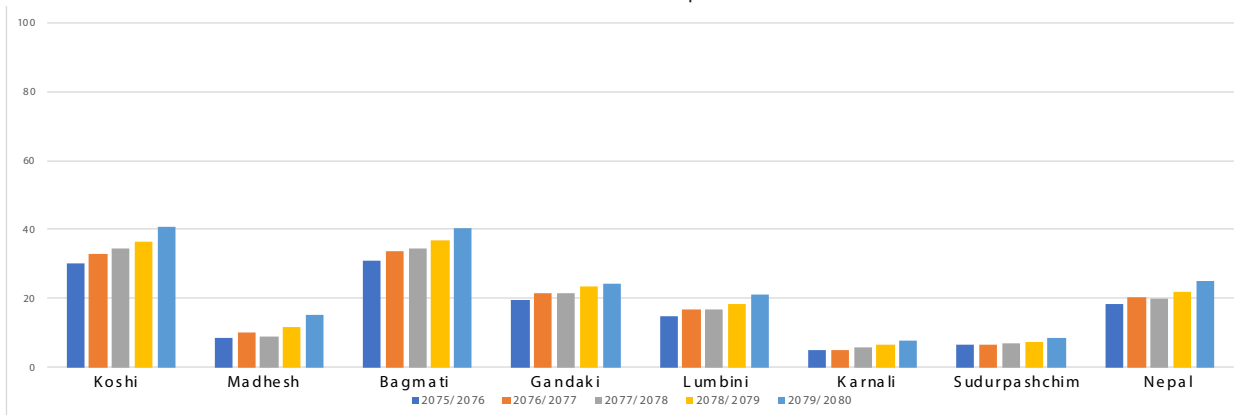
Figure 3.11 CS rate among deliveries in FY 2077/78-2079/80

Source: HMIS/DoHS

A monitoring system for CS has been proposed and piloted in the facilities. By FY 2079/80, FWD has been 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 2079/80

A total of 113 maternal deaths and 2,186 perinatal deaths were reported in FY 2079/80 of which 47% of the maternal deaths and 28% of perinatal deaths were reported from Lumbini Province (Fig 3.13).
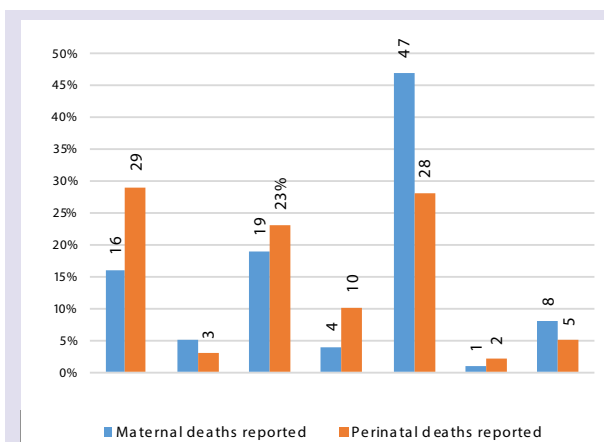
Figure 3.12 Distribution of Maternal and Perinatal deaths reported by province in FY 2079/80
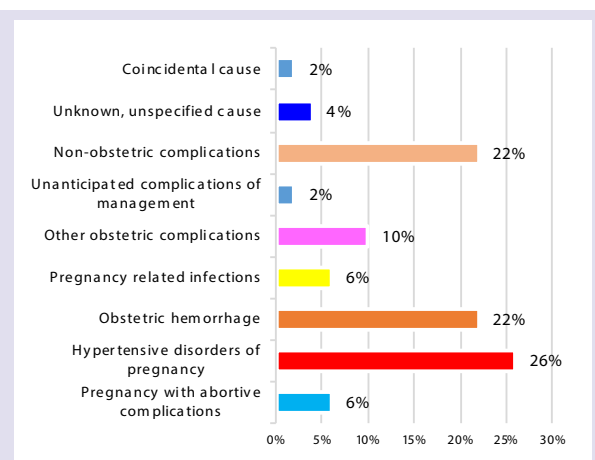
Source: MPDSR/DoHS

Figure 3.13 Causes of Maternal deaths reported in FY 2079/80

Source: MPDSR/DoHS

Hypertensive disorders of pregnancy (26%) and obstetric hemorrhage (22%) were the major obstetric causes of maternal deaths reported; while 22% of the

deaths were due to non-obstetric complications and 4% were with unknown causes (Fig 3.13).
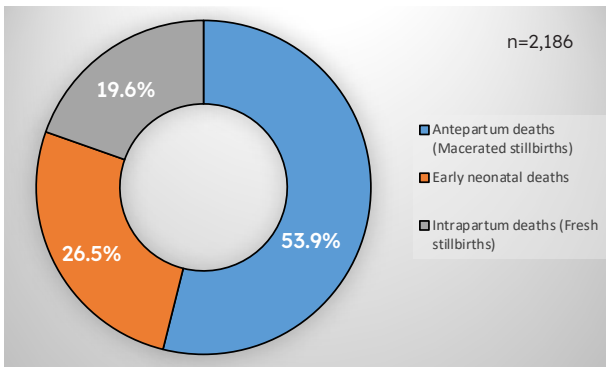
Figure 3.14 Timing of perinatal deaths

Source: MPDSR/DoHS

In FY 2079/80, there were 2,186 perinatal deaths, macerated stillbirths- 53.9%, fresh still births- 19.6%, and early neonatal deaths- 26.5% (Fig 3.14).

Among macerated stillbirths, with over half attributed to unknown causes, followed by antepartum hypoxia and fetal growth disorders (Fig 3.15). For fresh stillbirths too, 40% of causes were unknown and 28% were due to acute intrapartum events (Fig 3.16).
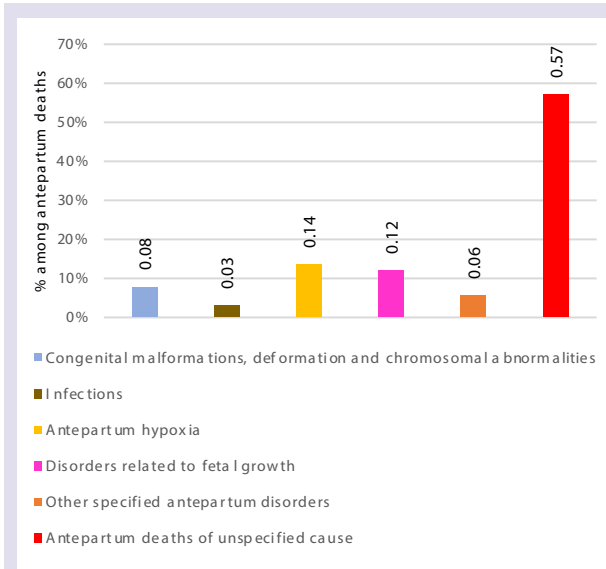
Figure 3.15 Causes of antepartum stillbirths

Source: NBBD Surveillance
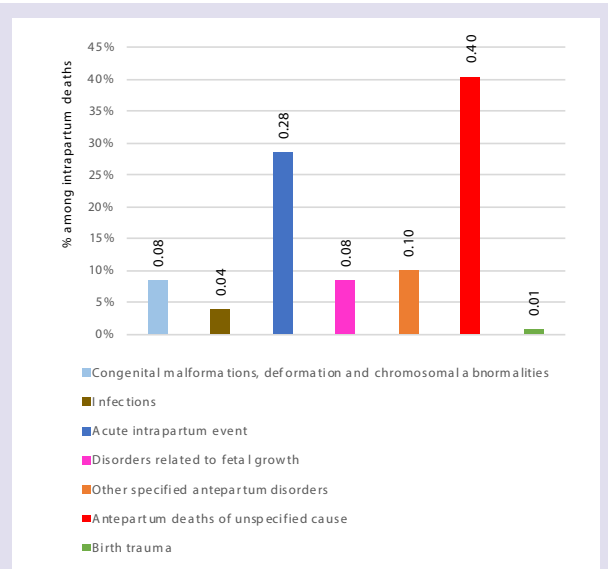
Figure 3.16 Causes of intrapartum stillbirths

Source: NBBD Surveillance
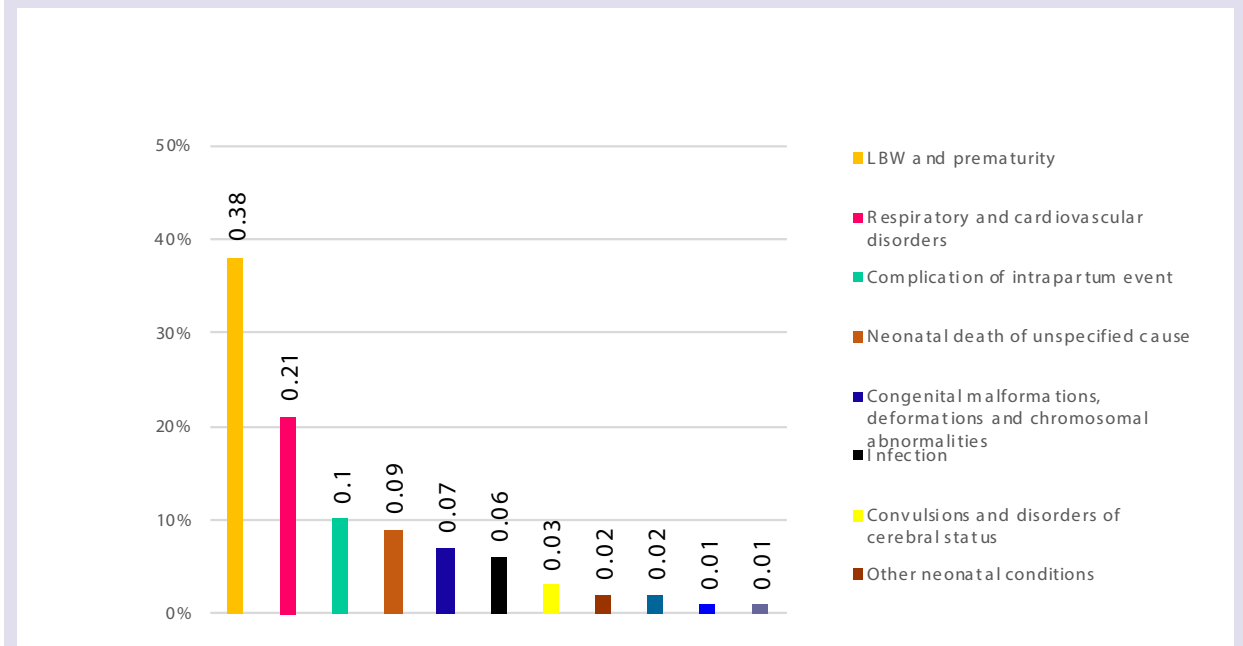
Figure 3.17 Causes of newborn deaths FY 2079/80

Source: NBBD Surveillance

Among neonatal deaths, the common cause was low birth weight (LBW) and prematurity, followed by respiratory and cardiovascular disorders. There were newborns with congenital malformations, deformations and chromosomal abnormalities and among those 7% couldn't survive (Fig 3.17).

Additionally, as part of NBBD surveillance, a total of 115 newborns were reported; accounting to around 22.6 births with congenital defects among 100,000 expected deliveries in FY 2079/80 (Fig 3.18). Among newborn with visible major birth defects, orofacial cleft, Tallies equinovarus and neural tube defects were common birth defects reported.
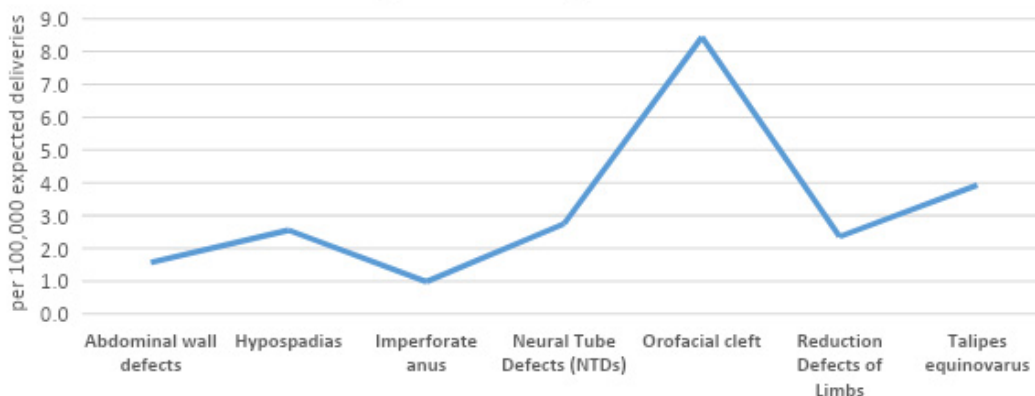
Figure 3.18 Distribution of visible major birth defects reported in FY 2079/80

Prioritizing interventions like folic acid supplementation to reduce spinal cord related genetic defects and improving nutritional status of mothers during their antenatal periods can help in reducing such events.

3.3.3 Postnatal Services

The proportion of mothers attending three Postnatal Check Up (PNC) visits as per the protocol increased remarkably by nearly 16.0% points from FY 2077/78 to 2078/79. In FY 2079/80, this increased by nearly 3.0% points with 44.0% PNC coverage of three PNC visits. Lumbini (68.0%), Sudurpaschim (61.0%) and Karnali (57.0%) provinces surpassed the national average (Fig 3.19). Among remaining four provinces, the coverage of three PNC visits has consistently been lower in Madhesh Province. Socio-cultural factors, improving perception on importance of care during postpartum period may be the possible areas to intervene. Furthermore, learnings from the provinces performing well can be reviewed to bring up implementation strategy that may improve coverage in other provinces as well.

Box 3.3: PNC Visits

Guideline encouraged all women for institutional delivery and stay in the health facility at least for 24 hours after delivery under the supervision and care of health workers as first 24 hours of delivery. The brief postnatal care/visit covers the following:

- Four postnatal check-ups, the first in 24 hours of delivery at the health facility, the second on the third day at home, third on the seventh to fourteenth at home and fourth on the 42 days after delivery at health facility.

- Identification and management of complications of mothers and newborns, care immediately at health facility and referrals to appropriate health facilities from community.

- Breastfeeding as soon within one hour of delivery and promotion of exclusive breastfeeding.

- Personal hygiene and nutrition education, and postnatal vitamin A and iron supplementation for mothers.

- Immunization of newborns.

- Postpartum family planning (PPFP) counselling and services.

Mothers who had Three PNC Check-up as Per Protocol (%)
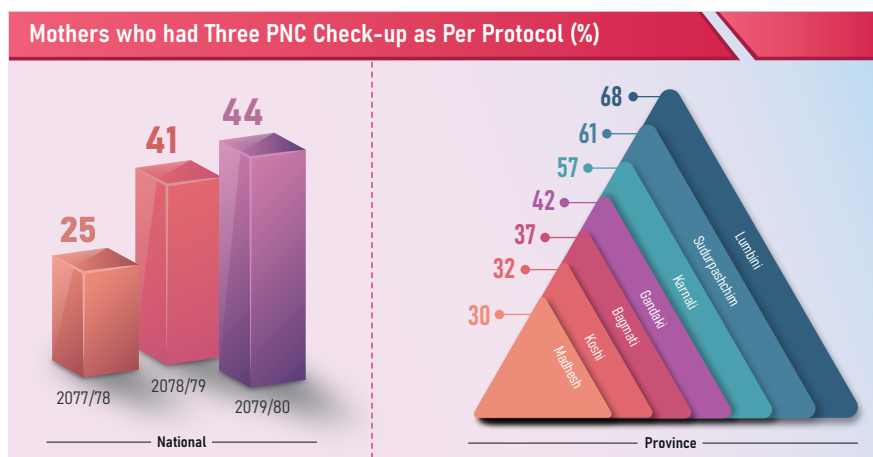
Figure 3.19 PNC coverage based on 3 PNC visits as per protocol

3.3.4 Gap in Coverage of Care Utilization from Pregnancy to Postnatal Phase

There is a notable gap between the uptake of 4-ANCs (93.5%) and 3-PNCs as per protocol (44.2%) in FY 2079/80 which is a consistent gap seen across three FYs. (Fig 3.20) Remarkable gaps are also observed at interprovincial level. The emphasis on counselling during each point of contact and integration of the PNC services with immunization and family planning are some initiatives of FWD that can be further investigated to see the role in fulfilling the gaps. Additionally, with high CS rates, the standardized PNC care becomes more essential to reduce postnatal morbidities in women post CS.
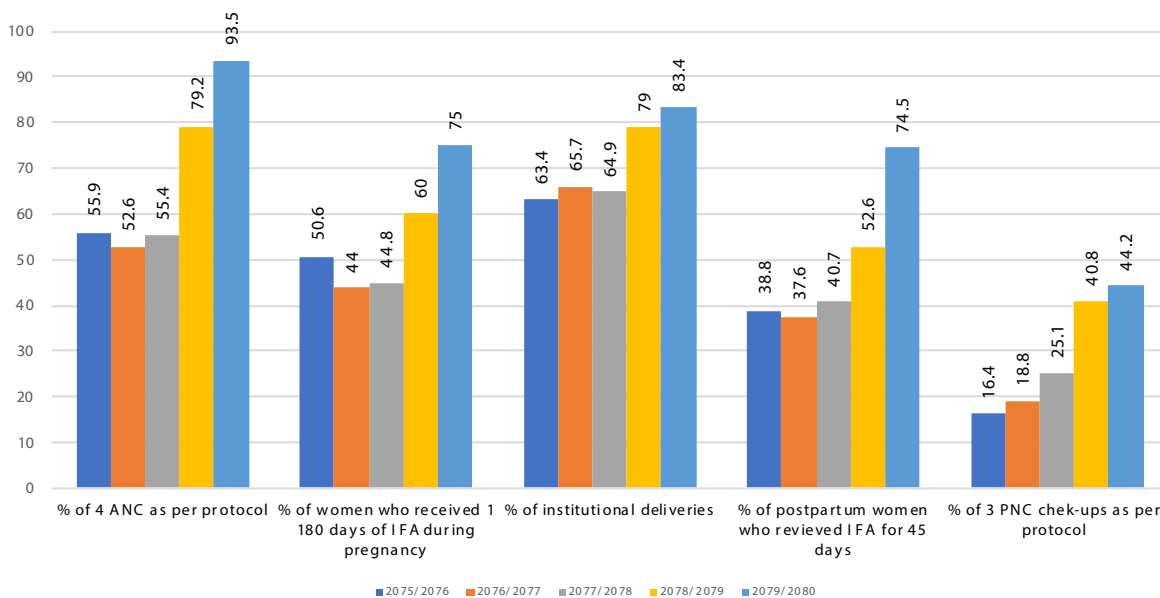
Figure 3.20 Gap in continuum of care utilization from pregnancy to postnatal phase

Source: HMIS/DoHS

3.3.5 Utilization of Safe Abortion Service

Users of SAS increased by 2,728 cases in FY 2079/80 (93,463) as compared to FY 2078/79 (90,733); from FY 2077/78 (79,952) the increment in FY 2078/79 was 10,781 cases. Among these cases, the share of medical abortion is more than that of surgical abortion. (Fig 3.21) Among total medical abortion 5.70 % done among <20 years' women and 6.9% total surgical abortion were done among <20 years' women.
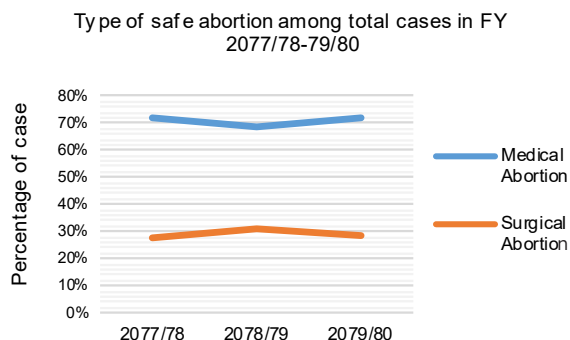
Figure 3.21 Type of safe abortion among total cases in FY 2077/78-79/80

Source: HMIS/DoHS

Among total users, Bagmati (n=19,225), Lumbini (n=18,107), Koshi (n=16,229) and Sudurpaschim (n=13,493) have relatively higher proportion of the users who utilized safe abortion services. Around 6% of the total women were below 20 years. Notably, the proportion surpasses the national average in Bagmati (7.1%), Koshi (6.9%) and Karnali (6.2%) provinces (Fig 3.22). The legal age of marriage is 20 years; this data depicts either premarital conception or early marriages leading to abortion. Furthermore, this data depicts only registered cases of abortions and doesn't capture the burden of the illegal, unregistered, unsafe abortions. Studies are needed to explore the gravity of the problem.
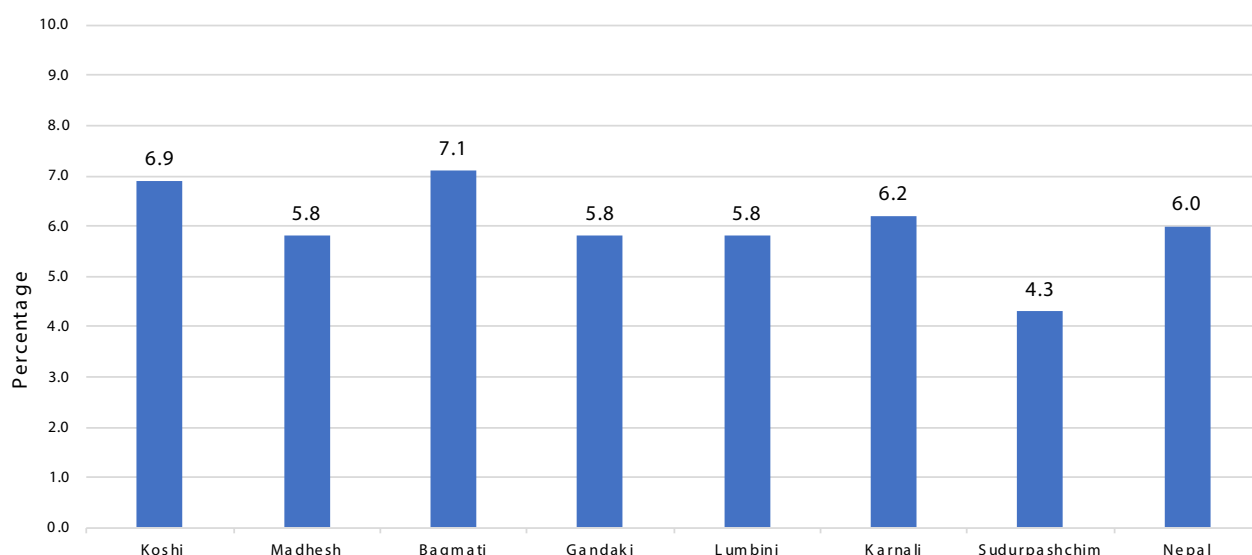
Figure 3.22 Percentage of women under 20 years among abortion services users in FY 2079/80

Source: HMIS/DoHS

Besides SAS, the services of post-abortive care (PAC) post induced abortion and safe abortion, services for the management of complication post-abortion and referral for management of the abortion are also presented below [Table 3.2]. Gandaki province reported twenty-three death from abortion complication.

Table 3.2 Number of CAC, PAC and Post Abortion Complication and Women Treated for Abortion in FY 2079/80

National/Province	Total Safe abortion Service	% PAC services (Induced)	% PAC services (Spontaneous)	% of women treated for abortion complications	% MNH-Obstetric Complication-Abortion complication-Referred Out	% of Post abortion Complication among Medical Abortion (Within 12 weeks)	% of Post abortion Complication among Surgical Abortion/ Within (12 weeks)
National	93,463	7.5	4.9	6.7	3.4	91.6	86.9
Koshi Province	16,229	9.3	4.5	5.0	3.6	89.0	87.5
Madhesh Province	8,203	5.2	5.1	5.5	5.1	100.0	37.1
Bagmati Province	19,225	6.2	5.1	12.8	1.6	93.1	90.7
Gandaki Province	12,796	7.2	2.6	2.9	5.8	100.0	89.1
Lumbini Province	18,107	8.1	5.2	8.6	4.4	100.0	94.2
Karnali Province	5,410	14.7	8.7	5.9	6.3	65.0	85.3
Sudurpaschim Province	13,493	5.2	4.9	2.4	3.1	96.1	90.7

Source: HMIS/DoHS

3.3.6 Newborn Service Utilization

Among 9,237 newborn cases reported to be admitted in SNCU/NICU/KMCU, 34.3% were admitted due to sepsis, 14.9% were admitted due to hyperbilirubinemia, 14.5% were admitted due to asphyxia and 12.6% were due to LBW. The causes of the admission were similar across the provinces (Fig 3.23). Out of the total admission, 24.5% were reported from Gandaki province, 21.2% from Lumbini, 17.5% from Madhesh, 17.3% from Koshi, 9.2% from Bagmati, 6.8% from Sudurpaschim and 3.4% from Karnali provinces.
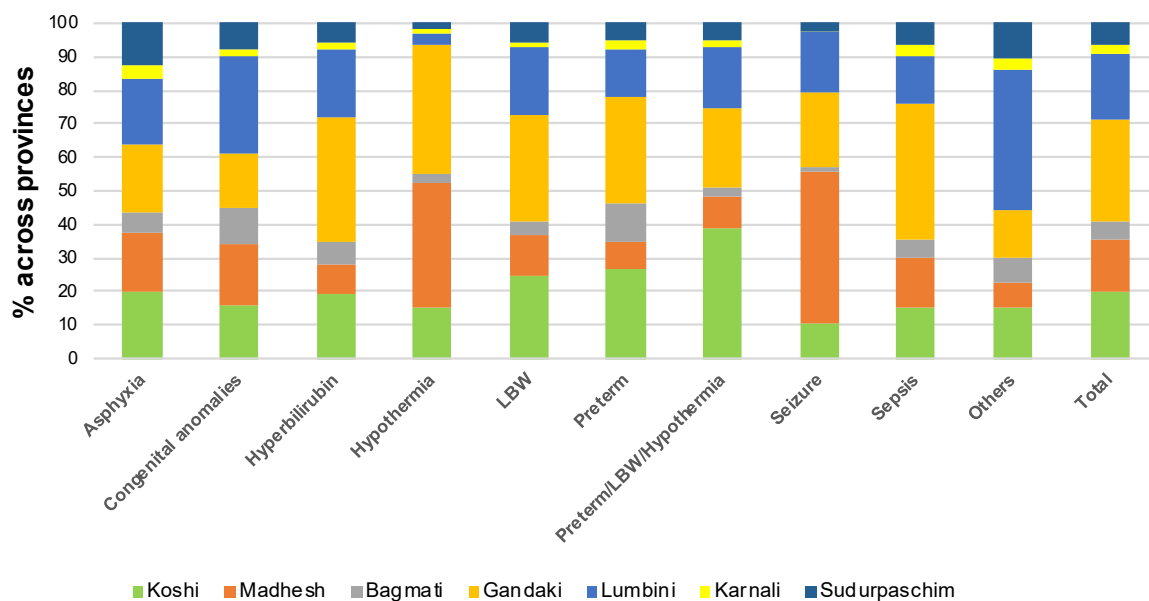
Figure 3.23 Causes of newborn admission across provinces reported in FY 2079/80

Source: HMIS/DoHS

Furthermore, a total of 2,791 cases of sick newborns were reported to be managed by Kangaroo Mother Care (KMC) of which 31.7% for LBW, 23.6% for preterm and 18.0% were managed for hypothermia; remaining 26.7% for preterm/LBW/ hypothermia. Most of the LBW newborns were from Gandaki province (n=315) and hypothermia were from Madhesh province (n=236) (Fig 3.24).
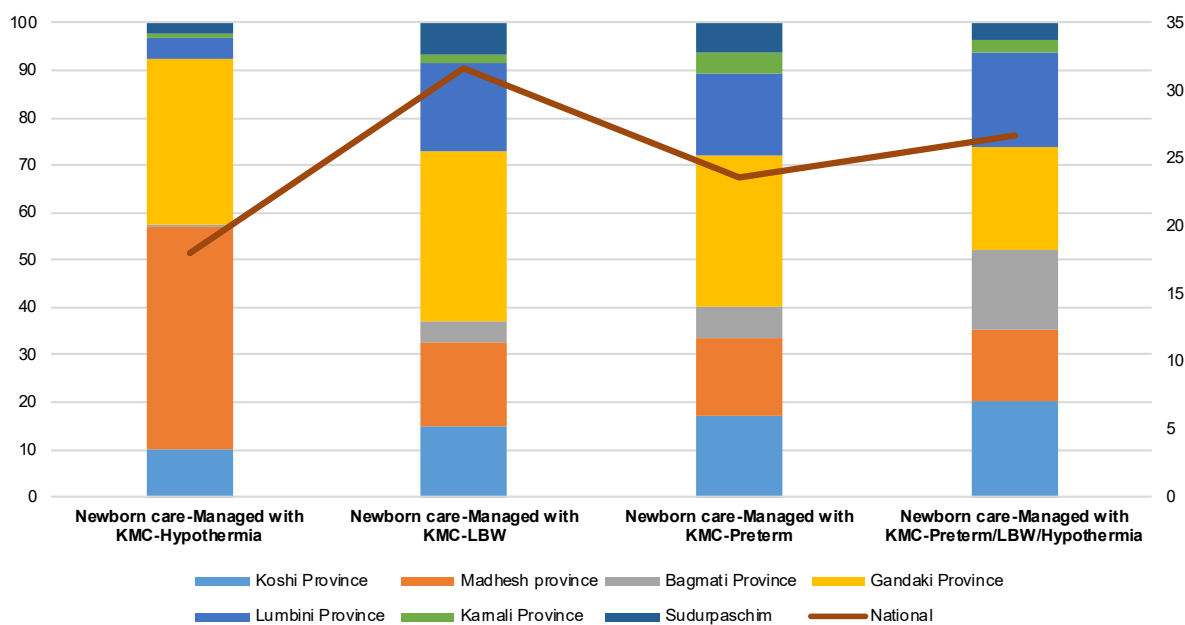
Figure 3.24 Newborns managed by KMC for preterm, LBW and/or Hypothermia reported in FY 2079/80

Source: HMIS/DoHS

A total of 7,995 newborns were reported on the outcomes of the admission in FY 2079/80. In 82.9% of the newborns there was improved status at discharge.

Unfortunately, there were around 50 newborns per 1,000 admitted cases who were succumbed to death (Table 3.3).

Table 3.3 CAC, PAC and Post Abortion Complication and Women Treated for Abortion in FY 2079/80

Treatment Outcome	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
LAMA/Absconded	1.3	0.9	0.1	0.6	1.2	0.1	0.4	4.7
Referred	1.7	0.8	0.6	0.7	2.6	0.3	0.8	7.4
Death	8	5	1	23	9	2	3	50

Source: HMIS/DoHS

Key Achievements of MNH Program in FY 2079/80

- QI Dashboard developed and linked with FWD websites
- Expansion and strengthening of CEmONC program at 76 districts
- Facility based MPDSR program has been expanded 108 hospitals and community level MPDSR has been expanded to 52 districts in FY 2079/80
- Robson Ten Group Classification has been expanded to 38 hospitals

- Ice Lined Refrigerators were procured in different LLGs
- Coaching mentoring program for SNCU level II care facilities developed and being piloted
- Level II newborn care orientation package and country specific model of care for small and sick newborns developed
- 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

Box 3.4 SWOT Analysis of MNH Programs

Strength	Opportunity
• Real-time monitoring of QI assessment of health facilities • Coaching mentoring program for continuous improvement of quality of care • Expansion and strengthening of CEmONC program to 76 districts • Regular case auditing through MPDSR program has been expanded • Monitoring for CS and its indication using Robson Ten Group Classification being expanded • Continuous capacity building and HR support	• Initiation of the companionship in labor • Integrating MNH QI tools with other programs/ tools for integrated supervision
Weakness	**Threat**
• Inadequate Budget for MNH program including supervision and monitoring • Inefficient implementation of DQSA • Maternal/newborn deaths at health facilities	• Timely referral from remote areas and execution of emergency referral funds/air lift • Self-referral and crowding at the CEmONC sites and less uptake of delivery services from birthing centers • Natural disasters like flooding, landslides, earthquakes, etc

4   **Child Health and Immunization Services**

Family Welfare Division	Maternal and Newborn Health Section	Child Health and Immunization Section	Nutrition Section	Family Planning and Reproductive Health Section

Child Health and Immunization Services Section bears responsibility for strategic planning, execution, monitoring, and evaluation of child health and immunization services at the federal level, coordinate and collaborate with the provincial and local level governments. To facilitate the provision of these services, a seamless coordination mechanism is consistently maintained among various centers and sections of different divisions like LMS, IHIMS, NHEICC, EDCD, NPHL, PHDs and HOs. The section ensures implementation of activities outlined in AWPB and facilitating multi-stakeholders' coordination. Major programs for child health and immunization services, are: National Immunization Program (NIP), explained in section 4.1 and Integrated Management of Newborn and Childhood Illness (IMNCI) program, explained in section 4.2 of this chapter.

4.1 National Immunization Program (NIP)

NIP, started as Expanded Program on Immunization (EPI) in 2034 BS, is a top priority and a successful initiative of MoHP, contributing in reduction of morbidity, mortality, and disability associated with vaccine-preventable diseases. 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 Mangsir 2080, 72 out of 77 districts and 724 out of 753 local levels have achieved 'full immunization' status. NIP significantly contributes to the decline in infant and child mortality, aiding in achieving MDG Goal 4[1] (See Fig 4.1 for major milestones of the program and Box 4.1 for key guiding strategies).

Nepal, the first country in the South-East Asia Region with Immunization Act, 2072 and Immunization Regulation 2074, and provinces adopting their own acts, demonstrates the government's commitment to recognizing immunization as a fundamental right for all children. Alongside global, regional, and national guiding documents, the National Immunization Program has a Comprehensive Multi-Year Plan (cMYP) 2017–2021/22. National Immunization Strategy (2023-2030), aligned with the Nepal Health Sector Strategic Plan (2023-2030), will be the primary guiding document for national immunization program for next seven years.

2019 A.D. (2076 BS)
- Nepal was certified of controlling Hepatitis B among children through immunization

2020 A.D. (2077B.S.)
- Rotavirus vaccine introduction in routine immunization along with hygiene promotion integration

2022 A.D. (2078 B.S.)
- TCV vaccine introduced in routine immunization with hygiene promotion stengthening

2018 A.D. (2075 B.S.)
- Switched from IPV to fIPV
- Nepal was certified to control Rubella and Congenital Rubella syndrome

2016 A.D. (2073 B.S.)
- JE vaccine expanded all over Nepal
- tOPV switched to bOPV

2015 A.D. (2072 B.S)
- MR II dose/MR second started in Nepal
- PCV introduced in routine immunization

2010 A.D. (2067 B.S.)
- Last case of Polio seen in Nepal

2013 A.D. (2070/71 B.S.)
- MR vaccine introduced in routine immunization

2014 A.D. (2071 B.S.)
- IPV introduced in routine immunization
- Nepal was certified Polio free

2009 A.D. (2066 B.S.)
- Hib introduced in routine immunization (pentavalent vaccine)

2006 A.D. (2063 B.S.)
- JE vaccine in different phases

2005 A.D. (2062/63 B.S.)
- Hepatitis B vaccine expanded in all districts
- Maternal and Neonatal tetanus elimination
- TT vaccine for grade 1,2 & 3 students in eight districts

1977 A.D. (2034 B.S.)
- BCG and Diptheria in Dhanusha, Sindupalchowk, and Rupandehi districts only

1988/89 A.D. (2046 B.S.)
- BCG & Diptheria vaccine all districts
- OPV introduction into routine immunization
- Measles vaccine introduced in routine immunization

2002 A.D. (2060 B.S.)
- Hepatitis B vaccine introduction in phase wise manner

Figure 4.1 Major Milestones of NIP Program, Nepal

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1 Nepal and the Millennium Development Goals, Final Status Report 2000-2015, National Planning Commission

- Search and immunize during Immunization Month
- Screening of child missed for vaccination
  » During Vitamin A campaigns for under- 5 children (Bi-annual)
  » Screening of under 5 children at the time of school enrollment (through vaccination card)
- Yearly household survey (Magh to Chaitra) to locate zero dose and under-immunized children, with additional sessions during Immunization Month celebration
- Mandatory immunization cards for under-five children for government benefits
- Identification through campaigns, surveys, and real-time monitoring
- Micro-plan updates focus on high-risk areas/population
- Mass media and social mobilization for vaccination using monitoring charts to monitor the coverage and identify dropouts by health facilities

Additionally, Hygiene Promotion through Routine Immunization is a collaborative program since 2077/78 to enhance hygiene behaviors of mothers/guardians and increase immunization coverage. Led by FWD, MoHP, Nepal, and supported by Water Aid Nepal, the government scaled up nationwide hygiene integration into routine immunization across 77 districts, targeting 530,000 populations annually. Child health and immunization services section collaborates with other divisions, centers, and partners like WHO and UNICEF, are supporting NIP and Water Aid for Hygiene Integration in Routine Immunization. Mothers of children under two years participating in routine immunization sessions engage in 30-35 minutes' interactive hygiene promotion sessions focusing on full immunization and five key hygiene behaviors:

exclusive breastfeeding, food hygiene, water treatment, handwashing, and toilet use, guided by the Behavior Centered Design (BCD) Approach. These sessions, conducted concurrently with immunization sessions (static, outreach, and mobile clinics) by trained health workers, supported by FCHVs, benefitted 498,382 mothers/guardians in the one-year period, representing 96.6% of the targeted 0–11-month age group. Similarly, in FY 2079/80, 80.5% of immunization clinics administering vaccinations conducted hygiene promotion sessions.

The target for NIP is to immunize children up to 15 months of age, missed child vaccination up to 5 years and Tetanus Diphtheria Toxoid (Td) vaccines for pregnant women (Table 4.1).

Table 4.1 Target Population of NIP for FY 2079/80

Age group	Target Population FY 2079/80
Under 1-year children (surviving infants)	515,533
12-23 months population	516,514
0-59 months population	2,597,003
Expected pregnancy	620,983

Source: HMIS/DoHS

4.1.1 Major Activities Conducted in FY 2079/80

The immunization month is celebrated every year during first month of the Nepali calendar; Baishakh (Mid-April- Mid-May), coinciding with "World Immunization Week" celebrated on the last week of April. In fiscal year 2079/80, Baisakh 15 and 31 were dedicated to vaccinate under 5 years children who have missed routine with the theme "Extensive Search and Vaccination". The vaccination campaign was conducted nationwide in all health facilities (Fig 4.2). Facilities conduct house-

to-house surveys to list eligible children and locate dropouts (Search and Immunize strategy). Involvement of local administration, intellectuals, teachers, political figures, and social workers is crucial in addressing dropouts. Provincial and local levels engage in activities to celebrate Immunization Month, with additional support from partners, highlighting the importance of collective efforts for comprehensive immunization coverage.

Legend:
- Districts where unvaccinated children are found
- Districts where no unvaccinated children are found
- District pending report

Total number children sought and vaccinated

40,463

Total session conducted: 4,697

Number of vaccinated children

2,092	Children not routinely vaccinated (zero dose*)
25,398	Children 0 to 23 months of age
12,973	Children 24 to 59 months of age

*BCG vaccination taken as proxy for zero dose

Figure 4.2 Extensive Search and Vaccination Campaign, Baishak, 2080

Source: FWD/DoHS

In FY 2079/80, COVID-19 vaccination program was continued throughout the country (Fig 4.3).

Magh 2077
- Nepal initiated COVID-19 vaccination
- Emphasis was given to health workers, frontline workers and >65 years

Mangsir 2078
- m-RNA vaccination for 12-17 years old

Poush 2078
- Booster doses for health workers, >60 years and immuno-compromised 18 years and above

Magh 2078
- 18 years and above age group received booster doses

Jestha 2079
- 5-11 years age group vaccination initiated
- Booster dose to 12-17 years age group was initiated

Karthik 2079
- Provision for 2nd booster dose

Figure 4.3 Timeline of COVID-19 vaccination campaign in Nepal

Source: HMIS/DoHS

Vaccine-Preventable Disease (VPD) surveillance

Maintaining robust surveillance, couplesd with high coverage in routine immunization, ensures the attainment of the goals and strategic objectives of NIP. The VPD surveillance include – AFP, MR, AES and Neonatal Tetanus surveillances (See Fig 4.4 for important milestones in VPD surveillance).

2055 B.S.
• Polio eradication efforts began with AFP surveillance

2060 B.S.
• Integration of AFP surveillance with measles /rubella and neonatal surveillance

2061 B.S.
• WHO-IPD supports nationwide surveillance through 885 zero reporting sites, 685 case based measles surveillance sites and 830 informers
• Sentinel surveillance covered invasive bacterial diseases, rotavirus, and CRS

2066 B.S.
• Patan Hospital sentinel site for invasive bacterial diseases
• Kanti children's hospital sentinel site for Rota virus

2075 B.S.
• Rota virus sentinel site expansion: NMC, Nepalgunj
• CRS sentinel surveillance site: TUTH, PAHS, Tilganga eye hospital & Kanti children's hospital

Figure 4.4 Important milestones in two decades of VPD Surveillance in Nepal

Other activities:

- National level workshop was held on National Immunization Strategy Development

- Gavi Full Portfolio planning was done

- Submitted vaccination campaign proposals to Gavi (MR, HPV and IPV catch up vaccination)

- District level review meeting on C-19 vaccination and RI strengthening and VPD surveillance in 75 districts and about 10,000 health staffs trained

- Provincial trainings on AEFI, Vaccine Safety and VPD Surveillance to Pediatricians, Medical officers, and stakeholders were done

- National and provincial level review meeting on C-19 vaccination and RI were done

- Orientation on RI, C-19 vaccine and hygiene promotion to local government representatives and stakeholders in low performing LLGs and districts (14 districts) were done

- Root-cause analysis (RCA) conducted in Outbreak Response Immunization in 10 districts

- Health Workers reference manual, facilitator's guideline on immunization were developed

- Hygiene promotion strategy for urban and rural immunization settings was developed

4.1.2 Key Program Indicators for NIP

National vaccination coverage

The coverage for the maternal Td vaccination has been stagnant (72%) as that of last FY. BCG coverage (102%), DPT- HepB-HiB1 (101%) and OPV 1 (102%) in FY 2079/80 exceeded the target (95%). The coverage are more than 100% due to more newborns shown up for vaccination than the targeted and expected pregnancies/deliveries.

The coverage is >90% for the antigens scheduled for children aged 10 weeks and above. Coverage of DTP-HepB-Hib3 and OPV3 coverage increased by 4% and 3% respectively in FY 2079/80 compared to FY 2078/79 while fIPV2 coverage declined by 29%. PCV1 and PCV3 coverage remained constant at 98% and 94%, respectively. MR1 and MR2 coverage stood at 97% and 95%, respectively. In order to eliminate measles, achieving >95% coverage for both MR1 and MR2 is crucial. Despite a pandemic-related dip (FY 2078/79), the NIP swiftly restoring monthly vaccination coverage to or above pre-pandemic levels (FY 2079/80). NIP introduced TCV in routine immunization in FY 2078/79 following catch up campaign has been able to achieve coverage of >90% (Fig 4.5-4.9).

In FY 2079/80 there were only 26 districts which have achieved MR2 coverage >95% which is most needed to maintain herd immunity ultimately leading to measles elimination.
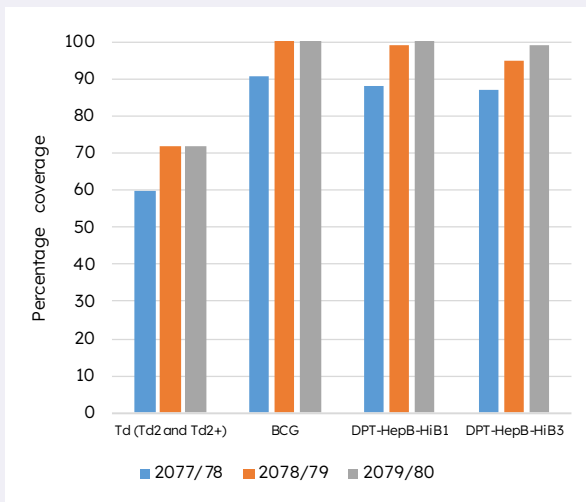
Figure 4.5 Coverage of Td, BCG and DPT-Hep-HiB in FY 2077/78-2079/80Surveillance in Nepal

Source: HMIS/DoHS
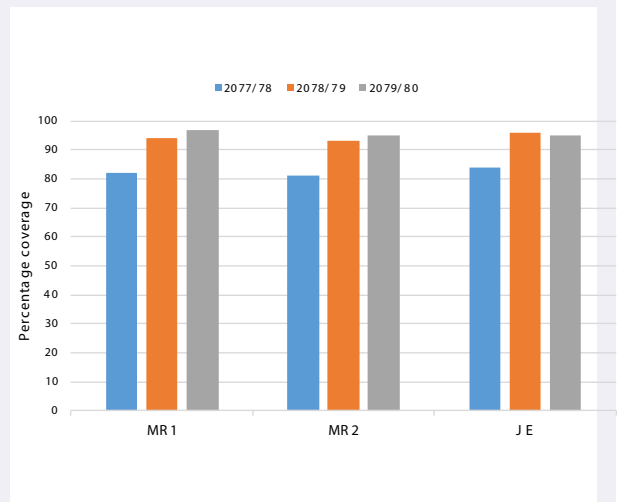
Figure 4.6 Coverage of MR1, MR2 and JE in FY 2077/78-2079/80
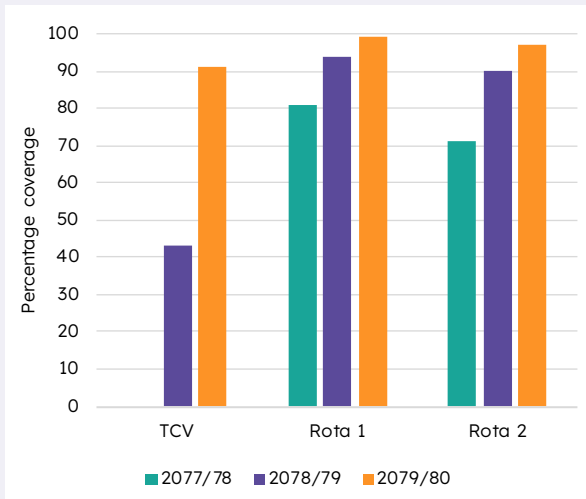
Source: HMIS/DoHS

Figure 4.7 Coverage of TCV and Rota in FY 2077/78-2079/80
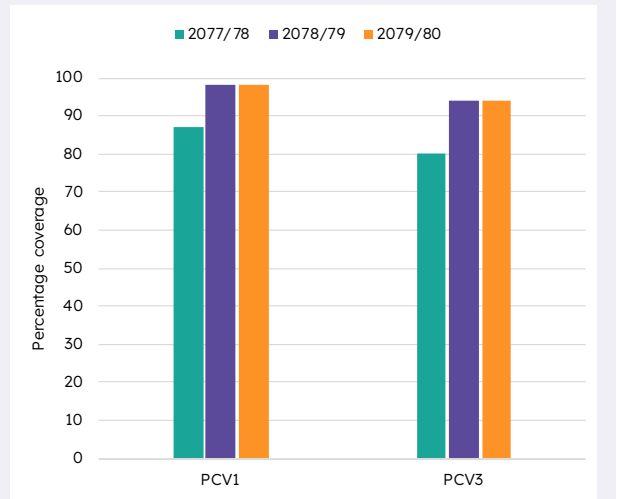
Source: HMIS/DoHS

Figure 4.8 Coverage of PCV in FY 2077/78-2079/80
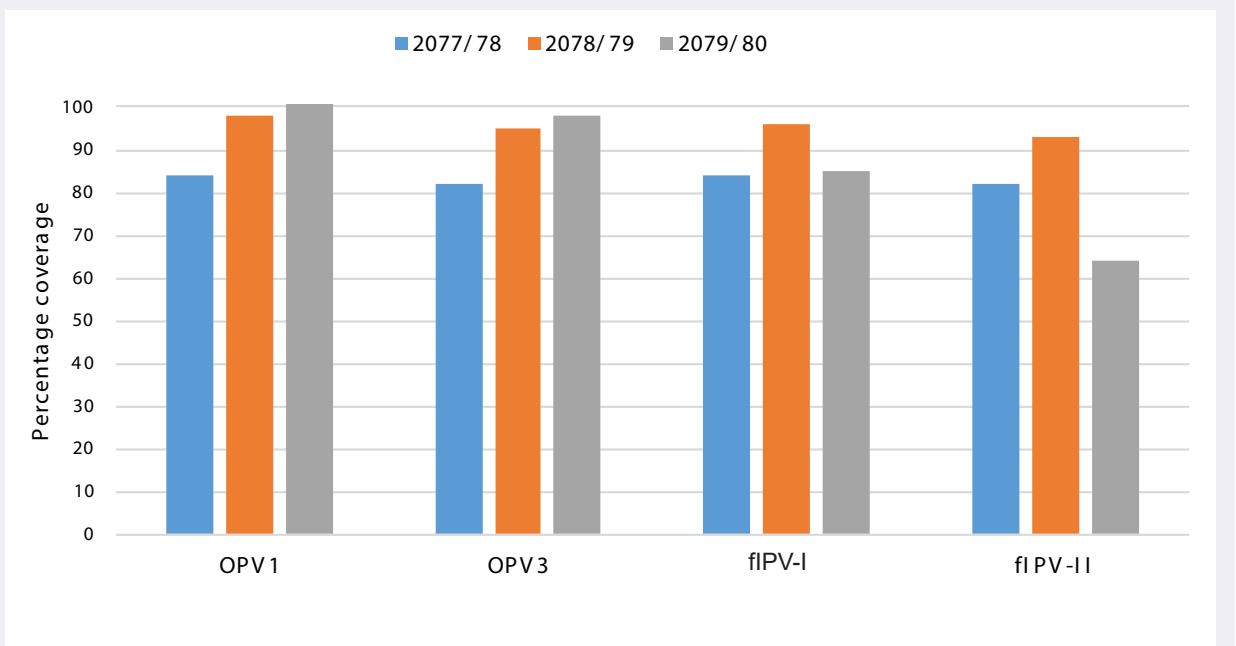
Source: HMIS/DoHS

Figure 4.9 Coverage of oral and injectable polio vaccine in FY 2077/78-2079/80

Source: HMIS/DoHS

Vaccination coverage by province

Provincial variations in antigen coverage over the past three fiscal years show DPT-HepB-Hib exceeding national levels in Madhesh and Bagmati provinces, while MR1 and MR2 achieve over 95% coverage only in Bagmati and Madhesh. Notably, Madhesh sees a 12% increase in MR2 coverage but Gandaki experiencing a 4% decline. Td coverage surpasses the national average in Madhesh and Lumbini provinces, but there are fluctuations, including declines in Sudurpaschim, Koshi, and Karnali provinces. Bagmati province leads in DPT-HepB-Hib3 and MR1 coverage, while Karnali has the lowest MR1 coverage at 86%. National MR1 and MR2 coverage are 97% and 95%, respectively, but sub-national variations exist (Fig 4.10)[2].
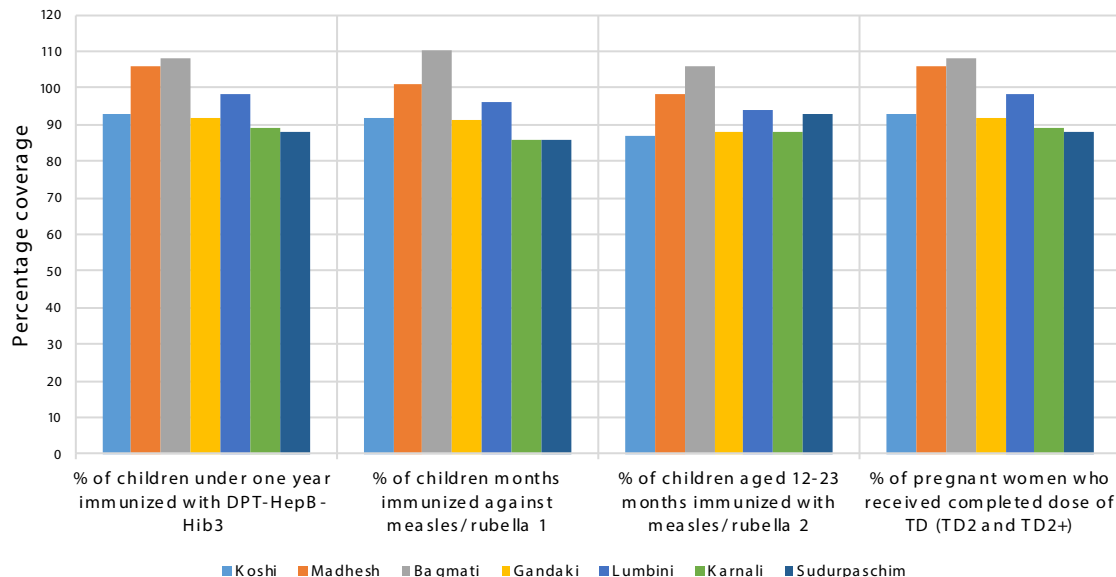
Figure 4.10 National and provincial coverage of antigens in FY 2079/80

Source: HMIS/DoHS

Drop-out rates (%) of vaccination

Over last three FYs there has been an improvement in the national average of the drop-out rates for the reference antigens- DPT-HepB-Hib, MR and PCV. (Fig 4.11) With all drop-out rates falling below 10%, the lowest dropout is seen in DPT-HepB-Hib1 Vs DPT-HepB-Hib3 while highest was observed in DPT-HepB-Hib1 Vs MR2 dropout. It is noteworthy that the exception is observed in Madhesh Province, where the drop-out rate for DPT-HepB-Hib 1 versus MR 2 is 11%. (Fig 4.12). The three provinces (Koshi-7.7%, Madhesh-11% and Gandaki-5.9%) reported comparatively high dropout for MR2.[3]
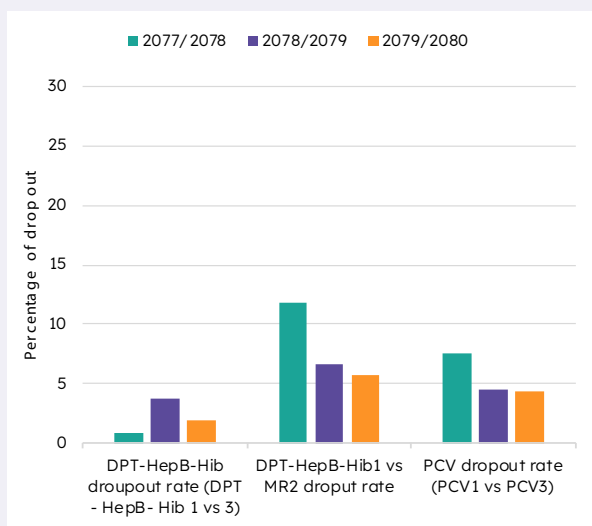
Figure 4.11 National dropout rates for reference antigens
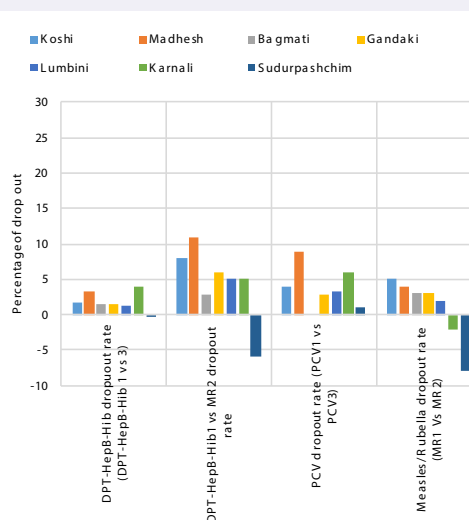
Figure 4.12 National and provincial vaccination drop outs in FY 2079/80

Source: HMIS/DoHS

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2 Some of the antigens have more than 100% coverage, this might have been due to more cases arriving at the health facilities than estimated targets due to in-migration, daughters married to neighboring countries coming back to maternal homes for postnatal periods and lack of unique identifier for the vaccination programs or electronic medical recording

3 There were negative drop outs for some vaccines, this might have been caused due to catch up vaccinations given to the children who were not previously immunized or due to open borders where the children across borders have been immunized who were not previously covered by NIP

Vaccine wastage rates

The vaccine wastage rates have reduced by 2% in two of the antigens (PCV, JE), however for most of the antigens the wastage rate have increased in FY 2079/80 as compared to last fiscal years. While comparing each antigen to respective indicative wastage rate, almost all wastage rates were above them in all three fiscal years (Fig 4.13).
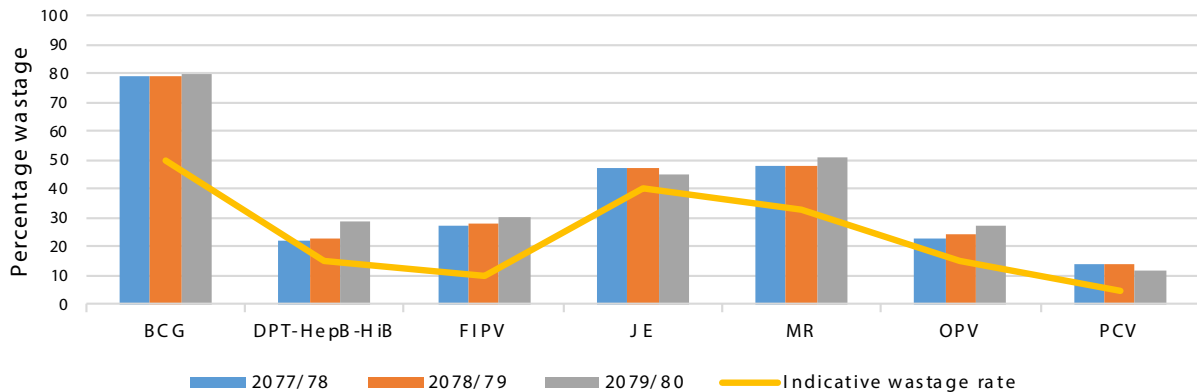
Figure 4.13 Vaccination wastage rate against indicative wastage rate in FY 2077/78-2079/80

Source: HMIS/DoHS

Need to plan and address the issue of vaccine wastage rate with reinforcement of multi dose vaccine vial policy at the session site.[4]

Coverage of COVID-19 vaccines

In FY 2079/80 coverage of first and second dose of COVID-19 vaccination among the total population is 83.1% and 83.6% moreover, in population ≥ 12 years age it is 92.1% and 94.1% and in the 5 to 11 years' age group is 91.8% and 82.2% respectively (Fig 4.14). There are provincial differences observed in COVID-19 vaccination coverage with least coverage in population ≥ 12 years' age in Karnali province (first and second dose- 84% and 83%). Provincial differences were observed with least coverage in Koshi and Karnali, and highest coverage in Bagmati and Gandaki provinces (Fig 4.15).
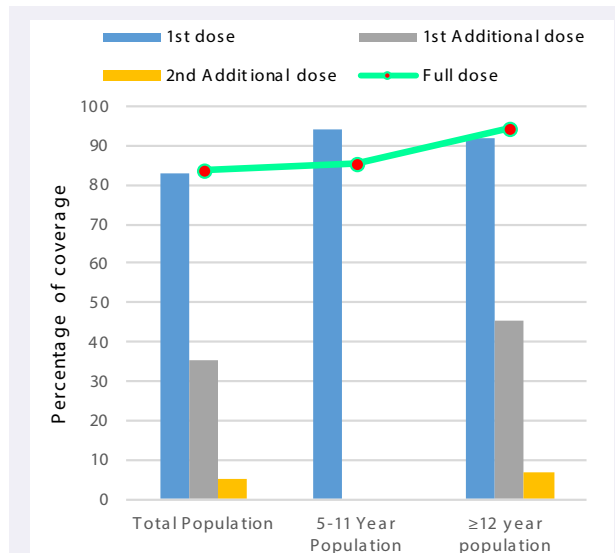
Figure 4.14 COVID-19 vaccination coverage by age in FY 2079/80

*J&J vaccine administered are added to Full/second dose. Therefore, in some cases, second dose coverage is higher than the first.
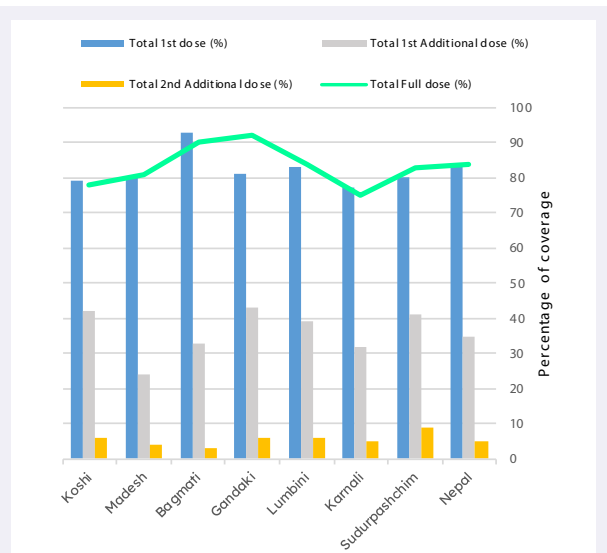
Figure 4.15 COVID-19 vaccination coverage across provinces in FY 2079/80

Source: HMIS/DoHS

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4 For reconstituted vaccines requiring disposal within 6 hours (BCG, MR) and 1 hour (JE) or at the end of the immunization session, whichever comes first, the anticipated opened vial wastage rates are likely to be more. In Nepal, 'one vial per session' policy is implemented for BCG, fIPV, MR, and JE vaccines. Given the smaller session sizes necessitated by the sparse population in hilly and mountainous terrain, higher opened vial wastage rates are permitted, with principle of leaving no one behind.

Acute flaccid paralysis (AFP) surveillance

To maintain sensitive polio surveillance, two cardinal indicators are - a non-polio AFP rate of at least 2 per 100,000 (SEAR standard) among the under-15 populations, and an adequate stool collection rate of 80% or more. In FY 2079/80, a total of 266 AFP cases were reported across 58 districts. The national non-polio AFP rate was 2.54 per 100,000 under-15-year populations, surpassing the required rate of at least 2 per 100,000. Among the reporting districts, 44 have achieved the target rate of 2 or more, 10 districts have a non-polio AFP rate between 1 and 1.9, and 4 districts have a rate below 1 per 100,000 under-15-year populations (Fig 4.16). The national AFP adequate sample stool specimen collection rate is 93%, which exceeded the target of 80%. Among 58 districts reporting AFP cases, 49 have achieved targeted stool collection rate of 80% or higher (Fig 4.17).

[Note: The 19 districts (Taplejung, Terathum, Dhankuta, Bhojpur, Khotang, Okhaldhunga, Ramechap, Sindhuli, Solukhumbu, Sindhupalchowk, Dolakha, Syangja, Palpa, Manang, Mustang, Rukum-west, Dailekh, Mugu, Humla) that 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.]

Environmental Surveillance

Environmental Surveillance (ES) for poliovirus analyzes composite human faecal samples from wastewater downstream of high-risk populations. It complements AFP surveillance, confirming the absence of indigenous wild poliovirus, monitoring international virus importations, and detecting vaccine-derived poliovirus. Since Mangsir 2074 (November 2017), NPHL has been conducting ES at the seven permanent Environmental Surveillance sites are Sewer Inlet Chamber- Chabahil, Bagmati Manahara Confluence, Bagmati/Dhobikhola confluence, Tukucha, and Shovabagawati in Kathmandu and one each in Morang and Dhanusha districts.
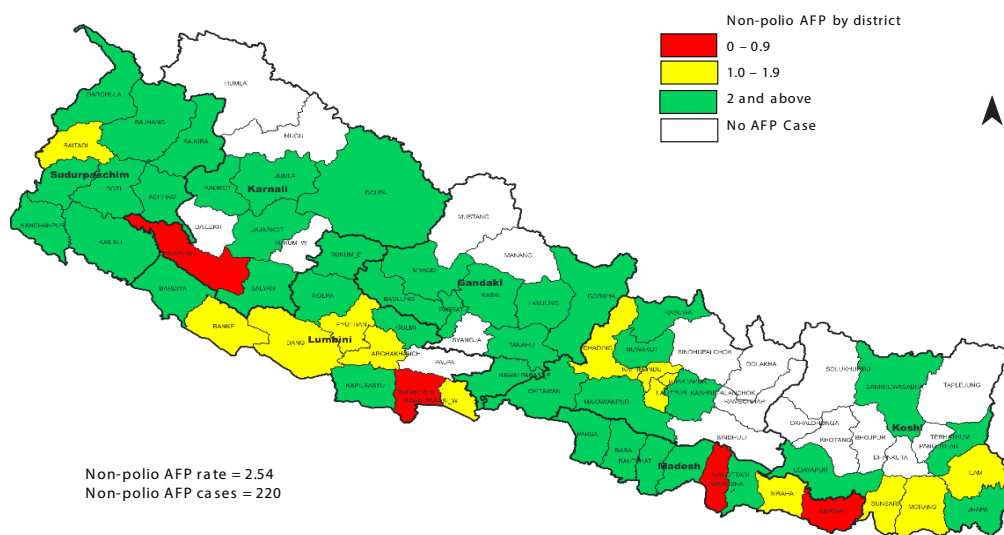
Figure 4.16 Non-Polio Acute Flaccid Paralysis (NP AFP) rate by district, FY 2079/80 (2022/23)
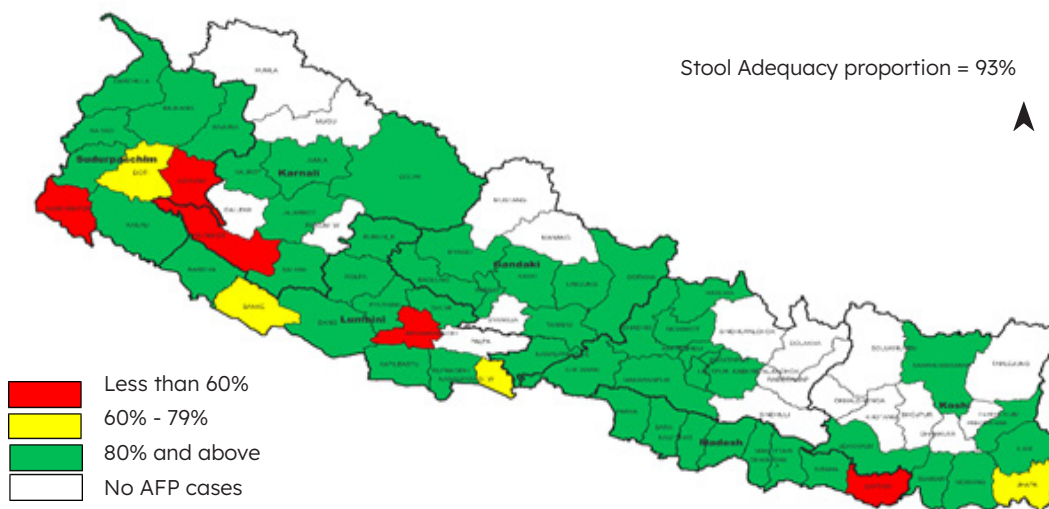
Source: FWD/DoHS

Figure 4.17 Adequate stool collection rate of AFP cases by district, FY 2079/80 (2022/23)

Source: FWD/DoHS

Measles-rubella surveillance

Nepal achieved a 97% reduction in rubella cases in 2017 (22 cases) as compared to 2008 (786 cases) surpassing the target of 95% or more reduction. Nepal was certified in Bhadra 2075 (August 2018) for the achievement and control of CRS. While it is yet to achieve the target for measles elimination that demands zero case reported.

A total of 1,022 measles positive cases (including laboratory confirmed, epi-linked and clinical cases) in FY 2079/80. The rubella cases were identified at case-based measles surveillance sites (Fig 4.18). Among the total lab-confirmed measles cases in FY 2079/80, there were cases seen across the country with no provinces with zero reporting.
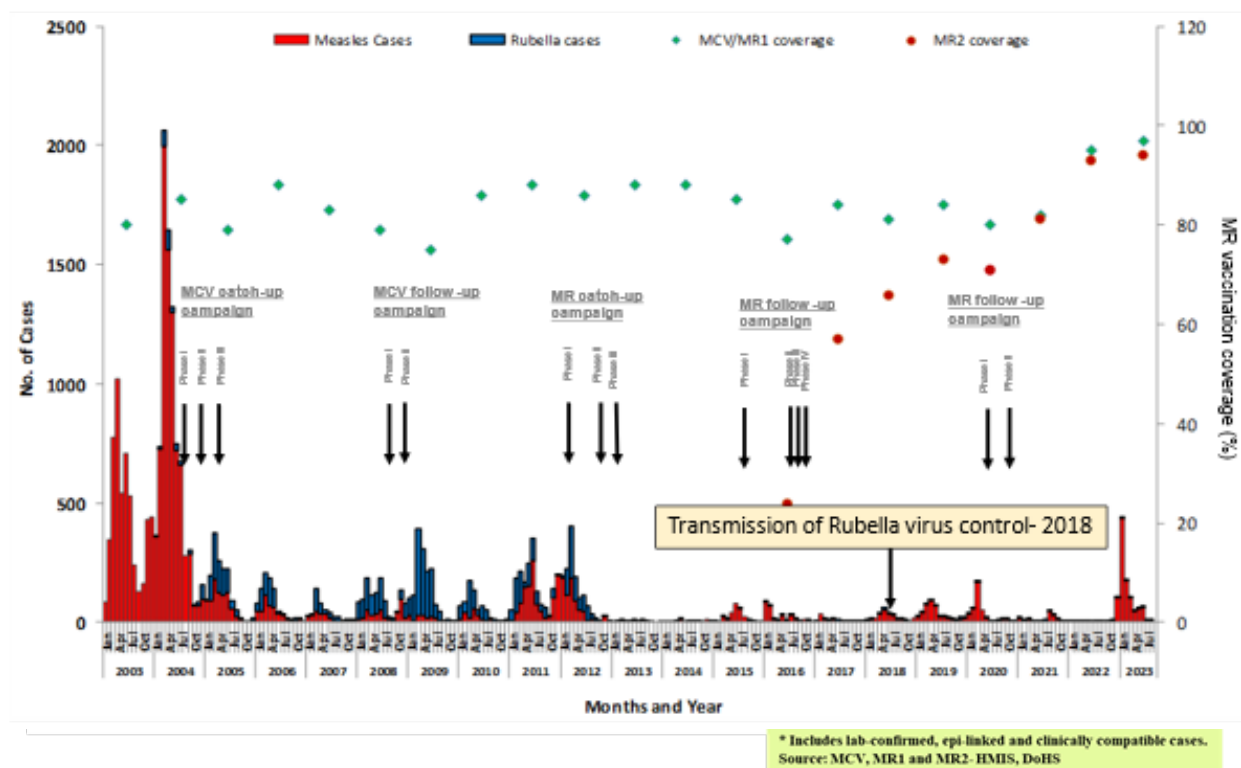
Figure 4.18 Confirmed measles and rubella cases and MCV/MR1/MR2 coverage, Nepal, 2003-2023

Source: FWD/DoHS

NMNR rate for quality of measles- rubella surveillance is met at national average (NMNR-2.2). However, Lumbini (0.8), Madhesh (1.1), and Sudurpaschim Provinces (1.3) still have to work on to achieve the NMNR rate of above 2 per 100,000.

[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 and non-rubella) per 100,000 populations should be reported for quality measles-rubella surveillance.]

Notably, in FY 2079/80 Measles outbreak was originated from Banke district that spread to over 17 districts of Nepal. ORI was conducted in 10 most affected districts . RCA traced major contributors-issues in the cold chain supply management and cold chain point, knowledge gap of vaccine and vaccination site, fear of side effect, service provider and cross border issues.

Acute encephalitis syndrome (AES) surveillance

In FY 2079/80, 758 AES cases were reported of which 76 (10.0%) were laboratory confirmed for JE. Though the cases have increased in number from last FY (79 cases were confirmed JE), the confirmatory percentage among reported cases (12.4%) has decreased (Fig 4.19). JE cases were present in all provinces. Only 10 districts reported zero cases (Fig 4.20).
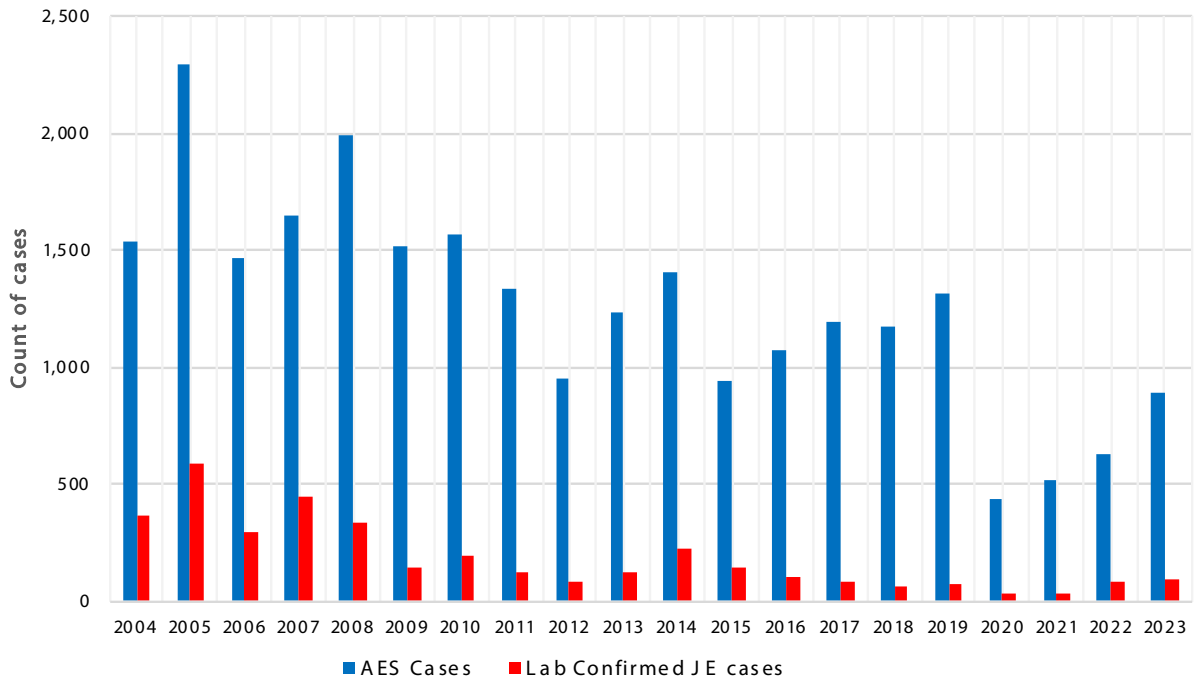
Figure 4.19 Reported AES and lab-confirmed Japanese encephalitis cases, Nepal, 2004 – 2023.
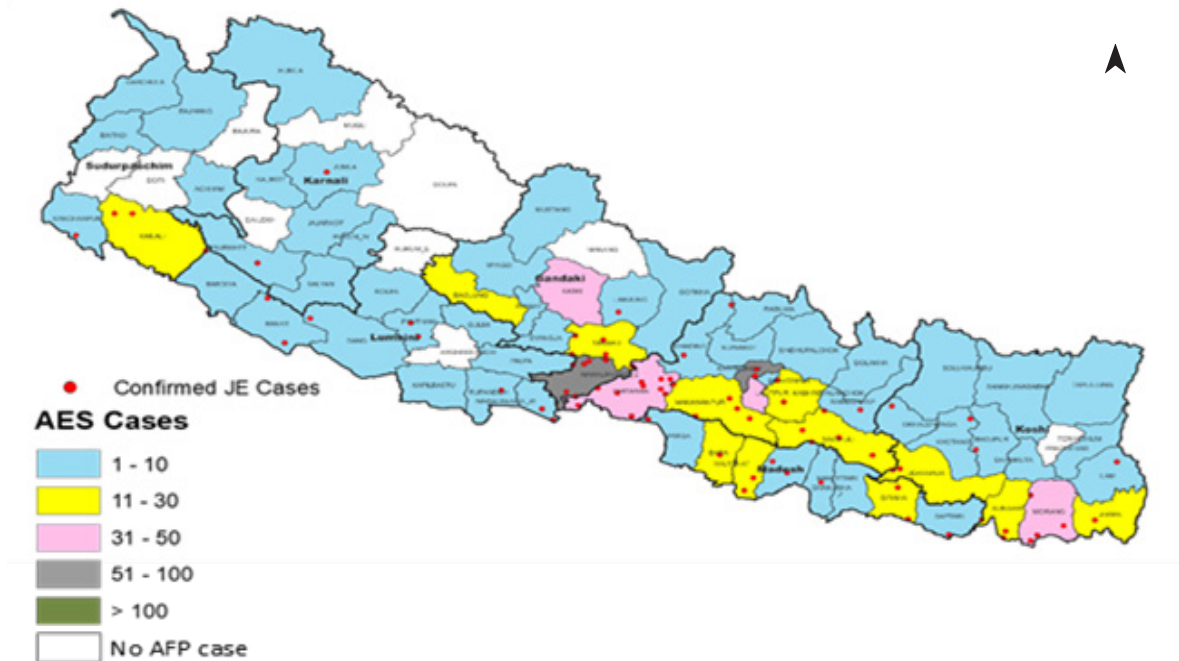
Figure 4.20 Reported AES and laboratory-confirmed JE by district, FY 2079/2080 (2022/23).

Neonatal tetanus surveillance

In Nepal, elimination of neonatal tetanus (NNT) was achieved in 2061/62 (2005). In FY 2079/80, two NNT cases were reported one each from Tanahun and Udayapur districts. The national incidence rate of NNT is 0.0039 per 1,000 live births. This is below the elimination range of one case per 1,000 live births.

4.1.3 Key Performance Indicators of NIP

Percentage of the fully immunized children

There was a notable decline in the full immunization coverage of the children by 7% in the FY 2079/80 as compared to last FY. The coverage of vaccination was below national average in Koshi and Gandaki Provinces (Fig 4.21). The decline might be attributable to the stigma associated with vaccination during COVID-19 vaccination and disruption of the regular services due to COVID-19 pandemic.

Fully Immunized Children (%)

National

78 — 2077/78

91 — 2078/79

84 — 2079/80

Province
(2079/80)

KOSHI — 74

MADHESH — 85

BAGMATI — 88

GANDAKI — 75

LUMBINI — 88

KARNALI — 85

SUDURPASHCHIM — 91
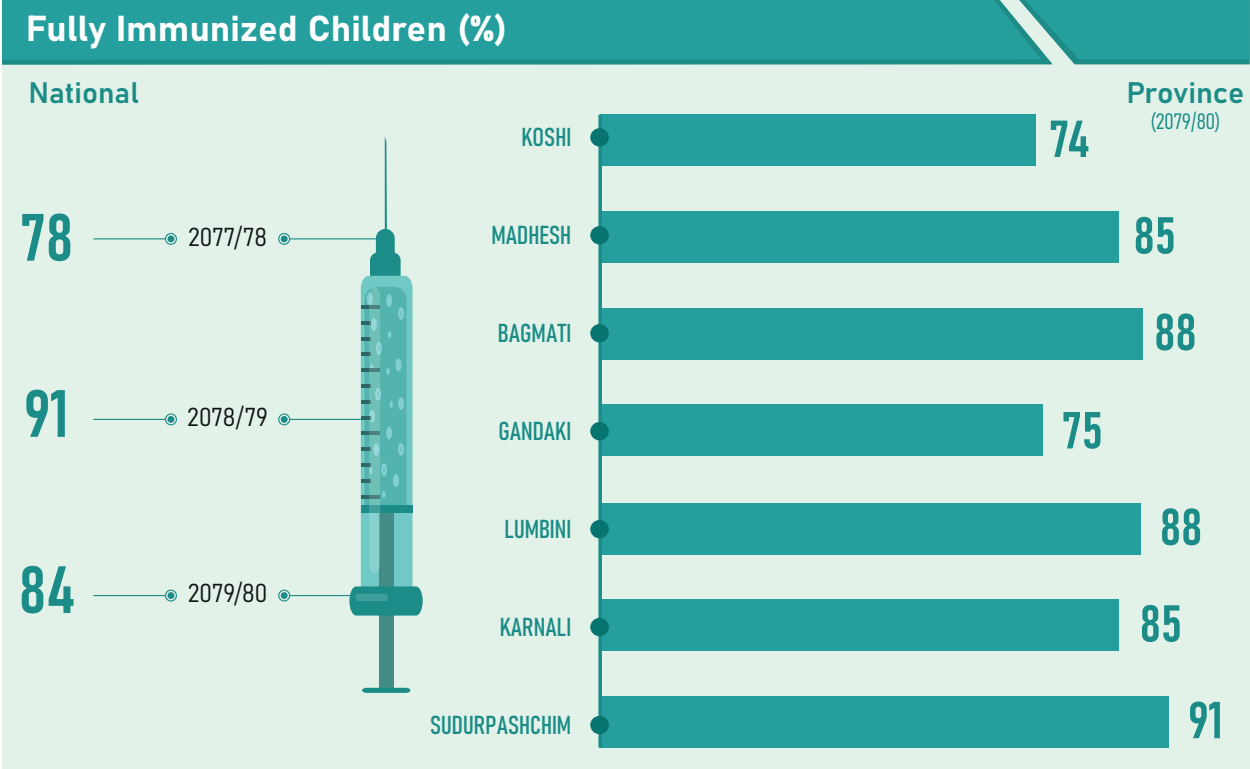
Figure 4.21 Fully Immunized Children as per NIP schedule

Access and utilization of immunization services

NIP monitors district status based on the accessibility and utilization of immunization services, categorizing them into four categories. This classification is determined by DPT-HepB-Hib1 coverage and the dropout rate of DPT-HepB-Hib1 vs MR2, reflecting accessibility and utilization, respectively. In FY 2079/80, 35 districts exhibit both good access and good utilization, while 9 have good access but poor utilization, and 32 show poor access but good utilization. Notably, Mugu experiences both poor access and poor utilization (Fig 4.22).

- ■ Category 1 (Less Problem) High Coverage (<90%) Low dropout (<10%)
- ■ Category 2 (Problem) High Coverage (>90%) High dropout (>10%)
- ■ Category 3 (Problem) Low Coverage (<90%) Low dropout (<10%)
- ■ Category 4 (Problem) Low Coverage (<90%) High dropout (>10%)
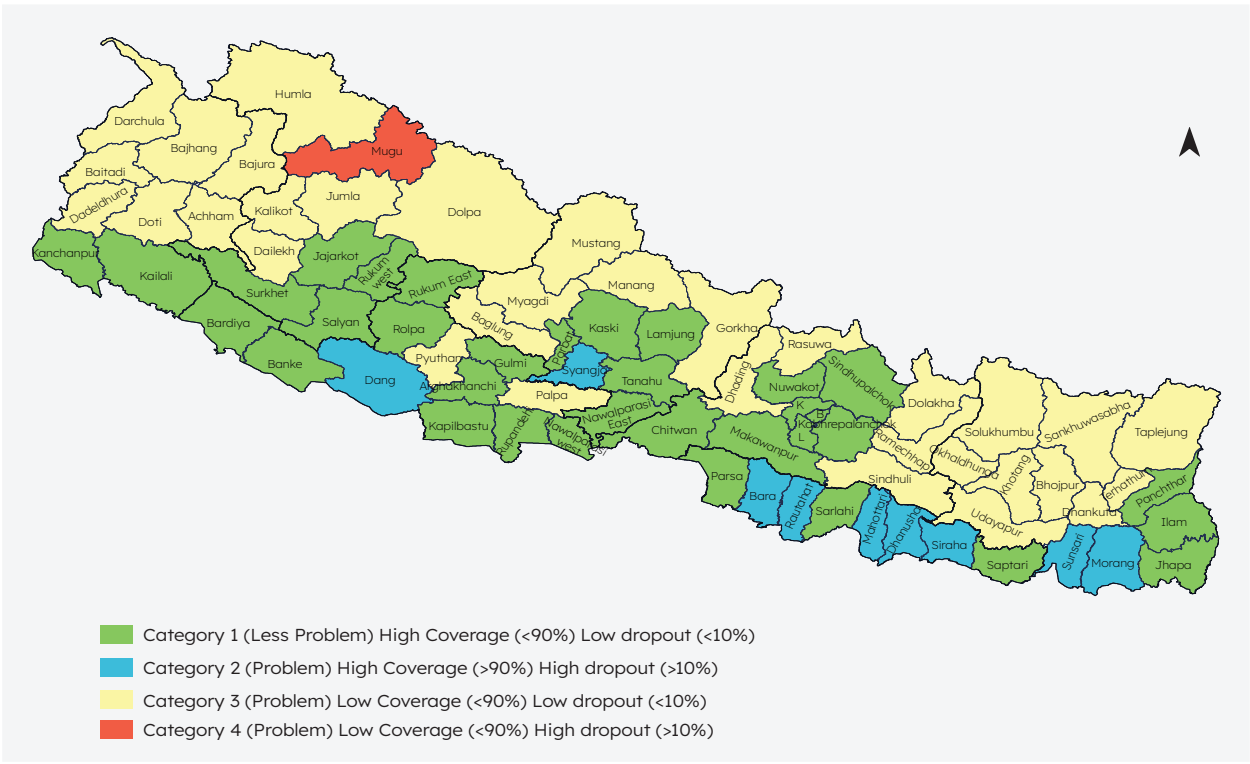
Figure 4.22 District categorization based on access and utilization in FY 2079/80

Programmatic risk assessment of NIP

Risk assessment model employs the following parameters: (a) unimmunized children, (b) immunization coverage, (c) measles cases, and (d) measles outbreaks. Districts and municipalities are scored based on routine immunization coverages and vaccine preventable disease surveillance(measles) indicators, including:

- 3-year average of DTP-HepB-Hib 3 coverage (%) and number of infants missed DTP-HepB-Hib 3

- 3-year average of MR2 coverage (%) and Number of 12-23 months old children missed MR2

- 3-year average annual confirmed measles case count (any age)

- 3-year sum of confirmed measles outbreak count

In FY 2079/80, three districts are at "Very High Risk (VHR)", 18 districts are at "High Risk (HR)", 31 districts are at "Medium Risk (MR)" and 25 districts in "Low Risk (LR)". Similar classification has been done at local government levels as well (Fig.4.23., 4.24).
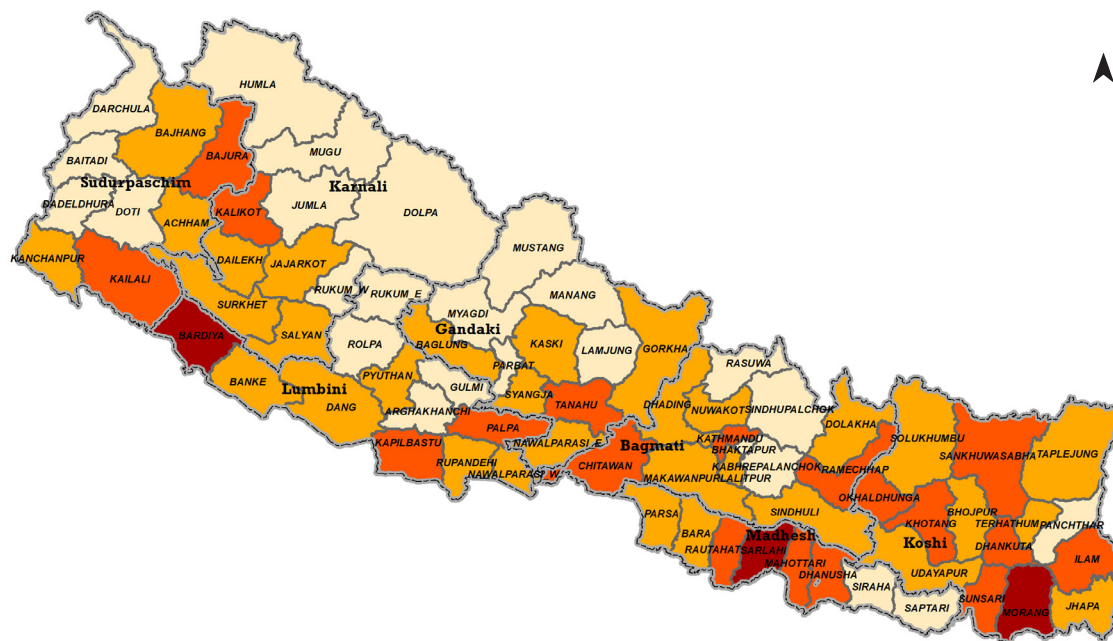
Figure 4.23 District wise programmatic risk assessment
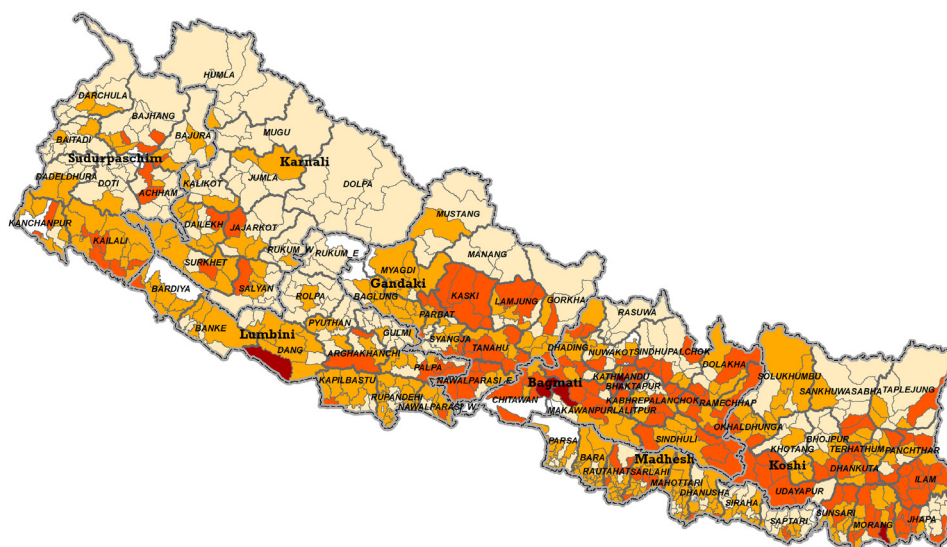
Figure 4.24 Municipalities' level programmatic risk

Further analysis of ward level immunization data for municipalities

Ward-wise immunization coverage data was further analyzed for FY 2079/80 to calibrate the status of the immunization. It was observed that nearly every new-born was vaccinated with BCG. It is noteworthy that in an average 17 in 100 BCG vaccinated children are likely to miss full-immunization (FI) which is consistent with the findings of NDHS 2022 (16%) (Fig 4.25). In addition, there is also gap between BCG coverage rates and Td vaccination of pregnant mothers (Fig 4.26). Operational research may be useful to explore the reasons for low maternal Td vaccination and means to overcome them.
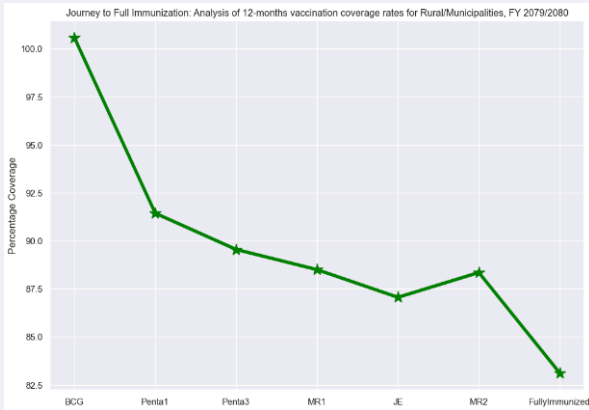
Figure 4.25 Journey to full immunization of a child FY 2079/80
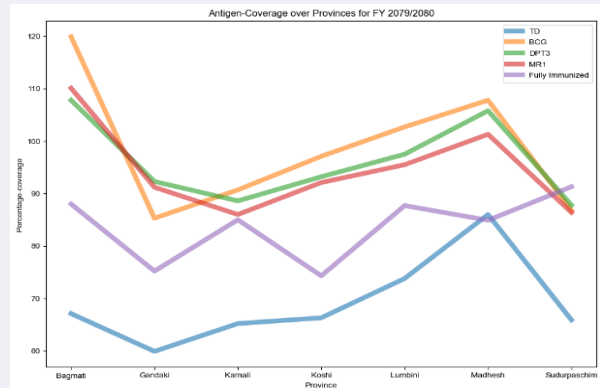
Figure 4.26 Provincial disaggregation in the immunization of children and Td Immunization of Pregnant women FY 2079/80
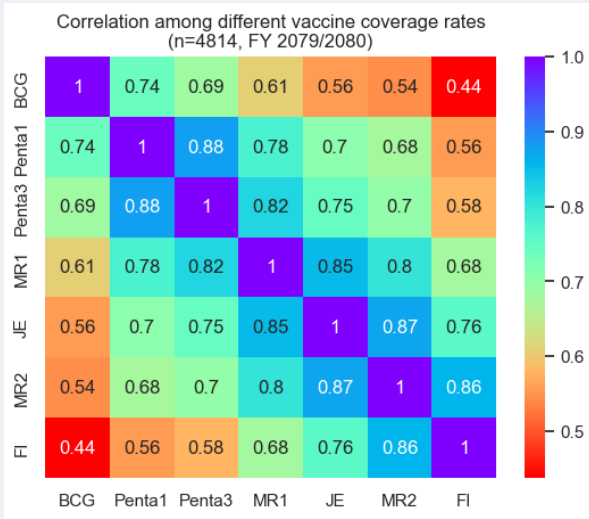
Figure 4.27 Correlation heat map shows high correlation between FI and MR2 coverage
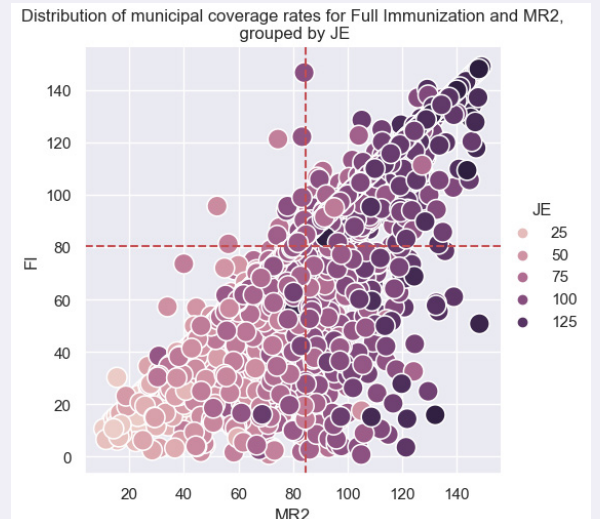
Figure 4.28 Scatter plot to explore relationship between FI and MR2 coverage grouped by JE coverage

Method: All municipalities (n=753, 100%) reported during FY 2079/2080. Exploratory Data Analysis (EDA) was performed using Python 3.10. A total of 6,741 wards (100%) of 753 local levels from IHIMS database were reviewed. Outliers were identified and discarded in two steps- i. values falling beyond the range (Mean ± 3 Standard Deviation) and ii. values falling outside of the whiskers in boxplots. Finally, the coverage rates for 4,814 wards from 686 local level government) were analysed and interpreted.
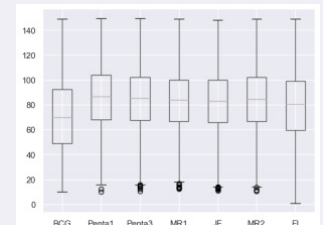
Figure 4.29 Box plot to identify outliers

Further analysis was done on FI status and type of antigen coverage at ward levels. The correlation heat map reveals a substantial correlation (r=0.86, p=0.001 at 95% CI) between FI and MR2 coverage, FI and MR1 coverage (r=0.71, p=0.048 at 95% CI) and FI and JE coverage (r=0.83, p=0.010 at 95% CI) with median MR2 coverage at 84.6% and FI at 80.4% for FY 2079/2080. The strong correlation of FI with MR1, JE and MR2 suggests a higher likelihood of full vaccination when a child receives any of these vaccines, emphasizing the need for focused campaigns. Among the antigens, MR2 and JE had strong correlation (r=0.82, p=0.03 at 95% CI) (Fig 4.27). Notably, correlations between FI and other vaccines were not statistically significant (p>0.05).

