Annual Report

Department of Health Services
2074/75 (2017/18)

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

CONTENTS

मा. उपेन्द्र यादव
Hon. Upendra Yadav
उपप्रधानमन्त्री,
स्वास्थ्य तथा जनसंख्यामन्त्री
Deputy Prime Minister,
Minister for Health and Population

नेपाल सरकार
Government of Nepal
स्वास्थ्य तथा जनसंख्या मन्त्रालय
Ministry of Health and Population

फोन : ०१-४-२६२५३४
: 01-4-262534
फ्याक्स : ०१-४-२६२५६५
Fax : 01-4-262565

रामशाहपथ, काठमाडौं, नेपाल ।
Ramshahpath, Kathmandu, Nepal
Website: www.mohp.gov.np

MESSAGE

The Government of Nepal, Ministry of Health and Population is committed to deliver the quality of health care to all Nepalese people. The ministry is determined to translate the aspirations of theConstitution of Nepal 2072, National Health Policy 2071 and the Nepal Health Sector Strategy 2072-2077, in achievingUniversal Health Coverage together with all stakeholders including private, public sector and external development partners. I am pleased to note that several outstanding achievements have been made in the heath sector in the past decade. The health outcomes achieved so far are the results of joint effort of the ministry and all health sector stakeholders.

I am pleased to know that Department of HealthServices (DoHS) is bringing out the annual report of fiscal year 2074/75 (2017/2018), 24th report in its series. The annual report is a comprehensive document based on the annual performance of all components of the health care delivery system along with their reviews accomplished at the local, provincial and federal levels. It provides detailed informations with regards to resources, services provided, analytical trends and disease patterns in the country. Data on disease prevalence people are suffering from, service utilization and other data related to health care delivery services are very much important for planning purposes. Furthermore, as the country has been transformed from unitary system to federal system of governance; the information provided by the annual report would be very fruitful for each level during planning, implementation and evaluation of health-related activities and results.

I am hopeful that, this annual report of DoHS will be helpful for policy makers, managers, decision makers, evaluators, researcher and students. I hope this document will be very helpful for further improvement of health services in Nepal.

I would like to extend my sincere thanks to the DoHS and all those who contributed in preparation of this report. I would also like to thank our external development partners for their continuous support.

Jestha 02, 2076

Upendra Yadav
Deputy Prime Minister,
Minister for Health and Population

मा. डा. सुरेन्द्र कुमार यादव
Hon. Dr. Surendra Kumar Yadav
राज्यमन्त्री
State Minister
स्वास्थ्य तथा जनसंख्या मन्त्रालय
Ministry of Health and Population

नेपाल सरकार
Government of Nepal
स्वास्थ्य तथा जनसंख्या मन्त्रालय
Ministry of Health and Population

फोन : ०१-४-२४३६७२
: 01-4-243672
फ्याक्स : ०१-४-२६२४६८
: 01-4-262468

निजी सचिवालय
Personal Secretariat
रामशाहपथ, काठमाडौं, नेपाल ।
Ramshahpath, Kathmandu, Nepal

पत्र संख्या :
च.नं. (Ref.No.) :

मिति:.....

MESSAGE

In line with the article 35 of the Constitution of Nepal 2072, the Nepal Government is committed to provide health care services to its citizens residing all over the country. Universal Health Coverage is one of the priority agendas of the National Health Policy 2071 and Nepal Health Sector Strategy. As a signatory to Sustainable Development Goals (SDG), Nepal is also committed to achieve the SDG targets. I am excited to peruse the progress that has been achieved during fiscal year 2074/75; the current challenge is to sustain the progress in the days to come.

This annual report of Department of Health Services (DoHS) describes the activities that were conducted in fiscal year 2074/75 throughout the health system of the country. This is a result of the hard work of the entire team of DoHS. I would like to thank all the team members who are directly and indirectly involved during preparation and finalization of this report. During the annual review at the local, provincial and federal level, I had also got the chance to participate at various levels.The discussions during the National Annual Review (NAR) will also help to guide the program of fiscal year 2075/76.

I am confident that this annual report of DoHS will be helpful for policy makers, public health professionals, researchers and students. This report will play an important role in policy formulation, planning and programming.

I would like to extend my sincere gratitude to all health-related cadres; from FCHV level to the top-level policy makers who had tried their level best to improve the health of the Nepalese people. Again, I would like to thank all the key stakeholders including governmental and non-governmental agencies involved in the preparation of this annual report.

Dr Surendra Kumar Yadav

State Minister of Health and Population

2076-2-2

Government of Nepal
Ministry of Health & Population
Phone: 4. 262987
262590
262802
262706
262935
262862
Ramshahpath, Kathmandu
Nepal

Ref.: .....

Date : .....

PREFACE

I fully believe that our stronger focus on making health service information available in public domain and its appropriate use helps us to make our health systems more transparent and accountable to people. With this gratefulness, I am pleased to release the annual report of the Department of Health Services (DoHS) for the year 2074/75 (2017/18), adding to the last 24 years of good practices. The report covers all major programmes and achievements of the DoHS in the last year along with other departments under the Ministry of Health and Population (MoHP). It also includes the contributions of external development partners, non-governmental organizations and private sectors in delivery of health services.

We are in initial years of implementing federalism, experiencing new developments, revised structures and actors at vary level. It is vital that we improve our practice towards effective use of evidence in our decision making processes. Using information and knowledge to improve the effectiveness and efficiency of health interventions in federal context requires strengthening the links between synthesis, generation and translation of information at each level. We need to understand the strengths and limitations of our programmes, whether they are achieving high value results with efficient use of available resources. In this regard, the disaggregated information included in this report will be instrumental for federal, provincial and local governments to identify gaps in the health service delivery and to plan for provision of high-quality services in the coming year.

This report helps policy makers, programme managers and service providers in making appropriate decisions in their day-to-day practice that are evidence-based and feasible to implement. Also, useful for researchers, academics and students, as it provides an opportunity to learn and innovate new approaches to improve the health systems and services in Nepal. I appreciate the hard work done by DoHS, Provincial Health Directors, Health Offices, Hospitals and all health personnel including Female Community Health Volunteers working at various levels of the health systems for achieving these outcomes. Without their effort, the achievement that we have accomplished today would not have been possible; they deserve our heartfelt thanks for improving health status of the Nepalese people.