The scatter plot (Fig 4.28), exploring the relationship between FI and MR2 coverage 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 and FI. Bivariate analysis indicates that 44.4% wards (n=2,138) from 587 Local Level Government clustered at category 'd' signifying low FI status due to low MR2 coverage rates. Grouping of the wards in category 'd' by province shows Koshi (n=485) has the maximum number of wards followed by Bagmati (n=400), Gandaki (322), Lumbini (266), Madhesh (218) and Sudurpaschim (n=216) in the category. 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 Local Level Government and finally contributing to provincial and national FI rates (Figure 4.25-4.29 are based on HMIS/DoHS).

Box 4.2 SWOT analysis of NIP

Strength	Opportunity
• Priority program of government • Cold chain storage capacity • Vaccine and other vaccine related logistic supply optimum up to district level	• Sustainability of Full Immunization Declaration • Ownership and coordination at all levels • Regular update of routine immunization microplanning focusing on high-risk area • Hygiene promotion in routine immunization to build the trust and efficacy of enteric vaccine (Rota, TCV)
Weakness	**Threat**
• Sub optimal quality immunization program data: Under and over-reporting • Sub optimal inventory keeping and distribution system • High vaccine wastage rate • Inadequate monitoring, supervision, and feedback mechanism • Mapping of high risk areas for missed children not updated	• Inadequate HRH especially in Metro/Sub - Metropolitan, MCH / Institutional clinics, and ill-defined JD of AHW and ANM (for vaccinations) • Immunization waste management • Slow consumption of COVID- 19 booster doses • Cold chain expansion without fulfilling minimum required criteria

Source: The provincial review meetings in 2079/80

4.2 Integrated Management of Neonatal and Childhood Illness (IMNCI)

4.2.1 Overview of IMNCI Program

The CB-IMNCI program has a vision to provide targeted services to 90% of the estimated population by 2030 as shown in the diagram guided by Vision 90 by 30 (Fig 4.30). Nepal has implemented both the community based and facility based IMNCI approaches. CB-IMNCI is an integration of CB-IMNCI and CB-NCP Program as per the decision of MoHP on Ashoj 2071 BS (October 14, 2015). This was scaled up to all 75 districts in FY 2071/72 (2016); to all current 77 districts (Fig 4.30).

The program aims to address major childhood illnesses like Pneumonia, Diarrhoea, Malaria, Measles and Malnutrition among under 5 year children in a holistic way. Child Health & Immunization Services Section concentrates on monitoring, supportive supervision, onsite coaching, and RDQA to enhance the CB-IMNCI program. This initiative is geared towards reaching unreached populations and communities by implementing the Equity and Access Program (EAP). The CB-IMNCI program is reported to contribute in reducing the prevalence of pneumonia and diarrhea significantly The health care seeking behavior and practices have been improved at the household level. In FY 2079/80, the treatment chart booklet was revised as per WHO updates to aid health workers in classifying, treating, and managing childhood diseases classified as up to two months and two months to five years old children.

Figure 4.30 CBIMNCI Program Vision
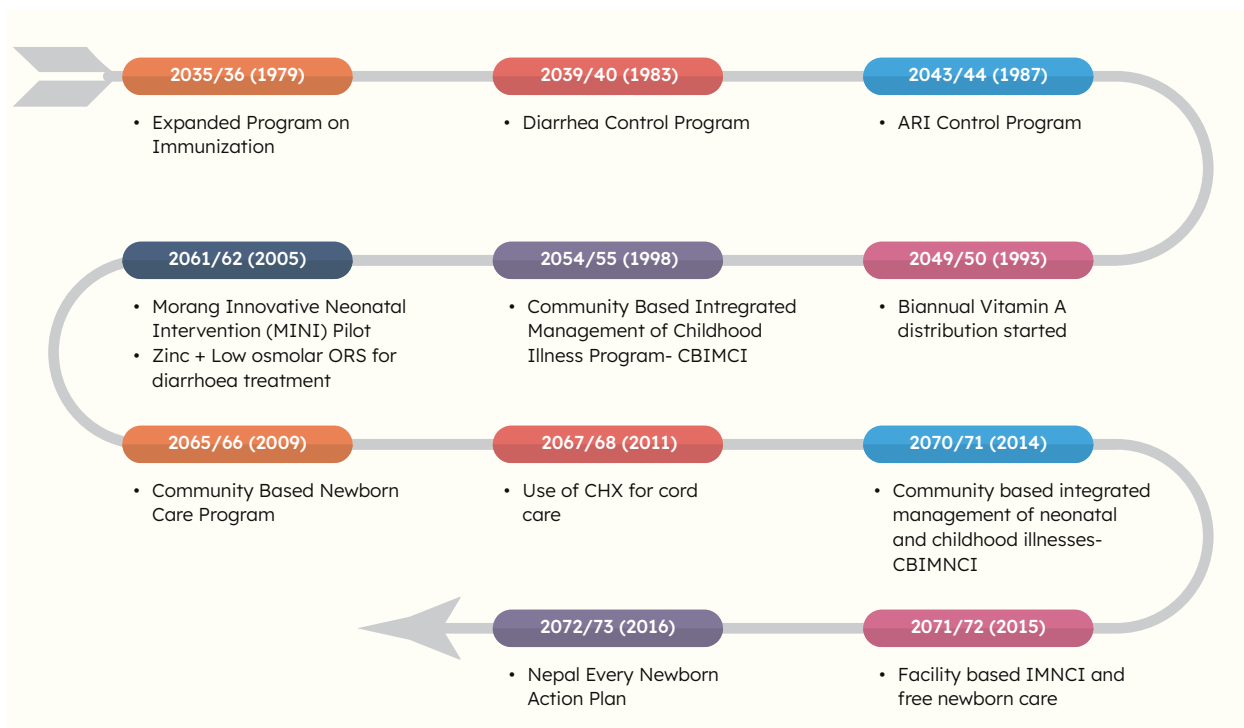
Figure 4.31 Development of CBIMNCI Program in Nepal (year in parenthesis is in AD)

In 2073 BS, FWD initiated Facility Based (FB) IMNCI to address gaps in managing cases referred from peripheral health institutions. Linked with CB-IMNCI, it uses Emergency Triage and Treatment (ETAT) at health facilities. The thematic approach covers new-born care, cough, diarrhea, fever, malnutrition, and anemia. The goal is to equip district hospital teams for effective management of complicated under-five and neonatal cases. Training, three days for Paramedics and Nursing staff, and six days for Medical Officers, occurs at district, provincial, and federal hospitals.

4.2.2 Major Activities in FY 2079/80

Comprehensive new-born care program

To curb neonatal mortality, a "Comprehensive New-born Care Training Package (For Level II Hospital Care)" was developed for pediatricians, senior medical officers, and medical officers in level II care hospitals. The six days training strengthens the health system by equipping health providers at all tiers with essential skills. It focuses on basic skills for managing small or sick newborns, covering counseling, infection prevention, newborn care, feeding, neonatal resuscitation, thermal protection, fluid management, identification, and management of small or sick neonates, low birth weight, neonatal sepsis, and common procedures. Started in Mangsir/Paush 2073, the annual training enhances the capabilities of medical officers. NHTC introduced a similar package in 2074 for Nurses in collaboration with FWD.

Free new-born care services

Since 2071/72, GoN has been ensuring free treatment for sick newborns across all healthcare levels, aiming to eliminate health service disparities due to poverty. The program categorizes services into three packages: A, B, and C. Health posts and PHCCs provide Package 'A,' district hospitals with Special Newborn Care Units

(SNCUs) offer Package 'B' and 'A,' while provincial and tertiary hospitals provide Neonatal Intensive Care Unit (NICU) services for all three packages. The government allocates the necessary budget and issues directives for nationwide implementation of the free newborn care packages. The objective is to achieve SDGs by reducing newborn mortality through increased access to care services. The program involves reimbursement of the cost of care to health institutions for providing free inpatient care to sick newborns. Regular annual reviews of Free Newborn Care Services are conducted at the Federal and Provincial levels

Kangaroo mother care program

Kangaroo mother care (KMC) is a proven, cost-effective intervention for stable preterm/LBW babies implemented by GoN within the CB-IMNCI program. It aims to prevent hypothermia and treat low birth weight babies and small sick newborns through continuous and prolonged skin-to-skin contact between the mother and baby.

Equity and access program

The Equity and Access Program was developed to increase the access to new-born & child health services by the maximum mobilization of the local community. It mainly targets the inaccessible newborn and under five children by utilizing the CBIMNCI.

Routine data quality assessment (RDQA)

Routine Data Quality Assessment is regular data testing system to test the quality of data coming from information system and to carry out improvement programs by measuring various aspects such as structure of monitoring and evaluation of overall information system management, definition of indicators, guidelines of records and reports, records and reporting materials, data management process and use of data.

Onsite coaching

Onsite coaching is to develop skill & confidence enhancement of health service providers at the service point. The concept of onsite mentoring was developed to enhance the service provider's knowledge skills in order to perform the care service delivery effectively. It helps to improve knowledge & skills through creating an enabling working environment for service providers. Onsite coaching helps to retain their skills to improve their capacity for assessing, treating and managing cases.

Early childhood development: health sector's responsibility

Early childhood development ECD services ideally span multiple sectors, but the health sector, with its unique advantages, plays a crucial role in supporting nurturing care for childhood development. Interventions in reproductive, maternal, newborn, and child health directly impact child development, covering areas like immunization, nutrition, mental health, HIV prevention, and hygiene. With extensive contact with pregnant women, lactating mothers, infants, and young children, the health sector is well-placed to implement interventions for both physical and cognitive development. Expanding maternal and child health services to cover all dimensions of the nurturing care framework serves as a vital entry point for collaborative, multi-sectoral efforts to support families and reach very young children. National framework for health sector response to ECD is based on the available evidence and local context to implement impact interventions related to ECD through health service outlets. While acknowledging the importance of interventions related to first two components of nurturing care framework, this national framework focuses on incorporating three other components- responsive caregiving, safety and security and early learning. By adopting this framework, the health sector aspires to put equal emphasis on both survival and thriving young children.

Other activities

Capacity Building
FB IMNCI training for nursing staffs and paramedics
CBIMNCI onsite coaching for health workers
Capacity building of provincial and district level managers and focal persons through orientation (7 provinces-7)
Free newborn care review with federal hospitals and other supporting stakeholders
CBIMNCI training to health service providers
Orientation of Equity and Assess guideline
Assess and train health care providers of Provincial and Federal Hospitals -Point of Care Quality Improvement (PoCQI)

Procurement: Equipment and supplies
Procurement of various equipment, commodities, and medicines for IMNCI programs (ORS, Zinc, Amoxicillin, Gentamycin, Chlorohexidine gel) at provincial level.

Preparation/Revision of Guidelines, Protocols and Packages
Establishing/Strengthening SNCU/NICU
Total NICU established till date: 13 hospitals Total SNCU established till date: 61hospitals
Printing of CBIMNCI training materials, FB-IMNCI training manuals, Comprehensive New-born Care (Level II) Training Materials (Guidelines, Handbook, etc.)
Implementation of New-born services and programs
Implementation of Free New-born Care Program at federal, provincial, district and local level hospital.
Implementation of Point of Care Quality Improvement Program (PoCQI)
Orientation on Recording & Reporting tools of New-born Care Program Development of NENAP 2023-2030 Development of KMC guideline
Formulation of health sector related Early Childhood Development (ECD) Guideline.

4.2.3 Key Indicators of IMNCI Program

Indicators of CBIMNCI program

CB-IMNCI program has identified six major indicators to monitor the program: 1) % of institutional delivery, 2) % of new-born who had applied Chlorhexidine gel immediately after birth, 3) % of infants (0-2 months) with PSBI receiving complete dose of Injection Gentamicin, 4) % of under 5 children with pneumonia treated with antibiotics, 5) % of under 5 children with diarrhoea treated with ORS and Zinc and, 6) Stock out of the 5 key CB-IMNCI commodities at health facility (ORS, Zinc, Gentamicin, Amoxicillin, Chlorohexidine).

The national target for institutional delivery by the year 2030 is to achieve 90%; In the fiscal year 2079/80, the national average for institutional deliveries was 83. and has increased over the last three fiscal years in all the provinces. In FY 2079/80 with the lowest rate observed in Madhesh Province (65%) and the highest in Bagmati Province (101%). Chlorhexidine application for newborn umbilical cords (HF+FCHV) was reported at 83% nationally. However, there was notably low coverage in Bagmati Province (57%) (Table 4.2).

Regarding the indicators of management based on CBIMNCI protocols, Possible Serious Bacterial Infection (PSBI) cases in children under two months, more than half (54%) received a complete dose of Injection. Gentamicin nationally. In Karnali province the coverage was for 89% cases and in Sudurpaschim province 60% cases. While remaining five provinces had this coverage below national average. Antibiotic use for pneumonia treatment exceeded 100% in six provinces, with the national average at 102%. The inclusion of non-pneumonia cases in the reporting might have led to the figure surpassing 100%. In the treatment of diarrheal cases among under-five children in 2079/80, 96% received ORS and Zinc nationally, with the highest rate in Lumbini, Gandaki and Sudurpaschim provinces (99%), and the lowest in Koshi Province (89%) (Table 4.2).

Cases of Management of 0-28 days Newborn

In this FY, 42,607 newborns received treatment in health facilities and PHC/ORC clinics, indicating a notable increase of 9,656 cases compared to the previous year. The reported deaths decreased from 84 to 16. Due to a protocol change, cotrimoxazole treatments were not administered by any FCHVs. Nationally 3,725 cases were classified as PSBI, showing a 10.5% reduction from the previous year, with the highest cases in Karnali (n=932) and Lumbini (n=868) provinces.

Table 4.2 Status of CB IMNCI program monitoring indicators by province in three FYs 2077/78-2079/80

Indicators	Year	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	National
% of Institutional Delivery	2077/78	58	50	60	41	77	70	72	61
	2078/79	69	55	97	63	90	70	80	75
	2079/80	86	65	101	68	96	83	86	83
% of newborn applied with CHX Gel	2077/78	81	79	63	90	91	83	96	82
	2078/79	90	81	65	98	97	99	100	87
	2079/80	83	81	57	97	98	97	99	83
% of PSBI Cases received complete dose of Inj. Gentamycin	2077/78	38	17	25	23	62	65	69	50
	2078/79	45	32	23	32	40	75	60	48
	2079/80	41	41	39	25	36	89	60	54
% of pneumonia cases treated with antibiotics[5]	2077/78	127	149	129	113	109	96	106	121
	2078/79	106	150	108	102	96	99	104	109
	2079/80	100	116	99	102	100	99	101	102
% of diarrheal cases treated with ORS and Zinc	2077/78	92	97	94	102	97	96	97	96
	2078/79	89	94	93	97	99	95	97	95
	2079/80	89	94	95	99	99	97	99	96

Source: HMIS/DoHS

5 The coverage if more than 100%, this might be due to missed entries for diagnosis or due to over the counter antibiotics already being used by the patients before coming to the health facility requiring to complete the doses

Incidence, case Fatality And Management Of Diarrhoea under 5 children

In FY 2079/80, incidence of diarrhoea was 115.1 per 1,000 under 5 children with a threefold decrease from previous fiscal years. Karnali Province had the highest incidence (216), followed by Lumbini Province (161.6), and the lowest incidence was reported in Bagmati Province (78.8). There were four diarrhoeal deaths, one death each was recorded in Bagmati, Madhesh, Karnali, and Sudurpaschim Provinces, with no reported diarrhoeal deaths in Lumbini, Koshi, and Gandaki Provinces (Table 4.3).

The proportion of diarrhoeal cases treated with ORS and Zinc as per IMNCI national protocol at national level was 93.6% which was similar to the previous year trend, with more than 90% of diarrheal cases were treated with Zinc and ORS in all provinces. There were 0.6% of diarrheal cases treated with intravenous (IV) fluid (Table 4.3).

Acute Respiratory Infections and Pneumonia

In FY 2079/80, there were 689,310 registered Acute Respiratory Infection (ARI) cases in HFs and PHC/ORCs, with 33.6% categorized as pneumonia and 0.37% as severe pneumonia. The national pneumonia incidence for under 5 children decreased by over 22%, reaching 55.1 per 1,000. Karnali province had the highest ARI incidence (406/1,000 under 5 children), followed by Sudurpaschim (356/1,000 under 5 children), and Madhesh had the lowest (209/1,000 under 5 children). Karnali and Sudurpaschim also had the highest pneumonia percentage among ARI cases (19.98% and 16.21%), while Madhesh had the lowest (8.79%) (Table 4.3).

There were 22 deaths due to ARI in this FY. The ARI case fatality rate per thousand at health facilities decreased to 0.01 per 1,000 cases in FY 2079/80 compared to 0.02 of last fiscal year FY 2078/79.

Table 4.3 Incidence, deaths and management of diarrhoea under 5 children by province FY 2077/78-2079/80

Indicators	Year	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	Total National
Estimated <5 years population prone to Diarrhoea[6]	2077/78	497,208	634,058	652,626	251,327	514,162	183,481	295,726	3,028,588
	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
Incidence of Diarrhoea /1000 U5 Population	2077/78	298	339	213	235	357	653	547	339
	2078/79	310	325	311	263	347	595	601	365
	2079/80	79	129	79	83	110	216	162	115
Diarrhoeal Deaths	2077/78	14	3	28	0	3	1	1	50
	2078/79	9	3	10	4	0	2	6	34
	2079/80	0	1	1	0	0	1	1	4
Diarrheal cases treated with Zinc+ORS (HF+ORC+ FCHV)	2077/78	132,243	194,054	128,793	59,206	173,177	110,516	152,475	950,484
	2078/79	28,712	69,893	28,245	14,510	47,997	37,081	42,687	269,125
	2079/80	29,658	73,995	30,950	15,449	51,684	38,516	39,689	279,941
Diarrhoeal cases provided intravenous Fluid (HF)	2077/78	265	496	109	25	269	232	215	1611
	2078/79	467	422	177	33	244	275	269	1,887
	2079/80	351	469	158	69	35	269	272	1,623

Source: HMIS/DoHS

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6 The change in estimates to lower number is related to the estimates on pregnancies, changes in TFR

Box 4.3 SWOT Analysis of IMNCI Program

Strength		Opportunity	
• Covers both community and facility based management of the common newborn and childhood illnesses		• Engagement of the private sector	
Weakness		**Threat**	
• Lack of dedicated human resource in Hospital for SNCU/NICU/KMCU • Inadequate IEC and BCC activities as compared to the approved program implementation guideline, so as to improve the demand of CH services • Lack of equipment to deliver new-born and child health services at service delivery points		• No provision of CBIMNCI dedicated officer at province & municipalities • Difficulties to implement free new-born care guideline as expected • Frequently stock-outs of essential commodities in districts, municipality and community level. • Inappropriate referral mechanism	

5 Nutrition Program

Family Welfare Division	Maternal and Newborn Health Section	Child Health and Immunization Section	Nutrition Section	Family Planning and Reproductive Health Section

5.1 About the Program

Between FY 2052/53 and FY 2078/79, Nepal made significant strides in reducing severe stunting and wasting in children under five, dropping from 57% to 25% and 15% to 8%, respectively.[1] However, challenges persist, with a 19% prevalence of underweight among children less than five years. Anemia still remains a major concern, affecting 43% of children under five and 23.1% of women aged 15-49. Of particular concern is the 6–23-month age range, where over 65.7% of children have anemia.[2] The overall program is guided by the Nutrition Strategy, 2077 (Box 5.1). Different nutrition programs are in different phases of piloting, scale up and nationwide coverage (Box 5.2).

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

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 Modality of implementation of nutrition program/services

Nationwide programme	Scale up programme	Pilot programme
Maternal, Infant and Young Child Nutrition (MIYCN) Growth Monitoring and Promotion Biannual distribution of Vitamin A and Albendazole Adolescent Nutrition Programme Control and Prevention of Iodine Deficiency Disorders (IDD) School Health and Nutrition Program Integrated Management of Acute Malnutrition	Mother Baby Friendly Hospital Initiative (MBFHI) Nutrition Rehabilitation Center (NRC) Comprehensive Lactation Management Center Mother and Child Health and Nutrition Programme (MCHN) in Jumla, Dolpa, Mugu, Kalikot and Humla districts of Karnali Province and Solukhumbu district of Koshi Province	Management of Moderate Acute Malnutrition programme in Siraha of Madhesh Province.

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[1] Ministry of Health, New ERA, and ORC Macro. 1996. Nepal Demographic and Health Survey (NDHS), Kathmandu, Nepal: Ministry of Health [Nepal].

[2] Ministry of Health and Population [Nepal], New ERA, and ICF. 2023. Nepal Demographic and Health Survey 2022. Kathmandu, Nepal: Ministry of Health and Population [Nepal].

5.1.1 Growth Monitoring and Promotion

Children (0-23 months) who are registered for growth monitoring and promotion are monitored for both anthropometric as well as developmental milestones and general health. The program is guided by "Growth Monitoring and Promotion Guideline 2079" (Fig 5.1).

5.1.2 Integrated Management of Acute Malnutrition (IMAM)

The Integrated Management of Acute Malnutrition (IMAM) programme has been implemented in Nepal since 2064/65 (2008), with the help of UNICEF (Fig 5.2). The programme was initially piloted in five districts and then scaled up to seven provinces across the

Figure 5.1 Anthropometric measure during GMP visit

Source: NHEICC/DoHS

country. The IMAM program will be expanded with the implementation of the Comprehensive Nutrition Specific Interventions (CNSI) training package.

Figure 5.2 Four components of IMAM Program

Nutrition Rehabilitation Centers (NRCs) help children with malnutrition 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.

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

In 2065/66, GoN, in collaboration with UNICEF and an implementing organization, initiated the "Integrated IYCF and MNP project" as a pilot program in six districts. The intervention targeted children aged 6-23 months, distributing 60 sachets of Baal Vita (Fig 5.3) every six months. Baal Vita, containing 15 micronutrients, including iron and zinc, addresses iron deficiency anemia. 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.

Figure 5.3 Baal Vita Micronutrient Powder

Source: NHEICC

5.1.4 Control and Prevention of Iron Deficiency Anemia

Iron deficiency anemia 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 biannual distribution of Vitamin A to children aged 6-59 months commenced in eight districts and was scaled up in 2058/59 and expanded nationwide in 2066/67. Facilitated by FCHVs through campaigning, the distribution occurs twice a year, specifically on Baisakh 6th and 7th and Kartik 2nd and 3rd. Initiated in 2067, this activity is combined with biannual albendazole distribution targeting 12-59 months old children, free of charge.

5.1.6 Control and Prevention of Iodine Deficiency Disorders (IDD)

To address IDD, MoHP initiated a policy in 2029/30, mandating the fortification of all edible salt through universal salt iodization. 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

Initiated in 2063, primary goal of the school health and nutrition program (SHNP) is to improve the physical, mental, emotional, and educational status of students (Fig 5.4). SHNP are integral to Nepal's efforts to enhance the overall well-being of its children and youth. 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. One school- one health worker program is being implemented through NSSD and provinces, elaborated in Chapter 7 section 7.4 of this report under school health and nursing service program.
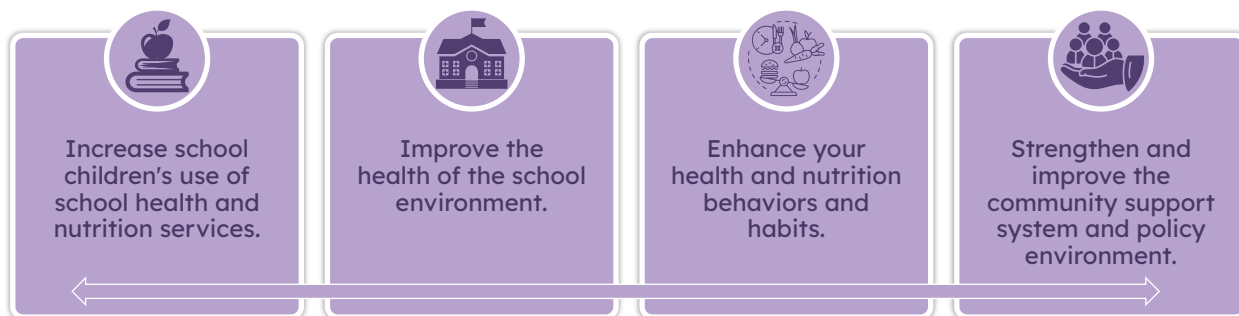
Figure 5.4 Strategic objectives of SHNP

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 Training Programme

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 (Fig 5.5).
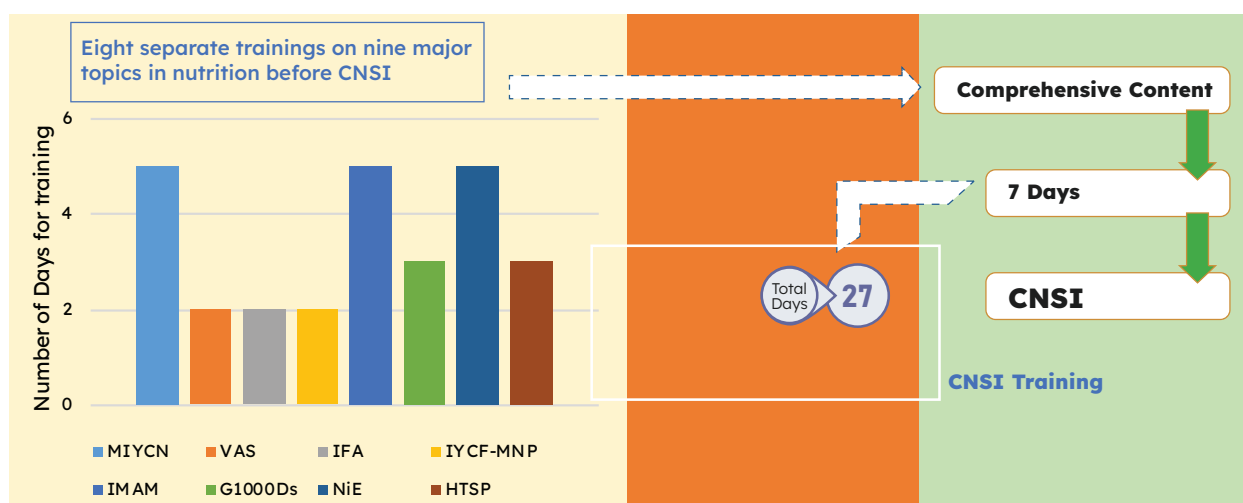
Figure 5.5 Remarkable reduction of number of days for training with CNSI development

5.1.9 Mother and Child Health and Nutrition (MCHN) Program

GoN and World Food Program Nepal (WFP) have entered into an Operational Agreement to implement the Mother and Child Health and Nutrition (MCHN) Component, with Karnali and Solukhumbu designated as priority districts. The primary goals of MCHN include:

- Prevention and reduction of anemia, stunting, and wasting
- Increase in growth monitoring and promotion
- Improvement in access to and utilization of health nutrition services

The government has prioritized 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.

5.1.10 Mother Baby Friendly Hospital Initiative (MBFHI)

Nepal has implemented MBFHI in 22 hospitals, guided by the MBFHI guidelines developed in 2073. The Nutrition Strategy Action Plan 2077/78 to 2081/82 aims to extend MBFHI to provincial hospitals. The orientation began in FY 2076/77 and expanded to additional hospitals in subsequent fiscal years.

5.2 Major Activities for FY 2079/80

Procurement and distribution of Nutrition Commodities (Vitamin A, ready-to-use therapeutic food (RUTF), super cereal plus/ready-to-use supplementary food (RUSF), F 75, F 100, MNP, Height/weight Machine (Digital scale) Shakir's Tape (Mid-upper arm circumference (MUAC)).

National Nutrition Program Review

National Review of Nutrition Rehabilitation Center

Capacity building of Breast Milk Substitute inspector appointed according to the Breast Milk Substitute (Sale, Distribution and Control) Act 2049.

Nutrition Related Days Celebration (like- Breastfeeding week, School health and nutrition week, iodine month)

CNSI Training

In FY 2079/80, CNSI training concluded in all 77 districts of Nepal. In this fiscal year, three batches of CNSI ToT were conducted at Pokhara, Nepalgunj and Biratnagar in which 84 health workers of different cadres from auxiliary health worker (AHW) to Paediatrician were trained as master trainers.

Development of capacity building materials for health worker related to malnutrition management

Onsite coaching of nutrition specific programme

Nutrition in Emergency

In FY 2079/80, a five-day training program on nutrition in emergencies was conducted. The primary objective was to enhance the technical capacity of health workers and partnering staff, enabling effective implementation and management of nutrition programs during critical situations. The training aimed to equip participants with the skills and expertise necessary to address nutrition-related challenges in emergency settings. Specifically, the program focused on providing a comprehensive understanding of best practices and protocols in nutrition treatment during emergencies. Nineteen participants from all provinces, excluding Lumbini Province, and the Nepal Red Cross Society from the Kathmandu Valley were trained in Nutrition in Emergency Training of Trainers (ToT). Additionally, contingency plans for emergencies have been prepared by all provinces.

Orientation on MBFHI

Advocacy meeting with Education and Health Committee of Federal Parliament of Nepal.

Nutrition related guidelines preparation

Nutrition Technical Committee (NuTeC) meeting and strengthening.

Scale up of MBFHI

As of FY 2079/80, 13 hospitals from FWD and 21 hospitals from province health directorate have been endorsed as MFHI hospitals making a total of 34 MBFHI hospitals.

School Health and Nutrition Training Manual Preparation and Printing

Master training of trainer's on SHNP

The three-days master training of trainers on SHNP focused on a comprehensive range of topics. In FY 2079/80, this was done in two batches; the first batch, consisting of 25 trainees and second batch of 20 trainees including all seven provinces and multi-stakeholders.

Supervision and Monitoring of Nutrition Programme

5.3 Key Performance Indicators for Nutrition Services

Registered for growth monitoring and promotion

In last three FYs, child growth monitoring registration in Nepal varied across provinces. Koshi Province and Madhesh Province had a positive growth. While the peaked registration of Bagmati Province at 91.2% in 2078/79, had declined to 79% in 2079/80. Similar was scenario of Gandaki Province that peaked at 102.7% in 2078/79 had declined to 74.7% in 2079/80, Lumbini Province dropped to 69.4% (from 92.3%), Karnali Province dropped to 74.4% (from 102.6%) and Sudurpaschim Province 69.5% (from 103.7%) in FY 2079/80 (Fig 5.6).

This data underscores to revisit the cause of the decline in these five provinces. Moreover, for the percentages exceeding 100 might have been attributed to a higher number of children visiting compared to the estimated count of children aged 0-23 months in the province.
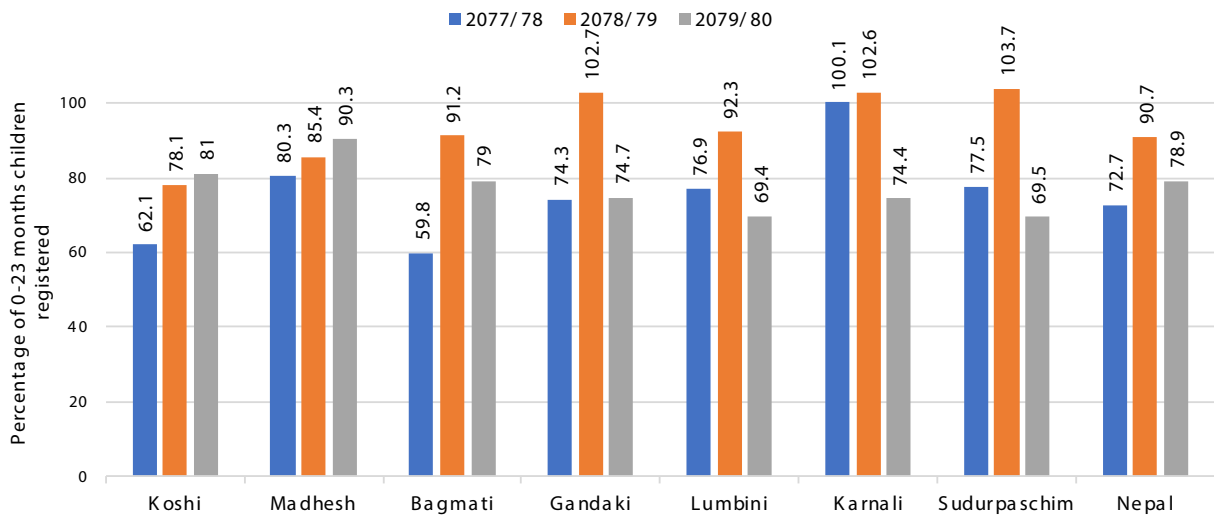
Figure 5.6 Percentage of children aged 0-23 months registered for growth monitoring

Source: HMIS/DoHS

Average number of visits for growth monitoring per child

The average number of visits for growth monitoring has improved over last three FYs. The national average for the number of visits is only six visits in FY 2079/80 which is only 25% of the ideal 24 visits though there was an increase as compared to the last fiscal years. Sudurpaschim has the highest average number visits of 10.5 followed by Karnali (9.5), Lumbini (9) and Gandaki (7.5). It is notable that the visits were less than national average in the Koshi (3.6), Bagmati (3.7) and Madhesh (4.0) Provinces (Fig 5.7).
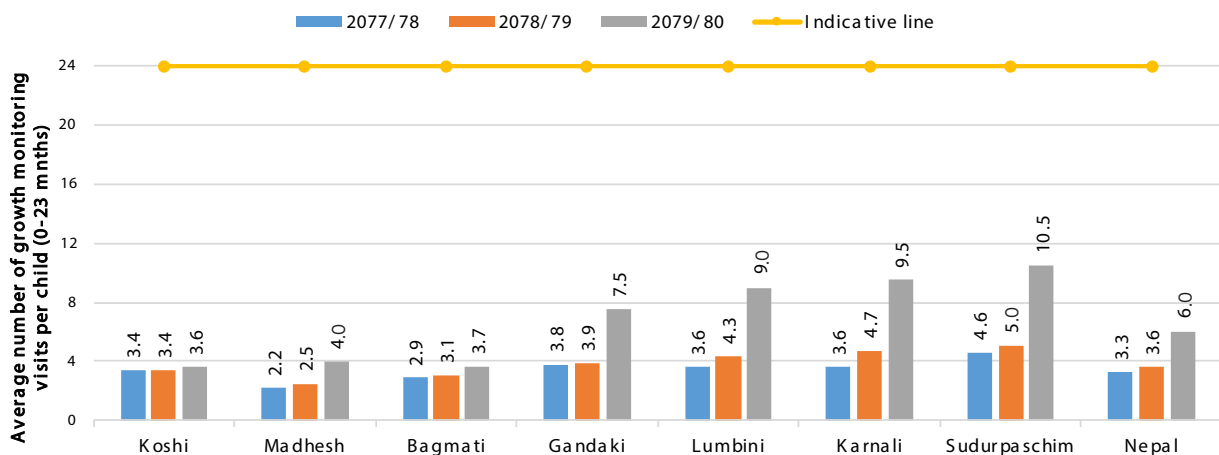
Figure 5.7 Average number of growth monitoring visits per child in last three FYs 2077/78- 2079/80

Source: HMIS/DoHS

Proportion of underweight among children registered for growth monitoring

Among the children registered for growth monitoring in the country, 2.7% were underweight at in FY 2079/80. There is different distribution of this indicator across the provinces and fluctuation in last three fiscal years. The data underscores the heterogeneous nature of underweight prevalence across Nepal's provinces, requiring tailored strategies for effective intervention. (Fig 5.8)
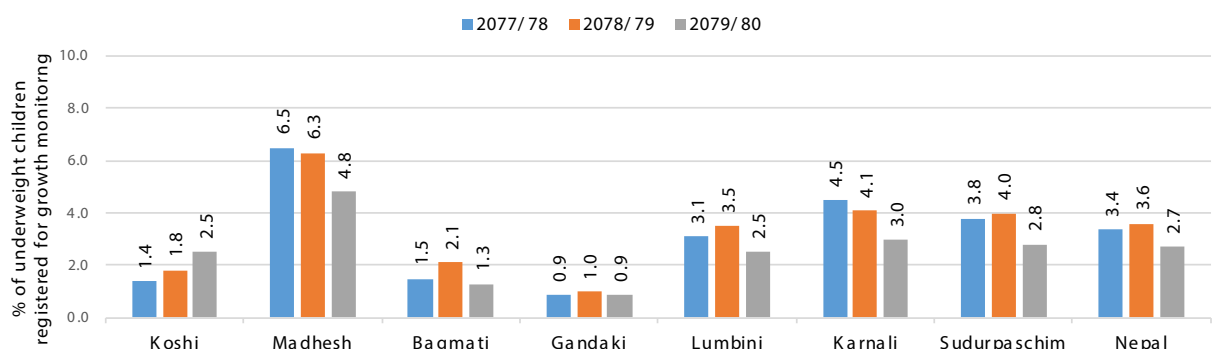
Figure 5.8 Average number of growth monitoring visits per child in last three FYs 2077/78- 2079/80

Source: HMIS/DoHS

Status of IYCF practices

Early initiation of breast feeding

The national average of newborns initiated with breastfeeding within one hour of birth was 84% in FY 2079/80 (Table 5.1).

Exclusive breastfeeding for six months

The exclusive breastfeeding rate increased at national level from 36.9% in 2077/78 to 54.9% in 2079/80. There is notably increment seen across the provinces. Four provinces- Gandaki, Lumbini, Karnali and Sudurpaschim have the exclusive breast-feeding rates above national average. However, the growth is not satisfactory considering the importance of the exclusive breastfeeding and newborn development and nutritional requirement (Table 5.1).

Timely introduction of complementary foods

The rate of timely introduction of complementary foods increased by 19.3% in FY 2079/80 (55%) as compared to last FY. There is steady growth in rate of timely introduction of the complementary food across all seven provinces in last three FYs. (Table 5.1) However, there are still two provinces- Koshi and Madhesh, that have lower rates than national average indicating the need for targeted interventions in areas with low coverage to ensure consistent and adequate nutrition for infants.

Table 5.1 IYCF Practices Indicators FYs 2077/78-79/80

Percentage of newborns who initiated breastfeeding within 1 hour of birth

FY	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
2079/80	84.0	88.2	84.5	54.4	96.3	93.9	99.5	99.4

Percentage of children aged 0- 6 months registered for growth monitoring who were exclusively breastfed for the first six months.

FY	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
2077/78	36.9	23.9	26.0	33.6	44.1	48.3	62.1	46.5
2078/79	49.0	33.0	33.1	48.6	54.7	64.7	74.5	65.3
2079/80	54.9	47.1	41.1	57.0	62.6	67.2	70.1	60.4

Percentage of children aged 6–8 months registered for growth monitoring who received solid, semi-solid or soft foods

FY	Nepal	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
2077/78	35.7	22.1	26.5	30.4	36.1	48.2	70.3	45.0
2078/79	49.6	32.1	33.2	48.9	54.6	62.8	87.7	66.4
2079/80	55.0	45.3	42.0	55.4	62.0	67.6	75.2	60.5

Source: HMIS/DoHS

Community mobilization for IMAM

There were 3,623,283 number of under-five children screened by FCHVs throughout the country using MUAC tapes for their nutritional status. Among the screened children, 2.3% were found to be undernourished – Moderate Acute Malnutrition (MAM) (2.1%) and Severe Acute Malnutrition (SAM) (0.2%) at national level. Remarkably, this was found higher than national average in Madhesh (3.5%), Karnali (3.4%) and Koshi (2.8%) provinces (Table 5.2).

Table 5.2 Screening of the under-five children by FCHVS using MUAC Tape and their malnutrition status FY 2079/80

Province	Normal		MAM		SAM		Total screened
	Number	Percent	Number	Percent	Number	Percent	
Koshi	372,493	97.2	9,851	2.6	831	0.2	383,175
Madhesh	712,194	96.5	23,839	3.2	2,283	0.3	738,316
Bagmati	671,829	99.2	5,135	0.8	382	0.1	677,346
Gandaki	188,851	99.3	1,198	0.6	118	0.1	190,167
Lumbini	618,297	97.6	13.671	2.2	1,261	0.2	633,229
Karnali	225,501	96.7	7,176	3.1	636	0.3	233,313
Sudurpaschim	751,615	97.9	15,000	2.0	1,122	0.1	767,737
Nepal	3,540,780	97.7	75,870	2.1	6,633	0.2	3,623,283

Source: HMIS /DoHS

Outpatient therapeutic center (OTC) services

Outpatients Therapeutic Centers (OTCs) cover services to 85-90% of SAM cases (6-59 months) in the community and provides services through the local health facility. There is significant decline in the number of cases treated though OTCs in FY 2079/80 (9,760) as compared to the FY 2078/79 (18,857). There was a surge in FY 2078/79 as compared to FY 2077/78 (7,103). This fluctuation is depicted across the provinces where all the provinces had an increase between FY 2077/78 and 2078/79 while a sharp decline in the cases between 2078/79 and 2079/80 (Table 5.3). The fluctuations observed in OTC cases could be attributed to shifts in healthcare-seeking behaviours, variations in health conditions prompting such visits, suggesting potential adjustments in health priorities, or improvements in health access and conditions influencing the demand for OTC treatments.

Inpatient therapeutic center

Inpatient therapeutic centers (ITCs) are facilities that provide inpatient care for malnutrition with medical complications as well as malnourished children under the age of six months. ITCs have been established throughout Nepal to address the high rates of malnutrition among children and adults. In FY 2079/80, a total of 798 cases took services from ITCs with highest contribution of 515 cases from ITCs in Madhesh Province. These numbers have grown significantly over the period of last three FYs. However, there was no case in Karnali and only three cases in Bagmati Province that utilized ITCs services (Table 5.3). These declines raise significant concerns and calls for further inquiry into ITCs functionality and possible need for new strategies and interventions to ensure effective ITCs functioning.

Table 5.3 Children from 6-59 months treated at OTCs and ITCs in last three FYs- 2077/78-2079/80

Province	Total number of children admitted in OTCs (FY)			Total number of children admitted in ITCs		
	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80
Koshi	250	1,099	1,371	9	23	36
Madhesh	2,670	4,976	3,193	86	92	515
Bagmati	307	825	564	23	18	3
Gandaki	238	517	258	25	12	39
Lumbini	1,323	3,625	2,062	27	62	82
Karnali	690	2,521	918	39	37	0
Sudurpaschim	1,371	4,623	1,704	65	80	123
Nepal	**6,849**	**18,186**	**9,760**	**274**	**324**	**798**

Source: FWD/DoHS

Nutrition rehabilitation center

There is a total of 26 NRCs, three each in five provinces, four in Sudurpaschim and five in Bagmati provinces accounting to a total 207 bed with services of NRCs. There were two deaths (0.09%) among 2042 cases admitted in the NRCs. Koshi and Madhesh provinces exhibit high admission rates with corresponding high discharge rates, suggesting successful treatment outcomes. Lumbini Province and Bagmati Province has a relatively lower discharge rate, indicating ongoing treatment or extended care needs (Table 5.4).

SPHERE Standard and Management of Malnutrition

The Sphere standards[3] 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.

Comparison of SPHERE benchmarks and the nutrition management performance in FY 2079/80, shows that mortality of the malnourished cases in average and

Table 5.4 Admission, discharge and deaths of malnourished children in NRCs in FY 2079/80

Province	Total admission	Total death	Total discharge
Koshi	222	0	220
Madhesh	172	0	170
Bagmati	303	0	159
Gandaki	119	1	132
Lumbini	370	0	356
Karnali	217	0	176
Sudurpaschim	451	1	435
Nepal	**1,854**	**2**	**1,648**

Source: HMIS/DoHS

throughout the provinces is within the benchmark (<3%) which suggested that there is 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 slightly above 15.3% in Karnali which suggests intervention required in Karnali in areas of ensuring consistent and prolonged treatment adherence. Similarly, for recovery the national average

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

surpasses the benchmark (>75%) while there are two provinces- Koshi (73.8%) and Bagmati (67.8%) showing the need of interventions to ensure that the cases stay in the treatment and recover effectively (Table 5.5).

Baal vita community promotion program

In FY 2079/80, national coverage of the MNP use of at least one cycle among 6-23 months' children has increased from 29.6% in FY 2078/79 to 40.9% in FY 2079/80. The three cycle coverage has also increased from 2.8 in FY 2078/79 to 5.1 in FY 2079/80 (Table 5.6). Data revealed that the returning back of users/guardians to the facility for the second batch of MNP is very poor. Thus, demands assessment of the contextual factors to improve increased coverage and utilization.

Table 5.5 SPHERE Standards and management of malnutrition in FY 2079/80

Province	Death %	Defaulter %	Recovered %
SPHERE Benchmark	<3%	<15%	>75%
Koshi	0.31	13.4	73.8
Madhesh	0.1	9.6	77.4
Bagmati	0	14.5	67.8
Gandaki	0.43	5.6	80.7
Lumbini	0.34	12.8	77.2
Karnali	0	15.3	79.8
Sudurpaschim	0.06	4.5	79.5
Nepal	0.16	10.5	77.2

Source: HMIS/DoHS

Table 5.6 MNP Utilization among 6-23 months' infants in last three FYs 2077/78-2079/80

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	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80
Koshi Province	16.1	15.6	32.0	2.7	1.8	2.5
Madhesh Province	56.3	18.8	53.1	6.6	2.6	5.8
Bagmati Province	25.1	10.2	27.7	4.5	1.8	4.2
Gandaki Province	14.7	14.1	34.6	2.5	1.6	3.8
Lumbini Province	30.0	22.3	48.7	6.6	3.9	6.6
Karnali Province	25.8	18.2	29.5	1.1	1.6	2.7
Sudurpaschim Province	19.4	54.0	44.3	5.0	5.8	8.8
Nepal	29.6	20.5	40.9	4.7	2.8	5.1

Source: HMIS/DoHS

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

There was 55.4% coverage of the 180-day supply of IFA during pregnancy in FY 2079/80. Three provinces have average coverage below the national average- Bagmati (53.8%), Madhesh (56.7%) and Koshi (56.6%). When compared over last three FYs, there was increment across last three fiscal years was seen across six provinces except for Sudurpaschim province, where the decline in coverage by 5.5% (Fig 5.9).
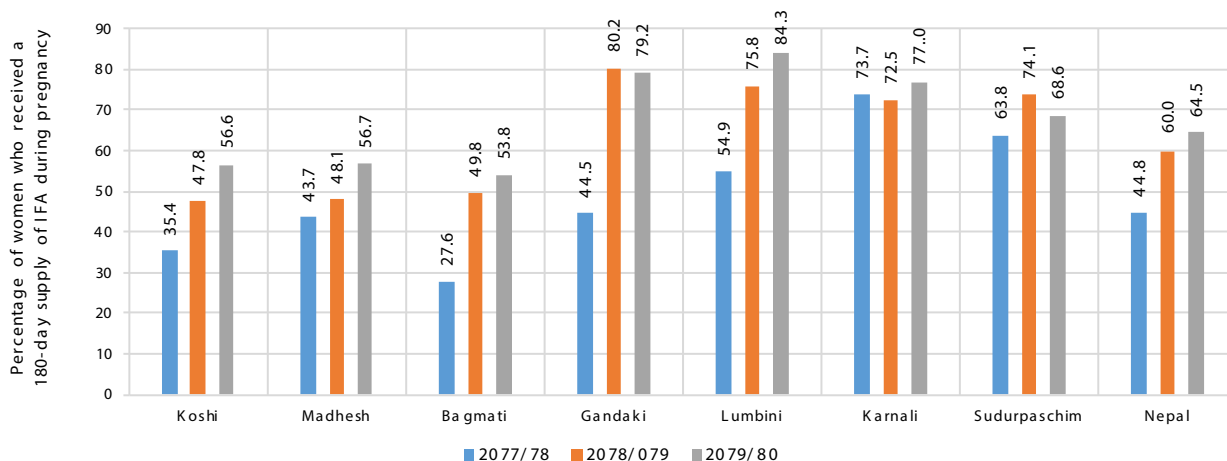
Figure 5.9 Percentage of women who received a 180-day supply of IFA during pregnancy 2077/78-2079/80

Source: HMIS/DoHS

Coverage of 45-day supply IFA to postpartum mother

The coverage of 45-day supply of IFA to postpartum mothers was 74.5% nationally with five provinces surpassing the national average- Sudurpaschim (97.5%), Karnali (96.4%), Lumbini (86.8%), Madhesh (84.2%) and Gandaki (77.7%), in FY 2079/80. There has been a consistent growth across the provinces and in national average when compared in last three FYs. Notably, the coverage is lower than national average consistently in Koshi and Bagmati Provinces in all three FYs (Fig 5.10).
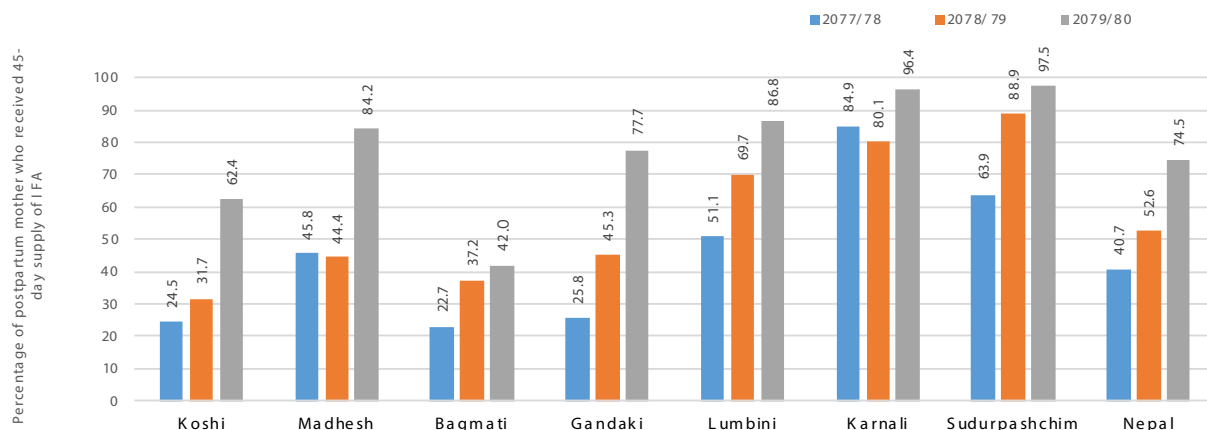
Figure 5.10 Percentage of postpartum mother who received 45-day supply IFA in FYs 2077/78-2079/80

Control and Prevention of Vitamin-A Deficiency Disorders

In the campaigning of Kartik 2079, Madhesh exhibited the highest coverage at 136.1%, which contributed to the national average to 107.9%. There was increment in the coverage of the children in Baishak 2080 in Bagmati and Karnali Provinces while decline in the remaining five provinces and the national average fell by 6.1 percentage points in Baishak. (Fig 5.9, 5.10) Factors contributing to the fluctuations could include variations in resources, implementation strategies, awareness campaigns, logistical challenges, or changes in community participation. In Kartik 2079, national coverage of Vitamin A was 98.3%, which decreased to 93.9% in Baishak 2080. There was decline across the provinces with remarkable percentage-point decline in Koshi Province from 95.9% in Kartik to 88.4% in Baishak, in Madhesh Province from 101.5% to 99.1%. The coverage was decimal point (0.2%) increase in Sudurpaschim Province. (Fig 5.9, 5.10) The drop in the coverage suggests need of an improved preparation for the upcoming campaigning.
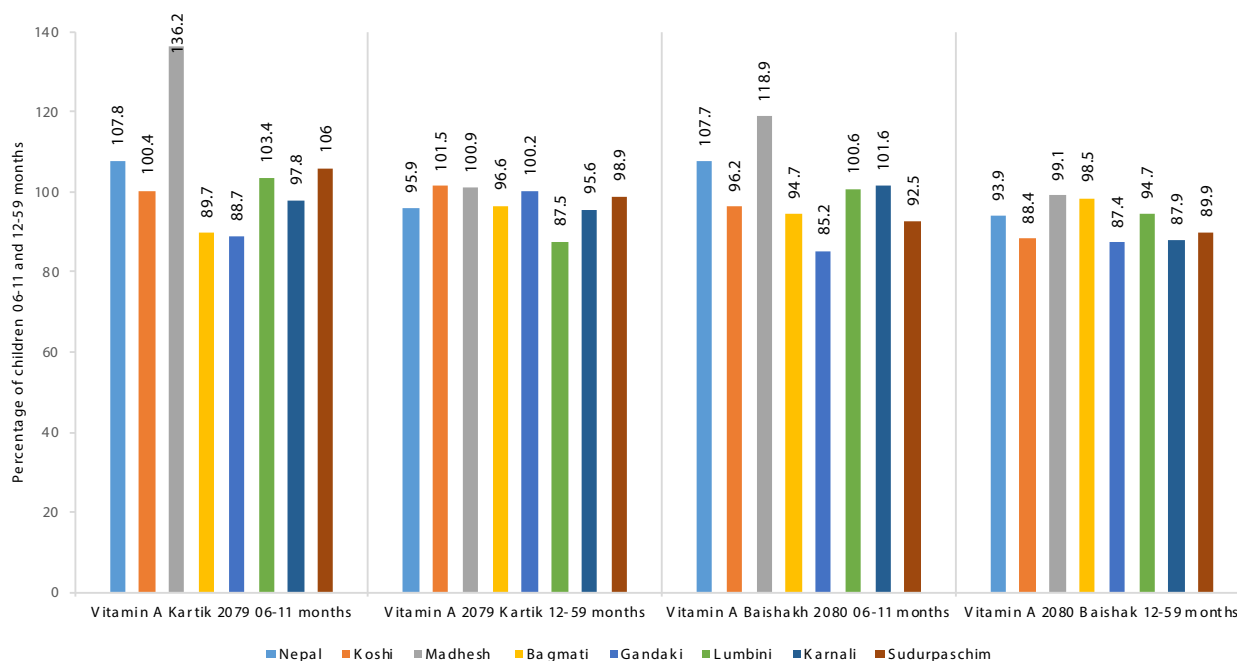
Figure 5.11 Vitamin A mass campaign 06-11 months across provinces in FY 2079/80

Control of Intestinal Helminths Infestations

The coverage of the deworming was 98.0% in Kartik and dropped by 11.7% point in Baishak (86.3%) in FY 2079/80. This decline was seen across the provinces. Notable drops were observed in Koshi, Madhesh, Gandaki, Lumbini and Sudurpaschim provinces. Karnali province has only a single decimal point (0.1%) decline. These reductions across provinces highlight the significance of re-evaluating and resolving the problems impeding effective and regular deworming tablet distribution in Nepal (Fig 5.10).
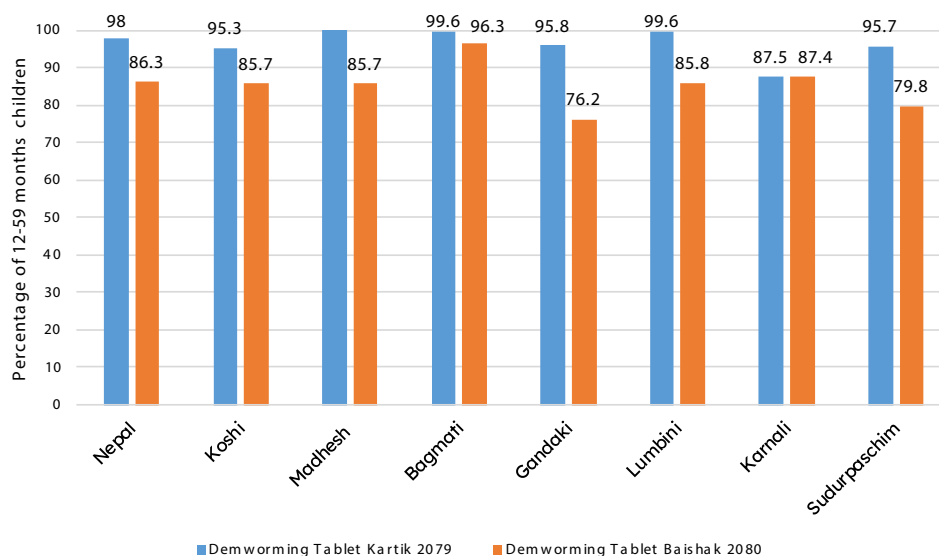
Figure 5.12 Coverage of deworming tablet mass campaign 12-59 months in FY 2079/80

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% in 2054/55 to 98% in 2078/79 (Fig 5.13).

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.
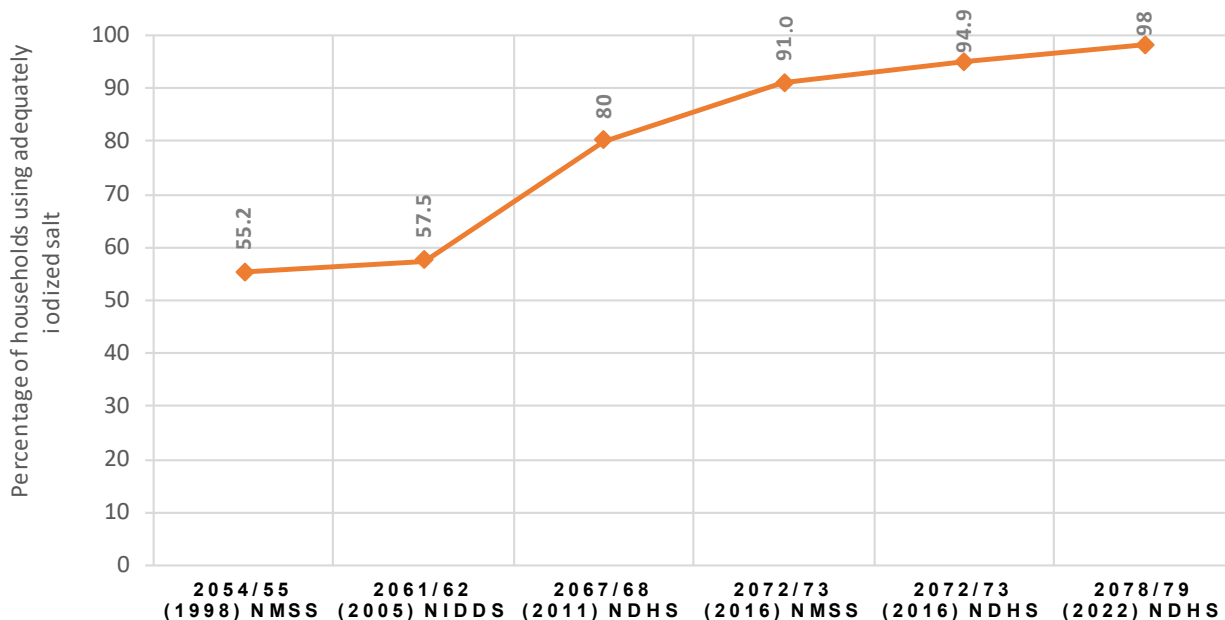
Figure 5.13 Trend in percentage of households using adequately iodized salt

IFA distribution to adolescent girls in school

In FY 2079/80, national average for coverage of 13 weeks' supply was 19.2% and for 26 weeks was 12.4%. The coverage was highest in the Gandaki Province (39.8%, 29%) followed by Lumbini Province (25.1%, 19.8%) and Sudurpaschim Province (24.9%, 19%). Remaining four provinces have lower coverage than national average (Fig 5.14). The current coverage demands to initiate focused efforts to ensure consistent access and address barriers for adolescent girls for improving the penetration.
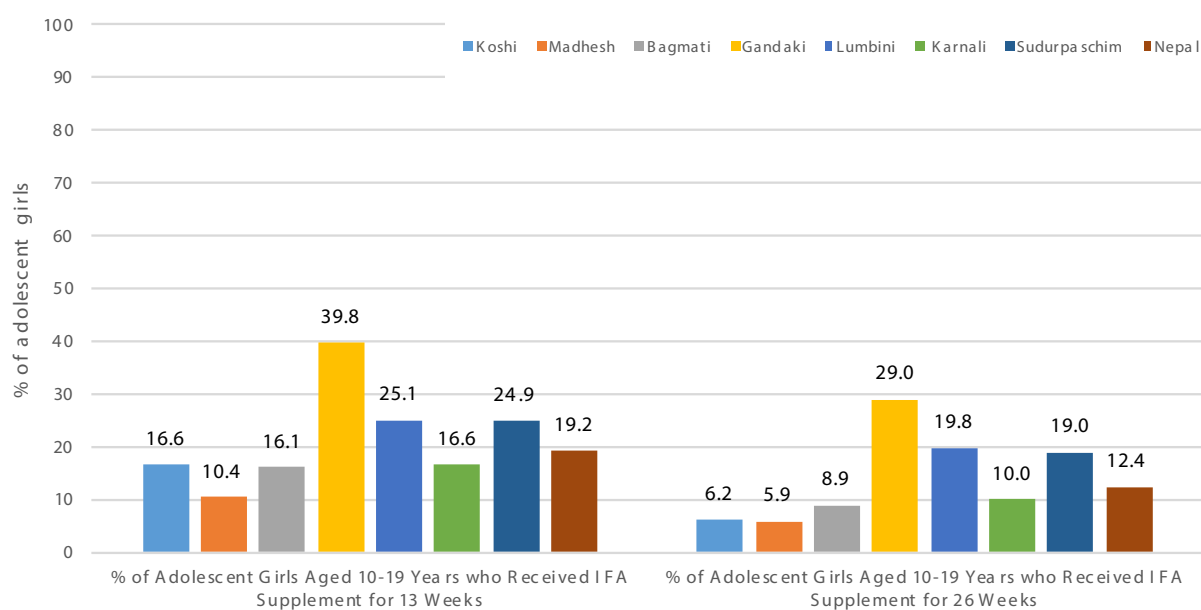
Figure 5.14 Percentage of adolescents who received supply of IFA

Source: HMIS/DoHS

Box 5.3 SWOT Analysis of Nutrition Programs

Strength	Opportunity
• 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.
Weakness	**Threat**
• 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 within 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	Maternal and Newborn Health Section	Child Health and Immunization Section	Nutrition Section	Family Planning and Reproductive Health Section

6.1 Family Planning and Reproductive Health

Family Planning (FP) has been enshrined as a fundamental right in the constitution and included in the basic health service package under the Public Health Service Act 2075[1]. In addition, the Safe Motherhood and Reproductive Health Act 2075[2], Safe Motherhood and Reproductive Health Regulation 2077[3], 15th National Plan (2076/77-2080/81)[4] as well as Safe Motherhood and Newborn Roadmap (2076-2087)[5] 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 SDG targets. Efforts are directed towards reducing contraceptive discontinuation, scaling up successful innovations, generating evidence, and linking FP services with delivery and demand generation interventions. FP information and services are disseminated through government channels, social marketing, non-government organizations (NGOs), and the private sector. 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 clinics, pharmacies, and hospitals also contribute to the comprehensive availability of FP services.

Box 6.1 Objectives of FP program

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-centered quality voluntary FP services.

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.

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

Target and Indicators	2078	Source	2082 Targets	2087 (SDG Targets)
% women of reproductive age (aged 15-49 years) with FP need satisfied with modern methods	55%	NDHS 2022 (2078/79)	76%	80%
Contraceptive prevalence rate [6](mCPR)	43%	NDHS 2022 (2078/79)	56%	60%
Unmet need[7] for Family Planning	21%	NDHS 2022 (2078/79)	15.2%	10%
Total Fertility Rate [8](TFR) [children per women]	2.1	NDHS 2022 (2078/79)	2.1	2.1
Adolescent (10-19 years) birth rate	71%	NDHS 2022 (2078/79)	43%	30%

1 Government of Nepal. Public Health Service Act. 2075 (2018)

2 Government of Nepal. Safe Motherhood and Reproductive Health Act 2075

3 Government of Nepal. Safe Motherhood and Reproductive Health Regulation 2077

4 National Planning Commission. The 15th plan (2076/77-2080/81). Government of Nepal

5 Family Welfare Division, Department of Health Services. Safe Motherhood and Newborn Roadmap 2086/87 (2030). Ministry of Health and Population

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

7 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

8 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

6.1.1 Major Activities in FY 2079/80

- Provision of long-acting reversible services (LARCs like- Intra-uterine contraceptive device (IUCD) and Implant)
- Voluntary Surgical Contraception (VSC) camps and institutional base.
- Provision of regular comprehensive FP service including post-partum and post abortion FP services.
- Micro planning for addressing unmet need of FP in hard to reach and underserved communities.
- Integration of FP with other SRH service (Nutrition, Immunization)
- Satellite clinic services for long-acting reversible contraceptives
- Contraceptive update for Obstetrician/Gynecologist, nurses and concerned key stakeholders.
- Provision of emergency contraceptive pill (ECP) services through all public health facilities and FCHVs.
- High level policy dialogue on family planning program at federal level.

- Interaction with organization working in people with disabilities to improve sexual and reproductive health (SRH) access.
- Interaction program on FP and RH including adolescents' need of SRH with pharmacist and marginalized communities.
- Public Private Partnership for family planning services in designated hospitals and medical colleges.
- New methods: Emergency Contraceptive Pills (ECP) and Sayana Press
- Initiation and drafting of FP Sustainability Roadmap and FP Costed Implementation Plan up to 2030.

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 and long-acting reversible methods for spacing. These indicators collectively reflect the informed, comprehensive, and voluntary choices made by users in the selection of FP methods.

Method mix among current users
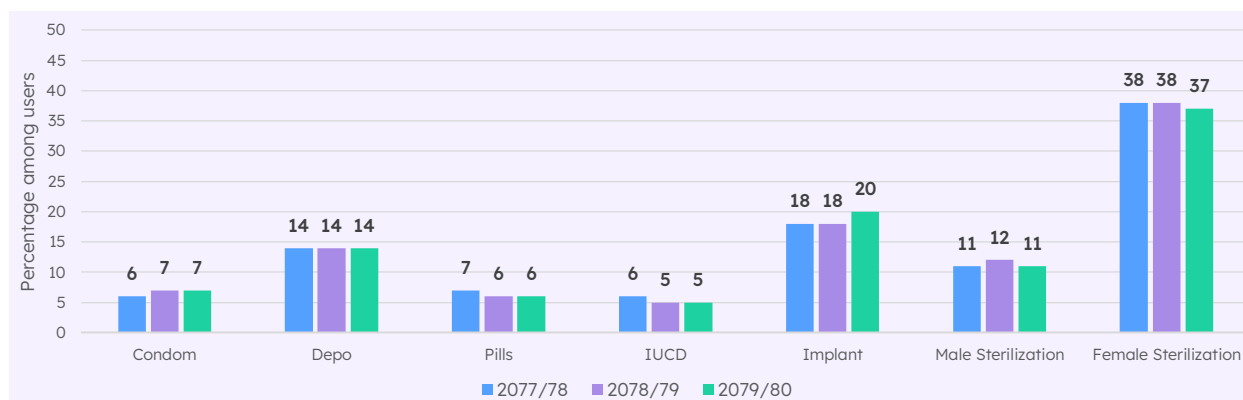
Figure 6.1 Modern contraceptive method mix in last three FYs 2077/78-79/80

Contraceptive uptake by FY shows that there is no major change in the current users of four out of five spacing methods. There is a two-point percentage increase in uptake of implants. There is a decrease in total current users of both male and female sterilization (Fig 6.1). There is decrease in the limiting methods across all the provinces (Refer to Annex-Table 6.1 in the annex of the report).

Among current users of modern methods in FY 2079/80, methods mix was observed as- Female sterilization (37%), Implant (20%), Depo-Provera (14%), male sterilization (11%), condom (7%), pills (6%) and IUCD (5%). Additionally, there were two more spacing methods added-during the FY 2079/80. The current users of newly introduced Sayana press and Emergency contraceptive pills (ECPs) are 11,813 (1%) and 2,779 (less than 1%) respectively (Fig 6.2). IUCD is also used for emergency contraception but it is not in record as of FY 2079/80.
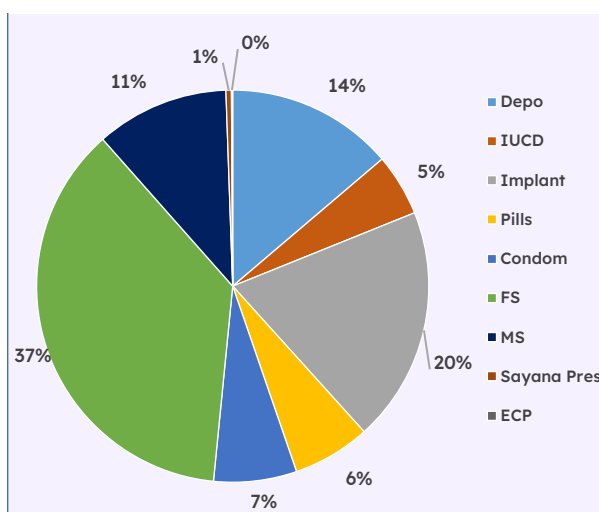
Figure 6.2 Current users of family planning methods, 2079/80

Source: HMIS/DoHS

Limiting (Permanent) FP method current users among MWRA

In FY 2079/80 limiting method contributes about 18.6% in contraceptive method mix among married women of reproductive age (MWRA) nationally. Madhesh Province has the majority of women going for permanent sterilization. There is relatively, better male engagement in permanent methods in Karnali, and Bagmati provinces (Fig 6.3). The factors related to relative least uptake of the male permanent method in Madhesh province needs to be explored.
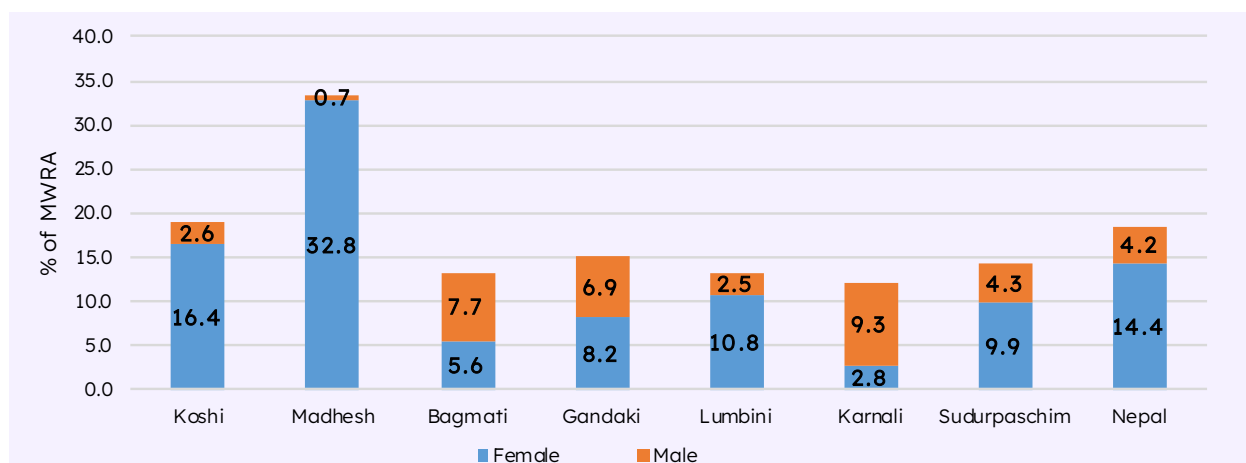
Figure 6.3 Current users of sterilization as % of MWRA, 2079/80

Source: HMIS/DoHS

New acceptors method mix

Among new contraceptive method acceptors in the fiscal year 2079/80, short acting reversible contraceptives (SARCs) had a share of the (74%) of which Depo-Provera (46%) was most popular choice followed by pills (26%) There were 22% users of long acting reversible contraceptives (LARCs) with implants (19%) and IUCDs (3%). Voluntary surgical contraception (VSC) was taken up by 4% users with female sterilization (3%) and male sterilization (1%) (Fig 6.3). Please refer to Annex-Table 6.2 for three-year trend of new acceptors across all provinces in the annex of the report.

Considering new acceptors of limiting methods, the proportion of female sterilization uptake was more in Madhesh Pradesh (95%) and Koshi Province (96%), while proportion of male sterilization uptake was more in Karnali Province (81%) and Bagmati Province (68%). In FY 2079/80, the share of male sterilization has
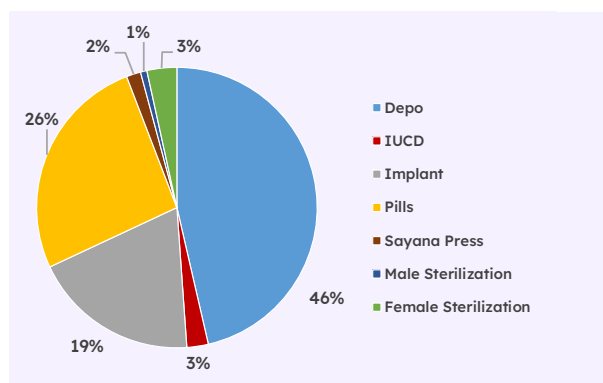
Figure 6.4 Modern methods new acceptors method mix FY 2079/80

Source: HMIS/DoHS

increased in Lumbini Province (8% point) (Bagmati province (7% point), Karnali province (6% point) as compared to last FY (Fig 6.5).
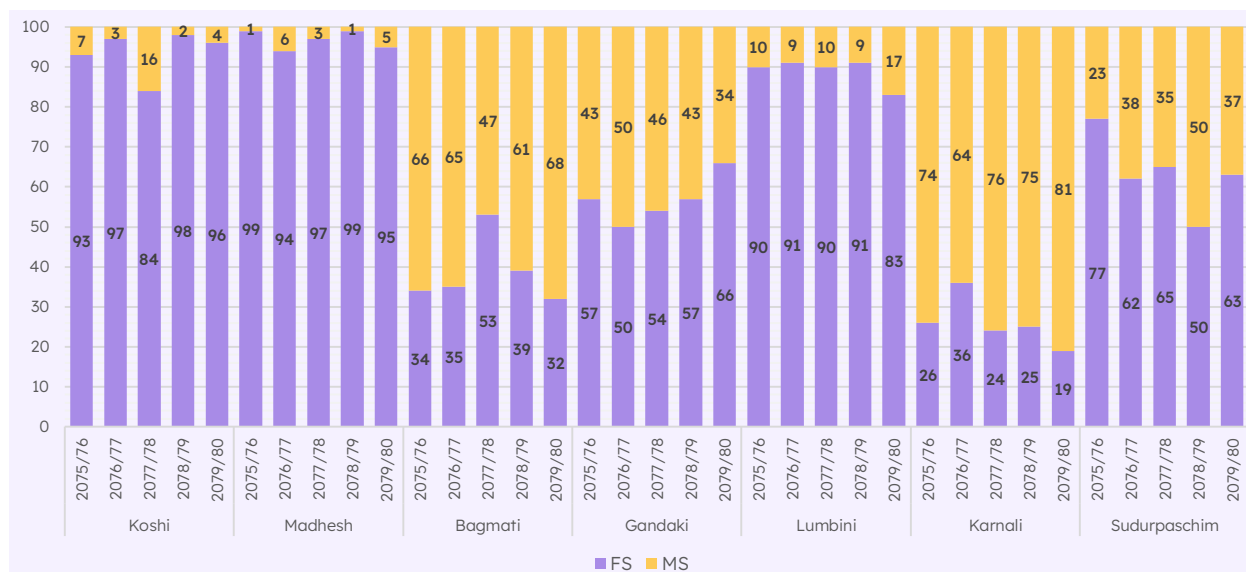
Figure 6.5 Share of FS and MS among total sterilization new acceptors (%) FY 2075/76- 2079/80

Source: HMIS/DoHS

Modern contraceptive prevalence rate (mCPR)

The national mCPR for the fiscal year 2079/80 is 39%, reflecting a 2-percentage-point decline from the previous fiscal year's 41% in 2078/79. Sudurpaschim Province exhibits the highest mCPR at 46%, followed by Madhesh Province at 45%, while Gandaki Province records the lowest at 33%. During the last three fiscal years, only Sudurpaschim Pradesh showed an increasing trend for mCPR (Fig 6.6).

Figure 6.6 Trend of Contraceptive Prevalence Rate

Source: HMIS/DoHS

In FY 2078/79, 19 districts had mCPR greater than 50%, 53 districts had mCPR between 30-50% and 5 districts had mCPR less than 30% (Fig 6.7). Among districts, Parsa had the highest mCPR (71%) whereas the Bhaktapur has the lowest mCPR (21%), study can be done in these sites for factors related to differential uptake. These figures are less than but consistent with the DHS figure of 43% for 2022.

Figure 6.7 Districtwide mCPR status in FY 2079/80

Source: HMIS/DoHS

Post-Partum Family Planning uptake as proportion of Institutional deliveries by province

The postpartum uptake as proportion of the total facility delivery is highest in Bagmati Province (2.61%), followed by Koshi province (2.25%) and Gandaki province (2.21%).The lowest proportion of PPFP services uptake during 2079/80 is in Madesh province (0.95%).

	Koshi Province	Madhesh Province	Bagmati Province	Gandaki Province	Lumbini Province	Karnali Province	Sudurpaschim Province	Nepal
IUCD	0.38	0.07	0.5	0.15	0.12	0.56	0.34	0.28
Implant	0.15	0.08	0.09	0.17	0.4	0.15	0.24	0.19
Tubectomy	1.71	0.48	2.03	1.89	0.98	0.24	0.41	1.16
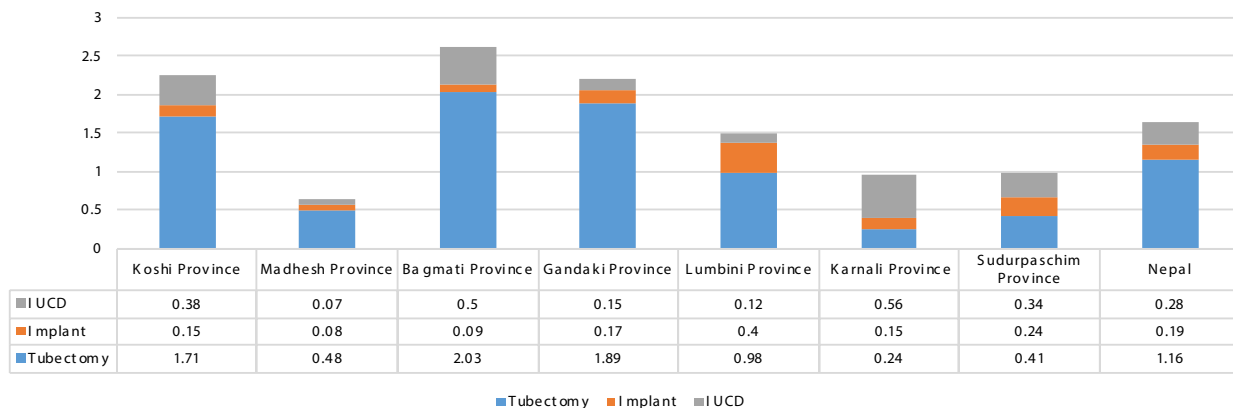
Figure 6.8 PPFP uptake as proportion of total institutional deliveries by province, FY 2079/80

Source: HMIS/DoHS

Trend of post abortion FP (PAFP) uptake

There are still 26% of the women, who didn't uptake of any modern methods post-abortion (Fig 6.9).

Notably, the data does not cover the statistics of unsafe abortions.
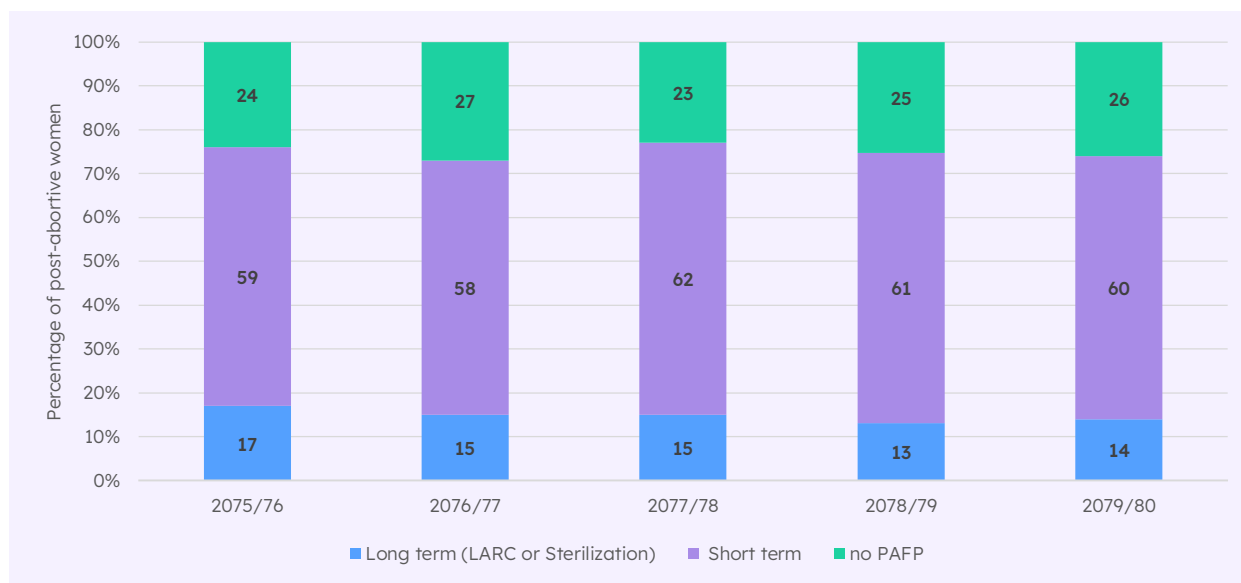
Figure 6.9 Proportion of post abortion FP uptake by method type FY 2075/76 to 2079/80

Source: HMIS/DoHS

Madesh province maintained the highest uptake of PAFP (83%), followed by Karnali Province (82%) and Koshi Province (81%). Among all provinces, Bagmati

Province consistently has the lowest PAFP uptake during the last three years (Fig 6.10).
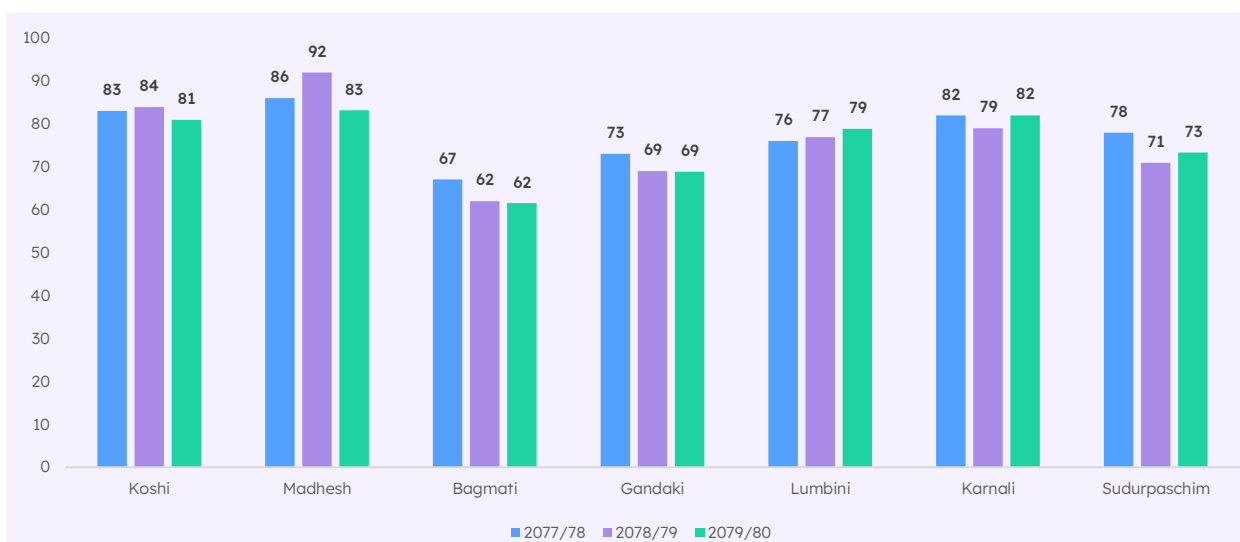
Figure 6.10 Trend of post abortion FP uptake across provinces, FY 2077/78 to 2079/80

6.2 Adolescent Sexual and Reproductive Health (ASRH)

Adolescents aged 10 to 19 make up 24% (6.4 million) of Nepal's population, with 17% of girls aged 15-19 already mothers or pregnant. Only 14.2% of currently married adolescents use modern contraceptives. Nepal, a pioneer in South Asia, endorsed its first National Adolescent Health and Development (NAHD) Strategy in 2056/57 (2000), later revised in 2074/75 (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 2079/80

- Expansion of adolescent friendly health facilities
- Certification of adolescent friendly health facilities
- Updated Adolescent Friendly Sexual Reproductive Health Guideline

6.2.2 Key Indicators for Adolescent 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 2056/57 (2000) health facilities. Adolescent friendly health services operation guideline has envisioned to gradually develop all health facilities as Adolescent Friendly Service sites. As per Adolescent RH guideline 2079, Adolescent Health Coordination Committees have been established in all the local levels. It regularly discusses adolescent health related issues and addresses them.

Certification of adolescents friendly sites

In FY 2079/80, adolescent friendly health facility implementation guideline 2079 was developed and endorsed. As of 2079/80, nearly 287 health facilities are certified as adolescent friendly service sites.

Box 6.2 National Adolescent Health and Development (NAHD) Strategy, 2074/75 (2018)

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

Mission: Maximum use of the available methods and estMaximum use of the available methods and establishing strong bond between the concerned parties and developing strategy with the view of securing the health and development of adolescents.

Goal: To promote the sexual and reproductive health of adolescents.

General Objective: By the year 2082/83 (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

ASRH service utilization

Table 6.2 FP, ANC and abortion service utilization by adolescents in FY 2077/78-2079/80

ASRH Service utilization by adolescents	FY2077/78	FY2078/79	FY2079/80
FP service new user	33,743	30,220	26,912
At least 4 ANC as per protocol	41,485	38,919	39,522
SAS	6,924	6,645	5,651

Compared to the last two fiscal years, there is a declining trend in new users of FP services (both male and female) and safe abortion services have reduced. In FY 2079/80, there was a slight increase in number of adolescent utilizing four ANC visits as per protocol (Table 6.2).

6.3 Reproductive Health Morbidities

Reproductive Health 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.[9] Cervical cancer, breast cancer, obstetric fistula, pelvic organ prolapses, and infertility are among the prioritized RH morbidities.

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.

6.3.1 Major Activities Conducted in FY 2079/80

- Cervical cancer screening, prevention and treatment guideline 2079

- Screening of eligible women for cervical cancer
- Disability Friendly RH and Safe Motherhood service guideline, 2079

6.3.2 Achievements in FY 2079/80

Table 6.3 RH morbidity services uptake in FY 2079/80

RH Morbidities Services		Values
Breast Cancer	Screened	30,377
	Suspected and referred	1.7%
Cervical Cancer	Women aged 30-49 Years-Screened	160,519
	Women aged 30-49 Years-Positive	3.4%
	Women aged 50+ Years-Screened	44,813
	Women aged 50+ Years-Positive	2.4%
	Colposcopy-Performed	2,841
	Ablativ Treatment-Received	51.6%
Obstetric Fistula	Screened	10,324
	Suspected	1.0%
	Referred	0.9%
	Surgery done	0.3%
Pelvic Organ Prolapse	Screened	83,056
	Prolapse identified	15.9%
	Referred	3.5%
	Ring Pessary applied	12.7%
	Surgery done	1.7%

Source: HMIS/DoHS

In FY 2079/80, screening for breast and cervical cancer as well as fistula and pelvic organ prolapse were conducted. The identified/positive cases were managed as appropriate. Among the women who were screening for cervical cancer, 3.4% and 2.4% among women aged 30-49 years and 50+ years respectively had positive signs (Table 6.3). Screening for these morbidities are planned to cover more women in coming years.

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9 Safe Motherhood and Reproductive Health Right Act 2018

Box 6.3 SWOT of the FP and RH program

Strength	Opportunity
• Adoption of new and innovative approaches to address the programmatic issues • Strong coordination mechanism through different thematic committees at federal level • Emphasis on evidence generation and practice of evidence based planning	• 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
Weakness	**Threat**
• Service disruption due to unavailability of program related commodities • Coordination with federal hospitals • Inadequate monitoring of quality of services • Misleading e-LMIS data for commodity planning • Integration of FP service data from private sector yet to be done • All PPFP data is not added in CYP • Inadequate human resources • Inadequate trained service providers • Limited understanding of FP program investment, expenditure and return	• 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 • Discontinuation of fistula care center due to shift in priority of donor/s.

| FWD | PHC/ORC Program Outreach | | NSSD | Female Community Health Volunteers Program | School Health Nurse Program Community Nurse Program |

7.1 Basic Health Services (BHS)

7.1.1 About Provision of Basic Health Services

Constitution of Nepal 2072 (2015) mandates provision of free BHS to all citizens and designates BHS delivery as the exclusive responsibility of LLGs. Basic health services comprise essential healthcare provisions intended for every Nepali citizen, irrespective of their demographic, geographic, or socio-economic background, and is assured by GoN to be delivered through the state apparatus.

With the comprehensive scope of BHS extending to all levels of the national health system it is ensured that healthcare is easily accessible to communities at their doorstep. To effectively implement this constitutional mandate, a robust framework of legal and policy instruments, coupled with established institutional structures, is in place. These mechanisms are designed to translate the constitutional commitment into tangible actions, fostering the realization of universal access to BHS for the citizens of Nepal.

To further facilitate the legal framework for BHS, Public Health Service Act 2075[1] defines BHS to cover components of key public health interventions in promotional, preventative, diagnostic, curative, and rehabilitative health services in seven different aspects of the continuum of care like immunization services; IMNCI; nutrition; antenatal care, delivery, family planning, reproductive health and abortion services; infectious diseases; NCDs and physical distortions; mental health; and geriatrics, including general emergency services. Additionally, the aspects of Ayurveda and alterative health services are also covered. The Act has kept the avenues open for expansion of the BHS with the provision of any other services defined by the GoN in the Nepal Gazette. The Act mandates provincial governments and local levels to add to the BHS determined by GoN as per the need with financial responsibility for any additional services laid with the respective government. Also, LLGs can deliver BHS in partnership with the health facilities managed by federal and provincial governments. Federal, provincial, and local governments may partner with private and non-governmental health facilities for delivery of health services.

Furthermore, Public Health Service Regulation 2077[2] defined BHS Package further elaborating the nine service components stated in the Act and categorically outlined health facilities (service outlets) at all levels need to provide thus stated services within BHS free of cost to the citizens. As stated earlier in Chapter 1 of this report as well, GoN aims at ensuring free BHS in urban and rural settings as a part of social health protection and adapts the strategy to expand BHS at all levels of health facilities targeting the unreached and disadvantaged group of people leaving no one behind[3]. The budget required for delivery of BHS free of cost to the people is managed through fiscal transfer while the responsibility of ensuring delivery of basic health service remains with LLGs[4]. In accordance with the Public Health Service Act 2075, and its Regulations 2077, MoHP, in 2079, developed and rolled out Operational Guideline for Implementation of BHS 2079[5]. The guidelines have provisions for service operation, health infrastructure, safe workplace, improvement of service quality and waste management, and protection of the rights of service users. It lists the basic medicines and medical supplies/equipment needed for delivery of basic health service.

Basic and Emergency Health Service Management Section within the CSD, DoHS at the federal level is the key institution serving as the pillar for BHS implementation (See chapter 13 section 13.1 of this report). The health entities at the provincial level provide technical assistance to LLGs for delivery and monitoring of BHS. Health Offices within the province specifically support in managing logistics and provide technical assistance to the LLGs for effective delivery of BHS. Health Offices also have a crucial role in managing and supplying vaccines, family planning commodities and other medical supplies procured by federal and provincial governments to LLGs. The institutional mechanism has been designated across three level of the governments for delivery of BHS (Table 7.1).

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[1] Law Commission, Government of Nepal. Public Health Service Act 2075

[2] Law Commission, Government of Nepal. Public Health Service Regulation 2077

[3] Ministry of Health and Population. Nepal Health Sector Strategic Plan 2079/80-2087/88

[4] Ministry of Health and Population. National Health Sector Financing Strategy 2080-2090

[5] Ministry of Health and Population. Operational Guideline for Implementation of BHS 2079

Table 7.1 Basic health service delivery units at three spheres of government

Local level	Provincial level	Federal level
• Basic hospital (5, 10, 15 beds)	• General Hospital (25-300 beds)	• General Hospital (300 plus beds)
• Basic Health Service Centres (BHSCs)		• Specialized Hospital (min 100 beds)
• Primary Health Care Centers (PHCC)		• Teaching Hospital (Academy and others)
• Health Posts (HP)		
• Community Heath Unit (CHU)		
• Urban Health Center (UHC)		
• Ayurveda Dispensaries (*Aushadhalaya*)	• Provincial Ayurveda Hospital	• Central Ayurveda Hospital
	• Provincial Ayurveda *Chikitsalaya/* Ayurveda Health Centre	

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.

7.1.2 Basic Health Service Utilization

The services captured through HMIS includes service utilization of BHS irrespective of the cost incurred during the service utilization at the level of the users. This AHR captures in its different chapters the indicators that also relate to the BHS service utilization in that continuum or spectrum of care. To give a holistic picture from the lens of BHS, the common services defined in BHS and their indicators are enlisted in Annex Table 7.1.

Box 7.1 SWOT analysis of BHS Provision

Strength	Opportunity
• Regulatory legal framework	• Specification of the services covered under BHS and its costing
• Role of all three tiers of government defined through constitution	
Weakness	**Threat**
• Not enough disaggregated data to claim the service provision under BHS	• Sustainability of the program
• Lack of roadmap and poor coordination between governments to ensure BHS available to users of the referral centers	• Grey area in the services under BHS and services covered by health insurance and other social protection services in the country

7.2 PHC/ORC Program

7.2.1 About the program

Established in 2051 (1994), Primary Health Care Outreach Clinics (PHC/ORC) aim to enhance community access to essential health services such as family planning, child health, and safe motherhood (Box 7.2). Operating as extensions of PHCCs and health posts, these clinics are conducted monthly at fixed locations, dates, and times, within a half-hour walking distance for their catchment populations. ANMs, paramedics, FCHVs, and local NGOs collaborate to provide basic primary health care services based on local needs.

Box 7.2 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.