Finally, I extend my sincere thanks and congratulations to the Director General of DoHS, Director of Management Division and his team, especially Integrated Health Information Management Section (IHIMS) and all Divisional/Centre Directors and other concerned personnel who contributed to this report.

Dr. Pushpa Chaudhary
Secretary
Baisakh 2076

Government of Nepal
Ministry of Health & Population
Phone: 4. 262987
262590
262802
262706
262935
262862
Ramshahpath, Kathmandu
Nepal

Ref.: .....

Date : .....

PREFACE

It is my immense pleasure to release this annual report of Department of Health Services (DoHS) for the fiscal year 2074/75. Health sector is one of the priority sectors of the government. I am very much delightful to know that major indicators of the health sector are progressing in the right direction as per the targets set in the Sustainable development Goals (SDGs).

Our country has been transformed into a federal state as per the new federal set up. The health sector has also been restructured in line with the new federal structure. In this juncture, Health sector has challenges as well as opportunities for uplifting the health status of the Nepalese people. I am sure that the annual report would play an important role for further planning and programming.

This report would not have been possible if the supporting front line staffs, female community health volunteers (FCHVs) to the high-level policy makers had not performed their tasks with complete devotion and sincerity. I would like to thank more than 50,000 FCHVs, health professionals at the local level, provincial level and federal level for their untiring efforts to bring improvements in the health status of the people. For this endeavours, our DPs and I/NGOs have played the crucial roles.

In the changed context, as per the constitutional requirement, the co-ordination within the new governance set up as well as within the concerned stakeholders, co-existance, collaboration and co-ordination needs to be stronger to tackle the issues and challenges. To meet the new challenges, the ministry is committed to formulate necessary policies, develop strategies and guidelines to improve the service quality.

In the end, I would like to extend my sincere gratitude to all the stakeholders for their valuable contributions. In the days to come, I am confident, this report will be a valuable resource for all stakeholders engaged in health sector and beyond as a reference report while designing and implementing evidence based programmes.

Mr. Ram Prasad Thapaliya

Secretary

Ministry of Health and Population

Baisakh 2076

Government of Nepal
Ministry of Health and Population
Department of Health Services
.....Division
Government of Nepal Ministry of Health & Population Department of Health Services Teku, Kathmandu

☎ 4-261712
4-261436
Fax: 4-262268

Pachali, Teku
Kathmandu, Nepal

Ref No.:

Date:.....

Sub: **FOREWORD**

This is the 24th edition in the uninterrupted series of annual reports published by the Department of Health Services (DoHS), Ministry of Health and Population (MoHP). This annual report is one of the outcomes of the annual performance review workshops conducted at various levels. It reflects the performances of all major programs and activities implemented by various health institutions at all levels from community to the centre. This report covers major health issues, challenges and way forward to improve the health service delivery.

The facts and figures presented in the report are based on the information generated through Health Management Information system (HMIS) and other sources in the health sector. This report provides comprehensive information regarding health policies, strategies, plan, activity, service coverage and achievements made in the last three years, as well as program issues that emerged during the fiscal year 2074/75. This report also covers progress of activities carried out by other departments under the MoHP and External Development Partners (EDPs) during the reference years. As the country has transitioned to a new health care delivery structure following federalization, this report provides information as per provincial as well as local levels. There definitely is a room for improvement in the overall quality of routine HMIS data and other data sources included in this report, which we aspire to improve in the days to come. The facts provided in this report will act as the basis for planning health care service delivery for citizens of Nepal in the coming year. Furthermore, using this year's lessons, we will also focus on routine and regular use of data generated at each level in the upcoming year.

I am pleased to state that most of the activities planned by different Divisions/Centres have been carried out successfully. This achievement would not have been possible without the commitment and dedication of the staff of the DoHS working in difficult remote areas. However, more collaborative efforts are required to deliver quality health care services to meet the aspiration of the people as envisaged by the National Health Policy 2071 and National Health Sector Strategy 2072-2077.

I would like to extend my sincere appreciation to all Female Community Health Volunteers, all categories of health workers working in the health facilities for their untiring efforts in providing health services at the community level. I would also like to thank the Directors of Divisions and Centres, Provincial Health Directors, Chief of Sections, the Municipal health team for their meticulous support to implement the health programs. My appreciation also goes to all the EDPs, INGOs, NGOs, and private heath sector for contributing significantly to improve the health status of the people in all corners of the country.

I am also grateful to all the officials of the DoHS for their support and coordination. Finally, I would like to thank the Director of the Management Division and in particular the staff of the Integrated Health Information Management Section for their valuable contribution in preparation and publication of this report.

Dr Guna Raj Lohani
Director General
Baisakh 2076

Government of Nepal
Ministry of Health & Population
DEPARTMENT OF HEALTH SERVICES
Management Division

Tel. : 4261436
: 4261712
Fax : 4262238

Pachali, Teku
Kathmandu, Nepal

Ref. No. 2424

Date:-.....

ACKNOWLEDGEMENT

It is my pleasure to bring forth the 24th Annual Report of the Department of Health Services (DoHS) for the fiscal year 2074/75. This report is also a reflection of annual performance of all components of the health care delivery system along with their reviews conducted at various levels of health service delivery. It is a compilation of major activities carried out by the health institutions at all levels. The data presented in this report is based on the information submitted by the institutions to the Health Management Information System (HMIS) and other sources.

The report includes information about health care services and activities of public and private institutions providing health care to the Nepalese people. It also highlights the trend and patterns in service coverage and continuum of care. Furthermore, it also informs us about the program target and achievement with respect to budget allocation and expenditure. The report not only identifies pertinent issues, problems and constraints but also suggests actions to be taken to address these issues in order to improve the services in the days to come. And most importantly this year's annual report provides the information for all three levels of government as the country has been transformed into federal structure. This imperative publication provides detailed statistical analysis of health program against its target and indicators. For the first time in history, annual report of DoHS has published excel sheet of raw and analysed data in the webpage of DoHS so that it can be used by the researchers and program managers effectively. Similar annual reports published by provincial and local levels government would be crucial for evidence based planning and programming at respective levels.

I express my sincere gratitude to the Honourable Deputy Prime Minister & Minister of Health and Population Mr Upendra Yadav for praiseworthy message. Furthermore, I would like to thank Honourable State Minister of Health and Population Dr Surendra Kumar Yadav for commendable messages and direction. I am also thankful to the secretaries of Ministry of Health and Population: Dr Pushpa Chaudhary and Mr Ram Prasad Thapaliya for their leadership of the overall health sector and providing a meaningful preface for the report. Similarly, I express my sincere gratitude towards Dr Guna Raj Lohani, Director General of the DoHS for his leadership, future directions and thoughtful guidance for DoHS.

I also extend my thanks to the Directors of the different Divisions, Centres and Section Chiefs for providing analytical reports. My colleagues in the Management Division Dr Sharad Kumar Sharma, Mr Badri Nath Gyawali, Mr Puspa Lal Shrestha, Mr Diwakar Sapkota, Mr Binod Poudel, Mr Shiva Lal Sharma, Mr Mukesh Adhikari, Mr Sameer Kumar Adhikari, Mrs Sarada Adhikari and Mr Gopal Adhikari deserve special appreciation for their hard work and effort to bring out this report. I would also like to thank the chief of other sections of Management Division for their support. I also thank all the Health Offices for their contribution. I feel indebted to all those who worked restlessly for recording, reporting, compiling, processing and analyzing service and progress reports timely, without which this report publication would not have been possible.

I take this opportunity to offer my sincere appreciation to EDPs, INGOs and NGOs who have joined us in service delivery programs and submitting their brief annual activity progress report.

Finally, I hope that this report will be of great help in strengthening the health services in Nepal. I also hope that it will provide validated information to all those who work for uplifting the health status of all citizens, particularly the poor and vulnerable group of the Nepali society.

Mr Ramesh Prashad Adhikari
Director

Baisakh 2076

ABBREVIATIONS AND ACRONYMS

AA	Anaesthesiologist Assistant
AAHW	Auxiliary Ayurveda Health Worker
AEFI	Adverse Event Following Immunization
AES	Acute Encephalitis Syndrome
AFP	Acute Flaccid Paralysis
AFS	Adolescent-Friendly Services
AGE	Acute Gastroenteritis
AIDS	Acquired Immuno-Deficiency Syndrome
AMDA	Association of Medical Doctors Of Asia
AMR	Antimicrobial Resistance
ANC	Antenatal Care
API	Annual Parasite Incidence
ARI	Acute Respiratory Infection
ART	Antiretroviral Therapy
ARV	Anti-Rabies Vaccine and Antiretroviral
ASBA	Advanced Skilled Birth Attendant
ASRH	Adolescent Sexual And Reproductive Health
ASVS	Anti-Snake Venom Serum
BAMMS	Bachelor of Ayurveda and Modern Medicine and Surgery
BAMS	Bachelor of Ayurveda Medicine and Surgery,
BC	Birthing Centre
BCC	Behaviour Change Communication
BDS	Bachelor Of Dental Science
BMEAT	Biomedical Equipment Assistant Training
BMET	Biomedical Equipment Training
bOPV	Bivalent Oral Polio Vaccine
BS	Bikram Sambat (Nepali era)
BTSC	Blood Transfusion Service Centre
IMCI	Integrated Management Of Childhood Illness Programme
IMNCI	Integrated Management of Neonatal and Childhood Illness
NCP	Integrated Management of Newborn Care Programme
CBO	Community-Based Organisation
PMTCT	Prevention Of Mother To Children Transmission
CCE	Comprehensive Centres Of Excellence
CDD	Control of Diarrheal Disease
CEONC	Comprehensive Emergency Obstetric and Neonatal Care
CHX	Chlorhexidine
cMYPoA	Comprehensive Multi-Year Plan of Action
CNR	Case Notification Rate
CoFP	Comprehensive Family Planning
CPR	Contraceptive Prevalence Rate
CRS	Congenital Rubella Syndrome
CTEVT	Council for Technical Education and Vocational Training
CSD	Curative Service Division
DAMA	Discharged Against Medical Advice
DHF	Dengue Haemorrhagic Fever
DHIS	District Health Information System
DoHS	Department of Health Services
DOTS	Directly Observed Treatment Short Course
DPT	Diphtheria, Pertussis, Tetanus
DQSA	Data Quality Self-Assessment
DSS	Dengue Shock Syndrome
ECC	Eye Care Centres
EDP	External Development Partners
EDCD	Epidemiology and Disease Control Division
EHCS	Essential Health Care Services
EID	Early Infant Diagnosis
EmOC	Emergency Obstetric Care
EOC	Essential Obstetric Care
EPI	Expanded Programme on Immunization
EQA	External Quality Assurance
EWARS	Early Warning and Reporting System
FCHV	Female Community Health Volunteer
FSW	Female Sex Worker
FY	Fiscal Year
FWD	Family Welfare Division
G2D	Grade 2 Disability
GIS	Geographic Information System
GMP	Good Manufacturing Practice
GoN	Government of Nepal
HFOMC	Health Facility Operation and Management Committee
IHIMS	Integrated Health Information Management System
HIV	Human Immunodeficiency Virus
ICD	International Classification of Diseases
ICT	Immunochromatographic Test
IDA	Iron Deficiency Anaemia
IDD	Iodine Deficiency Disorder
IEC	Information, Education and Communication
IFA	Supplementary Iron Folic Acid
IMAM	Integrated Management of Acute Malnutrition
INGO	International Non-Governmental Organizations
IPV	Inactivated Polio Vaccine
IRS	Indoor Residual Spraying
ISMAC	Iodized Salt Social Marketing Campaign
IT	Information Technology
IT	Information Technology
IUCD	Intrauterine Contraceptive Device
JE	Japanese Encephalitis
LAMA	Left Against Medical Advice
LAPM	Long Acting And Permanent Methods
LARC	Long Acting Reversible Contraceptive
LLIN	Long Lasting Insecticidal (Bed) Nets
LMIS	Logistics Management Information System