7.2.2 Key Indicators for PHC/ORC Services

Conduction of PHC/ORC sessions

In FY 2079/80, 86.9% of the planned PHC/ORC sessions were conducted. This is a slight increment of 0.6% points as compared to last FY. Notably 95.5% of the planned PHC/ORC sessions were held in Sudurpaschim Province while only 70.9% were conducted in Madhesh Province in FY 2079/80. The decline is seen in Madhesh Province over last three FYs (Fig 7.1).
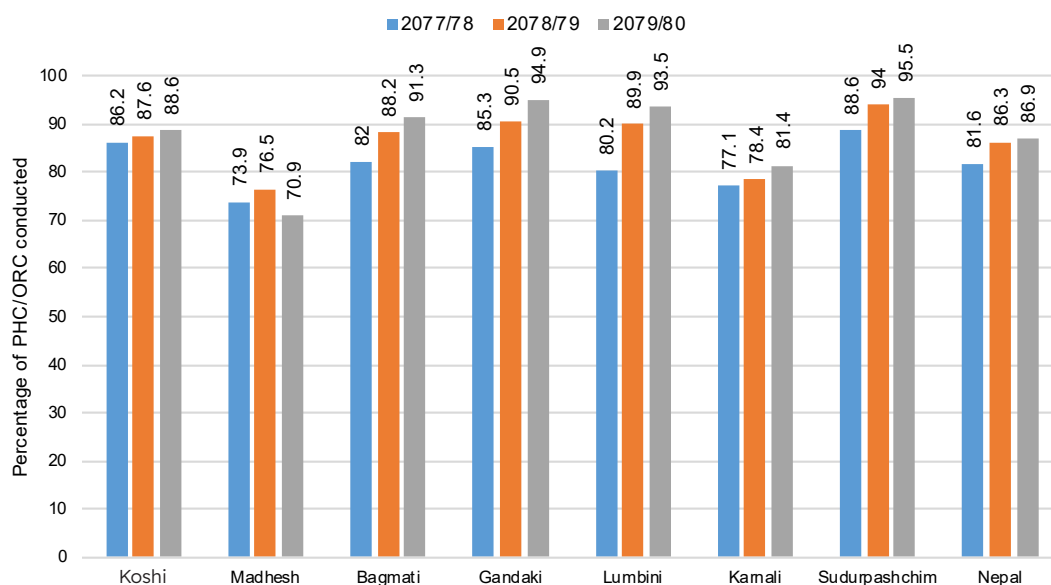
Figure 7.1 Proportion of PHC/ORC sessions conducted out of planned in last three FYs 2077/78- 2079/80

Service Users of PHC/ORC

In FY 2079/80, the number of clients served from outreach (PHC-ORC) clinics was 2,512,111 (Table 7.1). The total number of clients served increased by 222,933 number in FY 2079/80 as compared to the previous FY 2079/80. However, decline is seen in Madesh Province over last three FYs (Fig 7.1).

Table 7.2 Service Users of PHC/ORC in last three FYs 2077/78-79/80

Province	FY 2077/78	FY 2078/79	FY 2079/80
Koshi	340,053	327,822	348,928
Madhesh	390,981	417,532	459,043
Bagmati	291,441	296,196	332,957
Gandaki	236,313	224,688	296,212
Lumbini	410,156	472,822	531,202
Karnali	191,085	155,486	152,036
Sudurpaschim	358,412	394,632	391,733
Total	**2,218,441**	**2,289,178**	**2,512,111**

Source: HMIS/DoHS

Services utilization from PHC/ORCs

The number of users receiving primary treatment, ANC, PNC and postpartum Vitamin A services have increased in FY 2079/80 as compared to previous FY. While, there is decline in number of users who received family planning services from PHC/ORCs in FY 2078/79 as compared to last FYs (Table 7.2).

Table 7.3 Number of services utilized during PHC/ORCs in last three FYs 2077/78-79/80

Types of services	2077/78	2078/79	2079/80
Primary treatment	40.4%	38.5%	43.4%
ANC	6.4%	5.7%	5.5%
PNC	1.1%	1.0%	1.1%
Postpartum Vitamin A	1.6%	0.7%	0.9%
Depo-provera	4.9%	4.4%	3.7%
Condom	69.2%	64.0%	57.1%
Pills	2.6%	2.9%	2.1%

Source: HMIS/DoHS

Box 7.3 SWOT of the PHC/ORCs

Strength	Opportunity
● Strategic locations targeting the marginalized communities and hard to reach communities	● Partnership with local level government
Weakness	**Threat**
● Targeted PHC/ORCs sessions not scheduled up to mark ● Inadequate supervision and monitoring from province and federal level	● Not effective in urban settings

7.3 Female Community Health Volunteer (FCHV) Program

7.3.1 About the Program

In the year 2045/46 (1988), GoN initiated the FCHV Programme across 27 districts, eventually expanding its reach to encompass all 77 districts. Initially, a single FCHV was appointed per ward, with a subsequent shift to a population-based approach introduced in 28 districts in 2050 B.S. The goal of the program was to improve the health of local community peoples by promoting public health. This includes imparting knowledge and skills for empowering women, increasing awareness on health related issues and involving local institutions in promoting health care (See Box 7.4 for objectives of program).

FCHVs are selected through health mothers' groups. Initially, FCHVs underwent an 18-day training (9+9 days). However, starting from FY 2077/78, the training package was revised to include 10 days of basic training and four days of refresher training every four years. Following their training, FCHVs receive essential resources such as medicine kit boxes, manuals, flipcharts, ward registers, IEC materials, FCHV bags, signboards, and identity cards. Family planning devices, limited to regular pills and emergency contraception pills, and condoms, along with iron tablets, vitamin A capsules, and Oral Rehydration Solution (ORS), are supplied through health facilities.

Figure 7.2 FCHVs per 100,000 population

Source: CBS, HMIS

FCHVs' role had been highly acknowledged by the government in achieving milestones of MDGs 4 and 5, and expected the same in the era of SDG by 2030 through contextual modification. Similarly, FCHVs are recognised for having played a major role in reducing maternal and child mortality and morbidity and general fertility through community-based health programmes. The government is committed to increase the morale and participation of FCHVs for community health. Likewise, policies, strategies and guidelines have been developed and updated accordingly to strengthen the program. The latest amendment of FCHV strategy 2076 highlights the context specific revision such as change in FCHV selection criteria and institutional arrangement to support FCHV program. Though minimum GoN provides certain incentives to FCHVs (Box 7.5).

Box 7.4 Objectives of the FCHV Programme

Objectives

- Mobilize a pool of motivated volunteers to connect health programmes 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.

The primary role of FCHVs is to advocate for mothers and community members, promoting healthy behaviours related to safe motherhood, child health, family planning, and other community-based health issues and services. As of FY 2079/80, around 51,423 FCHVs are actively contributing to healthcare in Nepal with approximately 174 FCHVs per 100,000 populations (Fig 7.2).

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 (SSU) of Health Facilities.

7.3.2 Major Activities in FY 2079/80

Programmatic activities

- Audio visual aids/telefilms including FCHV role and health awareness was produced and telecasted through 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 as in previous years

FCHV's contributions in heath service delivery

- Distribution of the FP commodities (refill pills and distribute condoms)
- Conduction of the mother's health group meetings
- Even though government of Nepal has the policy of mandatory institutional deliveries, pregnant women cannot reach up to health centers for delivery for various reasons. FCHVs support mother's and newborn's care during home

deliveries as well as 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.

7.3.3 FCHVs' Key Service Delivery Indicators

There was progressively increase in number of health mother's group meeting from FY 2077/78 to FY 2079/80 (Fig 7.3) while FP commodity and iron tablets distribution numbers decreased (Fig 7.4).
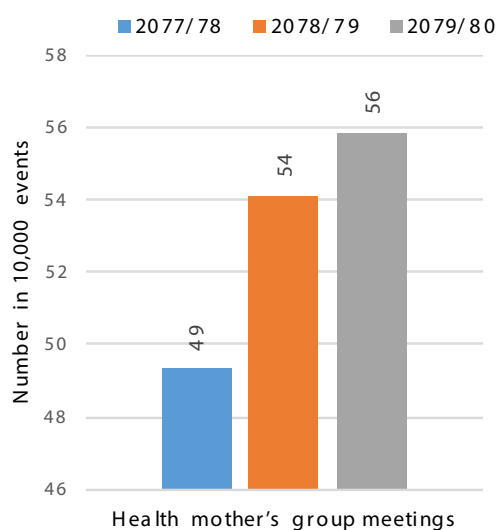
Figure 7.3 Mothers' health group meetings conducted by FCHVs FY 2079/80

Source: HMIS/DoHS
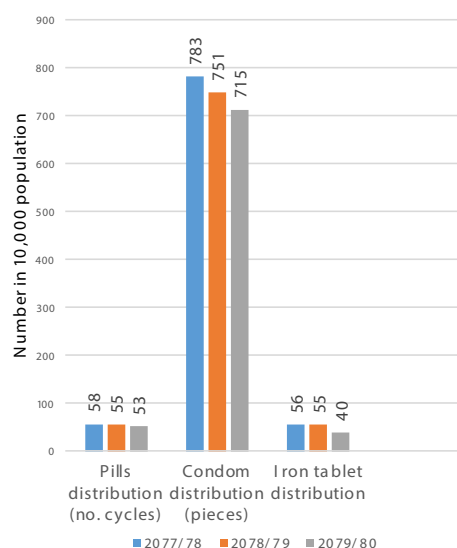
Figure 7.4 FP commodity, iron tab distribution and meetings held by FCHVs FY 2077/78-2079/80

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. FCHVs ensured misoprostol tablets taken to reduce PPH (n=6,743), initiated skin-to-skin contact to reduce hypothermia (n=40,471) and supported application of chlorohexidine to reduce umbilical infections (n=30,919). They also ensure postnatal visits for review and

counselling on postnatal and newborn danger sings and support in breast feeding. (Table 7.4)

Additionally, FCHVs helped more than 50,000 mothers and newborns in initiating breast feeding within one-hour of birth and distributed postnatal Vitamin A capsule to postpartum mothers to more than ninety thousand postnatal mothers in FY 2079/80 (Table 7.5).

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	6,896	6,402	1,919	5,597	7,683	7,903
Madhesh	24,976	17,199	1,386	20,249	21,588	22,085
Bagmati	3,023	2,391	916	2,368	3,388	3,487
Gandaki	782	788	415	681	1,025	1,180
Lumbini	1,880	1,525	1,492	1,711	3,866	4,078
Karnali	1,956	1,777	381	1,585	1,976	1,899
Sudurpaschim	958	837	234	968	1,169	1,140
National	40,471	30,919	6,743	33,159	40,695	41,772

Source: HMIS/DoHS

Table 7.5 FCHVs' support in initiating breastfeeding within an hour of birth and distribution of postpartum Vitamin A in FY 2079/80

Province	Breast Feeding <1 hour of Birth	Distribution of Postpartum Vitamin A
Koshi	7,142	21,791
Madhesh	35,492	42,780
Bagmati	3,396	13,943
Gandaki	865	3,588
Lumbini	2,044	4,295
Karnali	2,012	3,230
Sudurpaschim	1,038	4,141
National	51,989	93,768

Source: HMIS/DoHS

In FY 2079/80, FCHVs screened 3,623,283 children from 6-59 months of age using mid-upper arm circumference measurements through MUAC's, they ruled out MAM (yellow colour in MUAC tape) in 2.1%, SAM in 0.2% and 119 cases with edema among screened children. Those with SAM and edema need to be immediately referred to nearest OTCs or health facilities there were provincial differences in the malnutrition status of children with highest recorded in Madhesh Province followed by Sudurpaschim and Koshi Provinces respectively (Fig 7.5).
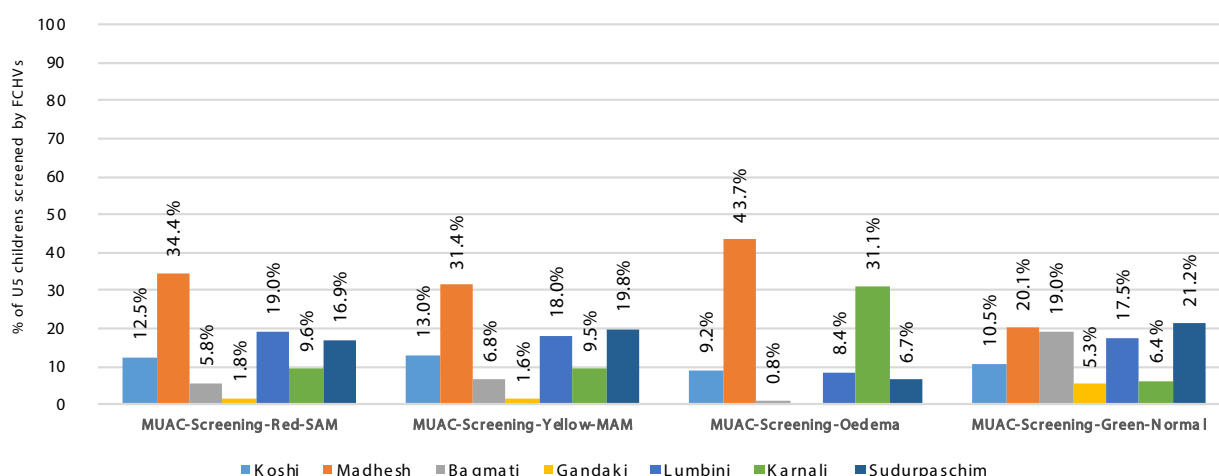
Figure 7.5 Provincial differences in MAM, SAM and children with edema identified by FCHVs in FY 2079/80

Source: HMIS/DoHS

Strength	Opportunity
• FCHV program directly connects the health system to the community • Women empowerment • Regular and period trainings	• Incentivizing FCHVs through different mechanisms to reduce dissatisfaction among FCHVs related to volunteerism • Creating social platforms for network of FCHVs and encouraging exchange of knowledge
Weakness	**Threat**
• Low utilization of FCHV Fund • Lack of interventions to update FCHVs with technical advancement and their personal growth	• FCHV are not interested in farewell programmes • Multiple projects/programs utilizing FCHVs as field workers can be exhaustive to them • Sustainability of volunteerism

7.4 Community Health and Nursing Services Program

7.4.1 About the Program

Community health and nursing (CHN) services program was started as a pilot program in two local levels (Bhaktapur Municipality, Bagmati Province and Bardibas Municipality, Madhesh Province) in FY 2078/79 guided by Community Health Program Guideline. The main objective of the program was to keep up-to-date health data of each individual in a family and promote healthy lifestyles so as to reduce communicable diseases and NCDs. With two phases in program, first phase (baseline data collection) records every individual's socio-demographic and health related information via CHNs under purview of work and second phase (intervention phase) incorporates community directed and community based health services in life cycle approach (promotive and preventive). All these activities are recorded in Community Health Information System (CHIS) via Community Health Toolkit (CHT) application. Community health nurses refer the community members to health facilities for needful treatment.

7.4.2 Major Activities During Piloting in FY 2079/80

- Scaling-up the program to Chandragiri Municipality. Currently, program encompasses 3 Community Health Officers (CHOs) (one each in a local level) and 39 CHNs (10 in Bhaktapur, 14 in Bardibas and 15 in Chandragiri Municipality).

- Capacity building of CHNs on sexual and reproductive health, NCDs and mental health to implement the intervention phase of the program.

- A total of 14,020 households were identified in Bardibas and 12,863 households were covered for the baseline assessment.

Strength	Opportunity
• Recruitment of human resource who are local with ample geographical and cultural proximity to population they serve • Digitalized data entry of the CHN baseline data collection • Good coordination with local governments of implementation sites	• 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. • Encompassment of research in modality, cost-efficiency, acceptability and effectiveness of program
Weakness	**Threat**
• Budgetary constraint • High human resources turnover	• Scale up largely depends upon local levels interest in taking up program.

7.5 School Health and Nursing Service Program

7.5.1 About the Program

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 a minimum of 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 7.8) This guideline aspires to institutionalize the pivotal role of school nurses, providing a comprehensive framework for the establishment of school health units at the institutional level. School health unit is chaired by the school principal, with the appointed school nurse hold 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 2079/80, the program has been implemented in 1,011 schools of which 23% of schools were supported by NSSD and remaining were owned by the provinces (Table 7.6). Few of the private schools also have implemented this program.

Box 7.8 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 7.6 School nurses supported by NSSD and Provinces

School Nurses	Supported by NSSD	Supported by respective Province
Koshi	10	145
Madhesh	38	80
Bagmati	0	519
Gandaki	30	8
Lumbini	36	0
Karnali	98	0
Sudurpaschim	20	27
National	**232**	**779**

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.

7.5.2 Key Activities in FY 2079/80

National review of the program

- Representation and participation from each of the province were the program has been implemented. The review came up with the finds that the program is effective to promote healthy habits in students and has been crucial for the girl child to share their menstrual and reproductive health related matters as the provider is also female.
- This program was also acknowledged for being effective in discouraging ultra and processed food at school and school nurses proactively provided first aid services in the schools.

Provincial review of the program

- It was conducted in Karnali province, Surkhet as the majority of schools were included in this program. The stakeholders were positive towards the program. The cases of high turnover of the school nurses was anticipated as possible problem.

Box 7.9 SWOT analysis of school nurse program

Strength	Opportunity
• Effective program for health promotion at school level remarkably supported with menstrual health and hygiene of adolescent girls • Implementation of national program like Vitamin A, Deworming, IFA distribution, ASRH at school level	• Ownership of the program by provinces • Collaboration with MoEST
Weakness	**Threat**
• 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	• Sustainability of the program- both human resource and financial resources

EDCD	NTD and Vector Borne Disease Control Section	Zoonotic and Other Infectious Disease Control Section	Disease Survelliance and Research Section	Epidemiology and Epidemic Management Section	NCD and Mental Health Section	Leprosy Control and Disability Management Section

8.1 Non-Communicable Diseases Prevention and Treatment Programs

8.1.1 About the Program

Burden of disease estimates[1] show that burden of NCDs has been steadily rising in Nepal. The premature mortality due to NCDs has risen from 51% in 2066/67 (2010) to 71% in 2075/76 (2019). The proportional mortality of NCDs is ever increasing. Cardiovascular disease (CVDs) is responsible for 30% deaths, cancer 9%, diabetes 4%, chronic respiratory diseases 10% and other NCDs 13%. Increasing life expectancy, demographic and epidemiological transition, rampant urbanization and change in the lifestyle all account to this rising burden of NCDs. The increasing disease burden is associated with decreasing quality of life,

increase in DALYs and catastrophic health expenditures. A four-year analysis of National Health Accounts (NHA) reported highest healthcare spending was on NCDs at NPR 37.73 billion. Out of Pocket (OOP) expenditure by disease and health conditions was highest for NCDs with 31% of OOP expenses (NHA, 2068/69-2071/72).

Notably, on comparing the STEPS survey from 2066/67 (2008) to 2076/77 (2019), there is increase the prevalence of insufficient physical activity and increased body mass index (BMI) in adult population of the country (Fig 8.1).
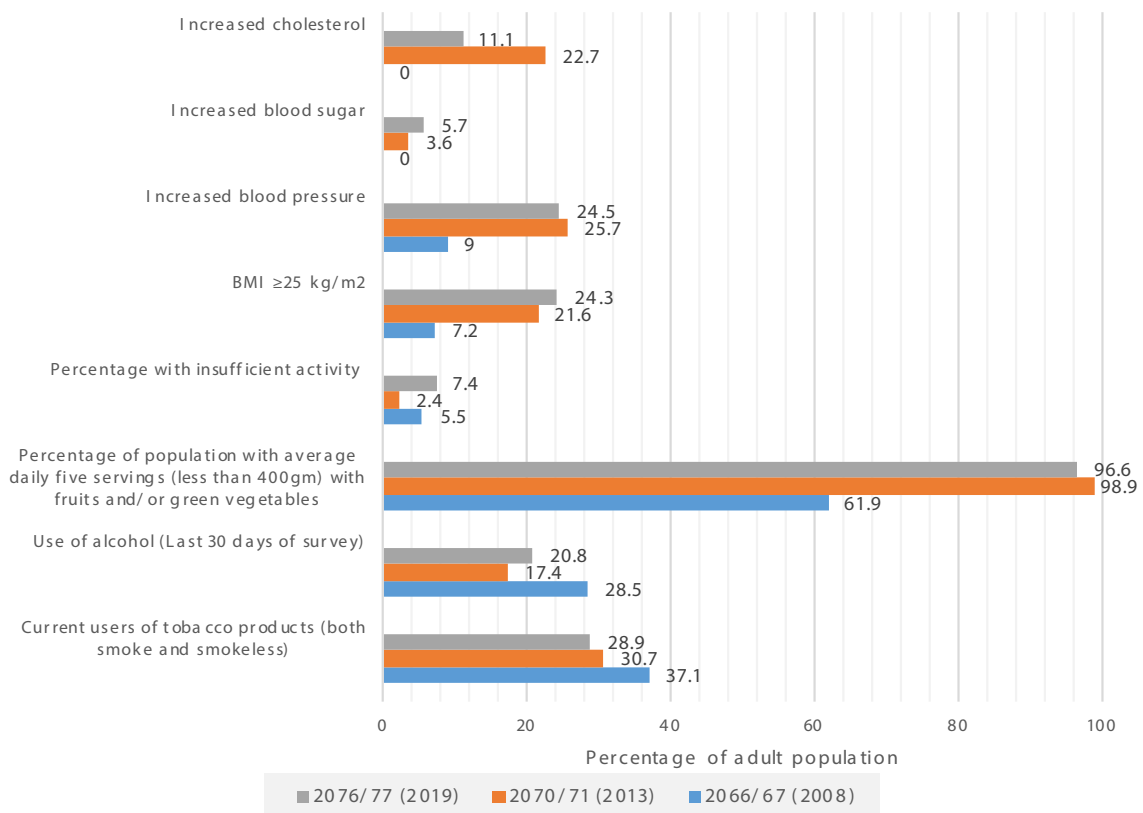
Figure 8.1 Risk factors of NCDs among adult population in Nepal, STEPS Survey

[Source: NCDs Risk Factors: STEPS survey Nepal, 2066/67, 2070/71, 2076/77]

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1 Nepal Health Research Council (NHRC), Ministry of Health and Population (MoHP), Institute for Health Metrics and Evaluation (IHME), Monitoring Evaluation and Operational Research (MEOR). Nepal Burden of Disease 2019: A Country Report based on the 2019 Global Burden of Disease Study. Kathmandu, Nepal: NHRC, MoHP, IHME, and MEOR; 2021

In this backdrop, GoN has prioritized NCDs and has strategic planning based on National Multi-sectoral Action Plan II (MSAP II) for NCDs (2021-2025). 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).

Specific objectives are:

- To raise 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.

8.1.2 Key Activities in FY 2079/80

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 (Box 8.1).

PEN program has been scaled in all seven provinces across 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]

Box 8.1 Key objectives of PEN program

To strengthen health systems to address the prevention and control of NCDs and underlying social determinants through people centered primary health care.

To strengthen national and local capacity and partnership to accelerate country response for the prevention and control of NCDs.

To reduce modifiable risk factors for non-communicable diseases and underlying social determinants through creation of health-promoting environments.

Kavrepalanchok hypertension care cascade initiative

The MoHP launched the Kavre Hypertension Care Cascade Initiative in Kavrepalanchok district, supported by Norwegian Agency for Development Cooperation (NORAD) and WHO. This initiative aims to improve hypertension identification and management at the primary healthcare level. The Government of Nepal aims to extend treatment services for hypertension and diabetes, following established procedures, to 1.5 million individuals by 2025 through this project. This initiative was launched in Jestha 2080 (May 2023). This pilot project includes screening, diagnosis, treatment, and follow-up, guided by evidence-based protocols within primary healthcare settings. Also, the initiative also envisions involvement of the academia and health institutions for the implementation.

PEN plus project

To address the service gap in underprivileged children and young adults, MOHP, in collaboration with KIOCH, initiated the PEN-Plus program in Jhapa, Bardiya, Dailekh, Bajhang, Gulmi, Siraha, and Dolakha districts of Nepal. PEN-Plus is an integrated care delivery model targeting NCDs like Type-1 diabetes, rheumatic heart disease, congenital heart disease, and sickle cell disease. The program aims to enhance accessibility and quality of severe and chronic NCD care at provincial level hospitals.

WHO NORAD Nepal Integrated NCD Care Model (NINCM)

To address the global underfunding of NCDs and recognizing their significant impact on public health, Norway pledged $133 million from 2076/77-2080/81 (2020-2024). This commitment aims to preserve and improve lives and considers NCDs as a crucial part of the response to COVID-19 and subsequent recovery. In 2077 (November 2020), Norway declared the establishment of the WHO/NORAD joint initiative on NCDs, the first of its kind, focusing on providing comprehensive support and solutions to the economic, social, and developmental dimensions of NCDs in Ethiopia, Ghana, Myanmar, and Nepal.

Box 8.2 Objectives of NINCM

Strengthen operational efficiency and program administration at all levels for implementing and scale up of integrated people centered NCD services through the project sites

Adopt, adapt and update evidence-based technical packages for common NCDs including common cancers, stroke and palliative care

Build capacity of the health workforce and set up NINCM and referral points through partnership with academic institutions

Set up effective information system with digital solutions for NCD service performance monitoring and patient tracking for continuity of care

Strengthen essential diagnostics, supplies and medicines to improve patient care

2 Government of Nepal. National Multi-sectoral Action Plan II (MSAP II) for NCDs (2021-2025). MoHP, Nepal

Cancer control strategy

In FY 2079/80, Cancer Control Strategy is in a final process of endorsement.

Behavior change communication (BCC) or 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 19 of this report.

8.1.3 Key NCD prevention and Treatment Service Indicators

Service utilization for common NCDs

In FY 2079/80, a total of 630,299 patients of hypertension, 312,370 with diabetes and 185,857 with Chronic Obstructive Pulmonary Diseases (COPD) were on treatment for NCDs. There were differences across the provinces in uses per 10,000 population uptaking treatment for these three common NCDs (Fig 8.2).
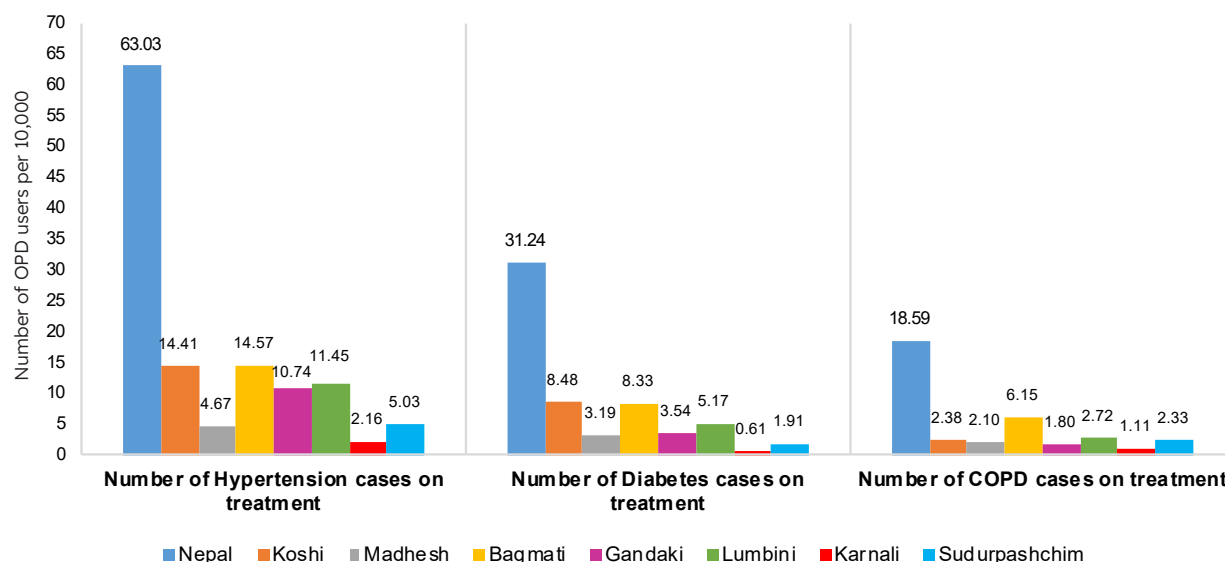
Figure 8.2 Service utilization for common NCDs

Source: HMIS/DoHS

Besides these, the services uptake of the cervical cancer screening is catered in Section 6.3 of Chapter 6 Family Planning and Reproductive Health Program of this report.

Preventive and promotive aspects through NHEICC doesn't capture the thematic areas like segregated data related NCDs or its risk factors of the health promotional activities (see Chapter 19 of this report for total educational sessions).

Box 8.3 SWOT analysis of programs for management of NCDs

Strength	Opportunity
• 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
Weakness	**Threat**
• 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 • Poor motivation of health workers	• Rising risk factors and new cases of NCDs • 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 Road Safety

8.2.1 About the Program

Road Traffic Accidents (RTAs) are a major cause of serious injuries, disabilities and deaths globally. WHO estimates showed that, about 1.35 million road users are killed on the world's roads, and nearly 50 million are seriously injured each year.[3] Among the total RTAs about 93% occurred in Low and Middle-Income Countries (LMICs).[4] It is a leading cause of death of children and young adults aged 5-29 years.[5] Besides human losses, psychological damage, financial loss, and other associated impacts of a road crash on the victim and their family members are beyond our imagination. It is crucial to determine the underlying factors of road crashes and crash severity for policy formulation and program design to prevent road traffic crashes and reduce preventable deaths and injuries.

In 2077 (September 2020), the UN General Assembly adopted resolution A/RES/74/299, declaring the Second Decade of Action for Road Safety 2077/78-2087/88 (2021-2030), with the goal of preventing at least 50% of road traffic deaths and injuries by 2030 (See Fig 8.3 for five pillars of road safety of the action plan).

WHO, along with UN regional commissions and partners in the UN Road Safety Collaboration, released the Global Plan for the Decade of Action in Kartik 2078

(October 2021). Aligned with the Stockholm Declaration, the Global Plan advocates for a holistic approach to road safety, emphasizing improvements in road and vehicle design, law enforcement, and timely emergency care. It also supports policies promoting walking, cycling, and public transport for their health and environmental benefits.

Road travel is the primary mode of transporting goods and people in the country. Along with population growth- urbanization, rapid increment in the number of vehicles, road networks have massive changes in transportation and people's mobility. The increased number of vehicles, road networks, lack of awareness, continuously increasing crashes, and lacking strict implementation of road safety measures are the current challenges for road safety in Nepal. Analysis of Global burden of disease estimates showed that 4.11% of all deaths caused by road traffic injuries, it represented 26.99% of all injury related mortality in 1990 and it was increased to 40.02% in 2017 in Nepal.[6] Also, ten years road traffic crash incidents analysis of Nepal showed that for all the time of day road crash incidents were increasing and casualties were higher between 12 noon to 6 pm (See Box 8.4 for Status of road safety in Nepal, Global Status Report on Road Safety, 2079/80 (2023)).

Figure 8.3 Five pillars of road safety action plan

3 https://www.who.int/data/gho/data/themes/topics/topic-details/GHO/road-traffic-mortality

5 https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries

5 https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries#:~:text=Road%20traffic%20injuries%20are%20the,adults%20aged%205%E2%80%9329%20years

6 Pant PR, Banstola A, Bhatta S, Mytton JA, Acharya D, Bhattarai S, Bisignano C, Castle CD, Prasad Dhungana G, Dingels ZV, Fox JT, Kumar Hamal P, Liu Z, Bahadur Mahotra N, Paudel D, Narayan Pokhrel K, Lal Ranabhat C, Roberts NLS, Sylte DO, James SL. Burden of injuries in Nepal, 1990-2017: findings from the Global Burden of Disease Study 2017. Inj Prev. 2020 Oct;26(Supp 1):i57-i66. doi: 10.1136/injuryprev-2019-043309. Epub 2020 Jan 8. PMID: 31915272; PMCID: PMC7571348.

in number

24,537

road traffic crashes resulting in injured individuals

26,504

injured individuals from traffic crashes reported by Police (FY 2078/79, (2021/22))

94,665

of injured individuals from traffic crashes reported through OPD visits HMIS (FY 2078/79, (2021/22))

7,282

Severely injured

Figure 8.4 Sex distribution of the deaths due to RTA

A total of 2,883 lives were lost in RTA with majority (82.06%) being males (Fig 8.4).

Among these lives lost 34.0% were drivers or passengers of 2 or 3 wheelers, 22.7% were pedestrian and 30.6% were passengers of motorized 4-wheelers light vehicles (Fig 8.5).

In the reported years from 2075/76- 2077/78 (2019-2021), it is worrisome that the RTA deaths per 100,000 populations is consistently increasing (Table 8.1).

Table 8.1 RTA death rates per 100,000 population 2075/76-2077/78 (2017-2019)

Year	Number of deaths*	Source(s) of data	National Population	Population death rates per 100,000 population
2021	2,883	Nepal Police	29,674,920	9.7
2020	2,513	Nepal Police	29,136,808	8.6
2019	2,251	Nepal Police	28,608,710	7.9

Data Sources:

Nepal Police Mirror, 2020 and 2022

https://www.nepalpolice.gov.np/media/filer_public/71/ed/71edd99d-a91a-47e5-9e86-a0626d52198e/police-mirror-f-2022.pdf

Global status report on road safety (2023): chapter Nepal reported by EDCD, DoHS

In this backdrop, MoHP actively participates and contributes in several stakeholder activities of road safety led by Nepal Road Safety Council, Ministry of physical Infrastructure and Transport (MoPIT), and Nepal Police. Among multi-sectoral strategies on road-safety recommended by Nepal Road Safety Action Plan 2077/78-87/88 (2021-2030), direct health sector related strategy is timely emergency care of road crash victims by instituting trauma care system at federal, provincial local level government tha includes a timely response to crashes, followed by pre-hospital, hospital, and post-hospital care and related formalities. Efforts of MoHP, guided by the action plan for road safety in five pillars of road safety, are institutionalized across different centers and divisions (Fig 8.6).

Curative Service Division	National Health Training Center	Epidemiology and Disease Control Division	Health Emergency and Disaster Management
Facility based trauma care	Capacity building	Capacity building	Disaster management / Information and communication center
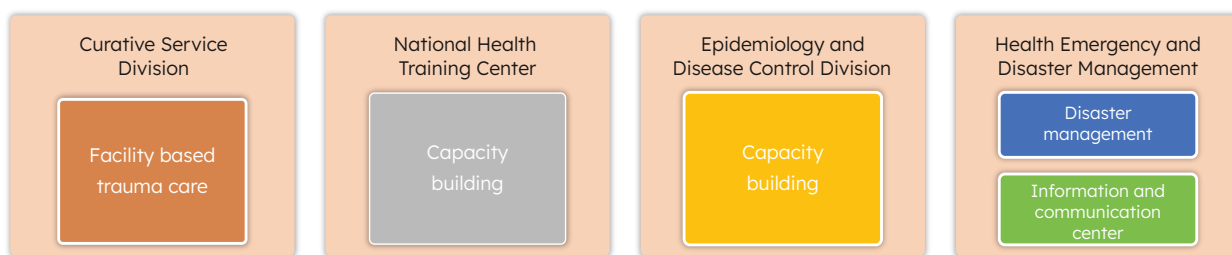
Figure 8.6 Institutional arrangement for implementation of road safety strategy for health sector

8.2.2 Major Activities on Road Safety

Development of injury prevention strategy

The injury prevention strategy in Nepal is currently in the development phase, with a draft prepared by EDCD and ready for review. The plan is to finalize the strategy in the near future.

Low-cost road safety pilot initiatives at local level

A five-day orientation, titled Low-Cost Road Safety Initiatives at Local Level, was held in Tulsipur Sub-Metropolitan City, Dang and Damak Municipality, Jhapa. The workshop aimed to engage the entire municipality, wards, and community in low-cost road safety interventions. It disseminated knowledge about proven initiatives to reduce road crashes, deaths, and injuries, emphasizing the community's role. The orientation emphasized that road safety is a shared responsibility requiring the active involvement of various stakeholders. To facilitate initiatives, an 11-member road safety leadership network was formed, and a thirteen-point draft declaration was made during the workshop to achieve the desired objectives of low-cost road safety interventions. This activity was led by LCDMS/EDCD.

Global status report on road safety

EDCD/LCDMS served as a member of National data focal points and worked with WHO regional Advisors and Regional Data Coordinators in identifying the contributors, followed by coordinating and supervising the data collection process and submitted to incorporate in the Global Status report on road safety (See Box 8.4 above).

8.3 Mental Health Programs

8.3.1 About the Program

History of mental health services in Nepal roots back to 2018 (1961) as an out-patient service from Bir Hospital. Mental health problems constitute of 18% of the total NCDs and is the fourth leading cause of disability. National Mental Health Survey 2077 (2020) showed that 10% of the adult population had some mental disorder in their lifetime and 4.3% currently had some mental disorder. The prevalence of suicidality was 7.2%, current suicidality was 6.5%, lifetime suicidal attempts were 1.1% and risk of future suicidal attempts was 0.3%. There is increased risk among the vulnerable like- poor, hard to reach population, homeless, conflict affected, survivors of violence, minority groups, non-binary gender, prisoners, people in humanitarian setting are more prone to mental health problems. In addition to these, mental disorders are stigmatized in the society and the people are reportedly named crazy and taken as a matter of embarrassmentfor a holistic approach to road safety, emphasizing improvements in road and vehicle design, law enforcement, and timely emergency care. It also supports policies promoting walking, cycling, and public transport for their health and environmental benefits.[7]

Recognizing these challenges, the GoN has progressively increased its commitment to mental health, resulting in the establishment of a Non-Communicable Diseases and Mental Health (NCDs and MH) Section. Mental health care is now a fundamental service according to the Public Health Services Act, 2075, and is included in the BHS and emergency health services as defined by Public Health Service Resulation. The National Health Policy of 2076, in section 6.17.5, outlines a strategy to expand and integrate mental health services into the broader health system. Remarkably, Nepal has endorsed its National Mental Health Strategy and Action Plan (NMHSAP) 2077 as an umbrella strategy to guide the overall mental health program planning and service delivery (Fig 8.7).

Ensure easy availability, affordability and equitable access in mental health services	Manage resources, human resources and institutionalize mental health and psychosocial services	Promote mental health and increase awareness to eliminate superstitions, myths related to mental health	Protect human right of people with mental health problem and psychosocial disability	Integrate mental health services information with existing integrated health information system and promote research

Figure 8.7 Five strategies of National Mental Health Strategy and Action Plan 2077

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7 Nepal Health Research Council, Ministry of Health and Population. 2020. National Mental Health Report Survey Nepal 2077 (2020). Government of Nepal

8.3.2 Key Programs/Activities for Mental Health

National mental health service strengthening programme 2079/80

National Mental Health Care Programme 2022 provides a framework for the delivery of PHC-oriented mental health services. It is intended to guide programme managers from all levels of the government on the implementation of the provisions of Public Health Service Act 2075, Public Health Service Regulations 2077 and NMHSAP 2077. The program prioritizes practical, equitable, and need-based mental health care, considering the current health system capacity, infrastructure, and community needs. It emphasizes people-centered care, community participation, and enhanced access to mental health services.

The service package that supports the implementation of the NMHSAP 2077 and guides the WHO SIMH has been endorsed. The service package has been developed using insights from the Community Mental Health Care Package 2073/74 (2017), feedback from stakeholders and reviewed by national and international entities. The implementation is currently underway. The National Mental Health Care Programme also aims to provide basic mental health services at the primary healthcare level and focused care at secondary health facilities. Collaboration with academic institutions, NGOs, and communities will follow a primary health care-oriented service delivery model.

WHO special initiative for mental health (WHO SIMH)

The WHO SIMH seeks to ensure universal health coverage involving access to quality and affordable care for mental health conditions in 12 countries, aiming to reach more than 100 million people. 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. The SIMH has been working closely with MoHP and other mental health stakeholders across the nation.

In collaboration with WHO Nepal and various stakeholders, MoHP has developed a multiyear logical framework for the Special Initiative, aligning with NMHSAP 2077. This framework is informed by a country situation analysis, addressing the organization of services, human and financial resources, prevalence, treatment gaps, and integration opportunities within the health system. SIMH alos aims to support systems reform across all seven provinces, with targeted assistance to 14 districts through a revised district care model for mental disorders.

Integrating mental health in undergraduate curriculum

The Bachelor of Medicine Bachelor of Surgery (MBBS) program in Nepal offers a comprehensive five-and-a-half to six-year medical undergraduate training,

enabling graduates to independently practice medicine within the country. Mandatory rural placements after completion contribute to these individuals serving as the primary healthcare workforce in Nepal's rural areas, carrying the responsibility of delivering essential curative services to a majority of the population. However, mental health was given little emphasis during MBBS training. There is an on-the-job training programmes to build the competency of the MBBS doctors implemented by NHTC and EDCD to ensure he provision of basic mental health services. With realization that in the absence of optimum preservice education, training needs will be extensive, consultation were organized to identify ways to strengthen the preservice medical education curriculum.

Led by MoHP and EDCD, with support from WHO Nepal, a workshop on 26th-27th Falgun 2078 (10th-11th March 2022) involved deans, heads of psychiatry departments, and medical education experts from all Nepalese universities. The outcome included basic competencies for MBBS training were defined, consensus on teaching hours, methods, and examination processes. Universities are now developing institution-specific roadmaps to implement these actions.

Strengthening mental health services

MoHP mandates general hospitals with over 200 beds to establish functional mental health units. This is a crucial step in setting up acute inpatient care units in multi-disciplinary general hospitals in each province. MoHP allocated funds to 13 larger federal and provincial general hospitals for integrating mental health services. This decentralization effort aims to provide comprehensive mental health care within general health care, supporting disaster response and recovery, including COVID-19 situations. Medical superintendents, nursing officers, and mental health experts have collaboratively developed facility-specific work plans for the upcoming year, incrementally strengthening both hospital-based and community-based care despite resource constraints.

Child and adolescent mental health (CAMH) services

CAMH training program has been started for child and adolescent mental health by the support of UNICEF. Training for medical officers, pediatricians and general practitioner from all seven Provinces has been trained to identify and manage common mental health problems of children and adolescents.

Psychotropic medications

Various psychotropic medications, such as antipsychotics, antidepressants, anxiolytics, mood stabilizers, and anti-epileptics, are accessible at health facilities throughout Nepal. However, patients often bear OOP costs due to frequent stock-outs and inconsistent supply. Registered medical doctors can prescribe mental health medications. Notably, after undergoing training and adhering to government protocol, health assistants in primary healthcare settings can also prescribe them.

Integrating NCD in maternal mental health services

A review of maternal mental health services in Paropakar Maternity and Women's hospital team has

been conducted through FWD. Although the work is in the initial stage, this is a noble step to integrate NCD in maternal mental health services.

Integrating NCDs and mental disorders in the current recording and reporting of HMIS

Mental health data has not been a priority in the HMIS, lacking indicators and a monitoring system for mental health services. Recognizing the need for patient tracking and treatment outcomes in mental health, a separate patient register 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.

"Khulla Mann": district mental health care program 2022

To enhance primary mental health services in Nepal in a practical, equitable, and needs-based manner, the *"Khulla Mann"* District Mental Health Care Program was introduced. This ambitious yet pragmatic initiative considers current health system capacity, infrastructure, and community care needs. Informed by global best practices and experiences from the Community Mental Health Care Package 2073/74 (2017), *"Khulla Mann"* prioritizes people-centered care, community participation, and improved access to ensure mental health equity. It replaces and builds upon the Community Mental Health Care Package 2073/74 (2017), with a focus on strengthening the PHC system, integrating mental health services at district-level hospitals, PHCCs, and health posts, and establishing strategic community linkages for mental health care and promotion.

Suicide prevention:

In 2019, WHO reported 700,000 yearly suicide deaths globally, equating to one death every 40 seconds. Each suicide affects 135 individuals in its vicinity. The 2019 report estimates the suicide mortality rate is 9 lakh, with 16.4 lakh in males and 2.7 lakh in females in Nepal.[8] In FY 2078/79, Nepal recorded 6,850 suicides, with a death rate of 23.4 lakh. Suicide is also a significant cause of mortality among women of reproductive age.

MoHP has launched a 24/7 national suicide prevention helpline ☎1166 at the Mental Hospital with support from WHO. Plans include establishing a National Suicide Prevention Resource Center. There are ongoing trainings for primary care providers incorporates suicide risk assessment and management based on mental health Gap Action Programme (mhGAP) recommendations. WHO media guidelines aimed to create a training package for media personnel have been translated in Nepali. Furthermore, NPC is in the process of developing a National Suicide Prevention Action Plan.

8.3.3 Key Mental Health Service Indicators

Types of service providers accessed by the population

There were 23% of the individuals who access the service providers for management of their symptoms[9] of which 6.5% were psychiatrist, 0.2% were psychologist, 0.3% were counsellor, 8.8% were medical doctors (non-specialist) and 0.3% were paramedics. There were still 6.7% of the individuals consulting faith healers. Considering involvement of the faith healers in capacity building activity for mental health disorders recognitions, referral and awareness on importance of regular medication is needed.

Service utilization for mental health issues

In FY 2079/80, a total of 119,429 patients were on treatment for mental health issues. The proportion was relatively higher among 10,000 cases under treatment in Koshi, Bagmati and Lumbini Provinces (Fig 8.8).
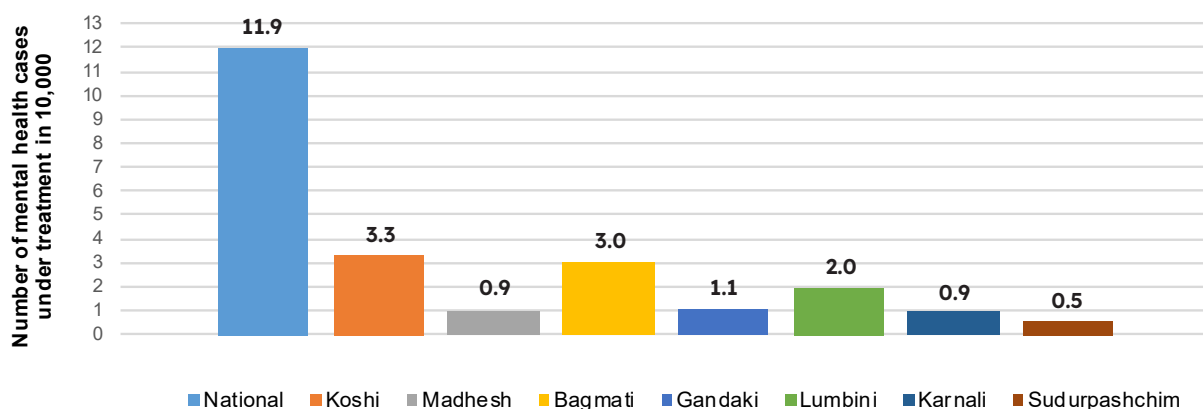
Figure 8.8 Service utilization for common mental health issues

Source: HMIS/DoHS

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8 https://data.who.int/indicators/i/I6BBF4I

9 Nepal Health Research Council, Ministry of Health and Population. 2020. National Mental Health Report Survey Nepal 2077 (2020). Government of Nepal

Box 8.5 SWOT analysis of Mental Health Programs

Strength	Opportunity
• 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	• 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
Weakness	**Threat**
• Inadequate institutional setup and human resources • Insufficient training for newly recruited health workers and lack of refresher trainings • Low priority for mental health program at sub-national level • 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

Epidemiological Surveillance, Research and Outbreak Management

EDCD	NTD and Vector Borne Disease Control Section	Zoonotic and Other Infectious Disease Control Section	Disease Survelliance and Research Section	Epidemiology and Epidemic 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 2056, 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 2079/80, all designated sentinel hospitals actively contribute to EWARS reporting. This participation caters 82 government hospitals, 12 private hospitals, six missionary hospitals, four community hospitals, and 14 medical colleges.

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, along with its affiliated institutions, is committed to ensuring that water supplied by projects complies with the National Drinking Water Quality Standard of 2079. Serving as the secretariat of the NDWQS, EDCD bears the exclusive responsibility for overseeing the monitoring 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).
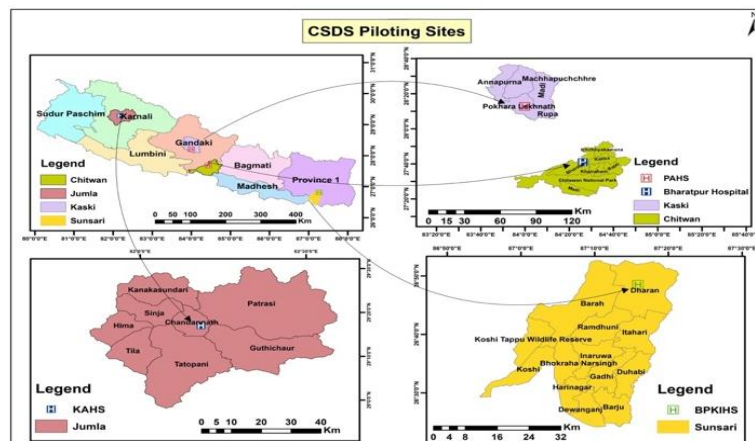
Figure 9.1 CDSS Piloting Sites

Source: EDCD/DoHS

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 provinces.

Toll-free call center

Since 6th Falgun, 2076 (18th February, 2020), EDCD has been operating a toll-free call center with number 1115, available daily from 8 am to 8 pm. Establishment of this call center aimed to gather inquiries pertaining to the GoN, MoHP, DoHS and EDCD. The focus areas include queries related to the COVID-19 pandemic, other communicable and NCDs, complaints concerning health services, suggestions for health service enhancements. The primary goal is to promptly address these issues through relevant agencies, ensuring the provision of quality and effective service delivery.

9.1.2 Key Activities in FY 2079/80

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.

Drinking water quality surveillance

- Across all seven provinces, Water Quality Surveillance Committee were established along with dissemination of water quality surveillance guideline 2076.

- Furthermore, Water Users Committees received training for water quality surveillance activities, including the use of test kits and awareness campaigns, across all provinces.

CSDS

- The Department of Hydrology & Meteorology (DHM) and DoHS have formed a robust collaboration through a formal Memorandum of Understanding (MoU), focusing on climate and health data sharing, collaborative research, and community engagement.

- Progress has been made in creating a comprehensive retrospective health (since 2075/76 (2019)) and meteorological (since 2048/49 (1992)) database. Currently, the focus is on ensuring the completeness and consistency of prospective health data to facilitate analysis.

- Dedicated server for the tool has been allocated to automate the meteorological and health data sharing for streamlining the real-time functionality. Server installation and hosting for CSDS tool is in the process, after which, an automated platform for regular surveillance and forecasting mechanism will be developed - which shall be then further tested for its validation.

- Currently, efforts are being made for attaining model fit calibration value with the available data.

- The operational manual has been developed and all four piloting sites has been oriented in CSDS tool.

- Regular on-site data verification, basic support for electronically recording disease data at relevant departments and orientation sessions for healthcare professionals - particularly medical recorders and relevant wards/departments of those piloting sentinel sites are the initiations made for improving data quality and enhancing surveillance capacity.

- Targeted sensitization campaigns are initiated to raise awareness among local government bodies and health facilities near the sentinel sites. The focus is to sensitize about the connections between climate change, health risks, and the recording/reporting and response mechanisms for climate-sensitive diseases.

SORMAS

- In FY 2079 at Gandaki and Sudurpaschim provinces, SORMAS Training of Trainers and user training on SORMAS tool was provided to the district level and provincial level health managers (Division chiefs of ministry, health office chiefs and focal persons).

- In addition, all Health Section Chief and one Rapid Response Team (RRT) Member from 85 LLGs were trained for use of SORMAS tool.

- The tools are being used in both the pilot provinces to report the events with details.

Media monitoring and operation of call center

- Daily monitoring of the published information specific to outbreaks and sensitive health events in open source media.

- Preparation and Dissemination of the daily media monitoring report and weekly call center report to the concerned stakeholders for needful action.

9.1.3 Key program/progress status in FY 2079/80

EWARS:

- Round the year publication and dissemination of weekly bulletin.

- EWARS reporting system has documented a comprehensive total of 19 infectious diseases between the FYs 2077/78-2079/80 (Table 9.1).

COVID-19 was partially reported from the sentinel sites. In addition to the six priority diseases, enteric fever (n=3,491) and scrub typhus (n=3,458) emerged as the most frequently reported diseases. The EWARS platform also recorded cases of leptospirosis, pneumonia, plague, and meningitis.

Table 9.1 Priority diseases and other diseases reported in EWARS in FY 2077/78-2079/80

Disease / Period	2077/78	2078/79	2079/80
Priority Diseases			
COVID-19	18,869	17,662	5,789
Influenza like illness	3,636	2,901	2,207
Severe Acute Respiratory Illness (SARI)	7,596	9,373	11,957
Acute Gastroenteritis (AGE)	8,366	7,903	14,583
Dengue	541	531	25,777
Kala-azar	220	278	310
Cholera	0	19	44
Malaria falciparum	19	17	38
Malaria vivax	62	37	66
Other diseases			
Diphtheria	-	1	4
Encephalitis	39	12	141
Hepatitis-Acute Jaundice	258	136	173
Leptospirosis	10	17	34
Meningococcal Meningitis	47	32	119
Suspected Measles Like Illness	10	4	10
Viral Haemorrhagic Fever	5	1	18
Whooping Cough	2	-	11
Pneumonia plague	5	93	7
Snake Bite-poisonous	-	-	201
Rabies	-	-	207
Enteric Fever	2,691	1,654	3,491
Scrub Typhus	1,754	2,018	3,458

Source: EWARS/EDCD/ DoHS

At provincial level, Influenza-like illness was predominantly reported in the Karnali Province (n=1560). The highest number of Severe Acute Respiratory Illness (SARI) cases were documented in the Koshi Province (n=3,464), followed closely by the Lumbini Province (n=2,912). In the case of cholera, Bagmati Province reported 42 cases, while Madhesh, Gandaki, Lumbini, and Karnali Provinces reported zero cases, as detailed in Annex Table 9.1.

Reporting status of the sentinel site

With consistent reporting throughout all epidemiological weeks, Sudurpaschim and Madhesh Province had reporting rate of cent percent. Karnali and Bagmati provinces are the least performer in the reporting to EWARS (Figure 9.2). However, of the 118 sentinel sites, 16 sites consistently reported throughout every epidemiological week in the year, ensuring their sustained commitment to reporting.
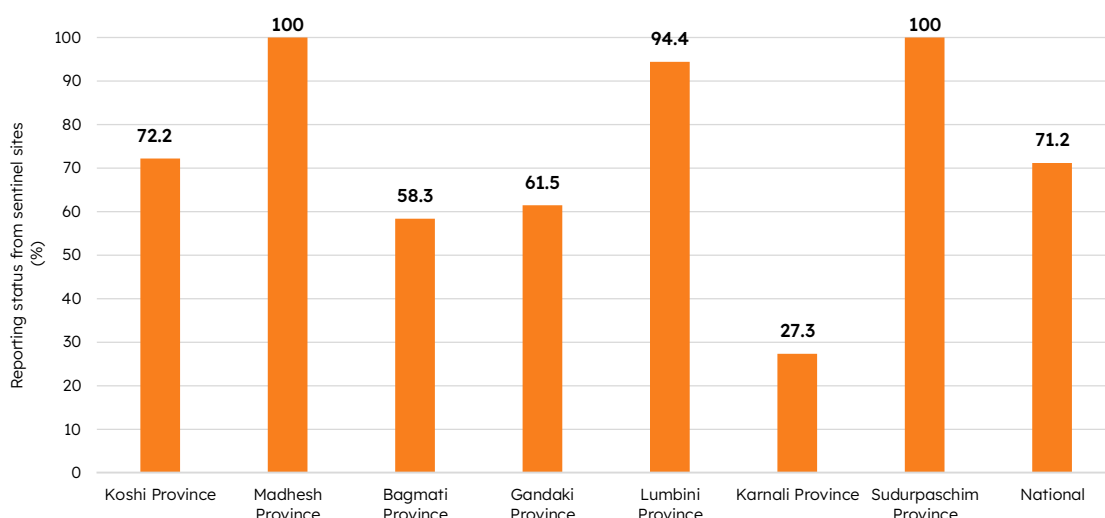
Figure 9.2 Reporting status of sentinel sites by Province in FY 2079/80

Source: EWARS/EDCD/DoHS

Drinking water quality surveillance

Water quality kits are now accessible in Health Offices, the PPHL, and Provincial Health Directorates throughout the provinces. However, an assessment of kit functionality indicated that out of 79 available water quality test kits, 33 (41.77%) are in a functional state.

In the course of regular Water Quality Surveillance (WQS), a total of 6937 drinking water samples were tested, revealing that 43% of them were E.coli positive. Reporting status by province is presented in below table (Table 9.2).

Table 9.2 Water Quality Surveillance in Provinces in FY 2079/80

WQS Sites*	Total Water Samples Tested	E. coli	
		Positive (%)	Negative (%)
Lumbini Province	5,448	2,268(42%)	3,180(58%)
Gandaki Province	980	451 (46%)	529 (54%)
Sudurpashchim Province	403	199 (49%)	204 (51%)
Regular WQS by EDCD (during outbreaks)	106	46 (43%)	60 (55%)
Total Tests	**6,937**	**2,964 (43%)**	**3,973 (57%)**

* Reporting status of other provinces not available

Source: EDCD/ DoHS

Call center

In FY 2079/80, more than 62,500 call have been received, 54,608 calls have been answered. Most of calls are received from Bagmati Province (35.8%) and followed by Sudurpaschim Province (10.6%), Koshi Province (5.1%), Karnali Province (4.7%), Lumbini Province (4.6%), Gandaki Province (3.2%) and Madhesh Province (2.6%).

Box 9.1 SWOT Analysis of Epidemiological Surveillance and Research

Strength	Opportunity
- Functional EWARS system. - Swift reception of signals/alerts from both sentinel sites and call centers. - Implementation pilots of the Climate-sensitive Disease Surveillance (CSDS) and SORMAS - Foster WQS across all provinces.	Reinforcing event-based surveillance by incorporating the call center/Surveillance Outbreak Response Management Analysis System (SORMAS) from the initial piloting provinces, namely Gandaki and Sudurpaschim.
Weakness	**Threat**
- Limited coverage of sentinel sites. - Delayed real-time data submission, often received after a 10-day interval, typically post-discharge. - Reporting in EWARS captures data of only impatient departments. - Technological deficiencies, such as the ability of a sentinel site to enter data for the six prioritized diseases individually for all upcoming Epidemiological Weeks in a single session. - Inadequate reporting of water surveillance data in the N-WASH (National Water, Sanitation, and Hygiene) program.	- Vertical surveillance without integration is operational. - Inadequate of proper means for verification and validation mechanisms poses challenges in ensuring data accuracy and reliability.

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), 2061/62 (2005). The EoMS section plays one of the key roles in strengthening the IHR core capacities and in reporting on progress (Fig 9.3).
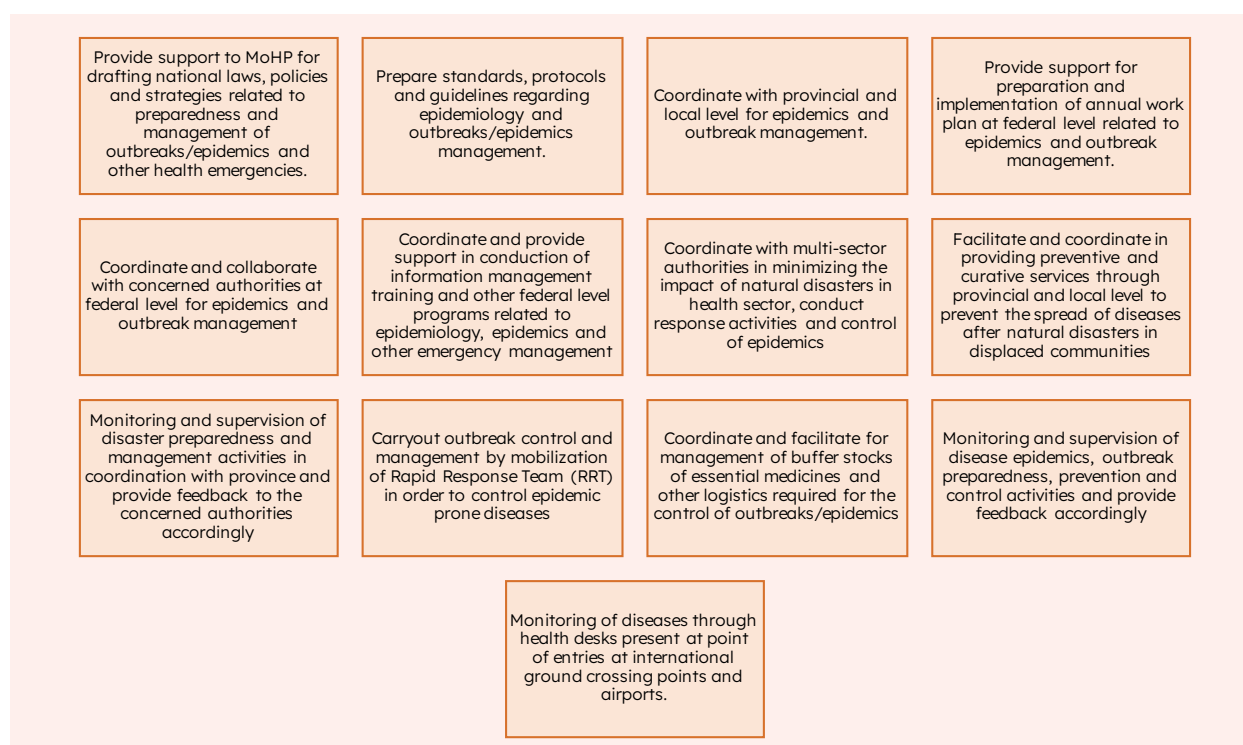
Figure 9.3 Major areas of functions/responsibilities of EMoS, EDCD

9.2.2 Major Activities in FY 2079/80

Continued public health response to COVID-19 pandemic in collaboration with provinces, local levels and development partners.

Conducted vaccination for Haj Pilgrims as a regular program (influenza and meningococcal vaccines for 1,200 Haj Pilgrims)

Endorsed the operational guidelines for RRTs and Emergency Medical Teams (EMTs)[1].

Conducted Training of Trainers sessions for RRT across all 7 provinces. This initiative prepared 91 RRT instructors.

Conducted three batches of the Field Epidemiology Training Program (FETP), 57 professionals were graduated.

Conducted National Workshop on Multi-Hazard Emergency Risk Assessment using Strategic Toolkit for Assessing Risks (STAR).

Conducted national level sensitization workshop on public health risks. The participants were from health and beyond health sectors including federal and provincial ministries, agencies, development partners.

Conducted reviews of health desks at Point of Entry (PoE)-Ground Crossings, covering 14 locations along the Nepal-India 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)
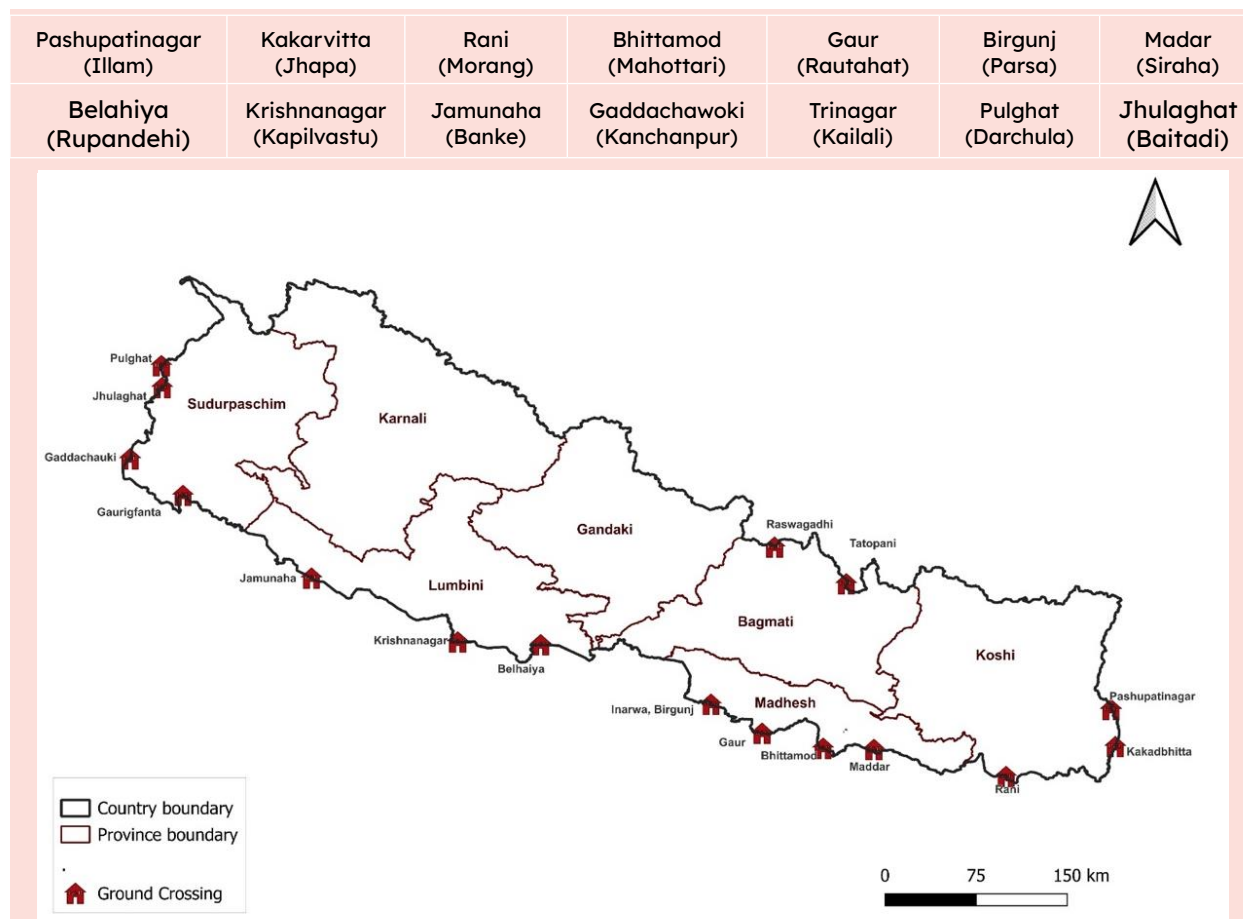
Figure 9. 4 Health desks functional at ground crossing in FY 2079/80

Source:EDCD/DoHS

Conducted RCCE training in six provinces (Madhesh, Bagmati, Gandaki, Lumbini, Karnali, Sudurpaschim), aimed at strengthening the capabilities of health authorities. Participants included RRT focal persons, information officers from health offices, Provincial Health Directorates, the Red Cross Society, District Administration Offices (DAO), and Veterinary hospital and livestock services expert center.

Successfully carried out Nepal's first Joint External Evaluation (JEE)[2] of International Health Regulations Core Capacities. The overarching recommendations include:

- Develop a five-year, risk-based, prioritized and costed National Health Security or IHR plan, based on the recommendations of the JEE

report, with roles and responsibilities for all relevant stakeholders. Implement the plan with a monitoring and evaluation framework, and facilitate implementation of all other plans and/or strategies in the pipeline in Nepal that will augment IHR capacities (e.g. the National Action Plan on Antimicrobial Resistance (NAP-AMR) and the One Health Action Plan). Institutionalize these plans with endorsed policies, guidelines, standard operating procedures and operational budgets aligned to government processes.

- Develop a national multi-hazard health emergency preparedness and response plan informed by strategic assessment of risks, with multisectoral engagement, accountability and funding, clearly

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1 https://edcd.gov.np/resource-detail/rrt-guideline

2 https://heoc.mohp.gov.np/guidelines-publications/joint-external-evaluation-of-ihr-core-capacities-of-nepal-mission-report-28-november-2-december-2022/detail

aligned to the national disaster risk management architecture, strategy and plan. Ensure the rapid endorsement and implementation of this plan to enable national response readiness. Support provincial and local governments to develop similar plans contextualized to their risk profiles, but clearly aligned to the national plan to ensure vertical integration of preparedness and response actions.

- Develop an accountability framework and standard operating procedures (SOPs)for intra- and intersectoral coordination and communication among and between the health and non-health sectors, including the security apparatus, the private sector and civil society, across all levels of governance and administration in Nepal. This should be done with the goal of improving cross-sectoral partnerships at all levels, enabling the stewardship of the National Steering Committee and helping the IHR National Focal Point to advance multi-hazard health emergency risk reduction, preparedness, readiness, response, recovery and resilience.

- To enable the implementation of actions to address the gaps in health security identified by the JEE and the lessons of the COVID-19 pandemic and other emergencies/disasters:

  - Map, review and amend/update existing legal, regulatory and administrative instruments and develop new instruments that are critically needed;

  - Complete a needs assessment to aid the mobilization of adequate resources and efficient allocation of budgets for all relevant sectors and institutions at all administrative levels, in line with current and envisaged future absorptive capacities; and

  - Map essential public health functions: assess the competencies needed; identify current and

envisaged gaps in human resources; and develop, endorse and implement

  - » a national, multi-sectoral workforce plan;

  - » a national human resources capacity building strategy and action plan; and

  - » a national partnerships platform to strengthen systems for One Health security, including for surge response during emergencies.

- Strengthen existing mechanisms and platforms and develop and implement new strategies and partnerships to protect communities from the multidimensional impacts of emergencies through community-centered risk reduction, preparedness, readiness, response, recovery and resilience. This should be done by enhancing coordination and collaboration among all relevant stakeholders to ensure that communities are empowered to take action to reduce/mitigate risks, misinformation, disinformation and lack of information; and engaged throughout the emergency management cycle. Community concerns must be addressed through multi-sectoral policy and action that incorporates human rights, gender equality and social inclusion.

Carried out preparedness initiatives for a potential Monkey pox outbreak

- Assigned 14 dermatologists as key contacts in 14 hospitals across all seven provinces. Also provided training sessions for healthcare workers in major hospitals such as Sukraraj Tropical and Infectious Disease Hospital and Koshi Hospital.

Responded to Cholera outbreak in Kathmandu Valley

- Outbreak investigation

- Carried out Reactive Oral Cholera Vaccination (OCV) campaign in Kathmandu in FY 2079/80 (Table 9.3).

Table 9.3 Oral cholera vaccination campaign in Kathmandu FY 2079/80

Campaign Phase	Total Population that received OCV	Target Population	Coverage rate (%)
First	37,108		40.25
Second	45,215	92,185	49.04
Total	82,323		44.64

Source: EoMS/EDCD/DoHS

Health desks

There are 16 Health Desks at its Ground Crossing Points of Entries (GCPoE), with 14 located at the Nepal-India border and two at the Nepal-China border (as illustrated in Fig 9.4 above). These health desks play a crucial role in preventing the spread of communicable diseases into the country. Health desks focus on screening for significant diseases such as COVID-19, Malaria, and Tuberculosis, HIV and others, in accordance with national protocols (detailed in Annex Table 9.2 for COVID-19 tests at GCPoEs).

Box 9.2 SWOT Analysis of Epidemiology and Outbreak Management Programme

Strength	Opportunity
• 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
Weakness	**Threat**

• 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 Multi-Hazard Health Emergency Preparedness and Response Plan
• Lack of implementation of Public Health Service Act, provisions related to health emergencies.
• Ad-hoc health desks at point of entries.
	• Poorly resourced Designated Ground Crossing Points (GCPs)
	• Coordination and collaboration among three tiers of governments and other sectors
	• Non-operationalization of contingency funds

EDCD	NTD and Vector Borne Disease Control Section	Zoonotic and Other Infectious Disease Control Section	Disease Survelliance and Research Section	Epidemiology and Epidemic Management Section	NCD and Mental Health 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 infectious disease that possess a public health challenge in Nepal. The disease is primarily transmitted to humans through the bites of infected female Anopheles mosquitoes. Malaria is endemic in certain parts of Nepal, with the Terai region (southern plains) being the most affected area. However, the cases have also been reported in the hilly and mountainous regions. Malaria in Nepal exhibits seasonality, with the peak transmission occurring before and after the rainy season.

To better understand and combat malaria, Nepal has adopted a micro-stratification approach. Nepal's "malaria micro-stratification process" began at the district level in 2066/67 (2010). To enhance community-level risk stratification and accurately define the total population at risk, micro-stratification was performed at the ward level within LLGs.

Based on the recommendation by EDCD and TWG and 2068/69 (2012), 2072/73 (2016) and 2074/75 (2018)

micro-stratification study the methodology used for micro-stratification includes recent data on malaria disease burden, coupled with spatial information on climate, ecology, key vector species, and vulnerability in terms of human population movement. Using this approach, the 2079/80 (2023) micro-stratification updated wards, categorizing them as high, moderate, low and no risk. While the Terai regions show low endemicity, upper hilly river valleys, previously categorized as 'No Malaria' risk, are now reporting increased infection rates. Despite this, the current stratification retains the same ward categories as the previous three years, with program activities directed accordingly. Notably, the concentration of malaria cases was primarily observed in Sudurpaschim and Karnali Provinces, encompassing all high-risk wards and 94% of moderate-risk wards. The remaining 6% of moderate-risk wards were identified in Lumbini Province (Table 10.1).

Table 10.1 Micro stratification for Malaria risk

Province	High Risk ward	Moderate Risk Ward	Low Risk Ward
Koshi	0	0	217
Madhesh	0	0	222
Bagmati	0	0	365
Gandaki	0	0	253
Lumbini	0	2	271
Karnali	4	10	408
Sudurpaschim	6	23	595
National	**10**	**35**	**2,331**

Source: EDCD/DoHS

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) and framework for malaria elimination, 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 2078/79 (2022).

Mission: Ensure universal access to quality assured malaria services for prevention, diagnosis, treatment and prompt response in outbreak.

Goal: Reduce the indigenous malaria cases to zero by 2022 and sustain thereafter and sustain zero malaria mortality.

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.

Major activities conducted in FY 2079/80

- Total of 97,053 Long Lasting Insecticidal nets (LLIN) were distributed through mass distribution and 20,207 LLINs through continuous distribution to people living in active foci, malaria risk groups, military and police personnel and pregnant women at their first ANC visits.
- Ward-level micro-stratification of malaria cases in 77 districts.
- Continuation of case-based surveillance as key intervention, including web-based recording and reporting system for districts. The Malaria Disease Information System (MDIS) is fully operational.
- Continuation of program orientation to district and peripheral level health workers on case-based surveillance and response.
- Continuation of private sector engagement activities; health worker orientation on malaria diagnosis and treatment, recording and reporting to DHIS2 in correct and timely manner.
- Carried out detailed foci investigation at 23 sites.
- Reorientation in Sudurpaschim and Madhesh provinces on malaria prevention, early diagnosis, prompt treatment and conduction of CBI including 1-3-7 modality of malaria disease surveillance.
- Re-orientation in Koshi, Bagmati, Gandaki, Lumbini and Karnali Provinces through COVID-19 Response Mechanism (C19RM) program at LLGs.

- Periodic review meetings for district and central level staff
  - Participants reviewed data from peripheral facilities and revised it based on suggestions.
- Continuation of study on prevalence of laboratory-confirmed malaria among clinical malaria cases identified by physicians in referral hospitals of Nepal.
- Carried out malaria program mid-term review by External experts.
- Regular vector control (indoor residual spraying) biannually across high and moderate risk districts.
- Detailed case-based investigation and fever surveys around positive index cases.
- Regular supply of malaria Rapid Diagnostic Tests (mRDT) and anti-malaria drugs to Service Delivery Points (SDPs)
- Supportive supervision to SDPs
- Celebrated World Malaria Day on 12th Baishak 2080 (25th April 2023).

Status of malaria program

Confirmed malaria cases increased from 491 in 2078/79 to 533 in 2079/80 of which most are contributed by imported cases (95.6%). The proportion of *P. falciparum* infections is increased and accounted for more than 28.33% of all cases in current year. There were 31 *P. ovale* malaria cases among returnees from peacekeeping missions in this FY (Table 10.2).

Table 10.2 Malaria epidemiological information FY 2077/78–2079/80

Items/indicators	2077/78	2078/79	2079/80
Total population	11,902,650	10,140,450	10,299,169
Total slide examined (Slide and RDT)	156,783	292,893	468,330
Total positive cases	377	491	533
Total indigenous cases	66	38	24
Total imported cases***	311	453	509
Total P. falciparum (Pf) cases *	51	114	151
% of Pf of total cases*	13.53	23.2	28.33
Total indigenous Pf cases *	8	0	4
% indigenous Pf cases *	16	-	2.64
Total imported Pf cases *	43	114	147
% imported Pf cases	84	100	97.36
Total P. vivax(Pv)cases+Ovale**	326	377	382
Total indigenous Pv cases+Ovale**	58	38	20
% indigenous Pv cases +Ovale**	18	10	5.24
Total imported Pvcases +Ovale**	268	339	362
% imported Pv cases+Ovale**	82	90	94.76
Annual blood examination rate	1.32	2.89	4.55
Annual parasite incidence	0.03	0.05	0.05
Annual Pf incidence	0.004	0.011	0.015
Slide positivity rate	0.24	0.17	0.11
Slide Pf positivity rate *	0.02	0.04	0.03
Death from Malaria	0	1	0
Probable/clinical suspected malaria cases	129	303	290
Active Foci	30	24	16
Residual Non Active Foci	117	48	44
Cleared Foci	152	87	23

*Pf+Pmix, ** P. Ovale (31 in FY 2079/80), *** imported relapse (10 in FY 2079/80)

Source: HMIS/DoHS

The trend of clinically suspected malaria cases is also decreasing, mainly due to the increased coverage of RDTs and microscopic laboratory services at peripheral level, and regular orientation and on-site coaching of service providers. In 2079/80, the case decreased from 303 to 290, out of which some were tested negative but treated by chloroquine (Table 10.2, 10.3).

The highest number of total confirmed cases were reported from Banke district (122) followed by Kailali (73), Kathmandu (45), Sarlahi (37), Kanchanpur (28), Achham (20), Rupandehi (20), Surkhet (20), Dhanusa (14) and Kapilbastu (13). Out of total confirmed cases, majority of indigenous cases were reported from Humla district (6) followed by Kanchanpur (5), Kailali (3) and Surkhet (3). Achham, Bajura, Banke, Doti, Kathmandu, Mugu and Sindhuli reported single indigenous case in each district. This data includes cases from the private sector as well, indicating substantial progress in reducing indigenous cases towards elimination targets. However, continuous efforts are necessary for further improvement.

Table 10.3 Provincial malaria epidemiological trend 2077/78 to 2079/80

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		
	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80
Koshi	1.64	2.48	4.52	0	0.01	0.01	0	20	50	100	100	100	0.02	0.02	0.03
Madhesh	1.05	2.4	2.99	0.01	0.04	0.06	27.3	13.6	29.69	90.9	100	100	0.05	0.18	0.21
Bagmati	0.71	4.64	8.10	0.01	0.02	0.03	70	51.2	40.63	86.5	100	96.88	0.05	0.05	0.05
Gandaki	0.42	1.08	2.64	0.01	0.01	0.02	25	23.1	26.92	86.5	100	100	0.25	0.11	0.09
Lumbini	2.71	3.58	5.77	0.04	0.1	0.11	30.9	38.9	37.57	91.7	97.5	99.45	0.16	0.27	0.20
Karnali	0.52	1.57	2.95	0.02	0.04	0.03	5.9	2.1	12.90	72.5	62.5	70.97	0.48	0.25	0.08
Sudurpaschim	1.52	3.02	3.84	0.08	0.07	0.06	4.48	11	13.33	82.5	91.2	92.67	0.53	0.24	0.16

Source: EDCD/HMIS/DoHS

Box 10.2 SWOT Analysis of Malaria Program

Strength	Opportunity
• 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	• 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.
Weakness	**Threat**
• 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

10.1.2 Scrub Typhus

Scrub typhus, caused by *Orientia tsutsugamushi*, is transmitted by infected larval mites (chiggers). These tiny mites, measuring 0.15–0.3 mm, leave a characteristic black eschar upon biting, aiding clinical diagnosis. No human-to-human transmission occurs. The disease exhibits seasonality, peaking before and after the rainy season in Southeast Asia, with year-round transmission in tropical regions. Previous studies conducted in Nepal have identified cases of scrub typhus infections. For instance, an analysis of blood samples collected from fever patients at Patan Hospital in the Kathmandu valley in 2060/61 (2004) revealed a 3.2% positive rate for scrub typhus through serology. Furthermore, there were documented instances of morbidities and fatalities attributed to scrub typhus

following the earthquake in 2072 (2015). Although, surveillance for scrub typhus is not well-established, scrub typhus cases were reported through the Early Warning and Reporting System (EWARS) from 2072/73 (2016).

Major activities conducted in FY 2079/80

National Guideline on Diagnosis, Management and Prevention of Scrub Typhus in Nepal (2079).

EDCD has developed and endorsed the National Guideline for Diagnosis, Management, and Prevention of Scrub typhus in response to the increasing cases in Nepal. The guideline aims to ensure prompt diagnosis and management, along with effective surveillance.

It provides health workers with valuable assistance in diagnosing, managing cases, and contributing to the prevention and control of scrub typhus.

Capacity strengthening

While no standalone capacity building program for scrub typhus existed, orientation on guidelines and sensitization for this emerging disease was integrated into other NTDs/VBDs programs. Clinicians from major hospitals were sensitized in conjunction with the Dengue program. Additionally, meetings with medical recorders and program managers were organized to ensure proper recording and reporting of scrub typhus through EWARS.

Diagnostics support: EDCD supported availability of diagnostic test kits for scrub typhus to the provinces, districts, and local level.

IEC activities: EDCD has developed and disseminated many IEC materials and conducted IEC support activities to prevent and control scrub typhus in Nepal.

Status of Scrub Typhus

In FY 2079/80, a total of 9,243 cases were reported, with cases distributed across various provinces. The highest number of cases was reported in Lumbini province (n=2,843). It's worth noting that in FY 2079/80, the number of cases increased across the provinces compared to the previous fiscal years (Table 10.4).

Table 10.4 Province wise scrub typhus cases reported to HMIS

Provinces	2079/80
Koshi	773
Madhesh	94
Bagmati	1,290
Gandaki	1,565
Lumbini	2,843
Karnali	403
Sudurpashchim	2,275
National	**9,243**

Source: HMIS/DoHS

Box 10.3 SWOT analysis for Scrub Typhus

Strength	Opportunity
• 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
Weakness	**Threat**
• Absence of a well-established national surveillance system for scrub typhus	• Consistent rise in reported cases annually across various districts

10.1.3 Dengue

Dengue, a mosquito-borne disease transmitted by Aedes aegypti and Aedes albopictus, is endemic in most of the provinces in Nepal. First reported in the country in 2060/61 (2004), cases have steadily risen, particularly in tropical lowlands and subtropical hilly regions, including Kathmandu. Multiple outbreaks occurred between 2062/63 (2006) and 2078/79 (2022), with notable instances in 2062/63 (2006) and 2066/67 (2010), signaling the disease's persistence and expansion in various districts. The A. aegypti was identified in five peri-urban areas of the Terai (Kailali, Dang, Chitwan, Parsa and Jhapa) during entomological surveillance conducted by EDCD from 2062/63 - 2066/67 (2006–2010), suggesting the local transmission of dengue. From 2068/69 to 2071/72 (2012 to 2015), cases continued variably. Subsequent years saw annual outbreaks in different districts, notably in 2075/76 (2019) when 68 out of 77 districts were affected with 17,992 reported cases. The COVID-19 pandemic 2076/77-2077/78 (2020-2021) resulted in fewer cases, but the 2079 (2022) outbreak was larger, with 56,338 cases and 88 deaths, marking it as the largest outbreak in Nepal to date. Dengue has emerged as a significant concern nationwide, with cases reported in all 77 districts throughout the year. The implementation of the program is guided with the goal to reduced dengue related mortality (Box 10.4).

Box 10.4 Nepal's Dengue Control Program

Goal: To reduce the morbidity and mortality due to dengue fever, dengue haemorrhagic 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

Recent study by Vector Borne Disease Research and Training Center (VBDRTC) has shown that both A. aegypti and A. albopictus mosquitoes are transmitting the disease in Nepal. Entomological surveillance conducted in three cities (Kathmandu, Lalitpur and Ghorahi) in 2079 (2022) also showed the presence of both species in Lalitpur and Ghorahi.

In 2062/63 (2006), a collaborative study by EDCD and NPHL with the Walter Reed/AFRIMS Research Unit Nepal identified the circulation of all four Dengue virus sub-types (DEN-1, DEN-2, DEN-3, and DEN-4) in Nepal. Contrastingly, the 2079 (2022) dengue virus serotyping conducted by EDCD and NPHL revealed the prevalence of DENV1, followed by DENV3 and DENV2, with no positive samples for DENV4.

Major activities in FY 2079/80

Consultative review and planning meeting on Dengue preparedness and response

A comprehensive Consultative Review and Planning Meeting was convened to assess the current state of Dengue preparedness and response strategies in Nepal. Stakeholders from diverse sectors collaborated to enhance the country's capabilities in managing Dengue outbreaks.

MOHP circular for "Every Friday 10 Minute" cleanliness campaign

MoHP issued a circular promoting a nationwide breeding sites 'Search and Destroy' campaign, encouraging citizens to dedicate ten minutes every Friday to eliminate potential breeding grounds for mosquitoes in their homes, offices and public places, aiming to reduce the risk of Dengue transmission.

EDCD circular to local levels requesting Dengue prevention and control activities

EDCD circulated request letter to LLGs, urging them to implement Dengue prevention and control activities. The circular included a line list of Dengue cases and recommended actions to facilitate efficient monitoring and response.

EDCD circular to local levels regarding Dengue prevention and control action plan

EDCD issued another circular to LLGs, detailing a comprehensive Dengue Prevention and Control Action Plan. This document provided a roadmap for effective response measures, ensuring a coordinated effort across all administrative levels.

Nepal's participation in meeting of the programme managers and RTAG on Dengue

Nepal actively participated in the meeting of programme managers and regional technical advisory group (RTAG) on Dengue and other arboviruses in the South-East Asia region. This engagement enabled the country to align its strategies with regional best practices and gain insights into epidemiology and IVM approaches for prevention and control of dengue, thereby minimizing the public health impact of dengue.

Clinical seminar on Dengue

Clinical seminar on Dengue, supported by WHO, was organized to enhance healthcare professionals' understanding of diagnosis and treatment. International clinical experts were invited for orientation on effective triage and case management, focusing on fluid management in Dengue with warning signs. This initiative aimed to enhance the overall clinical management of Dengue cases in Nepal and adopted a hybrid model, benefiting doctors and nurses from major hospitals across the country.

Sensitization meetings on Dengue prevention and control with:

- **Nepal Auto-mechanics Association:** A focused sensitization meeting was held to educate and involve auto service providers in Dengue prevention. The emphasis was on proper disposal and storage of tires, addressing the identified breeding grounds for Aedes mosquitoes.

- **Nepal Recollectors' and Recyclers' Association:** Similar sensitization meeting was held to engage the waste management sector in Dengue prevention activities and acknowledging their vital role in eliminating mosquito breeding sites.

- **Journalists:** Media professionals and journalists were sensitized on Dengue prevention and control strategies, leveraging their influence to disseminate accurate information and raise public awareness about preventive measures.

High-level advocacy meeting with local levels of Kathmandu Valley

A high-level advocacy meeting was organized in the presence of the Honorable Minister, MoHP, targeting representatives and officials of local government in the Kathmandu Valley. This session aimed to secure commitment and support for intensified Dengue prevention and control measures.

Advocacy meeting with local levels of Chitwan district on Dengue prevention and control

An advocacy meeting with representatives and officials of all local government of Chitwan district was conducted to address local challenges and foster collaboration in Dengue prevention and control efforts. The program was focused in Chitwan due to high risk, previous number of cases and dense population.

These initiatives collectively reflect the concerted efforts made by various stakeholders in Nepal to control and respond to the Dengue outbreak, demonstrating a multi-faceted and community-oriented approach.

Other regular interventions in FY 2079/80:

- Routine Dengue surveillance through EWARS across 118 sentinel sites, with EDCD verifying data from these reports.
- Vector surveillance activities in Bagmati province (Bhaktapur, Chitwan, Kathmandu, Lalitpur, Makwanpur) and some selected sites at Sudurpaschim province.
- Genome sequencing to study the type of dengue virus circulating in Nepal.
- Procurement and supply of rapid diagnostic test kits (IgM) to provincial and local government as per need and demand.
- Regular advocacy and coordination meetings with institutions like Rotary Club, Institute of Engineering, Armed Police Forces, etc.
- Preparation of daily situation updates of dengue and dissemination through the EDCD website and other stakeholders.
- Development of SOPs for integrated vector surveillance and disseminated to the concerned stakeholders.

Status of Dengue program

Dengue Cases (in number)

National

489	2077/78
733	2078/79
56,338	2079/80

Province (2079/80)

KOSHI	4,960
MADHESH	2,947
BAGMATI	35,486
GANDAKI	3,265
LUMBINI	5,574
KARNALI	2,134
SUDURPASHCHIM	1,972
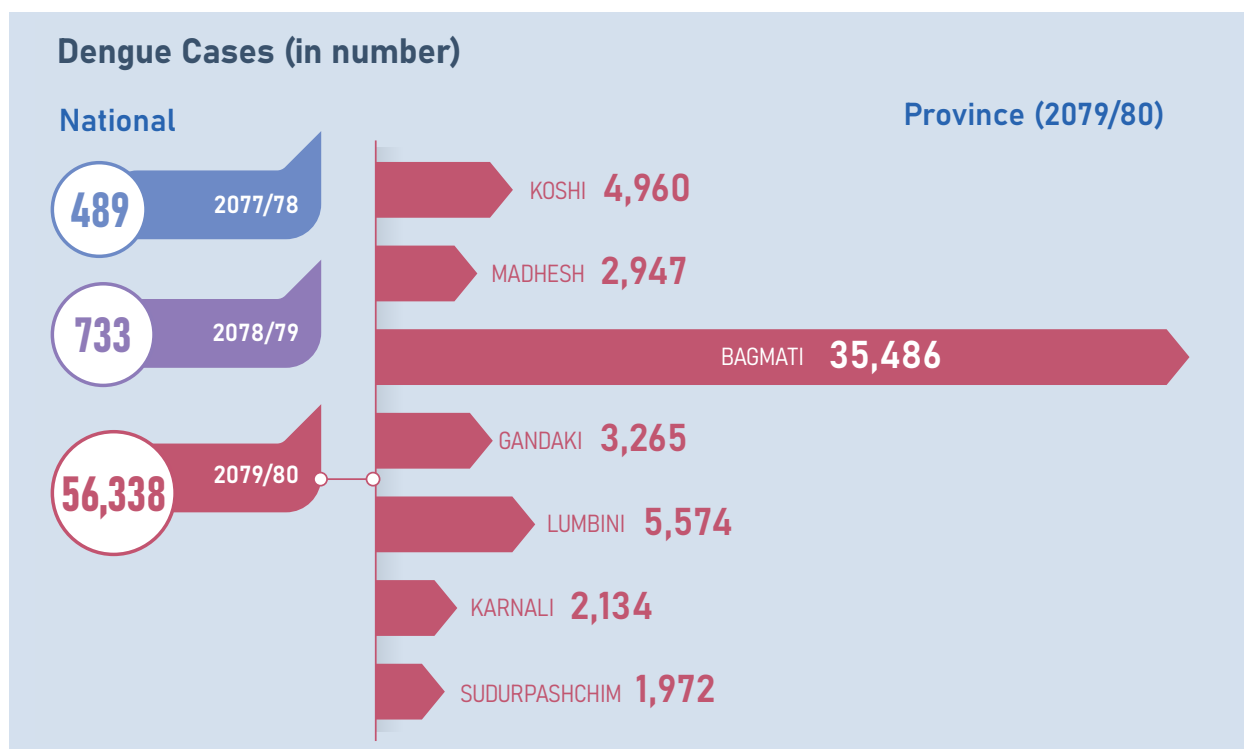
Figure 10.1 Dengue cases across provinces in FY 2079/80

Source: HMIS/DoHS

In FY 2079/80, Dengue cases surged from 733 to 56,338, with the highest reported in Bagmati Province followed by Lumbini Province (Fig 10.1). Kathmandu Valley reported the most cases, with Kathmandu having 20,367 cases, Lalitpur (3,083) and Bhaktapur (4,481); followed by Chitwan (2,696), Rupandehi (2,254) and Makwanpur (2,124). It's essential to note discrepancies between EWARS and HMIS/DHIS2 data, as EWARS gathers direct hospital data, while HMIS receives consolidated information. The EDCD ensures the accuracy of this data through a line listing report of all cases.

Strength	Opportunity
• Availability of National Guidelines on Prevention, Management and Control of Dengue in Nepal. • Comprehensive month wise action plan for dengue control and prevention is in place. • Establishment of online reporting system through EWARS on DHIS2 and SORMAS from Selected provinces. • Availability of dengue register for better recording and reporting. • Development of National Guidelines on Integrated Vector Management (IVM) • Development of SOPs for Integrated Vector Surveillance. • SOPs for complimentary vector control intervention like, targeted Indoor Residual Spray, BTI Use has been developed and disseminated	• Local governments have authority and capacity to plan and implement response activities as per the local need. • Collaboration with regional and international organizations for dengue control efforts. • 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.
Weakness	**Threat**
• Low priority for the dengue control program at sub-national level. • Inadequate training and orientation for newly recruited health workers and refresher trainings for focal persons and managers. • Under/over reporting of dengue cases leading Inconsistent, incomplete, and untimely reporting • The EWARS system is unable to capture a substantial number of dengue cases that are tested outside the designated sentinel sites, hindering the government's ability to accurately predict outbreaks • Limited capacity for early detection and response to outbreaks • Limited entomological capacity and vector surveillance due to the unavailability of resources (trained human resources and budget)	• Climate change and its impact on mosquito populations and dengue transmission with shifting of disease from low land regions to higher elevations. • Rapid and unplanned urbanization have created favorable 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 stake holders' engagement in dengue control measures at local levels. • Sudden and unpredictable outbreaks may overwhelm healthcare systems and strain available resources • Lack of reporting on Dengue from private clinics, polyclinics, and other health institutions

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.

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%. 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 (Fig 10.2, Box 10.6).
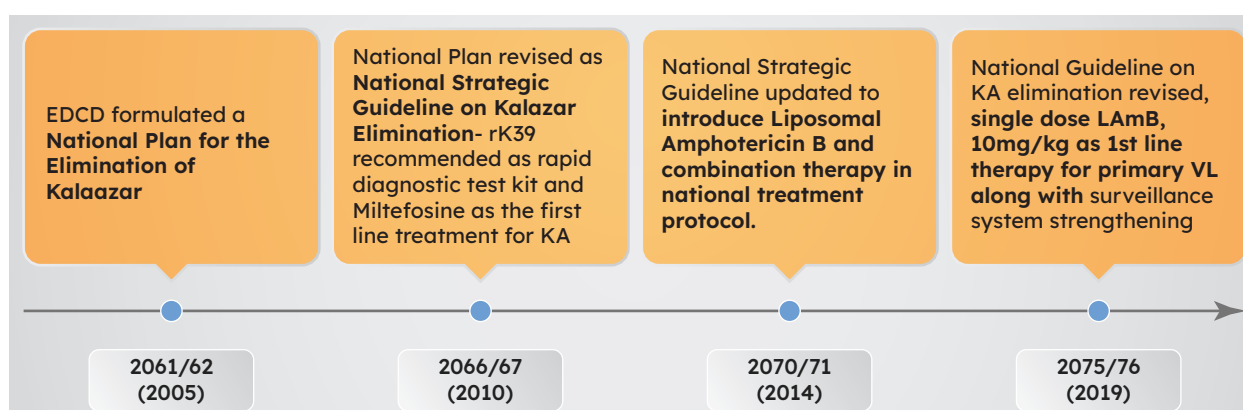
Figure 10.2 Milestones of National Kala-azar elimination program in Nepal

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 partnership
- 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. EDCD provides free diagnostics and drugs to the patients. Additionally, treatment centers receive an incentive of NPR 5,000 per case, and patients are reimbursed NPR 2,000 to cover transportation costs.

Major activities in 2079/80

Case detection and treatment

Diagnostic services extended up to PHCC level, while treatment is available at district and higher health facilities. Health posts play a role in awareness, health education, and referral of suspected cases.

RDT scaling up

RDTs are the current optimal diagnostic tool for Kala-azar, suitable for any field setting. rK39 (RDT) is available in Kala-azar affected districts from level II and above health institutions, with the provision of supply on demand for facilities with a high clinical suspicion.

Active case detection (ACD)

Suspected individuals with symptoms related to Kala-azar and Post Kala-azar Dermal Leishmaniasis (PKDL) were tested using the rK39 test kit. Community awareness activities on Kala-azar were conducted alongside. Positive cases were referred to higher-level hospitals for confirmation and management, following national guidelines.

Insecticidal residual spray (IRS)

In FY 2079/80, EDCD led the IRS activity in high-impact Kala-azar districts like Okhaldhunga, Kalikot, and Surkhet. Health offices received insecticides, spray pumps, and training for regular IRS. The SOPs ensure quality implementation and monitoring,

with operational insecticide costs covered by local governments.

National stakeholders' consultative meeting on Kala-azar elimination

EDCD convened a national stakeholder meeting in Lalitpur, guided by Dr. Dipendra Raman Singh, the then Director General of DoHS. The session, attended by national and international experts, aimed to discuss the current national program, identify gaps, and prioritize the upcoming action plan. The outcome was a drafted plan to expedite Kala-azar elimination efforts in Nepal.

Interaction meeting with medical recorders on NTDs/VBDs including Kala-azar

EDCD organized an interaction meeting to enhance the capacity of medical recorders and address challenges in timely and quality data recording and reporting through the EWARS system. Participants included individuals from sentinel sites and program managers.

Planning meeting on strengthening National Kala-azar elimination program in Gandaki Province

A planning meeting in Gandaki Province focused on strengthening Kala-azar prevention, diagnosis, and treatment. Discussions centered on current guidelines, protocols, and SOPs, with a focus on identifying gaps and defining roles of federal, provincial, and local governments in Kala-azar elimination efforts.

Meeting on endemicity assessment and strategic planning on strengthening National Kala-azar elimination program

The program primarily centered on discussing epidemiological, serological, and entomological findings from endemicity assessments. In FY 2079/80, there were 42 districts with endemicity of Kala-azar (Fig 10.3). It also involved sharing the regional strategic framework for Kala-azar elimination, outlining the country's strategic priorities for the next three years, and gathering feedback from experts and participants.
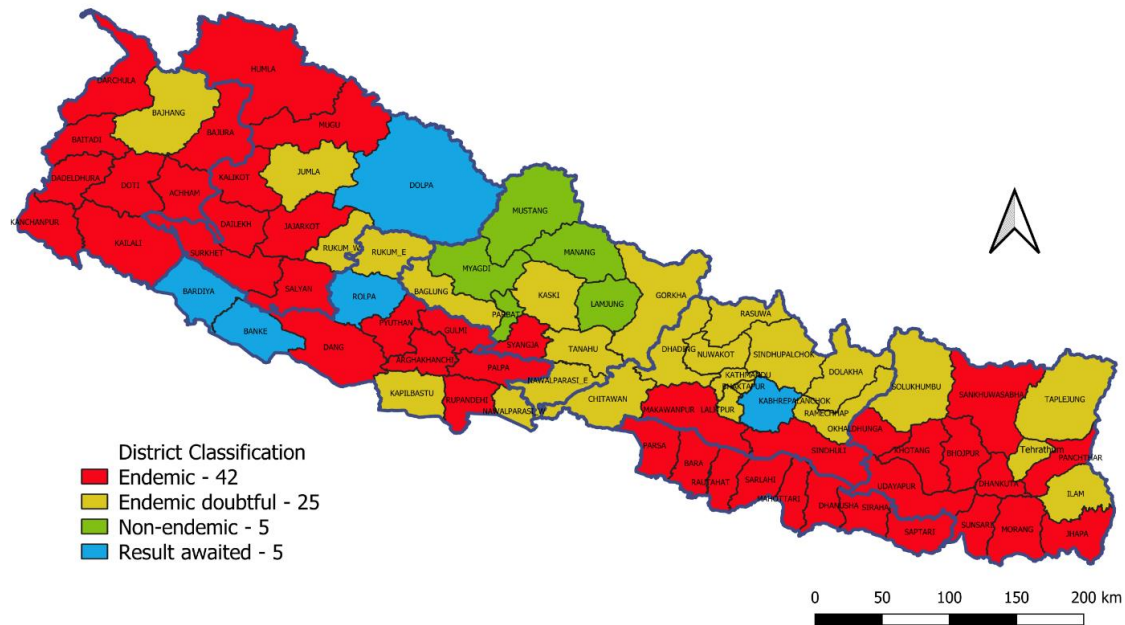
Figure 10.3 District-wise Kala-azar Endemicity Classification

NTD-VBD review meeting including Kala-azar

A national review meeting on NTDs and VBDs in Chitwan assessed last year's (2078/79) progress and formulated a strategic plan for the future. The meeting identified efforts at all levels to achieve kala-azar elimination targets.

Joint program review mission for VBDs including Kala-azar

In 2080 (May 2023), the Government of Nepal, with support from WHO, invited international and national experts to independently review the VBDs program. The experts, assisted by national officials, extensively visited national, provincial, and local government offices, treatment facilities, communities, and individuals. The objective was to assess all aspects of the program, including Kala-azar and other VBDs like Lymphatic Filariasis, Dengue, and Malaria, and provide recommendations for strengthening capacity and addressing areas for improvement to achieve elimination targets.

Supervision and monitoring

EDCD, PHD, and Health Offices jointly supervised and monitored vector-borne and neglected tropical diseases, offering necessary technical support to local governments as required.

Status of Kala-azar elimination program

The cases of Kala-azar had increased from 212 in FY 2077/78 to 322 in 2078/79 and reduced to 199 in FY 2079/80 (Fig 10.4).
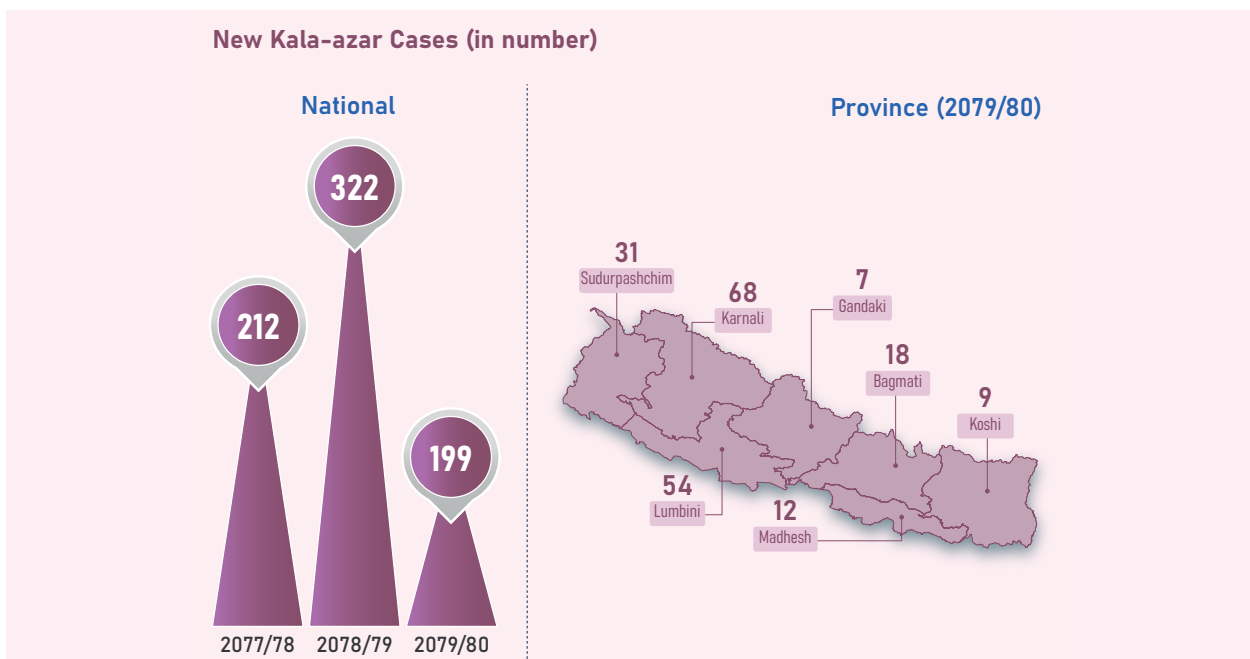
Figure 10.4 Cases of Kala-azar detected in three FYs and distribution across province in FY 2079/80

There is gradual reduction of the cases across the provinces. In FY 2079/80, Kalikot district reported the highest number of cases (33), followed by Baitadi (10), Achham (9) and Kailali (8) as three most affected districts. Okhaldhunga, Morang, Makwanpur, Doti, Palpa, Banke, Syangja, Surkhet and Bajura are other districts that have reported 5 or more cases.

Box 10.7 SWOT Analysis of National Kala-azar Elimination Program

Strength	Opportunity
• Free diagnostics and drugs for timely kala-azar diagnosis and treatment	• Expansion of clinical and implementation research efforts
• Revised national guidelines and regular professional training	• Continuing collaboration with national and international institutes to facilitate knowledge exchange among health workers (clinicians, paramedics, and medical recorders)
• Standard Operating Procedures for ACD, IRS, and Integrated Vector Surveillance	• Collaboration with international expert to capacitate human resources for insecticidal residual spray
• 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	
Weakness	**Threat**
• Regular seasonal insecticide spray Coverage is too low at endemic and endemic doubtful district	• Changes in climate and environment may impact the distribution of sandfly vectors, affecting disease transmission patterns
• The unavailability of diagnostic tool rk39 at all PHCC level as envisioned by national guideline	• 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
• Insufficient community awareness about the disease.	• Rising other form of leishmaniasis including cutaneous, mucocutaneous and PKDL are reporting

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 of 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, Fig 10.5).

Box 10.8 National Lymphatic Filariasis Elimination Program

Goal: Elimination of Lymphatic Filariasis from Nepal by the year 2087/88 (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 2082/83 (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 2087/88 (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 burden 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 (Fig 10.6).

Figure 10.6 LF Endemicity Status of Nepal in 2080

Major activities in FY 2079/80

The supporting partners for LF elimination program in Nepal are- World Health Organization (WHO), USAID's Act to End Neglected Tropical Disease | East (Act to End NTDs| East)/ RTI International and FAIRMED Foundation.

Interruption of transmission through MDA campaign

Mass Drug Administration (MDA) involves giving single dose of Albendazole and Diethylcarbamazine (DEC) to the entire at-risk population for at least six rounds. The goal is to reduce microfilarie density, preventing mosquito-borne transmission and lowering infection prevalence. Each round should achieve ≥65% epidemiological coverage in a district, and MDA can be stopped after passing TAS I. Since 2078/79 (2022), Nepal has adopted the Triple drug regimen (IDA) in five districts, expanding to 11 in 2079/80 (2023). IDA MDA, with Ivermectin, is more efficient in clearing microfilariae, requiring only two to three rounds for a shorter elimination effort compared to DEC MDA.

Monitoring and evaluation of the MDA program

MDA is crucial for reducing community infection levels below a threshold, preventing the spread of parasites by mosquitoes and new infections. Monitoring coverage in each MDA round is essential to achieving a minimum 65% coverage of the total population. EDCD conducts post-MDA Coverage Surveys, Pre-Transmission Assessment Surveys, and Transmission Assessment Surveys (TAS) (I, II, & III) following WHO guidelines to monitor Lymphatic Filariasis Elimination activities. TAS surveys are performed for DA (two-drug regimen) MDA, while in IDA (three-drug regimen) MDA districts, Epidemiological Monitoring Surveys (EMS) and IDA Impact Surveys (IIS) are conducted (Fig 10.7).
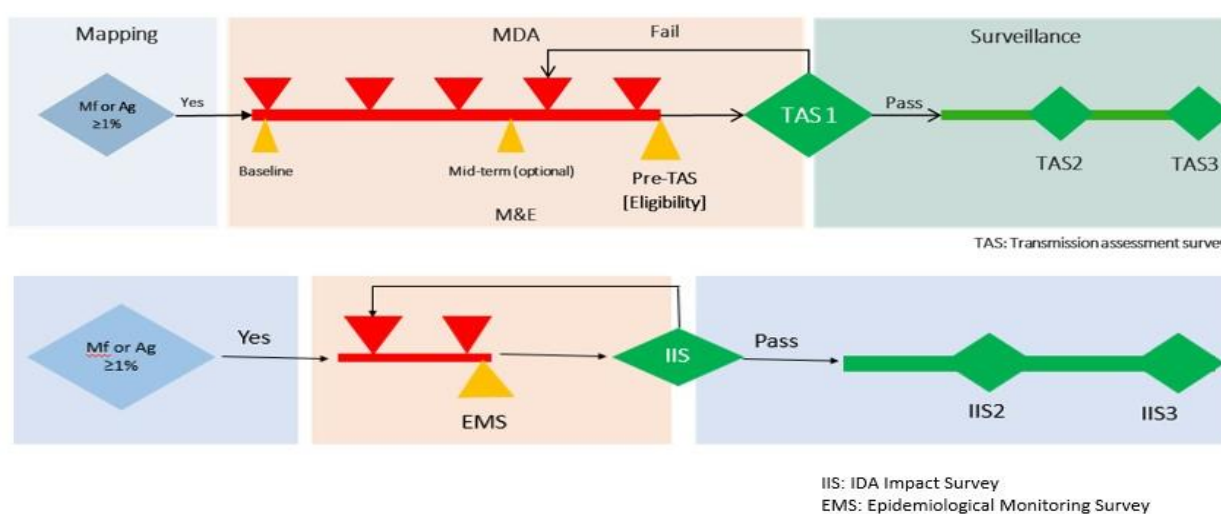
Figure 10.7 Monitoring and Evaluation of MDA program

To assess the effectiveness of the MDA campaign, comprehensive independent evaluations were simultaneously carried out, utilizing measures including spot compliance assessments and the WHO-recommended Supervisors' Coverage Tool (SCT). Both spot coverage and SCT assessments are expected to offer a more accurate approximation of the actual coverage achieved by the MDA (Annex Table 10.1).

Morbidity mapping and disability prevention

Morbidity mapping and disability prevention (MMDP), a key element of the LF elimination program, complements MDA. During MDA, health workers and FCHVs are trained to identify LF cases, offer home-based treatment, collect morbidity reports, and provide support. Health workers manage acute attacks, offer symptomatic treatments, and refer hydrocele cases for free surgical correction. The MMDP program extends its impact through phased training for health workers and FCHVs in all districts, ensuring continuous mapping, management, and referral of LF morbid cases. Currently, 58 districts have received training, actively reporting cases through morbidity mapping surveys. Functional MMDP centers in 13 districts provide surgical and management services, while self-help groups offer rehabilitative and social support to LF cases, promoting self-care and livelihood activities.

Activities to prevent resurgence of transmission

The identification of TAS-positive cases in districts after MDA raised concerns about potential transmission resurgence. Recognizing this risk, TAS-positive areas were considered potential hotspots. A proactive approach followed, targeting the surrounding 50 households for LF anti-genemia testing. Individuals testing positive underwent additional microfilaria microscopy.

Status of Lymphatic Filariasis Elimination Program

Mass drug administration implementation, monitoring and evaluation

In 2079/80, MDA covered 15 districts, with 11 using the triple drug therapy (IDA regimen) and four sticking to the two-drug regimen (DA). The campaign was highly successful, with all districts surpassing the recommended epidemiological coverage threshold (>65%). Remarkably, 13 out of the 15 districts achieved an epidemiological coverage of over 80% (Table 10.5).

Status of Lymphatic Filariasis Elimination Program

Mass drug administration implementation, monitoring and evaluation

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Table 10.5 Status of MDA Implementation

Status of MDA Implementation								
Number of endemic district	MDA not started/ not at scale	MDA at scale	IDA 1st round	IDA Completed/ EMS planned	DA Completed/ TAS 1 ongoing	TAS 1 passed	TAS 2 passed	TAS 3 passed
64 districts	0	64 districts	6 districts (Jhapa, Rasuwa, Dhanusha, Mahottari, Rautahat, Sarlahi)	5 districts (Morang, Kapilvastu, Dang, Banke, Kailali)	4 districts (Bara, Lamjung, Parbat, Baglung)	53 districts	47 districts	28 districts

Due to the successful MDA campaigns (Fig 10.7), the at- risk population of LF in Nepal has reduced significantly from 25 million to 9.8 million in the FY 2079/80.
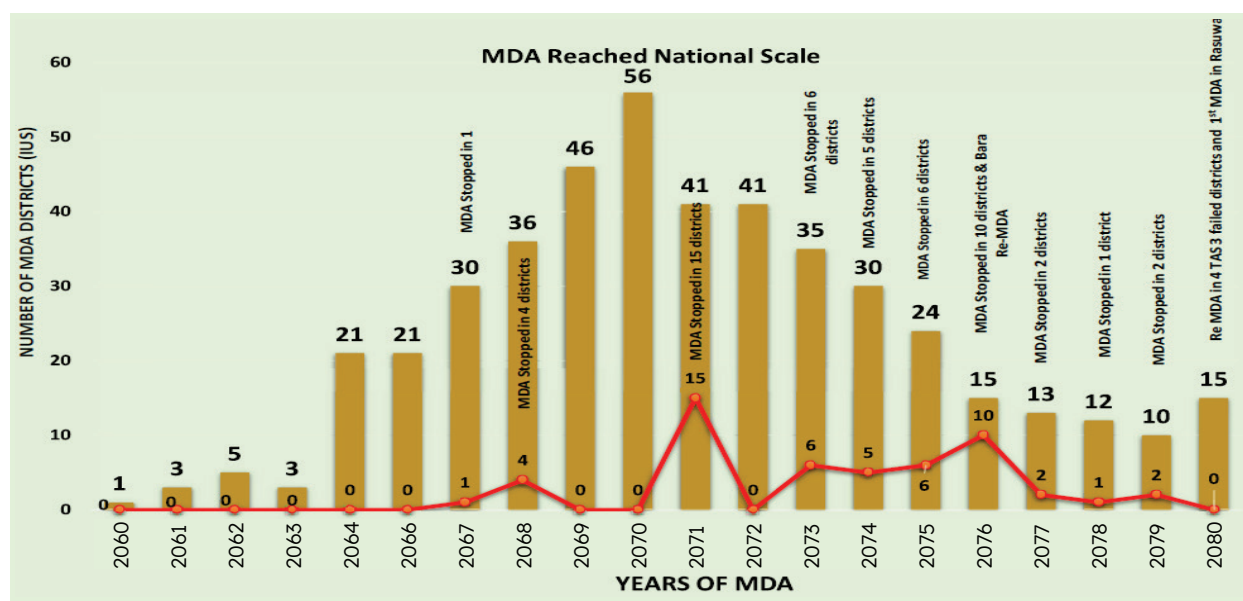
Figure 10.8 Year-wise Scaling up of MDA campaign

Source: EDCD/DoHS

In the 2079/80 LF MDA campaign, conducted in 15 districts and 190 Municipalities/Rural Municipalities from the 11th Falgun, 2079 onwards, four districts conducted DA MDA, and the remaining 11 underwent IDA MDA. Health offices organized coordination meetings, media orientations, and advocacy efforts. Municipalities conducted planning meetings, health worker training, FCHV orientations, and community interactions. A total of 9,121 health workers and 12,856 FCHVs were mobilized for the 2079 MDA campaign, administering medications to eligible populations.

In the FY 2079/80, Pre-TAS Surveys were conducted in Jhapa, Bara, Lamjung, Parbat, and Baglung. TAS II Surveys occurred in Ilam, Panchthar, and Kanchanpur, while TAS III was completed in 13 districts

(Okhaldhunga, Saptari, Siraha, Kathmandu, Lalitpur, Bhaktapur, Kaski, Rukum East, Argakhanchi, Pyuthan, Rukum West, Salyan, and Rolpa), all successfully passing these surveys.

Morbidity mapping, care and support

The morbidity data collected from mapping (SMS and paper-based approach) of 49 districts showed that 41,535 cases of LF have been identified so far, among which majority (28,896 cases) were hydrocele, 12,310 lymphoedema and 329 cases were having both Hydrocele and Lymphoedema (Table 10.6) (District-wise morbidity mapping report in Annex-Table 10.2 in the annex of this report).

Table 10.6 MMDP Implementation Status

Mapping completed	MMDP care and support centres	Self-help group formation	Cumulative number of hydroceles operated
49 districts	13 districts (Jhapa- 2 centres, Udayapur, Dhanusha, Rautahat, Dhading, Nuwakot, Lamjung, Nawalparasi East, Baglung, Rupandehi, Kapilvastu, Bardiya, Kanchanpur)	6 districts (Jhapa, Morang, Sunsari, Kapilvastu, Rupandehi and Nawalparasi West)- 58 self-help groups)	10,504 (cumulative total)

Source: EDCD/DoHS

Targeted testing to prevent 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 microfilaremia rates below 1%.

Responding to the findings, individuals with positive LF antigen tests were promptly treated with a single dose of IDA. However, Taudaha in Kathmandu was confirmed as a hotspot, leading to the recommendation for specific focal treatment measures in that area (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

Further analysis of MDA coverage

There is marked differences in the SCT survey compliance based on the locality with odds ratio of 4.6 times more compliance in rural area as compared to urban area. Concentrated efforts are required in urban area to increase compliance of MDA coverage (Table 10.8).

Table 10.8 Rural urban MDA coverage variation

Spot survey			SCT survey		
Locality	Non-compliance	Compliance	Locality	Compliance	Non-compliance
Rural	702 (12.7%)	4830 (87.3%)	Rural	2,387 (87.7%)	334 (12.3%)
Urban	50 (18.5%)	220 (81.5%)	Urban	97(60.6%)	63 (39.4%)
Odds Ratio (CI) = 0.64 (0.47-0.88), p-value = 0.005			Odds Ratio (CI) = 4.6 (3.3-6.5), p-value = <0.05		

Source: EDCD/DoHS

Box 10.9 SWOT Analysis of LF Elimination Program

Strength	Opportunity
• TAS III passed in 28 districts • Operational MMDP Centers Across 13 Districts Offering Surgical and Care Services • MMDP completed in 51 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
Weakness	**Threat**
• 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

Leprosy, or Hansen's disease, is caused by *Mycobacterium leprae,* an acid-fast, rod-shaped bacillus. With ancient roots, it is likely transmitted through droplets during prolonged contact with untreated patients. Primarily affecting the skin, peripheral nerves, respiratory mucosa, and eyes, leprosy is curable. Early diagnosis and treatment in the initial stages can prevent disability. Historically associated with social stigma, GoN has been actively working to support individuals affected by leprosy since the year 1913/14 (1857) (See Box 10.10 for major milestones of National Leprosy Elimination Program (NLEP)).

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

Year BS (AD)	Milestones
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 NLEP is guided by National Roadmap for Zero Leprosy 2077/78-2087/88 (2021-2030) and National Leprosy Strategy 2077/78 – 2081/82 (2021-25) with the vision of leprosy free Nepal (Fig 10.9).

Pillar 1 :Implement the national leprosy roadmap for zero leprosy across all levels -national, provincial, and local

Pillar 2: Scale up leprosy prevention alongside integrated active case detection

Pillar 3: Manage leprosy and its complications and prevent new disability

Pillar 4: Combat stigma and ensure human rights are respected
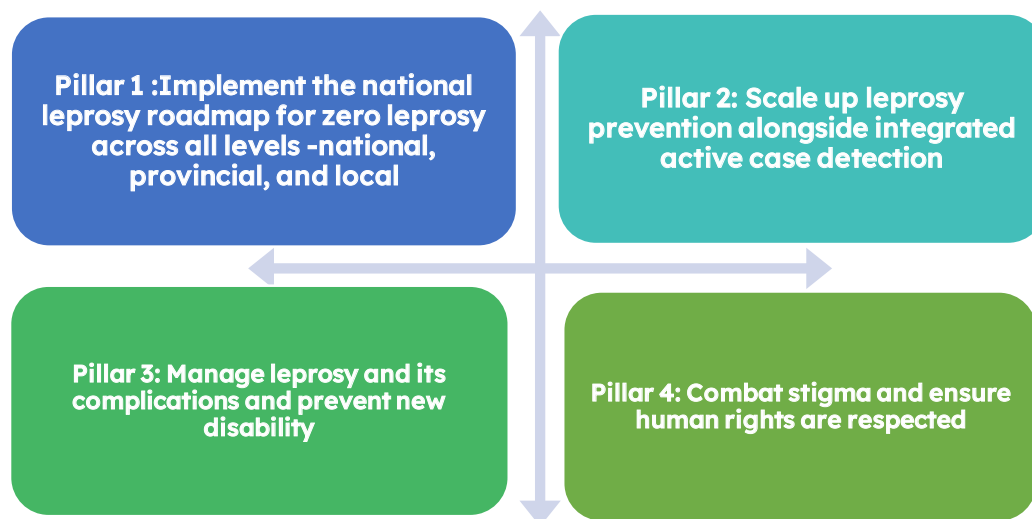
Figure 10.9 Four Strategic Pillars of NLEP

The goal is 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).

Major activities in FY 2079/80

Leprosy service delivery

In FY 2079/80, there were 2,523 new leprosy cases received multi-drug therapy, with 2,424 cases under treatment by year-end. Of these, 1,939 patients completed the MDT regime and were released. Referral centers, supported by partners, delivered secondary and tertiary care services. MDT and anti-reaction drug (clofazimine) supplies were freely available, and the drug distribution across provinces and local levels was effectively managed throughout the year.

Capacity building programme

Three batches of basic leprosy training (three days each) for health workers in high-endemic districts were conducted in the last fiscal year with WHO's support. A total of 95 participants were trained at Anandaban Leprosy Training Center-Lalitpur, Lalgadh Leprosy Hospital and Service Center-Dhanusha and Green Pasture Hospital-Pokhara. Additionally, one comprehensive training for a batch 25 medical officers was held.

Review meeting of Leprosy control programme

Leprosy Control and Disability Management Section (LCDMS) organized a review meeting to assess the leprosy activities in FY 2078/79. Program focal persons, statistical officers from seven provincial health directorates, and pharmacist/store managers from province health logistic management centers participated in the meeting to identify key action plans for the upcoming year.

IEC and advocacy

To boost community awareness, passive case detection, voluntary case reporting, and stigma reduction, ongoing IEC activities utilized electronic and print media. A handbook on leprosy covering diagnosis, treatment, and free services, along with a statistics factsheet and frequently asked questions (FAQ) for general public awareness, were printed and distributed.

World Leprosy Day celebration

The 70th World Leprosy Day in Nepal, celebrated on January 29, 2023, featured activities at national, provincial, and district levels. A media interaction program was conducted in NHTC which highlighted the National Leprosy Strategy 2077/78-2081/82 (2021-2025) and addressed questions related to leprosy-related issues and stigma. The event received extensive media coverage, and a leprosy handbook was released. Messages from the Prime Minister and Minister for

Health and Population were published, while leprosy awareness videos and messages were disseminated on social media in collaboration with MoHP, NHEICC, partners including WHO Nepal.

Transport support to released-from-treatment cases

The program initiated granting NPR 1,000 through regular budget of local levels to patients completing MDT treatment, aiding their transportation costs upon release. This incentive probably contributed to an increasing treatment regularity rate, with 2,261 leprosy cases benefiting from the allocated transportation cash support.

Case validation, supervision, and monitoring

Recording, reporting, update and case validation was carried out in Jhapa district. forty-six news cases from six municipalities were cross validated to confirm diagnosis as part of strengthening recording and reporting and the release of cases from treatment.

Active case detection activity

Early leprosy case finding activities were conducted in the districts of Banke, Siraha, and Bara, resulting in the detection of 41 new cases in FY 2079/80.

Conditional grant for leprosy affected people's organization

A conditional grant was extended to support leprosy-affected residents in Khokana, Pokhara Aarogya ashrams, and additional shelters facilitated by Nepal Leprosy Relief Association (NELRA), READ Nepal, and Nepal Leprosy Affected Persons Welfare Association. These grants are allocated through selected LLGS. In Pokhara Lekhnath Metropolitan City, Dakshinkali Municipality, and Budanilkantha Municipality, this grant aids in different rehabilitation services and incentives are given to the people affected by leprosy. For example, NPR 1,000 for referral hospital admissions.

Annual report and bulletin

Annual report of Leprosy Control and Disability Management Program 2078/79 (2021/22) was published highlighting the activities conducted in the same fiscal year both by EDCD and partners.

Activities supported by partners

LCDMS conducted coordination meetings with partners, including WHO-Nepal, Leprosy Mission Nepal, Nepal Leprosy Trust, International Nepal Fellowship, NLR-Nepal, Damien Foundation, FAIRMED Foundation, Nepal Leprosy Fellowship, Nepal Leprosy Relief Association, Sewa Kendra, READ Nepal, and IDEA Nepal. These meetings aimed to share update on the activities, establish a common approach for World Leprosy Day, and jointly implement ongoing leprosy activities.

In FY 2079/80 (2022/23), WHO-Nepal provided technical support in developing the National Leprosy Strategy and Action Plan (2021-25). WHO also supports in the supply of MDT drugs, provides technical and financial support in active case detection, capacity building of health workers, routine surveillance, technical supervision and monitoring, and the community awareness programme as part of program planning and strengthening.

The partners- The Leprosy Mission Nepal, Nepal Leprosy Trust, International Nepal Fellowship, Damien Foundation, Netherland Leprosy Relief, FAIRMED Foundation supported the following activities in high endemic districts:

- Community awareness and participation programme
- Orientation of health workers, FCHVs, community members
- Provision of primary, secondary and tertiary care at referral centres
- Capacity building activities for government health workers
- Technical support through joint supervision and monitoring
- Prevention of disability in leprosy
- Rehabilitation service
- Formation, implementation and support of self-care and self-help groups operated by people affected with leprosy and people living with disabilities due to leprosy.
- Support for Post-Exposure Prophylaxis Programme

Similarly, regular coordination and cooperation occurred with partners and stakeholders working on disability management and rehabilitation sector.

Status of NLEP

In FY 2079/80, a total of 2,523 new leprosy cases and 2,510 leprosy cases on Multidrug Therapy (MDT) were reported. There has been a slight increase in the new case detection rate (NCDR) compared to the previous fiscal year due to intensified active case detection activities at the field level.

National NCDR was 8.5 per 100,000 population, and the prevalence rate (PR) was 0.8 per 10,000 population. Madhesh province and Lumbini province exhibited the highest NCDR and PR. Multi Bacillary (MB) cases comprised 76.9% of new cases, with 7.2% child proportion and 7.5% having grade 2 disability (G2D). Females constituted 41.6% of new cases (Fig 10.10, Table 10.9, Annex Table 10.3).
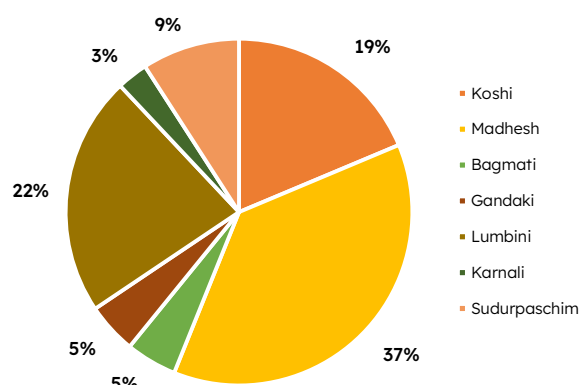
Figure 10.10 Distribution of the new cases of the Leprosy in FY 2079/80 across provinces

Source: HMIS/DoHS

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	5,045,132	9.33	0.9	81.3	6.6	11.3	-	37.8
Madhesh	6,248,267	15.12	1.5	68.0	9.4	6.3	0.6	45.0
Bagmati	6,169,817	1.94	0.2	93.3	0.8	3.3	-	36.7
Gandaki	2,512,952	4.73	0.5	96.6	2.5	13.4	-	33.6
Lumbini	5,220,392	10.82	1.1	74.2	6.9	5.1	-	42.3
Karnali	1,725,340	4.23	0.4	86.3	4.1	6.8	-	32.9
Sudurpaschim	2,760,130	8.33	0.83	88.7	6.5	9.6	0.8	43.0
National	**29,682,030**	**8.50**	**0.85**	**76.9**	**7.2**	**7.5**	**0.3**	**41.6**

Source: HMIS/DoHS

Nine districts (Taplejung, Sankhuwasabha, Khotang, Bhojpur, Ilam, Dolakha, Sindhupalchowk, Manang and Mustang) reported zero new leprosy cases. Seven districts- (Manang, Rasuwa, Solukhumbu, Khotang, Bhojpur, Taplejung, Ilam) reported zero prevalence, 56 districts had PR below 1, and 14 districts exceeded PR more than 1 (Fig 10.11).
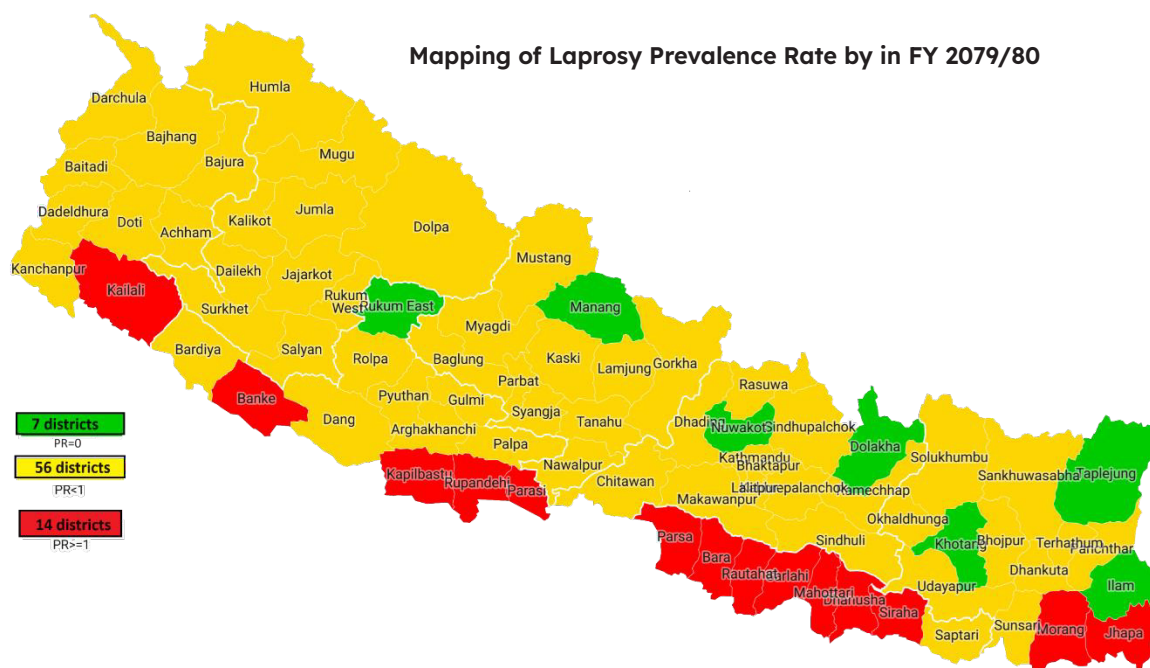
Figure 10.11 District based Leprosy prevalence rate in FY 2079/80

Source: HMIS/DoHS

Among the 16 high prevalence districts for leprosy, Kapilvastu district in Lumbini Province and Kailali district of Sudurpaschim province had the highest prevalence rate of more than 2 (Fig 10.12).
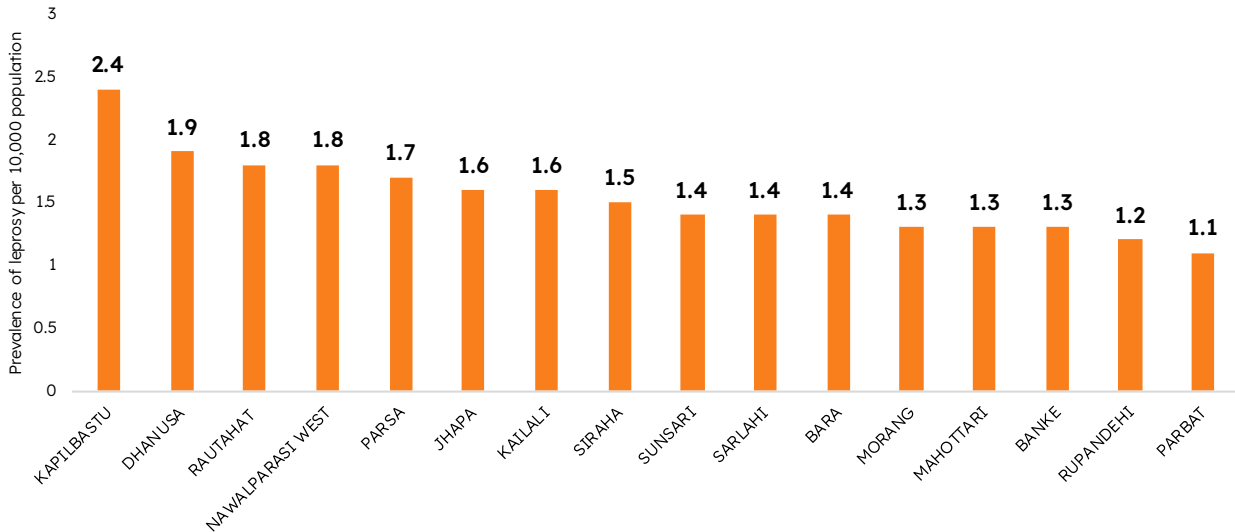
Figure 10.12 District with high prevalence rate in FY 2079/80

Source: HMIS/DoHS

In 2079/80 (2022/23), 189 visible disability cases (Grade 2 Disability -G2D) were recorded nationally, constituting 7.5% among new cases. (Fig 10.13) Untreated leprosy cases can lead to disabilities, emphasizing the importance of early detection and complete treatment. Monitoring indicators, including the Proportion of G2D among new cases and the rate per 100,000 populations, highlight the significance of early case detection.
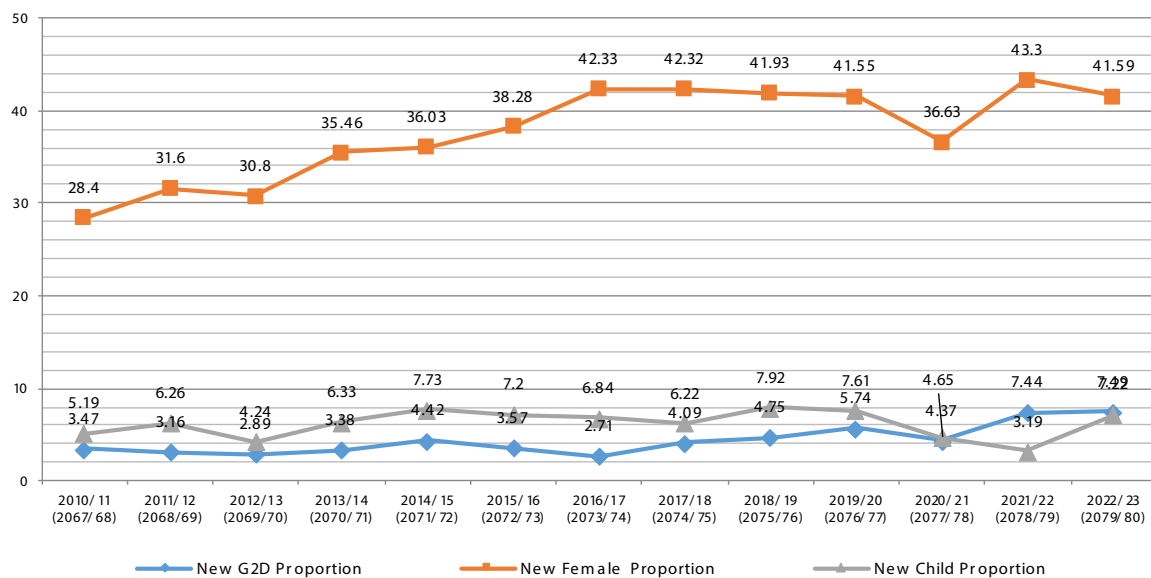
Figure 10.13 Proportion of New Grade 2 Disability, Child and Females cases from 2067/068 to 2079/80 (2010/11-2022/23)

Source: HMIS/DoHS

In 2079/80 181 new child cases were diagnosed, constituting 7.2% of new cases—a significant increase from the previous year's fluctuating trend. Additionally, 1,049 female cases were detected, making up 41.6% of new female cases. In FY 2079/80, eight G2D new child leprosy cases were recorded (Fig 10.13).

Strength	Opportunity
• Free MDT, transportation for released cases, and additional services for treating complications	• Evidence-based planning aligned with the National Leprosy Strategy and Action Plan 2021-2025
• Leprosy services accessible at grassroot levels	• Pilot of case-based surveillance system
• Continuous supply of MDT	• Operational research in high-endemic districts for quality services
• Effective communication and collaboration among supporting partners	• Intensification of vocational education and income generation for people affected by leprosy
• Increased participation of leprosy-affected individuals in the national program	• Resource mobilization, partnerships, and collaboration with local government and new partners
• Regular meetings of steering, coordination, and technical committees	• Leprosy Post-Exposure Prophylaxis in use as preventive chemoprophylaxis
• Active case detection, contact examination, and surveillance of patients, family, and neighbours	
• Expansion and continuation of Leprosy Post-Exposure Prophylaxis in high-endemic districts	
Weakness	**Threat**
• Inadequate institutional setup and human resources	• Addressing cross-border mobility
• Low priority for leprosy program at the periphery	• Limited activities for early case detection and management, high G2D proportion
• Poor motivation of health workers	• Increasing new cases of leprosy
• Limited rehabilitation activities	• Ongoing high community transmission, high child cases
• Insufficient training for newly recruited health workers and lack of refresher trainings	• Retaining trained human resources
• Challenges in reaction and complication management at the periphery	• Stigma and discrimination related to leprosy
• Poor result-based output, recording, and reporting of contact examination activities	• Maintaining access and quality of services in low-endemic mountain and hill districts
• Issues with under and over reporting of leprosy data	
• Low coverage of contact examination and LPEP	

10.2 Zoonotic Diseases and other Communicable Disease Control

10.2.1 Zoonotic Disease Control

Around 60% of existing human infectious diseases are zoonotic in origin and at least a 70% of emerging infectious diseases of humans including Ebola, Zika and influenza have an animal origin. Every year, five new human diseases appear out of which three are of animal origin. Around 80% of potential bioterrorism agents involve zoonotic pathogens. The Zoonotic and Communicable Disease Control section primarily emphasizes public health measures for zoonotic diseases. To optimize national resources and enhance human and animal health, a One Health approach prioritizes ten key zoonotic diseases:

Influenza (Avian and Seasonal)	Leptospirosis	Zoonotic Tuberculosis
Rabies	Brucellosis	Toxoplasmosis
Coronavirus	Salmonellosis	Cystode
(SARS-CoV, MERS-CoV, SARS-CoV2)	Leishmaniasis	(Cysticercosis/ Hydatidosis)

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. Children represent 40% of dog bite cases, with approximately half of Nepal's population at high risk and a quarter at moderate risk. Annually, Nepal witnesses hundred human rabies cases, with the Terai region facing the highest risk. Over 96% of bite cases in Nepal are attributed to dogs, and 99% of human rabies cases result from dog bites. Vaccinating 70% of dogs is crucial to break the rabies transmission cycle, making it a priority at EDCD.

Major activities in FY 2079/80

• Awareness programs about Rabies for school students and general public

- Celebration of World Rabies day on 28th September
- Orientation program for health workers on Rabies prophylaxis through Intradermal (ID) administration of Anti Rabies Vaccine (ARV) and immunoglobulin administration
- Scaling up of immunoglobulin services in federal and provincial level hospitals
- Procurement and supply of cell culture ARV vaccine and immunoglobulin

- Rabies Outbreak Investigation at Mandandeupur municipality
- Kavre animal health authorities to eliminate rabies as a public health problem.

Status of rabies control program

In FY 2079/80, 1,19,392 cases of animal bites reported and 456,978 ARV vials consumed. The incidence has increased by two fold as compared to FY 2077/78 (Table 10.10).

Table 10.10 Animal bites and consumption of the ARV vials in FY 2077/78- 2079/80

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
2077/78	54,996	4,418	59,414	-	18
2078/79	75,562	9,921	85,483	-	13
2079/80	1,08,555	10,837	1,19,392	4,56,978	10

Source: HMIS, e-LMIS, EWARS / DoHS

Snake bites control program

Nepal has 21 poisonous snake species among its 89 snake species. An estimated 10,000 snake bite cases occur annually, with 10% being poisonous bites and a 10% mortality rate in such cases. The 26 Terai districts are particularly affected. Free distribution of Indian quadrivalent anti-snake venom serum (ASVS) began in 2056 (1999/2000), with 110 treatment centers nationwide operated in collaboration with the Nepal Army, Nepal Red Cross Society, and community members. Additionally, hospitals in the Kathmandu Valley receive ASVS based on the snakebite cases they manage.

Major activities in FY 2079/80

Approval of and scaling up the establishment of snakebite treatment centers in the country in reference to endorsed standards

Masters training of trainers' training on snakebite management to the personnel from all seven provinces and capacity building of health workers on the proper use of Anti snake venom and snake bite management in Nepal

Procurement and supply of ASVS for respective centres.

Status of snake bites control program number of cases reported

In 2079/80, altogether 9,120 snake bite cases were reported across the country of which 1223 were poisonous (Table 10.11).

Table 10.11 Snake bite cases in Nepal

Fiscal year	Total cases	Non-poisonous	Poisonous
2077/78	7,902	6,935	967
2078/79	9,346	8,420	926
2079/80	9,120	7,897	1,223

Source: HMIS /DoHS

Box 10.12 SWOT analysis of zoonotic disease programs

Strength	Opportunity
- Free administration of ARV and ASVS all around the country - Updated guidelines on rabies prophylaxis and snakebite management - Expansion of snakebite treatment centers and ARV administration sites - Training on rabies prophylaxis and snakebite management to health workers	- International collaboration platforms - Funding sources - Advocacy - Expansion of one health approach to address zoonotic diseases
Weakness	**Threat**
- Lack of trained human resources - Inadequate domestic funding. - Updated guidelines and documents on prioritized zoonotic disease control other than rabies, snakebite not available	- Unprecedented surge in the zoonotic disease cases. - Human animal conflict conditions are increasing - Lack of political will or political instability. - Ownership by all the sectors including governance structures.

10.3 International Health Regulations (IHR)

The IHR are an instrument of international law that is legally-binding on 196 countries, including the 194 WHO Member States. They create rights and obligations for countries, including the requirement to report public health events and has outlined the criteria to determine whether or not a particular event constitutes a "public health emergency of international concern". Under the IHR, countries have agreed to build core capacities to prevent, detect, respond and report public health events. The IHR 2005 came into force from 1st Shrawan 2064 (17th July, 2007). IHR defines the core capacity requirement for IHR and major components of monitoring and evaluation (See Box 10.13, Fig 10.14 for detail).

Box 10.13 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

State Party Annual Reporting (SPAR)

Voluntary Joint External Evaluation(JEE)

Four major components of M and E of IHR

After Action Review / IAR (COVID-19 Pandemic)

Simulation Exercises (SIMex)
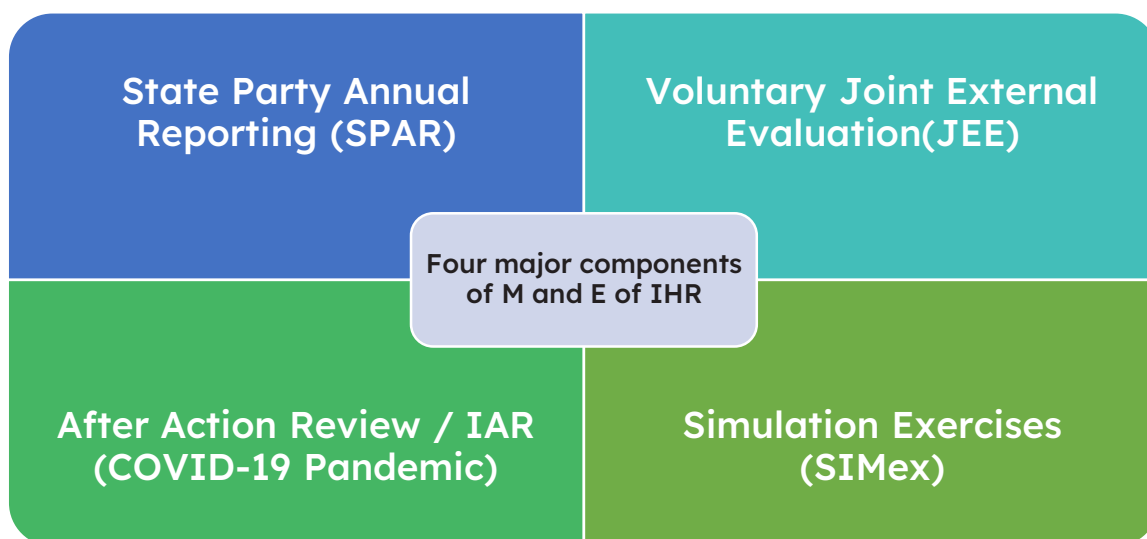
Figure 10.14 Four major components of monitoring and evaluation of IHR

State Party Annual Report (SPAR) is mandatory, with EDCD as the National Focal Point. EDCD serves as the focal point, and Zoonotic and Communicable Disease Control Section acts as the alternate IHR Focal Point. EDCD collaborates with various ministries for SPAR preparation, including Ministry of Agriculture and Livestock Development (MoALD), Ministry of Education Science and Technology (MoEST), and Ministry of Culture Tourism and Civil Aviation (MoCTCA). Provinces undergo IHR core capacities orientation, with multisectoral involvement, and national workshop is conducted for consensus on the final SPAR report. The report is uploaded online and shared with the World Health Assembly through WHO. Tribhuvan International Airport (TIA) is Nepal's sole designated PoE, with health desks in two air and 16 ground crossings. EDCD ensures capacity development activities aligned with IHR recommendations.

Major activities in FY 2079/80

- National workshop on SPAR reporting
- Province level SPAR Preparation and IHR core capacities orientation
- Conduction of voluntary JEE for the first time in Nepal
  » The activities are detailed in Chapter 9, section 9.2 of this report.
- Strengthening of the diagnostic capacity of NPHL regarding Anthrax and Nipah through the orientation training to staffs.
- Orientation on the IHR capacity at the Point of Entry (PoE)

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/detailt

Box 10.14 SWOT analysis of One Health Approach

Strength	Opportunity
• Fosters a holistic approach to health issues • Early detection of emerging diseases becomes more feasible, allowing for timely intervention	• Integrated Surveillance and collaborative research • Platform for international collaboration and advocacy
Weakness	Threat
• Requires substantial resources and personnel • Difficulty in proper allocation of funds due to competing priorities	• Resistance to adopt a more integrated approach may impede progress. • Political instability or lack of political will may hinder the establishment of supportive policies for One Health.

10.4 One Health Approach

One Health Approach recognizes the interconnectedness of human, animal, and environmental health, promoting collaboration across sectors to address health challenges comprehensively. Zoonotic and other communicable disease section is the focal point for One Health approach. The zoonotic section emphasizes one health approach, fostering understanding of the relationship between wildlife, domestic animals, and humans, particularly regarding zoonotic diseases like rabies. This perspective encourages collaboration and a comprehensive approach, emphasizing data sharing and integrated disease surveillance. In FY 2079/080, the Zoonotic Influenza Distribution Assessment and Ranking (ZIDAR) model was introduced as a pilot study in Nepal, with national and province-level workshops. The part of AMR surveillance is covered in Chapter 17 Public Health Laboratories Services of this report.

11 National TB Control and Management Program

NTCC	Tuberculosis Treatment Section	DR TB Treatment Section	M and E, Supervision and Research Section	Administration and Store Logistics Management Section	Laboratory Network / Health Facilities

11.1 About the Program

Tuberculosis (TB) is a significant public health issue in Nepal, being a leading cause of global mortality. Caused by *Mycobacterium tuberculosis*, it primarily affects the lungs but can also manifest in other areas. With nearly a quarter of the global population infected, TB is 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 current TB epidemic status, progress in response efforts, and the impact of COVID-19, drawing on data from various sources, including NTCC, HMIS, Nepal Tuberculosis Program Management Information System (NTPMIS) and WHO country profiles.

11.1.1 TB Burden Estimates

Based on the National TB prevalence survey report 2076 (2020), TB prevalence in Nepal is 1.8 times, incidence is 1.6 times and TB mortality is 3.1 times higher than the previous estimates (Table 11.1).

Table 11.1 Comparison between the pre-and post-survey TB burden, 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

Though the incidence is higher than the previous estimates, the incidence rate is declining by 3% annually. An assumption of a 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%/year growth in Gross National Income (GNI)/capita.[1]

In 2078 (2022), Nepal grapples with a TB burden, estimating 70,000 total cases at an incidence rate of 229 per 100,000 populations. HIV-related TB stands at 540 cases, with an incidence rate of 1.8 per 100,000, while drug-resistant TB, including Multi Drug Resistance/Rifampicin Resistant (MDR/RR)-TB, affects 2,900 individuals at a rate of 9.5 per 100,000. The mortality toll is significant, with 18,000 HIV-negative TB deaths (mortality rate: 58 per 100,000) and 220 HIV-positive TB deaths (mortality rate: 0.71 per 100,000) (Table 11.2).

Table 11.2 Nepal TB burden estimates, 2078 (2022)

	Number	(Rate per 100,000 population)
Total TB incidence	70,000 (43,000-117,000)	229 (141-382)
HIV-positive TB incidence	540 (290-870)	1.8 (0.94-2.8)
MDR/RR-TB incidence**	2,900 (1,200-4,600)	9.5 (4-15)
HIV-negative TB mortality	18,000 (9,100-29,000)	58 (30-94)
HIV-positive TB mortality	220 (110-360)	0.71 (0.37-1.2)
Estimated proportion of TB cases with MDR/RR-TB*, 2078 (2022)		
New cases % (CI)	4% (3.6-4.4)	
Previously treated cases % (CI)	6.3% (0.97-20)	

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[1] Nepal Tuberculosis Control Center. 2020. National Tuberculosis Prevalence Survey Report 2076 (2020). Department of Health Services, Ministry of Health and Population, Government of Nepal
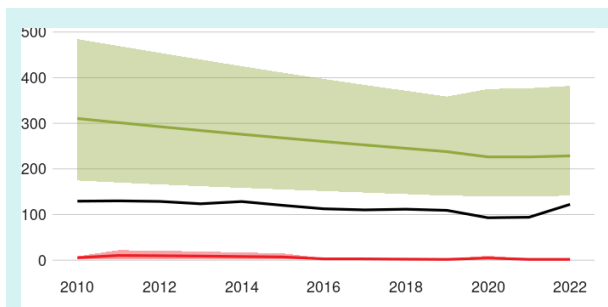
Figure 11.1 Incidence, New and relapse TB cases notified, HIV-positive TB incidence trajectory 2010-2022

Source: Global TB Report 2023, WHO
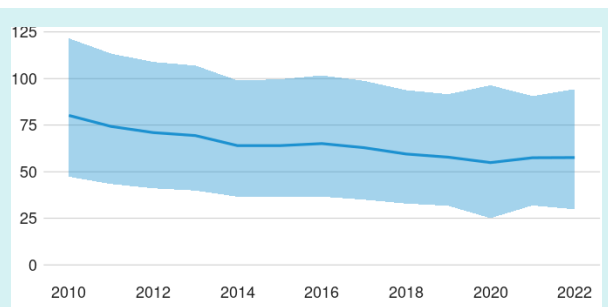
Figure 11.2 HIV-negative TB mortality trajectory 2010-2022

Source: Global TB Report 2023, WHO

Proportions of MDR/RR-TB cases are 4% among new cases and 6.3% among previously treated cases. Health system indicators reveal a 53% TB treatment coverage, with 27% of TB patients facing catastrophic total costs. In 2078/79 (2022), a total of 37,861 TB cases were notified, with 51% tested using rapid diagnostics and 75% having known HIV status. Drug-resistant TB (DRTB) care is notable, with 80% and 78% of bacteriologically confirmed TB cases tested for rifampicin resistance in new and previously treated cases, respectively. These statistics underscore the challenges and efforts needed to effectively address TB in Nepal (Fig 11.1, 11.2).[2]

1993/94 (1937)	2007/08 (1951)	2021/22 (1965)	2052/53 (1996)	2062/63 (2006)	2071/72 (2015)	2076 (2020)	2077/78 (2021)
Sanatorium at Tokha to care TB patients establishaed	First chest clinic for TB patients in Kathmandu	National TB program established	DOTS TB strategy	Stop TB strategy	End TB strategy	National TB Prevalence Survey	TB free initiative in 25 LLGs
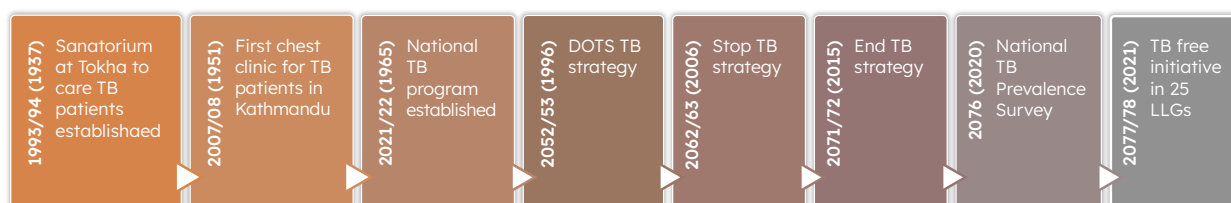
Figure 11.3 Major milestones in GoN efforts for TB Control and Management

Box 11.1 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 significant reductions in TB incidence, deaths, and costs for patients and households. Subsequent declarations, including the Moscow Declaration 2074 (2017) and the UN General Assembly high-level meetings on TB 2075 (2018) and 2080 (2023), reaffirmed commitments to SDGs and the End TB Strategy, introducing new elements like the multi-sectoral Accountability Framework and community engagement.[3,4] Nepal aligned its strategies with these global commitments.

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 1.9% reduction in TB deaths between 2071/72 (2015) and 2078/79 (2022), however Nepal is still far behind to track in reaching the END TB targets. Furthermore, Nepal does not have the data on TB affected people facing catastrophic cost. Based on the National TB prevalence survey report, there has been a 3.0% decline in annual incidence rates in TB in Nepal.

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[2] Global TB report 2023, WHO
   https://worldhealthorg.shinyapps.io/tb_profiles/?_inputs_&entity_type=%22country%22&iso2=%22NP%22&lan=%22EN%22
[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

Goal:

Nepal has set a goal to decrease incidence rate from 238 in 2078/79 (2020/21) to 181 per 100,000 populations by 2083/84 (2025/26); decrease mortality rate from 58 in 2078/79 (2020/21) to 23 per 100,000 by 2025/26; end TB epidemic by 2091/92 (2035); eliminate TB by 2107 (2050); and reduce the catastrophic cost to zero

Objectives:

To build and strengthen political commitment, sustainability, and patient-friendly health system to end TB and To ensure the identification of TB, diagnosis, quality treatment and prevention.

Indicators	Milestones		Targets	
	2076/77 (2020)	2081/82 (2025)	SDG 2087/88 (2030)	END TB 2091/92 (2035)
Reduction in number of TB deaths compared with 2015 (%)	35%	75%	90%	95%
Reduction in TB incidence rate compared with 2015 (%)	20% (<85/100,000)	50% (<55/100,000)	80% (<20/100,000)	90% (<10/100,000)
TB Affected Families facing catastrophic costs due to TB (%)	Zero	Zero	Zero	Zero

Strategies

- Improve the quality of TB services and strengthen the health system for universal access to TB services; effectuate the 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

11.2 Major Activities in FY 2079/80

Expansion of diagnostics:

- Expansion of GeneXpert sites to 113 sites. Introduction of new diagnostics like Xpert XDR from 19 sites
- Introduced GeneXpert Ultra (5000 cartridges) and initiated testing of stool samples for children
- Identified DMCs for MC for NTP

Quality treatment:

- Continued treatment with quality TB drugs with the introduction of all oral bedaquiline containing shorter regimen options for MDR TB patients.

Continued commitment to end TB

- TB-free initiatives continued and strengthened in 25 LLGs.

Strengthening monitoring and evaluation and reviews:

- Develop and introduce the biometric system at GeneXpert and DR TB treatment sites
- Started interoperability between NTPMIS and HMIS
- Conducted epidemiological appraisal of the National TB program (NTP)

- Conducted Mid-term review of the National Strategic Plan of TB 2079/80- 2083/84 (2021/22-2025/26)

Survey/Research:

- Completion of field operation and data collection for the National Anti-TB Drugs Resistance Survey
- Protocol drafting for the National Patient Cost Survey

11.3 Key Programme Indicators

Institutional coverage of TB services

Nepal adopted the Direct Observed Treatment Short Course (DOTS) strategy in 2052/53 (1996), achieving nationwide coverage by 2057/58 (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 2079/80, 230 DOTS centers were added to increase coverage. Similarly, two DR centers, 17 MDR sub-centers were added and 19 Xpert Direct Observed Treatment Short Course (XDR) facilities were established (Table 11.3, 11.4). 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 11.3 Service sites expansion in last seven FYs 2073/74-79/80

Number of Service Sites	National Level						
	2073/74	2074/75	2075/76	2076/77	2077/78	2078/79	2079/80
DOTS Center	4221	4323	4382	4955	5503	5971	6209
MDR Treatment Centers	18	21	21	22	22	22	24
MDR Treatment Sub-Centers	81	86	81	81	81	81	98
DR Homes	1	1	1	1	1	1	1
DR Hostel	6	6	6	6	6	6	6
DRTB Referral Centers					3	3	3
Designated Microscopy Centers	604	624	604	765	896	896	786
GeneXpert Facility	27	55	56	72	84	98	113
Xpert XDR Facilities							19
Culture Labs and DST	2	2	2	2	2	2	2
Line Probe Assay (LPA)	2	2	2	2	2	2	2
Solid Culture						2	2

Source: NTCC/DoHS

Table 11.4 Service sites across provinces in FY 2079/80

Number of Service Sites	FY 2079/80 by Province						
	Koshi	Madesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
DOTS Center	1114	1005	1226	828	902	421	713
MDR Treatment Centers	4	4	2	3	4	2	5
MDR Treatment Sub-Centers	17	17	23	9	14	16	2
DR Homes	0	0	0	1	0	0	0
DR Hostel	1	1	1		1	0	2
DRTB Referral Centers	0	0	0	1	1	0	1
Microscopy Centers	131	74	155	101	145	57	123
GeneXpert Facility	19	21	23	9	21	9	11
Xpert XDR Facilities	3	2	4	3	3	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: NTCC/DoHS

Case notification rates

In FY 2079/80, case notification rate (CNR) of all forms of TB is 126/100,000 (n=374,47), and that for TB cases pulmonary bacteriologically confirmed (PBC) new and relapse is 71/100,000 population.

In FY 2079/80, there were 98.3% incident TB cases registered (New and Relapse) among all TB cases;

72.5 % of all TB cases were pulmonary cases of which 57.3% were bacteriologically confirmed. A total of 18,472 were confirmed using Xpert MTB/RIF testing (Table 11.5) (See Fig 11.4-11.6 for disaggregation for CNR based on province, age group and sex). Among the 23 districts with high TB case notifications, 14 are in the Terai belt, and the remaining 9 are in the Hilly region (Figure 11.7).
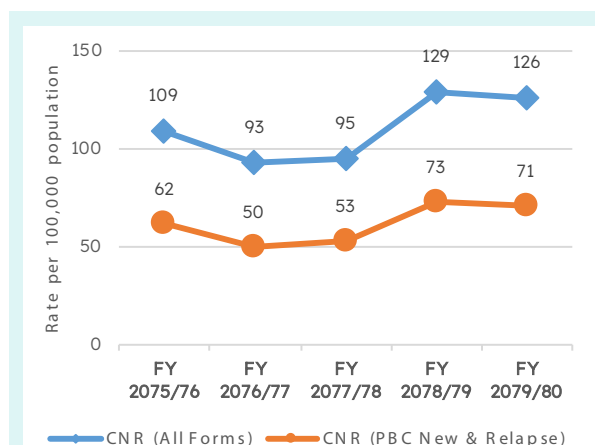
Figure 11.4 TB case notification rate (2075/76–2079/80)

Table 11.5 TB case notification FY 2079/80

TB Case Notifications (New and Relapse), 2079/80	
Total New and Relapse	36,819
% pulmonary	72.5%
% pulmonary bacteriologically confirmed	57.3%
% children aged 0-14 years	8.0%
% women	37.7%
% men	62.3%
Total TB cases notified	37,447

Source: NTCC/DoHS
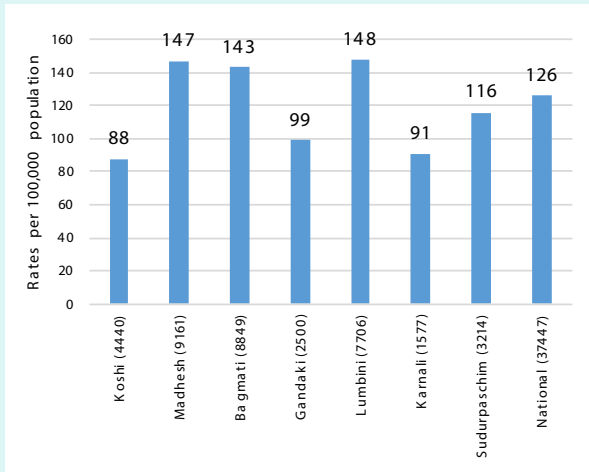
Figure 11.5 Notified TB cases (All forms) in rates by provinces for FY 2079/80
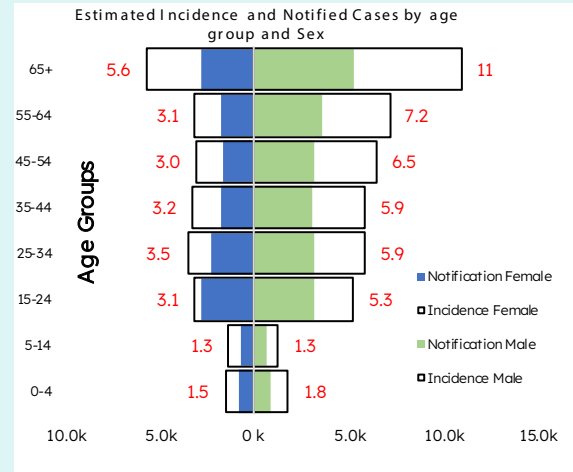
Figure 11.6 Notified TB cases (all forms) by age-group compared to the estimated incidence

Source: HMIS/NTCC/DoHS
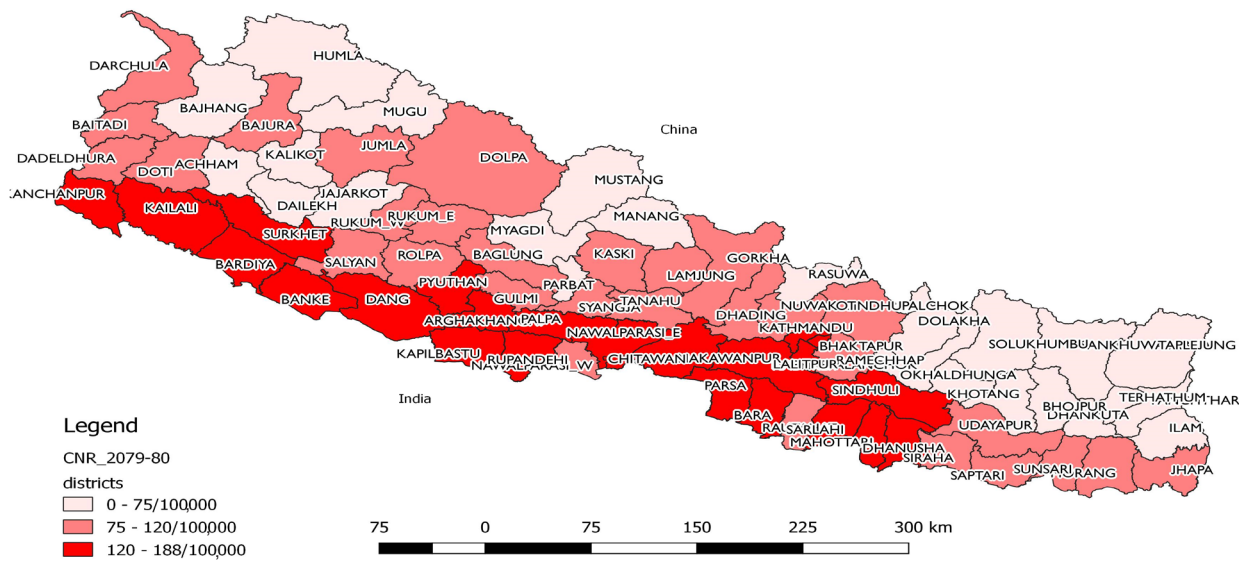
Figure 11.7 District wise tuberculosis case notification rate, 2079/80

Source: HMIS/NTCC/DoHS

Treatment outcomes

TB treatment success rates in Nepal have consistently exceeded 90.0%, except in FY 2076/77, impacted by the COVID-19 pandemic. In FY 2079/80, the overall treatment success rate is 92.4% for all forms of TB. However, the success rates for retreatment cases (Success, Failure, Loss to Follow-up, and other previously treated) have consistently been lower than the success rates for newer cases (Figure 11.8). Gandaki and Koshi provinces had an average treatment failure rate exceeding 1.0%, while approximately 3.0% of TB patients died during treatment. Additionally, Koshi and Sudurpaschim provinces reported a higher lost to follow-up (above 3.0%) compared to other provinces (Table 11.6).
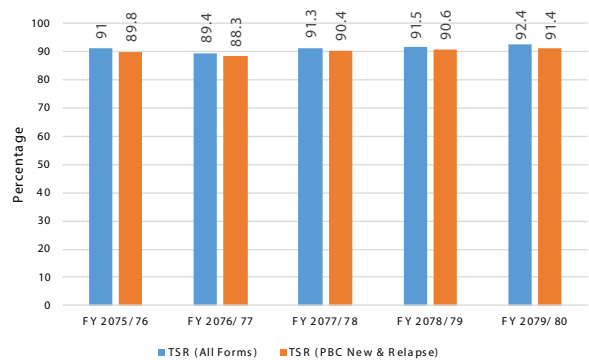
Figure 11.8 TB Treatment Success Rate FYs 2075/76–2079/80

Source: HMIS/NTCC/DoHS

Table 11.6 Province wise TB treatment outcomes (2079/80)

Province	Treatment Success Rate	Treatment failure Rate	Mortality Rate	Rate of Loss to Follow Up	% Not Evaluated
Koshi Province	89.9	1.1	3.5	4.1	1.8
Madesh Province	93.5	0.5	2.9	2.6	0.4
Bagmati Province	92.5	0.8	2.3	1.7	2.8
Gandaki Province	91.8	1.1	3.5	2.5	1.1
Lumbini Province	93.0	0.7	3.3	2.5	0.5
Karnali Province	93.2	0.6	2.7	2.4	1.2
Sudurpaschim Province	91.1	0.8	3.5	3.3	0.9
National	**92.4**	**0.7**	**3.0**	**2.6**	**1.3**

Source: HMIS/DoHS

Drug resistant tuberculosis

DRTB is a critical 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 (See Annex Figure 11.1 in the annex of the report).

MDR-TB enrolled in treatment

In FY 2079/80, a total of 546 RR/MDR-TB cases were registered for treatment in Nepal (Fig 11.9). Detection methods for drug-resistant TB include GeneXpert, Culture/DST, and LPA. Out of the 546 MDR TB cases reported, 265 (49%) were MDR (SSTR), 189 (35%) were MDR (LTR), 84 (15%) were Pre-XDR, and 8 (1%) were XDR. Lumbini province has the highest burden, of Pre-XDR and XDR TB patients (Fig 11.9).

Treatment outcome of MDR TB

A total of 82% treatment success rate for MDR TB in this reporting period. Over recent years, there has been a consistent upward trend in the treatment success rate of MDR TB, suggesting the effectiveness of patient care services for managing DRTB in Nepal (Fig 11.10, 11.11).
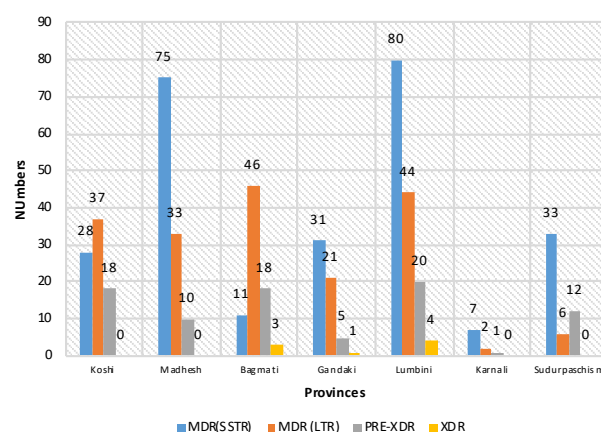
Figure 11.9 MDR-TB cases enrolled in treatment by provinces
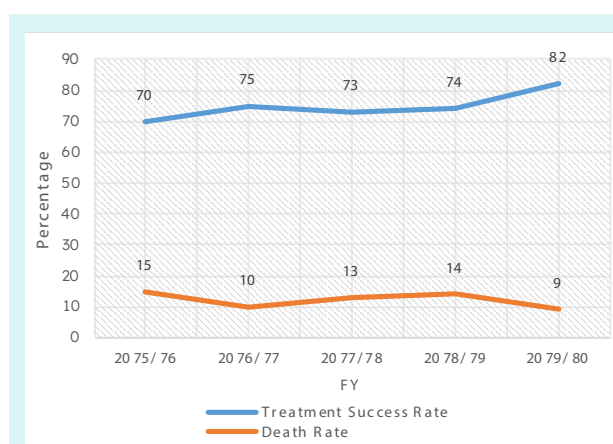
Source: NTCC/DoHS

Figure 11.10 Treatment success rates in FYs 2075/76-2079/80

Source: NTCC/DoHS
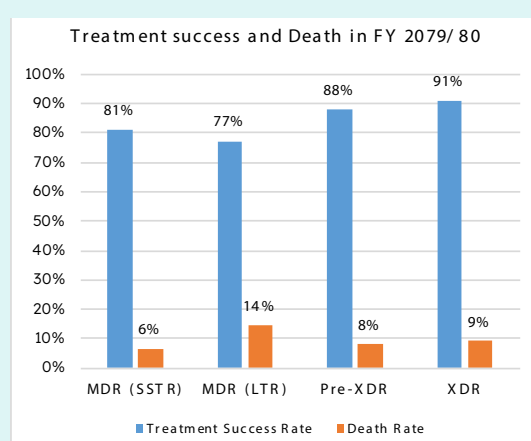
Figure 11.11 Treatment success rates in types of MDR FY 2079/80

Source: NTCC/DoHS

Further break down of the type of the MDR TB treatment success and mortality data depict that there is relatively better treatment success rate in SSTR than LTR therapy treatment of MDR. Notably there was slight better results seen in the success rate of XDR TB (Fig 11.11).

DR TB annual Case Finding and Gap from Estimates

In 2078 (2022), the estimated proportion of TB cases with multidrug-resistant or rifampicin-resistant TB (MDR/RR-TB) was 4% among new cases and 6.3%

among those previously treated. Around 2,900 people were estimated to have MDR/RR-TB in FY 2079/80, but only 693 were detected, resulting in a 76% detection gap (Fig 11.12). Among those diagnosed, 546 received DR TB treatment.

MDR TB annual case finding and gap
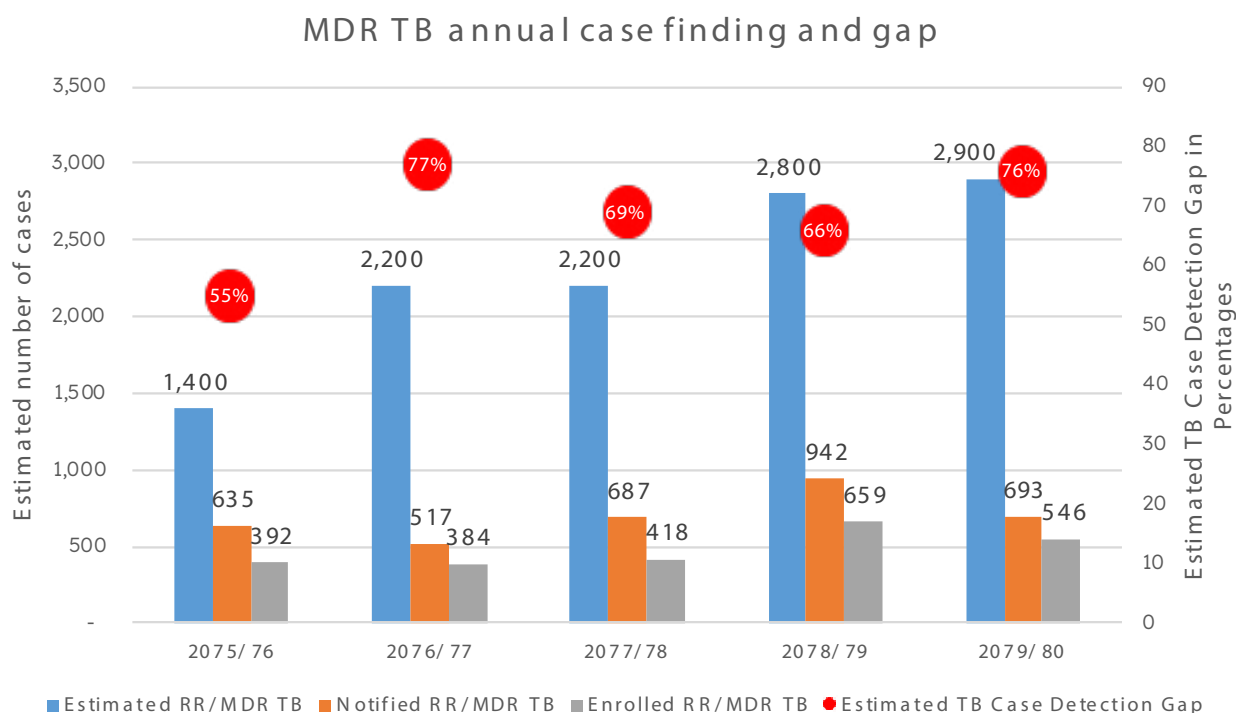
Figure 11.12 MDR TB annual case finding and Gap

Source: NTCC/DoHS

NTP's laboratory network

The diagnosis and monitoring of TB patients play a crucial role in effective disease management. Nepal is transitioning for primary diagnostic tool as molecular WHO recommended rapid diagnostics like GeneXpert platforms (where available) followed by sputum smear microscopy. This method is widely employed globally and is now a globally recommended primary tool for the diagnostic. Nepal boasts 113 GeneXpert sites, 786 TB designated microscopy centers (MCs), distributed across various provinces and regions. While most MCs are operated by government health facilities, a few are managed by non-governmental organizations (NGOs) and private. There is extensive coverage of the TB diagnostic network, highlighting the institution (Table 11.7).

These MCs maintain established networks with PHCCs, Health offices, seven PPHL and NTCC. NTP is coordinating with provinces to support the establishment of provincial structures for external quality assurance of smear microscopy slides. External Quality Assessment (EQA) for sputum microscopy occurs at seven PHDs and NTCC in Kathmandu within the federal structure. Nepal extensively employs Lot Quality Assurance Sample/System (LQAS) for quality assurance. At each microscopy center, slides for EQA are selected based on LQAS, replacing the previous practice of collecting all positive and 10% negative slides.

Table 11.7: NTP laboratory network (number of institutions) by province

Center	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim	Nepal
MC	131	74	155	101	145	57	123	786
GX sites	19	21	23	9	21	9	11	113
Xpert XDR	3	2	4	3	3	1	3	19

Source: HMIS/DoHS

Laboratory tests for TB diagnosis

In FY 2079/80, among 329,234 presumptive TB cases tested, 4% positivity of sputum microscopy test rate led to the diagnosis of 12,761 PBC TB cases (Fig 11.13). Additionally, in FY 2079/80, the proportion of MTB among total GeneXpert tests was 13%, and the proportion of RR MTB among total MTB cases decreased to 3% (Fig 11.14).
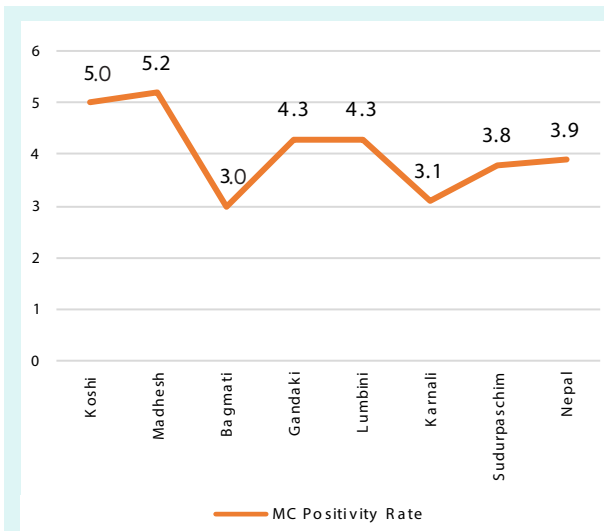
Figure 11.13 Sputum microscopy positivity rate performed in FY 2079/80
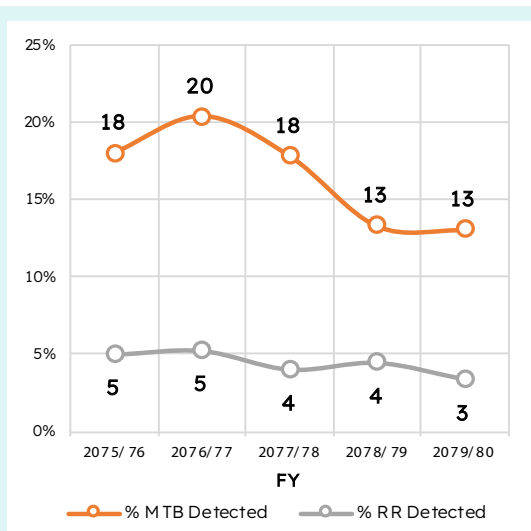
Figure 11.14 TB diagnosis performed using GeneXpert test in FY 2075/76-2079-80

Source: HMIS/NTCC/DoHS

TB/HIV co-morbidity

The testing proportion for HIV among TB patients has been on the rise, witnessing a significant increase from 74% in FY 2078/79 to 89% in FY 2079/80. Moreover, in FY 2079/80, Anti-retroviral therapy (ART) enrollment increased to 99%, up from 97% in the preceding year (FY 2078/79) (Fig 11.15). TB HIV comorbidity rate 0.6 for FY 2079/80 among tested (Fig 11.16).
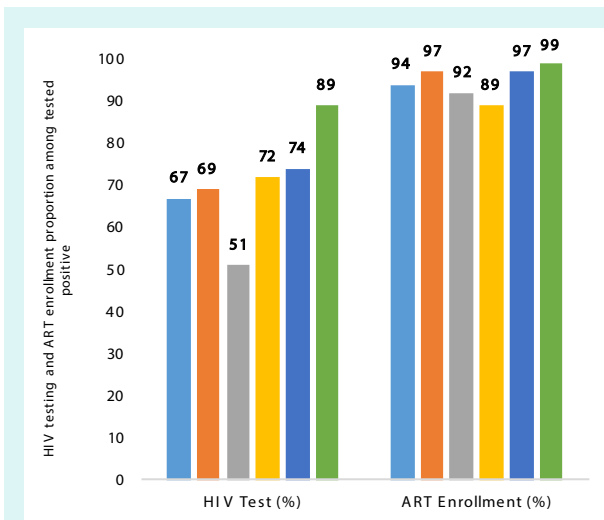
Figure 11.15 Trend of HIV testing and ART enrollment proportion among tested positive
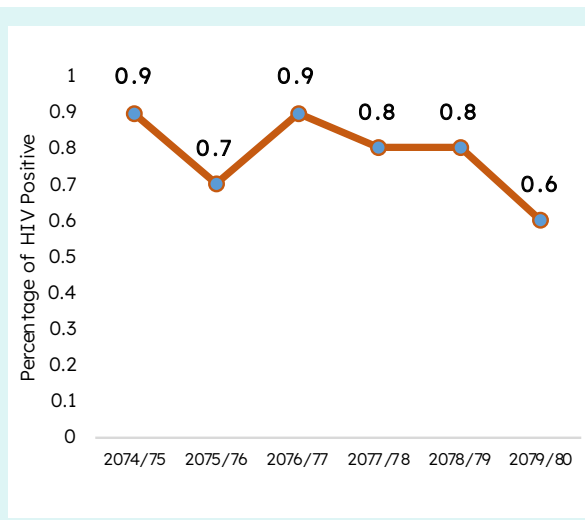
Figure 11.16 HIV TB Comorbidity

Source: HMIS/DoHS

TB preventive treatment (TPT)

The National Strategic Plan (NSP) of TB for the period 2021/22-2025/26 emphasizes the initiation of TB Preventive Treatment (TPT) among children under 5 years old. As part of this strategy, NTP aims to expand TPT services not only among this specific age group but also to other identified risk groups across all 77 districts by the conclusion of the NSP period.

Presently, TPT services have been successfully implemented in 42 high burden districts throughout Nepal. In the fiscal year FY 2079/80, a total of 3,658 children under the age of 5 were reported to have initiated preventive treatment, marking a significant stride towards the program's objectives. The ongoing efforts underscore the commitment to scaling up TB preventive measures and enhancing coverage across vulnerable populations including PLHIV.

TB free Nepal initiative

The TB Free Nepal Initiative represents a comprehensive government-led approach aimed at enhancing the ownership and accountability of local-level governance in the response to TB. In the fiscal year 2078/79, the initiative was introduced in 25 LLGs out of the total 753, backed by an additional federal budget of NRs 150 million. This initiative encompasses various interventions, including intensified TB case finding, expanded access to TB prevention therapy,

improved quality treatment, increased care and social protection schemes/support, and effective community engagement.

The implementation of the initiative requires structural improvements, including the allocation of additional designated human resources at the local level/ municipality. Various committees have been formed at different levels to strengthen the TB support system. Tools such as TB microplanning and social audit are being applied to ensure meaningful community engagement and the sustainability of the initiative.

In the FY 2079/80, out of the 25 LLGs 16 allocated approximately NPR 10 million from their budget ceiling. The initiative is set to continue in these 25 local levels and will be expanded to include 100 new local levels in the fiscal year 2080/81. Preliminary results indicate a 31% increase in case notification following the implementation period (between FY 2077/78 and FY 2078/79), with an additional 5% increment in FY 2079/80 compared to cases notified in FY 2078/79 (See Annex-Table 11.1 in the annex of the report).

Planning, monitoring & evaluation

Data source for TB program management and review

The primary data source for NTP is the Health Management Information System (HMIS) data. In adherence to the NSP's directive to develop an e-case based data system, the NTP has invested in the development of the NTPMIS database. This platform records individual case-based data for each patient and is accessible at https://ntpmis.gov.np/

Supervision and monitoring

NTP consistently monitors case notification, smear conversion, treatment outcomes, and program management reports, conducting supervision visits across all program levels (Figure 11.17). Periodic trimester planning, monitoring, and evaluation (PME) workshops analyze key monitoring data, involving local, provincial, and national levels.
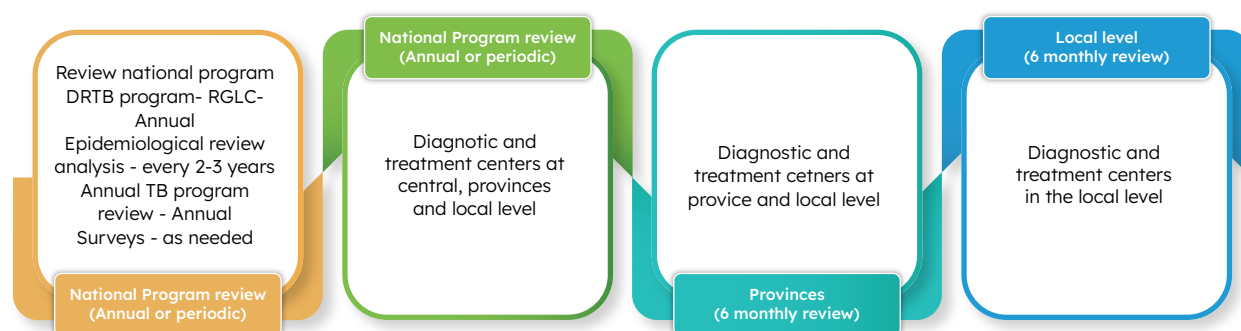
Figure 11.17 Line of management and program review at different levels

Logistics supply management

NTP's logistics system provides anti-TB drugs and essentials every four months to service delivery sites, determined by 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 PLMC every four months. Furthermore, the drugs from district medical stores, is sent to LLGs every four

months. First-Line Drugs have a 4-month buffer, while DR Drugs are directly supplied to DR Centers and some DR Sub Centers.

Financial contribution to NTP

In FY 2079/80, the total budget allocated for NTP was total NPR 1,995.6 million (Table 11.8). Over the period of three fiscal years, there have been slight increment in the allocation of the fund from government and decline in the fund from Global fund.

Table 11.8 Trend of financial contribution and expenses by sources and FY

Source	Budget in NPR (million)			
	2077/78 (2020/21)	2078/79 (2021/22)	2079/80 (2022/23)	
			Budget	Expenses
GoN	835.4	1,035.7	1,192.7	1,064.8
Global Fund	1,070.5	1,240.3	798.9	787.2
WHO	4.0	4.7	4.0	2.5
Total NPR	1,909.9	2,280.7	1,995.6	1,854.5

Source: NTCC/DoHS

The allocation made by GoN represents the budgeted figure of federal, provincial, LLGs & TB free initiatives. The major areas of investment and expenditures were on the procurement of drugs, laboratory consumables & equipment's, GeneXpert cartridges, supervisions & monitoring, supply chain management and TB free

Initiative. 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 including WHO.

Box 11.3 SWOT Analysis of NTP

Strength	Opportunity
• Dedicated and well-qualified M&E team at NTCC • Utilization of electronic database systems (NTPMIS and HMIS) for TB, with ownership of the systems • Regular reviews of data quality conducted at national, provincial, and health facility levels • Availability of essential resources, including National M&E plan, RDQA guideline, HMIS user manual, R&R tools, and training modules.	• Roll-out of interoperability between HMIS and NTPMIS, including biometric systems for GX and DR sites • Full coverage of electronic TB registers and update of Geographic Information System (GIS) systems • Mobilization of available human resources (logistics officers) for tracking the supply chain of available documents
Weakness	**Threat**
• Poor quality implementation of the program due to lack of dedicated TB focal person at province and local level • Inadequate engagement of private sectors and community in TB diagnosis and management • High number of initial defaulters • Lack of nationwide scale-up of digitized case-based surveillance and full integration with HMIS • Significant gap in treatment coverage (TB case notification vs. estimated incident TB cases). • Inadequate restoration of Quality Control system for sputum microscopy and mWRD (GX test) • Gap in quality reporting of NTP services from HMIS in terms of timeliness, completeness, and accuracy • Challenges in ensuring uninterrupted logistics supply and management	• Insufficient resources for TB, including both human resources and budget • Inadequate expansion, maintenance, and utilization of rapid molecular diagnostic tests, specifically GeneXpert.

NCASC	Control, Treatment, Care and Coordination Section	Monitoring, Evaluation, Supervision and Research Section	Administrative and logistics management section	Health Facilities and ART centers
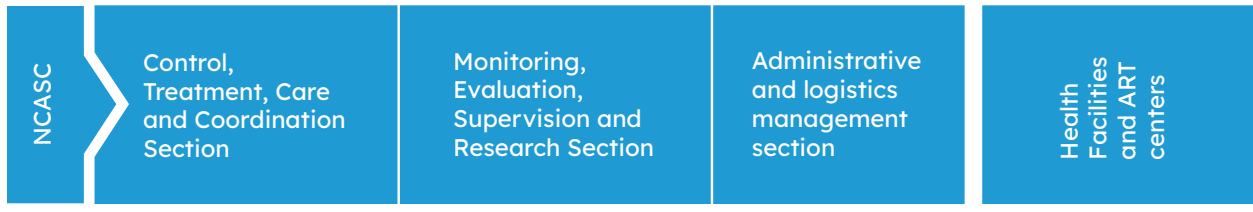
12.1 About the Program

Nepal first identified a case of Human Immunodeficiency Virus (HIV) in 2044/45 (1988), prompting the development of National Policy on Acquired Immunodeficiency Syndrome (AIDS) and Sexually Transmitted Diseases (STDs) Control in 2052 (1995) The National Centre for AIDS & STD Control (NCASC) was established in 2050 B.S. to formalize the response against HIV and STIs control in Nepal. Recognizing the dynamic nature of the HIV epidemic, Nepal revised its initial policy and endorsed an updated version in 2067/68 (2011): The National Policy on HIV and Sexually Transmitted Infections (STIs).

The epidemic in Nepal is predominantly driven by sexual transmission and is characterized as a concentrated HIV epidemic among key populations, including men who have sex with men, male sex workers, transgender individuals, people who inject drugs, female sex workers and their clients, migrants, and prisoners. The national response primarily focuses on accelerating and expanding comprehensive HIV prevention programs, as well as enhancing access to equitable, quality, and gender-sensitive HIV diagnosis, treatment, care, and support services through strengthened health and community systems.

The National HIV Strategic Plan (NHSP) 2077/78-2082/83 has been launched to achieve the ambitious global 95-95-95 targets by Ashad 2083. As per the targets, by July 2026, 95% of all people living with HIV (PLHIV) should know their HIV status, 95% of those diagnosed should receive sustained antiretroviral therapy (ART), and 95% of those on ART should achieve viral suppression. Nepal is also committed to the global 'UNAIDS Strategy 2021-2026' and the SDGs which include commitments to Fast-Tracking the end of the AIDS epidemic as a public health threat by 2087/88 (2030). The estimated PLHIV in Nepal was 30,000 in 2078/79 (2022). The vision of NHSP 2077/78-2082/83 (2021-2026) is to end the AIDS epidemic as a public health threat in Nepal by 2087/88 (2030).