LTF	Lost to Follow-Up
M&E	Monitoring and Evaluation
MA	Medical Abortion
MAM	Management of Acute Malnutrition
MB	Multibacillary Leprosy
MCH	Maternal And Child Health
mCPR	Modern Contraceptive Prevalence Rate
MCV	Measles-Containing Vaccine
MD	Management Division
MDA	Mass Drug Administration
MDG	Millennium Development Goal
MDGP	Doctor of Medicine in General Practice
MDIS	Malaria Disease Information System
MDR	Multi-Drug Resistant
MDT	Multi-Drug Therapy
MDVP	Multi-Dose Vaccine Vials
MIYCN	Maternal, Infant, and Young Children Nutrition programme
MNCH	Maternal, Newborn And Child Health
MNH	Maternal And Newborn Health
MNP	Micro-Nutrient Powder
MoHP	Ministry of Health and Population
MPDSR	Maternal and Perinatal Death Surveillance And Response
MR	Measles/Rubella
MSM	Men Who Have Sex With Men
MSNP	Multi-sector Nutrition Plan
MVA	Manual Vacuum Aspiration
NAHD	National Adolescent Health and Development (Strategy)
NAMC	Nepal Ayurvedic Medical Council
NAMS	National Academy for Medical Sciences
NCD	Non-Communicable Disease
NCDR	New Case Detection Rate
NDHS	Nepal Demographic and Health Survey
NEQAS	National External Quality Assurance Scheme
NHCP	National Health Communication Policy
NHSP-IP	Nepal Health Sector Programme-Implementation Plan
NHSS	Nepal Health Sector Strategy (2015-20),
NIP	National Immunization Programme
NMC	Nepal Medical Council
NMICS	Nepal Multiple Indicator Cluster Survey
NNJS	Nepal Netra Jyoti Sangh
NTP	National Tuberculosis Programme
NSSD	Nursing and Social Security Division
OPD	outpatient
OPV	oral polio vaccine
ORS	Oral Rehydration Solution
OTTM	Operation Theatre Technique And Management
PAM	Physical Assets Management
PB	Paucibacillary Leprosy
PBC	Pulmonary Bacteriologically Confirmed
PCD	Pulmonary Clinically Diagnosed
PCV	Pneumococcal Conjugate Vaccine
PDR	Perinatal Death Review
PEM	Protein Energy Malnutrition
PEN	Package of Essential Non-Communicable Diseases
Pf	Plasmodiumfalciparum
PHC-ORC	Primary Health Care Outreach Clinics
PLHIV	People Living with Hiv
PLW	Pregnant and Lactating Women
PMTCT	Prevention of Mother to Child Transmission
PNC	Postnatal Care
POP	Pelvic Organ Prolapse
PPH	Postpartum Haemorrhage
PSBI	Possible Severe Bacterial Infection
PV	Plasmodium Vivax
PWID	People Who Inject Drugs
QI	Quality Improvement
RDT	Rapid Diagnostic Tests
RMS	Regional Medical Stores
RTI	Reproductive Tract Infection
RTQCC	Regional TB Quality Control Centres
SARC	Short Acting Reversible Contraceptive
SARI	Severe Acute Respiratory Infection
SBA	Skilled Birth Attendant/Attendance
SHSDC	Social Health Security Development Committee
SRH	Sexual And Reproductive Health
SS+	Smear Positive
STI	Sexually Transmitted Infections
SUN	Scaling-Up-Nutrition
TABUCS	Transaction Accounting and Budget Control System
Td	Tetanus And Diphtheria
TIMS	Training Information Management System
TSLC	Technical School Leaving Certificate
TT	Tetanus Toxoid
TTI	Transfusion Transmissible Infection
VA	Verbal Autopsy and Visual Acuity
VAD	Vitamin A Deficiency
VPD	Vaccine-Preventable Disease
VSC	Voluntary Surgical Contraception
WASH	Water, Sanitation and Hygiene
WPV	Wild Poliovirus
WRA	Women of Reproductive Age

Department of Health Services

Trend of Health Service Coverage Fact Sheet

Fiscal year 2072/73 to 2074/75 (2015/16 to 2017/18)

Programme Indicators	National level			FY 2074/75 (2017/18) by Province							National Target	
	2072/73 (2015/16)	2073/74 (2016/17)	2074/75 (2017/18)	1	2	3	Gandaki	5	Karnali	Sudur Paschim	2020	2030
NUMBER OF HEALTH FACILITIES												
Public hospitals	111	123	125	18	13	33	15	20	12	14		
PHCCs	202	200	198	40	32	43	24	30	13	16		
HPs	3803	3808	3808	648	745	640	491	570	336	378		
Non-public facilities	1277	1715	1822	133	169	1163	100	168	46	43		
HEALTH FACILITIES & FCHVs REPORTING STATUS (%)												
Public facilities	na	96.8	95	95	95	95	95	95	95	95	100	100
Public hospitals	89	93	96	99	95	90	95	99	97	99	100	100
PHCCs	100	98	98	99	92	100	96	96	100	98	100	100
HPs	99	100	98	98	96	99	97	99	98	98	100	100
Non-public facilities	80	47	49	40	26	60	47	67	72	100	100	100
FCHVs	82	90	72	81	79	47	81	79	91	92	100	100
IMMUNIZATION STATUS (%)												
BCG coverage	87	91	92	90	104	84	73	98	106	87		
DPT-HepB-Hib3 coverage	82	86	82	82	87	73	72	87	93	83		
MR2 coverage (12-23 months)	na	57	66	69	58	57	70	79	73	70		
Fully Immunized children*	71	73	70	80	66	57	66	74	88	76	90	95
Dropout rate DPT-Hep B-Hib 1 vs 3 coverage	5.0	4.7	7.4	4.6	14	5	4	5	10.5	5		
Pregnant women who received TD2 and TD2+	66	64	73	68	88	55	64	83	82	76		
NUTRITION STATUS (%)												
Children aged 0-11 months registered for growth monitoring	78	85	84	82	74	67	89	98	126	89	100	100
Underweight children among new GM visits (0-11m)	2.7	3.5	3.6	1.9	6.4	2.3	0.7	3.3	6.6	4.3		
Children aged 12-23 months registered for growth monitoring	47	54	56	50	57	42	67	59	86	57	100	100