HIV testing services

HIV testing services (HTS) has been a strategic focus in national response to HIV control. Previously, HTS was referred to as voluntary HIV counseling and testing (VCT) or HIV counseling and testing (HTC) services. The first-ever HTS program was initiated in 2051/52 (1995), employing the Client-Initiated Testing and Counseling (CITC) approach.

GoN is actively promoting HIV testing uptake among key populations (KPs) through targeted communications and establishing connections between community outreach and HTS. Additionally, Provider-Initiated Testing and Counseling (PITC) services have been extended to STI clinics, antenatal Clinics, childbirth facilities, malnutrition clinics, postpartum care, Family Planning centers, and TB services to address TB/HIV co-infection management. HTS are available in all 77 districts of Nepal.

Sexually transmitted infections (STIs) management

Standardizing the quality of STI diagnosis and treatment up to the health post level as part of primary healthcare services has been a key strategy in the national response to HIV. One of the key actions in addressing the concentrated HIV epidemic in Nepal has been the strengthening of documented linkages, including the referral and follow-up mechanisms between BCC services and HIV testing and counseling. This effort also includes enhancing the linkage between HTS and STI services. STI management services targeted at key populations are provided through ART centers.

Prevention of mother to child transmission of hiv for elimination of vertical transmission (eVT)

In 2061 (2005), Nepal initiated the Prevention of Mother-to-Child Transmission (PMTCT) program, also known as eVT. Later, in 2065/66 (2009), Community-based PMTCT (CB-PMTCT) programs was introduced and now covers all 77 districts where HIV screening and counseling are provided to women during their ANC visits at health facilities.

Similarly, the National Guidelines on PMTCT have been developed and integrated into the National HIV Testing and Treatment Guidelines 2078/79 (2022). Furthermore, HIV testing has been incorporated into maternal and child healthcare through PMTCT. Counseling and information regarding infant feeding have been adapted to meet the needs of HIV-infected infants and HIV-exposed babies. In addition to the CB-PMTCT program, the country is scaling up PMTCT services, aligning them with planned ART, HTC, and STIs services. This ensures access to a continuum of care and ART for pregnant women living with HIV. Furthermore,

linkages have been established between PMTCT sites and interventions targeting key populations, Family Planning, sexual and reproductive health services, and counseling services.

Pursuant to its commitment to eliminate vertical transmission of HIV among children by 2082/83 (2026), Nepal adheres to test and treat strategy and promotes rapid ART initiation for all identified pregnant women and breastfeeding mothers with HIV, regardless of CD4 along with prophylaxis treatment for their infants as well. Nepal has scaled up its PMTCT services in recent years which led to an increased testing and detection over years.

HIV treatment services

Since 2060/61 (2004), the government began providing free anti-retroviral (ARVs) from ART centers with the aim of improving the survival of PLHIV. The NCASC adopted the WHO "Treat All" policy following the revision of the national HIV testing and treatment guidelines in 2073/74 (2017). Infrastructure necessary for diagnosis and treatment, including CD4 machines and viral load machines, has been established in various parts of the country, and human resources have been trained in treatment, care and support.

Opioid substitution therapy (OST) services

Harm Reduction encompasses methods, programs, and practices designed for individuals in the stages of continued drug use before they establish motivation for enrollment in treatment or during periods of slips/relapses. Harm Reduction is a goal-oriented approach aimed at reducing the specific health risks and damages associated with substance use. OST is one of the harm reduction initiatives designed to facilitate recovery from substance use disorders, particularly those dependent on opioids. OST is an effective treatment that also plays a critical role in the prevention of HIV and Hepatitis C virus. Currently, there are 12 OST sites (eight government sites and four NGO-managed sites) providing services across 10 districts in Nepal. There are no OST services in Karnali and Sudurpaschim at present.

Strengthening strategic information of national HIV program

To address the challenges of aggregated data reported to the national system, the NCASC developed and introduced the HIV Care and ART Tracking System (also known as DHIS2 Tracker). This system generates real-time data for an informed HIV response in the country. The previous recording and reporting (R&R) system was solely paper-based, lacking individual-level data at the national level. The HIV Care and ART Tracking System comprises three interconnected systems: a) DHIS2 Tracker; b) mHealth; and c) Biometrics.

Currently, the DHIS2 tracker is implemented at all HIV-related service delivery points across the nation for recording HIV prevention, testing, treatment, care and support details of clients.

DHIS2 tracker

The DHIS2 Tracker maintains records of all personal information of clients for HIV prevention, testing, treatment, care and support services including PMTCT, Early Infant Diagnosis (EID), and discontinuation of follow-up services across all service delivery points (EID diagnosis is done by NPHL, see Chapter 17 section 17.2.6). Once a client is registered, all related information is entered and is retrievable at any time. The system's primary goal is to record client information in real time, ensuring accessibility for treatment and effective implementation of HIV-related programs. It also facilitates client information transfer and referral to other sites. The system is linked with the Biometric System for scanning client fingerprints, streamlining duplication checks and transfer processes. However, some sites face challenges with internet speed, impacting the full functionality of the DHIS2 Tracker system. To mitigate training challenges during COVID-19, program developed a YouTube channel (https://www.youtube.com/@hivcareandarttrackingsyste6057) to assist users in understanding and effectively using the HIV Care and ART Tracking system.

As a priority for NCASC and the IHIMS,MD; sites can generate monthly reports from the HIV Care and ART Tracking System and upload them to the aggregated DHIS2 system of national IHMIS. Since the DHIS2 Tracker System and National Reporting System platforms are the same, individual-level client data can be generated as a monthly report in National IHMIS reporting formats. Reports from this system can be directly imported into HMIS, reducing data entry errors and enhancing timely reporting from ART sites.

mHealth (Mobile Health)

mHealth aims to support HIV treatment and improve retention. The system includes automated and manual push SMS methods for sending appointment reminders and general awareness messages to clients. It has significantly contributed to increased adherence to services and retention in HIV care and treatment 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.

Biometrics

The biometric system is employed for clients confirmed as HIV positive or enrolled in HIV care. It registers new clients in the HIV Care and ART Tracking System with a unique alphanumeric identification code. This helps identify if a client is registered at another ART center in Nepal, addressing the issue of client duplication. The unique identification code facilitates the search and review of clients' past records and aids in treatment planning. The system also simplifies tracking clients transferred between sites and districts.

Lessons learned from this system are being applied by various partners to integrate individual-level data

recording and reporting for HIV prevention, care, and support components into the national HIV program. NCASC and HIMS have developed recording registers and reporting forms for HIV prevention, testing, care, and support services managed by different implementing agencies or partners (INGOs, NGOs). These are being integrated into the existing information system and will be incorporated into the national HMIS/DHIS2 from FY 2080/081. This integration aims to ensure real-time data generation.

12.2 Key Service Status 2079/80

12.2.1 Positivity Rate Among Tested Through HTS

The positivity rate among tested is 0.54%. (Table 12.1). The provincial testing, shows higher positivity yeild in Bagmati and Madhesh Provinces even when the volume of cases being tested are relatively lower (Table 12.2). There is need of concentrated efforts for HIV and STI control and management in these provinces.

Table 12.1 HIV testing and counseling services for the period of FY 2075/76 to 2079/80

Indicators	Fiscal Years				
	2075/76	2076/77	2077/78	2078/79	2079/80
Total tested for HIV	237,496	147,968	176,895	376,191	558,219
Total HIV positive reported	2,298	2,416	2,944	3,270	3,046
HIV positivity rate (%)	0.97	1.63	1.66	0.86	0.54

Source: HMIS/DoHS

*Out of total 376191 HIV tests reported in IHMIS only 174251 number of tests reported by HTC list of IHIMS which was approved by NCASC in close coordination with IHIMS and provincial authorities. HIV testing and positive numbers were also reported by non-HTC sites (Private hospitals, Health Posts, UHCs, BHSCs, NGOs etc.). Similarly, some of the NGO sites were not integrated within national IHMIS during FY 2078/079.

Table 12.2 HIV testing and counseling services at provinces in FY 2079/80

Provinces	Tested for HIV	Positive reported	% of Positivity Yield
Koshi	63,591	381	0.60
Madhesh	43,475	606	1.39
Bagmati	43,459	883	2.03
Gandaki	42,682	246	0.58
Lumbini	203,116	622	0.31
Karnali	17,249	56	0.32
Sudurpaschim	144,647	252	0.17
Total	**558,219**	**3,046**	**0.54**

Source: HMIS/DoHS

12.2.2 Cases Tested for STIs

In FY 2079/80, the number of people assessed for STIs has doubled to 35,278 (Fig 12.1) more than double as compared to FY 2077/78 (12,076).
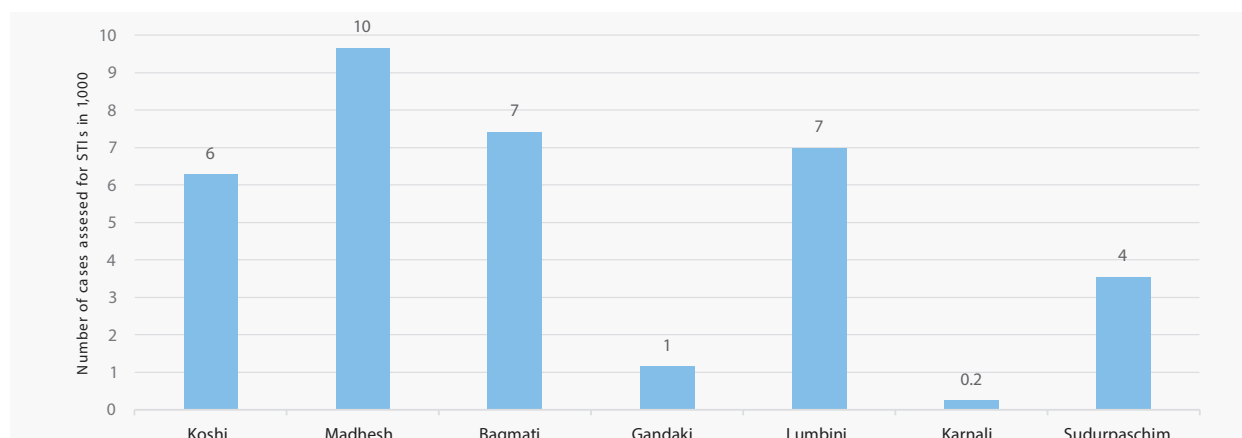
Figure 12.1 Numbers of cases assessed for STIs in FY 2079/80

Source: HMIS/DoHS

12.2.3 eVT Service Uptake

In FY 2079/80, a total of 593,257 women in ANC, Labor and PNC were tested and new 73 cases were identified. (Table 12.3) This testing number have increased progressively in the last FYs with similar number of new cases being identified across FYs 2075/76 to 2079/80 (Fig 12.2, 12.3).

Table 12.3 Service statistics on eVT at provinces in FY 2079/80

Province/ Women in her ANC, labor or PNC	Women tested	Positive women identified
Koshi	106,838	12
Madhesh	109,609	11
Bagmati	106,842	20
Gandaki	49,956	6
Lumbini	130,138	17
Karnali	35,966	3
Sudurpaschim	53,908	4
National	**593,257**	**73**

Source: HMIS/DoHS
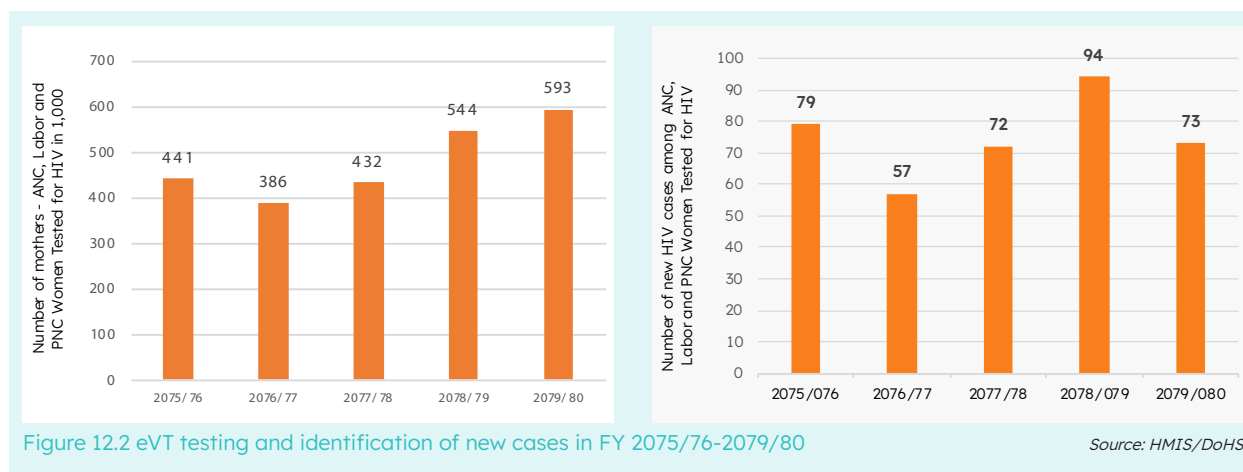
Figure 12.2 eVT testing and identification of new cases in FY 2075/76-2079/80

Source: HMIS/DoHS

12.2.4 HIV Treatment Services

As of FY 2079/80, a total of 24,232 PLHIV (cumulative) have received ART, there were 5,263 cumulative deaths and 3,947 cumulative lost-to-follow up (Fig 12.3, 12.4).

Very few cases under ART stopped their treatment (n=20) in FY 2079/80.

	PLHIV on ART, ARVs (cumulative)	People lost to follow up (Cumulative)	Total deaths (cumulative)
2079/80	2.11	0.34	0.44
2078/79	1.24	0.18	0.34
2077/78	1.67	0.10	0.49
2076/77	1.22	0.66	0.38
2075/76	17.99	2.68	3.62
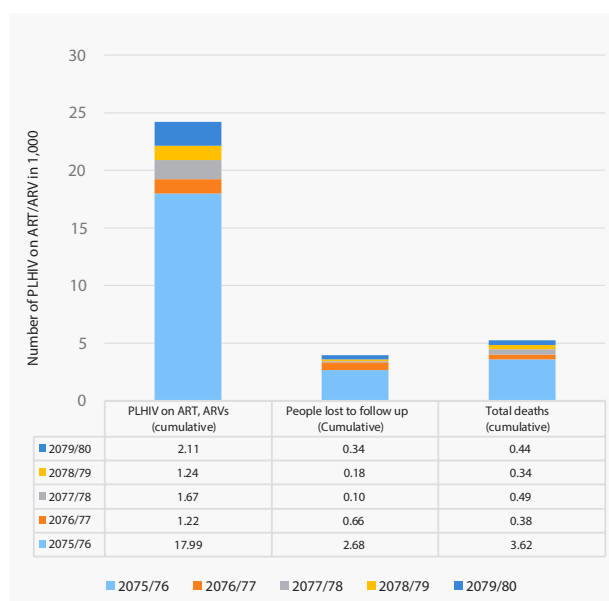
Figure 12.3 PLHIV on ART/ARV, lost to follow up and deaths (cumulative) from FY 2075/76-79/80

Source: HMIS/DoHS
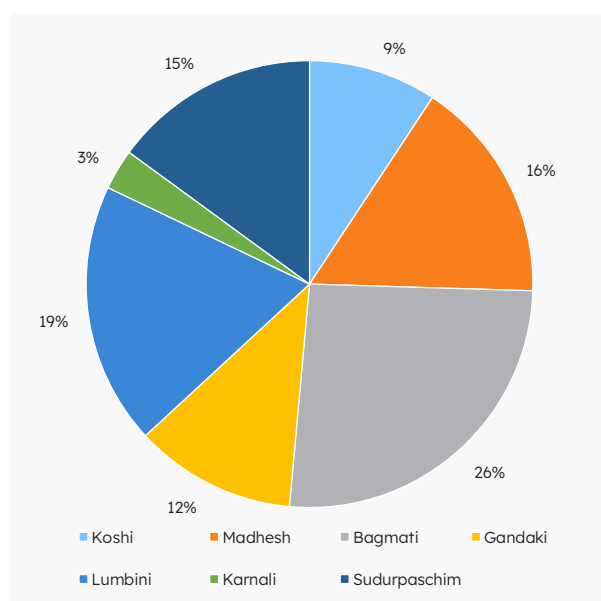
Figure 12.4 PLHIV on ART/ARV (cumulative) across provinces in FY 2079/80

Source: HMIS/DoHS

12.2.5 Opioid Substitution Therapy (OST) Services

In FY 2079/80, a total of 1,240 PLHIV were under OST services with most being in Bagmati province (Table 12.4, 12.5).

Table 12.4 Number of clients enrolled in OST in FY 2075/76 to 2079/80

OST Service Status	Fiscal Year				
	2075/76	2076/77	2077/78	2078/79	2079/80
Cases currently under Buprenorphine	165	134	139	318	270
Cases currently under Methadone	451	468	466	750	970

Source: HMIS/DoHS

Table 12.5 Number of PLHIV/AIDS enrolled in OST by province in FY 2079/80

Province	PLHIV/AIDS Currently Enrolled in Buprenorphine	PLHIV/AIDS Currently Enrolled in in Methadone
Koshi	9	201
Madhesh	20	15
Bagmati	190	606
Gandaki	44	61
Lumbini	7	87
Karnali	No Service	No Service
Sudurpaschim	No Service	No Service

Source: HMIS/DoHS

Box 12.1 SWOT Analysis of HIV and STI Programs

Strength	Opportunity
• Integration of technology for HIV Care and ART Tracking System for real time data • GeneXpert machines established at an additional seven sites, which will improve viral load testing coverage	• Systematic assessment of the variation in HIV positivity rates by province and other indicators, as well as addressing inequalities • Integrating private hospitals into the national reporting system/DHIS2 for PMTCT • Strengthen Provincial Public Health Laboratories to initiate viral load testing services in all provinces of Nepal • Treatment literacy and effective counseling should be effectively managed and prioritized • Expand OST services based on the burden of opioid-dependent clients
Weakness	**Threat**
• Timely, complete, and accurate reporting of data related to STI services from ART centers remains a persistent issue • ANC mothers who should be screened for HIV are being missed • Duplication of reporting for testing and positive data of mothers from both HIV screening and HIV confirmatory diagnosis sites • A data gap exists in the HIV program, particularly with regard to reports from a few private health facilities that have not yet been integrated or reported into the electronic HMIS system • Limited number of ART centers and ART dispensing sites in remote and rural areas	• Health facilities that solely provide HIV screening services or conduct tests without following the three tiers of confirmatory HIV tests are incorrectly reporting data as confirmatory HIV tests and positive cases • Inadequate budget and timely procurement of the required STI drugs hindering the implementation of STI services in many ART centers • Limited available evidence regarding the burden of STIs at the federal and provincial levels • Clients enrolled in OST has consistently remained low over time.

13 Curative 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
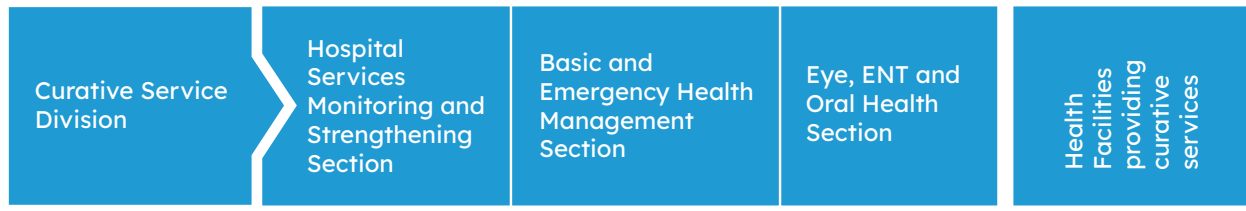
13.1 About Management of Curative Services

13.1.1 Hospital Services Monitoring and Strengthening

Hospital service monitoring and strengthening is one of the crucial function of Hospital Services Monitoring and Strengthening Section of CSD, 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 and specialized or super-specialized hospitals, undergo regular monitoring and inspections. This section of CSD facilitates and oversees the registration, renewal, and upgrading processes for hospitals falling 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 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 centers.

13.1.2 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." In alignment with this constitutional provision, the Public Health Service Act and Regulations have outlined a specific list of basic health services. The section ensures the implementation and management of basic health package, ensuring availability of prescribed free medications included in basic health package, and is vigilant to updating

and amending the range of services provided under BHS and emergency services, and ensuring the monitoring and quality control of these services. It also evaluates the effectiveness of BHS, coordinating continuous improvement at all levels and making necessary modifications and extensions based on disease prevalence, financial resources, and local needs. 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. The service provision and utilization of BHS are explained in Chapter 7 section 7.1 of this report.

13.1.3 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.

13.2 Major Activities and Achievements in FY 2079/80

13.2.1 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 specific-service hospitals (Children Hospital, Infectious and Tropical Disease Hospital, Mental Hospital, Maternity and Gynecological Disorders Hospital). 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 fulfill these gaps ensures MSS assessment to be a continuous effort towards preparing foundation for quality service provision (Fig 13.1).
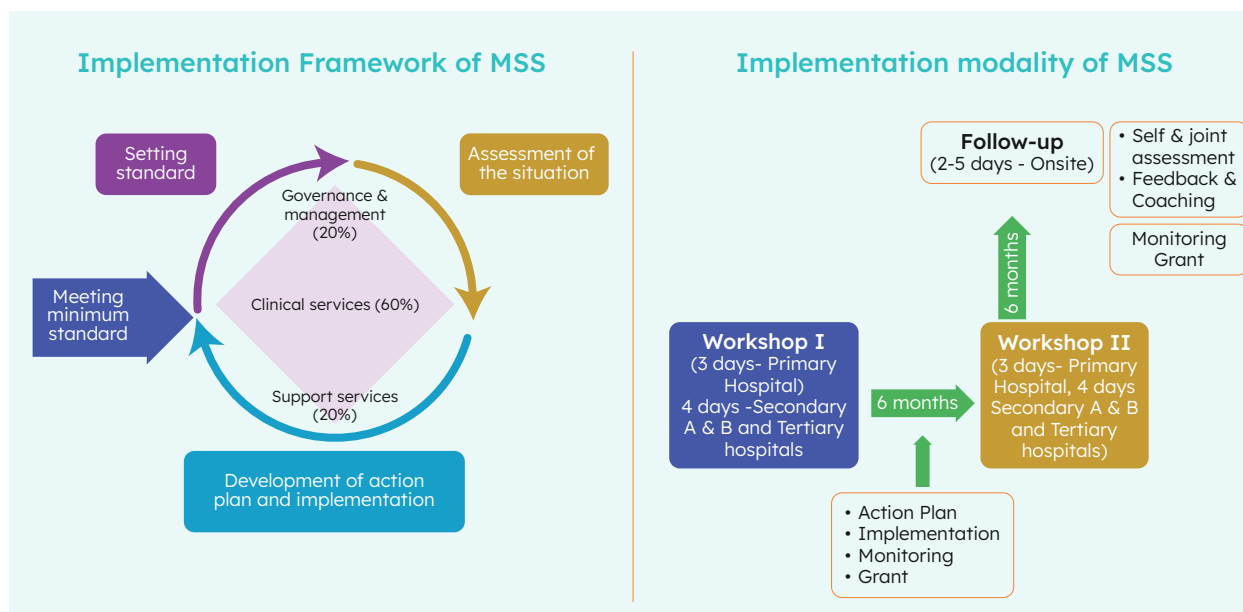
Figure 13.1 Key concept, implementation framework and implementation modality of MSS

In FY 2079/80, MSS was assessed in 127 hospitals with a national average score of 66%. The average score surpassed the national average in Sudurpaschum (71%), Karnali (70%), Lumbini (68.9%) and Koshi (67%). This average was lowest for Madhesh province (58%) (Fig 13.2). The differences in the scores might have been contributed to the number of hospitals and their cateories in each province with a relative decline in MSS scores with increasing category of hospitals.

Among the tertiary hospitals assessed in FY 2079/80, the highest score attained was that of Bheri Hospital (75%) followed by Patan Academy of Health Sciences (74%) (Table 13.1).

In the fiscal year 2079/80, Bhaktapur district hospital in the Bagmati province achieved the highest MSS score, reaching an impressive 97%, surpassing top scorers in other provinces. Notably, among the top-performing hospitals, 23 achieved a score within the 85-100% range, earning the green color code on the MSS score scale. Additionally, 11 hospitals scored within the 70-85% range, corresponding to the blue color code. Still, one hospital fell within the 50-70% range, indicating the yellow color code on the MSS Score category (Table 13.3). MSS scoring system and the subsequent rankings have ignited a positive sense of competition among hospital leaderships, motivating them to strive for excellence and distinguish themselves as the best in their respective categories.
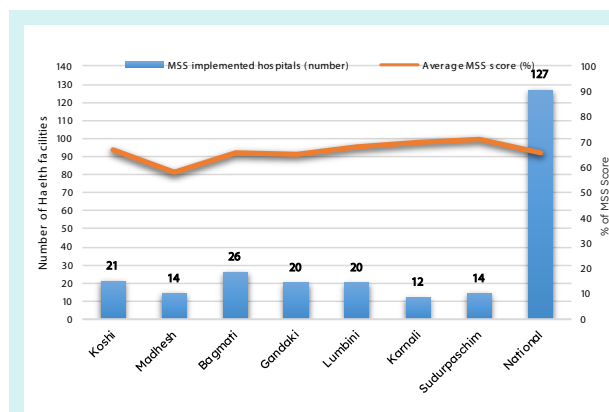
Figure 13.2 Average MSS scores of hospitals assessed in FY 2079/80

Source: CSD/DoHS, https://msshealth.org.np

Table 13.1 Top five tertiary level hospitals based on MSS scores in FY 2079/80

Top Five Tertiary Hospitals	MSS Scores (%)
Bheri Hospital	75
Patan Academy of Health Sciences	74
B.P Koirala Institute of Health Sciences	66
Bharatpur Hospital	64
Rapti Academy of Health Sciences	64

Source: CSD/DoHS, https://msshealth.org.np

Province	Top five MSS scorers among hospitals within respective provinces				
Koshi	District Hospital, Taplejung	District Hospital Phaplu, Solukhumbu	District Hospital Bhojpur	District Hospital Sankhuwasabha	Katari Hospital
	88%	86%	85%	81%	80%
Madesh	Provincial Hospital, Siraha	Bardibas Hospital	Provincial Hospital, Gaur	Provincial Hospital Jaleshwor	Provincial Hospital Lahan
	95%	75%	73%	70%	63%
Bagmati	Bhaktapur Hospital	Trishuli Hospital	Dhading Hospital	Hetauda Hospital	Chautara Hospital
	97%	96%	96%	89%	89%
Gandaki	Gorkha District Hospital	Damauli Hospital	Beni Hospital	Dhaulagiri Hospital	Parbat Hospital
	93%	92%	88%	87%	86%
Lumbini	Kapilvastu Hospital	Bardiya Hospital	Gulmi Hospital	Bhim Hospital, Bhairahawa	Rapti Provincial Hospital
	96%	95%	89%	88%	84%
Karnali	Dailekh District Hospital	Rukum West District Hospital	Salyan District Hospital	Karnali Provincial Hospital	Mehelkuna Hospital
	86%	83%	82%	79%	74%
Sudurpaschim	District Hospital Baitadi	District Hospital Achham	District Hospital Bajhang	Mahakali Hospital	District Hospital Doti
	95%	93%	93%	85%	84%

Source: CSD/DoHS, https://msshealth.org.np

13.2.2 Inspection and Renewal Status of Hospitals under the Jurisdiction of CSD

In FY 2079/80, a total of 21 hospitals under the jurisdiction of CSD were visited for inspection/renewal. Out of them 11 were in Kathmandu Valley and rest were from out of valley. The inspected hospitals were in different phases- Letter of Intent (LoI) under process, approved LoI, waiting for permission to operate, upgrading number of beds and functional hospitals. (Annex Table 13.1)

13.3 Status Of The Common Curative Services

13.3.1 Percentage Of Population Utilizing Outpatient (OPD) Services

The percentage of the population utilizing the OPD services was around 76% in FY 2079/80. The percentage of the users surpassed the national average in five provinces with highest in Gandaki province (88%) and Karnali province (88%). However, even the highest percentage was below the national average of last FY 2078/79 which was 92% (Fig 13.3). The overall reporting of outpatient visits from government sector is satisfactory. However individuals seeking medical care at private hospital, clinics and polyclinics offering outpatient services are not documented in the central HMIS system, resulting in an overall decline.

Province (2079/80)

74 Sudurpashchim
88 Karnali
88 Gandaki
77 Lumbini
79 Bagmati
78 Koshi
61 Madhesh

National

2077/78	2078/79	2079/80
77	92	76

Source: HMIS/DoHS
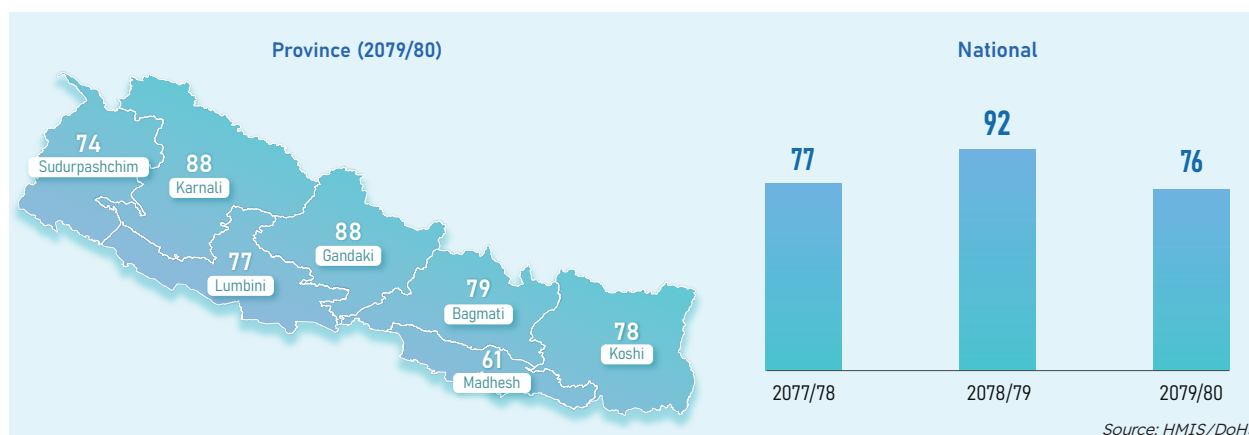
Figure 13.3 Percentage of population utilizing outpatient (OPD) services

13.3.2 Most Common Morbidities Presented at OPD

The prevalent morbidities encountered at the OPDs include gastritis (APD), URTIs, Headache and followed by cases presenting with fever. Hypertension marks the fifth common morbidity presented at OPD and musculoskeletal pain- backache is on the ninth common morbidity (Fig 13.4). This underscores the need of the interventions to address the epidemiological transition.
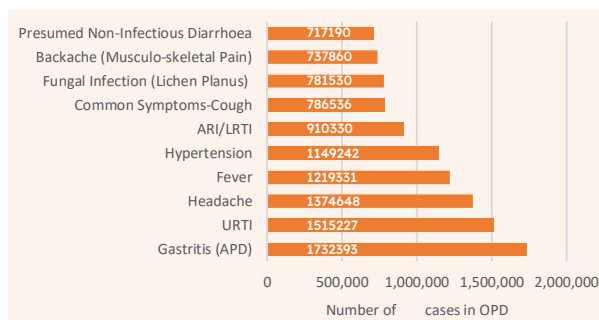
Figure 13.4 Top 10 morbidities presented at OPD in FY 2079/80

13.3.3 Utilization of Emergency and Inpatient Services

During the fiscal year 2078/79, there were 15,48,336 hospital admissions. As of the fiscal year 2079/80 16,14,426 patients had utilized inpatient service, across various types of hospitals. Despite the significance number of admissions in 2079/80, only 4,88,215, cases have been reported as morbidity. This discrepancy may be attributed to the introduction of the international classification disease. Eleventh revision (ICD-MMMS), with the majority of private hospitals not reporting morbidity patterns.

Table 13.3 Top Ten Inpatients Morbidities in FY 2079/80

Morbidity	Number of cases
CA22 Chronic obstructive pulmonary disease	10,640
1D2Z Dengue fever, unspecified	9,444
CA40 Pneumonia	8,446
CA22.0 Chronic obstructive pulmonary disease with acute exacerbation, unspecified	8,044
ND56.2 Fracture of unspecified body region	5,938
DC11 Cholelithiasis	5,681
GC08 Urinary tract infection, site not specified	5,284
CA4Z Lung infections, unspecified	4,931
1A07 Typhoid fever	4728
DC11.Z Cholelithiasis, unspecified	4596
Total of all inpatient service uptake in FY 2079/80	**488,215**

13.4 Status of Hospital Key Performance Indicators

Annual surgical procedure

In the period of FY 2079/80 there were a total of 426,404 surgeries of which 58.5% were female who underwent major surgeries. Minor surgeries were available at ER, IPD and OPD setting. Among 260,152 cases of minor surgeries, 22.8% were done in emergency. The proportion of cesarean section delivers is on the rise each year, resulting a higher proportion of female surgical procedures compared to male (Table 13.4, Fig 13.5).

Table 13.4 Surgical services received at hospitals in FY 2077/78-79/80

Surgical services	2077/78		2078/79		2079/80	
	Female	Male	Female	Male	Female	Male
Major Surgeries	137,224	84,623	190,633	136,254	249,558	176,846
ER Minor Surgeries	19,864	22,616	26,227	31,413	26,246	33,170
Inpatients Minor Surgeries	29,427	28,770	53,765	41,503	35,175	35,873
Outpatients Minor Surgeries	34,339	36,469	65,254	69,585	65,602	64,086
Total	220,854	172,478	335,879	278,755	376,581	309,975
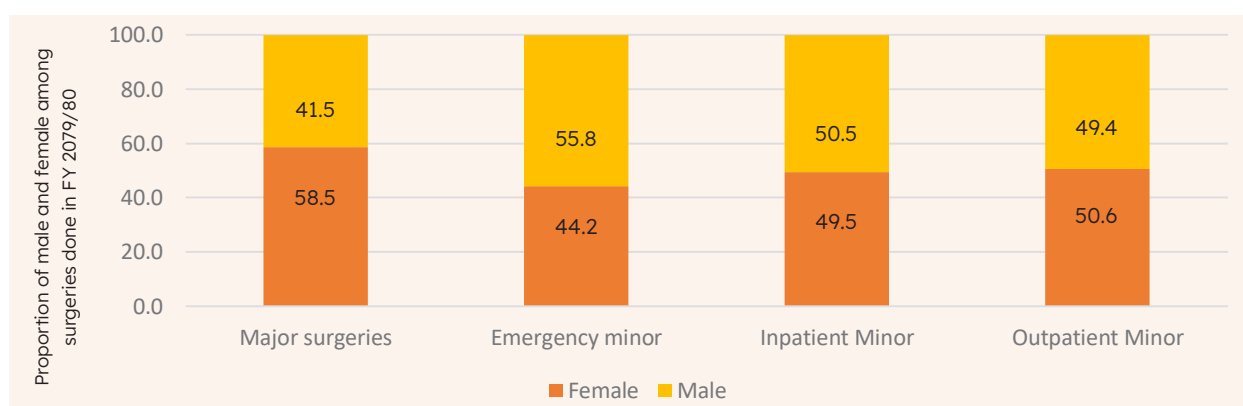
Figure 13.5 Proportion of female among those who utilized surgical services in FY 2079/80

Source: HMIS/DoHS

Bed occupancy rates

In FY 2079/80, the bed occupancy rate was 51% with a gradual increase of 4% from FY 2078/79. The highest bed occupancy rate reported to be 56% from Lumbini province, followed by 53% in Bagmati and 51% in Koshi provinces (Fig 13.6).
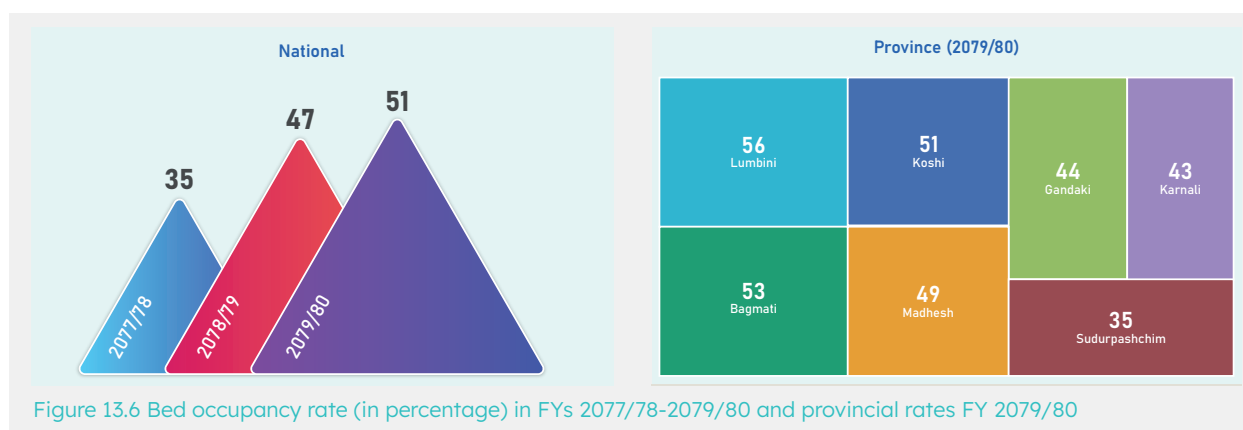
Figure 13.6 Bed occupancy rate (in percentage) in FYs 2077/78-2079/80 and provincial rates FY 2079/80

Source: HMIS/DoHS

Average length of stay in hospital (in days)

The national average length of hospital stay (ALOS) was 3.6 days, showing a slight increase in FY 2078/79 compared to previous fiscal years (Fig 13.7). Notably, ALOS varied across provinces, with five days in Bagmati, four days in Lumbini, and three days in all other provinces. 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.

National

Province (2079/80)

Figure 13.7 Average length of hospital stay (in days) in FYs 2077/78-2079/80 and provincial average in FY 2079/80
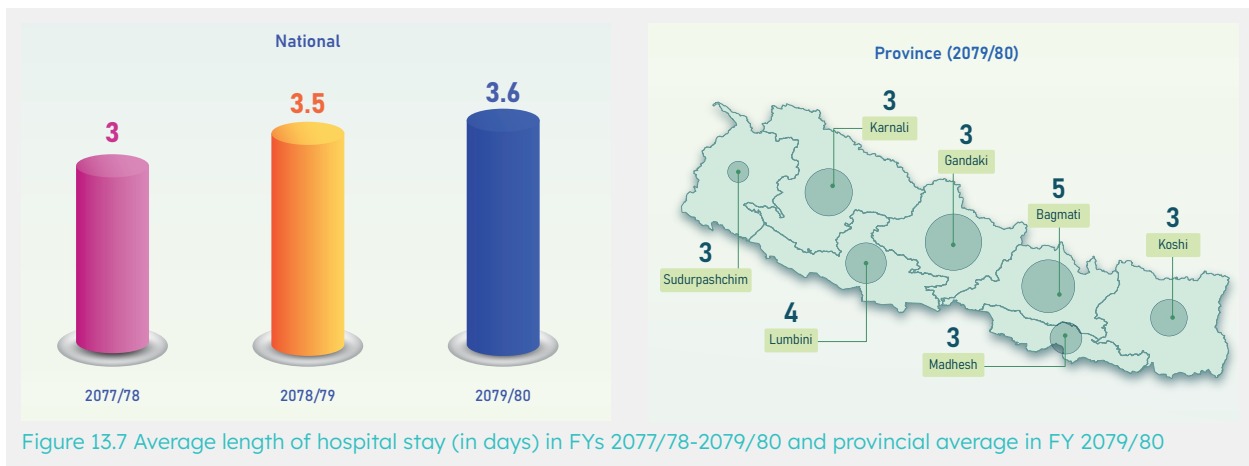
Source: HMIS/DoHS

13.4.2 Brought Dead Cases in Hospital

The incidence of brought dead is increasing each year. In fiscal year 2079/80, a total of 6586 cases were reported brought dead, 1406 more than the FY 2078/79. The proportion of males (60.7%) was higher. Unfortunately the specific cause of death couldn't be determined from these data. However, a signification portion of deaths cases were attributed to road traffic accident (RTA) and other unnatural causes.

13.4.3 Post-mortem Services

Postmortem services are provided at some tertiary level hospitals and all provincial hospitals. A total of 11,893 cases were received for post-mortem with 65.6% were male.

Box 13.1 SWOT Analysis of Curative Services

Strength	Opportunity
• 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
Weakness	**Threat**
• 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

This chapter provides an overview of the service and notable initiatives of federal level health academia and federal hospitals. The content for the section 14.1 and 14.2 is largely based on the presentation and report of NJAR. Additionally, the chapter includes a detailed overview of services from the Sahid Dharma Bhakta National Transplant Center. Chapter 22 continues the discussion, covering the services provided by Pashupati Homeopathy Hospital, building on the previous year's annual reports. In coming years, the chapter will be more inclusive to reflect services of each federal hospital in similar format.

14.1 Federal Level Health Academia and their Services

14.1.1 Overview of Health Academia

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. This report recommended the decentralization of medical colleges and establishment of at least one medical college/academy/health institution in each province.[1] In provinces where no such institution existed previously, both the federal and provincial government are making efforts to establish a new one.

Currently, there are seven federal level medical academia, 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)

National Academy of Health Sciences (NAMS)

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

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

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

Figure 14.1 Federal level academia as of FY 2079/80

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[1] Mathema Committee Report on Health Profession Education Policy

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, additional hospitals are attached like 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.

Till date 9,000 medical doctors and nurses have been produced from these federal level health academia including specialized and super-specialized courses (Table 14.1).

Table 14.1 Cumulative number of medical doctors and nurses produced from federal level academia as of FY 2079/80

| Academies | Number of Human Resource Produced | | | | |
	MBBS	MD/MS	DM/MCh	Nursing (BSc, BNS, MSC)	Total
NAMS		1,456	121	1,410	2,987
BPKIHS	1,786	1,299	29	662	3,776
KAHS	80	14		90	184
PAHS	347	86		340	773
PoAHS		17		37	17
RAHS				36	36
NAIHS	523	68		636	1,227
Grand Total	2,736	2,940	150	3,174	9,000

Source: NJAR 2080

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 2079/80

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 2080

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 Programs/Services in FY 2079/80

Government public health interventions/ programs in academia

Among government programs, BHS is implemented in all of the federal level academia. The program of One Stop Crisis Management Center (OCMC) and Social Service Unit (SSU) are functional in all academia except NAIHS. NAIHS has its own tailored welfare system for army personnel. In FY 2079/80, PAHS received the best OCMC and PoAHS received the best SSU award. Notably, one-doctor-one- institute is implemented in BPKIHS, RAHS and KAHS and *Aama*

Surakhsya Program is only implemented in KAHS, PoAHS and RAHS (Table 14.3). Multiple consultations and deliberations have been undertaken in regards to the one-doctor-one-institute policy, which was intended to have dedicated technical health workforce in the government health facilities and encourage their time commitment, however with challenges faced to self-sustain the academia, the implementation is not seen across the academia. Similar findings have been observed with regards to the implementation of *Aama Surakshya Program* in academia. MoHP is continuously putting its efforts to facilitate these critical programs with potential to contribute to equitable access and quality of healthcare services to be implemented across all academia.

Table 14.3 Government Programs in Academia in FY 2079/80

Academia	One Doctor One Institute	OCMC	SSU	*Aama Surakshya* Program
NAMS	Not implemented	Functional	Functional	Not implemented
BPKIHS	Implemented	Functional but no dedicated wards	Started this FY 2079/80	Not implemented
KAHS	Implemented	Functional	Functional	Available
PAHS	Not implemented	Functional & Best OCMC award	Functional	Not implemented
PoAHS	Not implemented	Functional	Functional & Best SSU award	Available
RAHS	Implemented	Functional	Functional	Available
NAIHS	Not implemented	Not implemented	Not implemented	Not implemented

Source: NJAR 2080

Most of the academia have extended health services (EHS), satellite health services and tele-medicine services. EHS is not implemented in NAMS and NAIHS

and satellite health service is not implemented in RAHS. NAMS has dedicated tele-medicine service for the Nepalese on foreign employment (Table 14.2).

Table 14.4 Extended health services (EHS), Satellite Health Service and Tele-medicine Services in FY 2079/80

Academia	EHS	Satellite Health Service	Tele-medicine Services
NAMS	Not Available	Bagmati province	Dedicated TMS for Nepalese on foreign employment (Hotline number 1133)
BPKIHS	Available	Koshi and Madhesh Provinces	4 Centers
KAHS	Available	Karnali Province	Installed but not in use
PAHS	Available	Lumbini Province (in its community posting sites)	Available (for mental health)
PoAHS	Available	Gandaki Province	Available
RAHS	Available	Not Available	Installed but not in use
NAIHS	Not Available	As per need in the form of field ambulances & medical camps	Military hospitals (United Nations' Level One)

Source: NJAR 2080

14.2 Federal Level Hospitals

14.2.1 Overview of Federal Level Hospitals

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 2079/80, there are federal level hospitals with following categories;

- six tertiary hospitals owned by the government,
- three government hospitals dedicated for government 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.
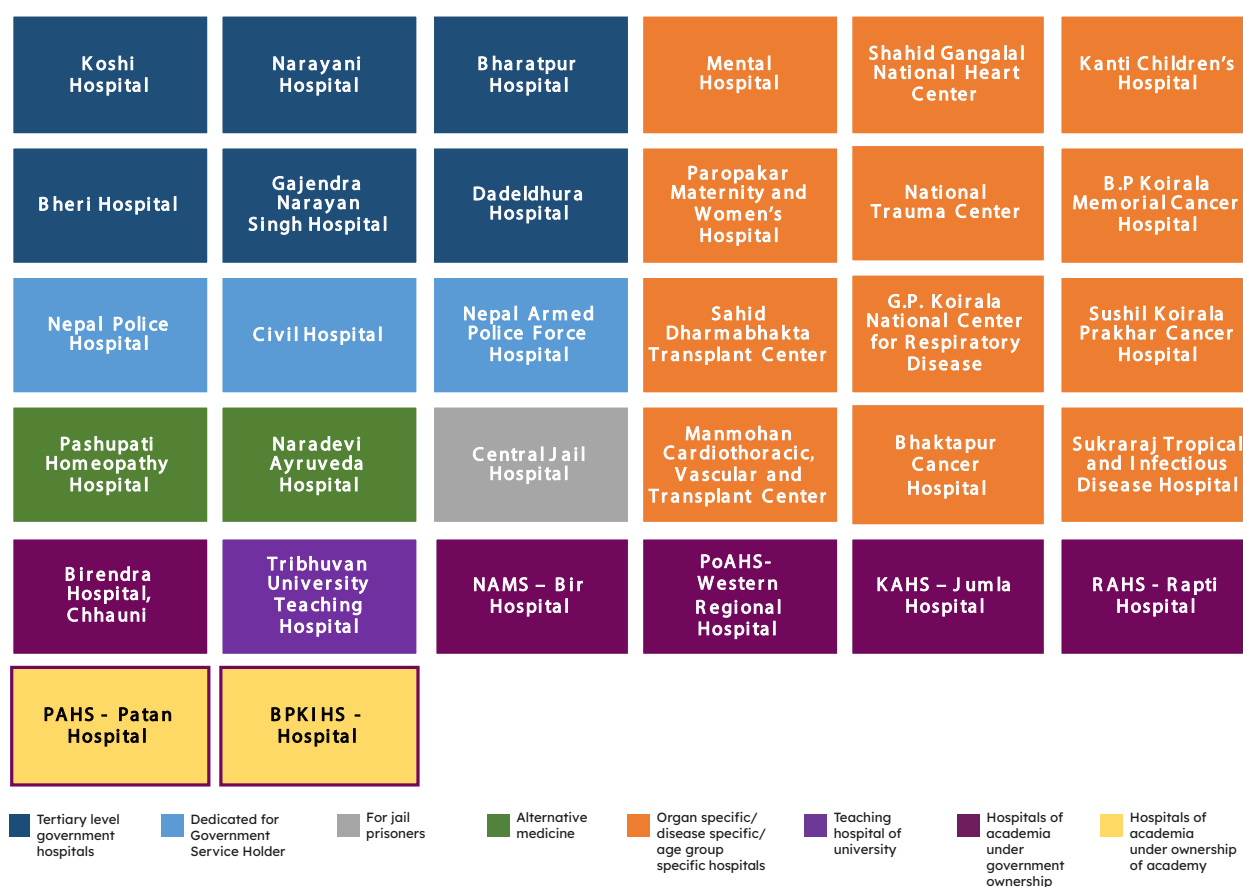
Figure 14.2 List of the federal level hospitals as of FY 2079/80

14.2.2 Major Programs

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 14.1 Notable initiatives in FY 2079/80 in federal level hospitals

Hospitals	Notable initiatives in FY 2079/80
Sukraraj Tropical and Infectious Disease Hospital	• Lab Information System Integration
Paropakar Maternity and Women's Hospital	• In vitro fertilization Service • Laparoscopic Surgeries • Human Milk Bank
Sahid Gangalal National Heart Center	• Trans catheter Aortic Valve Implantation Started • Heart Failure Unit
Manmohan Cardiothoracic Vascular and Transplant Center	• Hybrid Operation Theatre: serving patients requiring both surgery and Cath at the same time
Bhaktapur Cancer Hospital	• Immunohistochemistry Lab
Sushil Koirala Prakhar Cancer Hospital	• Linear Accelerator Installation
Naradevi Ayurveda Hospital	• Fully automated and legalized electrical heating devices were designated for Sirodhara therapy
Sahid Dharmabhakta National Transplant Center (See Box 14.1 for more details)	• MoU with major hospitals in all seven provinces for initiation of kidney transplantation • Initiated kidney transplantation in 3 provinces (Bagmati, Gandaki, Karnali)
Nepal Police Hospital	• Started provided services to general public
Koshi Hospital	• Lithotripsy services started
Narayani Hospital	• Dialysis services to seropositive patient in Madhesh Province
Bharatpur Hospital	• Drug Information Counter – Average 200 patient counselled by pharmacist • Refill counter – For insured chronic ill patients needing regular medicine only, daily more than 100 patients get service
Bheri Hospital	• Free Blood Transfusion – Funded by Lumbini Province Government
Tribhuvan University Teaching Hospital	• Interventional Radiology • In vitro fertilization service • Post menopause clinic • Day care dialysis

Box 14.2 Sahid Dharma Bhakta National Transplant Center

Shahid Dharma Bhakta National Transplant Center
(Human Organ Transplant Center (HOTC))

Overview of center

Established in 2068 (2012) to strengthen and expand organ transplantation services in the country. It is driven with the objective of quality services at affordable costs and capacity building of the human resources in the area of organ transplants. Since establishment till date, 1203 kidneys and 19 liver transplants have been successfully done at the center.

Table 14.5 Key milestones of HOTC in the journey of organ transplantation

Year BS (AD)	Milestones
Falgun, 2068 (Feb 2012)	Establishment
27 Kartik, 2069 (12 Nov 2012)	Initiations of Dialysis services
6 Magh 2069 (19 Jan 2013)	Kidney transplantation started
16 Chaitra 2069 (29 March, 2013)	Free Hemodialysis service stated
13 Falgun 2072 (25 Feb, 2016)	Human Organ Transplantation Act
12 Shrawan 2073 (27 July, 2016)	1st Pair Exchange Kidney Transplantation
2 Mangsir 2073 (17 Nov, 2016)	Initiation of Cardiac Surgery
16 Mangsir 2073 (1 Dec, 2016)	Human Organ Transplant Regulations
22 Mangsir 2073 (7 Dec, 2016)	First Liver Transplantation
2 Baishak, 2074 (15 April, 2017)	Free Kidney Transplantation
28 Baishak 2074 (11 May, 2017)	Transplantation from a brain dead persons
4 Magh 2075 (18 Jan, 2019)	1st cadaveric liver transplantation in Nepal

Major activities of FY 2079/80

- With the technical support of the center, the transplantation service has been started at the Pokhara Academy of Health Sciences in Gandaki Province and Surkhet Provincial Hospital under Karnali Province.

- Kidney Transplant services has been extended to Pokhara Academy of Health Sciences in Government hospital which is ongoing. Till now 8 Kidney transplantation have been accomplished in this facility.

- It has prepared to expand transplant services in the government health institutions of all seven provinces, in addition to providing support to expand organ donation and dialysis across the country. MOU with Seti Regional Hospital Dhangadhi in Far West Province, Madan Bhandari Health Sciences Hetauda Hospital in Bagmati Province and Koshi Hospital in Biratnagar in Koshi Province are preparing for transplantation.

- Interaction programme done in different parts of the country about "Brain death" and brain-dead donors.

- Conducted kidney and liver transplants.

Key service indicators in FY 2079/80

- There were 55,586 patients served in outpatient department and 1,984 inpatients served in this FY.

- There were 757 minor surgeries and 868 major surgeries in the FY 2079/80. A total of 186 kidney transplantation were done, among them 4 kidneys were from brain dead donors.

- 2 Liver transplantation from brain dead donor

- Free dialysis service to 28,186 and paid to 1,647 cases

- A total of 256,808 laboratory tests, 32,905 ultrasounds, 6,648 X-ray and 35,428 CT, 16,199 ECG 13,032 echocardiograph, 259 endoscopies, 259 colonoscopies, 571 BCM and 753 of ABG tests were done

Major challenges

- Space for expansion of the hospital infrastructure and services

- Awareness among population on organ donation

14.3 Major Areas to Strengthen in Academia and Federal Hospitals

- Identification of poor and marginalized population to facilitate the proper and timely identification and management of health needs of the targeted population

- Establishment of separate wing to look after the academia at MoHP

- Faculty Development Program and performance-based incentives for improved retention and need based faculty exchange between academia

- Timely reimbursement of the health insurance claims for financial sustainability of the academia and federal hospitals

- Integrated and uniform EHR/EMR interoperable with DHIS2 platform along with mechanism to tackle data security threats

- Dedicated IT department with human resource designated from academia

- Development of master plans for hospital development and expansion

- Health workforce retention and approval of sanctioned positions based on the updated O & M survey

- Infrastructure not adequate to run satellite services specially for surgery

- Retention and availability of the health workforce and scholarship bond graduates posting in the hospitals

- Adequate incentives for EHS

- Maintenance budget for infrastructure and expansion of services including support to all academia for robust, environmentally friendly and income-generating waste management system.

[Source: NJAR 2080]

Furthermore, there are assessments of MSS (detailed in Chapter 13 of this report), which also help in identification of the specific areas for improvement in terms of readiness and service availability of the individual hospitals.

EDCD	NTD and Vector Borne Disease Control Section	Zoonotic and Other Infectious Disease Control Section	Disease Survelliance and Research Section	Epidemiology and Epidemic Management Section	NCD and Mental Health Section	Leprosy Control and Disability Management Section

15.1 About the Program

Rehabilitation, an essential health service, aims to enhance functioning and prevent health conditions in interaction with the environment. The increasing prevalence of non-communicable diseases, injuries, and an aging population highlights an unmet need for rehabilitation. Its goal is to optimize functioning, promote independence, facilitate education, ensure economic productivity, and fulfill meaningful life roles. Accessible and affordable rehabilitation is crucial for achieving SDG 3, "Ensure healthy lives and promote well-being for all at all ages."

Government of Nepal ratified the United Nations Conventions on the Rights of Persons with Disabilities (UNCRPD) in 2065/66 (2009), emphasizing articles related to personal mobility, health, habilitation, and rehabilitation. Aligned with the UNCRPD principles, the National Disability Right Act 2073/74 (2017) mandates provisions for access to health, rehabilitation, and assistive products to uphold the rights and dignified living of persons with disabilities.

Recent NDHS 2078/79 (2022) showed nearly quarter of the five years and above among de-facto population had some difficulty in at least one functional domain. Against the backdrop of a recognized service gap highlighted in the 2073 (2016) report and Rapid Assistive Technology Assessment 2077/78 (2021), the health system demonstrates sensitivity in addressing these gaps (Box 15.1).

Box 15.1 Key statistics on disability[1] and identified service gaps[2] in Nepal

- 23% have some difficulty in at least one functional domain, 5% have a lot of difficulty, and 1% cannot do at least one domain
- Six percent have a lot of difficulty or cannot function at all in at least one of the functional domains.
- Most common disability - difficulty seeing (15%), difficulty walking or climbing steps (12%)
- Over a quarter of people with disabilities lack access to health services
- More than half of people with disabilities face challenges in accessing health-related information.
- One fifth of the people with disabilities had unmet need for assistive products.[3]

The overall program is guided by the following objectives:

- To expand quality rehabilitation services in all health care levels
- To increase the availability of quality assistive products with appropriate provision
- To strengthen the availability of data on rehabilitation services
- To build disability inclusive health system including expanding the access to healthcare service for person with disability

In alignment with Public Health Service Act 2075, GoN focuses on rehabilitation services for all, following WHO's Rehabilitation 2086/87 (2030) and GATE Initiatives. MoHP's leadership integrates rehabilitation into government healthcare planning, addressing a spectrum of health conditions. EDCD/LCDMS prioritizes disability equity across all health services, investing in health system capacity for sensitive policies. Coordinated efforts from LCDMS, EDCD, DoHS and MoHP are pivotal for disability-inclusive health and rehabilitation services. Furthermore, NHP 2076 and PHSA 2075 recognize rehabilitation as integral to health services. NHSSIP 2072/73-2078/79 (2016-2021) outlined a 5-year benchmark for

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1 The 2078/79 (2022) NDHS included The DHS Program's Disability Module, a series of questions based on the Washington Group on Disability Statistics (WG) Short Set of questions. It assessed on functional domains: Seeing, hearing, communicating, remembering or concentrating, walking or climbing steps, and washing all over or dressing among the de facto household members age 5 or older

2 Arne H. Eide, Shailes Neupane, Karl-Gerhard Hem. 2073. Report on Living Conditions among People with Disabilities. Department of Health Research, SINTEF Technology and Society

3 A Rapid Assistive Technology Assessment Study 2021

rehabilitation. Policy, Strategy, and 10-Year Action Plan on Disability Management (2074/75 (2017)) provides a comprehensive roadmap for rehabilitation services in Nepal. Increased investment is crucial, requiring enhanced training, acquisition, recruitment, distribution, and retention of rehabilitation professionals.

15.2 Major Activities in FY 2079/80

In FY 2079/80, EDCD developed Rehabilitation Clinical Protocol, SoPs for Rehabilitation Service, and National Standards on Assistive Technology.

In FY 2079/80, like other years, the International Day of Persons with Disabilities, established by UN resolution 47/3 in 2049(1992), was observed on 18th Mangsir (3rd December). This year's commemoration centered around the theme "Leadership and Participation of Persons with Disabilities Toward an Inclusive, Accessible, and Sustainable Post-COVID-19 World," marked by interactive programs with stakeholders, information sharing on social media, and national television broadcasts.

Disability management and rehabilitation training

EDCD/LCDMS, in collaboration with NHTC, developed a 5-day training package for medical officers and a 3-day package for other health workers. Aimed at addressing the gap in rehabilitation at the primary healthcare level, the training covers three core modules: Disability Inclusive Health, Rehabilitation, and Assistive Technology. Trained medical officers will subsequently train health workers in each province. In FY 2079/80, pilot training sessions for 32 medical officers and 45 health workers were conducted in Koshi and Karnali Provinces, with finalization based on feedback. PHDs will then deliver the training for the integration of Disability Inclusive Health, Rehabilitation, and Assistive Technology at the provincial level.

National rehabilitation strategic plan

Following the release of the Systematic Assessment of Rehabilitation Situation (STARS) report, stakeholder consultation workshops were held in Bagmati, Koshi, Madhesh, Karnali, Lumbini, Gandaki, and Sudurpaschim provinces to shape the National Rehabilitation Strategic Plan 2079/80-2086/87 (2023-2030). These workshops allowed federal, provincial, and local stakeholders to address key rehabilitation issues and make recommendations, including fostering health sector stewardship, integrating rehabilitation into primary healthcare, diversifying healthcare benefit packages, increasing investment from all government tiers, and rehabilitation HMIS module. The preliminary draft has been formulated, incorporating feedback from all provinces during the review process.

Tele-rehabilitation service and protocol development

Tele-rehabilitation is now operational in all provinces, installed at nine sites including Dadeldhura Hospital, KAHS, RAHS, National Disability Fund, National Trauma Center, Hospital and Rehabilitation Center for Disabled Children, Community Based Rehabilitation (Biratnagar), Prerana (Sarlahi) and Nepal National Social Welfare

Association (Kanchanpur). The tele-rehabilitation protocol has been developed and endorsed to ensure uniform, client-centric, high-quality, and comprehensive tele-rehabilitation service delivery, aligning with the e-health strategy.

Development and orientation on post COVID -19 rehabilitation management clinical protocol

Post COVID-19 Rehabilitation Management Clinical Protocol was developed in consultation with physicians and rehabilitation professionals, emphasizing the role of multidisciplinary teams. A total of 232 rehabilitation and health professionals (doctors and nurses) were trained on this protocol.

Public private partnership guideline

Public private partnership (PPP) guideline is under finalization to establish criteria for accrediting and listing rehabilitation service providers by the GoN. The objective is threefold: Specify the accreditation procedure within the health system; develop a reimbursement mechanism from federal systems to all government levels for enlisted rehabilitation service providers and establish a specific mechanism for the accurate costing of rehabilitation services in Nepal.

Develop awareness raising materials on rehabilitation

EDCD/LCDMS, in collaboration with National Federation of the Disabled- Nepal, NHEICC, and PRA, developed awareness materials on health-related rehabilitation. These materials aim to promote a consistent understanding and emphasize the importance of rehabilitation services for all populations in need.

Care giver skill training for children with developmental disabilities

EDCD/LCDMS, in collaboration with USAID-Physical Rehabilitation Activity, Autism Care Nepal Society, and WHO Nepal, implemented caregiver skill training for children with developmental disabilities. Twelve trainees received masters training of trainers, with six achieving fidelity through practical experience with caregivers. A stakeholders' consultation meeting discussed sustainability and documentation form adaptation. Following this, an adaptation team meeting addressed feedback from the stakeholders' consultation workshop.

Rehabilitation workforce assessment based on Guide for Rehabilitation Workforce Evaluation (GROWE)

The 2075/76 (2019) national rehabilitation situation assessment highlights the need to strengthen the rehabilitation workforce. However, due to insufficient data, a specific action plan is yet to be developed. To address Nepal's complex rehabilitation workforce challenges, a targeted evaluation will explore needs, supply, demand, and absorption, drawing on labor market and competency analyses. A national workshop was organized to agree on key strengths, conclusions, and recommendations from the GROWE report and identify targets for the rehabilitation workforce at the national level.

National standard on assistive technology

Nepal is the first country in the South East Asia Region to nationalize the WHO Priority Assistive Products List (PAPL). With WHO's support, the first national standard on assistive technology was developed to ensure quality and user-centric delivery. Draft revision and consensus meetings occurred in 2078/79 (2022), and the standard is now validated. EDCD is planning national dissemination and application, accompanied by a pocket book guiding the operationalization of PAPL by the three tiers of government. EDCD/LCDMS has disseminated the national standard.

Conditional grant to provinces and local level governments

EDCD/LCDMS allocated conditional grants to all provinces and selected local governments to enhance population access to assistive products. A program implementation guideline has been established to ensure standardized service delivery. Provinces and local governments will implement these interventions through PPP with nearby physical rehabilitation centers and rehabilitation hospitals.

Low-cost road safety pilot initiatives at local level

A five-day orientation, titled Low-Cost Road Safety Initiatives at Local Level, was held in Tulsipur Sub-Metropolitan City, Dang ad Damak Municiplaity, Jhapa. The workshop aimed to engage the entire municipality, wards, and community in low-cost road safety interventions. It disseminated knowledge about proven initiatives to reduce road crashes, deaths, and injuries, emphasizing the community's role. The orientation emphasized that road safety is a shared responsibility requiring the active involvement of various stakeholders. To facilitate initiatives, an 11-member road safety leadership network was formed, and a 13-point draft declaration was made during the workshop to achieve the desired objectives of low-cost road safety interventions.

Global status report on road safety

LCDMS served as a national data focal point and worked with WHO regional advisors and data coordinators in identifying the contributors, followed by coordinating and supporting the data collection process and submitted to incorporate in the Global Status Report on road safety. The status of road safety is detailed in Chapter 8 section 8.2 of this report.

15.3 Key program/service indicators status in FY 2079/80

Reporting status on rehabilitation

The rehabilitation database module, integrated with HMIS and DHIS2 in FY 2077/78, received endorsement in October 2020. Training for professionals in selected health facilities completed, coordinated by IHIMS. Health facilities are reporting in the interface.

By FY 2079/80 end, the dataset was assigned to 273 health facilities, but 70 did not submit reports (3,276 expected vs. 2,164 actual reports). To ensure quality, a joint monitoring and evaluation team is planned to be established at the provincial level, expecting increased reporting accuracy and a streamlined system. The rise in new clients receiving rehabilitation services underscores its population-level impact, with service utilization doubling. Adequate resource allocation is essential for affordable access. With increasing trends in aging, NCDs, and injuries, the demand for rehabilitation services is expected to soar.
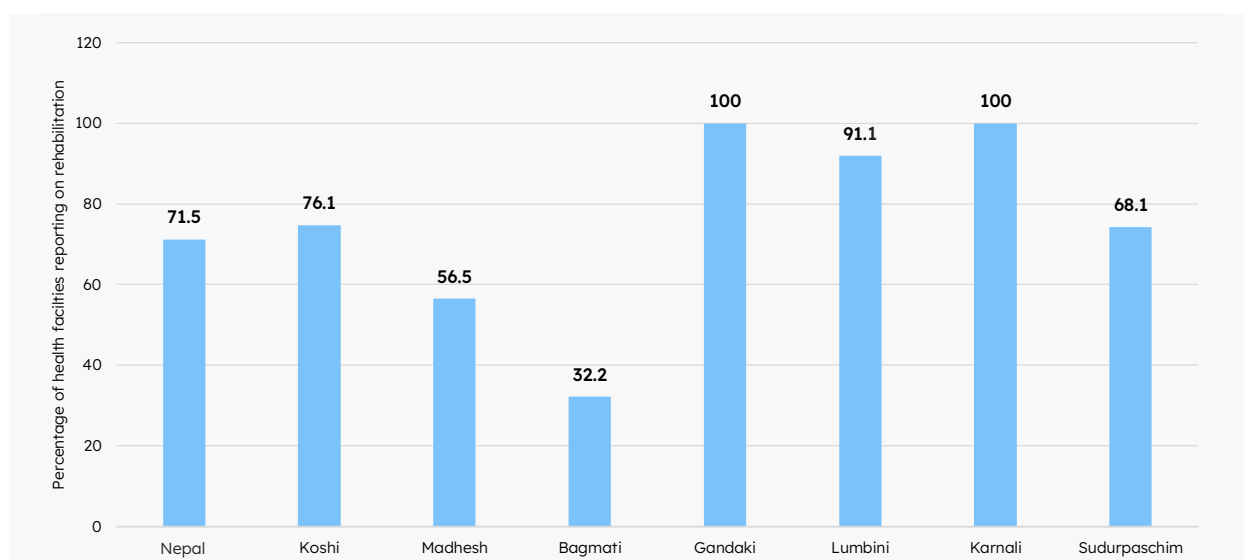
Figure 15.1 Reporting Status of Rehabilitation Service

Source: HMIS/DoHS

Gandaki and Karnali Provinces achieved a 100% reporting rate, whereas Bagmati and Madhesh provinces lag below the national average (Figure 15.1). The lower reporting in these provinces is linked to a higher number of private facilities, limited review and follow-up, and inadequate monitoring and coaching/mentoring visits. The upcoming fiscal year should prioritize targeted interventions to enhance each dimension of data quality, addressing identified challenges and improving overall reporting accuracy and completeness.

Database of rehabilitation service provision

In the FY 2079/80, a total of 238,628 rehabilitation services were provided, with 98,210 new users receiving services from health facilities nationwide (Fig 15.2, 15.3). The number of new users may be higher as data from some institutions is yet to be operationalized, resulting in underreporting.
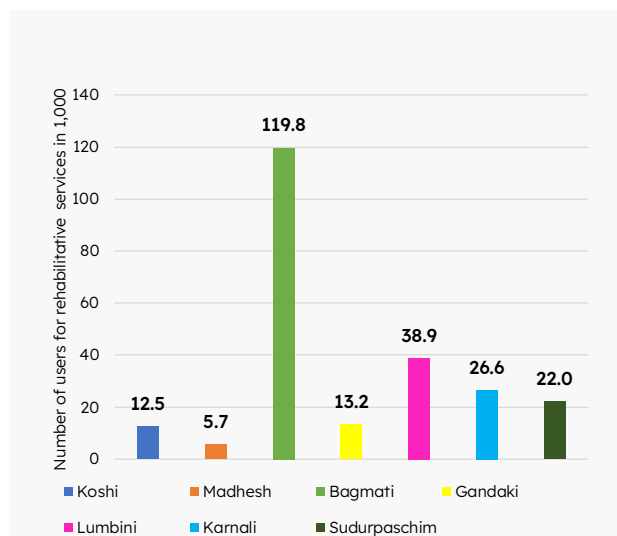
Figure 15.2 Total number of users of rehabilitation service in FY 2079/80
Source: HMIS/DoHS
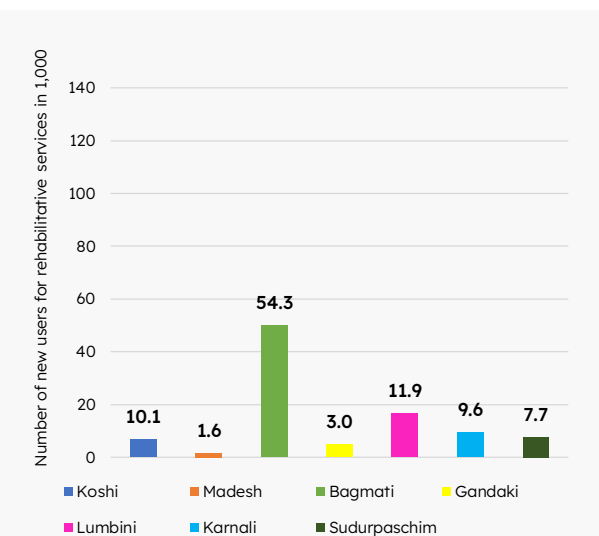
Figure 15.3 New users of rehabilitation services in FY 2079/80
Source: HMIS/DoHS

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 Karnali provinces with established physiotherapy units in district hospitals. Koshi Province had more new clients following orientation on the recording system and enhanced services in government hospitals.

Delivery of assistive products

Assistive products (AP) are vital external devices for enhancing functioning and preventing disabilities. 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 7,417 assistive products were delivered, with 91% being mobility aids like crutches, canes, and walkers. (Fig 15.4) However, thus reported vision aids do not include the ones that are provided through eye hospitals. There is essence felt to work to integrate this reporting to the delivery of assistive product to draw the real picture and gap for vision aids.
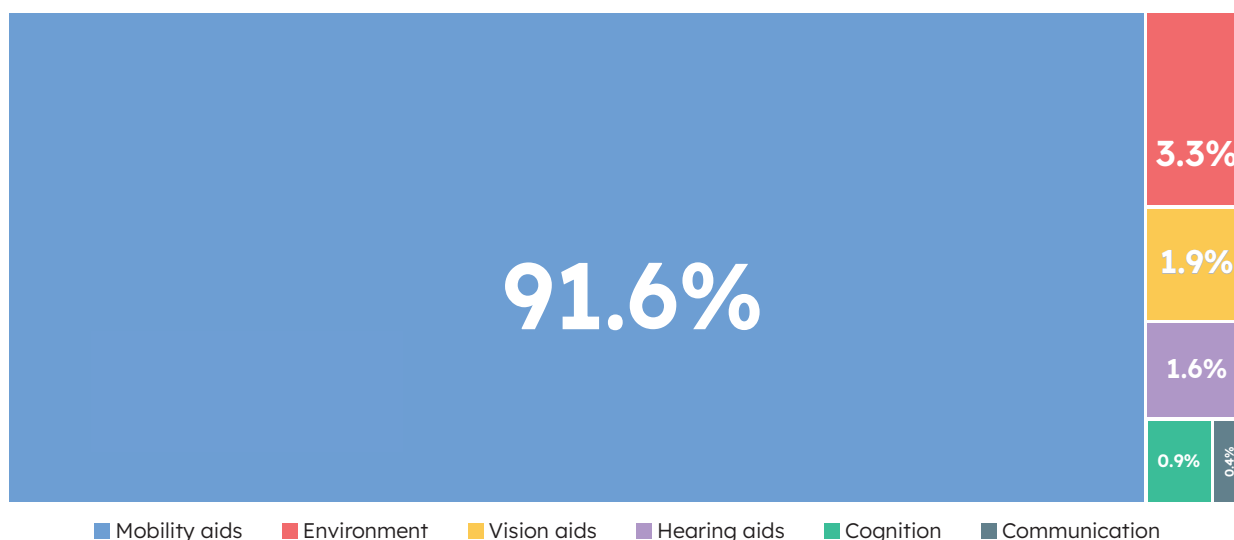
Figure 15.4 Proportion of assistive products delivered in FY 2079/80

Health conditions among new cases for rehabilitation

New cases for rehabilitation had musculoskeletal and connective tissue conditions as most common health conditions followed nervous system conditions. The number of rehabilitation users by diagnosis is slightly higher than the total number of new clients due to cases presenting with multiple conditions requiring rehabilitation.

Rehabilitation service on the basis of disability cards

Among the 98,210 new clients, 1,678 individuals were service users with a government-defined disability card. Over a quarter of those receiving services had severe or moderate disabilities, with mild forms following (Fig 15.5).

There is a pressing need to enhance physical and financial access for people with disabilities to avail rehabilitation services.
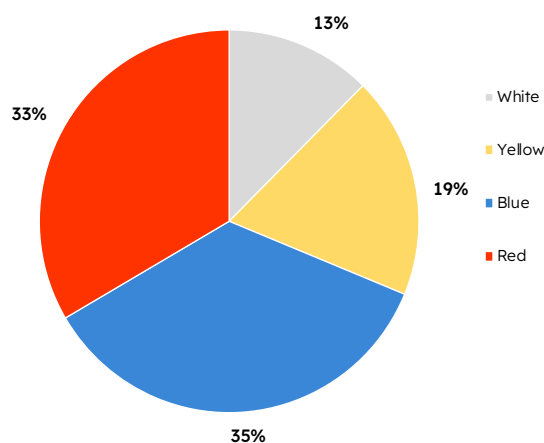
Figure 15.5 Beneficiaries getting rehabilitation services on the basis of Disability card in FY 2079/80

Box 15.2 SWOT Analysis of Disability Management, Rehabilitation and Assistive Technology

Strength	Opportunity
• MoHP advocacy and awareness efforts for rehabilitation integration in healthcare • Enhanced focus on sub-national and local government planning for rehabilitation support • Training programs for rehabilitation professionals across district, provincial, federal, and specialized health services • 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 • Government commitment to comprehensive rehabilitation, inclusive of persons with disabilities • Collaboration with international organizations for technical support • Public-Private Partnership initiatives including the integration of recording and reporting of rehabilitative services • Utilization of technology, like tele-rehabilitation, to enhance access to primary healthcare and other levels • 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
Weakness	**Threat**
• 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, with only 7% of district hospitals having rehabilitation professionals. • Limited integration of assistive products into government healthcare	• Limited government investment in rehabilitation • 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. • Budget constraints and reliance on external development partners pose a threat to rehabilitation program sustainability. • Potential impact of health crises on resource allocation and attention to rehabilitation services.

| NSSD | Geriatrics and GBV Management Section | GESI Section, MoHP, NHTC Provincial Ministries | Health Facilities and Academia providing OCMC and/or Medico-legal Services |

16.1 Gender-Based Violence (GBV) Management and One Stop Crisis Management Center

Gender-Based Violence (GBV) is a grave human rights issue and public health concern which 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, GBV cuts across caste-ethnicity, religion and socioeconomic status and is prevalent in all geographical settings, in different forms and magnitude, making prevention and response crucial nationwide. Geriatric and GBV Management section of NSSD is the focal section for developing policies, strategies, guidelines and programs at DoHS. This section also coordinates OCMC services.

GBV Situation in Nepal, NDHS 2078/79 (2022)[1]

- Nearly one in four women (23%) aged 15-49 ever experience physical violence
- 8% experienced sexual violence ever in lifetime; 4% who experienced sexual violence by intimate partner
- One in 5 women who are divorced, separated, or widowed have ever experienced sexual violence
- Nearly 6 out of 10 (58%) survivors never sought help or told to anyone
- Survivors are reluctant to report incidents to the authorities for fear of stigmatization and further incidences of violence and lack of support services

GoN has taken significant steps in reforming laws and policies to combat GBV in the country. In accordance to the Clause 3 of the National Action Plan against GBV (2010), the MoHP is tasked to provide integrated, multi-disciplinary services in a single physical location to survivors of GBV by establishing hospital-based OCMCs. OCMC deals with violence against women, children, men, and gender and sexual minorities who are victims of violence. As per the operational guideline of OCMC 2077, OCMCs are mandated to provide seven types of services to GBV survivors:

- Health services;
- Psycho-social services;
- Safe homes;
- Medico-legal services;
- Legal services;
- Security;
- Rehabilitation services

Box 16.1 Key Guiding Documents for GBV Programs

National Population Policy, 2071

Health sector Gender Equity and Social Inclusion (GESI) strategy, 2065/2066 (2009)

Operational Guideline of OCMC, 2077

Piloting phase — Scaled up

| 2067/68 • 7 OCMCs in 7 districts | 2070 • Additional 10 OCMCs | 2072 • Additional 23 OCMCs | 2072-75 • Additional 15 OCMCs | 2076/77 • Additional 14 OCMCs | 2077/78 • Additional 19 OCMCs | 2079/80 • Additional 5 OCMCs • Total 93 OCMCs across 77 districts |

Figure 16.1 Important milestones in the establishment of OCMCs

[1] Ministry of Health and Population [Nepal], New ERA, and ICF. 2023. Nepal DHS Report, 2022. Kathmandu, Nepal: Ministry of Health and Population [Nepal].

- Ensuring health care, legal treatment, protection, safe housing, rehabilitation, counseling and other necessary services are available through a one-door system.
- Ending the situation where the GBV-affected victim does not have to frequently repeat the incident details to the relevant body and suffer repeated psychological trauma.
- Establishing a one-door system in service flow.
- Partnership and cooperation between local level, and related bodies/organizations for the integrated management of survivors of gender violence.
- Maintaining the safety and privacy of victims or victims of gender-based violence
- Preparing and following a code of conduct with the participation of all stakeholders and adherence to the Code of Conduct by all.

16.1.1 Major Activities in FY 2079/80

- In FY 2079/80, 5 additional OCMCs were set up; making a total of 93 OCMCs in 77 districts.
- Interaction program with related ministries and stakeholders for strengthening of OCMC program.
- Orientation program for health managers to strengthen health services for GBV survivors.

16.1.2 Key Indicators of OCMC Services in FY 2079/80

Number of cases served in FY 2079/80

In FY 2079/80, 3.3 per 10,000 population registered for OCMC services and 1.0 per 10,000 population follow-up cases were served through OCMC. There are provincial differences in the new and the follow up cases with a higher number of new cases reported in Sudurpaschim and Madhesh provinces, and a higher number of follow up cases reported in Madhesh, Koshi, Sudurpaschim and Karnali provinces. Notably only 65.0% perpetrators were reported with as low as 31% reported in Lumbini and 33% in Karnali provinces (Table 16.1).

Table 16.1 Cases served from OCMCs in FY 2079/80

Indicator (FY 2079/80)	Nepal	Provinces						
		Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
New cases (per 10,000 population (based on Census 2078)	3.3	2.6	5.2	1.3	0.9	3.2	4.9	5.8
Follow-up cases (in number)	3,023	694	888	236	11	100	527	567
Percentage of perpetrators reported (out of new registered cases)	65	79	80	87	64	31	33	63

Source: CBS, HMIS/DoHS

Type of violence among new cases

There were different types of violence reported often with more than one type in the same case. The different types of violence reported were emotional violence, child/forced marriage, denial of resources/opportunities/services, physical violence, harmful traditional practices, sexual assault and rape. Rape was reported as high as 26.5% in Bagmati province and Koshi province (26%) though the case per 10,000 was among the least in these provinces. Sexual assault was most reported among cases in Gandaki province, physical violence in Karnali province and emotional violence in Sudurpaschim province (Fig 16.2).
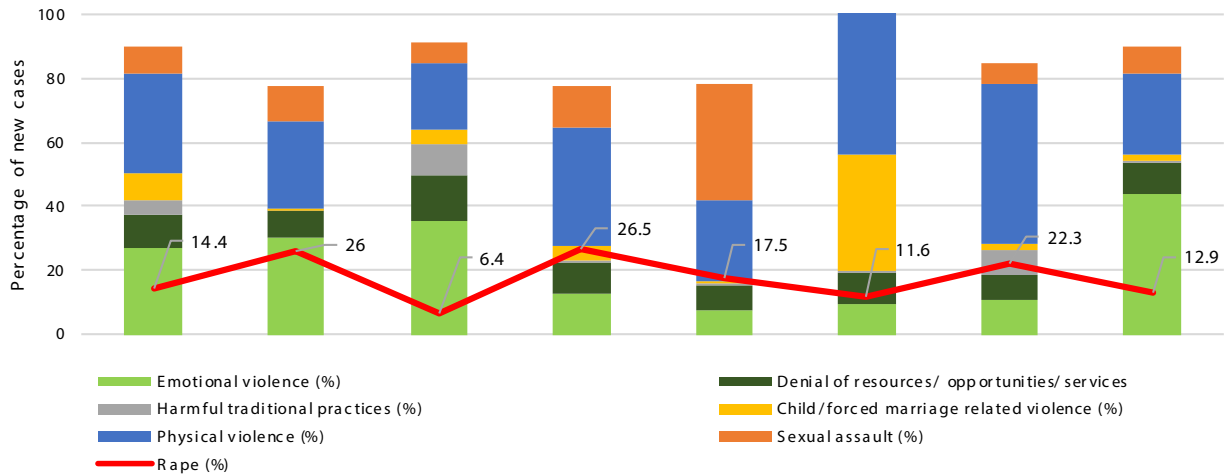
Figure 16.2 Type of violence reported among new cases of OCMC in FY 2079/80

[*Multiple response, total % more than 100]

Source: HMIS/DoHS

Services received from OCMC by new cases

In FY 2079/80, there was relatively less uptake of the psychosoical counselling services in Gandaki province among new cases of the province. Notably, there were higher proportion of cases requiring the injury related services. Physical examination was missed in nearly 38% of the cases registered (Fig 16.3). There is a requirement of strengthening the OCMCs to cover multiple aspects of the services.
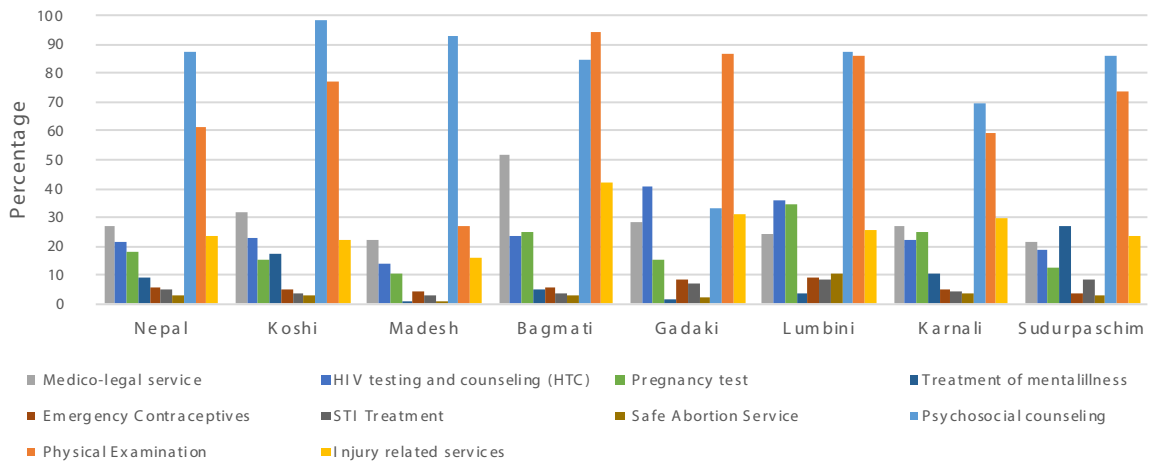
Figure 16.3 Services received from OCMC by new cases in FY 2079/80

*Multiple response,

Source: HMIS/DoHS

16.1.3 Enabling Factors for Effective OCMC Service Implementation

- The commitment from the hospital leadership to OCMCs is a key enabling factor for their success. Supportive leaders provide resources to OCMCs, generate a commitment to GBV across the hospital, motivate staff, and improve the quality of care.

- Good coordination between Police administration, and hospitals leads to the effective referral of GBV cases to OCMCs. This will also improve referral and cross referral of the cases among concerned personnel and agencies (hospital departments, counsellors, safe homes, police offices, legal aid committees, public lawyers, NGOs, and rehabilitation centers).

- Quality of care including orientation and training of stakeholders and staff, provision of 24-hour services, and maintenance of client confidentiality and security.

- Widespread dissemination of information about OCMC services and GBV issues through FM radio, brochures and other media.

- Awareness raising through organization of sensitization campaigns against GBV in local communities and schools.

Box 16.3 SWOT Analysis of GBV Management Program

Strength	Opportunity
• Legal framework and operational guidelines • Continuous capacity building activities • Integrated services at one location for survivors	• Provision of orientation on GBV and OCMC services to all local-level health workers and FCHVs. • Integrated supervision and monitoring
Weakness	**Threat**
• 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

16.2 Medico-legal Services

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.

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

Box 16.4 Policy framework and institutional basis for medico-legal services

Key guiding document for policy framework:
- Muluki Ain (National Code of Criminal Offenses), 2074
- Muluki Faujdari Karyabidhi Samhita (Criminal Procedure Code) and Muluki Dewani Karyabidhi Samhita (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

Institutional Basis:
- OCMC sites
- Budget allocated is done annually for each OCMC center

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.

16.2.1 Major Activities in FY 2079/80

- To compensate the lack of forensic experts, in the fiscal year 2079/80, MoHP appointed 35 permanent medical officers of public service for capacity building. They received a 7-day medical legal training along with induction training to make the integrated services of OCMC more effective.
- Coordination with the Nepal Police, Ministry of Home Affairs (MoHA) for the needful support in the case investigations

Box 16.5 SWOT Analysis of Medico-legal Services

Strength	Opportunity
• 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 enrollment of more doctors in forensic medicine subject • Collaboration with the Medico-legal Society of Nepal (MeLeSon) • Reporting integrated with Nepal police, MoHA
Weakness	**Threat**
• 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 centers 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

NPHL	NCDs Laboratory	Infectious Diseases Laboratory	NCD, Laboratory and Blood Transfusion Services Regulation Section	Quality Control and Training Section	Laboratories Surveillance Sites
	Administration and Supply Management Section				
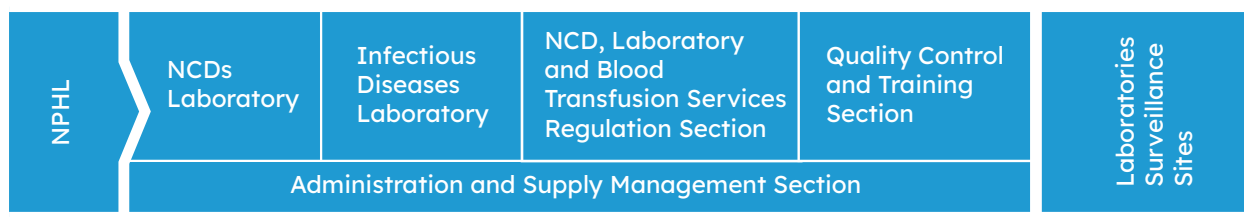
17.1 About National Public Health Laboratory

National Public Health Laboratory (NPHL) is the primary reference lab for screening, diagnosing, and researching communicable and non-communicable diseases at the national level. Established in 2024 (1968) as the Central Health Laboratory, it was later expanded and renamed in 2047 (1991). NPHL confirms pathogenic agents, especially those posing public health threats and emergencies. It plays a key role in disease surveillance and outbreak confirmation, providing proficiency testing for seven Province Public Health Laboratories (PPHL) and ensuring quality assurance in health laboratory services. NPHL is responsible for registering and licensing private sector labs and blood centers. NPHL has five sections infectious disease laboratory, quality control and training, and laboratory licensing, regulation and blood transfusion services regulation.

NPHL hosts National Reference Laboratories (NRL) for various diseases, including Respiratory Viruses, HIV/STDs, AMR, and VPDs. It also functions as a bio repository for disease surveillance samples and operates a Biosafety Level 3 (BSL-3) laboratory certified by WHO for isolating high-risk biological agents since 2071/72 (2014/15). NPHL is ISO 15189:2012 accredited in clinical chemistry, immunology, serology, hematology,

and molecular testing in 2076/77 (2020). It remains the sole government laboratory with this accreditation to date.

Additionally, NPHL works closely with seven Provinces through province Public Health Laboratories (PPHLs) in the seven Provinces of Nepal and 753 Local Government Public Health (villages/sub metro/Metro municipalities' level) laboratories (V/MPHLs) for evidence based disease surveillance.

17.1.1 NCDs Laboratory

NCDs laboratory includes- Histocytopathology, Haematology, Biochemistry, Endocrinology Unit Molecular & Immunopathology Unit for routine and specialized laboratory tests. (Table 17.1) The specialized tests available are- Leukaemia panel (flow cytometric technique), Haemoglobin electrophoresis for haemoglobinopathies, Coagulation factor assays and inhibitor assays, Detection of 14 types of high risk Human papilomavirus (HPV) deoxyribonucleic acid (DNA) with genotyping of 16 and 18 type and other type (31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66,68) and human leucocyte antigen (HLA) typing for renal transplant recipients and donors.

Table 17. 1 Samples tested in NPHL NCD Center in FY 2079/80

Tests performed	Samples
Biochemistry Tests	330,472
Haematology, Coagulation & Haemoglobinopathy Tests	71,813
Histocytopathology Tests	806
Immunology/Endocrinology Tests	89,273
Molecular & Immunopathology Tests	226

Source: NPHL/DoHS

Table 17. 2 Number of HPV DNA tests performed and their subtypes in FY 2079/80

HPV Types	Test Count
HPV 16	3
HPV other type	15
Negative	147

Source: NPHL/DoHS

HLA Panel	Test Count
CDC	6
DSA	28
PRA	16
HLA SSO Typing	11

Source: NPHL/DoHS

In FY 2079/80, molecular and immunopathology tests were done in 226 samples (Table 17.2, 17.3).

17.1.2 Infectious Disease Laboratory

The infectious diseases laboratory includes the Microbiology Laboratory and AMR surveillance, VPD (JE/Measles/Rubella/Polio) and Dengue Surveillance laboratory, National Influenza Center/COVID 19 Molecular Laboratory, HIV/Hepatitis Reference Laboratory. Additionally, NPHL is also National Reference Laboratory (NRL) for Malaria.

17.1.3 Microbiology Laboratory and Surveillance

The microbiology laboratory at NPHL runs routine bacteriology, mycology and parasitology laboratory which majorly include: Bacteriology: bacterial culture and sensitivity; Water analysis, Mycology: fungal culture and sensitivity; Parasitology: parasitological analysis; Serology: rapid tests for diagnosis of Dengue, Brucellosis, Kalazar, Leptospirosis, Scrub Typhus, Typhoid/Paratyphoid, Cholera Antigen and H. pylori infection; rapid tests such Urinary pregnancy test and H. pylori antigen test ; and Automation: VITEK-MS (MALDI-TOF), VITEK compact (MIC), Bactec (Blood culture). The laboratory is involved in surveillance activities as well. It leads AMR surveillance (26 sites) in human health sector and is involved in ongoing Cholera (ECHO-N) surveillance.

17.1.4 AMR Surveillance Activities

NPHL is the focal point for AMR surveillance in the country. MoHP has also designated NPHL as the National Reference Laboratory (NRL) for human health and National Coordinating Center for AMR Surveillance. NPHL conducts laboratory surveillance on ten pathogens for antimicrobial resistance surveillance to analyse the trend of antimicrobial resistance in these priority pathogens. Data dissemination is done at various levels such as local level/ sites, national level and global level. Currently, there are 26 participating laboratories/ hospitals included in AMR surveillance network monitoring total of 10 organisms of interest (Fig 17.1).

AMR surveillance in Nepal was first initiated with 9 laboratories in 2055/56 (1999) with five pathogens of interest namely; Neisseria gonorrhea, Shigella spp., Vibrio Cholerae, Hemophilus influenzae and Streptococcus pneumoniae. Over the year's several organisms were included like Salmonella enterica serotype Typhi and Paratyphi (2058/59 (2002)), healthcare associated pathogens like Extended spectrum beta lactamase (ESBL) producing Escherichia coli (2065/66 (2009)), Methicillin resistant Staphylococcus aureus (MRSA) in 2069/70 (2013) and multidrug resistant (MDR) Acinetobacter spp. and MDR Klebsiella spp. (2072/73 (2016)).
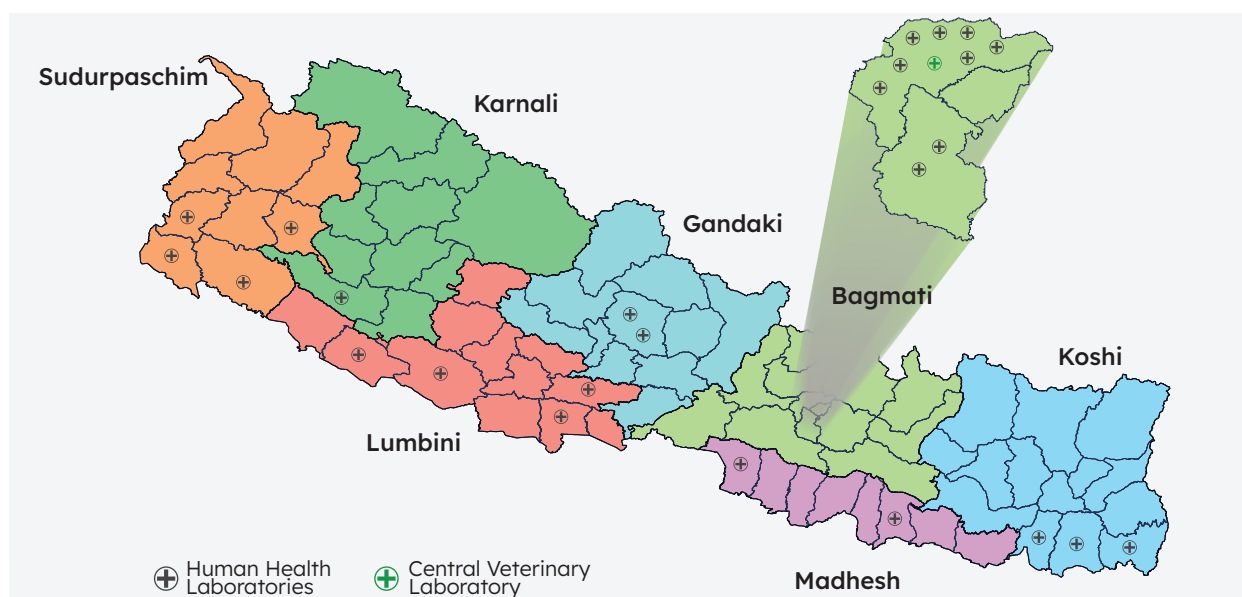
Figure 17.1 AMR surveillance sites in Nepal as of FY 2079/80

Source: NPHL/DoHS

NPHL also conducts training in bacterial identification, antibiotic testing, biosafety, and quality assurance for site personnel. Ongoing support is provided on different areas through various partners such as the Fleming Fund Country Grant for Nepal ensuring that sites receive necessary technical assistance and logistics supply. Collaborating with WHO, diagnostic stewardship and strengthening the lab-clinic interface are being promoted. External quality assessments on regular basis ensure quality testing by the sites. Laboratory surveillance on ten pathogens informs disease control strategies, focusing on antimicrobial resistance.

17.2 Major activities in FY 2079/80

17.2.1 Sample testing and surveillance of Isolates of Interest

A total of 16,325 samples were tested in the microbiology unit

A total of 28,472 isolates of surveillance interest were reported from 21 sites including NPHL:

- Majority of the isolates were reported from TUTH (19.69% of the total isolates)

- In addition to the resistance pattern analysis, specimen type, age and sex wise distribution for each organism were also analyzed.

- MDR *E. coli* (49.97%), MDR *Klebsiella* (21%), S. aureus (19.17%), MDR *Acinetobacter spp* (8.1%)

- In *E. coli* urine isolates, MDR *E. coli* (n=5264, 46%) showed resistance to access and watch group antibiotics used for urinary tract infection treatment.

- A total of 143 *S. pneumonia* and 20 *H. influenzae* isolates were reported; which are isolates of interest for AMR surveillance of respiratory infections. Among *S. pneumonia*, 28% (n=40) were reported to be MDR mostly sensitive to Vancomycin (93%), Linezolid (88%); and among *H. influenzae*, 9 were resistant to

Trimethoprim-sulfamethoxazole and 6 were resistant to ceftriaxone

- A total of 5,460 isolates of *Staph. aureus* reported of which only 487 were methicillin resistant. Most of the isolates were recovered from pus (n=328), from adult blood samples (n=29), from pediatric blood samples (n=130)

- A total of 5982 *Klebsiella* isolates were reported of which 297 were MDR of which 1,362 were urine isolates of which only 10% were sensitive to cefixime and 16% to ceftriaxone, the common antibiotics used in UTI treatment

- A total of 301 Typhoidal *Salmonellae* isolaes were reported; no MDR isolates were encountered but fluoroquinolones resistance was significantly high

- Other fastidious organisms like *N. gonorrhoea* (13) are only reported from few sites and in very low numbers.

- Additionally, in FY 2079/80, 10 *Shigella spp* isolates and nine *V. cholerae* isolates were reported for bacterial diarrhoea. Total six isolates of *Shigella* were resistant to Trimethoprim-sulfamethoxazole, and five isolates were resistant to ampicillin. Similarly, two isolates of *V. cholerae* were resistant to ampicillin and one to tetracycline.

17.2.2 Extended-spectrum Beta-lactamase (ESBL) Producing *E.coli* Tricycle Pilot Project

- ESBL tricycle pilot project with support from WHO Country Office, Nepal, initiated in 2076 and scheduled until 2080, monitors ESBL-*E.coli* in human health, animals in the food chain, and the environment in one heath approach. (Fig 17.2) NPHL leads the project implementation, surveillance, and supportive monitoring, while the Central Veterinary Laboratory (CVL), under the Department of Livestock Services, handles sample collection, processing, and identification of ESBL- *E.coli* from poultry.

Human Surveillance	Animal (Food chain) Surveillance	Environmental Surveillance
15% in controls and 49% in cases	38.6% in poultry	83%
Total Samples 31450	Total samples 220	Total samples 48
Total E.coli 283	Total E.coli 220	Total E.coli 43
ESBL Producing E.Coli 41	ESBL Producing E.Coli 85	ESBL Producing E.Coli 40
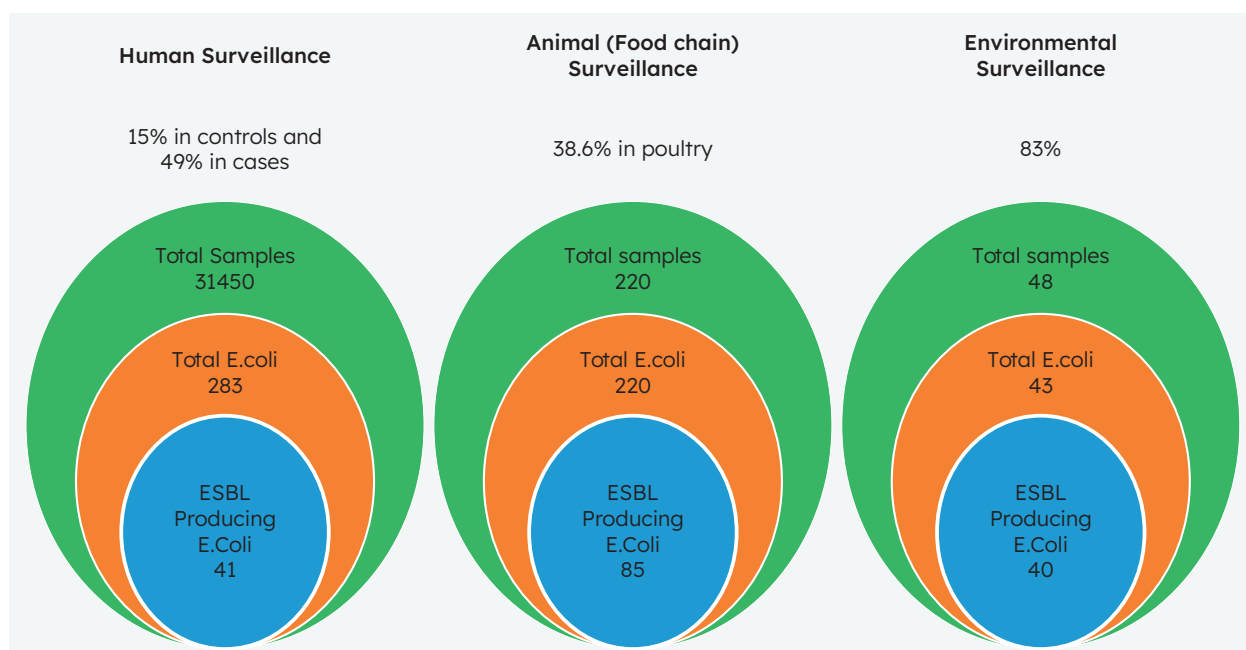
Figure 17.2 ESBL Producing E. coli in all three sectors in FY 2079/80

Source: NPHL/DoHS

NPHL also serves as the focal point for environmental sample testing, coordinating with human health surveillance sites and CVL for transportation, validation, and preservation of isolates for whole genome sequencing. Five human health site laboratories are: TUTH, PAHS Hospital, KIST Medical College Hospital, Kathmandu Model Hospital and Nepal Medical College Teaching Hospital (Tests of FY 2079/80 in Annex Table 17.1, Annex Table 17.2).

17.2.3 VPD (JE/Measles/Rubella/Polio) and Dengue Surveillance Laboratory

VPD surveillance unit

VPDs remain the leading cause of mortality in children under 15 globally. GoN and WHO collaborate closely to mitigate VPD-related morbidity and mortality. NPHL hosts a VPD surveillance laboratory, conducting lab-based monitoring of various vaccine-preventable diseases. The JE/Measles lab received WHO accreditation in 2075 (October 2018). Major surveillance activities include: laboratory containment of polio virus and surveillance (includes polio environment surveillance), JE, Measles and Rubella and Rota virus surveillances. In FY 2079/80, a total of 1,976 tests for rubella, 1,821 for measles, 984 for rota, 538 for JE and 264 for polio (environmental samples) were done.

Polio environmental surveillance : Environmental surveillance is done from different river water to detect current virus circulation. No Wild Polio Virus have been reported from Nepal since 2010. Environmental surveillance for polio virus has been expanded from Poush 2079 to PPHL Biratnagar, and PPHL, Janakpur.

Rota virus tests

NPHL is conducting rotavirus surveillance. Stool specimens are being collected from Kanti Children Hospital (KCH), Kathmandu, Nepalgunj Medical College (NGMC), Nepalgunj and BPKIHS. Enzyme linked immunosorbent assay (ELISA) is performed and then the stool samples are sent to WHO regional reference laboratory (Fig 17.3).
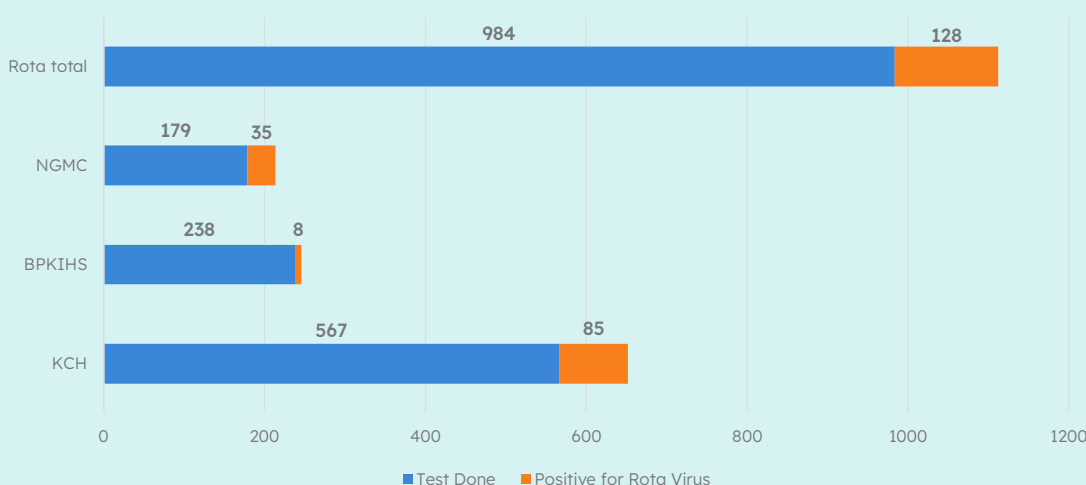
Figure 17.3 Tests done for Rota surveillance in FY 2079/80

Source: NPHL/DoHS

Measles/Rubella surveillance

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. Processing 47 outbreak samples, 25 were positive for D8 genotypes with distinct sequence identifiers (DSID) (Table 17.4).

Table 17.4 D8 genotypes with DSID in FY 2079/80

DSID	Total
2279	8
5963	5
8251	1
8318	1
8348	4
8470	1
No exact match with name strain	5
Total	**25**

Source: NPHL/DoHS

National malaria reference laboratory

NPHL has coordinated with EDCD to conduct Malaria Quality Assurance/Quality Control workshops in all the 7 provinces of the country. NPHL has started malaria PCR to confirm discrepant results of microscopy and RDT from the fiscal year 2078/79:

- Participation in International EQA program for malaria molecular testing
- NPHL staff trained on basic malaria microscopy
- Supervision visit of malaria laboratories (Banke district)
- Facilitation of workshop organized by EDCD on use of RDTs for Private Laboratories
- Malaria microscopy slide review initiated

- Out of 107 samples that underwent PCR, 21 were positive with nine samples confirmed to be P. vivax, six samples of P. falciparum and 6 samples of P. ovale.

National Influenza Center

Established on 6th Baishak 2067 (April 19, 2010), the National Influenza Center (NIC) at NPHL is globally recognized as the 132nd NIC and the 9th NIC in the South East Asia region by WHO. The NIC conducts sentinel site-based integrated surveillance for Influenza and SARS CoV-2. Samples from Influenza-like Illness (ILI) and Severe Acute Respiratory Illness (SARI) are tested using real-time PCR. (Fig 17.4) In 2021, SARS CoV-2 surveillance was integrated into influenza surveillance. The NIC also performs gene sequencing for Severe Acute Respiratory Syndrome (SARS) CoV-2 and molecular testing for Respiratory Syncytial Virus (RSV) (Table 17.5).
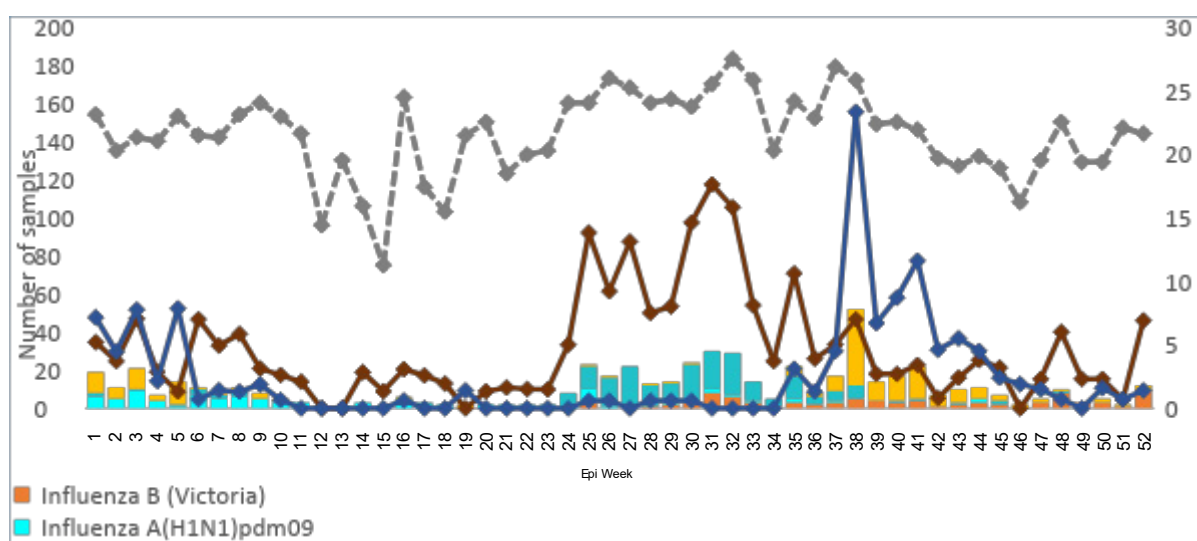
Figure 17.4 Status of Influenza A and Influenza B in FY 2079/80

Source: NPHL/DoHS

Table 17.5 Tests performed at NIC in FY 2079/80

Test Name	Total samples tested
SARS-CoV-2 PCR	6004
Influenza SARS-CoV-2 Multiplex RT-PCR	1801
Influenza (Uniplex)	847
Adeno Virus	146
RSV	58

Total samples tested	7456
Influenza H1N1(pdm09) Positive	85
Influenza A/H3 Positive	208
Influenza B (Victoria) Positive	89
SARS-CoV-2 Positive	187
Influenza Positivity Rate	5.1%
SARS-CoV-2 Positivity Rate	2.5%

Other tests were: 20- Mumps RT-PCR, 20- Dengue Virus Test (RT-PCR), 18- Zika Virus Test, 15- Chikungunya Virus Test (RT-PCR), 9- Varicella Zoster Virus Test, 4- Monkey Pox Test (RT-PCR) and 4- Trioplex Test

There are total fifteen sentinel sites, eight directly linked to NPHL and seven sentinel hospitals one each in each province, linked to province public health laboratories- Koshi Hospital, Provincial Hospital Janakpur, Bhaktapur Hospital, Manipal Teaching Hospital, Lumbini Provincial Hospital, Province Hospital Surkhet and Seti Provincial Hospital.

Influenza and SARS- CoV-2 Surveillance

National Integrated Influenza-SARS CoV-2 Sentinel Surveillance Plan in Nepal was approved by MoHP on

9th Falgun 2078 (Feb 21, 2022). Implemented across all seven provinces, 15 sentinel hospitals are linked to this dual surveillance for Influenza and SARS CoV-2; PPHL in each province perform testing, with eight sentinel hospitals linked to NPHL. Regular reports are shared with sentinel hospitals and PPHLs, and surveillance data is conveyed to EDCD and uploaded on the global platform FluNet.

17.2.4 Genome Sequencing

National Public Health Laboratory has been performing whole genome sequencing of SARS CoV-2 since 2078 (September 2021). WHO Nepal had played a very important role for initiating the whole genome sequencing. National Influenza Center, NPHL has done 522 whole genome sequencing of SARS CoV-2 positive samples on Oxford Nanopore mk1c in the FY 2079/80 (Fig 17.5).

Recently, NPHL has also started whole genome sequencing for influenza virus (since Chaitra 2079).
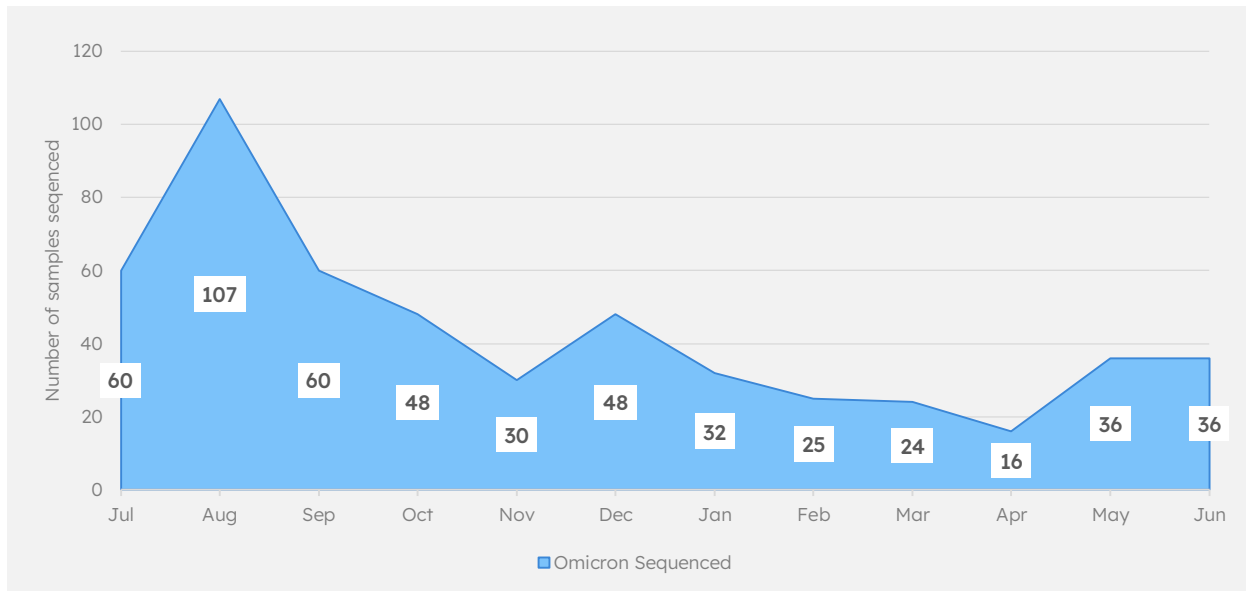
Figure 17.5 SARS-COV-2 Variant Sequenced at NPHL in FY 2079/80

Source: NPHL/DoHS

17.2.5 RSV Surveillance 2079/80 (2023)

A total of 255 (both ILI and SARI) samples of children aged below 5 years have been tested for Respiratory Syncytial Virus (RSV) from Epi-Week 1-30 Poush 2079 - Ashad 2080 (Jan 2- July 30, 2023). (Fig 17.6) There were a total of 255 samples tested for RSV of which two were RSV-A-Positive and 28 were RSV-B-Positive.
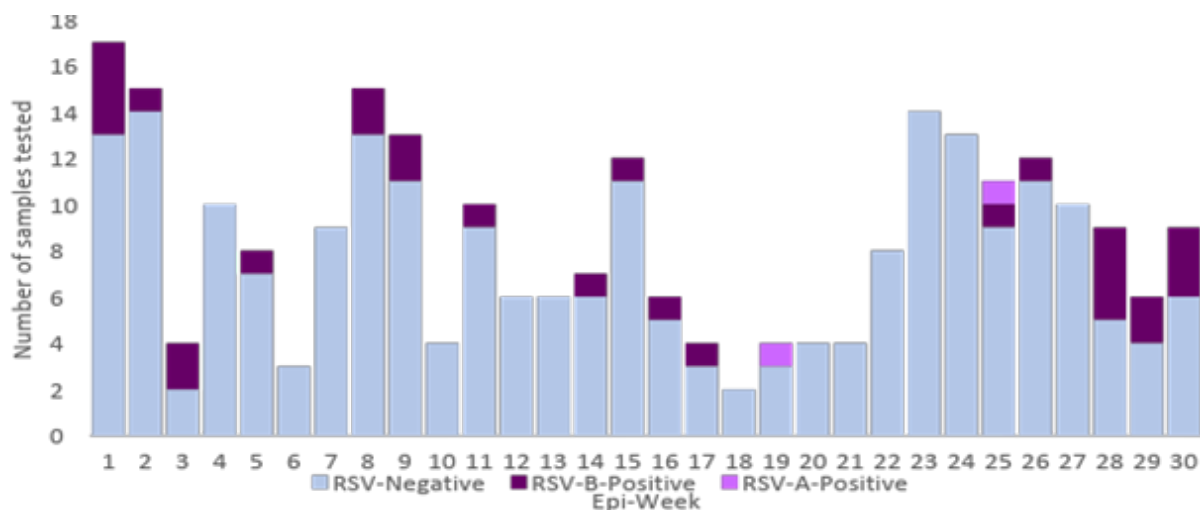
Figure 17.6 Respiratory Syncytial Virus Surveillance 30 Weeks of 2079/80 (Jan 2- July 30, 2023)

Source: NPHL/DoHS

17.2.6 HIV/Hepatitis Reference Laboratory

HIV/Hepatitis Reference Laboratory works in close coordination with NCASC for diagnosis and monitoring of HIV and STIs disease. This lab conducts HIV viral load testing to monitor treatment success and enhance HIV care quality. Diagnostic tests for HIV include Rapid test, Enzyme Immunoassay (EIA), and Electro Chemi-luminescence immunoassay (ECLIA). Viral load (VL) and CD4 tests are performed for treatment monitoring. EID of HIV is done using qualitative PCR for cases under 18 months. For hepatitis B and C diagnosis, Rapid test, EIA, and ECLIA are employed, along with PCR tests for viral load. (Fig 17.7-17.10) The laboratory offers EQA services for HTS (HIV testing sites) in seven provinces and participates in international EQA programs and EID from Centre for Global Health CDC- USA, for HBV and HCV viral load to CMC Vellore and for Serology and molecular EQAS to CMC Vellore and NRL, Australia for HIV Viral Load, EID, HBV, and HCV viral load. Training activities, including Training of trainers, are also provided.
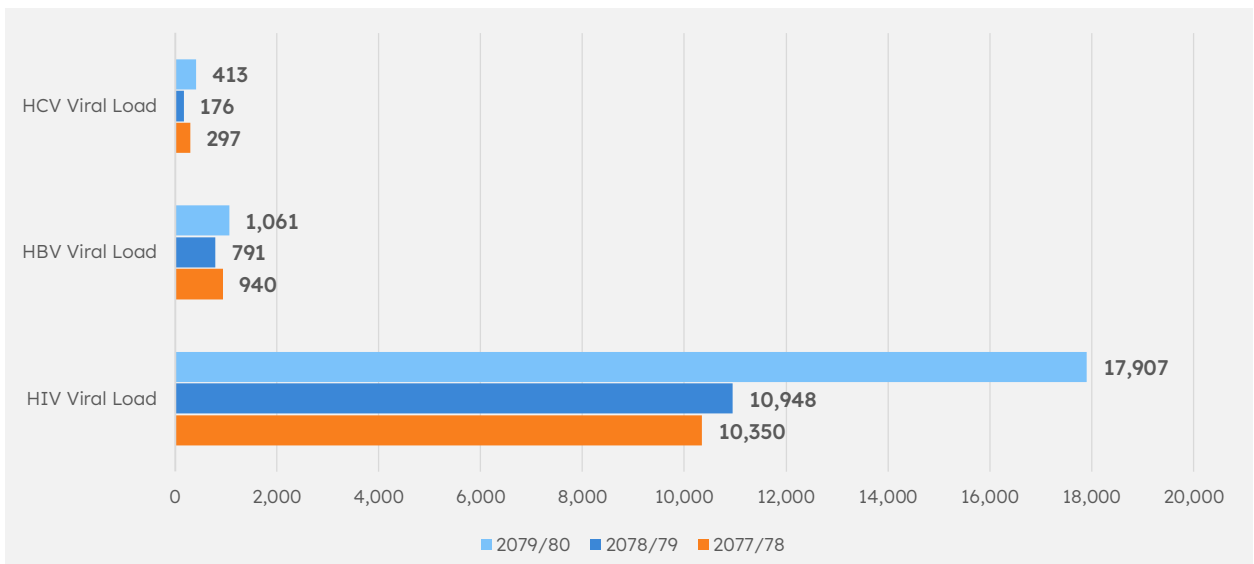
Figure 17.7 HIV, HBV, HCV Viral Load Tests done in FY 2077/78-79/80

Source: NPHL/DoHS
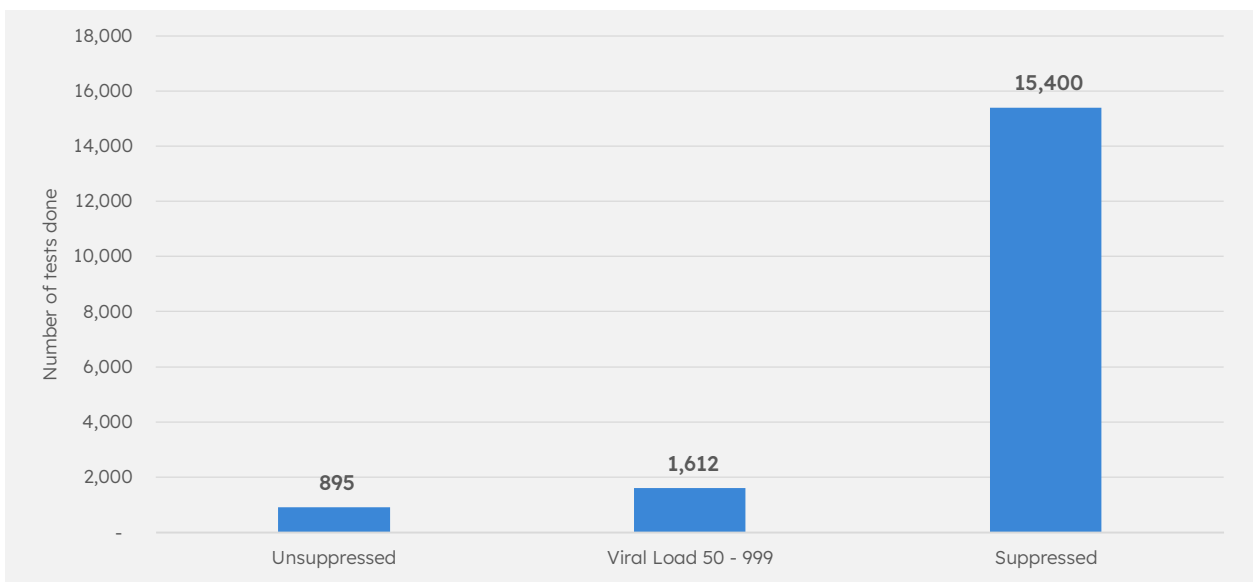
Figure 17.8 Total HIV Viral Load Tests Done And Viral Load Suppression Rate

Source: NPHL/DoHS
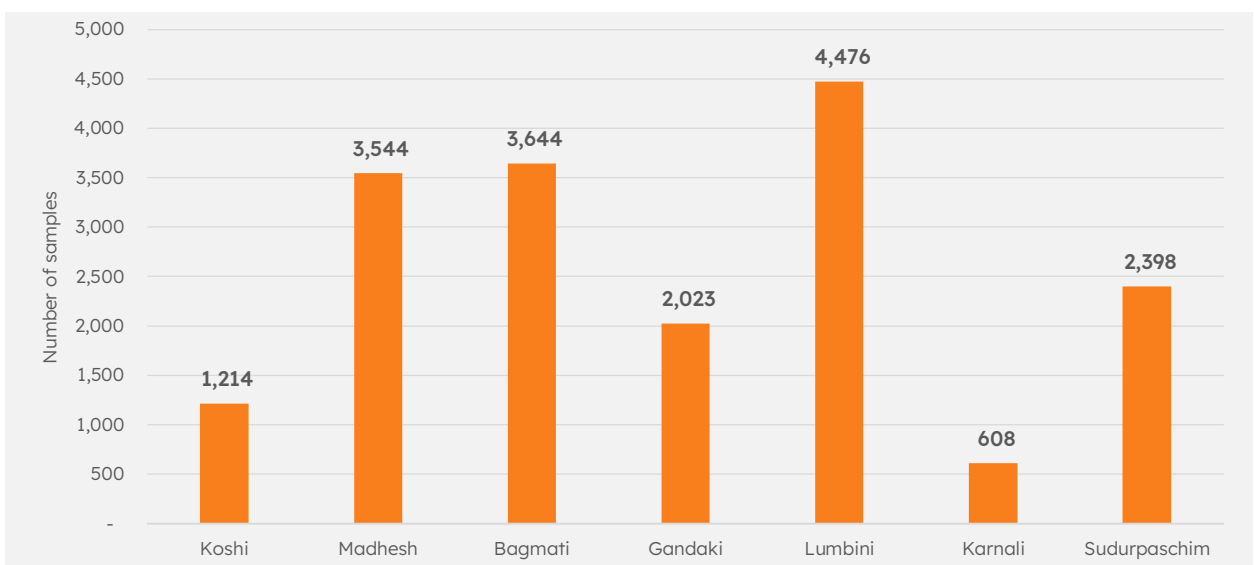
Figure 17.9 HIV Viral Load Sample from Provinces in FY 2078/79

Source: NPHL/DoHS
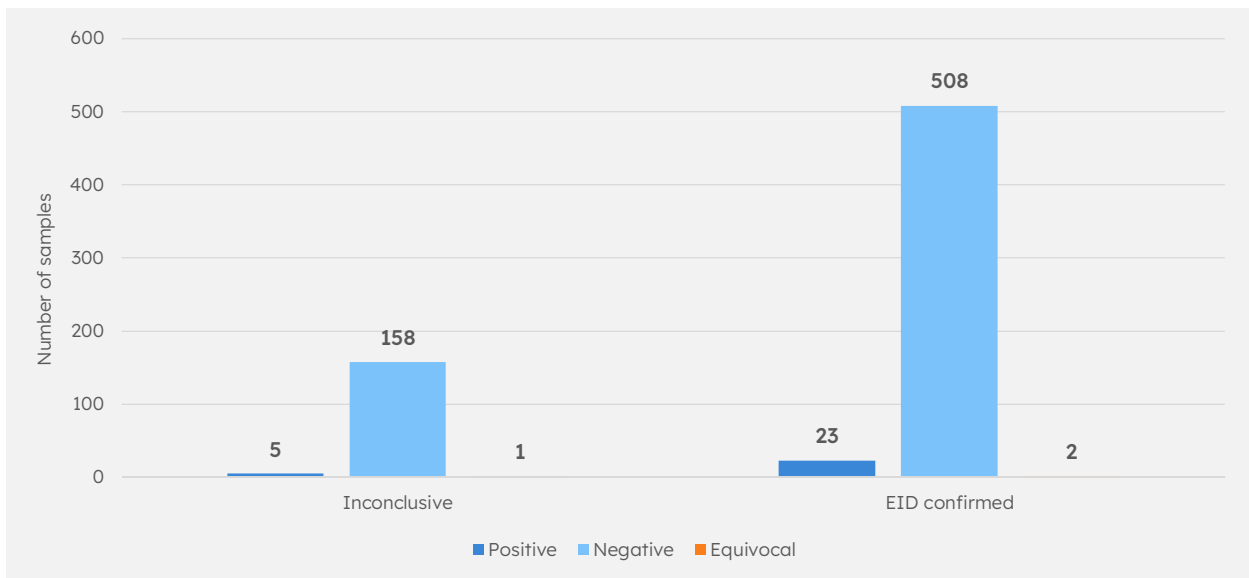
Figure 17.10 EID Diagnosis in FY 2079/80

Source: NPHL/DoHS

17.2.7 Laboratory and Blood Transfusion Services Regulation Department Laboratory Regulation

NPHL oversees licensing and monitoring of A and B category clinical laboratories, developing strategies, guidelines, and standards for laboratories and blood banks, implemented upon MoHP approval. Its current emphasis includes regulating sample outsourcing to international labs and enhancing both private and public laboratories within the country. PPHL licenses C level laboratories, and local authority licenses D and E level laboratory.

In FY 2079/80, a total of 45 laboratories were regulated, 23 newly registered and 22 renewed under the jurisdiction of NPHL (Table 17.6).

Table 17.6 Laboratory new and renewal regulated by NPHL in FY 2079/80

Category of laboratory	Number of new registered laboratory	Number of renewed laboratory	Total
'A '	01	06	07
'B '	10	16	26
'B ' Branch	04	-	04
Collection Unit	08	-	08
Grand Total	23	22	45

Source: NPHL/DoHS

National Bureau for Blood Transfusion Services (NBBTS)

NBBTS oversees the National Blood Safety Programme, ensuring a safe blood supply through policy development, guidelines, and standards. NPHL serves as the national reference laboratory for transfusion-transmissible infections (TTIs) and governs the National Hemo-vigilance program (Table 17.7). In FY 2079/80 there were 44 samples of TTIs, four for incompatible cross-matching, eight for reconfirmation of ABO/Rh typing received at NTBBS. NPHL is responsible for training Blood Transfusion Service Center (BTSC) staff, supervising, monitoring, and licensing BTSCs, as well as providing equipment and motivational programs.

Additionally, the introduction of the Blood Tracking and Donor Management System facilitates web-based donor registration, inventory management, and communication between centers, enhancing efficiency and ensuring the safety and availability of blood products.

Table 17.7 Hemo-vigilance site reports in FY 2077/78-79/80

Hemo-vigilance sites report	2077/78	2078/79	2079/80
Blood Transfused Recorded Data	9, 210	18,696	28,080
Minor Transfusion Reactions	184	53	177
Major Transfusion Reactions	0	0	1

Source: NPHL/DoHS

17.2.8 Quality Control and Training Department

National public health laboratory is an ISO 15189: 2012 accredited laboratory. Many quality related activities and training are conducted under this sections. Various National External Quality Assurance Programs are being operated throughout the country through this department. National public health laboratory has been accredited in accordance with ISO 15189:2012 in the discipline of clinical chemistry, immunology, serology, hematology and molecular testing since 2076/77 (2020). A major achievement of this year is the physical visit for renewal of ISO 15189:2012 held on 17-18th Ashad 2080 (2nd-3rd July 2023), for which NPHL has been successful in renewing its ISO accreditation certificate for tests within the scope.

NEQAS Program in NPHL

Established in 1997, national external quality assessment scheme (NEQAS) initially included government laboratories and has since expanded to encompass the private sector. The program involves preparing and dispatching proficiency test panels to participating laboratories, with feedback provided based on the results (Table 17.8).

Table 17.8 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

General/Basic NEQAS program

NEQAS is one of the oldest EQA programme being run by NPHL and under function since 2053/54 (1997). Samples are sent three times a year. Feedback is provided based on the results. Around 600 labs are enrolled in this program and the number is still increasing. There are total 26 proficiency panels prepared for general NEQAS program, they are:

• Hematology panel: Hemoglobin, Total White Blood Cell count, Total Red Blood Cell count, Differential Count, Platelets, Packed Cell Volume, Peripheral Blood Smear.

• Clinical biochemistry panel: Lyophilized serum for glucose, urea, creatinine, uric acid, total protein, albumin, potassium, total cholesterol, High Density Lipoprotein Cholesterol, Serum Glutamic Pyruvic Transaminase, Serum Glutamic Oxaloacetic Transaminase, Sodium, Potassium, Lactate Dehydrogenase, Gamma GT, Total Bilirubin, Direct Bilirubin, Creatinine Kinase Total,

• Microbiology panel: Gram stain slide

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
51	079/80-05	622	52%	35	54	10	1
52	079/80-09	658	59%	34	55	10	1
53	079/80-02	667	58%	50	36	12.5	1.5

Source: NPHL/DoHS

Result interpretation Based on:

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

NEQAS –TTIs serology for BTSC

Under this program, EQAS is being run for BTSCs and TTIs screening test is targeted (HIV, HBsAg, HCV and Syphilis). This program is intended to run every six month (biannually). In FY 2079/80, in first lot 43.4% (n=56) samples were received with average score of 99.2% and in second lot 46.5%(n=60) samples were received with 99.3% BTSC scoring. Scoring below, 90% is unacceptable performance, urgent action needed to review the technical competency of the BTSC.

NEQAS for HIV Testing

Proficiency panel testing of HIV Serology using Dried Tube Specimen (DTS) is conducted twice a year. Samples are prepared by NPHL and are sent to participating laboratories via respective Provincial Public Health Laboratories. In FY 2079/80, among 200 participants in panel lot-4 from seven provinces, 126 were excellent, however 26 needed urgent review. In panel lot-5, among 86 participants from seven provinces, 66 were excellent, one need to improve the performance and 19 needed urgent review.

Other NEQAS

In FY 2079/80, 69 laboratory participated in COVID-19 Proficiency testing six laboratory participated in SARS-CoV-2 and Influenza multiple PCR Proficiency Testing. For bacteriology,50 samples were dispatched in lot -3 (n=25) and lot-4 (n=25) of 2022 and 48 sent the results, 16% and 17.4% in each lot were unsatisfactory for identification and 4% were unsatisfactory for AST. In first lot of 2023, 24 samples were dispatched and al results were obtained, all identification were excellent while 29.16% of the AST were unsatisfactory.

17.2.9 Capacity Building

The training section facilitates the laboratory staff to acquire and update laboratory knowledge and skills for the smooth functioning of clinical laboratory. Both in-house and inter laboratory trainings are conducted by NPHL (Table 17.9).

Table 17.9 Major trainings conducted by NPHL in FY 2079/80

HIV viral load optimization workshop	Orientation on AMR surveillance and AMR site assessment
Training on EQA of HIV testing using DTS CD4 test training Workshop on Preparation of Training Package on HIV and STI Laboratory Diagnosis	Workshop on strengthening lab clinic interface Supportive monitoring for data extraction and strengthening Supportive supervision and monitoring at WRH
Workshop on National Operational Protocol for HIV testing services ToT for CLT, Facilitation of CLT on HIV by SAVE the children, CLT on HIV by FHI 360	Sharing of antimicrobial resistance data and point prevalence survey findings Workshop for preparation of local antibiogram and antibiotic guideline
Training on Bioinformatics training by PHE	Orientation on AMR surveillance and AMR site assessment
Training on Bioinformatics analysis and scientific interpretation of SARS-CoV-2 Genomic Data	WHO orientation on AMR surveillance protocol, and supervisory visit Checklist for quality WHO
Training workshop on Cell culture technique National Training of Nipah and Anthrax Nepal Skill Based Hands on Microbiology Placement Training	Lab-clinical interface (FHI) Monitoring visit Data issues and troubleshooting (FIND)
Orientation on laboratory inspection of Category D and Category E Laboratory for municipality level of Kathmandu , Bhaktapur , Lalitpur	WHO orientation on AMR surveillance protocol, and supervisory visit Checklist for quality
General Orientation of NPHL to new recruited staffs and Orientation of Biosafety Practices in NPHL	Lab-clinical interface with orientation to clinicians, nurses and lab staff
Orientation and implementation of Internal Management System Software Refresher training on Quality Assurance by Bio-Rad	AMR roadmap workshop TRACCS
Orientation on Laboratory Information System (LIS) of NPHL	Refresher training on one Health AMR surveillance using DHIS 2 for data analysis and visualization

Interactive training and workshop on ethics in health research writing and publication	Orientation to lab staff on AMR surveillance protocol, sample collection and transportation and AMR data
Training on waste management of helper staff of NPHL	Troubleshooting for AMR data
Discussion on guideline preparation of outsourcing of laboratory test outside country	Training on polymerase chain reaction applications to detect
Training on procurement procedure of Government of Nepal	Eshift training on AMR surveillance data analysis using DHIS2
Orientation of test done in NPHL and I/M Vaccine administration and adverse effects.	Hands on Training on MultiPlex PCR for *V. cholerae*
Orientation & Review of The National Essential In-Vitro Diagnostic List (NEIDL)	Biosafety And Risk assessment Refresher & Practical of Trainers training

17.2.10 Surveillance and Monitoring Visits

In FY 2079/80, there were 17 surveillance and monitoring visits of VPD with 12 visits for Polio Lab Containment, two visits for MR sub-national lab visits, one visit each for rota virus surveillance of sentinel sites and ES sample collection. Similarly, from HIV/Hepatitis C reference unit there were two supportive supervision and monitoring, two visits from microbiology unit for onsite coordination and EQAsia team visit. From NIC, there were six monitoring visits focused on onsite review and orientation of National Integrated and SARS-CoV-2 Sentinel Surveillance.

17.2.11 Biorepository Unit

In FY 2079/80, NPHL established a Biorepository unit to securely store biological samples and organisms for long-term use in research. The primary goal is to support future studies by collecting, cataloging, and preserving diverse biological materials from different departments within the organization. This effort contributes to addressing health challenges, improving disease detection and treatment, and enhancing community well-being.

17.2.12 Other Activities in FY 2079/80

- Help desk for service seekers from 8 am to 4pm
- Self-report dispenser
- Security update of laboratory information system and blood transfusion and donor management systems
- MoU with Central Jail Hospital & Naradevi Ayurveda Hospital for testing samples as a referral laboratory
- Training module application for orientation for technical staffs.

Box 17.1 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 centr 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 at least A and B category laboratory with molecular tests to combat pandemic issue like COVID-19 in future • Networking with private laboratories
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

18 Human Resource Capacity Building

NHTC	Training material development section	Skill Development Section	BMET Unit	Nursing Capacity Building Section, NSSD
	Training Accreditation and Regulation Section	Administration Section		

This chapter covers the part of the in-service capacity building of the human resources led by the government agencies -NHTC, programs conducted by dedicated section for capacity building of NSSD, Vector Borne Disease Research and Training Center (VBDRTC) and Nepal Health Research Council (NHRC). There are ongoing regular activities on orientation and mentoring through the divisions and sections as per their AWPB. These are covered in the activities of the respective programs in the chapters of the report as relevant. In addition to this, HRH production through federal level academia is covered in Chapter 14 of the report.

18.1 National Health Training Center

18.1.1 Overview of NHTC

NHTC was established in 2050 BS to coordinate and manage all trainings under MoHP. It caters to training needs of all human resources under departments and divisions of DoHS and MoHP. The key guiding document for NHTC is National Health Training Strategy 2060/61 (2004). Additionally, it is guided by the vision of the National Health Policy and health sector strategic plans.

Box 18.1 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

Assessing, standardizing and accrediting training sites and activities | Development, standardization, and revision of training packages +Training need assessment | Institutional Capacity development of all levels of training sites | Conducting pre-service, in-service, short term, and long term trainings as per national requirements | Integration and institutionalization of training activities | Developing links with professional career development organizations | Strengthening TIMS and developing the trainer's roster at all levels

Figure 18.1 Strategies of NHTC for Capacity Building of HR

18.1.2 Major Activities in FY 2079/80

Training material development

- Workshop to identify need to revise/update different training materials
- Workshop on the guideline on training activities development process with provincial health training centers
- Training material development and field test for the Basic research methodology for health workers training
- 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)

Skill development section

- Training of trainers on ASBA for Physicians
- Training of trainers on Pediatric Nursing
- Diploma in Biomedical Equipment Engineering (DBEE) training to 24 students and continuation of 2077/78 batch
- Induction training for health officers newly appointed through the public service commission examination
- Medico-Legal Training on Post Mortem Examination and Clinical Forensic Medicine for Physicians
- Training of trainers on Operation Theater and Management Techniques Training (OTTM) for Nursing Staffs
- Comprehensive New Born Care for Physicians/ Nursing Staffs (CNC-II & III)
- Training of trainers on Intensive Care Unit (ICU)/ Coronary Care Unit (CCU) for Nursing Staffs
- Training of trainers on Occupational Health and Safety Training for Physicians/Health Workers/ Nursing Staffs
- Training of trainers on AMR Prevention for Physicians/Health Workers
- Minilap and Vasectomy training for Physicians/ Nurses
- Anesthesia Assistant Training for HA and Staff Nurse
- Training of trainers on Burn Care Management for Physicians/Health Workers/Nursing Staff
- Training of trainers on Primary Emergency Care (PEC) for Physician/ Health Workers/Nursing Staff

- Training of trainers on Cervical Cancer Screening (VIA/Thermal Coagulation) for Physician/Nursing Staff/Health worker
- Refresher training to trainers of various trainings
- Training of trainers on (OBGYN/MDGP) Second Trimester Abortion Care for Physician
- Essential Critical Care Management training
- Pre-Hospital Care (Emergency Medical Technician/ Dispatcher) Training for Health Workers/Ambulance Workers
- Training of trainers on PEN
- Clinical Training Skill (CTS)/GTS Training to instructors of various trainings
- Training on Environmental Health, Healthcare waste management and WASH for Physicians/Health Workers working in hospitals and health facilities
- Pediatric Essential Critical Care Training (ECCT)
- Human Centered Design Training
- Cardiothoracic vascular intensive nursing (CTVIN) Training
- Training of trainers on Menstrual Hygiene Management
- Integrated RH morbidity screening Training
- Oral Health Training
- Palliative care Training
- Basic psychosocial counseling training for nurses and health workers working in OCMC, mental hospitals

BMET Unit

- Training on User Maintenance of X-ray Equipment
- Training on User maintenance of Lab Equipment

Training accreditation and regulation section

- Follow-up Enhancement Program (FEP) for FP, Mid-level practicum (MLP), OTTM, Basic Life Support (BLS), SBA and other trainings
- Site visit and monitoring for the accreditation, renew and regulation of the health training sites
- Clinical training site development and strengthening of various clinical training (materials, halls, furniture, laptops, anatomical models and other support required for the site)
- Overview of quality of training activities being conducted and feedback
- Annual report preparation and printing
- Workshop on review and action plan with various clinical training sites of all seven provinces

18.1.3 Key Program Indicators in FY 2079/80

Types of training events

In FY 2079/80, there were 43 training events of which two were long-term trainings- Anesthesia Assistant and DBEE. There are four participants for AA training in FY 2079/80 and 24 students of DBEE and continuation from FY 2077/78. Among 41 training events, 36.5% were training of trainers (Fig 18.2).

Almost all training of trainers in FY 2079/80 were targeted for the medical doctors' nurses and/or paramedics. The conduction of training of trainers is helpful to build in the roster of the trainings to conduct the trainings in the provincial and peripheral levels.
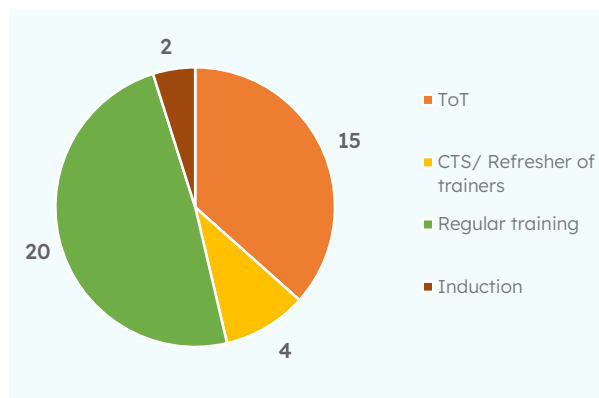
Figure 18.2 Training events conducted by NHTC in FY 2079/80

Source: TIMS, NHTC/DoHS

Subject area of training

There were range of areas from curative to promote and equipment covered in the trainings conducted in FY 2079/80 (Fig 18.3).
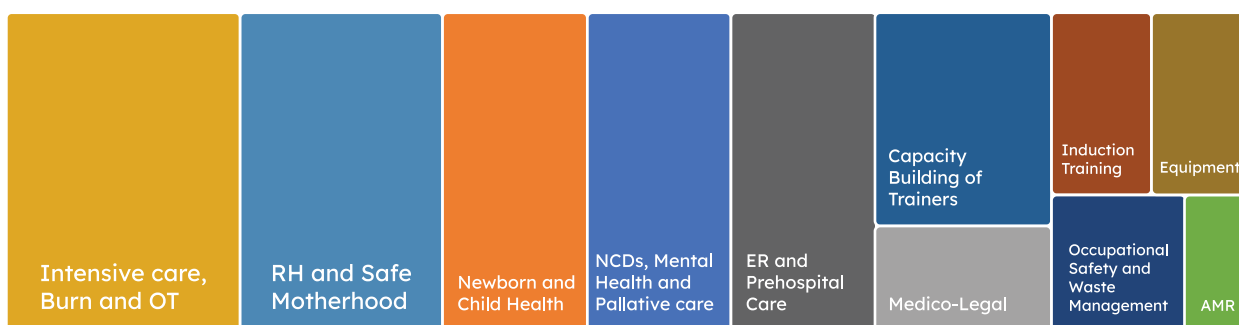
Figure 18.3 Areas covered in proportion of training events in FY 2079/80

Box 18.2 SWOT analysis of capacity building program of NHTC

Strength	Opportunity
• Development focused on competency (Skill) based training packages and learning resource packages (LRP's) using blended approach • Revision and update of the existing training packages • 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 at various levels • Competent and skilled health workforce • Support from government as well as various External Development partners • Increasing budget for provincial training centers • Introduction of self-sponsored training opportunities for health workers
Weakness	**Threat**
• Multi-door for trainings still persists • Lagging to shift into technology based education such as self-paced learning, online learning platform as well as web based learning • Inadequate training follow-up mechanism • Inadequate skilled technical human resources to operate TIMS at all levels • Lack of functional mechanism of recording and reporting between province and federal health training center	• Delayed revision of the training related policies, strategies and guidelines • Training taken as only financial incentive • Limited sites for special competency based training • Inadequate training materials at training sites • Inadequate budget allocation for training monitoring and quality assurance • Inadequate incentives for trainers and participants who travel from distant districts, no separate financial expenditure norms for training

- Lack of systematic coordination mechanism with province governments and local level for training management and quality control
- Gaps in accountability of training sites
- Challenging to manage a separate pool of trainers from various disciplines
- Lack of need based selection of participants
- Need based training not institutionalized
- Health trainings often focus on theory rather than practical skills.
- Lack of trainings on prevention and promotion. Majority of trainings provided are focused on curative service.

- High demand of training and limited resources
- No clear pathway to link up with continuous professional development and career development
- Lack of adequate regulatory frameworks to ensure that health training programs meet minimum standards of quality
- No defined roles to regulate health related trainings conducted by private sectors

18.2 Capacity Building from NSSD

Nursing Capacity Building section of NSSD also aids in the capacity building of the human resources in addition to NHTC.

18.2.1 Infection Prevention and Control (IPC) Training

In health facilities, vigilant IPC standards are essential to ensure patient safety and providing quality care. In response to need of evidence-based strategy to counter healthcare-associated infections (HCAIs) and AMR, IPC training was designed by NSSD in collaboration with

NHTC. The training adopts the blended modality of delivery and runs for a total of three months covering self-study and six weeks of clinical posting in different health facilities. The training agenda extends beyond capacity building to include raising awareness and promoting surveillance of HCAIs.

In FY 2079/80, a total of 40 participants in two batches (20 in each batch) were trained. Participants were identified and selected from the both, private and public hospitals at federal and provincial level.

Box 18.3 SWOT Analysis of IPC Training

Strength	Opportunity
- HCAIs surveillance has been started from few of federal hospitals - Best practice can be shared among the sites and practicing centers of the HR trained in IPC	- Trained IPC nurses are working as a focal person to strengthen IPC program at health facilities. - Collaboration with other programs like MSS, Clinical audit, health care waste management
Weakness	Threat
- Limited resource allocated to the IPC activities and surveillance	- Frequent transfers of the HR in health facilities

National infection prevention and control symposium

National Symposium on Infection Prevention and Control was convened for two days on 2079/04/14 -15 (B.S.). A scientific committee was formed to finalize the content and modality of the program, under the chairmanship of the Director, NSSD. The participants of the national symposium were the provincial health secretary, director of provincial health directorate and all the representatives of provincial hospitals, federal hospital and representatives from private hospitals and academia.

The presentations were done on thematic areas such as IPC practices and health care associated infections. Panel discussions were conducted to discuss on the draft of national IPC guideline in the presence of experts and the representatives from the provincial ministry of health and health directorate. At the end of the program, there was a consensus developed on the draft of National Infection Prevention and Control Guideline. It also gave an opportunity to all the health facilities to know the status of the IPC program and few recommendations to strengthen the program.

18.2.2 On-site Clinical Coaching and Mentoring Program

Clinical mentorship and coaching are a system of practical training and consultation that fosters ongoing professional development to yield sustainable high-quality clinical care outcomes. NSSD developed onsite mentoring coaching and mentoring package to aid delivery of quality health services. The overall goal of this program is to improve the quality of care through increasing knowledge and competency and changing behavior, practice and skills of healthcare provider in provision of routine nursing care and also develop mentors for onsite coaching.

This program is implemented in six governments' federal level hospital (Bir hospital, Bharatpur hospital, Bheri hospital, Koshi hospital, Narayani hospital and Dadeldhura hospital).

In FY 2079/80, following activities were conducted;

- One batch of master mentors was developed from the government hospital inside the valley. The master mentors will be the mentor for their respective hospitals.

- Review of the onsite and coaching program from the program implemented hospitals (Koshi, Bir, Narayani, Dadeldhura, Bheri, and Bharatpur hospital) to discuss the effectiveness and issues of the program and recommendations for implementing this program in another fiscal year. The participants from the review stated that the documentation of every procedure was improved and provided care according to standard checklist and protocols.
- Onsite coaching and mentoring program implemented in Bhaktapur hospital with the engagement of the master mentors.

18.2.3 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 16 participants, four from each selected hospital (Bir Hospital, National Trauma Center, Grande International Hospital, and Sahid Gangalal National Heart Center). 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.

18.3 Vector Borne Disease and Research Training Center

18.3.1 About the Program

Vector 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 GoN including- Malaria, Kala-azar, Dengue, Chikunguniya, Lymphatic filariasis, Scrub typhus and Japanese encephalitis.

18.3.2 Major Activities in FY 2079/80

Malaria Microscopy Basic Training (for Larval Technicians and Larval Assistants)
Health workers will receive a 3-day training on insect-borne diseases (training for each group in all 7 provinces).
Insectarium management
Vector-Borne Disease Sample Collection
Post-training Evaluation
Development committee meeting
Office, residence maintenance
Study on Insecticide Effectiveness
10-day Refresher Training on Entomology
With financial support from USAID-RTI, the Transmission Assessment Survey (TAS) was carried out for the elimination of Filariasis- • Confirmatory Survey - 4 districts (Kalikot, Mugu, Jumla, and Humla) • Pre-TAS - 4 districts (Jhapa, Lamjung, Parbat, and Baglung) • TAS II - 3 districts (Kanchanpur, Ilam, and Panchthar) • TAS III - 14 districts (Kathmandu, Bhaktapur, Lalitpur, Siraha, Saptari, Kaski, Okhaldhunga, Rukum East, Rukum West, Arghakhanchi, Pyuthan, Salyan, Rolpa, and Sindhuli)
Survey was conducted in 5 districts (Kathmandu, Lalitpur, Bhaktapur, Makwanpur, and Chitwan) in collaboration with the Bagmati Province Health Ministry to study the vectors spreading Dengue

18.3.3 Key Achievements in FY 2079/80

Physical and financial achievement of program activities

In FY 2079/80, financial achievement was 78.22% and physical achievement was 75.0%. The total budget absorption rate was 78.2% in FY 2079/80 (Table 18.1).

Table 18.1 Budget absorption rate of VBDRTC in FY 2079/80

Items	Budget (Nrs in millions)	Expenses (Nrs in millions)	Budget absorption rate %
Administrative cost	12	11.4	95.1
Programmatic cost	7.9	4.1	52.5
Total	19.9	15.5	78.2

Source: VBDRTC/DoHS

18.3.4 Challenges of VBDRTC

In budget of 2080/81, VBDRTC development committee was dissolved and the responsibility was given to EDCD for further management of the staffs under VBDRTC. A study report has been submitted with recommendation, by the committee chaired by Additional Secretary, HEOC unit, MoHP.

18.4 NHRC's Role in Capacity Building for Research

National Health Research Council (NHRC) conducts capacity building activities for research in the country at both federal and provincial level for health workers. The details of NHRC is explained in Chapter 25 section 25.6 of this report.

19 Health Education, Information and Communication

NHEICC	Health Education and Material Development Section	Health Communication Coordination Section	Health Promotion and Tobacco Regulation Section	Administrative Section
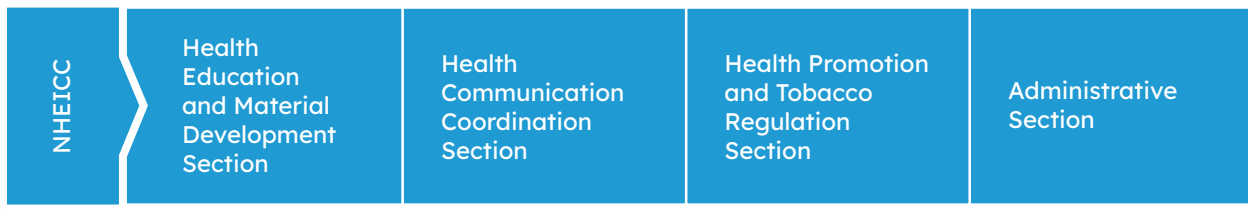
19.1 About the Program

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 achieve goals and SDGs. Employing key approaches like advocacy, social mobilization, and SBCC, NHEICC has four sections namely Health Education and Material Development Section, Health Communication Coordination Section, Health Promotion and Tobacco Regulation Section, and Administrative Section. NHEICC is the focal point of MoHP for tobacco control and regulation along with Risk Communication and Community Engagement (RCCE). Recently, NHEICC has been taking a leading role for SAFER initiative* (anti-alcohol activities) for the first time in the South Asian Region and "Healthy Palika" initiatives.

*S= Strengthen restrictions on alcohol availability, A= Advance and enforce drink driving counter-measures, F= Facilitate access to screening, brief interventions and treatment, E= Enforce bans/ comprehensive restrictions on alcohol advertising, sponsorship and promotion, R= Raise prices on alcohol, through excise taxes and pricing policies

- Advocacy
- Social mobilization and community engagement
- Mediate
- Social Behaviour Change Communication (SBCC)
- Digitalization in health promotion and communication
- Mass media approach
- Policy, strategies, and directives formulation

Figure 19.1 Health promotion strategies of NHEICC

Box 19.1 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 section of the center work in close coordination with MoHP and related divisions for needful IEC materials development and tailoring based on the health promotion strategies of NHEICC (Fig 19.1). Also, NHEICC is the focal point for tobacco control and regulation in Nepal (Box 19.2).

Box 19.2 Tobacco control programme legislation and strengths

Tobacco Control Programme

NHEICC is the focal point for tobacco control and regulation in Nepal. Annually, over 27,000 individuals in Nepal succumb to diseases linked to tobacco use. Nepal committed to the WHO Framework Convention for Tobacco Control (FCTC) by signing it on 17th Mangsir 2060 (December 3, 2003), ratifying it on 21st Kartik 2063 (November 7, 2006), and officially becoming a Party on 22nd Magh 2063 (February 5, 2007). In alignment with the WHO FCTC, the government has implemented laws and procedural documents with the objective of controlling and regulating tobacco.

Roadmap to Tobacco Control Legislation

- 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. To enforce the Act, one regulation and three directives have been issued: Tobacco Products (Control and Regulation) Rule, 2068;

- Directive for Printing and Labelling of Warning Message and Graphics in the Boxes, Packets, Wrappers, Cartons, Parcels and Packaging of Tobacco Products, 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, 2071.

Strength of tobacco control programme of Nepal

The government of Nepal has established a tax fund from which the programmes of tobacco control, cancer and NCD prevention and care are organized. It is a kind of innovative financing. Besides this we have strong civil society and media engagement in tobacco control programmes. Furthermore, the policy instruments so far endorsed are highly comprehensive.

19.2 Major Activities in FY 2079/80

19.2.1 Health Education Information and Communication Activities at Federal Level in 2079/80

Airing of health messages and public health radio programme through Radio Nepal
Publication of health messages, information and press release in national newspapers
Communicable and epidemic disease control related communication programme and daily newspaper monitoring programme
Health awareness and communication programme for differently able people
ENT related health awareness and communication programme
Communication programme on smoking and tobacco control and regulation
Communication programme on NCD prevention and control
Advocacy and strategic communication on occupational, environmental health and air pollution, climate change
Health awareness and communication programme on fuel emission and air pollution
Health education and communication programme on IMNCI, Immunization, Nutrition, Diarrheal diseases, Pneumonia
Broadcasting of health messages, public health dialogue *(Janaswasthya Bahas)* and *Jivan Chakra* through Nepal television
Health message exhibition on assembly, event, sports, health camp musical and cultural programme
Health education and communication programme on accident and physical injuries
Health education and communication programme for marginalized and deprived community or group
Health awareness and communication programme on mental health
Health awareness and communication programme on birth defect
Awareness and communication programme on family planning, safe motherhood and neonatal health
Dissemination of information and messages on online media
Broadcasting of health-related messages and information through National Television.
Airing and broadcasting of disease outbreak and epidemic-related messages.
Monitoring and facilitation for effective implementation of health promotion activities at the provincial and local levels.
Health awareness programme for senior citizens
Package development for RCCE

Health awareness on oral hygiene
Health awareness programmes on genital hygiene
HEIC programme through braille script
Communication programme related to SAFER Initiatives
Communication programme on SMART couple promotion and reproductive health
Workshop on Health Promotion for Health Education Officers/Managers
Reviewed and updated health textbook of class 8 in coordination with Curriculum Development Centre
Conducted a pilot study in Bir hospital and Bhaktapur Cancer hospital to assess the utilization, feasibility and acceptability of Nicotine Replacement Therapy
Endorsed "Suicide prevention guideline for journalist 2080"
Approved a "Suicide prevention guideline for journalist 2080" conducted orientation workshops for journalists in Sudurpaschim, Karnali and Gandaki provinces

Source: NHEICC/DoHS

19.2.2 Activities of Tobacco Control Programme Carried Out by Federal Level in 2079/80

Booklets related to tobacco updated and printed.
Celebration of World No Tobacco Day.
Train the trainer Workshop on Brief Tobacco Intervention in Nepal
Production of audio, video and documentary on smoking and tobacco products.
Broadcasting and airing of messages regarding Smoking and Tobacco product control through television, FM and digital medias.
School health program related to smoking and tobacco products.
Advocacy/Interaction program to hotel association and restaurants owners about smoking and tobacco products.
Advocacy/Interaction program to journalists and stakeholders about smoking and tobacco products.
Interaction program to FCHVs and mothers groups about smoking and tobacco products.
Communication program related to e-cigarette and hukka.
Signage, stickers, pamphlets and mount-boards were developed and printed to aware about harmful effects of tobacco products.

Source: NHEICC/DoHS

19.2.3 Major Activities at Provincial Level in 2079/80

• Celebration of health related days	• Broadcasting of messages via local mass media (cable TV, online, FM, newspaper etc)
• School health education programme	• Supervision and monitoring of health education, information, communication and health promotion programs
• Journalist and health workers interaction on health promotion	• Communication program on control of Tobacco products consumption and alcohol consumption

Source: NHEICC/DoHS

19.2.4 Major Activities at LLGs in 2079/80

• Awareness program on control of Tobacco products consumption and alcohol consumption	• School health education programme
	• Health mother group and social behaviour change campaign at local level.

Source: NHEICC/DoHS

19.3 Key Program Indicators and Achievements FY 2079/80

19.3.1 Number of Health Education Sessions Conducted

In FY 2079/80 total of 43,182 health education sessions were conducted in which maximum were conducted in Lumbini Province and minimum in Karnali Province (Fig 19.2).

19.3.2 Number of People Attending Health Education Sessions

In FY 2079/80 total of 11,72,570 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 (Fig 19.3).

Number of health education sessions conducted in FY 2079/80

National: 43,182
Koshi: 6,685
Madhesh: 3,595
Bagmati: 4,285
Gandaki: 8,724
Lumbini: 11,439
Karnali: 2,007
Sudhurpashim: 6,557
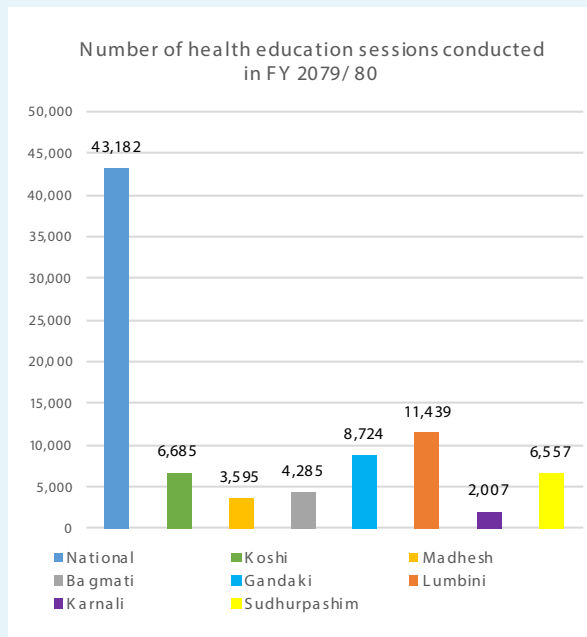
Figure 19.2 Coverage of Health Education Sessions Conducted in FY 2079/80

Source: HMIS/DoHS

Number of people attending health education sessions

Sudhurpashim: 199,687
Karnali: 64,438
Lumbini: 314,553
Gandaki: 206,084
Bagmati: 123,063
Madhesh: 103,902
Koshi: 160,843
National: 1,172,570
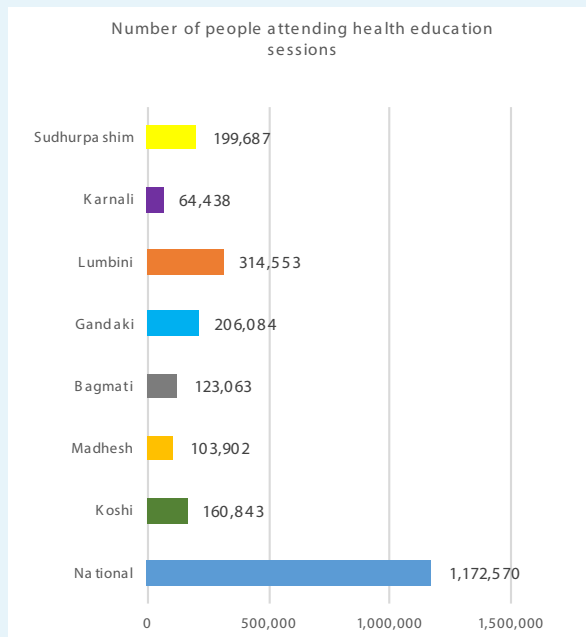
Figure 19.3 Reach of Health Education Sessions Conducted in FY 2079/80

Source: HMIS/DoHS

19.3.3 Federal Level Physical and Financial Achievement of Program Activities

In FY 2079/80, financial achievement was 79.41% and physical achievement was 82.0% of NHEICC at federal level (Table 19.1).

Table 19.1 Physical and financial achievement of NHEICC at federal level in 2077/78 to 2079/80

Programme	2077/78		2078/79		2079/80	
	Physical	Financial	Physical	Financial	Physical	Financial
Federal Level	98	75	89	81	82	79

Source: NHEICC/DoHS

Box 19.3 SWOT Analysis of HEICC Programs

Strength	Opportunity
• National health communication policy, strategy and directive are in place. • Good organizational structure at Federal/Province level for health promotion programme • BCC for health promotion has been developed in line with National Health Communication Policy 2069/70 (2012) • Formulation of Health Promotion Strategies 2079/80-2087/88 (2023-2030) • RCCE guidelines in place and establishment of federal RCCE structure • SAFER Initiative roadmap finalized	• 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 • Incline towards healthy setting approach • Penetration of mobile phone and internet in communities • Disaggregated capture of the data to produce thematic indicators for HEICC activities
Weakness	**Threat**
• Limited human resources for health promotion at federal and province level • No organizational structure including human resources for health promotion at local level • Roadmap of health promotion activities yet to be developed • Preparedness mechanism during emergencies is not satisfactory	• Multi-door health communication activities • Inadequate allocation of budget for communication programme as per communication policy 2012 • Continuous change of behaviour pattern/continuous change of lifestyle of people • Low health literacy • Diverse culture and practice • 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.

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 the DoHS and functions as secretary to Director General, DoHS. It synchronously aids as the vital nexus for health-related information management. HMIS, LMIS, and 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 also assumes 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.

20.1 Health Information Management Program

20.1.1 About the Program

Integrated Health Information Management System (IHIMS) section 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 levels. IHIMS coordinates among all three tiers of government, ensuring an integrated platform available for collecting, collating, analyzing, visualization, dissemination and storage of health information derived by the national health system (Fig 20.1).

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.
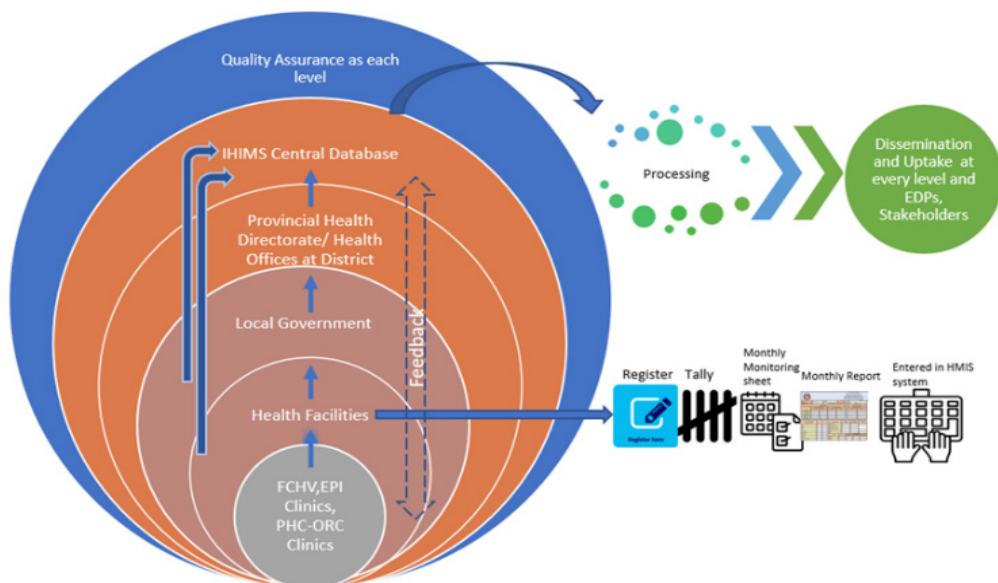
Figure 20.1 IHIMS information flow

Health management information system

Health Management Information System (HMIS) operating on DHIS2, an ICT friendly platform with highly scalable features, manages health sector information in an integrated and comprehensive manner through a one door system. To reach its current state, HMIS has come through several significant milestones (Fig 20.2). 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 (Fig 20.3).

Milestone on HMIS tool development

2050
- HMIS was established under Policy Planning and Monitoring Division of Department of Health Services

2052
- HMIS implementation

2054
- Minor revisions in HMIS Tools

2058
- ICD 10 training started through BPKIHS

2064
- HMIS software developed for reporting from districts
- Health Sector Information System- National Strategy developed and piloted for a duration of four years (2064-68 BS) in three districts (Lalitpur, Parsa and Rupandehi)

2069
- MS Access based online reporting system initiated
- HMIS published Social Inclusion in Health Service Utilization Report

2068
- Online Data Entry of District Integrated Monthly Reporting

2067
- Health GIS conceptualized and Health Facility Mapping Survey conducted

2066
- HMIS recording and reporting tools
- Hospital monitoring sheet, monthly monitoring and annual performance worksheets for health facilities updated

2070
- HMIS revision integration HSIS and HMIS MoHP and partners team visited Chandigadh and Simla, India to observe DHIS2 and EMR

2071
- Introduction of District Health Information System (DHIS2)
- Introduced web-based online data entry Software

2073
- All districts (public) health offices started HMIS online reporting through DHIS2 platform

2076
- HMIS online reporting via DHIS2 expanded to 753 LLGs

2079
HMIS tool revision primarily to facilitate BHS monitoring

2079/80
IHIMS Roadmap 2078/79- 2087/88 (2022-2030)

Figure 20.2 Milestone on development of HMIS tools

HMIS 9.1: Female Community Health Volunteers (FCHVs) Report Collection Form

HMIS 9.2: Community Level Health Service Monthly Reporting Form- Immunization and PHC/ORC Form

HMIS 9.3: Basic Health Facilities Monthly Reporting Form

HMIS 9.4: Hospital Level Monthly Reporting Form

HMIS 9.5: Non-Public Health Facility Monthly Reporting Form
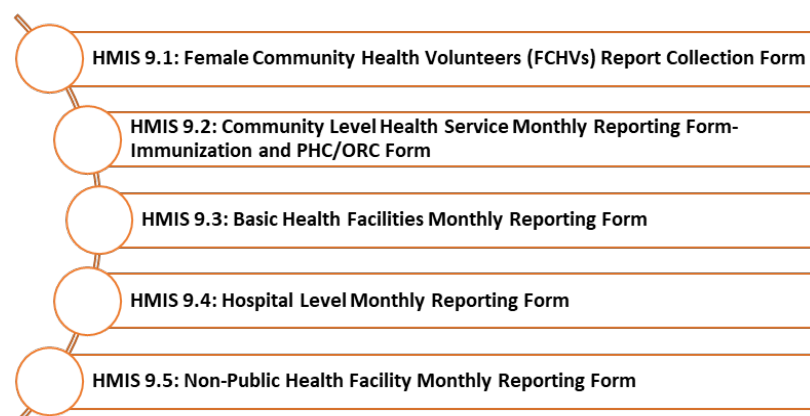
Figure 20.3 Current reporting tools being used in HMIS

IHIMS Roadmap 2078/79-2087/88 (2022-2030) has been crucial to drive key improvements in health data management. In FY 2079/80, 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 2080 (16th July of 2023), there are a total of 32,570 live sites, comprising 2,539 SDPs, 753 LLGs, 77 Health Offices, and provincial and 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 20.4.
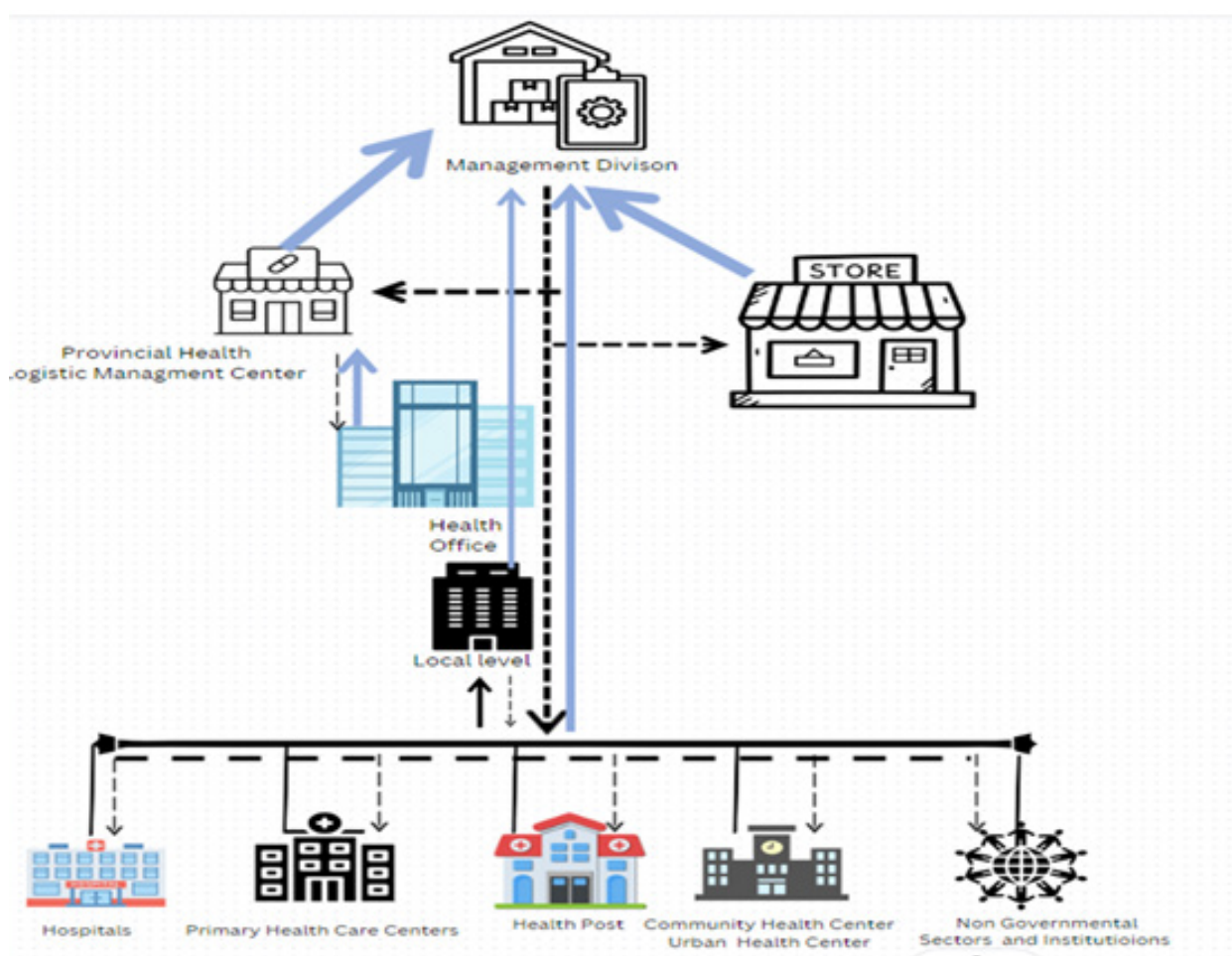
Figure 20.4 Logistic Management Information Flow

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 more than an hour way 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.

In FY 2079/80, there are 55% of the health facilities with computer and internet facilities and 26% have communication equipment available for health service purpose. Similarly, at the population level 15.4% households have computers and 51% households have internet access at home.[1] It is evident that the use and expansion of ICT is rapidly growing and in the year 2078/79, internet penetration has reached to 38% of 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 2073/74 (2017) and eHealth Roadmap 2075/76 (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 2075/76-2080/81 (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).

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 five positions in the federal MoHP, three in DoHS, three in DDA, one in DoAA, one in NPHL and one in NHEICC. However, the availability of ICT related permanent staffs at the federal level is much lower than required to keep pace with the advancement of technology and cope with it. There is high and growing demand for 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 20.1).

Table 20.1 Major digital health related domain of services and their platforms as of FY 2079/80

Domain of services	Major platforms/Solutions
Routine health information management	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	NFHR
Digital Health Inventory Management	Digital Health Atlas

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1 Central Bureau of Statistics (CBS),2020. Nepal Multiple Indicator Cluster Survey 2019, Survey Findings Report. Kathmandu, Nepal: Central Bureau of Statistics and UNICEF Nepal.

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

The list (Table 20.1) 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 20.1 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

20.1.2 Major Activities for Health Information Management in FY 2079/80

HMIS related activities

- The HMIS recording and reporting tools underwent significant revisions to align with program requirements. This involved the revision of 73 tools, consisting of the addition of 15 recording tools to existing 68 and five reporting tools, with updates made on the DHIS2 platform.
- Health staff received training across 753 Local Levels, encompassing Master Training of Trainers, Training of Trainers, and local sessions.
- ICD-11 training was completed a batch in turn 28 doctors trained

- Routine work included the completion of population projections to the ward level for 2079/80.
- RDQA concluded in 545 health facilities in the first round, 27 health facilities in the second round and one health facility during the third round. Data validation was done in most of these facilities.
- PHA training was provided for healthcare staff, and an IMU/DHIS maturity report was compiled.
- Management Division-led annual reviews were conducted, and support was provided for NJAR especially with the production of health fact sheets.
- Online self-reporting increased from 3,779 to 5,500 health facilities from FY 2078/79 to 2079/80.

Dashboard related activities

IHIMS Roadmap 2078/79-2087/88 (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:

- Orientation sessions for dashboard implementation were held for two LLGs in Koshi Province, five LLGs in Madhesh Province, four LLGs in Bagmati Province, one LLGs each in Gandaki and Lumbini Province, and three LLGs in Karnali Province.
- The dashboard system was successfully installed in four LLGs, namely Aathbis Municipality, Birendranagar Municipality, Gurbhakot Municipality, and Chandragiri Municipality, which had previously undergone orientation.
- Performance review meeting for the dashboards was conducted, involving all 17 LLGs across the seven provinces where the system had been installed in the preceding year.
- Regular supervision and monitoring with ICT support were provided to ensure the effective functioning of the dashboard systems in the given LLGs.

eLMIS related activities

- IHIMS provides eLMIS support to users across 3,286 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; a total of 13,367 tickets were successfully resolved during FY 2079/80.
- User support services encompass a toll-free helpline, trouble-shooting guidelines, on-site coaching, and training.
- eLMIS training initiatives have been executed at 1,159 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 eight 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 FY 2080/81, aiming to avoid shortages and wastage of health commodities.

20.1.3 Status of Key Reporting Indicators in FY 2079/80

Status of HMIS reporting

Reporting from grassroots levels (FCHVs) have gradually increased to 96% in FY 2079/80. There is consistent cent percent reporting from health posts and PHCCs. In FY 2079/80, reporting from public hospitals increased by 7% as compared to last FY (Fig 20.5).
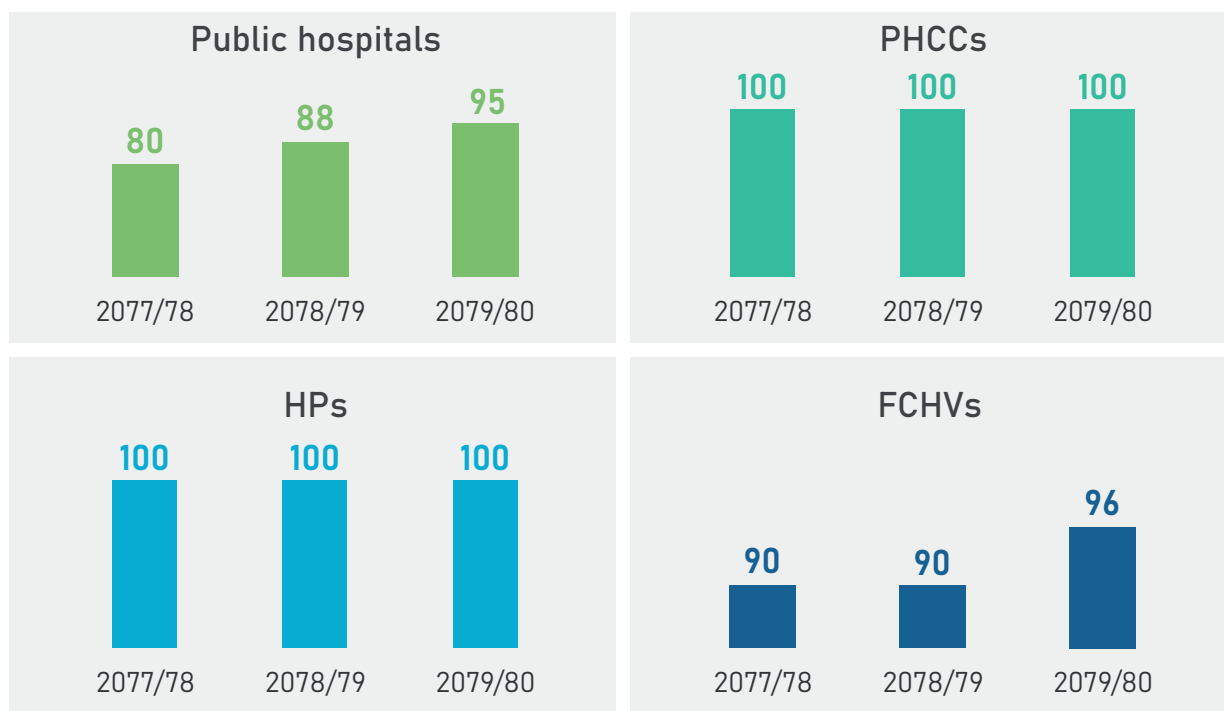
Figure 20.5 Reporting status from FCHVs and public health facilities in FY 2079/80

The reporting from FCHVs was 98% in Gandaki and Lumbini provinces surpassing the national average (96%) (Fig 20.6). Reporting from public facilities is cent percent in Madhesh, Karnali and Sudurpaschim provinces. However, the reporting is relatively less from Bagmati province (90%), Gandaki province (91%) and Lumbini province (93%). 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.
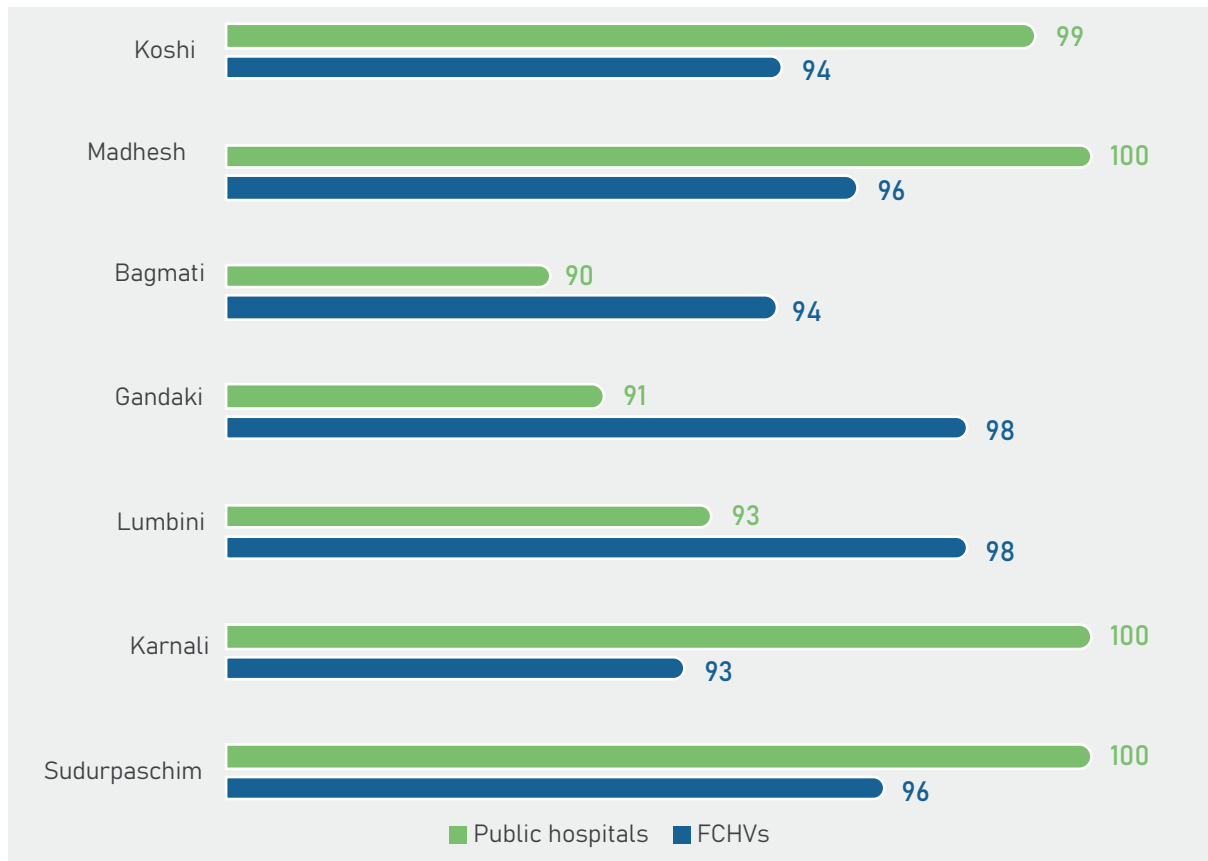
Figure 20.6 Provincial reporting status of HMIS 2079/80

Source: HMIS/DoHS

Status of eLMIS reporting

After successful implementation of eLMIS at all LLGs in FY 2077/78, total reporting rates have improved (Fig 20.7). In FY 2079/80, there were 3,286 health facilities reporting through LMIS (Fig 20.8, Fig 20.9). Efforts are to be dedicated to increase the rates of timeliness of these reports moving ahead to real-time inventory status recording and reporting.
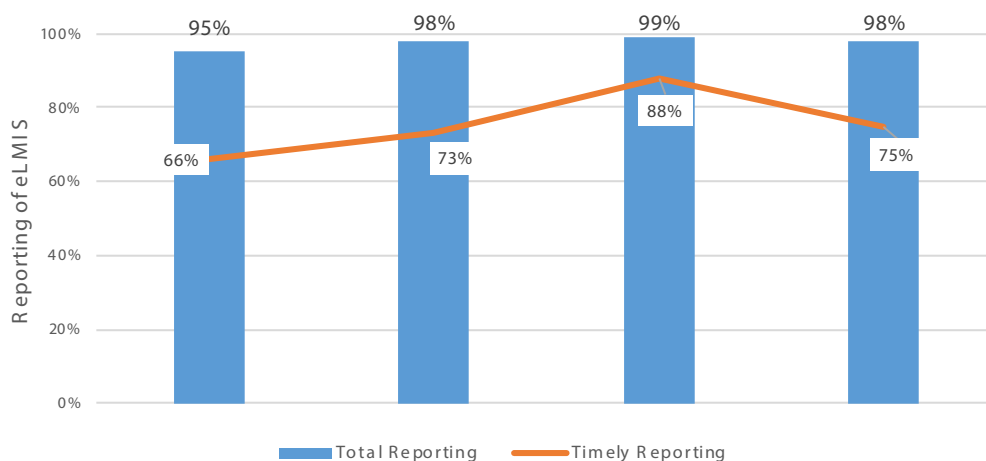
Figure 20.7 Reporting Status of eLMIS by Province in fiscal year 2079/80

Source: eLMIS/DoHS
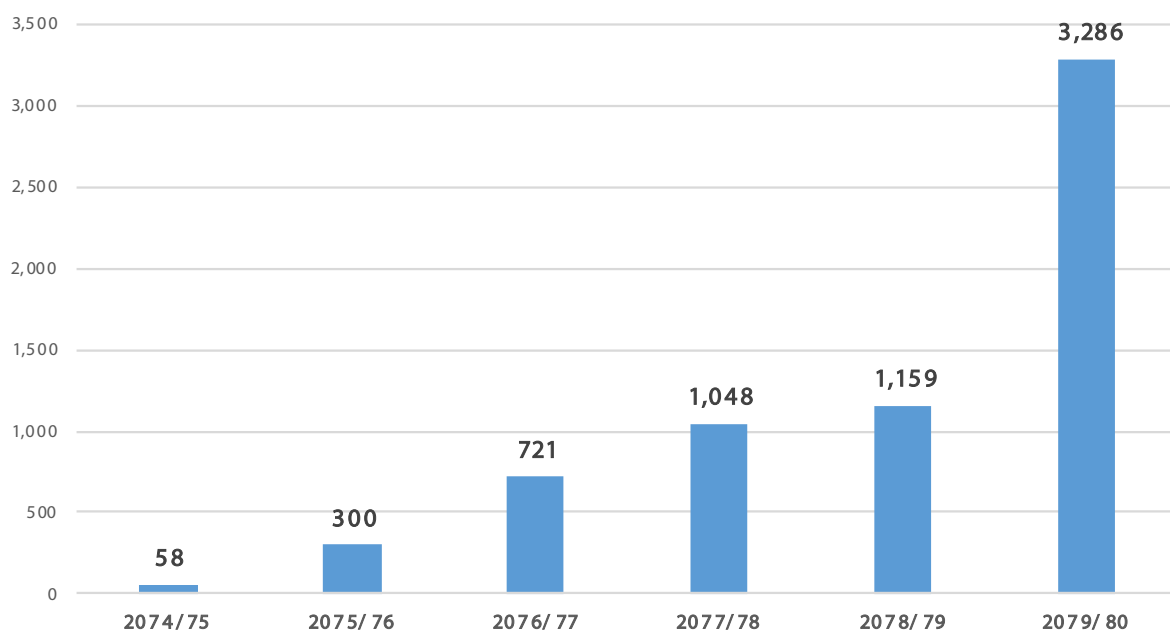
Figure 20.8 eLMIS Reporting trend from FY 2076/77–2079/80

Health Facility Type	Count
Central Stores	9
PHLMC Stores	7
National and Provincial Public Health Laboratories	8
District Health Offices	77
LLG Stores	753
Hospitals	160
Health Post/Primary Health Care/Basic Health Unit/Community Health Unit/others/Ayurvedic Health Center	2,272
Total	**3,286**

Province Name	Count
Koshi Province	522
Madhesh Province	478
Bagmati Province	627
Gandaki Province	268
Lumbini Province	673
Karnali Province	283
Sudurpashchim Province	435
Total	**3,286**

Figure 20.9 eLMIS Sites by Province in FY 2079/80

Operational Status

eLMIS is implemented at all federal, provincial, HOs, and LLG 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 93% of SDPs operational on the system (Table 20.2).

Table 20.2 Operational Status of eLMIS by health facilities in FY 2079/80

Health Facility Type	Total number of eLMIS Sites	Operational	Non-Operational	eLMIS Utilization (%)
Federal (Central) Store	9	9	0	100%
PHLMC (Provincial) Store	7	7	0	100%
Health Office	77	77	0	100%
Local Level	753	717	36	95%
Laboratory	8	7	1	88%
Hospital	160	147	13	92%
Health Post/Primary Health Care/Basic Health Unit/Community Health Unit/others	2,272	2,102	170	93%
National Utilization	**3,286**	**3,066**	**220**	**93%**

The eLMIS and LMIS report 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), Condom, and Pills have displayed the average quarterly stock out rate of 8% in FY 2079/80. Among MNCH and essential commodities, paracetamol has the lowest stock out rate at 6%, whereas Zinc Sulphate shows a stock out of 15% (Fig 20.7).

Percentage of Stock out (FY 2079/80)
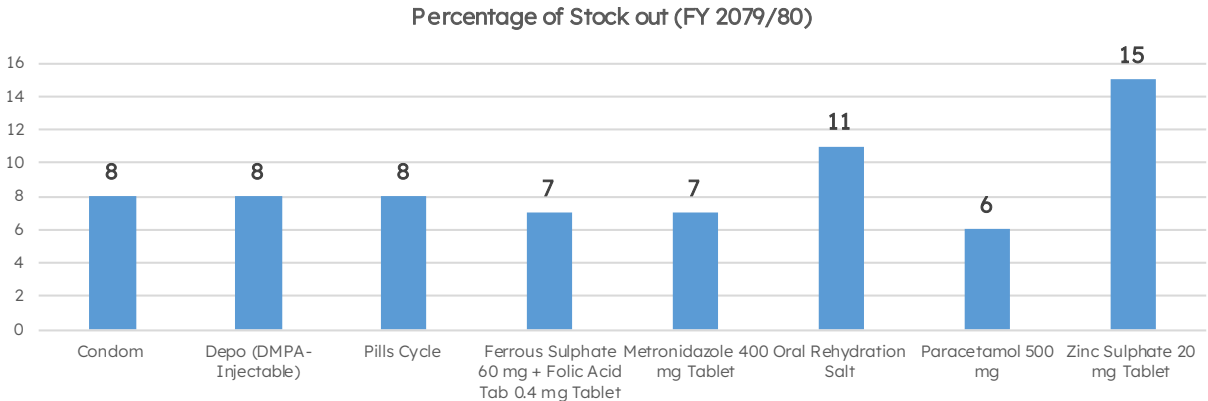
Figure 20.10 Average percentage of stock out of some essential medicines (FY 2079/80)

Data Source: eLMIS system

Box 20.2 SWOT Analysis of Health Information Management Program

Strength	Opportunity
• 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
Weakness	**Threat**
• Lack of interoperability among HISs. • 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.