Programme Indicators	National level			FY 2074/75 (2017/18) by Province							National Target	
	2072/73 (2015/16)	2073/74 (2016/17)	2074/75 (2017/18)	1	2	3	Gandaki	5	Karnali	Sudur Paschim	2020	2030
Underweight children among new GM visits (12-23m)	4.2	5.7	5.7	3.5	9.2	2.4	1.5	5.4	10.3	7.6		
Pregnant women who received 180 tablets of Iron	49	44	45	37	46	28	58	57	59	51		
Postpartum mothers who received vitamin A supplements	51	72	66	60	83	45	53	72	87	72		
IMNCI STATUS												
Incidence of pneumonia among children U5 years (per 1000) (*HF and PHC/ORC only)	147	66	54	69	41	40	41	50	106	71		
% of children U5 years with Pneumonia treated with antibiotics	174	156	165	173	296	148	219	193	174	160		
% of children U5 years with Pneumonia treated with antibiotics (Amoxicillin)	na	na	102	92	127	99	126	98	85	100	100	100
Incidence of diarrhea per 1,000 under five years children	422	400	385	364	337	262	290	403	709	648		
% of children under 5 with diarrhea treated with ORS and zinc	87	92	95	90	97	94	99	95	96	98	100	100
SAFE MOTHERHOOD (%)												
Pregnant women who attended first ANC visit (any time)	97	102	103	105	94	110	94	108	117	93		
Pregnant women who attended four ANC visits as per protocol*	51	53	50	47	34	49	60	61	55	55	70	90
Institutional deliveries *	55	55	54	53	34	49	47	75	67	69	70	90
Deliveries conducted by skilled birth attendant*	54	52	52	52	35	49	47	70	56	60	70	90
Mothers who had three PNC check-ups as per protocol*	18	19	16	12	14	10	13	22	19	26	50	90

Programme Indicators	National level			FY 2074/75 (2017/18) by Province							National Target	
	2072/73 (2015/16)	2073/74 (2016/17)	2074/75 (2017/18)	1	2	3	Gandaki	5	Karnali	Sudur Paschim	2020	2030
FAMILY PLANNING												
Contraceptive prevalence rate (CPR-unadjusted)*	43.0	43.6	40.0	42.0	47.0	36.0	33.0	41.0	34.0	39.0	56	60
CPR (Spacing methods)	20	21	18	20	9	20	15	25	20	23		
FEMALE COMMUNITY HEALTH VOLUNTEERS (FCHV)												
Number of FCHVs	51416	49101	51420	8916	7755	9010	5858	8939	4202	6037		
% of mothers' group meeting held*	94	86	98	95	98	97	95	100	100	98	100	100
MALARIA AND KALA-AZAR												
Annual blood slide examination rate (ABER) per 100	0.84	0.79	1.3	0.56	0.49	0.50	0.63	1.60	1.20	4.6		
Annual parasite incidence (API) per 1,000 population at risk	0.07	0.08	0.08	0.01	0.02	0.02	0.03	0.07	0.3	0.3		
% of PF among Malaria Positive case	16.3	13.1	7.1	20.8	6.1	40.7	25.0	12.1	0.5	4.1		
Number of new Kala-azar cases	250	225	239	44	45	13	7	58	36	36		
TUBERCULOSIS												
Case notification rate (all forms of TB)/100,000 pop.	113	111	112	84	109	127	88	143	94	111		
Treatment success rate	90	91	91	85	85	88	90	90	93	85		
LEPROSY												
New case detection rate (NCDR) per 100,000 population	11	11	11	11	20	3	3	16	7	11		
Prevalence rate (PR) per 10,000	0.9	0.9	0.9	0.9	1.6	0.4	0.4	1.5	0.7	1.1		
HIV/AIDS and STI												
Number of new positive cases	2163	1781	2101	249	361	445	193	585	21	247		

Programme Indicators	National level			FY 2074/75 (2017/18) by Province							National Target	
	2072/73 (2015/16)	2073/74 (2016/17)	2074/75 (2017/18)	1	2	3	Gandaki	5	Karnali	Sudur Paschim	2020	2030
CURATIVE SERVICES												
% of population utilizing outpatient (OPD) services	66	72	74	79	45	89	98	73	83	72		
Average length of stay at hospital	4	3	4	3	4	4	3	4	3	2		
Note: *NHSS RF and/or SDG indicators												

Source: HMIS, EDCD, NSSD, NCASC & NTC, DoHS

EXECUTIVE SUMMARY

INTRODUCTION

The annual report of the Department of Health Services (DoHS) for fiscal year 2074/75 (2017/18) is the twenty-forth consecutive report of its kind. This report focuses on the objectives, targets and strategies adopted by Nepal's health programmes and analyses their major achievements and highlights trends in service coverage over three fiscal years. This report also identifies issues, problems and constraints and suggests actions to be taken by health institutions for further improvements.

The main institutions that delivered basic health services in 2074/75 were the 125 public hospitals including other ministries, and 1,822 non-public health facilities, the 198 primary health care centres (PHCCs) and the 3,808 health posts. Primary health care services were also provided by 11,974 primary health care outreach clinic (PHCORC) sites. A total of 15,835 Expanded Programme of Immunization (EPI) clinics provided immunization services. These services were supported by 51,420 female community health volunteers (FCHV). The information on the achievements of the public health system, NGOs, INGOs and private health facilities were collected by DoHS's Health Management Information System (HMIS).

PROGRESS OF OTHER DEPARTMENTS UNDER MoHP

The responsibilities of Department of Drug Administration (DoA) is responsible for regulate all functions related to the modern, veterinary and traditional medicines, including misuse and abuse of medicines and its raw materials, to stop false and misleading advertisement and make available safe, efficacious and quality medicine to the general public by controlling the production, marketing, distribution, sale, export-import, storage and use of medicines

Department of Ayurveda and Alternative Medicine (DoAA) primarily manages the delivery of Ayurveda & Alternative Medicine Services and promotes healthy lifestyles through its network facilities all across the country.. Its manages Ayurveda health services are being delivered through one Central Ayurveda Hospital (Nardevi), one Provincial Hospital (Dang), 14 Zonal Ayurveda Dispensaries, 61 District Ayurveda Health Centers and 305 Ayurveda dispensaries across the country. The Ayurveda and Alternative Medicine unit in the Ministry of Health & population (MoHP) is responsible for formulating policies and guidelines for Ayurveda and other traditional medical system

Progams under Department of Health Services:

- **Child Health and Immunization**

National Immunization Program (NIP) of Nepal (Expanded Program on Immunization) was started in 2034 BS and is a priority 1 program. It is one of the successful public health programs of Ministry of Health and Population, and has achieved several milestones contributing to reduction in child morbidity and mortality associated with vaccine preventable diseases.

National immubization coverage of BCG 92% which has increased by 1 point from 2073/74 to in FY 2074/75.However, the coverage of DTP-HepB-Hib3 and OPV3 82%which have decreased by 4 points compared to previous year.PCV 3 coverage 80% which has improved slightly by 2 point, where as the coverage of MR1 81% has decreased by 4 point compared to previous year. MR2 coverage 66% which

has increased by 9% points compared to previous year. For measles elimination, high coverage of both MR 1 and 2 is required (≥ 95%). Therefore, coverage of both MR 1 and MR 2 is still not satisfactory. In July 2016 (FY 2073/74), JE vaccine was introduced in all remaining districts of the country. In FY 2074/75, the coverage of JE vaccine 80% which has improved significantly by 13 point compared to the previous years. The coverage of IPV is only 16% in FY 2073/74 due to shortage of the vaccine. Instead of IPV (given one dose intramuscular at 14 weeks), fractional dose of IPV (given intradermal at 6 and 14 weeks) has been introduced since August 2018 (FY 2075/76) .

- **Integrated Management of Neonatal and Childhood Illnesses**

IMNCI is an integration of CB-IMCI and CB-NCP Programs as per the decision of MoH on 2071/6/28 (October 14, 2014). This integrated package of child-survival intervention addresses the major problems of sick newborn such as birth asphyxia, bacterial infection, jaundice, hypothermia, low birth-weight, counseling of breastfeeding. It also maintains its aim to address major childhood illnesses like Pneumonia, Diarrhea, Malaria, Measles and Malnutrition among under 5 year's children in a holistic way.

The Facility-Based Integrated Management of Neonatal and Childhood Illnesses(FB-IMNCI)package has been designed specially to address childhood cases referred from peripheral level health institutions to higher institutions.FBIMNCI package is linked strongly with the on-going Community Based Integrated Management of Neonatal and Childhood Illness (CB-IMNCI). The package is expected to bridge the existing gap in the management of complicated neonatal and childhood illnesses and conditions. With the gradual implementation of this package, further improvement in neonatal and child health can be expected. This package addresses the major causes of childhood illnesses including Emergency Triage and Treatment (ETAT) and thematic approach to common childhood illnesses towards diagnosis and treatment especially newborn care, cough, diarrhoea, fever, malnutrition and anemia. It also trains common childhood procedures needed for the diagnosis and treatment. It aims to capacitate team of health workers at district hospital with required knowledge and skills to manage complicated under-five and neonatalcases and to ensure timely and effective management of referralcases.

In FY 2074/75, a total of 25,678 newborns cases were registered and treated at health facilities and PHC/ORC level (HF-23,854 and PHC/ORC-1824) which is slightly less than that of previous year by 64 in total. Province 5 (6,425) had highest number of registered cases followed by province 1 (3,902) and least case load was in GandakiProvince (2,156). Out of total registered cases in FY 2074/75, 3,580 cases were classified as Possible Severe Bacterial Infection (PSBI) which accounts for 13.9 percent at national level which is slightly less than that of previous year (14.4%).

The proportion of PSBI was highest in province karnali (20.1%) followed by Province 7 (18%). Among the total registered cases at the national level (Health facilities and PHC-ORC level), 43.5 percent cases were classified as LBI, 5.9percent as Jaundice, and 7.2 percent as Low Birth weight or Breast Feeding Problem. The proportion of LBI and Jaundice decreases compared to last year whereas Low Birth weight or Breast Feeding Problem increased which were 47.8%, 6.8% and 6.8% respectively last year. Among the total registered cases the proportion of LBI was highest in province 2 (59.6%) followed by Province 1 (56.5%) with the least in Province 5 (30.2%). All classified cases were treated accordingly following the national protocol and out of the total recorded cases (25,678) in FY 2074/75, i.e. 26.3 (27.5) percent were treated by Amoxycillinpaediatrics,5.9 (5.5) percent cases were referred and 0.35 percent was reported dead from health facilities and PHC-ORC level. There was slight increase in proportion treated by Amoxycillin paediatrics and referral which was 26.3% and 5.5% respectively. However the proportion of death slightly decreased from 0.4%. Total 13,257 cases were identified by FCHVs as sick children out of which 36.9 percent reported in FY 2074/75.

- **Nutrition,**

The National Nutrition Programme is priority programme of the government. It aims to achieve the nutrition well-being of all people so that they can maintain a healthy life and contribute to the country's socioeconomic development. There is a high-level commitment to improve the nutritional status especially of Adolescence, Pregnant and Lactating mother, and Children under five.

In FY 2074/75, the percentage of new-born with low birth weight (<2.5 kg) was11.9 %. About 70 % of children between 0-23month old were registered for growth monitoring with an average of 3 visits per child, among them 4.3% of were reported as underweight. During growth monitoring, *29.6 % children were exclusively breastfed, 6-8 months who received complementary foods was 30.8%.*

A total 26984 children of 6 months to 5 years with SAM admitted in outpatient therapeutic centers of 55 districts. Among discharged SAM cases, 75.7 percent were recovered, less than 1 percent died and 14.4 percent were defaulter. Similarly, total 2250 children were provided with nutritional care through 17 NRH.