20.2 Logistics Management Program

20.2.1 About the Program

Procurement of commodities within the nation 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 focus on acquiring and disseminating vital pharmaceuticals and equipment.

The Consolidation of Annual Procurement Plan (CAPP) has been a standard practice at 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 2073/74 (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 (Fig 20.11).
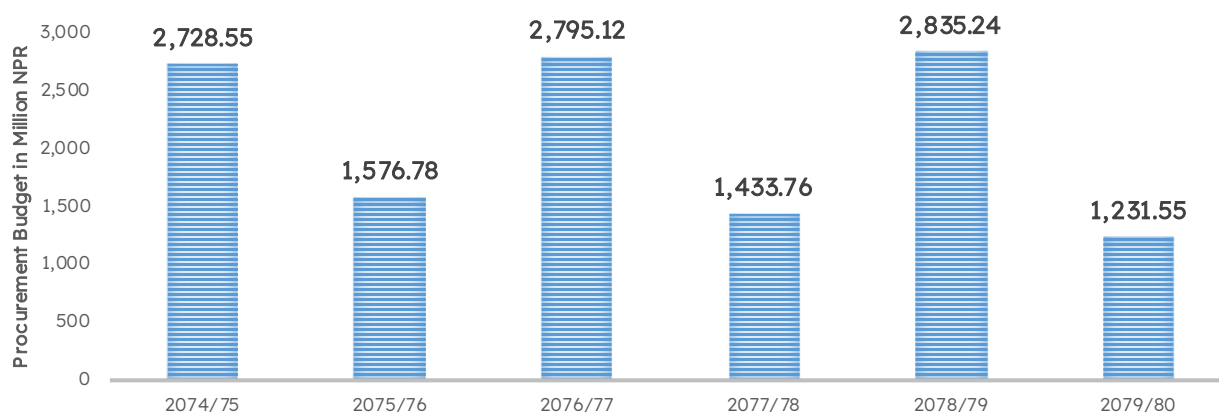
Figure 20.11 Procurement Budget of DoHS in FY 2074/75-2079/80

Although initially intended to continue into the FY 2079/80, the budget for hospital upgrading faced reductions after the third quarter due to a shortage of treasury funds (Fig 20.11).

The majority of the procurement budget was allocated to goods, particularly drugs and medical equipment (Table 20.3). After devolution, there is a gradual redistribution to provinces and LLGs for basic medicines and equipment procurement.

Table 20. 3 DoHS Procurement Budget for FY 2074/75 to FY 2079/80

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

Source: CAPP Execution Data, DoHS

Apart from changes with devolution of authority, over the years the portion of the budget in nutrition commodities is increasing while procurement of contraceptives is in decreasing trend (Fig 20.12).

Fiscal Year	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Nutrition	87.67	-	139.83	266.10	315.18	287.93
Insecticides	151.87	20.00	14.83	37.50	32.50	32.50
Kits	66.50	12.00	44.20	32.55	22.50	34.00
Contraceptives	212.43	191.60	211.13	210.00	82.68	89.28
Vaccines	286.50	408.00	1,398.51	204.85	229.93	254.00
Medicines	1,344.01	71.93	623.59	189.10	75.60	220.00
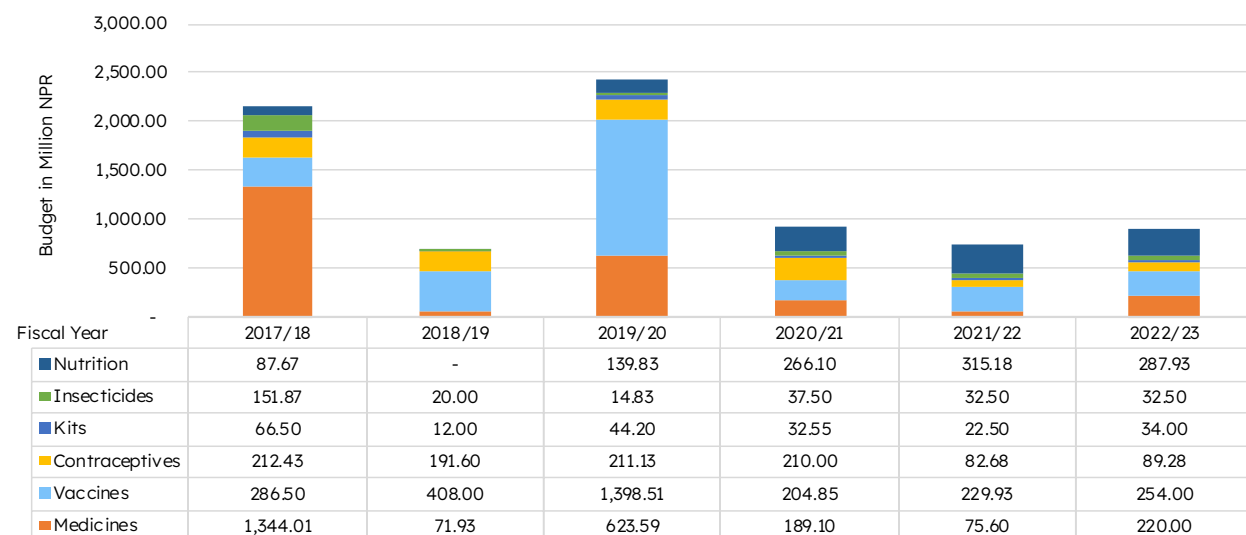
Figure 20.12 Distribution of Drugs Procurement Budget for FY 2074/75 to FY 2079/80

Source: CAPP Budget Analysis of Table 20.3

20.2.2 Major Activities/Progress in FY 2079/80

In FY 2079/80, Public Procurement Strategic Framework for Management of Medicines and Medical Goods, 2079/80- 2083/84 (2022/23–2026/27) was approved and rolled out. Also, e-GP was taken up for bidding as a regular practice in FY 2079/80.

Use of SOPs and standard technical specification from the TSB and disposal based on the directive

Periodic meetings of SCM-WG were held and addressed specific supply chain performance issues, such as storage, reporting, and stock levels. Key performance metrics were discussed, and remedial actions for improvement of SCM were determined.

Capacity development of the official working on procurement and supply chain management through facilitation, procurement clinics, on-site coaching and distance support are continued throughout the year. The concept of procurement clinic is replaced by Knowledge Bank and centered at MD, DoHS with a pool of trainee officials in procurement. Similarly, capacity building programs on using e-LMIS, logistics and inventory management are provided in the provinces.

A national consensus forecasting and quantification exercise workshop was conducted for program products and vaccines. Data used for quantification was generated from e-LMIS (consumption data and stock-on-hand data) and the HMIS. MD has facilitated all the provinces for provincial forecasting and quantification of health commodities inside the province.

Construction of the modern vaccine store at Teku is in progress. The central store and provincial stores are upgraded with cold chain facilities and vaccine storage capacity is enhanced in all provinces. With support of One Heart Worldwide, construction of a new cold chain system management building for vaccine storage with 32,500 cubic feet space at Teku has been completed and handed over to the Government as expansion of

existing vaccine storage capacity. It consists of one Walk-in Freezer and four Ultra Cold Chain Freezer each of 25-liter capacity.

A Warehouse Management handbook was published and distributed to all the stores.

20.2.3 Key Progress in FY 2079/80

DoHS could make 93% procurement against the CAPP of 2079/80 (Table 20.4).

Table 20.4 Efficiency of CAPP Execution

Fiscal Year	2077/78		2078/79		2079/80	
(NPR 100 Million)	Value	%	Value	%	Value	%
Total Planned Budget	14.3		28.3		12.3	
Procurement Initiated against Planned Budget	13.7	96	28.3	100	12.3	100
Planned Budget of Contract Signed	10.6	74	24.5	86	11.4	93
Actual Value of Contract Signed	8.4	58	19.3	68	9.5	77

Source: Annual Progress Report of CAPP Execution, DoHS

Similarly, continuation of e-GP became an institutionalized standard practice at the DoHS (Table 20.5).

Table 20.5 Use of e-GP in Procurement

Value in NPR Million

Fiscal Year	2020/21		2021/22		2022/23	
	Value	%	Value	%	Value	%
Contract Value	837.78	100	1932.97	100	954.37	100
Use of e-GP	830.93	99.18	1913.89	99.01	857.28	89.83
Non e-GP	6.85	0.82	19.08	0.99	97.09	10.17

Source: Various Years CAPP Data of DoHS

Box 20.3 SWOT Analysis of Logistics Management Program

Strength	Opportunity
• 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 are 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. The gap due to lack of operation of the system of PLAMAHS that has caused unknown status and inventory of medical equipment in the hospitals is expected to be fulfilled by BEMS
Weakness	Threat
• The existing LMIS/e-LMIS is not comprehensive enough to inform the quantification and forecasting of all medicines and equipment. • Lack of skilled human resource in procurement and supply chain • Inadequate staffing in stores and warehouses	• Procurement under Framework Agreement could not be initiated in lack of proper SBD and guideline. • Poor capacity of bidders and suppliers at sub-national level

20.3 Health Infrastructure Development Program

20.3.1 About the Program

Infrastructure Development Section (IDS) oversees the enhancement of health infrastructure by developing guiding documents and maintaining updated records of biomedical equipment. Key functions include supporting national policy development, managing 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.

20.3.2 Major Activities in FY 2079/80

Update and follow up of Planning and Management of Assets in Health Services (PLAMAHS)

- Conducted one-day orientation program in 10 selected hospitals and follow up in 40 health facilities
- Collected data on equipment procured and received

by these health facilities before and after Covid-19 pandemic

- Fed the obtained data on PLAMAHS software.

Monitoring and follow up of state and local level program management, infrastructure development as well as planning aspect

- Conducted monitoring and follow up of health projects under conditional grants provided by the federal government.

Update of HIIS and follow up

- Under construction health facilities were monitored and data were collected
- Backstopped and managed ad-hoc situations aroused during infrastructure development

Sticker management for continuous Bio-medical equipment inventory

- 44 reels (500 stickers in one reel) of high quality and durable stickers were procured in order to label and record the bio-medical equipment inventory used in health facilities of Nepal

Box 20.4 SWOT Analysis of Health Infrastructure Development Program

Strength	Opportunity
• Availability of records of medical equipment (electronic) and health infrastructure present in health facilities supports evidence-based planning of procurement of medical equipment • 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 are obtained • Inventory and proper labelling reduces risk of loss of medical equipment	• Real time data used for advocating development of program and infrastructure • 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
Weakness	**Threat**
• 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 • The server of the software is not with DoHS • 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

20.4 Environmental Health and Waste Management Program

20.4.1 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 preparing 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 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 two 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 HCWM through revised National HCWM Standards and Operating Procedures 2076/77 (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 2076/77 (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 20.5). 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 20.6).

Box 20.5 Key areas of National HCWM Standards and Operating Procedure, 2076/77 (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 20.6 Standard of WASH in Healthcare Facilities

Area	Required standard	Types of Health Facilities				
		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	√	√			

20.4.2 Major Activities in FY 2079/80

Conducted onsite coaching at 12 hospitals based on the National HCWM SoP 2076/77 (2020) and National Standard for WASH in Healthcare Facilities of Madhesh province, Gandaki province and Koshi province.

Conducted training on the calculation of Green House Gas (GHG) emissions from the health sector for government officials from MoHP, DoHS, MD, all seven PHDs as well as representatives from selected public and private hospitals in collaboration with WHO.

Drafted National Roadmap on WASH in Healthcare Facilities 2077/78-2087/88 (2022-2030) to meet SDG target for Nepal with the support from WHO.

Conducted two batches of Training of Trainers on Environment Health, WASH and Healthcare waste management to the focal persons of PHDs, PHTCs, federal and provincial hospitals.

COVID 19 Vaccine Waste Management in Kathmandu and Biratnagar with support from FHI 360.

Conducted dissemination workshops for the National HCWM SoP, as well as the Standard of WASH in Healthcare Facilities in Bagmati and Lumbini Province.

Management Division with Asian Development Bank (ADB) technical assistance has started HCWM activities including development of HCWM status report study, diagnostic assessment of HCWM in hospitals of Sudurpaschim province, developing model of sustainable and integrated management of HCWM in 2 municipalities, HCWM training in Madhesh and Sudurpaschim provinces, developing learning resources and offering training on operation and maintenance of healthcare waste treatment equipment. These activities are expected to be completed in FY 2081/82 (2024).

Management division in collaboration with WHO started comprehensive diagnostic assessment and planning in the hospitals of Gandaki provinces.

WASHFIT training and interventions are ongoing in collaboration with Madhesh province and UNICEF in 10 healthcare facilities of two LLGs.

Conducted a review of the progress in HCWM following diagnostic assessment and interventions in 12 hospitals of Koshi Province, with support from GIZ and WHO.

Procurement and distribution of 200 horizontal autoclaves of different capacities in 200 hospitals (150 liters in 15 hospitals and 75 liters in 185 hospitals) to strengthen the HCWM system.

Interaction programs on HCWM and WASH were carried out in Lamjung and Nuwakot district among local levels and other stakeholders.

With support from USAID's Health and Hygiene (Swachchhata) Project, various interventions were implemented at 249 health facilities (HFs) of Karnali Province. Among 249 HFs, interventions on Infection Prevention & Provider Behavior Change Communication (PBCC) were implemented at 248 HFs and additional interventions on BCC were conducted at 180 HFs. Moreover, of these 249 HFs, WASH Infrastructure was constructed at 181 HFs and Solar system was installed at 61 HFs.

Assessment and pilot intervention is continuing in 3 hospitals of different geographic regions (namely; KAHS, Dhaulagiri hospital and Gaur hospital) to make climate change and environmentally sustainable health facility.

Baseline assessment of GHG emission of Nepal's health sector operations in 12 diverse health care facilities based on location, province, topography, facility type (See Key Findings in Box 20.6).

Box 20.6 Key Findings of GHC Emission Study 2079/80

This study estimates Nepal's health sector GHG emissions at 0.002% of global GHG emissions (1,164,719 tCO$_2$e), constituting 4.1% of Nepal's GHG emissions and 0.05% of global health sector emissions (Table 20.7, Table 20.8).

Table 20.7 Type of Emissions covered in GHC 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 20.8 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%
Stationary Combustion	104,151.89	8.94%
Mobile combustion	39,788.49	3.42%
Fugitive Emissions and Cooling & fire suppression	326,048.02	27.99%
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 20.7).

Box 20.7 Key Findings of NFHS 2012 Further Analysis

Over 80% of healthcare facilities in Nepal have access to basic improved water supply (Fig 20.13) 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 20.1 for details).
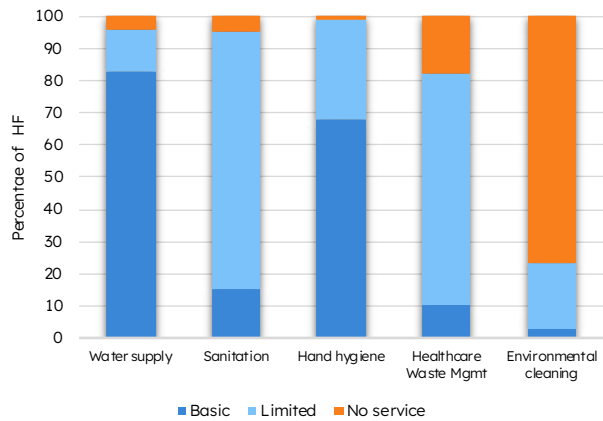
Figure 20.13 WASH facilities in HF, NHFS (Further analysis), 2021

Box 20.8 SWOT Analysis of Environmental Health and Waste Management Program

Strength	Opportunity
• 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
Weakness	**Threat**
• Inadequate trained/dedicated human resource for environmental health and WASH services at different levels of healthcare facilities • Gap in infrastructure in terms of WASH in healthcare facilities • Problem in coordination 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.

21 Human Resource in Health and Health Finance Management

DoHS	Personnel Administration Section	Financial Administration Section	Institutions under MoHP
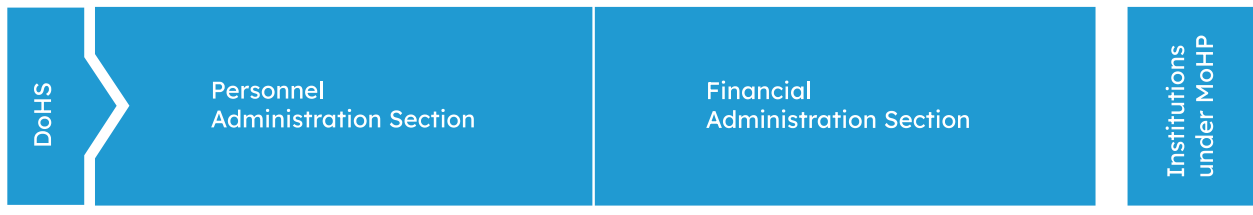
21.1 Human Resource in Health (HRH) Administration and Management

21.1.1 Overview of HRH Administration and Management

Human resource in health (HRH) is an essential software 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 2062/63 (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

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 instil 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.

21.1.2 Major Activities in FY 2079/80 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.

New initiatives in fiscal year 2079/80 in DoHS

- Digital attendance introduced within DoHS.

- Introduced an online calendar of operations (online action plan) of divisions and DoHS

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.

21.1.3 Status of HRH Administration and Management

Status of fulfillment of sanction post

There are 73.4% fulfilled posts against the sanctioned posts within the MoHP. There are consistent gaps in the fulfilment across all cadres with marked decline in the fulfilment in the positions of the physicians/general practitioners (Fig 21.1) (See Annex Table 21.1 for the status of fulfilment of sanction post in DoHS network).
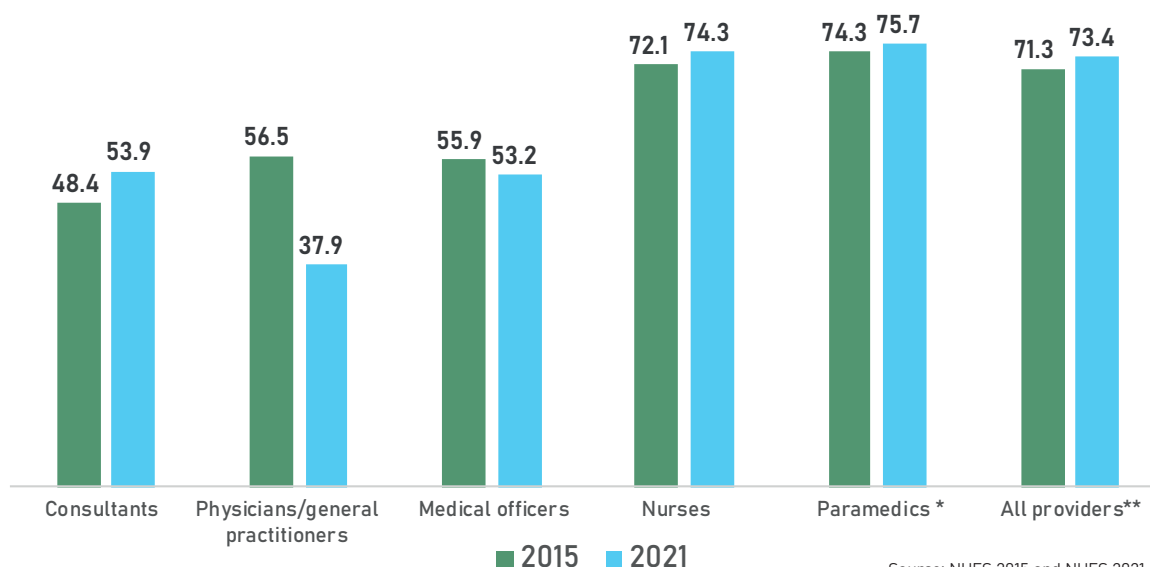
Source: NHFS 2015 and NHFS 2021

Figure 21.1 MoHP sanctioned posts filled with cadre of HRH

It is worrisome that there are no consultants or physicians and no general practitioners in Karnali Province (Table 21.1).

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 vacanies from the public service commission (PSC) to fulfill the vacant positons, relying on the contract based staffs, decreased retention of the HRH and increasing emmigration of the HRH to global spheres. MoHP/DoHS is serious to address this issue and is putting its conttinuous efforts to ensure timely call for vacancies and regular O & M based upgrading of the organizaitonal structure and its approval.

Box 21.1 SWOT Analysis of HRH administration and management

Strength	Opportunity
• 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
Weakness	**Threat**
• 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

21.2 Health Finance Management

21.2.1 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 26 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] The utilization of the BHS is detailed in Chapter 7 and health insurance and social health protection programs is detailed in Chapter 23 of this report.

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.

21.2.2 Major Activities in FY 2079/80 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 programmer 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.

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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

21.2.3 Achievements in the fiscal year 2079/80

Absorption of budget in DoHS Network

In FY 2079/80 out of total national Budget, NRs. 6.011 billion was allocated during the fiscal year 2079/80 for the execution of programs under the DoHS Network

(Table 21.1) The total absorption rate was 71.79%. The share of the budget in DoHS network was highest for the FWD programs with 70.44% absorption and 89.9% physical progress. Remarkably, the absorption rate for NPHL was 95.6% with 100% physical progress (Table 21.2).

Table 21. 2 Health Budget in DoHS Network in FY 2079/80

Code	Institution	Budget allocated ((NPR In'000)	Proportion of allocated budget	Expenses (NPR In'000)	Absorption Rate (%)	Physical Progress (%)
37001011	DoHS	263,005	4.37	232,341	88.3	93.3
37001103	FWD	3,090,300	51.40	2,176,694	70.4	89.9
37001105	EDCD	461,085	7.67	202,069	43.8	54.6
37001115	CSD	39,200	0.65	17,183	43.8	89
37001116	NSSD	59,139	0.98	23,383	39.5	84
37001107	MD	527,655	8.78	415,079	78.6	81.3
36000110	NCASC	419,900	6.98	240,477	57.2	98.7
37001109	NHEICC	77,870	1.30	61,833	79.41	82.4
37001101	NTCC	725,400	12.07	629,375	86.76	89.8
37001110	NHTC	86,300	1.44	69,446	80.47	90
37001112	NPHL	232,333	3.86	222,100	95.60	100
37000118	COVID-19	29,606	0.49	25,905	87.50	100
Total		**6,011,793**	**100.00**	**4,315,885**	**71.79**	

Source: Finance Administration Section, DoHS

Status of clearance of irregularity in DoHS network

In FY 2079/80, a total of 53,332,400.00 irregularity report has been reported of which 2,172,242 has been submitted to the Office of Auditor General for clearance.

Table 21.3 Irregularity clearance status of last three years FY 2077/78-2079/80 (NPR In'000)

Fiscal year	Total Irregularity amount	Irregularity clearance	clearance %
2079/080	5,332.4	2,172.2*	*
2078/079	5,484.2	2,217.7	32.0
2077/078	4,350.6	934.4	21.5

Source: Finance Administration Section, DoHS

*submitted to Office of the Auditor General to clear the irregularity

Status of inter-governmental fiscal transfer

There has been a continuous increment of the fiscal equalization grant and conditional health grant observed across the inter-government fiscal transfer in last five fiscal years. (Fig 21.2 In 2079/80, the share of the conditional heath grant is 65% of the budget for health of LLGs (Fig 21.3).
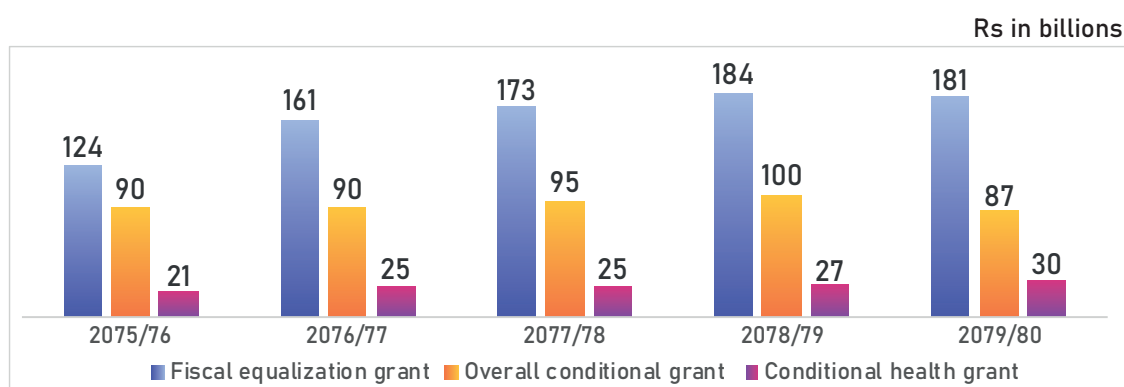
Figure 21.2 Trend of inter-governmental fiscal transfer for health sector from Federal FY 2076/77-2079/80 (2019/20-2023/24)
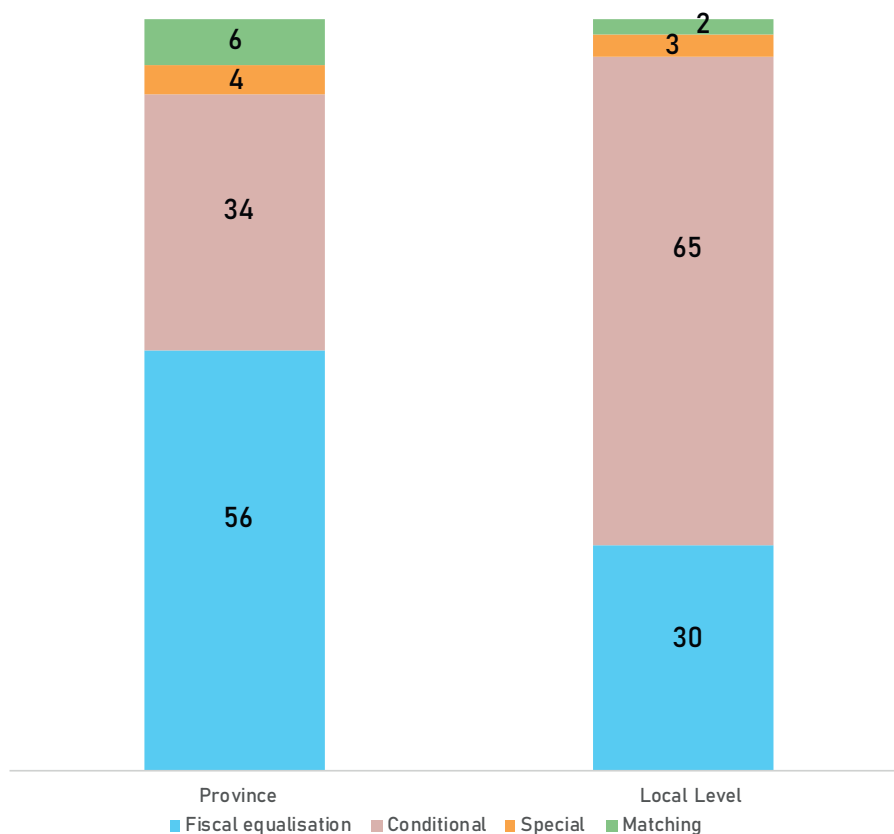
Source: Red MoF Book

Figure 21.3 Composition of inter-governmental fiscal transfer for province and LLGs for FY 2079/80

Box 21.2 SWOT Analysis of Financial Management

Strength	Opportunity
• Legal and operational guidelines 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
Weakness	**Threat**
• Allocation of health budget to the provinces and level programs and availability of human resources is not rationale • Mismatch in the allocation of health budget to the LGs in the certain levels • Number of HRH in accounting insufficient	• Non-release of committed HDPs budgets in time.

DoAA	Herbs, Medicine and Research Division	Ayurveda Medicine Division	Alternative Medicine Division	Ayurveda health facilities
	Herbs and Medicine Management Section	Ayurveda Service Management Section	Homeopathy and Amchi Medicine Section	
	Ayurveda Health Promotion Section	Monitoring, Research and Coordination Section	Naturopathy and Acupuncture Medicine Section	
	Administration Section			

22.1 Department of Ayurveda and Alternative Medicine (DoAA)

Ayurveda, an ancient medical system indigenous to Nepal, holds deep roots in the country's culture and traditions. A significant portion of the population, more than two-thirds, 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 vital role in the healthcare landscape with its interventions ranging from promotive, preventive, curative and rehabilitative services.

Department of Ayurveda and Alternative Medicine (DoAA) is primarily responsible for delivering Ayurveda and alternative medicine services to the population. It operates under MoHP and is responsible for planning, programming, coordination, supervision, monitoring, and evaluation of Ayurveda and Alternative Medicine service programs.

Ayurveda and Alternative Medicine unit within the Policy Planning Monitoring Division, MoHP is tasked with formulating policies and guidelines for Ayurveda and other traditional medical systems. Recognizing the importance of Ayurveda services in primary healthcare and the prevention of NCDs, both national and international policies emphasize their significance. The Constitution of Nepal specifically calls for the protection and promotion of traditional Ayurveda medicines, along with naturopathy and homeopathy.

In line with the federal structure, there is a need to restructure the Ayurveda system, as outlined in the National Health Policy 2076 (2019)[1] and its strategy 6.7.1. The government's Fifteenth Plan (2076/77-2080/81)[2] provides guidance for the planned development and expansion of Ayurveda, Naturopathy, Homeopathy, and other alternative medicines. Key areas of focus 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 medicine practices into the broader healthcare system, addressing both the healthcare needs of the population and the preservation of traditional knowledge and practices.

Box 22.1 Objectives and strategy of DoAA

Objectives of DoAA
- To expand and develop functional, physical Ayurveda health infrastructure;
- 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 healthy life style through Ayurveda and Yoga.

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1 Ministry of Health and Population. National Health Policy 2076. Government of Nepal
2 National Planning Commission. Fifteenths Plan (2076/77-2080/81). Government of Nepal

- To promote health status and sustainable development of Ayurveda system using locally available medicinal plants;
- To promote positive attitudes towards health care & awareness of health issues;

Strategies
- Provide preventive, promotive and curative health services in the rural areas;
- Establishment and development of Ayurveda institutions;
- Strengthen and expand the Ayurveda health services;
- Develop skilled manpower required for various health facilities;
- Strengthening of monitoring and supervision activities;
- Development of information, education and communication center in the Department;
- Develop Inter sectoral co-ordination with Education Ministry, Forestry, local development sector and other NGO's and INGO's;
- Establishment of regional Ayurveda Hospitals and Ayurveda Dispensaries;
- Strengthening and expansion of research and training center of international level;
- National and 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 22.2 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
	● National Ayurveda Medical Council (NAMC)
	● Pashupati Homeopathy Hospital
Provincial Level	● Provincial Ayurveda Hospital- (Koshi - Jhapa, Lumbini – Dang, Sudurpaschim – Kailali)
	● Provincial Ayurveda Chikitsalaya/District Ayurveda Health Centers
Local Level	● Ayurveda Dispensaries (Aushadhalaya)
	● Nagarik Arogya sewa Kendra

22.1.1 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 six at provincial level. There are no provincial level Ayurveda hospitals in Madhesh, Gandaki and Karnali provinces. There are a total of 77 district level Ayurveda Health Centers including the former regional *Ayurveda Chikitshalaya* and 305 Ayurveda *Aushadhalaya* across the country (Fig 22.1 depicts the coverage of Ayurveda health center and Ayurveda Aushadhalaya per 100,000 population).
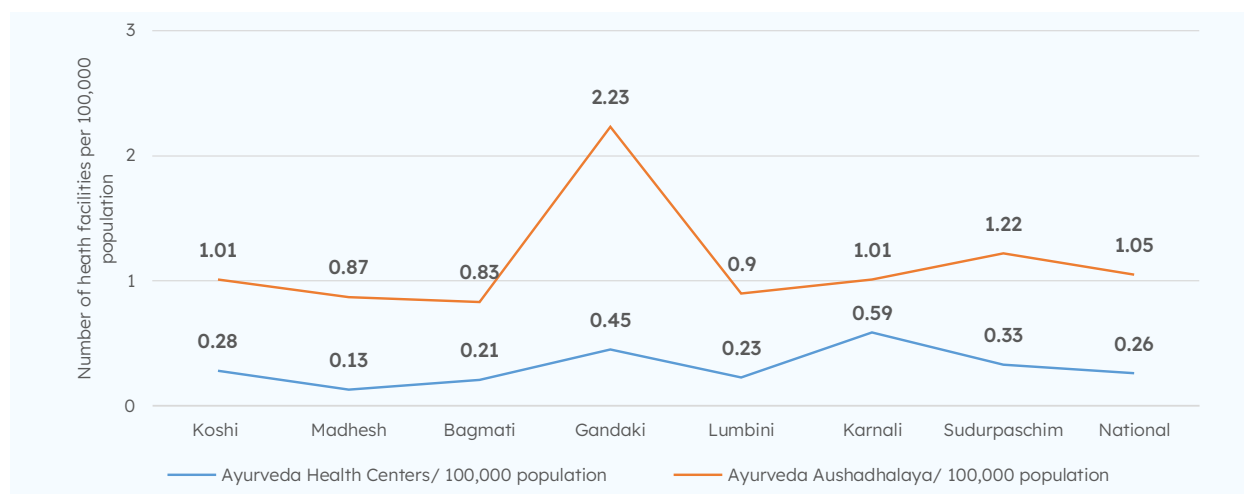
Figure 22.1 Institutional coverage of Ayurveda Health Center and Ayurveda Aushadhalaya per 100,000 population

Source: CBS, AHMIS/DoAA

22.1.2 Major Activities in FY 2079/80

Federal level

- Establishment of open Gymnasium (Gym) in different places of all seven Provinces.
- Development of MSS for Central, Provincial and local level Ayurveda health institutions and approved from MoHP
- Guidelines, Protocol, Manual development of Nagarik Aarogya/Lifestyle management (NCD Prevention and Control) Program.
- Establishment and development of Ayurveda Health Management Information System (AHMIS)
- Strengthening of National Ayurveda, *Panchakarma* and Yoga Center in Budhanilkantha and building is under construction of Budhanilkantha Panchakarma center.
- Strengthening of Provincial Ayurveda Hospital at Kailali and Jhapa.
- Strengthening program of Naturopathy, Yoga, Homeopathy, Unani, Aamchi
- Monitoring of services provided by private Ayurveda and Alternative Medical Systems.
- Annual review meetings.
- Evaluation and monitoring and co-ordination with province and local level
- National/International Yoga Day; National Naturopathy day; National *Arogya Diwas and Dhanwantari Jayanti* celebrations

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
- Construction of Buildings for Ayurveda Institutions
- Promotive Health Program for Senior Citizens
- Awareness Program on Medicinal Plants
- Program for Lactating Mothers (Distribution of Galactogogue Medicine)
- Procurement of Essential Ayurveda Drugs and Treatment Equipment
- Ayurveda Health Promotion and Public Awareness Program through Nagarik Arogya Program
- Skill Development/Empowerment Program
- Prevention, Reduction, and Management of NCDs
- Ayurveda Health Information Management Training Program
- Citizen Wellbeing (Nagarik Arogya) Program
- Yoga/Skill Development Training for Ayurveda Personnel
- Lifestyle Management Program in PHC
- Training on "Operation and Management of Ayurveda Programs" for Ayurveda Personnel
- Procurement and Transportation of Ayurveda Medicines
- Free Health Camps
- Citizen Health Campaigns and Community Health Education Programs through Citizen Wellbeing Group
- Information Communcaition Materials Development and Broadcasting
- *Swastha Jivan Saili Karyakram* (Healthy Lifestyle Program)
- *Vidhyalaya Ayurveda Shiksha Karyakram* (School Ayurveda and Yoga Program)
- Nagarik Arogya Clinic for NCDs
- Healthy Life *(Swastha Jeevan)* Program
- Production of Churna Aushadi (Medicine)
- Establishment of Citizen Wellbeing *(Nagarik Arogya)* Centers at the Local Level
- National/International Yoga Day; National Naturopathy day; National *Arogya Diwas and Dhanwantari Jayanti* celebrations

22.1.3 Key Service Indicators

Users of BHS Ayurveda services in FY 2079/80

In FY 2079/80, the users of Purba-Pancha Karma were 392,249, yoga services were 150,560 and among 58,755 postnatal women Satawari was distributed. There was provincial variation in the number of the users (Fig 22.2). 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.
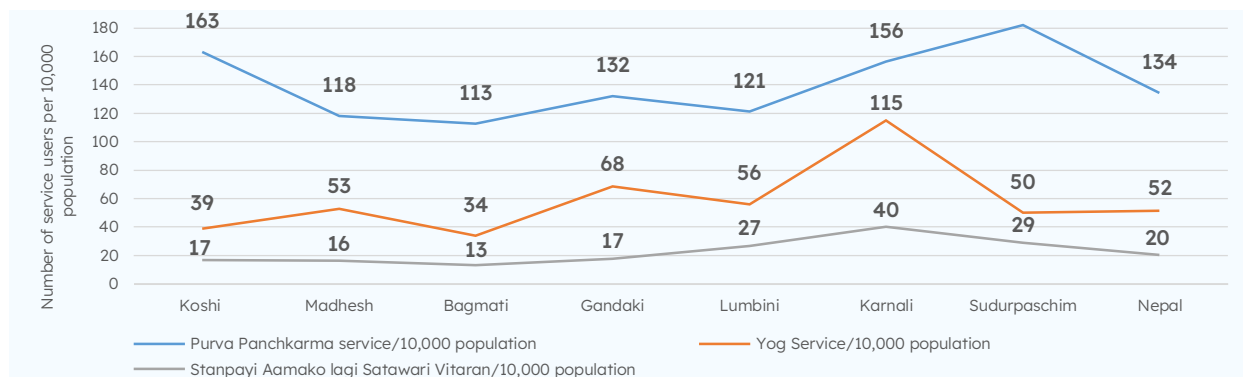
Figure 22. 2 Users of BHS Ayurveda services per 10,000 population in FY 2079/80

Source: CBS, AHMIS/DoAA

Morbidity among users of Ayurveda services

In addition to BHS utilization there are range of the Ayurveda services available, in FY 2079/80, an impressive total of 2,325,175 individuals availed themselves of Ayurveda services, indicating a remarkable level of user engagement. The most frequently reported morbidities included acute peptic disease, musculoskeletal and nervous disorders, respiratory disorders, abdominal disorders, anorectal disorders, rheumatoid arthritis, cardiovascular diseases, gynaecological disorders, and geriatric problems (Figure 22.3, Table 22.1).

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.
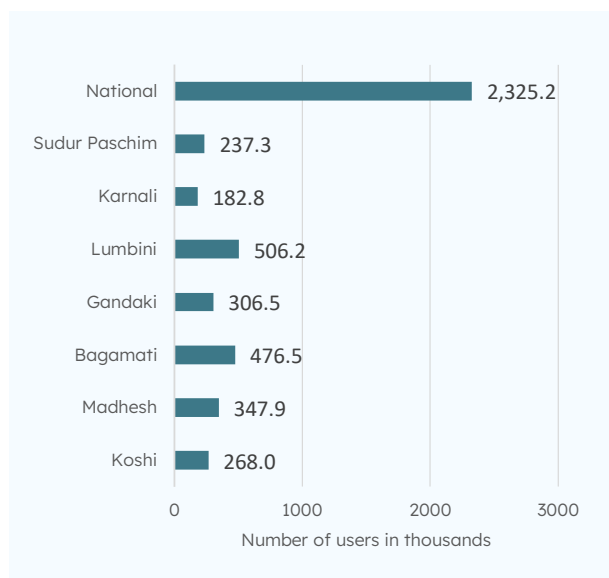
Figure 22. 3 Total Users of Ayurveda Services in FY 2079/80

Source: AHMIS/DoAA

Table 22. 1 Common morbidities reported among Ayurveda service users

Top 10 Morbidities among Ayurveda Service Users in FY 2079/80
Acute Peptic Disease
Musculo-skeletal and Nervous Disorder
Respiratory Disorder
Abdominal Disorder
Ano- Rectal disorder
Rheumatoid Arthritis
Cardiovascular Disease
ENT/Eye/Dental Disorder
Gynecological Disorder
Geriatric Problem

Source: AHMIS/DoAA

Reporting status of ayurveda health facilities in FY 2079/80

In FY 2079/80, overall, 97.2% have reported their data to DoAA; and province wise, the reporting rate from Ayurveda Health Facilities in Koshi, Lumbini and Karnali provinces was 100% (Fig 22.4).
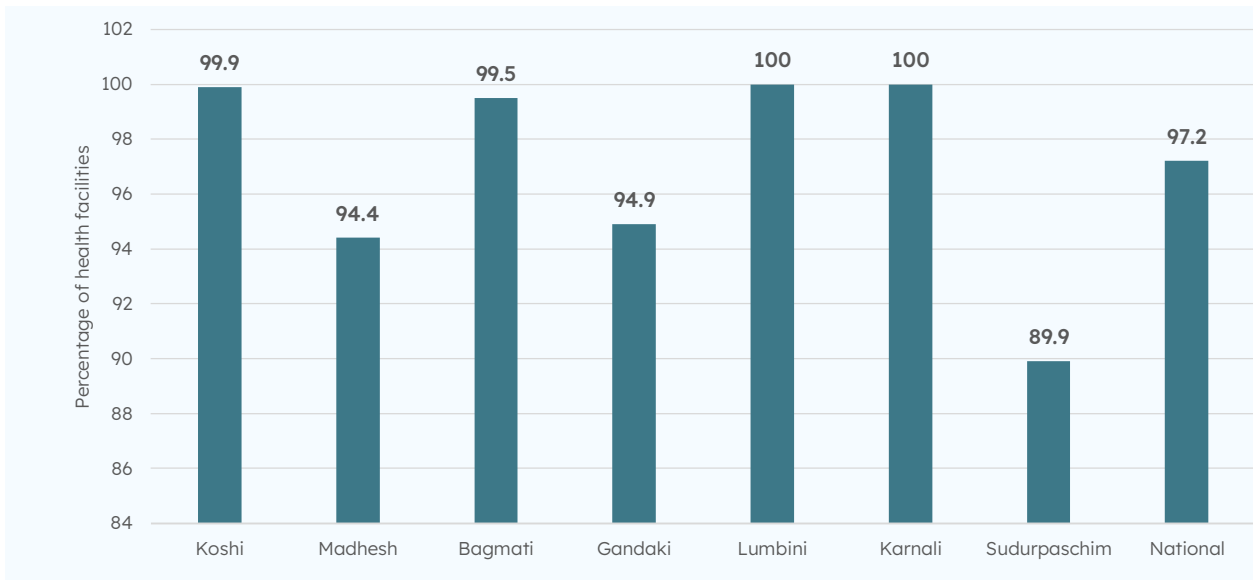
Figure 22.4 Reporting status of the Ayurveda health facilities

Minimum service standards of Ayurveda health facilities

Leveraging insights gained from the implementation of the 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 Ayruveda Heath Facilities have been developed – MSS for *Ayurveda Aushadhalaya*, MSS for District level Ayurveda Health Centers, MSS for Province Level Ayruveda Hospital and MSS for Federal Level Ayurveda Hospital (Fig 22.5). 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. MSS for Ayurveda Health Facilities is poised to boost operational efficiency, streamline management processes, and ultimately contribute to the provision of exemplary healthcare services in the field of Ayurveda.

Figure 22.5 MSS for different level of Ayurveda health facilities

Box 22.3 SWOT analysis of DoAA

Strength	Opportunity
• 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	• Enabling policy environment for Ayurveda services • Strengthen the process of integration of AHMIS to HMIS • Allocate sufficient Budget for sustainable development of Ayurveda Institutions • 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. • Documentation about the successful treatment of certain diseases with Ayurveda therapy claimed by practitioners
Weakness	**Threat**
• Inadequate research in the Ayurveda field. Insufficient Evidence Generation & • Inadequate experts and qualified HR in the field of research	• Insufficient production, broadcasting and dissemination of health related messages and materials for publicity of Ayurveda • High level coordination of MoHP is required for land acquisition process in some provinces for establishment of Ayurveda hospitals

22.2 Homeopathic Services

22.2.1 Overview of Homeopathy Services

Homeopathy was discovered by Dr. Samuel Hahnemann of Germany in 1852/53 (1796). This is based on the fixed principle of *"similia similibus curentur"*. Medicine is proved on healthy human being and symptoms are recorded in Homeopathic pharmacology i.e. **Materia Medica**. Medicine is prescribed on the basis of sign and symptoms obtained from patients.

In Nepal within government system, there is only one homeopathy hospital in Bagmati Province, Pashupati Homeopathic Hospital, established in 2040 (1953) AD. The hospital runs only out-patient services. The inpatient services are not in function due to resource constrain majorly on allocation of the human resources based on the organization and management survey of 2076 and 2078, and budget allocation.

Box 22.4 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, urticarial, piles
Preventive Services	Counselling and awareness raising
Curative Health Services	Free health services
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

22.2.2 Key Service Indicators

Users of BHS Homeopathy services in FY 2079/80

A total of 9,497 users accessed BHS Homeopathy services. Treatment of warts/corn through homeopathic modality is popular in the communities (Fig 22.6).
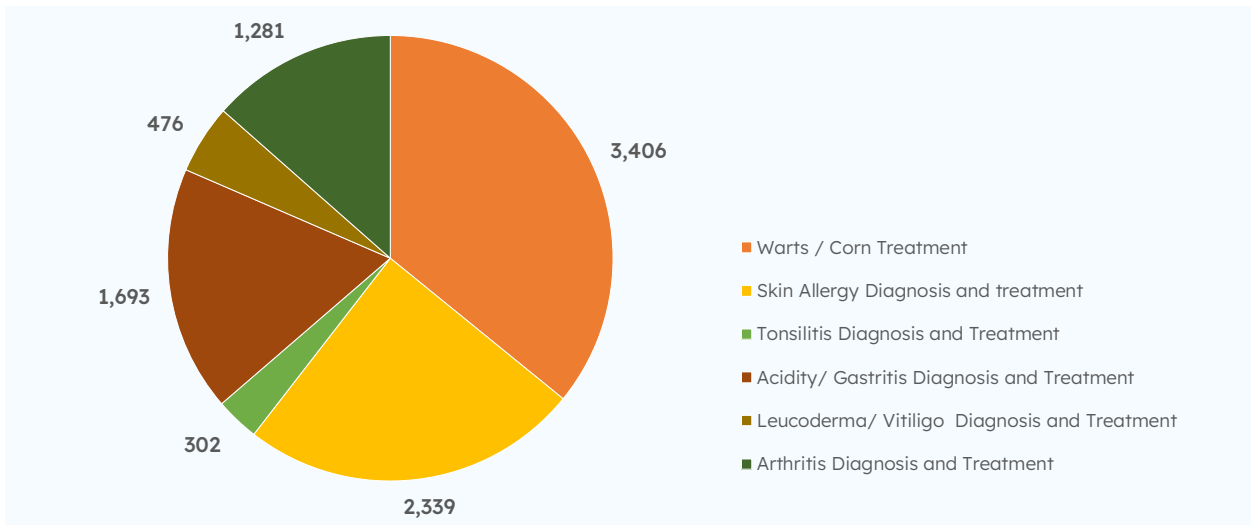
Figure 22.6 Users of BHS Homeopathy services in FY 2079/80

Source: Homeopathy Hospital /DoAA

Common services accessed by users of Homeopathy services

There is increase in the total users of the homeopathy services in last three years. The users presented in the hospital mostly accessed general medicine services. In addition to this there are notable number of users for urological problems in FY 2079/80. Some cases with psychiatric problems also have started to visit the hospital after COVID-19 (Fig 22.7).
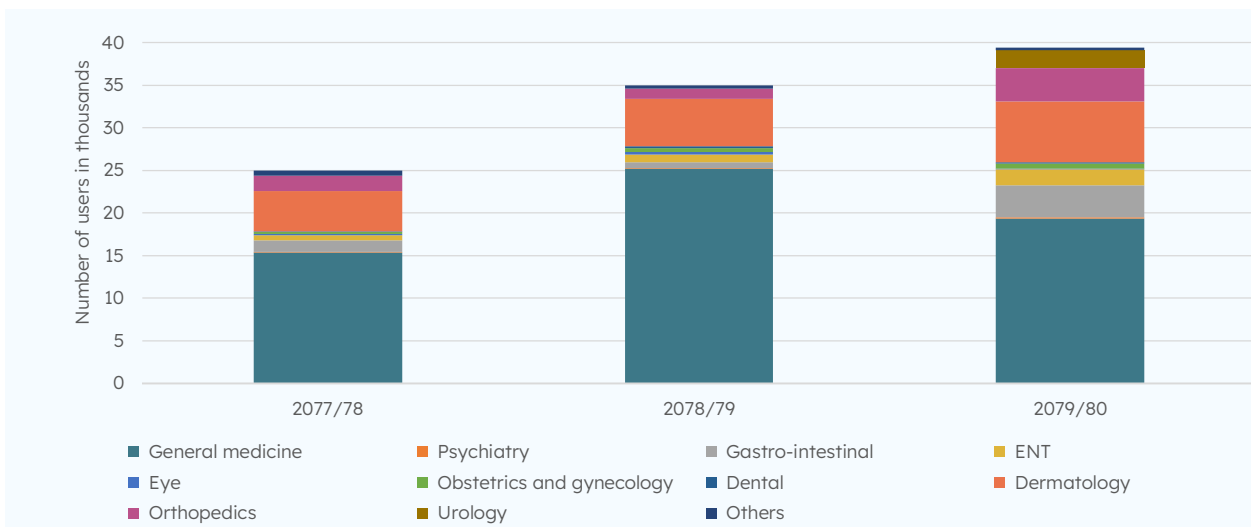
Figure 22.7 Services commonly accessed by users of homeopathic services

Source: Homeopathy Hospital /DoAA

Additionally, there were good number of users who visited the health facility for receiving Arsenicum Album 30c that was distributed as prophylaxis of COVID-19 in FY 2077/78 (n=12,551) and few users also came in FY 2078/79 (n=1,664).

Health camps were organized in all three FYs. In FY 2077/78 there were 444 users served through camps, this increased to 1,756 in FY 2078/79 as the camps were organized in three different sites as compared to single site in FY 2077/78. However, there were reduced number of users (n=550) in FY 2079/80 despite of camps in three different sites. The causes for the decline in users can be explored by consulting with the provincial stakeholders for improving the coverage in coming FYs.

Box 22.5 SWOT analysis of Homeopathy Services

Strength	Opportunity
• Homeopathic hospital is providing service to outdoor patients free of cost • 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
Weakness	**Threat**
• Limited budget to manage medicines as per demand • Due to unavailability of laboratory and diagnostic services patients need to be referred only for investigations	• Limited opportunities for the HR in homeopathy including career ladder in government services

23 Department of Drug Administration (DDA)

DDA	Office of the Director General			National Medicines Laboratory	DDA Biratnagar, Birgunj and Nepalgunj section offices
	Drug Evaluation and Registration Division	Planning Coordination and Management Division	Inspection Evaluation and Law Enforcement Division		
	Medicine and biological evaluation section Import section Domestic section Evaluation section	Drug information and training section Planning and coordination section Drug monitoring section	Inspection and evaluation section Law enforcement section GMP audit and certification section		
	Financial administration section		Administration Section		

23.1 An Overview of DDA

The Department of Drug Administration (DDA) was established on Kartik 1st, 2036 B.S., as a main body to implement the provisions of the act with the goal of ensuring public access to quality medicines, preventing pharmaceutical misuse, controlling misinformation, and overseeing all drug-related activities, including production, marketing, distribution, export, import, and storage. DDA restricts the use of medicines that fail to meet safety, efficacy, and quality standards. Drug Act 2035 (1978) was endorsed to prevent the misuse of medicines and regulate their production, marketing, distribution and use. National Drug Policy 2052 (1995) has been a guiding document on drug regulation in the country for long emphasizing coordination among government, non-government organization, and private institutions.

The policy outlines strategies and strategic 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 primary goal of DDA is to supervise and regulate various aspects of modern, 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. DDA controls the entire spectrum of medicine-related activities, including the lifecycle of pharmaceutical and biological products in country like regulation of clinical studies, production, marketing, distribution, sale, export-import, storage, and usage. DDA has three major divisions, one medicines testing laboratory and three branch offices at Biratnagar, Birgunj and Nepalgunj to fulfill this mandate.

Box 23.1: 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 & consultative council regulation, 2037
- Drug registration regulation, 2038
- Inquiry & inspection regulation, 2040
- Drug standard regulation, 2043
- Drug donation guidelines have been implemented for the quality assurance of donated drugs
- Drug sales & distribution codes, 2071
- Good practice codes for drug production, 2072
- Medicine registration guidance, 2073

Office of the Director General

The office of the Director General oversees, directs, coordinates, and collaborates with different divisions within the department and various ministries, departments and agencies in-country relevant to help implement drug law and the National Drug Policy in the country. Director General as Administrator of the Drug act section (2) (b) is mandated to oversee all regulatory functions, supervise personnel and activities like administration and financial management, approval of clinical trials, approval of medicines that are manufactured in-country and imported from foreign manufacturers. Law enforcement activities and actions against violation of drug law provisions is among key functions of the Administrator which are defined and prescribed at various sections of the drug act as well as in the Drug Investigation and Inspection Rule 2040. Many of the functions of the Director General are delegated and conducted by various divisions, section offices and National Medicines Laboratory. Director

General's office also functions as a secretariat for Drug Consultative Council and Drug Advisory Committee.

Drug evaluation and registration division

Medicine and Biological Evaluation Section is at the forefront of ensuring the safety and efficacy of pharmaceutical products. This section conducts rigorous scientific evaluations, including the assessment of new medicines and allied products for their suitability in manufacturing, import, export, and marketing. Similarly, it also caters the scientific evaluation of vaccines and biologicals, determining their fitness for manufacturing, export, import, and marketing. In addition to evaluation, the section actively engages in Research and Development (R&D) efforts for new medicines, managing clinical trials to validate their efficacy. The section also coordinates with relevant experts to ensure a comprehensive assessment of new medicines and gives permissions for research maintaining high-quality pharmaceutical standards.

Import Section facilitates importing pharmaceutical products, ensuring adherence to standards operating procedures and protocols. This section is responsible for approving foreign manufacturers for importing medicines which supports in ensuring quality and safety of imported pharmaceuticals. Additionally, it oversees registration process for products intended for export and import after a thorough evaluation, contributing to the overall regulatory framework.

Furthermore, this section issues recommendation letters for import and export of medicines, providing a formal endorsement based on its evaluations. The renewal of recommendation letters for import-export activities is also within the jurisdiction of Import Section which ensures continued compliance of pharmaceutical products with established standards. In the area of vaccines and biologicals also, the section takes on a similar role. It registers these products for export and import after a comprehensive assessment and issues recommendation letters for their import and export.

Domestic section is instrumental in regulating and overseeing pharmaceutical sector to ensure compliance with established standards. One of its key responsibilities is issuing recommendation letters for the establishment of pharmaceutical industries, including issuance and renewal of Product Manufacturing Licenses. The section also approves layout of pharmaceutical industries, ensuring they meet required specifications. In terms of product regulation, it is involved in registering new pharmaceutical products and issuing marketing permissions for their sale and distribution. It further contributes to supply chain by issuing letters of recommendation for import of raw materials, ensuring a seamless manufacturing process.

Additionally, the section is responsible for registration and issuance of certificates for opening of retail and wholesale pharmacy outlets, with a commitment to renewal.

Certificates for individuals authorized to sell medicines are also issued and renewed under the purview of the Industry Section. The section also maintains an updated record of pharmacies and approves variations in licenses as necessary, contributing significantly to the adaptability and integrity of the pharmaceutical industry.

Planning, co-ordination and management division

Drug Information and Training Section disseminates essential information about medicines and ensures continuous education of medicine sellers. This involves conducting refresher training sessions and providing comprehensive details on side effects, contraindications, drug interactions, storage conditions, and other pertinent information related to medicines.

Furthermore, the section actively contributes to knowledge dissemination through publication of Drug Bulletin of Nepal (DBN), distributed to various healthcare institutions, industries, medical professionals, health personnel, pharmacists, and other relevant individuals and institutions. Additionally, the section is responsible for periodically revising the National List of Essential Medicines and the Nepalese National Formulary. In the jurisdiction of controlled substances, the section recommends the import of narcotic, psychotropic, and precursor substances, maintaining communication with the International Narcotic Control Board. Moreover, this section conducts activities related to Pharmacovigilance and Adverse Drug Monitoring Reporting.

Lastly, the section is actively involved in modern communication platforms, with responsibilities ranging from webpage development and updating to computer networking.

Planning and coordination section oversees organization development, planning, budgeting, and managing foreign aid initiatives. Actively coordinating between central and provincial governments, the section also facilitates foreign coordination. Annually, the section leads in preparing yearly planning for activities conducted by the DDA and its branch offices. Coordination efforts extend to collaborating with ministry, other departments, and both governmental and non-governmental organizations for activities, followed by preparing and submitting comprehensive reports to MoHP. In addition to planning and coordination, the section collects, prepares, and forwards monthly, quarterly, and yearly reports, contributing to effective communication and monitoring of activities within DDA and its branch offices.

Drug Monitoring Section manages post-marketing surveillance of medicines and allied products. It serves as the National Pharmacovigilance Center, actively coordinating and collaborating with regional centers and the WHO Collaborating Centre for International Drug Monitoring (The Uppsala Monitoring Centre). In addition to surveillance, the section facilitates policy development and design concerning Drug Use Evaluation.

Inspection, evaluation and law enforcement division

Inspection, Evaluation, and Law Enforcement Division upholds regulatory standards, fostering compliance and safety in the pharmaceutical sector. It ensures adherence to provisions of Drug Act and its Regulations. This involves taking legal and administrative action against cases of non-compliance. It also regulates sales and distribution of psychotropic and narcotic drugs, contributing to maintenance of a controlled and safe pharmaceutical environment. This division actively

coordinates Good Manufacturing Practice Audits within and outside the country.

Inspection and Evaluation Section ensures the effective implementation of the Drug Act 2035 and related regulations. Regular inspections are conducted on drug industries, wholesale and retail pharmacies, as well as hospital pharmacies. The division is actively involved in preparing indicators for inspection and evaluation, contributing to the establishment of national standards for inspecting drug industries and pharmacies.

To streamline its activities, the division sets annual targets for inspections and evaluations, ensuring a systematic and comprehensive approach. Additionally, it provides assistance in periodic and annual reviews.

Law Enforcement Section holds a crucial role in upholding the provisions of the Drug Act. It is responsible for preparing the necessary documentation for registering cases in court against violations of the Drug Act. This section provides essential legal assistance to the Department, contributing to the effective implementation and enforcement of regulations. In support of capacity building, this section conducts training sessions for Drug Inspectors, focusing on inspection, investigation, and case filing procedures. Furthermore, the section actively engages in surveillance related to legal aspects of pharmacy practice, ensuring compliance with regulations. An additional responsibility of the section is to assist in the amendment of the Drug Act, Regulations, and Guidelines, contributing to the continuous improvement and adaptation of legal frameworks.

Certification and Inspection Section is actively involved in various functions related to GMP. This includes performing GMP certification and recertification activities, ensuring that pharmaceutical industries meet the required standards. The division conducts planned inspections of pharmaceutical industries, coordinating with branch offices to facilitate GMP-related inspections. This section prepares comprehensive work plans for foreign industry audit inspections. Additionally, this section is empowered to take necessary actions in cases of noncompliance.

Financial and administration section

Financial and Administration Section manages the entry and dispatch of letters, handling human resources matters such as recruitment, posting, promotion, and transfer. This section is actively engaged in the performance evaluation of employees, ensuring harmony within the workforce. This section handles the procurement-related activities and monitors, evaluates, and coordinates activities across branch offices. It takes charge of managing premises, buildings, workplaces, and the library. Internal financial management, revenue collection, and audit processes fall within its responsibility. Additionally, the section is responsible for planning and preparing budget expenditures, overseeing procurement and expenditure management and handling financial irregularities (Beruju).

Branch offices

DDA has its branch offices at Biratnagar, Birgunj and Nepalgunj. These offices carry out the delegated responsibility including investigation and inspection as well as 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), serves as the principal drug regulatory laboratory in the country which is mandated to carry out pre and post marketed medicines testing, analysis, analytical method validation and as advisor to 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.

- Test and analyse drug quality as per the Drugs Act, 2035 (1978).

- Provides Lot Release Certificates for vaccines imported into Nepal.

- Review and validate analytical methods of non pharmacopoeial products

- Provided advises to the department on matters like standard, quality and efficacy of medicines

- Conduct training on Good Laboratory Practices

- Audit laboratories of National Pharmaceutical industries.

Box 23.2 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 National Medicines Laboratory (NML) as National reference Laboratory on medicines.
- Medicine registration based on scientific facts.
- 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.
- Prevent misuse of antibiotic to combat antimicrobial resistance.
- Strengthen national industry to comply with WHO-Good Manufacturing Practices (GMP)

23.2 Major activities in FY 2079/80

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 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

23.3 Status of Activities in FY 2079/80

In FY 2079/80, DDA conducted 3,393 inspections of the drug retailers and wholesalers for quality assurance. The targeted information to public by different media was disseminated as targeted in the FY 2079/80. There were gaps in fulfilling the targeted activities on number of the drug sample analysis, inspection of domestic pharmaceutical industries and publication of bulletin. (Table 23.1)

Table 23. 1 DDA key activities targets and achievement in FY 2079/80

S. N	Activities	Target	Achievement in FY 2079/80	
			Number	%
1	Drug information to the public by different media	45	45	100
2	Publication of Drug Bulletin of Nepal	3	1	33
3	Inspection of domestic Pharmaceutical Industries	92	72	78
4	Inspection to drug retailers & wholesalers	3,300	3,393	103
5	Drug sample Analysis	900	756	84
6	Audit of Pharmaceutical Analytical Laboratories	30	26	87

Source: DDA

In FY 2079/80, there were remarkable regulatory activities like de-registration of 1191 pharmacies, 91 cases filed against violation of Drug Act 2035 and 25 medicines were recalled from the market due to inferior quality. (Table 23.2)

Table 23. 2 Major regulatory activities of DDA in FY 2079/80

Activities	Number of events
Registration of new foreign pharmaceutical Industry	46
Registration of new medicine (import)	392
Renew of import license	4,376
Issue of marketing license	538
Issue of product license	643
Import license for raw material for domestic industry	1,648
Registration of new pharmacy	2,126
Renew of pharmacy	13,367
Renew of Vyawasayi Mananyata Pramanpatra	1,736
De-registration of pharmacy	1,191
Filing of legal case against the violation of Drug Act 2035	79
Recall of medicine from market due to inferior quality	25

Source: DDA

Box 23. 3 SWOT Analysis of DDA

Strength	Opportunity
• Presence of legal framework • Clinical trial Oversight (Clinical trial inspection checklist approved, site inspection of trial site being conducted gradually) • Adopt and participate in collaborative registration procedure with good reliance practice • Risk based inspection, Post Marketing Surveillance, Risk based dossier evaluation with optimal utilization of available resources can be done • Pharmacovigilance strengthening for safety and effective monitoring of new and marketed medicines	• Revised Drug Act for effective regulation of Medicine and Health Technological Products • Pharmaceutical Waste Management guidelines for safe disposal of pharmaceutical waste • Regulation of Health Technology Products (HTP), Nutraceuticals and cosmetics. • Accreditation of NML as per ISO 17025, 2015 • Ethical Drug promotion guidelines. • Incorporate Good Manufacturing Practices in Ayurvedic medicine
Weakness	**Threat**
• Weak legal and infrastructure for effective and efficient Market Surveillance and control • Lack of organization and management structure as per the federal provision • Insufficient capacity for Laboratory testing and functions for Vaccines and Bioavialability/ Bioequivalance. • Lack of Legal framework for Dynamic price regulation mechanism including fair pricing of medicine. • Inadequate interdepartmental co-ordination and communication	• Open border/Cross border issues. • Lack of mechanism for controlling and regulating Online Pharmacy and advertisement of Medicine and Medicinal Products. • Lack of resources to conduct Clinical Trial oversight including Good Clinical Practice.

HIB	NSSD	SSU	Geriatric Services	Bippana Nagarik Aaushadhi Upachar Karyakram

24.1 Health Insurance Program

24.1.1 About the Program

Health Insurance Program (HIP) in Nepal is implemented by GoN with a primary goal to increase access to high-quality healthcare services and reduce out of pocket expenditure and episodes of catastrophic health expenditures. HIP was initiated under the Social Health Development Committee in FY 2072/73 and later managed through the Health Insurance Board (HIB) as an autonomous agency in accordance with the Health Insurance Act 2074 and Regulation 2075. The ultimate aim is to contribute to UHC.

Box 24.1 Key Objectives of HIP

- Ensure access to quality health services
- Protect from financial hardship and reduce out-of-pocket expenses
- Develop capacity of health service providers facilities
- Increase ownership building among health service providers facilities

24.1.2 Major Activities in FY 2079/80

- Expansion of population coverage by 391,864 in FY 2079/80 in comparison to FY 2078/79, which is equivalent to 1.4% increment in the total population enrollment.
- Claim reimbursement of 6,386,056 claims worth NPR 11,305.70 million to service providers.
- Development of training manuals
- Expanded implementation of health insurance program to 749 local levels.
- Monitoring and capacity development of health service providers.
- Conduction of insurance management information system (IMIS) training for service providers, enrollment officers, enrollment assistants and elected representatives.
- Revision of benefit package and costing (ongoing).
- Operational research on "Assessment of purchasing mechanism of HIB scheme".
- Finalized key performance indicators of Health Insurance for dashboard.
- Addition of 12 service providers in FY 79/80 making a total of 440 empanelled service providers.

24.1.3 Key Program Indicators for HIP

Population coverage of Health insurance

Over the last three fiscal years, Nepal has witnessed significant improvements in health insurance coverage across provinces. All seven provinces experienced notable increase in health insurance coverage, contributing to a national rise from 11.5% to 16.1% enrollees (Fig 24.1). Collective effort underscores a commitment to achieving comprehensive coverage of the entire population.

Household coverage of Health insurance

In FY 2079/80, nationally, household coverage averaged 24.7%, reflecting collective efforts to expand health insurance benefits. In Gandaki and Koshi provinces the coverage surpasses the national average with 37.2% and 36.6% respectively. In the remaining five provinces, the coverage is below the national average with notably least coverage in Madesh Province at 14.9% (Fig 24.2). The differential coverage depicts the need for targeted efforts to boost awareness and enrollment, ensuring comprehensive healthcare inclusivity.

12	15	16
2077/78	2078/79	2079/80

Figure 24.1 Population coverage by health insurance in FY 2077/78-79/80

Source: IMIS/HIB

Figure 24.2 Population and household coverage of HI at provincial and national level FY 2079/80
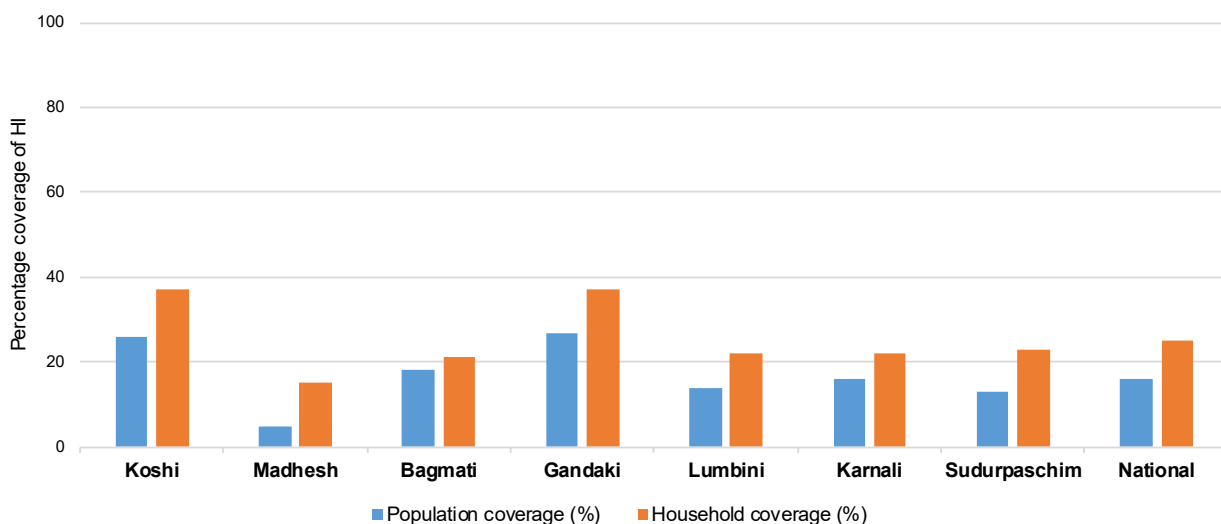
Note: Households from Census 2078 used as denominator

Source: CBS and IMIS/HIB

Service utilization

Nationally, health service utilization increased by 9.4% among the enrollee in FY 2079/80 as compared to the last FY. This depicts the increased access to health services through HIP. All provinces experienced positive trends in service utilization as compared to the last FY (Fig 24.3).

Renewable Rate (%)
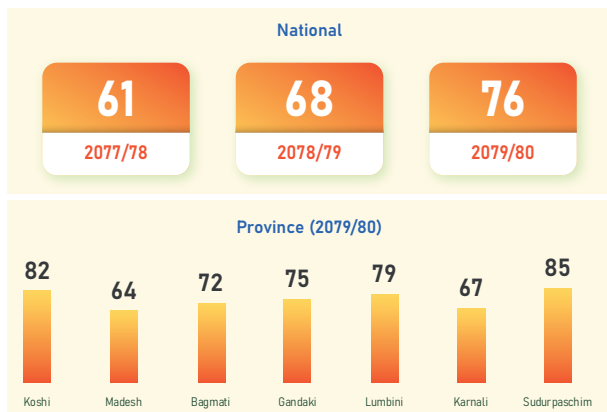
Service Utilization (%)
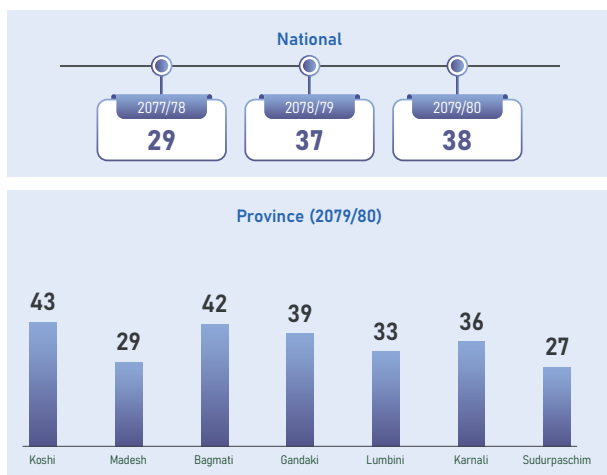
Figure 24.3 Renewal rate and service utilization of HI in FY 2077/78-79/80

Source: IMIS/HIB

Renewal rate

In FY 2079/80, the average national renewal rate was 76.2% (FY 79/80). Average renewal rate was remarkably good in Sudurpaschim Province (84.5%) and Koshi Province (81.7%). There was an overall increase in the renewal rates as compared to last FYs (Fig 24.3).

Cumulative coverage of health insurance for FY 2079/80

The total cumulative achievement till the end of FY 2079/80 in respect to population coverage, household coverage, service utilization and renewal rate is 24.6%, 33.2%, 43.4% and 61.3% respectively (Table 24.1).

Table 24.1 Cumulative coverage of health insurance till FY 2079/80

Cumulative Coverage Indicators	Number*	Percentage
Total families insured	22,12,827	33.2
Total population insured	71,71,843	24.6
Insured people accessing services	31,16,875	43.4
People renewing insurance	43,94,394	61.3

*Cumulative figure till the FY 2079/80

Source: IMIS/HIB

Empaneled health service providers for health insurance

As of FY 2079/80, there are a total of 440 health facilities empaneled in the health insurance program including both public and private health service providers (Table 24.2).

Province	Government Hospital	Primary Health Centre	Private/Community Hospital	Total
Koshi	48	37	22	107
Madhesh	15	33	8	56
Bagmati	55	31	14	100
Gandaki	27	23	5	55
Lumbini	23	30	4	57
Karnali	15	15	3	33
Sudurpaschim	14	16	2	32
National	**197**	**185**	**58**	**440**

Source: IMIS/HIB

Box 24.2 SWOT Analysis of HIP

Strength	Opportunity
• Legal Provisions: Constitutional mandate, Health Insurance Act,2074 and Regulation, 2075 • Extended coverage in all districts • Good population coverage • Government Priority	• Inclusion of large formal sector in health insurance program • Increasing people's participation • Inclusion of poor and targeted population • International commitment to UHC • Collaboration with external development partners in health
Weakness	**Threat**
• Unapproved O&M Survey Report • Unfilled permanent staff positions • Insufficient budget	• Rationale selection of health services • Rising drop-out rates • Limited understanding of solidarity concept • Lack of minimum service standard in regards to quality of care in service providers • Fragmented social health protection programs

24.2 Social Service Unit (SSU)

24.2.1 About the Program

Initiated from the Interim Constitution of 2063, Nepal reinstates the right to receive free BHS and access to emergency services in Constitution of Nepal 2015. SSU services that started in 2065 BS with major objective to provide free/subsidized service for poor patients at referral hospital are now scaled up in all provinces and districts (Fig 24.4, Box 24.2).
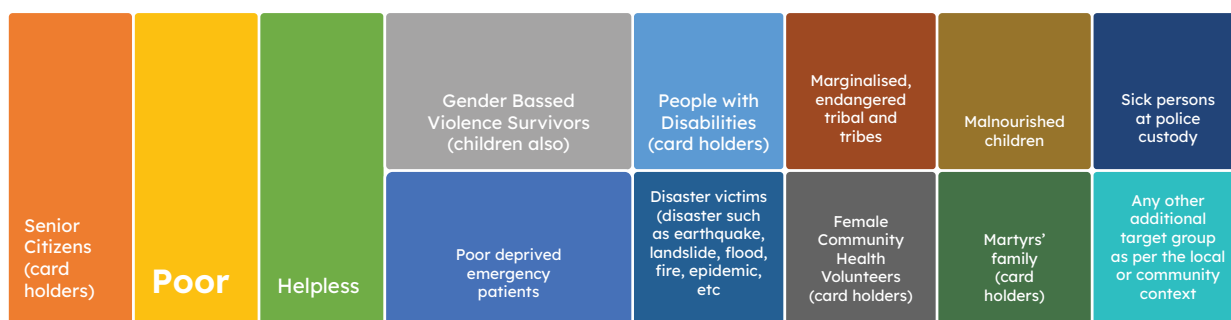
Figure 24.4 Target population for SSU services

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

Objective of SSUs

- Increase the provision of equitable access and use of health services for target group patients
- Help to ensure free and partially free regular or specialized health services to target group patients
- Coordination and facilitation of all social security programs such as health insurance, deprived citizens' treatment fund, senior citizen (geriatric) health services, neonatal health, free emergency services for poor and marginalised groups
- Create enabling environment so that target group can access health services effectively and transparently

Institutional Mechanism:

Social service management committee under leadership of hospital director/chief/medical superintendent and SSU unit operates with SSU chief, deputy chief and facilitators.

2063
- Interim constitution included the right to basic free health care

2065
- Establishment of SSU
- Provision of free/subsidized services for poor patients at referral hospitals through SSUs

2066/67
- 2067 guidelines were prepared by MoHP's PPICD

2068/69
- Assessment of SSU found gaps in implementation and uptake of subsidies

2069/70
- MoHP established SSUs in referral hospitals
- SSU operational guidelines revised
- SSU Establishment and Operational Guidelines 2069 (2012)'.
- Based on strategy 3 ka of the GESI Strategy, 2066/67 (2010)
- MoHP has decided that these units will run on a pilot basis for the two year period of fiscal years 2069/70–2070/71 to test the concept and collect experiences and learning
- Piloting ended the end of Nepali financial year 2071/72. (mid-July 2015)
- Final evaluation of the piloting of SSUs concluded that the model should be scaled up to other hospitals (June-September)

2072/73
- Bharatpur and Western Regional Hospital SSUs fulfilled the unforeseen critical role of managing free care and integrated support to people injured by the April and May 2015 earthquakes
- Based on the evaluation findings, MoHP endorsed a new roadmap to increase the number of SSUs
- Six new ones planned for 2015/2016, four under MoH's budget and two (Trisuli-Nuwakot and Gorkha hospitals) to be supported by NHSSP's HSTRP (September)

2074/75- 2076/77
- 37 SSUs established

2077/78
- 43 SSUs
- In the DHIS2 platform, recording and reporting tools digitalized.

2078/79
- Social Service Unit Establishment and Operational Guidelines 2078 (Revised 2079)
- Fifteen new Social Service Units (SSUs) were established in referral and district-level hospitals; the total number of SSUs is now 58.

2079/80
- 77 SSU have been established in public hospitals.
- Data available in DHIS2 platform
- SSU model is also being scaled up to teaching, private and community hospitals to support them achieve their own corporate social responsibility targets.

Figure 24.5 Milestones in the establishment of SSUs from piloting to scale up in all districts

The target group patients (Fig 24.4) are provided free or partially free services available at the hospital based on the evaluation of their financial status, identification card and other observations. But for the survivors of GBV, the hospital should provide all the services available at the hospital for free. Additionally, SSUs play an important role in coordinating, harmonizing and facilitating access to all social security related programs/services such as deprived citizen's treatment fund, social health insurance, geriatric health care, neonatal care, regular specialized services and basic health care and emergency services.

24.2.2 Major Activities and Achievements in FY 2079/80

- In FY 2079/80, additional 19 SSUs have been set up in public hospitals making a total of 77 hospital based SSUs
- A total of 34,461 new and 2,964 follow up cases were served through SSUs of different hospitals in FY 2079/80.
- There were provincial differences observed in the cases served through SSUs with 8,410 cases served in Sudurpaschim and 7,737 cases served in Koshi provinces (Table 24.3).

Table 24.3 Total cases served through SSU services in FY 2079/80

Indicator (FY 2079/80)	Nepal	Provinces						
		Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
New cases	34,461	7,737	3,436	4,757	2,351	5,219	2,551	8,410
Follow-up cases	2,964	54	73	137	186	1,077	83	1,354

Source: HMIS/DoHS

Box 24.4 SWOT analysis of SSU

Strength	Opportunity
• Strong legal framework for the program • Institution-based authorities can recommend the needy population in light of the operational guidelines • Effective network with SSUs at referral sites. Transparency of the service with the publication of the names of the beneficiaries publicly	• Identification of the target population and estimates for the program through coordination with related line ministries and divisions • SSUs can be one door for the social health security and safety net programs in health
Weakness	**Threat**
• Tedious documentation process for identification of the target population • Low awareness among targeted population about the provisions of SSUs	• Adverse selection and recommendation • Frequent changes in the leadership of the hospitals

24.3 Geriatric (Senior Citizens) Services

24.3.1 About the Program

Nepal is currently undergoing a demographic transition characterized by an increase in life expectancy. This shift is accompanied by a noticeable rise in the proportion of elderly individuals within the overall population. According to the 2078 (2021) census, Nepal has a population of 2.97 million elderly people, constituting 10.21% of the total population. The classification of senior citizens is based on the Senior Citizens Act, 2063, which defines senior citizens as individuals aged 60 and above. This definition guides the overall dimensions and coverage of geriatric services as services for senior citizens.

The constitution has guaranteed senior citizens the right to special protection and social security from the state. National Health Policy 2076, the Fifteenth Plan 2075/76-2080/81 (2019/20 to 2024/25) and GESI strategy of the health sector, all attest the government commitment to establishing an equitable and inclusive health system and enhance senior citizens' access to high quality services as per the need (See Fig 24.6 for course of development of geriatrics health services in Nepal).
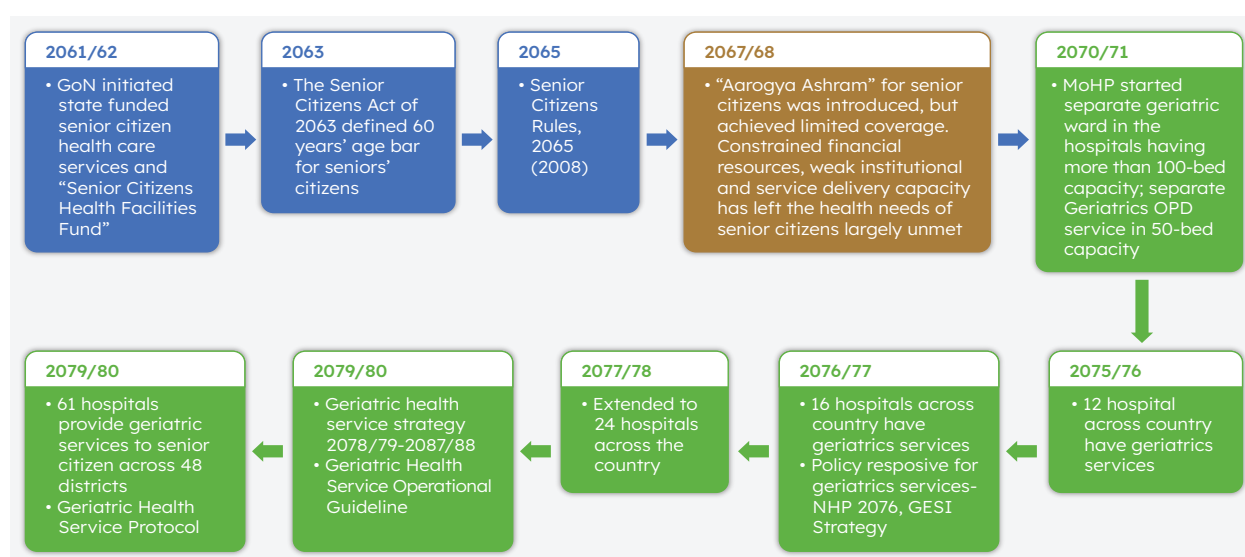
Figure 24.6 Milestones in the geriatrics (senior citizens) health services in Nepal

The geriatric health service strategy recognizes that senior citizens face increased risk of chronic conditions and multi-morbidities, with reduced functional capacity, and that health services have to account for these limitations and needs and encompasses population-based and service delivery strategies for healthy aging (Box 24.3).

Vision: "A meaningful, quality and healthy life for all senior citizens"

Purpose: To protect the health rights of senior citizens by means of their health promotion and protection, effective delivery of health services and an improved system of social health insurance.

Goal: To enable senior citizens to lead active and quality lives on the basis of optimum health protection and effective health service delivery.

Objectives

To provide lifelong health promotion and protection services to senior citizens

To build an effective, inclusive and accountable health service delivery system for senior citizens

To promote multi-sectoral coordination, harmony, collaboration and partnerships

To achieve effective geriatric health services

Strategies for Geriatrics (Senior Citizens) Health Services:

- Motivate senior citizens for healthy living and enhance awareness at family and community levels to reinforce health promoting actions

- Strengthen and expand the health protection system for senior citizens

- Increase access to, and the affordability and utilization of quality health services and assistive devices by senior citizens

- Develop a senior citizen-inclusive health system to address the health needs of senior citizens in an appropriate manner

- Motivate and enhance the professional and technical competence of health personnel to provide quality geriatric health services effectively and efficiently

- Expand and strengthen innovative and implementable social health insurance reform measures to respond to the needs of senior citizens and their family members

- Mainstream and institutionalize the health concerns of senior citizens into the health system at all levels

- Strengthen coordination and harmonization across spheres of government and across spheres of government and across sectors for the effective delivery of geriatric health services.

24.3.2 Major Activities/Achievements in FY 2079/80

- The geriatric services along with the establishment of separate geriatric wards and OPD have been strengthened in a total 61 hospitals across 48 districts

- Healthy Aging orientation program to targeted civil service staffs

- Geriatric review workshop was conducted

- Capacity building program related to geriatric health services for Medical Officers

24.3.3 Key Indicators of Geriatric Services in FY 2079/80

Coverage of the geriatric services

In FY 2079/80, a total of 21,372 new and 2,961 follow-up cases were registered in geriatric services across the country.

Taking into account the Population of Census 2078, the coverage of the geriatrics services is 82 per 10,000 senior citizens nationally. The highest coverage is in Sudurpaschim province with 165 per 10,000 senior citizens followed by 140 per 10,000 senior citizens in Koshi Province. The least uptake is observed in Bagmati Province with coverage of only 21 per 10,000 senior citizens. With government priority and development of protocols for health facilities, the coverage is expected to increase in coming FYs (Fig 24.7).
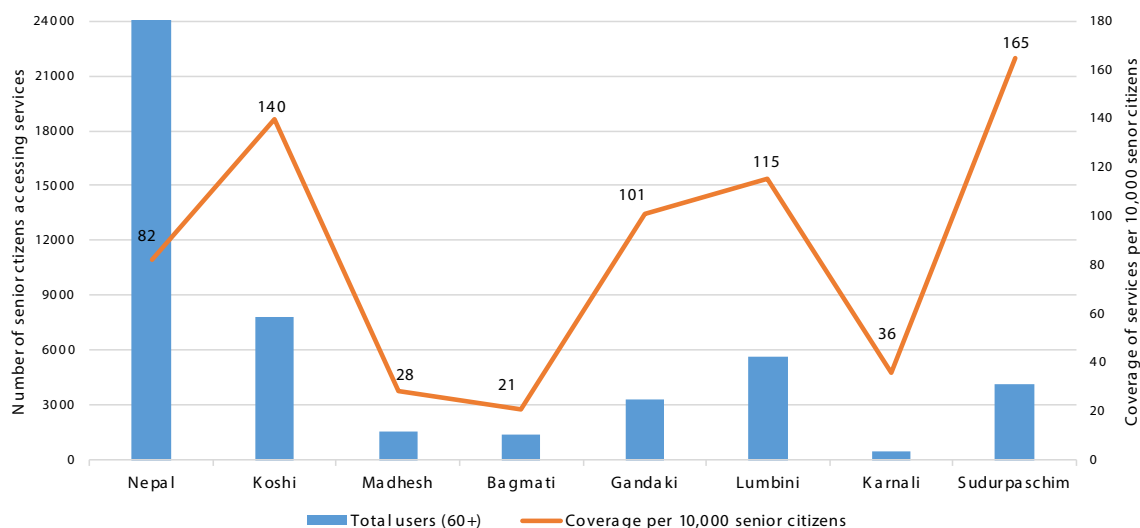
Figure 24.7 Coverage of senior citizen health services in FY 2079/80

Common morbidities of senior citizens receiving services

The most common morbidities of the senior citizens accessing the services included cardiovascular problems which included hypertension, stroke, coronary artery disease, followed by respiratory morbidities which included COPD and pneumonia (Fig 24.7). There were few cases of Parkinson's, Dementia/Alzheimer's, Depression and Cancer.
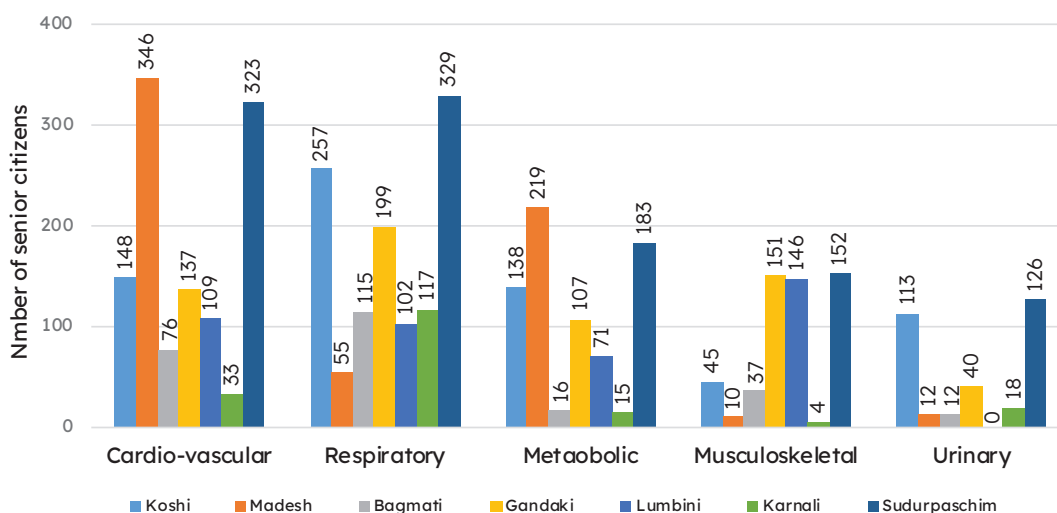
[*Note: Respiratory included- COPD and pneumonia, Cardio-vascular included- stroke, coronary artery disease, hypertension; metabolic included- diabetes; Urinary included- UTI and Benign Hypertrophy of Prostate Musculoskeletal included-osteoarthritis, osteoporosis, sarcopenia]

Figure 24.8 Common morbidities among senior citizens accessing services in FY 2079/80

Box 24.6 SWOT Analysis of Geriatric (Senior Citizens) Services

Strength	Opportunity
• Strengthens continuum of care • Budget allocation for geriatric service • Initiation of the establishment of the geriatric wards allocation of beds and specified OPD services	• Academic programs to produce geriatric specialized human resources • Integrated supervision and monitoring
Weakness	**Threat**
• Limited resources in government hospitals • Scarcity of human resources trained in geriatric services,	• Frequent turnover of the trained staffs • Geriatric services demand infrastructural changes which are resource intensive

24.4 *Bipanna Nagarik Aushadhi Upachar* Program

24.4.1 About the Program

The roots of the *Bipanna Nagarik Aushadi Upachar* program (Impoverished citizen's treatment program) can be traced back to the establishment of the *Bipanna Nagarik Kosh* (Impoverished Citizen's Fund), initiated after the civil movement *(Janaandola)* of 2062 BS, during the country's gradual recovery from a decade-long armed conflict. The program's goal was to alleviate medical expenses for impoverished individuals unable to afford treatment for specific diseases (See Fig 24.9 for estimates of poor people across provinces).
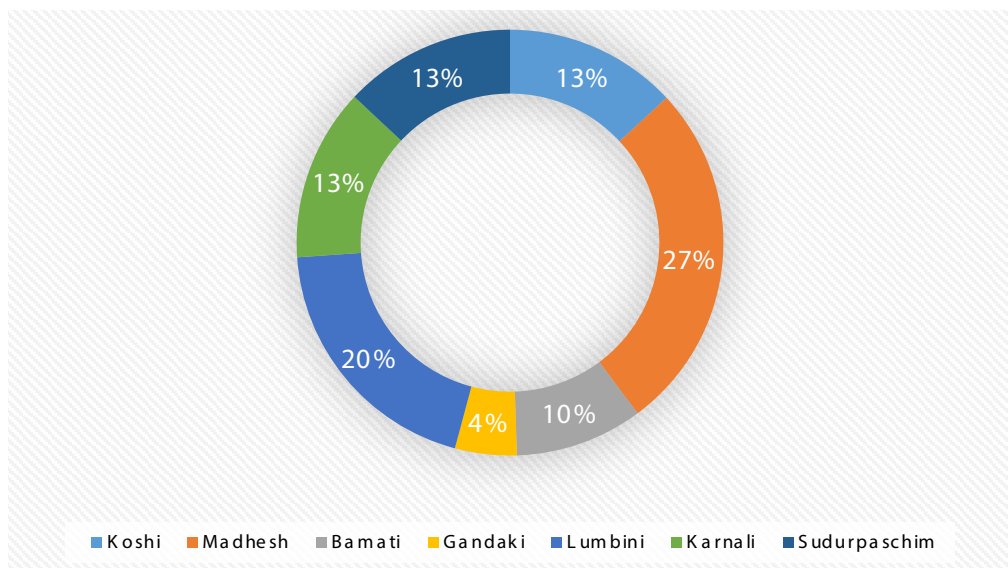
Figure 24.9 Estimated proportion of poor people across provinces

Source: NMICS, 2019

The Bipanna Nagarik Ausadhi Upachar Kosh was commenced in the FY 2066/67 BS to improve healthcare accessibility. It aimed to provide support to impoverished individuals undergoing treatment for selected chronic diseases. The program's guidelines were formulated in 2067 and implemented the same year under the name "Bipanna Nagarik Aushadhi Upchar Kosh Nirdeshika" (guideline). Subsequently, the guideline underwent revisions, receiving ministerial-level approval in 2075 BS, followed by the first round in 2076 BS and the second round in 2077 BS. The guideline enlists the empanelled health facilities to access relevant health services based on specific disease conditions covered by the fund by the deprived citizens. The main goal of this fund program is to provide treatment fund for eight selected diseases (Kidney disease, Heart disease, Cancer, Head Injury, Spinal Injury, Parkinson's, Alzheimer's, Sickle Cell Anemia) to impoverished Nepalese citizens through listed hospitals under the scheme.

Box 24.7 Scheme of *Bipanna Nagarik Aushadi Upachar* Program

- Treatment up to NPR 100,000 per patient through listed hospitals for severe diseases including cancer, heart disease, traumatic head injuries, traumatic spinal injuries, Alzheimer disease, Parkinson's, and sickle cell anemia diseases once in a life time.

- Pre-transplant (HLA and cross match) test support up to NPR 50,000;

- Renal transplantation costs up to NPR 400,000 per patient;

- Medication costs up to NPR 100,000 for post-renal transplant cases;

- Free hemodialysis and peritoneal dialysis services;

- Free medical treatment for acute kidney injury up to NPR 100,000.

24.4.2 Major Activities/Achievement in FY 2079/80

In FY 2079/80, a total of 41,230 patients were provided free treatment under the impoverished citizen's services scheme. Notably, the funds were available to cover the treatment mostly of the cancer patients (21,555) (Fig 24.10).

Kidney Hemodialysis	Kidney Transplant	Cancer	Heart Disease	Head Injury	Spinal Injury
7,449	432	21,555	6,936	761	1,239

Parkinson's	Alzheimer's	Sickle Cell Anemia
79	35	1,561
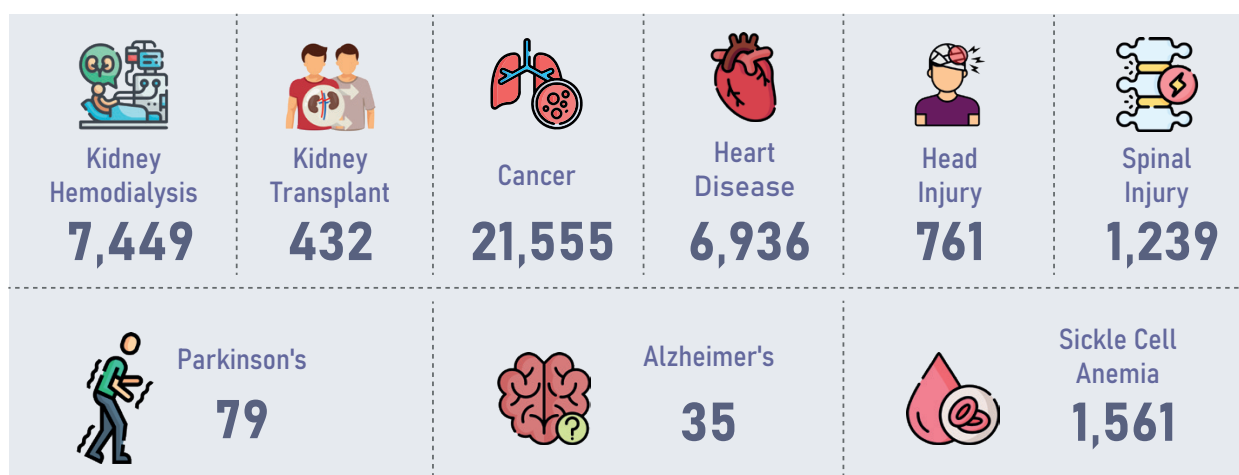
Figure 24.10 Fund utilized by the people living with targeted chronic diseases in FY 2079/80

Box 24.8 SWOT analysis of *Bipanna Nagarik Aushadhi Upachar* Program

Strength	Opportunity
• Provide treatment for listed severe 8 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
Weakness	**Threat**
• Insufficient fund / budget to treat serious health condition. • Limited human resources. • Lack of awareness about the program to general people • Inadequate supervision and monitoring of the program • Reimbursement guideline lack the precise specification of covering the cost of the services provided causing difficulties and delays in reimbursement process	• Quality assurance of service provided through listed hospitals • Sustainability in long term due to increase NCD

Nepal Medical Council	Nepal Nursing Council	Nepal Ayurvedic Medical Council	Nepal Pharmacy Council	Nepal Health Professional Council	Nepal Health Research Council

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, 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.[1] This chapter covers the details for each council, key guiding documents/important milestones, major activities, achievements and challenges of the respective councils.

25.1 Nepal Medical Council

25.1.1 About the Council

Nepal Medical Council (NMC) was established in 2020 (1964) by the act of parliament, Nepal Medical Council Act 2020 (1964) and came into function with the endorsement of Nepal Medical Council Regulation 2024 (1968). 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.

25.1.2 Major Aspects Regulated by the Council

Registration of practitioners

NMC conducts licensing examination for registration of the practitioner doctors, periodically. These examinations work as the must have requirement for graduates for the permission to practice; one can practice only after passing the licensing examination. NMC registers both nationals and international doctors with international doctors given registration for one year and are in need of renewal after that. Details of foreign national doctors working in medical college, academy, mission hospital and private hospital is available in https://nmc.org.np/list/fnd-doctors. Till date 376 foreign doctors are working in Nepal with one-year registration validity. The date mentioned in the registration certificate is the date on which the exam was passed and approved by the concerned committee.

For post-graduates' doctors and doctors acquiring fellowship, council mandates graduate to appear their respective specialization examination and get registered under their specialization. NMC has piloted use of simulation-based case as practical examination during licensing examination and is planning to scale it in coming years.

Code of conduct

NMC has in accordance with the Nepal Medical Council Act 1964, passed a medical Code of Ethics, which all doctors registered under it, are to abide by. [2]

Continuing professional development

Continuing Professional Development (CPD) programme is being reinforced by NMC by tying it up with renewal of the license for medical practitioners. At present NMC uses CPD database, an integrated data management system, as an official repository of data on continued evidence-based education of NMC registered doctors.[3]

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1 Medical Education Commission, Government of Nepal. Available at: https://mec.gov.np/en

2 Nepal Medical Council. Code of Conduct. Available at: https://nmc.org.np/nmc-code-of-ethics#:~:text=I%20will%20carry%20out%20my,gratitude%20that%20is%20their%20due.

3 Nepal Medical Education. Continuing Professional Education. Portal: https://cpdnmc.org.np/Account

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 certificate is requested for promotion, residency training, fellowship training and employment.

Grievance handling

Council have made arrangements to listen to complaints via the council's official email and in person application as well as though portal.[4] Any complaints on code of conduct are recorded and investigated by NMC as identified needful.

Cancellation of registration

Any registered practitioners and doctors later identified with fake documents are deregistered and the information of which is available in https://nmc.org.np/deregistration. Till date 172 doctors' registration has been cancelled.

25.1.3 Key Achievements in FY 2079/80

Pass rates of licensing examination for doctors

In FY 2079/80, the pass rates for bachelor level licensing examination and special license examination were 44.0% and 61.0% respectively. (Table 25.1) There is fluctuation in the pass rates in last five years in both the examination.

Table 25.1 Pass rates in licensing examination for bachelor and special license examination of doctors FY 2075/76-2079/80

Licensing examination	Year	Appeared	Passed	Pass %
Bachelors level	2075/76 (2019)	5,207	2,672	51.3
	2076/77 (2020)	2,937	1,813	61.7
	2077/78 (2021)	2,541	1,354	53.2
	2078/79 (2022)	5,687	2,386	42.0
	2079/80 (2023)	5,841	2,580	44.0
Postgraduate level special license	2075/76 (2019)	1,374	872	63.5
	2076/77 (2020)	1,163	755	64.9
	2077/78 (2021)	808	494	61.1
	2078/79 (2022)	1,673	1,234	73.8
	2079/80 (2023)	812	496	61.0

Source: NMC/MoHP

As of FY 2079/80 (December 2023), there are a total of 30,027 medical doctors and 4,883 dental doctors registered in NMC. In this fiscal year, 2,222 medical doctors and 470 dental doctors were registered. These numbers account to natives. Furthermore, there are a total of 10,558 native post-graduate doctors registered through special licensing. The details of the type of the specialization is furnished in Annex Table 25.1.

Issuance of good standing certificates

The council issued 2,582 good standing certificates to the registered doctors in FY 2079/80, most of it being for United States of America, United Kingdom and Maldives. This has increased in number in last four years (Table 25.2).

Table 25.2 Issuance of good standing certificate

Countries for issuance of good standing certificate (Alphabetical order)	2076/77 (2020)	2077/78 (2021)	2078/79 (2022)	2079/80 (2023)
Australia	62	66	109	166
Bangladesh	0	0	1	0
Belgium	1	0	0	0
Brunei	4	1	8	1
Canada	10	17	30	26
Denmark	2	0	3	6
Germany	7	23	20	11
Hong Kong	5	0	2	2
India	62	159	106	186
Ireland	0	5	1	6
Maldives	216	403	453	395
Nepal	218	175	235	264

4 Nepal Medical Council. Register complaints/suggestions. Portal: https://nmc.org.np/grievance

Countries for issuance of good standing certificate (Alphabetical order)	2076/77 (2020)	2077/78 (2021)	2078/79 (2022)	2079/80 (2023)
Qatar	7	6	9	14
Saudi	0	1	1	1
Singapore	3	1	7	3
United Arab Emirates	35	53	116	142
United Kingdom	162	319	592	505
United States of America	276	273	496	843
Others	17	0	0	11
Total	**1,087**	**1,502**	**2,189**	**2,582**

Source: NMC/MoHP

Status of complaints on code of conduct

In FY 2079/80, out of 86 complaints related to the Code of Conduct, 27 have been decided and 41 are in process. Out of the 27 complaints decided, six cases should not be acted upon, five cases were alerted to the doctor, six were deemed to require further action.

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.
- Increasing AMR with easy access and availability of the antibiotics without prescription.

25.2 Nepal Ayurveda Medical Council

25.2.1 About the Council

Nepal Ayurveda Medical Council (NAMC) was established under the act, Ayurveda Medical Council Act, 2045 (1988). 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/.

Furthermore, there post-graduate course of Ayurveda in Tribhuvan University that runs in Ayurveda Campus, Kritipur, Bachelors courses under Tribhuvan University and Nepal Sanskrit University in two campuses and three are in pipeline and certificate courses under Council for Technical Education and Vocational Training are in operation in four colleges.

25.2.2 Major Aspects Regulated by the Council

Registration of practitioners

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.

25.2.3 Key Achievements in FY 2079/80

Registration of the ayurveda professionals

Table 25.3 Registered Ayurveda Health Professionals in NAMC cumulative FY 2079/80

Category	Total Number
Ph.D.	3
MD/MS/PG	152
BAMS/equivalent	945
Traditional healers	19
Ayurveda Bachelors in Pharmacy	11
AHA/Equivalent	1,842
AAHW/TSLC	3,192

Source: NAMC/MoHP

As of FY 2079/80, a total of 3 PhD, 152 MD/MS/PG and 945 BAMS/equivalent doctors in Ayurveda have been registered in NAMC.

Challenges of NAMC

- Lack of trainers/faculties in the academic sector to expand the specialization courses in Ayurveda in the country
- Lack of funds and priority for research in Ayurveda sector

25.3 Nepal Nursing Council

25.3.1 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/.

25.3.2 Major Aspects Regulated by the Council

Registration of practitioners

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. The licensing examination for midwives also have the simulation components. NNC registers both nationals as well as international nurses.

By FY 2079/80, there are 37,346 ANMs, 78,948 registered nurses (PCL Nursing, B.Sc. Nursing), 1,507 specialized nurse (master and above) and 66 registered midwives (bachelor level) registered in NNC. There are 849 foreign nurse/midwives registered in NNC.

Code of conduct

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 are to abide by.[5]

Continuing professional development

 Finalized the guideline of CPD and formation of the Continue Nursing Education Committee.

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.

Health service monitoring guideline

NNC has finalized the checklist for health service monitoring in this fiscal year.

25.3.3 Key Achievements in FY 2079/80

Pass rate of licensing examination

In 34th licensing examination for nurses, 19.3% of 1,270 certificate level and 49.0% of 414 B.Sc. Nursing passed the examination. (NNC, MoHP) There is need of review of the quality education and examination system to identify in-depth cause of such high failure rates.

Challenges of NNC

- Effective implementation of CPD program
- Extension of NNC at provincial level
- Timely addressing moral and ethical issues of nurses
- Maintaining the online and up-to-date information of previously registered nurses
- Applying health service monitoring guideline check list to all hospital

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5 Nepal Nursing Council. Code of Ethics and Professional Code of Conduct for Registered Nurses and Midwives in Nepal 2076 (2019). Available at: https://nnc.org.np/web-content/publications/journal/20200915060908169997391151 26.pdf

25.4 Nepal Pharmacy Council

25.4.1 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/.

25.4.2 Major Aspects Regulated by the Council

Registration of personnel

NPC conducts licensing examination for registration of the pharmacists and pharmacy assistants, periodically. This year the examination was strengthened with inclusion of thumb and bar code for applicants similar to NMC license examination. This examination was further complemented by the skill test before registration of the personnel to the council.

Code of conduct

NPC has revised its code of conduct in FY 2079/80. All personnel 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.[6]

Continuing professional development

NPC conducted AMC training workshop for pharmacist in this FY.

Issuance of no-objection letter

NPC issues No-Objection letter for the students applying for studies abroad for diploma level.

Cancellation of registration

NPC also works on de-registration of pharmacist and pharmacy assistant

Hospital pharmacy directives

NPC contributed in revision of Hospital Pharmacy Directive.

25.4.3 Key Achievements in FY 2079/80

Registered Human Resources in NPC

NPC conducted its 34th licensing exam in FY 2079/80. As of FY 2079/80, there are a total of 6,093 registered pharmacist and 1,360 registered pharmacist assistants (NPC, MoHP).

Challenges of NPC

- Expansion to provinces and delegation of authorities
- Regular monitoring of pharmacy on operation based on code of ethics

25.5 Nepal Health Professional Council

25.5.1 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/.

25.5.2 Major Aspects Regulated

Registration of personnel

NHPC conducts subject specific licensing examinations for each types of the health professionals registered in NHPC.

Code of conduct

NHPC has endorsed the code of conduct for pharmacy that they need to abide by.[7]

Continuing professional development

NHPC realizes that there is need of initiating CPD in the respective fields.

Issuance of good standing

NHPC issues good standing certificate for the students applying for studies abroad, promotions and other purposes.

25.5.3 Key Achievements in FY 2079/80

Pass rates of licensing examination conducted by NHPC

In FY 2079/80, a total of 11,012 applicants for different certificate level courses, 3,357 for bachelors and 1,224 for masters' level applied for registration in NHPC of which pass rates were 50.9%, 47.5% and 42.0% respectively (Table 25.5).

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6 Nepal Pharmacy Council. Code of Ethics. Available at: https://nepalpharmacycouncil.org.np/coe
7 Nepal Health Professional Council. Code of Ethics. Available at: https://nhpc.gov.np/beta/pages/index/4

Licensing examination	Appeared	Passed	Pass %
Certificate level	11,012	5,603	50.9
Bachelors' level	3,357	1,596	47.5
Masters' level	1,224	515	42.0

Source: NHPC/MoHP

Additionally, bar code system is under process and the council is in the process of paperless services.

Challenges of NPC

- Lack of timely and periodic examination for the health professionals
- Diverse set of programs and require contextual health personnel to represent them in the council

25.6 Nepal Health Research Council

25.6.1 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 I 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.

In its role of generating evidence, NHRC also carries out research on its own on national health issues aligning with the national health priorities. 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. Additionally, NHRC has been providing health research grants to the researchers in order to enhance the research activities throughout the country. NHRC conducts workshops and dissemination programs to facilitate uptake of research findings by the policymakers into health system policies and practices.

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.

25.6.2 Major Activities in the FY 2079/2080

Research projects/activities in FY 2079/80

- Population-Based Cancer Registry
- Situational Assessment of Antibiotics use and its resistance in Nepal
- Integrated Biological and Behavioral Surveillance Survey among Female Sex Workers in Pokhara Valley, Nepal: Round VI- Mix-method Study, 2023

- Effectiveness of an Educational Intervention on Knowledge, Attitude and Practice Regarding Pharmacovigilance Among Health Care Professionals of Nepal: An Endline Survey
- An Analysis of Inpatients Expenditure at NICU in Tertiary Care Centers in Nepal
- Bioactivity-guided isolation and characterization of anti-diabetic activities from selected medicinal plants of Nepal
- Feasibility Study on Nurse Practitioner in Nepal
- Assessment of Health Status of Older Adults of Selected Districts of Nepal
- Prevalence of Rheumatic Musculoskeletal Pain and Disability in Western Nepal- A Cross-Sectional Community Based Study Adopting WHO-ILAR COPCORD Stage 1 Protocol
- Study on Hemoglobinopathies and G6PD Deficiency in Terai Districts of Nepal
- Assessment of NCDs and Injuries among Children in Selected Tertiary Level Hospitals in Nepal
- Investigation of Cholera Outbreak in Kathmandu: A Case Control Study
- Operational Research on Implementation of Integrated Disease Surveillance System in Nepal
- COVID-19 vaccine post-introduction evaluation (cPIE) in selected site of seven provinces of Nepal
- Study on the cause of death for estimating the burden of diseases in selected municipalities of Nepal
- Factors affecting health-seeking behaviors among people in Nepal-Exploratory study on institutional delivery, routine child immunization and COVID-19 vaccination
- Collaborating partner for CBS in Maternal Mortality Study
- Collaborated as mentorship agency for implementation research with WHO and coordinated two researches as part of capacity building

Ninth national summit of health and population scientist of nepal

The Ninth National Summit of Health and Population Scientist in Nepal was continuum of the previous annual summits celebrated every year on the establishment

day of NHRC (11-12 April, 2023) with the support of Government of Nepal and different stakeholders in the country including the HDPs, INGOs and NGOs. The National Summit provides a platform for researchers and academicians to share recent and relevant health evidences; and policymakers to interact with researchers and academia to identify recent evidences. A total of 203 presentations were received, of which 123 were selected, 28 oral and 80 poster presentations, 29 national and international invited talks and panel discussion were also held in the summit covering a wide range of pressing issues including Health System and Policy, Clinical trials and Bioethics, Genomic and Precision medicines, Population Health, Public Health Emergencies Emerging Issues and System Resilience, Biomedical and Transitional Research, Environmental, Occupational Health and Climate Change.

Ethical review board (ERB)

The Ethical Review Board (ERB) of the Nepal Health Research Council (NHRC) received 724 health research proposals for ethical clearance in FY 2079/80. For this, 20 ERB meetings and 67 Expedited sub-committee meetings were conducted to review and discuss the submitted proposals. A total of 571 research proposals received ethical approval 139 proposals are in process, and 14 proposals were withdrawn from the researcher due to the unavailability of the budget and the country's emergency. During the fiscal year, NHRC conducted a different workshop on health research ethics, the orientation of Revised National Ethical Guidelines, Standard Operating Procedure (SOP), and Responsible Conduct of Health Research in Nepal during this fiscal year 37 research projects were monitored among approved proposal from the ERB.

Challenges

- Safeguarding the researchers/ enumerators while conducting research

- Importance of research for nation's economic development and evidence for the national-level planning and policy-making is increasingly recognized by the state.

- Importance of implementation research to address the present health needs.

- Preparedness for the pandemic/policies and responsiveness to pandemic control.

- Attraction and retention of training human resources (Technical) should be key priority for sustaining research progress in the country

- Inadequate budget to conduct the national level study in the federal context (with generalization at least to province levels).

- Many research budgets with small amounts of budget so that findings cannot be generalized at national levels

- Retention of trained human resources.

- The lack of adequate laboratories for research sample analysis which has grossly limited to conducting the biomedical research such as clinical research and genetic research.

Institutional review committees (IRCs)

There are 57 IRCs established across the country to promote health research at the institutional level, especially in health science universities, institutes, colleges, and hospitals. Every year, a team from NHRC inspects the Institutional Review Committees approved by NHRC. During Fiscal Year 2079/80 NHRC 20 monitoring visits were conducted. Similarly, 15 training on Ethical Review Processes in Health Research especially for IRC members and other interested candidates were conducted online and in person.

26.1 Aid Harmonization in Health Sector

Since 2058/59 (2002), GoN has implemented several policies which are relevant for sector wide approach (SWAp) modality of financing. Two significant policy guidelines, Foreign Aid Policy (FAP) 2058/59 (2002) and Development Cooperation Policy (DCP) 2070/71 (2014), serve as the foundational framework for the effective implementation of SWAp in Nepal. Moreover, sectoral policies play a crucial role in facilitating SWAp implementation, requiring all Development Partners to align their support with national policies to ensure government ownership. Study was commenced by Ministry of Finance (MoF) in 2018[1], that showed requirement of improvement in the delivery of health services at local level and needful reduction in the transaction cost through harmonization through facilitation of the practical difficulties in the procurement system among key challenges and way forward. The National Health Sector Strategies serve as robust pillars for ensuring SWAp implementation in health sector. Against this backdrop, different HDPs contribute to health sector in Nepal. Furthermore, similar to the other years, Joint Financial Agreements were made for the investment in health guided by the then Health Sector Strategy Program and its review was done through NJAR in this fiscal year too. This chapter covers the major contributors, their areas of investment, geographical coverage and amount allocated in health sector for FY 2079/80 as reported by the health development partners.

26.2 Mapping of HDPs based on Major Programs of Investment

Based on the report received from the HDPs, divisions and centers and the thematic areas, mapping of the development partners based on major programs of their investment has been done. The themes are majorly based on the thematic areas of this report (chapters) and inductive themes based on the common areas being reported in the annual report have been included. (Table 26.1)

Table 26.1 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 Practical Help Achieving Self-Empowerment Nepal
Child Health and Immunization	UNICEF, WHO ADRA Nepal, CARE Nepal, Save the Children, United Mission to Nepal Practical Help Achieving Self-Empowerment Nepal
Nutrition	UNICEF, WHO USAID ADRA Nepal, World Vision International Nepal Nepali Technical Assistance Group, Practical Help Achieving Self-Empowerment Nepal
Family planning, sexual and reproductive health	UNFPA, WHO USAID Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, CARE Nepal FHI 360 Nepal, Ipas Nepal Nepal CRS Company
Primary Health Care and Community Support	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, Practical Help Achieving Self-Empowerment Nepal

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[1] Ministry of Finance, 2018. An Assessment of Sector Wide Approach (SWAp) in Health and Education Sectors of Nepal, Ministry of Finance, International Economic Cooperation Coordination Division (IECCD), Kathmandu, Nepal.

Thematic areas	Development Partners Contributing in the area
Non-communicable disease	WHO Norad FHI 360 Nepal
Mental health	UNICEF, WHO United Mission to Nepal
Road Safety	WHO
Surveillance	WHO FHI 360 Nepal Office
COVID-19	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, FHI 360 Nepal, World Vision International Nepal
Communicable disease	WHO FAIRMED Foundation Nepal, Save the Children NTAG – Nepali Technical Assistance Group, WHO Save the Children, WHO
International Health Regulation	WHO USAID
Tuberculosis	WHO, Global Fund, IoM Japan Anti TB Association support, Sustaining Technical and Analytical Resources (STAR) through USAID, Save the Children International (SCI), Damien Foundation TB Nepal, JANTRA, BWSN, KIDS, Trisuli + NATA, JANTRA, INTERPID Nepal, BNMT, NYMAT Nepal
HIV/STIs	USAID FHI 360 Nepal, Save the Children,
Curative services	WHO ADRA Nepal, Nick Simons Foundation International, One Heart Worldwide
Academics	UNFPA, WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation Nick Simons Foundation International
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
Human resource capacity building	UNICEF, UNFPA, WHO ADRA Nepal, CARE Nepal, FHI 360 Nepal, Ipas Nepal, Nick Simons Foundation International, One Heart Worldwide
Health education information and communication	UNICEF, UNFPA, WHO, Nick Simons Foundation International
Logistics management	UNFPA, WHO British Embassy Kathmandu, ADRA Nepal, FHI 360 Nepal
Health information management	WHO, UNFPA Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, FHI 360 Nepal, Medic Mobile,
Health Infrastructure management	WHO British Embassy Kathmandu,
Healthcare waste management	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation, FHI 360 Nepal

Thematic areas	Development Partners Contributing in the area
Water, sanitation and hygiene (WASH)	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation, USAID, USAID's Health and Hygiene Activity (Swachchhata) implemented by DevWorks International ADRA Nepal, United Mission to Nepal (UMN)
Digital health	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, CARE Nepal, Medic Mobile, Nick Simons Foundation International
Health Insurance and social protection	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation, WHO
Community mobilization and awareness program	WHO CARE Nepal, Practical Help Achieving Self-Empowerment (PHASE) Nepal
Private sector quality health care delivery	CARE Nepal, FHI 360 Nepal Nepal CRS Company
Air Quality	WHO FHI 360 Nepal
Resilient Livelihood	World Vision International Nepal
Health System Strengthening	WHO, UNICEF, UNFPA, World Bank British Embassy Kathmandu, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation, USAID ADRA Nepal, CARE Nepal, FAIRMED Foundation Nepal, FHI 360 Nepal, Nick Simons Foundation International Save the Children, United Mission to Nepal
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 HDPs are detailed in Table 26.2

Table 26.2 Health Development Partners Major Programs, Geographical Coverage and Budget in FY 2079/80

Organization (Alphabetical order)	Major program focus on	Geographical coverage Provinces/ Districts/ LLGs	Budget* for Health sector FY 2079/80 *Currency conversion factors used [1 USD = NPR 132.17[2] 1£ = NPR 160.9[3], 1 Euro = 141.5[4]	
			Total allocated budget (NPR in million)	Budget absorption rate (%)
Multi-lateral agencies/organizations				
United Nations Children's Fund (UNICEF)	Maternal and newborn health	77 Districts	**712.8**	**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%**

United Nations Population Fund (UNFPA)	**Sexual and Reproductive Health and Rights Program** - Holistic landscape **Family Planning** focused eLMIS, capacity building, costing plan **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)	543.99	78.3%
	Family Planning/Reproductive health commodities support	Nation-wide	263.33	100%
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. 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	Nation-wide	1969.33	89.9%
World Bank	Project: COVID-19 Emergency Response and Health Systems Preparedness Project Focus Areas: • COVID-19 Emergency Response • COVID-19 vaccination • Health Systems Strengthening	Nation-wide	Total IDA allocation for Nepal's COVID-19 response activities: **16,124.7** Red Book allocation **4,527.0**	
Bilateral Agencies/Organizations				
British Embassy Kathmandu	Health system strengthening, including policy making, planning and budgeting, enhancing health governance and accountability, improving quality of care, using data for decision making. Gender equity and social inclusion. Procurement and Public Financial Management of health sector. Health infrastructures and retrofitting of hospitals (Bhaktapur and Pokhara).	Nationwide with focused technical assistance to Madhesh and Lumbini Provinces.	Financial Aid disbursed **670.07** Technical Assistance **626.39**	

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ - German Technical Cooperation **Support to the Health Sector Strategy (7/2021 – 06/2024)** **With funding from German Federal Ministry for Economic Cooperation and Development (BMZ)**	**Social health protection** – Support Health Insurance Board (HIB) and Social Security Fund (SSF Nepal) to improve core processes such as enrolment, claims management, monitoring with support of digital tools	Support to National Scheme/Federal level	342.25	100%
	Subnational health management – Support to strengthen capacities at local level; Support selected 5 municipalities for evidence based local level planning and budgeting in Health sector, support 13 COVID designated hospitals across country to strengthen and institutionalize Health Care Waste Management system as per standard	**Support to 13 COVID 19 esignated hospitals Focused support to Sudurpaschim Province (1) Supported focused municipalities: 5 LLGs**		
	Integrated Health Information System: Support MoHP for promoting standard and interoperability, improve access to digital data and information - improve access to health sector management data and information, Support Health Insurance Board and Social Security Fund Nepal for implementation of openIMIS, and open-source insurance management system, Support for implementation of Birth Registration Management System (BRMS) in selected district (Kailali) to improve CRVS	**Support to Federal Level:** Technical support to iHIMS section and EDCD on EWARS Technical assistance to MoHP to formulate Standards for Interoperability **District number: 1 (Kailali)** Birth Registration Management System (BRMS)implementation at 63 Health facilities in Kailali district.		
	Improve reproductive health service through institutionalization of selected approaches; key support area includes support toward Menstrual Hygiene &Management, WASH in Schools, supports Midwifery education at selected partner universities	**Support at federal level:** Advocacy for institutionalizing Menstrual Hygiene Management (MHM) through MHM Partners Alliance **Municipality: 2** (Dhangadhi SMC and Godawari Municipality) Community based MHM and WASH in School Program Support for Midwifery Education (NAMS)		
USAID	**Maternal Newborn Health** **Maternal Newborn and Child Health and Nutrition**	District number: **47 districts** through different projects (Suaahara II, and SSBH, USAID Clean Air, Grants to WHO and UNICEF, MCGL and G2G)	6,608.5	100%
	Family Planning & Reproductive Health	District number **all 77 districts** through different projects (Epic-PSM, Women's health at workplace, Suaahara II, SSBH, Redbook, ARH, G2G, and MPHD)		
	HIV/AIDS and STI	District number: **37 districts** (EpiC project)		
	Water Sanitation and Hygiene program	District number **42 districts** through different projects (G2G, SUAAHARA, Karnali Water activity, and Swachchhata)		

USAID	**Health System Strengthening**	Nationwide through different projects: (G2G, MTaPS, PQM+, DHS, SSBH),		
	Physical disability and Rehabilitation	PRA, Sakchham-West, Sakchham-central, and Local works-Mugu)		
	Global Health Security	Nationwide through different projects (G2G, grants to WHO and FAO)		
USAID's Health and Hygiene Activity (Swachchhata) implemented by DevWorks International	Improve the quality of health services and hygiene behaviors. • Construction and upgrade of WASH Infrastructure (Water supply schemes, disabled-friendly Toilets, Handwashing stations) in health facilities. • Train health workers on infection prevention control and provider behavior change communication in health facilities. • Train Health workers and FCHVs on WASH Behavior Change Communication in health facilities to roll out BCC campaign in communities. • Support and strengthen the government's health and WASH sector. • Support in WASH and hygiene promotion message through IEC/BCC materials.	**Province:** Karnali and Lumbini **Districts:** 7 (Surkhet, Dailekh, Salyan Jajarkot, Dolpa and Rukum West and Rukum East **Local level:** 51 Rural and Urban Municipalities **Health Facilities:** 248	69.09	92.7%
International Non-government Organization (INGO)				
ADRA Nepal (INGO)	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 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 Integrated Nutrition and WASH program Health System Strengthening related to Maternal, Newborns Health Program including Maternal Mortality Survey Health System Strengthening related to Child Health Program COVID-19 Response and Recovery program related to mobile vaccination and increasing access of women's health services and resilience through effective partnerships and community engagement.	District number: 15 districts of Madhesh, Lumbini and Sudurpaschim Provinces District number: 4 (Madhesh and Koshi Provinces) District number:2 (Madhesh and Lumbini Provinces District number:2 (Madhesh province) District number: 14 hospitals and 8 districts (Madhesh, Lumbini and Sudurpaschim Provinces)	116.71	94.2%

CARE Nepal	SyAHAR (Strengthening Systems for Improved Access to Health and Rights):	Karnali Province, District 1, 2LLGs	**39.96**	**89.6%**
	Maternal Neonatal Health			
	Child Heath			
	Reproductive and Adolescent Health			
	Birthing centers construction and equipment support			
	Support national immunization program and cold chain management			
	Support to establish telemedicine at remote birthing centers			
	Capacity building clinical trainings to the health workers			
	Menstrual hygiene and health			
	Community mobilization and awareness			
	USAID Adolescent Reproductive Health (ARH) Project **Focus areas:** ● FP/RH information and behavior change support adolescents by addressing current social norms for adoption of healthy RH behavior. ● Improve availability and accessibility of quality FP/RH services for adolescents. ● Institutionalize successful data-driven approaches and mechanisms addressing adolescent reproductive health through the public and private sectors	Karnali Province Surkhet District (4 LLGs) Salyan (3 LLGs) Lumbini Province Banke District (4 LLGs) Rolpa District (3 LLGs) Pyuthan District (5 LLGs) Madhesh Province Bara District (5 LLGs) Dhanusha District (8 LLGs) Mahottari District (8 LLGs) Parsa District (4 LLGs) Rauthat District 8 LLGS) Sarlahi (8 LLGs)	**659.46**	**74.1%**
FAIRMED Foundation Nepal	Neglected Tropical Diseases Maternal and Newborn Health Health system strengthening, and behavior change at the community level GESI and Disability Inclusiveness	District number: 9 Lumbini Province – 5 Districts Gandaki Province- 1 District Bagmati Province- 1 District Koshi Province- 3 Districts	**202.8**	**97.5%**
FHI 360 Nepal	**USAID- and PEPFAR-supported Epic Nepal** HIV prevention including HIV PrEP HTC including HIV self-testing STI treatment Community-based ART Community care, support and counseling for adherence and retention **Technical and logistics support for HIV viral load testing and suppression** Stigma and discrimination reduction Technical assistance for capacity and systems strengthening	37 districts, – 391 National level	**1,176.31**	**86.5%**
	USAID-supported EpiC Nepal - Holistic landscape of COVID-19 management including vaccination and genome and PSM MD an PHLMC - Holistic landscape of eLMIS	National level	**264.34**	**85%**
	UK aid-funded Fleming Fund Country Grant for Nepal - Holistic landscape of AMR and One Health Approach	23 laboratories/ surveillance sites (15 human health, 7 animal health, and 1 food sector, 13 districts)	**132.17**	**86.0%**

Organization	Program	Coverage	Budget	%
FHI 360 Nepal	**USAID-supported MOMENTUM Private Healthcare Delivery (MPHD) Nepal** - Holistic landscape to support private sector provision of FP services including BCC and human center design focused support for adolescent and young people	866 private sector health facilities (Clinics-91, Polyclinics-88, hospitals-65 and pharmacies-622) 67 municipalities 26 districts Six Provinces (Bagmati, Gandaki, Karnali, Koshi, Lumbini and Madhesh)	**251.12**	**63.15%**
	USAID Clean Air - Holistic landscape for clean air including capacity building and multi-stakeholders' collaboration	All 18 municipalities and 3 districts of Kathmandu Valley	**79.30**	**41.6%**
Ipas Nepal	SRHR including safe abortion and contraception services and Gender-Based Violence Prevention and Response. - Holistic landscape Providing technical assistance and support for the formulation of Local Adaptation Plans of Action (LAPAs) in 10 municipalities, emphasizing health and SRHR. Prevention and response to Gender-Based Violence. Offering technical assistance for 2nd trimester and preservice interventions to ensure safe abortion practices.	**Koshi** – 7 Districts **Gandaki** –3 Districts **Lumbini** - 3 Districts **Sudurpaschim** – 7 Districts **Bagmati** - 4 Districts including 17 hospitals of the five provinces	**393.56**	**100%**
Medic Mobile	SMS-Based care coordination tool for FCHVs	District number: 26	**40.01**	**42.4%**
	Electronic Community Health Information System (eCHIS)	District number: 4		
	Pregnancy Tracking System	District number: 11		
	Medic has also been providing data visualization dashboard to national and sub-national health authorities to facilitate data-informed decision-making.			
Nick Simons Foundation International	Training In-service and academic	District number: 77 Districts	**774.38**	**93.2%**
	Curative Service Support program (CSSP)- Human Resource of different cadres, and equipment/Supplies	District number: 44 hospitals (40 Districts)		
	Hospital Strengthening Program (HSP)- System Strengthening, MSS implementation.	District number: 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- 4 Districts Gandaki province- 2 Districts Karnali province- 4 Districts	**328.97**	**96.12%**

Save the Children	Health System Strengthening	Karnali Province	4,538.18	89.14%
	Maternal, Newborn, Child and Adolescent Health	Koshi, Madhesh and Bagmati Province		
	HIV AIDS	Nationwide		
	Tuberculosis	Nationwide		
	Malaria	Nationwide		
United Mission to Nepal	Integrated Community Health focusing on MCH, mental health, WASH, FP, ASRH, and health system strengthening	Lumbini Province, 1 District (2 LLGs), Sudurpaschim Province- 1 District (1 LLG)	38.28	96.24%
	Mental Health	Lumbini Province 2 Districts (4 LLGs), Sudurpaschim Province- 1 District (2 LLGs)	37.41	91.3%
World Vision International Nepal	Nutrition and Resilient Livelihood: Sponsorship Project	Koshi, Bagmati, Madhesh, Gandaki Provinces - 6 Districts	101.17	
	Health and Nutrition: Poshan Sarlahi	Madhesh Province - 1 District:	1.55	
	Health And Nutrition: Kishori Kailali	Sudurpaschim Province- 1 District:	2.88	
	Health and Nutrition: Nepali Women Access to Health Response Initiative	Sudurpaschim Province- 1 District	14.06	
	Health and Nutrition: Community Resilience/Disaster Support: COVID-19 Recovery in Nepal	Madhesh Province- 11 Districts	14.83	
	Nutrition and Resilient Livelihood – Kishori Sindhuli	Bagmati Province- 1 District	0.89	
	Health and Nutrition: Gift catalog	Madhesh Province- 1 District	1.46	
Non-government organizations and not for profit private company				
Nepal CRS Company	● **Ongoing Program "Sangini Program"** – Trainings (Basic/ refresher) to private health facilities in "Sangini" DMPA, Technical Support Visit, Coaching and mentoring, follow up and commodities purchase	7 Provinces, 77 districts (as need basis)	149.15	43.20%
	● **MOMENTUM Private Healthcare Delivery (MPHD) Nepal** - USAID-supported MOMENTUM Private Healthcare Delivery Nepal works with the private sector health facilities and pharmacies to improve their technical and managerial capacity to deliver sustained, high-quality voluntary FP services, especially to adolescents and young people	6 provinces (Koshi, Madhesh, Bagmati Gandaki, Lumbini and Karnali), 26 districts, 67 municipalities	315.50	59.97%
	● MOMENTUM Nepal works with 904 private sector SDPs in total across 67 municipalities in six provinces			
	● USAID ARH – ASRH	3 provinces (Lumbini, Karnali and Madhesh), 11 districts, 60 LLGs	67.38	62.8%

Nepali Technical Assistance Group	Suaahara II	**6 Provinces** (Koshi, Bagmati, Gandaki, Lumbini, Karnali, Sudurpaschim) **42 Districts**	**486.22**	
	BHAKARI	**6 Districts**	**37.78**	
	Family MUAC Approach Piloting Project	**4 Districts**	**39.66**	
	Food and Nutrition Security Improvement Project, Palata	1 District	**2.61**	
	Dengue Response Program	2 Districts	**5.66**	
	Targeted Screening Strategy in Belaka municipality, Udayapur	1 District	**0.98**	
	Reinforcing Integrated Management of Acute Malnutrition (IMAM) in Nepal	Nationwide	**6.82**	
	Recall Food Habit Behavior Among the Women and Under 5 Children	2 Districts	**0.36**	
	Jajarkot Earthquake Response Project	2 Districts	**6.27**	
Practical Help Achieving Self-Empowerment Nepal	Primary Health Care programme Maternal and Child Health programme Maternal and Child Nutrition programme Community Awareness programme	Present in selected LLGs of Sudurpaschim, Karnali, Gandaki Province, Bagmati Provinces	**36.51**	**99.89%**

[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 HDPs organizations and their large contributions to Nepal's health sector. The partners have also provided technical assistance in their areas of expertise.

26.1 Aid Harmonization in Health Sector

Since 2058/59 (2002), GoN has implemented several policies which are relevant for sector wide approach (SWAp) modality of financing. Two significant policy guidelines, Foreign Aid Policy (FAP) 2058/59 (2002) and Development Cooperation Policy (DCP) 2070/71 (2014), serve as the foundational framework for the effective implementation of SWAp in Nepal. Moreover, sectoral policies play a crucial role in facilitating SWAp implementation, requiring all Development Partners to align their support with national policies to ensure government ownership. Study was commenced by Ministry of Finance (MoF) in 2018[1], that showed requirement of improvement in the delivery of health services at local level and needful reduction in the transaction cost through harmonization through facilitation of the practical difficulties in the procurement system among key challenges and way forward. The National Health Sector Strategies serve as robust pillars for ensuring SWAp implementation in health sector. Against this backdrop, different HDPs contribute to health sector in Nepal. Furthermore, similar to the other years, Joint Financial Agreements

were made for the investment in health guided by the then Health Sector Strategy Program and its review was done through NJAR in this fiscal year too. This chapter covers the major contributors, their areas of investment, geographical coverage and amount allocated in health sector for FY 2079/80 as reported by the health development partners.

26.2 Mapping of HDPs based on Major Programs of Investment

Based on the report received from the HDPs, divisions and centers and the thematic areas, mapping of the development partners based on major programs of their investment has been done. The themes are majorly based on the thematic areas of this report (chapters) and inductive themes based on the common areas being reported in the annual report have been included. (Table 26.1)

Table 26.1 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 Practical Help Achieving Self-Empowerment Nepal
Child Health and Immunization	UNICEF, WHO ADRA Nepal, CARE Nepal, Save the Children, United Mission to Nepal Practical Help Achieving Self-Empowerment Nepal
Nutrition	UNICEF, WHO USAID ADRA Nepal, World Vision International Nepal Nepali Technical Assistance Group, Practical Help Achieving Self-Empowerment Nepal
Family planning, sexual and reproductive health	UNFPA, WHO USAID Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, CARE Nepal FHI 360 Nepal, Ipas Nepal Nepal CRS Company
Primary Health Care and Community Support	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, Practical Help Achieving Self-Empowerment Nepal

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[1] Ministry of Finance, 2018. An Assessment of Sector Wide Approach (SWAp) in Health and Education Sectors of Nepal, Ministry of Finance, International Economic Cooperation Coordination Division (IECCD), Kathmandu, Nepal.

Thematic areas	Development Partners Contributing in the area
Non-communicable disease	WHO Norad FHI 360 Nepal
Mental health	UNICEF, WHO United Mission to Nepal
Road Safety	WHO
Surveillance	WHO FHI 360 Nepal Office
COVID-19	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, FHI 360 Nepal, World Vision International Nepal
Communicable disease	WHO FAIRMED Foundation Nepal, Save the Children NTAG – Nepali Technical Assistance Group, WHO Save the Children, WHO
International Health Regulation	WHO USAID
Tuberculosis	WHO, Global Fund, IoM Japan Anti TB Association support, Sustaining Technical and Analytical Resources (STAR) through USAID, Save the Children International (SCI), Damien Foundation TB Nepal, JANTRA, BWSN, KIDS, Trisuli + NATA, JANTRA, INTERPID Nepal, BNMT, NYMAT Nepal
HIV/STIs	USAID FHI 360 Nepal, Save the Children,
Curative services	WHO ADRA Nepal, Nick Simons Foundation International, One Heart Worldwide
Academics	UNFPA, WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation Nick Simons Foundation International
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
Human resource capacity building	UNICEF, UNFPA, WHO ADRA Nepal, CARE Nepal, FHI 360 Nepal, Ipas Nepal, Nick Simons Foundation International, One Heart Worldwide
Health education information and communication	UNICEF, UNFPA, WHO, Nick Simons Foundation International
Logistics management	UNFPA, WHO British Embassy Kathmandu, ADRA Nepal, FHI 360 Nepal
Health information management	WHO, UNFPA Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, FHI 360 Nepal, Medic Mobile,
Health Infrastructure management	WHO British Embassy Kathmandu,
Healthcare waste management	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation, FHI 360 Nepal

Thematic areas	Development Partners Contributing in the area
Water, sanitation and hygiene (WASH)	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation, USAID, USAID's Health and Hygiene Activity (Swachchhata) implemented by DevWorks International ADRA Nepal, United Mission to Nepal (UMN)
Digital health	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation ADRA Nepal, CARE Nepal, Medic Mobile, Nick Simons Foundation International
Health Insurance and social protection	WHO Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH - German Technical Cooperation, WHO
Community mobilization and awareness program	WHO CARE Nepal, Practical Help Achieving Self-Empowerment (PHASE) Nepal
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Air Quality	WHO FHI 360 Nepal
Resilient Livelihood	World Vision International Nepal
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Disaster response	UNFPA, UNICEF, WHO, World Bank Ipas Nepal, World Vision International Nepal Nepali Technical Assistance Group

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United Nations Population Fund (UNFPA)	**Sexual and Reproductive Health and Rights Program** - Holistic landscape **Family Planning** focused eLMIS, capacity building, costing plan **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)	543.99	78.3%
	Family Planning/Reproductive health commodities support	Nation-wide	263.33	100%
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. 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	Nation-wide	1969.33	89.9%
World Bank	Project: COVID-19 Emergency Response and Health Systems Preparedness Project Focus Areas: • COVID-19 Emergency Response • COVID-19 vaccination • Health Systems Strengthening	Nation-wide	Total IDA allocation for Nepal's COVID-19 response activities: **16,124.7** Red Book allocation **4,527.0**	
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British Embassy Kathmandu	Health system strengthening, including policy making, planning and budgeting, enhancing health governance and accountability, improving quality of care, using data for decision making. Gender equity and social inclusion. Procurement and Public Financial Management of health sector. Health infrastructures and retrofitting of hospitals (Bhaktapur and Pokhara).	Nationwide with focused technical assistance to Madhesh and Lumbini Provinces.	Financial Aid disbursed **670.07** Technical Assistance **626.39**	

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ - German Technical Cooperation **Support to the Health Sector Strategy (7/2021 – 06/2024)** **With funding from German Federal Ministry for Economic Cooperation and Development (BMZ)**	**Social health protection** – Support Health Insurance Board (HIB) and Social Security Fund (SSF Nepal) to improve core processes such as enrolment, claims management, monitoring with support of digital tools	Support to National Scheme/Federal level	342.25	100%
	Subnational health management – Support to strengthen capacities at local level; Support selected 5 municipalities for evidence based local level planning and budgeting in Health sector, support 13 COVID designated hospitals across country to strengthen and institutionalize Health Care Waste Management system as per standard	**Support to 13 COVID 19 esignated hospitals Focused support to Sudurpaschim Province (1) Supported focused municipalities: 5 LLGs**		
	Integrated Health Information System: Support MoHP for promoting standard and interoperability, improve access to digital data and information - improve access to health sector management data and information, Support Health Insurance Board and Social Security Fund Nepal for implementation of openIMIS, and open-source insurance management system, Support for implementation of Birth Registration Management System (BRMS) in selected district (Kailali) to improve CRVS	**Support to Federal Level:** Technical support to iHIMS section and EDCD on EWARS Technical assistance to MoHP to formulate Standards for Interoperability **District number: 1 (Kailali)** Birth Registration Management System (BRMS)implementation at 63 Health facilities in Kailali district.		
	Improve reproductive health service through institutionalization of selected approaches; key support area includes support toward Menstrual Hygiene &Management, WASH in Schools, supports Midwifery education at selected partner universities	**Support at federal level:** Advocacy for institutionalizing Menstrual Hygiene Management (MHM) through MHM Partners Alliance **Municipality: 2** (Dhangadhi SMC and Godawari Municipality) Community based MHM and WASH in School Program Support for Midwifery Education (NAMS)		
USAID	**Maternal Newborn Health** **Maternal Newborn and Child Health and Nutrition**	District number: **47 districts** through different projects (Suaahara II, and SSBH, USAID Clean Air, Grants to WHO and UNICEF, MCGL and G2G)	6,608.5	100%
	Family Planning & Reproductive Health	District number **all 77 districts** through different projects (Epic-PSM, Women's health at workplace, Suaahara II, SSBH, Redbook, ARH, G2G, and MPHD)		
	HIV/AIDS and STI	District number: **37 districts** (EpiC project)		
	Water Sanitation and Hygiene program	District number **42 districts** through different projects (G2G, SUAAHARA, Karnali Water activity, and Swachchhata)		

USAID	Health System Strengthening	Nationwide through different projects: (G2G, MTaPS, PQM+, DHS, SSBH),		
	Physical disability and Rehabilitation	PRA, Sakchham-West, Sakchham-central, and Local works-Mugu)		
	Global Health Security	Nationwide through different projects (G2G, grants to WHO and FAO)		
USAID's Health and Hygiene Activity (Swachchhata) implemented by DevWorks International	Improve the quality of health services and hygiene behaviors. • Construction and upgrade of WASH Infrastructure (Water supply schemes, disabled-friendly Toilets, Handwashing stations) in health facilities. • Train health workers on infection prevention control and provider behavior change communication in health facilities. • Train Health workers and FCHVs on WASH Behavior Change Communication in health facilities to roll out BCC campaign in communities. • Support and strengthen the government's health and WASH sector. • Support in WASH and hygiene promotion message through IEC/BCC materials.	**Province:** Karnali and Lumbini **Districts:** 7 (Surkhet, Dailekh, Salyan Jajarkot, Dolpa and Rukum West and Rukum East **Local level:** 51 Rural and Urban Municipalities **Health Facilities:** 248	69.09	92.7%
International Non-government Organization (INGO)				
ADRA Nepal (INGO)	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 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 Integrated Nutrition and WASH program Health System Strengthening related to Maternal, Newborns Health Program including Maternal Mortality Survey Health System Strengthening related to Child Health Program COVID-19 Response and Recovery program related to mobile vaccination and increasing access of women's health services and resilience through effective partnerships and community engagement.	District number: 15 districts of Madhesh, Lumbini and Sudurpaschim Provinces District number: 4 (Madhesh and Koshi Provinces) District number:2 (Madhesh and Lumbini Provinces District number:2 (Madhesh province) District number: 14 hospitals and 8 districts (Madhesh, Lumbini and Sudurpaschim Provinces)	116.71	94.2%

CARE Nepal	SyAHAR (Strengthening Systems for Improved Access to Health and Rights):	Karnali Province, District 1, 2LLGs	**39.96**	**89.6%**
	Maternal Neonatal Health			
	Child Heath			
	Reproductive and Adolescent Health			
	Birthing centers construction and equipment support			
	Support national immunization program and cold chain management			
	Support to establish telemedicine at remote birthing centers			
	Capacity building clinical trainings to the health workers			
	Menstrual hygiene and health			
	Community mobilization and awareness			
	USAID Adolescent Reproductive Health (ARH) Project **Focus areas:** • FP/RH information and behavior change support adolescents by addressing current social norms for adoption of healthy RH behavior. • Improve availability and accessibility of quality FP/RH services for adolescents. • Institutionalize successful data-driven approaches and mechanisms addressing adolescent reproductive health through the public and private sectors	Karnali Province Surkhet District (4 LLGs) Salyan (3 LLGs) Lumbini Province Banke District (4 LLGs) Rolpa District (3 LLGs) Pyuthan District (5 LLGs) Madhesh Province Bara District (5 LLGs) Dhanusha District (8 LLGs) Mahottari District (8 LLGs) Parsa District (4 LLGs) Rauthat District 8 LLGS) Sarlahi (8 LLGs)	**659.46**	**74.1%**
FAIRMED Foundation Nepal	Neglected Tropical Diseases Maternal and Newborn Health Health system strengthening, and behavior change at the community level GESI and Disability Inclusiveness	District number: 9 Lumbini Province – 5 Districts Gandaki Province- 1 District Bagmati Province- 1 District Koshi Province- 3 Districts	**202.8**	**97.5%**
FHI 360 Nepal	**USAID- and PEPFAR-supported Epic Nepal** HIV prevention including HIV PrEP HTC including HIV self-testing STI treatment Community-based ART Community care, support and counseling for adherence and retention **Technical and logistics support for HIV viral load testing and suppression** Stigma and discrimination reduction Technical assistance for capacity and systems strengthening	37 districts, – 391 National level	**1,176.31**	**86.5%**
	USAID-supported EpiC Nepal - Holistic landscape of COVID-19 management including vaccination and genome and PSM MD an PHLMC - Holistic landscape of eLMIS	National level	**264.34**	**85%**
	UK aid-funded Fleming Fund Country Grant for Nepal - Holistic landscape of AMR and One Health Approach	23 laboratories/ surveillance sites (15 human health, 7 animal health, and 1 food sector, 13 districts)	**132.17**	**86.0%**

FHI 360 Nepal	**USAID-supported MOMENTUM Private Healthcare Delivery (MPHD) Nepal** - Holistic landscape to support private sector provision of FP services including BCC and human center design focused support for adolescent and young people	866 private sector health facilities (Clinics-91, Polyclinics-88, hospitals-65 and pharmacies-622) 67 municipalities 26 districts Six Provinces (Bagmati, Gandaki, Karnali, Koshi, Lumbini and Madhesh)	251.12	63.15%
	USAID Clean Air - Holistic landscape for clean air including capacity building and multi-stakeholders' collaboration	All 18 municipalities and 3 districts of Kathmandu Valley	79.30	41.6%
Ipas Nepal	SRHR including safe abortion and contraception services and Gender-Based Violence Prevention and Response. - Holistic landscape Providing technical assistance and support for the formulation of Local Adaptation Plans of Action (LAPAs) in 10 municipalities, emphasizing health and SRHR. Prevention and response to Gender-Based Violence. Offering technical assistance for 2nd trimester and preservice interventions to ensure safe abortion practices.	**Koshi** – 7 Districts **Gandaki** –3 Districts **Lumbini** - 3 Districts **Sudurpaschim** – 7 Districts **Bagmati** - 4 Districts including 17 hospitals of the five provinces	393.56	100%
Medic Mobile	SMS-Based care coordination tool for FCHVs **Electronic Community Health Information System (eCHIS)** **Pregnancy Tracking System** *Medic has also been providing data visualization dashboard to national and sub-national health authorities to facilitate data-informed decision-making.*	District number: 26 District number: 4 District number: 11	40.01	42.4%
Nick Simons Foundation International	Training In-service and academic Curative Service Support program (CSSP)- Human Resource of different cadres, and equipment/Supplies Hospital Strengthening Program (HSP)- System Strengthening, MSS implementation. Research and advocacy	District number: 77 Districts District number: 44 hospitals (40 Districts) District number: 127 hospitals (77 districts) Need based research	774.38	93.2%
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- 4 Districts Gandaki province- 2 Districts Karnali province- 4 Districts	328.97	96.12%

Save the Children	Health System Strengthening	Karnali Province	**4,538.18**	**89.14%**
	Maternal, Newborn, Child and Adolescent Health	Koshi, Madhesh and Bagmati Province		
	HIV AIDS	Nationwide		
	Tuberculosis	Nationwide		
	Malaria	Nationwide		
United Mission to Nepal	Integrated Community Health focusing on MCH, mental health, WASH, FP, ASRH, and health system strengthening	Lumbini Province, 1 District (2 LLGs), Sudurpaschim Province-1 District (1 LLG)	**38.28**	**96.24%**
	Mental Health	Lumbini Province 2 Districts (4 LLGs), Sudurpaschim Province-1 District (2 LLGs)	**37.41**	**91.3%**
World Vision International Nepal	Nutrition and Resilient Livelihood: Sponsorship Project	Koshi, Bagmati, Madhesh, Gandaki Provinces - 6 Districts	**101.17**	
	Health and Nutrition: Poshan Sarlahi	Madhesh Province - 1 District:	**1.55**	
	Health And Nutrition: Kishori Kailali	Sudurpaschim Province-1 District:	**2.88**	
	Health and Nutrition: Nepali Women Access to Health Response Initiative	Sudurpaschim Province-1 District	**14.06**	
	Health and Nutrition: Community Resilience/Disaster Support: COVID-19 Recovery in Nepal	Madhesh Province- 11 Districts	**14.83**	
	Nutrition and Resilient Livelihood – Kishori Sindhuli	Bagmati Province- 1 District	**0.89**	
	Health and Nutrition: Gift catalog	Madhesh Province- 1 District	**1.46**	
Non-government organizations and not for profit private company				
Nepal CRS Company	● **Ongoing Program "Sangini Program"** – Trainings (Basic/refresher) to private health facilities in "Sangini" DMPA, Technical Support Visit, Coaching and mentoring, follow up and commodities purchase	7 Provinces, 77 districts (as need basis)	**149.15**	**43.20%**
	● **MOMENTUM Private Healthcare Delivery (MPHD) Nepal** - USAID-supported MOMENTUM Private Healthcare Delivery Nepal works with the private sector health facilities and pharmacies to improve their technical and managerial capacity to deliver sustained, high-quality voluntary FP services, especially to adolescents and young people	6 provinces (Koshi, Madhesh, Bagmati Gandaki, Lumbini and Karnali), 26 districts, 67 municipalities	**315.50**	**59.97%**
	● MOMENTUM Nepal works with 904 private sector SDPs in total across 67 municipalities in six provinces			
	● USAID ARH – ASRH	3 provinces (Lumbini, Karnali and Madhesh), 11 districts, 60 LLGs	**67.38**	**62.8%**

Nepali Technical Assistance Group	Suaahara II	6 Provinces (Koshi, Bagmati, Gandaki, Lumbini, Karnali, Sudurpaschim) 42 Districts	486.22	
	BHAKARI	6 Districts	37.78	
	Family MUAC Approach Piloting Project	4 Districts	39.66	
	Food and Nutrition Security Improvement Project, Palata	1 District	2.61	
	Dengue Response Program	2 Districts	5.66	
	Targeted Screening Strategy in Belaka municipality, Udayapur	1 District	0.98	
	Reinforcing Integrated Management of Acute Malnutrition (IMAM) in Nepal	Nationwide	6.82	
	Recall Food Habit Behavior Among the Women and Under 5 Children	2 Districts	0.36	
	Jajarkot Earthquake Response Project	2 Districts	6.27	
Practical Help Achieving Self-Empowerment Nepal	Primary Health Care programme Maternal and Child Health programme Maternal and Child Nutrition programme Community Awareness programme	Present in selected LLGs of Sudurpaschim, Karnali, Gandaki Province, Bagmati Provinces	36.51	99.89%

[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 HDPs organizations and their large contributions to Nepal's health sector. The partners have also provided technical assistance in their areas of expertise.

Annexes[1]

Annex for Family Planning and Reproductive Health (Chapter 6)

Annex Table 6.1 FP current users (modern methods) by Province in last three FYs, 2075/76 to 2079/80

Provinces	Users	FY 2077/78	FY 2078/79	FY 2079/80
Koshi	Spacing	2,30,011	2,36,291	2,27,366
	Limiting	2,30,962	2,35,018	2,21,958
	Total Users	4,60,973	4,71,309	4,49,324
Madhesh	Spacing	1,25,274	1,45,396	1,60,571
	Limiting	4,69,753	4,84,099	4,58,824
	Total Users	5,95,028	6,29,495	6,19,395
Bagamati	Spacing	2,75,309	2,80,963	2,86,165
	Limiting	2,02,477	2,04,437	1,90,804
	Total Users	4,77,786	4,85,400	4,76,969
Gandaki	Spacing	1,05,213	1,09,640	1,05,238
	Limiting	95,669	96,693	90,522
	Total Users	2,00,881	2,06,332	1,95,760
Lumbini	Spacing	2,92,726	2,72,727	2,92,110
	Limiting	1,69,492	1,72,609	1,62,800
	Total Users	4,62,218	4,45,336	4,54,910
Karnali	Spacing	92,979	96,584	92,517
	Limiting	51,835	52,543	48,829
	Total Users	1,44,813	1,49,127	1,41,346
Sudurpaschim	Spacing	1,74,121	1,96,680	1,98,135
	Limiting	95,768	97,340	90,974
	Total User	2,69,889	2,94,020	2,89,109
National	Spacing	12,95,633	13,38,280	13,62,102
	Limiting	13,15,956	13,42,739	12,64,712
	Total Users	26,11,589	26,81,019	26,26,814

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1 The label of the caption used for the annexes are linked with the chapter in the report for facilitating readers.

Annex Table 6.2 New acceptors (temporary methods) by Province, 2077/78 to 2079/80

FP method	Koshi			Madhesh			Bagmati			Gandaki			Lumbini			Karnali			Sudurpaschim		
	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80	2077/78	2078/79	2079/80
IUCD	1.7%	2.5%	2.6%	1.5%	2.7%	1.7%	3.5%	3.7%	4.7%	2.3%	2.7%	3.1%	1.9%	2.1%	2.3%	0.6%	0.6%	0.8%	1.4%	1.2%	1.6%
Implant	15.7%	18.5%	22.0%	9.4%	10.2%	11.3%	20.5%	20.0%	25.4%	17.0%	15.9%	22.9%	12.7%	15.5%	19.9%	10.5%	10.1%	12.3%	11.7%	12.5%	20.6%
Depo	43.1%	39.8%	46.3%	43.6%	43.6%	45.3%	40.6%	40.6%	46.1%	32.4%	33.2%	40.6%	36.3%	32.8%	43.1%	50.4%	50.1%	53.1%	37.1%	36.3%	49.1%
Pills	21.4%	21.5%	25.9%	26.4%	25.1%	31.6%	17.8%	17.1%	20.4%	20.6%	20.7%	27.1%	23.9%	20.2%	28.3%	21.2%	20.2%	22.6%	16.6%	15.2%	22.9%
Sayana Press	0.0%	0.0%	1.8%	0.0%	0.0%	1.1%	0.0%	0.0%	1.5%	0.0%	0.0%	2.7%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%
ECP	0.0%	0.0%	1.5%	0.0%	0.0%	9.0%	0.0%	0.0%	1.9%	0.0%	0.0%	3.6%	0.0%	0.0%	5.2%	0.0%	0.0%	11.3%	0.0%	0.0%	1.9%
Total	110,484	112,597	93,455	98,478	112,080	109,407	112,630	115,418	93,827	56,975	56,745	40,257	170,402	144,059	111,664	75,994	71,786	56,704	113,886	118,950	71,973

Source: HMIS/DoHS

Annex for Basic Health Services (Chapter 7)

Annex Table 7.1: BHS service utilization status by provinces in FY 2079/80

Indicators	Nepal	Province						
		Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim
Immunization								
% of children under one year immunized with BCG	102.2	97.1	107.8	119.9	85.3	102.7	90.7	86.8
% of children aged 12-23 months immunized with measles/rubella 2	94.7	87	97.8	105.6	87.7	93.9	87.7	93
% of children fully immunized as per NIP schedule (BHS package)	84.1	74.3	84.9	88	75.2	87.7	85.1	91.3
% of pregnant women who received completed dose of TD (TD2 and TD2+)	72	66.3	86	67.1	59.9	73.8	65.2	65.9
Integrated Management of Childhood Illness								
% of children under five years with diarrhea treated with zinc and ORS	95.8	89.4	94.2	95.1	99.1	99.4	97.3	98.5
% of children U5 years with Pneumonia treated with antibiotics (Amoxicillin)	102	99.6	115.5	98.7	102	100.3	99.2	100.9
% of newborns with preterm low birth and/ or hypothermia managed with KMC	74.6	38.9	115.6	525	68.6	78.9	117.6	54.9
% of infants aged 0-2 months with PSBI receiving a first dose of Gentamycin	70.8	61	18.2	43.2	64.9	94.8	95.4	68.5
Maternal and Newborn Health								
% of women who had four postnatal check-ups as per protocol	26.5	17.7	19.8	21	27.4	34.9	41.7	40.7
% of postpartum mother who received 45 days' supply of iron folic acid supplement	74.5	62.4	84.2	42	77.7	86.8	96.4	97.5
% of pregnant women who had at least eight ANC visits as per protocol	43	38	28	98.6	45.6	30.2	31.4	25.5
% of postpartum mother who received vitamin A supplement	79.1	71.7	80.3	50.2	80.9	96.2	97	97.2
% of women who received a 180-day supply of Iron Folic Acid during pregnancy	65.4	56.6	56.7	53.8	79.2	84.3	77	68.6
% of newborns who had CHX applied immediately after birth	83.4	82.5	81.2	57.3	97.3	97.6	96.8	98.6
% of pregnancies terminated by induced procedure at health facility	15.1	16.8	5.5	18.9	26.9	15.4	12	21.6

Indicators	Nepal	Province						
		Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim
% of women who had first ANC checkup as per protocol	76.6	76.2	67.4	105.6	81.6	71.1	65	65.8
% of institutional deliveries	83.4	86	64.8	100.5	67.9	96.4	83.4	85.8
Total number of women received PAC services (Induced+ Spontaneous)	11,565	2,250	842	2,179	1,251	2,413	1,263	1,367
Family Planning								
% of modern short-acting contraceptives new acceptors among WRA (pills, injectables)	4.9	4.8	5.1	3.4	3.8	5.2	8.9	6.2
% of women who received short acting contraceptives after abortion (surgical or medical)	59.8	64.8	63.3	48.1	53	67.3	69.2	60.9
Nutrition								
% of under 5 children receiving treatment for acute malnutrition	1.4	1.7	2.7	0.27	0.4	0.73	1.1	1.4
Average number of visits among children aged 0-23 months registered for growth monitoring	6	3.6	4	3.7	7.5	9	9.5	10.5
Reproductive Health Morbidity								
Number of women screened for pelvic organ prolapse	83,056	12,939	11,736	14,507	11,280	15,467	10,114	7,013
Number of women screened for cervical cancer	2,05,332	27,927	15,564	59,091	26,824	41,425	19,583	14,918
Number of women screened for breast cancer	30,377	3,457	1,169	11,567	4,679	5,889	1,115	2,501
Number of women screened for obstetric fistula	10,324	740	280	2,446	1,012	2,787	2,139	920
HIV/AIDS								
Total number of HIV patients treated for opportunistic infection	5,764	1,666	630	1,130	163	739	86	1,350
Tuberculosis								
Number of TB patients treated with first line medicine	37,510	4,473	9,149	8,857	2,524	7,712	1,577	3,218
Disease Control								
Number of cases of animal bites	1,28,512	18,745	21,982	19,192	11,094	37,861	6,010	13,628
Number of cases of snake bites	9,120	2,612	1,460	988	1,191	2,519	208	142
Number of Hypertension cases on treatment	6,30,299	1,44,139	46,670	1,45,666	1,07,416	1,14,498	21,594	50,316

Indicators	Nepal	Province						
		Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Sudurpashchim
Number of Diabetes cases on treatment	3,12,370	84,816	31,932	83,344	35,422	51,727	6,079	19,050
Number of COPD cases on treatment	1,85,857	23,827	21,004	61,468	17,983	27,167	11,062	23,346
Number of mental health cases on treatment	1,19,429	33,109	9,747	30,321	11,124	19,965	9,743	5,420
Number of blood sample collected for malaria diagnosis	4,68,303	43,500	30,872	1,40,876	28,102	92,652	36,951	95,350
Number of dengue cases	56,341	4,963	2,947	35,486	3,265	5,574	2,134	1,972
Curative Services								
Number of Acute gastro-enteritis (AGE) cases	3,39,348	55,484	67,523	64,025	39,660	53,214	31,645	27,797
Number of Measles cases	559	46	2	207	42	174	29	59
Number of Mumps cases	28,984	4,060	3,050	5,956	3,853	6,500	3,198	2,367
Number of Rubella cases	204	12	1	82	10	34	3	62
Number of patients infected by intestinal worms	5,51,188	1,00,566	2,28,789	74,416	33,101	54,972	32,454	26,890
Number of patients treated for Lower Respiratory Tract Infection (LRTI)	9,10,330	1,59,071	1,88,903	1,39,990	94,980	1,53,272	76,930	97,184
Number of patients treated for Upper Respiratory Tract Infection (URTI)	15,15,227	2,35,314	2,38,208	2,36,006	1,65,055	2,92,432	1,60,423	1,87,789
Population Program								
Number of new registered cases in geriatric services	21,372	7,650	1,554	1,342	2,863	3,818	487	3,658
Health Education								
Number of people attending health education sessions	11,72,570	1,60,843	1,03,902	1,23,063	2,06,084	3,14,553	64,438	1,99,687
Number of health education sessions conducted	43,182	6,685	3,595	4,285	8,724	11,439	2,007	6,447

Annex for Epidemiological Surveillance, Research and Outbreak Management (Chapter 9)

Annex-Table 9.1: Provincial EWARS reporting in FY 2079/80

Organisation unit	Koshi Province	Madhesh Province	Bagmati Province	Gandaki Province	Lumbini Province	Karnali Province	Sudurpaschim Province	Total
Disease / Period	2022	2022	2022	2022	2022	2022	2022	
AGE	2,262	2,380	3,470	982	3,071	1,198	1,220	14,583
Cholera	1	0	42	0	0	0	1	44
Covid-19	540	15	4,569	287	64	45	273	5,789
Dengue	2,386	636	16,981	1,676	2,589	454	1,055	25,777
Diptheria	2	0	1	0	1	0	0	4
Encephlitis	368	1,679	560	132	360	82	310	3,491
Hepatitis-Acute Jaundice	14	1	22	5	127	1	3	173
ILI	88	0	248	0	40	1,560	271	2,207
Kala-azar	46	14	38	1	69	94	48	310
Leptospirosis	3	0	14	1	16	0	0	34
Malaria Falciparum	2	0	11	2	14	4	5	38
Malaria Vivax	5	1	2	2	16	10	30	66
Meningococcal Meningitis	83	3	1	6	21	1	4	119
Pneumonia plague	0	0	0	4	2	1	0	7
SARI	3,464	595	2,362	290	2,912	1,216	1,118	11,957
Scrub typhus	457	80	540	151	995	22	1,213	3,458
Suspected Measles Like Illness	7	0	1	0	1	1	0	10
Rabies	85	66	5	0	0	51	0	207
Viral Haemorrhagic Fever	2	0	0	0	12	0	4	18
Whooping Cough	4	0	0	0	7	0	0	11
Snakebite-poisonous	0	12	77	41	45	6	20	201
Other	17	6	40	3	5	5	246	322
Total	**9,955**	**5,490**	**28,987**	**3,583**	**10,377**	**4,752**	**5,823**	**68,967**

Annexes for Communicable Diseases, IHR and One Health (Chapter 10)

Annex Table 10.1: SPOT Coverage and SCT Coverage of MDA in FY 2079/80

S.N	District	MDA Round	Total Population	Total Treated	Coverage	Spot coverage	SCT coverage
1	Jhapa	12th	933,401	785,632	84.17	87.8 (84.4-90.7)	93.3 (89.9-95.8)
2	Morang	12th	1,128,957	872,622	77.29	78.6 (74.8-82.1)	62.5 (56.0-68.6)
3	Dhanusha	1st	886,544	746,187	84.17	82.2 (78.8-85.4)	95.0 (91.2-97.5)
4	Mahottari	1st	731,061	710,390	97.17	96.0 (93.7-97.6)	87.5 (80.2-92.8)
5	Sarlahi	1st	874,206	774,316	88.57	96.5 (94.7-97.8)	92.7 (89.9-94.9)
6	Rautahat	1st	847,402	734,190	86.64	90.6 (87.8-92.9)	81.4 (77.0-85.3)
7	Bara	11th	759,945	792,491	104.28	83.1 (79.5-86.4)	97.1 (85.1-99.9)
8	Rasuwa	1st	45,230	37,094	82.01	96.2 (92.7-98.3)	88.3 (77.4-95.2)
9	Baglung	14th	242,637	226,586	93.38	99.0 (97.1-99.8)	93.8 (86.9-97.7)
10	Parbat	14th	127,178	116,501	91.60	79.3 (73.3-84.5)	100.0 (93.4-100.0)
11	Lamjung	14th	152,962	137,251	89.73	80.8 (75.3-85.6)	NA
12	Banke	13th	616,695	462,088	74.93	80.0 (74.4-84.9)	66.7 (57.5-75.0)
13	Dang	13th	687,776	559,261	81.31	82.7 (77.9-86.8)	100.0 (94.0-100.0)
14	Kapilvastu	15th	686,807	583,322	84.93	69.3 (63.8-74.5)	87.0 (78.8-92.9)
15	Kailali	13th	926,890	773,528	83.45	93.8 (91.1-95.9)	87.5 (82.6-91.4)
	Total		**9,647,691**	**8,311,459**	**86.91**		

Source: EDCD/DOHS

Annex Table 10.2 District-wise morbidity mapping of Lymphatic Filariasis for FY 2079/80

Districts	Hydrocele	Lymphoedema		Both	Total
		Male	Female		
Panchthar	134	17	39	3	193
Terathum	29	2	3	0	34
Dhankuta	96	20	18	1	135
Sunsari	649	129	222	1	1,001
Okhaldhunga	85	12	28	1	126
Udaypur	186	75	124	2	387
Siraha	572	112	152	6	842
Saptari	1,183	148	271	15	1,617
Mahottari	935	212	395	2	1,544
Sarlahi	1,475	499		7	1,981
Bara	706	55	148	8	917
Parsa	1,035	218	404	33	1,690
Ramechhap	115	47	44	2	208
Sindhupalchok	396	205	311	26	938
Kavrepalanchok	345	57	192	0	594
Nuwakot	1,562	210	487	0	2,259
Dhading	1,342	194	630	28	2,194
Kathmandu	281	156	497	10	944
Lalitpur	115	52	204	6	377

Districts	Hydrocele	Lymphoedema		Both	Total
		Male	Female		
Bhaktapur	126	119	345	4	594
Chitwan	247	55	44	3	349
Makawanpur	247	34	85	7	373
Kaski	249	71	202	0	522
Lamjung	172	12	31	2	217
Syangja	64	11	29	0	104
Gorkha	171	12	25	1	209
Nawalpur	25	10	14	0	49
Baglung	158	29	56	0	243
Nawalparasi	313	27	98	5	443
Rupandehi	830	88	221	17	1,156
Kapilvastu	1,855	265	578	29	2,727
Arghakhachi	70	10	27	3	110
Palpa	196	52	75	2	325
Rolpa	268	39	85	4	396
Rukum East	81	6	32	4	123
Pyuthan	167	1	4	0	172
Dang	1,614	132	298	16	2,060
Banke	1,850	127	243	13	2,233
Bardia	2,524	141	323	30	3,018
Rukum West	100	11	14	1	126
Salyan	46	13	3	0	62
Bajhang	54	9	16	7	86
Bajura	0	2	0	0	2
Doti	145	37	87	0	269
Kailali	3,362	248	482	14	4,106
Darchula	43	1	8	0	52
Baitadi	62	13	47	2	124
Dadeldhura	36	6	17	0	59
Kanchanpur	2,580	180	471	14	3,245
Total	**28,896**	**4,181**	**8,129**	**329**	**41,535**

Source: EDCD/DOHS

Annex Table 10.3: Comparison of leprosy indicators - 2068/69–2078/79 (2009/10 – 2022/23)

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)
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
New case detection rate	12.2	11.9	11.18	11.01	10.67	11.23	11.2	11.2	6.22	7.20	7.81	8.5
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
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
No. new child cases	218	136	204	236	220	220	202	260	141	101	73	181
Proportion child cases	6.26	4.24	6.33	7.73	7.20	6.84	6.22	7.92	7.61	4.65	3.19	7.2
New G2D cases	110	94	109	135	109	87	133	156	101	95	170	189
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
G2D rate/100,0000	3.9	3.5	4.0	4.9	3.8	3.3	4.1	5.30	3.39	3.15	5.81	6.66
New G2D Child cases	N/A	N/A	N/A	N/A	N/A	N/A	2	2	6	1	4	8
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
New female cases	1,100	1,004	1,143	1,100	1,169	1,361	1,375	1,376	770	796	989	1,049
Proportion female cases	31.6	30.8	35.5	36.0	38.3	42.3	42.3	41.9	41.6	36.6	43.3	41.6
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
No. Defaulters	24	43	24	38	44	57	93	142	153	62	79	95
No. relapse cases	25	14	11	8	12	15	21	36	19	16	28	19

Source: EDCD/DoHS

Annex for National TB Control and Management Program (Chapter 11)

Annex Table 11.1. Three-years case notification trend of 25 LLGs

Province	District	Local Level / Municipality	FY 2077/78	FY 2078/79	FY 2079/80	% Change
Koshi	Dhankuta	Chaubise	5	5	7	40%
Koshi	Jhapa	Mechinagar	188	182	205	13%
Koshi	Morang	Kerabari	20	50	42	-16%
Koshi	Sunsari	Itahari Sub-Metro.	192	233	205	-12%
Madhesh	Dhanusha	Laxminiya	42	54	124	130%
Madhesh	Sarlahi	Hariwan	92	120	119	-1%
Madhesh	Bara	Nijagadh	71	111	95	-14%
Bagmati	Kathmandu	Shankharapur	24	39	54	38%
Bagmati	Bhaktapur	Changunarayan	51	52	71	37%
Bagmati	Kavrepalanchok	Dhulikhel	29	39	57	46%
Bagmati	Makawanpur	Thaha	11	21	34	62%
Gandaki	Kaski	Rupa	6	11	2	-82%
Gandaki	Tanahu	Bhanu	24	31	33	6%
Gandaki	Syangja	Walling	43	79	84	6%
Lumbini	Rupandehi	Butwal Sub-Metro	291	396	429	8%
Lumbini	Kapilvastu	Banganga	105	174	159	-9%
Lumbini	Banke	Kohalpur	145	191	189	-1%
Karnali	Dailekh	Dullu	31	29	31	7%
Karnali	Salyan	Kapurkot	29	40	39	-3%
Karnali	Surkhet	Gurbhakot	43	77	65	-16%
Sudurpashchim	Bajhang	Jayaprithbi	43	32	28	-13%
Sudurpashchim	Dadeldhura	Ajayameru	11	10	9	-10%
Sudurpashchim	Dadeldhura	Ganyapdhura	13	10	8	-20%
Sudurpashchim	Kailali	Tikapur	114	168	176	5%
Sudurpashchim	Kanchanpur	Krishnapur	82	83	78	-6%
Total 25 Local Levels			**1705**	**2237**	**2343**	**5%**
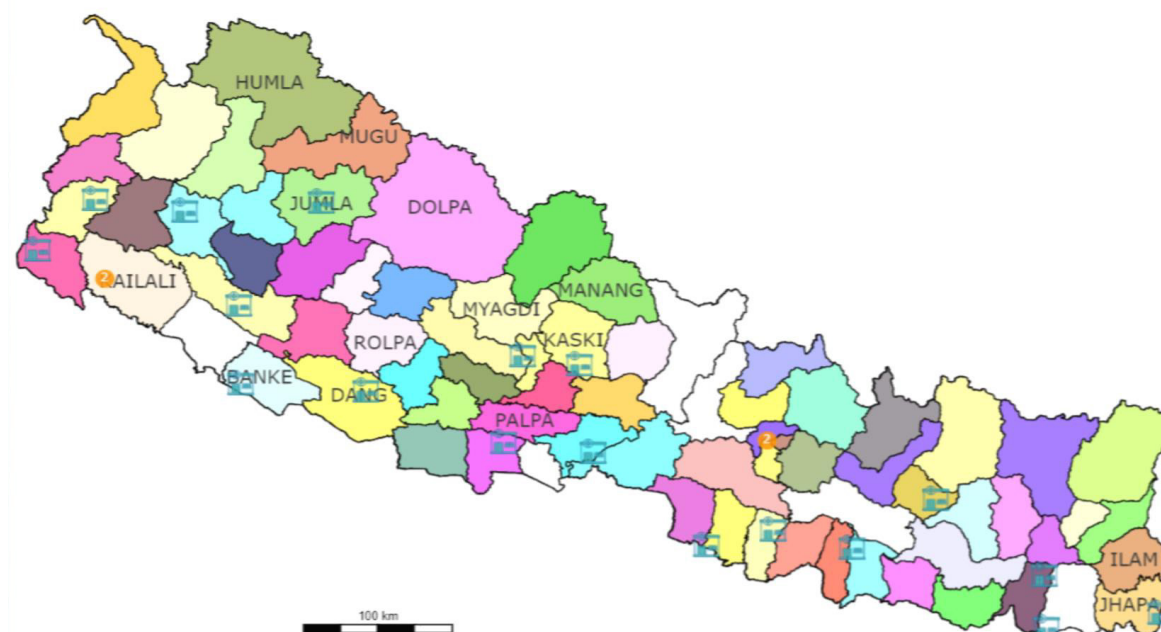
Annex Table 11.2: Different components of NTP MIS and updates

Component of NTPMIS	Description	Status in FY 2079/80
eTB Register	web-based application that facilitates the reporting of TB patient registration, follow-up, and outcomes, transitioning from the traditional paper-based tuberculosis register to a central online database. This patient tracker software is designed for efficient collection, management, and analysis of transactional case-based data records. It includes advanced features such as data analysis, feedback mechanisms, reporting, SMS integration, and a dashboard, enabling users to explore and derive meaningful insights from raw data.	Orientation/training initiated at national, provincial, and health facility levels. Expected full usage in FY 2080/81. Planned interoperability with HMIS in FY 2080/81.
eTB Register for Private Practitioners	Module developed for reporting TB patients from the private sector.	Reporting initiated.
eTB PPM	Online R&R tool records presumptive TB patients at pharmacies, referring them to designated doctors and hospitals for screening. Captures community referrals, tracks TB diagnosis, and monitors enrollment in treatment at DOTS Centers.	Introduced in major six cities.
DRTB Patient Tracking and TB Laboratory System	Web-based DHIS2 platform for managing DR TB patients, tracking treatment stages, and generating MDR TB management reports. Includes a comprehensive laboratory information system covering Microscopy, Culture/DST, GeneXpert, and LPA. Provides SMS notifications for test results. Both systems share a single ID for seamless patient tracking.	Utilized at all DR TB sites and GeneXpert sites.
GX-MIS	Web-based real-time GeneXpert machine functionality monitoring system.	Functional at over 107 sites out of 113 in FY 2079/80.

Annex for Curative Services (Chapter 13)

Annex Table 13.1 Inspection/ Renewal Visits by CSD Team to Different Hospitals in FY 2079/80

S.No	Address of the Hospital Visited	Bed Capacity	Renewal valid till
1	Madhyapur Thimi, Bhaktapur	50	Bhadra 2084
2	Banepa, Kavre	100	Ashad 2085
3	Banepa, Kavre	51	Ashad 2081
4	Basundhara, Kathmandu	Current 30 bed renew; LI for 50 beds	Jestha 2082
5	Harisiddhi, Lalitpur	100	Ashad 2082
6	Lazimpat, Kathmandu	300	Ashad 2083
7	Khairahani, Chitwan	50	Ashad 2080
8	Biratnagar, Morang	150	Ashad 2083
9	Birtamod, Jhapa	100	Bhadra 2082
10	Maitighar, Kathmandu	55	Ashad 2078
11	Jorpati, Kathmandu	100	Ashad 2084
12	Gwarko, Lalitpur	100	Ashad 2081
13	Bansbari, Kathmandu	100	Ashad 2084
14	Butwal, Rupandehi	100	Ashad2075
15	Biratnagar, Morang	100	LoI for 3 years
16	Budhanilkantha, Kathmandu	In process of LOI	LoI valid till 2083
17	Damak, Jhapa	50	LoI valid till 2082
18	Dhanusha, Janakpur	50	In process of approval for operation
19	Thapathali , Kathmandu	100	In process of LoI
20	Banasthali, Kathmandu	55	Ashad 2083
21	Gaushala, Kathmandu	30	Sharawan 2084

Source: CSD/DoHS

Annexes for Disability and Rehabilitation (Chapter 15)

Annex Table 15.1 Diagnosis of the rehabilitation service new users

Diagnosis	Percentage of Clients
15 Diseases of the musculoskeletal system or connective (FA00-FC0Z)	70.01%
08 Diseases of the nervous system (8A00-8E7Z)	8.03%
22 Injury, poisoning or certain other consequences of external causes (NA00-NF2Z)	6.82%
12 Diseases of the respiratory system (CA00-CB7Z)	5.85%
11 Diseases of the circulatory system (BA00-BE2Z)	3.00%
21 Symptoms, signs or clinical findings, not elsewhere classified (MA00-MH2Y)	1.06%
06 Mental, behavioural or neurodevelopmental disorders (6A00-6E8Z)	0.95%
05 Endocrine, nutritional and metabolic diseases (5A00-5D46)	0.45%
04 Disease of the immune system (4A00-4B4Z)	0.41%
01 Certain infectious and parasitic diseases (1A00-0Z)	0.36%
13 Diseases of the digestive system (DA00-DE2Z)	0.34%
14 Diseases of the skin (EA00-EM0Z)	0.31%
02 Neoplasms (2A00-2F9Z	0.29%
19 Certain conditions originating in the perinatal period (KA00-KD5Z)	0.29%
23 External causes of morbidity or mortality (PA00-PL2Z)	0.27%
16 Diseases of the genitourinary system (GA00-GC8Z)	0.25%
20 Developmental anomalles (LA00-LD9Z)	0.23%
03 Diseases of the blood or blood-forming organs (3A00-3C0Z)	0.22%
10 Diseases of the ear and mastoid process (AA00-AC0Z)	0.21%
18 Pregnancy, childbirth or the puerperium (JA00-JB6Z)	0.19%
09 Diseases of the visual system (9A00-9E1Z)	0.17%
24 Factors influencing health status or contact with health services (QA00-QF4Z)	0.07%
07 Sleep-wake disorders (7A00-7B2Z)	0.06%
17 Conditions related to sexual health (HA00-HA8Z)	0.04%
26 Supplementary chapter traditional medicine conditions (Module I (SA00-SJ3Z)	0.01%
Total	**100.0%**

Annexes for Public Health Laboratory Services (Chapter 17)

Annex Table 17.1 ESBL producing E. coli from human surveillance in FY 2079/80

Variable	Sites/Hospitals					
	A N (%)	B N (%)	C N (%)	D N (%)	E N (%)	Total
Case						
Total number of Blood cultures	13109	8635	3227	3154	3225	31,350
Total bacterial growth n (%)	746 (5.6%)	1257 (14.5%)	64(1.98%)	138(4.3%)	130(4.0%)	2,335(7.4%)
E. coli confirmed n(%)	85 (11%)	57 (5%)	14 (22%)	27 (20%)	12(9%)	195(8%)
E. coli from eligible cases n(%)	17(20%)	6 (11%)	5 (35%)	16 (59%)	9 (75%)	53 (27%)
ESBL positive E. coli n(%)	9 (53%)	4 (67%)	4 (80%)	9 (56%)	0	26(49%)
Control						
Stool samples tested	20	20	20	20	20	100
E coli isolated n(%)	20 (100%)	20 (100%)	20 (100%)	20 (100%)	20 (100%)	20(100%)
ESBL E.coli confirmed (% ESBL)	5 (25%)	2 (10%)	5 (25%)	0	3 (66%)	15 (15%)

Annex Table 17.2 ESBL producing E.coli from environment samples in FY 2079/80

Source	N	Average		
		Concentration of E. coli (CFU/100ml)	Concentration of ESBL E. coli (CFU/100ml)	% ESBL producing E. coli
A(Upstream) Mulkharka	8	2.7×10^3	0	0
B(Downstream) Jalbinayak	8	3.6×10^6	3.1×10^5	8.7
C(Communal) Sobhabhagwati	8	7.1×10^6	7.9×10^5	11.1
D(Communal) Manohara	8	2.2×10^6	2.1×10^5	9.3
E(Communal) Dhobikhola	8	6.5×10^6	9.5×10^5	14.5
F (Hospital effluent) KMH	8	1.8×10^6	1.8×10^5	10.2

Annex for Management Division (Chapter 20)

Annex Table 20.1 SDG monitoring indicators for WASH services based on the analysis of Nepal health facility survey

Parameter		Province							
Water	**National**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpashchim**
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 source.	3.49	5.17	1.96	2.47	0.17	4.58	3.18	7.5
Sanitation	**National**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpashchim**
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 are 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	**National**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpashchim**
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	2.0	3.4	0.0	0.2	0.3	1.4	0.7
Health Care Waste Management	**National**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpashchim**
Basic service with waste correctly segregated in the consultation area and infectious and sharps waste safely treated/disposed*	10.0	8.0	8.3	17.4	9.3	10.3	4.0	6.2
Limited service 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	**National**	**Koshi**	**Madhesh**	**Bagmati**	**Gandaki**	**Lumbini**	**Karnali**	**Sudurpashchim**
Basic service 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 service 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

Annex for Human Resource in Health and Health Finance Management (Chapter 21)

Annex Table 21.1 Type and number of DoHS workforce, fiscal year 2079/80

SN	Types of human resources	Grade/level	Sanctioned	Fulfilled
1	Director General	12th (Additional Secretary)	1	1
2	Director	11th (G.H.S.)	1	1
3	Director	11th (PHA)	2	2
4	Director	11th (HI)	1	1
5	Director	11th (G.Nur.)	1	1
6	Senior /Sub Health Administrator	9/10th (PHA)	3	3
7	Senior General Nursing	9/10th (GN)	1	1
8	Senior Community Nursing Administrator	9/10th (PHN/CN)	2	2
9	Senior Public Health Administrator	9/10th (H.I)	3	3
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	1
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	2
26	Senior /Public Health Officer	7/8th (H.I)	9	7
27	Nutrition Officer	7/8th (H.I)	1	1
28	Medical Officer	8th	7	4
29	Senior Medical Lab Technologist	7/8th (G.M.L.)	1	1
30	Senior Community Nursing Officer	7/8th (PHN/CN)	7	5
31	Senior/ Nursing Officer	7/8th (GN)	5	5
32	Entomologist	7/8th (HI)	1	0
33	Veterinary Doctor	Gazetted III (Agri/Vet.)	1	1
34	Computer Officer	Gazetted III	3	3
35	Mechanical Engineer	Gazetted III	1	0
36	Biomedical Engineer	7/8th (Bibi.)	2	2
37	Architect Engineer	Gazetted III	1	0

SN	Types of human resources	Grade/level	Sanctioned	Fulfilled
38	TB/leprosy Officer	7th (HI)	1	1
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)	3	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			**121**	**108**

[Note: In addition to the above mentioned permanent human resources, additional human resource is currently working in DoHS, such as pool *(fajil)*, stay order by court, and service contract basis.]

Annexes for Councils for Health Professionals and Health Research (Chapter 25)

Annex Table 25.1 Native postgraduate doctors registered till FY 20788/79 (Dec 2023)

Subject	Male	Female	Total
Anesthesiology	526	195	721
Anatomy	33	28	61
Biochemistry	25	37	62
Cardiac surgery	5	2	7
Cardiology	121	10	131
Clinical Genetic	5	1	6
Clinical Pathology	147	215	362
Colorectal Surgery	3	0	3
Community Dentistry	3	3	6
Community Medicine &Public Health	102	92	194
Conservative Dentistry & Endodontics	24	45	69
Critical Care Medicine	1	0	1
CTVS	18	7	25
Dermatology & Venerology	177	165	342
E.N.T.	241	87	328
Emergency medicine	17	9	26
Endocrinology	21	7	28
Family medicine	2	1	3
Forensic Medicine	37	16	53
Forensic Odontology	1	0	1
Gastroenterology	44	2	46
Gastro Surgery	24	6	30
General Practice	400	96	496
General Surgery	895	54	949
Geriatric Medicine	5	1	6
Hematology	5	1	6
Hepatobiliary surgery	5	1	6
Hepatology	3	0	3
Hospital Administration	57	12	69
Internal Medicine	974	114	1088
MDS	145	89	234
Microbiology	29	48	77
MPH	2	2	4
Neonatology	6	2	8
Nephrology	23	4	27
Neurology	31	5	36
Neurosurgery	60	0	60
Nuclear Medicine	35	27	62
OBS & GYN	286	710	996
Oncology	22	6	28

Subject	Male	Female	Total
Ophthalmology	246	224	470
Oral & Maxillofacial surgery	70	18	88
Oral Medicine and Radiology	4	9	13
Oral Pathology	5	10	15
Oral Science	2	2	4
Orthodontics	115	63	178
Orthopedics	799	7	806
Pediatric Cardiology	0	1	1
Palliative Medicine	5	6	11
Pediatrics Gastroenterology	1	2	3
Pediatrics Hematology	0	1	1
Pediatric Hematology Oncology	23	16	39
Pediatrics	554	227	781
Pediatrics Nephrology	1	0	1
Pediatrics Surgery	19	3	22
Pedodontics	4	30	34
Periodontics	18	44	62
Pharmacology	51	31	82
Physical Medicine and Rehabilitation	3	0	3
Physiology	40	34	74
Plastic surgery	10	3	13
Prosthodontics	51	46	97
Psychiatry	169	91	260
Public Health Dentistry	5	1	6
Pulmonology	2	1	3
Radio therapy	50	14	64
Radiology & Imaging	542	124	666
Rheumatology	7	2	9
Surgical Oncology	22	2	24
T.B. & Respiratory	25	6	31
Thoracic Surgery	0	1	1
Transfusion medicine & tissue typing	4	1	5
Tropical Medicine	1	0	1
Urology	59	1	60
Total	**7,467**	**3,121**	**10,588**

Annex- 2 Contributors of the Annual Health Report 2079/80

Advisory Committee for Annual Health Report 2079/80

Chair	Dr Sangeeta Kaushal Mishra, Director General, Department of Health Services
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Member	Dr Rudra Marashini, Director, Epidemiology and Disease Control Division
Member	Dr Anup Bastola, Director, Curative Service Division
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Member	Dr Anuj Bhattachan, Director, National Health Training Center
Member	Dr Sanjay Thakur, Director, National Center for AIDS and STD Control
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Member	Dr Rajan Raj Bhatta , Director, National Public Health Laboratory
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Member	Mr Bhuwan Kafle, Undersecretary (Account), Department of health Services
Member Secretary	Dr Shrawan Kumar Thapa, Director, Management Division

Technical Working Group for Annual Health Report 2079/80

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Member	Mr Chhedi Prasad Yadav, Statistics Officer, IHIMS, Management Division
Member	Mr Ram Chandra Chaulagain, Statistics Officer, IHIMS, Management Division
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Member	Mr Puspa Raj Joshi, Statistics Officer, Family Welfare Division
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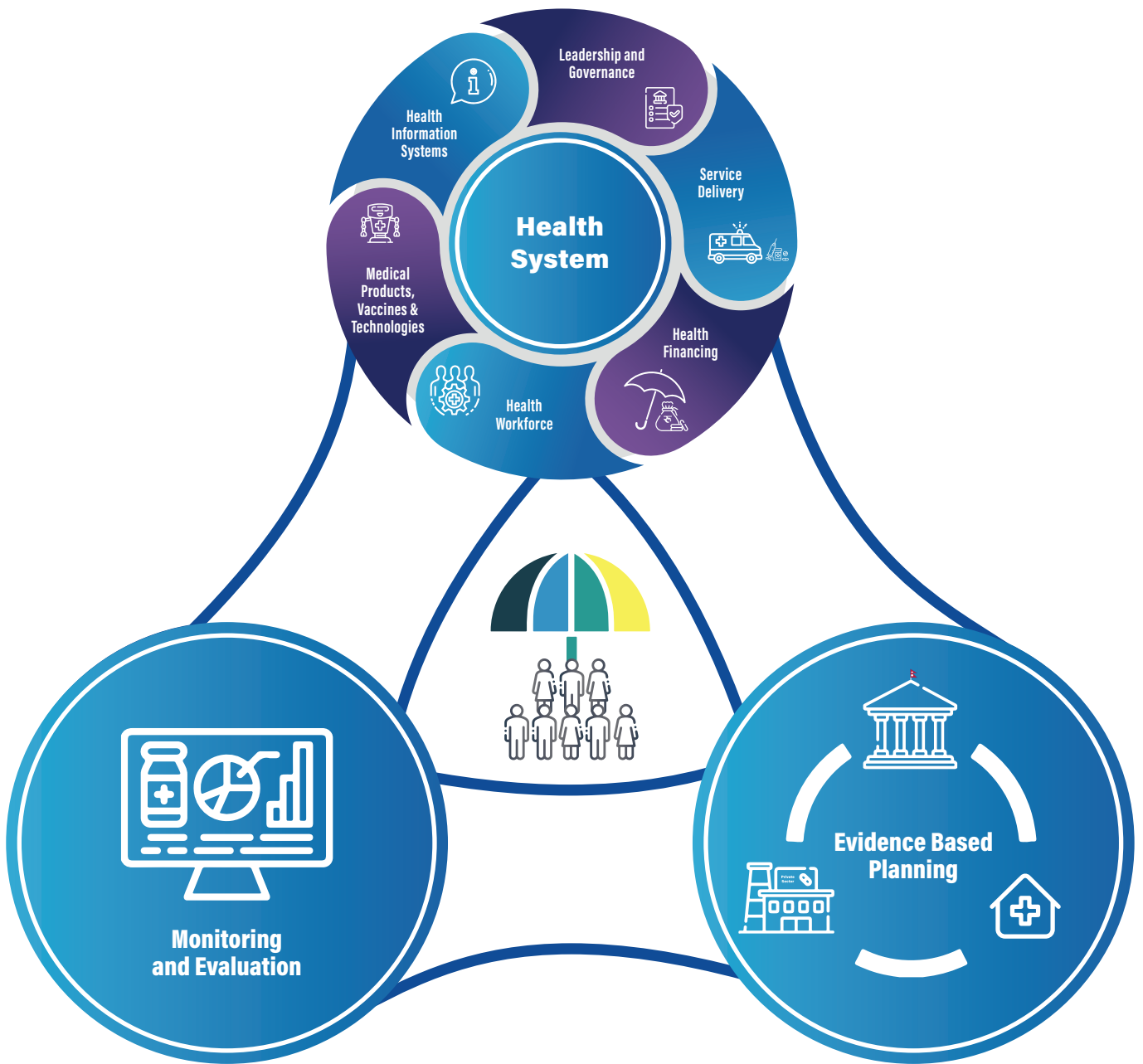
Report Designed by: Nepal in Data, initiative of Bikas Udhyami

Nepali Fiscal Years and the corresponding Gregorian Years

Nepali Fiscal Year	Gregorian Year
2060/61	2003/04
2061/6**2**	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