In context of micronutrient supplementation, the coverage of first-time iron distribution to PLW is high as 73 percent but the compliance of taking 180 tablets throughout the pregnancy is 45 %- and 45-days post-partum is 38 %. Average 45.6 percent of children aged 6 to 23 months had taken their first dose of MNP in the 41 programme districts. Compared to the 1st cycle of MNP intake, the 3rd cycle of intake indicating the compliance is drastically low at 15.6 percent. Households using adequately iodized is 95 percent. Vitamin A supplementation coverage is around 80% and deworming tablet distribution coverage is 78.8%. Likewise, coverage of school deworming is 38.4 percent for girls and 34.1 percent for boys.

In 2074/75response for the floods, Nutrition cluster reached 1,400,772 children of 6-59 months and 160,950 pregnant and lactating women in 18 flood affected districts. Vitamin A supplemented (1,400,772), counselling on breast feeding and complementary feeding to the caretakers of 0-23 months children (297,281), screening of children (630,976), treatment of SAM (15,201), deworming of 12-59 months children (1,209,568), iron and folic acid tablets to PLW (160,950). Similarly, 190,379 children aged 6-59 months and 52,902 PLW reached with blanket supplementary feeding; and 23,392 children aged 6-59 months with MAM and 6,617 women with acute malnutrition reached with Targeted supplementary feeding programme.

- **Safe Motherhood and Newborn Health**

During FY 2074/75,the national level ANC 4th visit (as per protocol)as percentage of expected pregnancy has been deceased to 50 % as compare to 53% in FY 073/74. Similarly the institutional delivery has slightly been decreased to 54% in FY 074/75 as compare to 55% in FY073/74. The percentage of mothers who received three post natal care visit as per protocol at HF among expected live birth has also slightly decreased to 16 %in FY 074/75 from 19% of FY 073/74. During FY 074/75 a total of 98640 CAC service has been provided, out of which ,62% women had received medical abortion service. Compared to fiscal year 2072/73, the proportion of women who had a safe abortion and then used contraceptives increased over the last three years, from 71 percent in 2073/74 to 75 percent in 2074/75 .The acceptance of post abortion contraception among medical abortion service users was high compared to among surgical abortion users (medical abortion 82% versus surgical abortion 65%). Overall, post-abortion LARC use is higher among women who had surgical abortion (21percent) than among medical abortion (16percent).

- **Family Planning and Reproductive Health**

National family planning programme (FP) in 2074/75 experienced a downturn in uptake of family planning services. National and Provincial mCPR has decreased. The modern contraceptive prevalence rate (mCPR) for modern FP at national levelis 40%. mCPR of Terai (45%) is higher than national average. Province 2 has the highest mCPR of 46.9% while Gandaki Province the lowest (32.7%). Nationally, current users (absolute numbers) of all modern methods have decreased by 174,705 in 2074/75 than in previous year. The number of districts with mCPR below 30 % has increased from 13 in 2072/73 to 18 in 2074/75 indicating below par performance among the low mCPR districts. The trends of current users of permanent methods are in decreasing trend while that of long acting reversible contraceptive (LARCs) currents users is almost stagnant at national level but is in increasing trend in Provinces 1 and Sudurpashchim Province. Female sterilization is popular in Terai and male sterilization is more popular in Mountain and Hiil than Terai. Contraceptive implant compared to IUCD seems to be more popular among women of reproductive age in all ecological region of Nepal. Contraceptive defaulters, a proxy indicator for contraceptive discontinuation, are high in Nepal. About 59% of contraceptive users have discontinued using the method or switched to another contraceptive method. Compared to SARCs (short acting reversible contraceptives—pills and Depo), LARCs has lower defaulter rate in all Provinces. Trends of contraceptive discontinuation have increased in 2074/75.

Depo (37%) occupies the greatest part of the contraceptive method mix for all method new acceptors, followed by condom (27%), implant (19%), IUCD (4%), female sterilization (ML 3%) and lastly male sterilization (NSV 1%) in 2074/75. Nationally, new acceptors of all modern methods (absolute numbers) have decreased by 4,315 while new acceptors of all temporary methods (absolute numbers) have decreased by 41,719 in 2074/75. LARCs, implant new acceptors significantly dominated over IUCD in all provinces and ecological regions. There has been nominal increase in post-partum uptake of FP method. Post abortion FP use is encouraging. Contraceptive uptake among total reported abortion services is 75.4%, an increase from past year (70.7%) but only 23% is contributed by LARCs indicating women after abortion are relying on less effective methods.

- **Adolescent sexual and reproductive health**

National Adolescent Sexual and Reproductive Health (ASRH) is one of the priority programs of Family Welfare Division (FWD), Department of Health Services. Nepal is one of the country in South Asia which has developed and endorsed the first National Adolescent Health and Development (NAHD) Strategy in 2000. To support district health managers to operationalize the strategy, an implementation guideline on Adolescent Sexual and Reproductive Health (ASRH) was developed in 2007 and piloted in 26 public health facilities of 5 districts (Bardiya, Surkhet, Dailekh, Jumla, Baitadi). ASRH barrier study *"Assessing supply side constraints affecting the quality of adolescent friendly services (AFS) and the barriers for service utilization"* carried out in 2014 under leadership of FWD or interventions were implemented in BS.2072 (2015) as part of system strengthening (*capacity building, certification for quality delivery of AFS in friendly manner) and awareness raising interventions among adolescents and key stakeholders.* To address the needs of emerging issues of adolescents in the changing context, the NAHD strategy is revised in 2018 the main aim of revision of strategy was to address the problem face by the adolescent in Nepal. Adolescents aged 10 to 19 constitute 24% (6.4 million) of the population in Nepal. Nepal is 3rd highest country in child marriage though legal age at marriage is 20. Seventeen percent of girls aged 15-19 years are already mothers or pregnant with their first child. Only 15% of currently married adolescents use a modern method of contraceptives. The Adolescent Fertility Rate (AFR) is an increasing trend from 81 in 2011 to 88 in 2016 per 1,000 women of 15-19 years.

- **Primary Health Care Outreach Clinics**

Based on the local needs PHC/ORCs are conducted every month at fixed locations of the Rural municipalities or municipalities on specific dates and time. The clinics are conducted within half an hour's walking distance for the population residing in that area. Primary health care outreach clinics (PHC/ORC) extend basic health care services to the community level.

In 2074/75, 2.6 million people were served at 131,382 outreach clinics (Table 4.7.1). A total of 131,382 clinic were run which represents 90 percent of the targeted number (131,382 clinics x 12 = 1,576,584 in a year). An average of 20 clients were served per day per outreach clinic, a increase from 19 the previous year with the highest average number being in province 5.

- **Malaria**

Nepal has surpassed the Millennium Development Goal 6 by reducing malaria morbidity and mortality rates by more than 50% in 2010 as compared to 2000. Therefore, Government of Nepal has set a vision of Malaria free Nepal by 2025. Current National Malaria Strategic Plan (NMSP) 2014-2025 was developed based on the epidemiology of malaria derived from 2012 micro-stratification. The aim of NMSP is to attain "Malaria Free Nepal by 2025".

Total positive cases of malaria slightly increased from 1128 in FY 2073/74 to 1187 in 2074/75 where 557 cases are indigenous cases and 630 are imported cases due to active surveillance. The proportion of P. falciparum infections is in decreasing trend and reached 7% in FY 2074/75 as compared to the previous year, however still the proportion is high which may be due to high number of imported P. falciparum cases. The trend of indigenous pf malaria cases are decreasing while imported cases of Pf are in increasing trend. The trend of clinically suspected malaria case, slide positivity rate, Pf and pv malaria cases also decreasing year by year, mainly due to increased coverage of RDT, microscopic laboratory service at peripheral level, high coverage of LLINs in endemic districts and increased socio-economic status of community people.

- **Kala-azar**

Kala-azar is one of the high priority public health problems of Nepal. Government of Nepal has designated 18 districts as Kala-azar endemic districts however, other districts except these also have continuously reported new cases of Kala-azar in recent years. Therefore, to eliminate Kala-azar from Nepal, strategies to improve health status of vulnerable and risk population has been made focusing on endemic areas of Nepal, which leads to elimination of Kala-azar, and it no longer becomes a public health problem. The incidence of kala-azar at national and district level has been less than 1/10,000 population since 2013. The trend of KA cases has been decreasing significantly for the last several years. In 2074/75, there has been slight increase in reported cases (239 Kala-azar cases) compared to previous year(231). Out of all cases, 122 Kala-azar cases were reported from 17 program districts and 117 cases were reported from 33 other non-program districts. The case fatality rate was 2.93 percent at national level during FY 2074/75.

- **Lymphatic filariasis**

Lymphatic Filariasis (LF) is a public health problem in Nepal. The goal of national Lymphatic Filariasis programme is the people of Nepal no longer suffer from lymphatic filariasis. As of 2074/75, MDA has been stopped (phased out) in 37 districts, post-MDA surveillance initiated in 37 districts and

morbidity management partially initiated in all endemic districts. All endemic districts completed the recommended six rounds of MDA in 2018. The LF elimination programme has also indirectly contributed to strengthening of health system through trainings and capacity building activities. The transmission assessment survey in 25 districts in 2017 found that the prevalence of infection had significantly reduced. Since 2003 more than 100 million doses of lymphatic filariasis drugs have been administrated to at-risk population. 2072 hydrocele surgeries have been performed in year 2074/075.

- **Dengue**

Dengue, a mosquito-borne disease emerged in Nepal in since 2005. The goal of national Dengue control program is to reduce the morbidity and mortality due to dengue fever, dengue haemorrhagic fever (DHF) and dengue shock syndrome (DSS). The number of reported dengue cases has decreased significantly since 2010 but cases of dengue were increased in recent years. In FY 2074/75, total 2111 cases were reported from 28 districts. The majority of cases have been reported from Rupandehi (32%), Jhapa (25%), Mahottari (20%) and Sarlahi (6%). As well there were three confirmed deaths due to Dengue — one each from Chitwan, Jhapa and Arghakhanchi.

- **Leprosy**

During the FY 2074/75, total number of 3249 new leprosy cases were detected and put under Multi Drug Therapy (MDT). 2882 cases were under treatment and receiving MDT at the end of the fiscal year. Registered prevalence rate of 0.99 cases per 10,000 populations at national level was reported this year which is below the cut-off point means below 1 case per 10,000 population as per the standard set by WHO. 133 (4.09%) new leprosy cases of Grade 2 Disability (G2D), 202(6.22%) new child leprosy cases and 1375 (42.32%) new female leprosy cases were recorded. The increasing trend of registered prevalence rate after the elimination in 2009 is a serious concern for leprosy control program hence early and active case detection activities need to be amplified and records/reports of local health facility level needs to be verified and validated.

Leprosy control and disability management section is a focal unit to manage, prevent, treatment and rehabilitation of disability. This unit is coordinating with DPOs and related organization for the disability prevention and rehabilitation of people with disability

- **Zoonoses**

Nepal has dual burden of disease and zoonotic diseases of epidemic, endemic and pandemic potentials are major public health concerns. Globally more than 300 Zoonotic diseases are identified among which about 60 have been identified in Nepal as emerging and re-emerging diseases. No people die of rabies or poisonous snake bites due to the unavailability of anti-rabies vaccine (ARV) or anti-snake venom serum or timely health care services and to prevent, control and manage epidemic and outbreak of zoonoses is the goal of zoonoses program. Around 30,000 cases in pets and more than 100 human rabies cases occur each year with the highest risk are in the Tarai. During FY 2074/75, 35,681 dog and other animal bites cases has been reported including 32 deaths throughout the Nepal and 5,606 cases of Snake bite has been reported. 20 deaths due to snake bite has been reported this year.

- **Tuberculosis**

Tuberculosis (TB) remains a major public problem in Nepal. In 2074/75, the total of 32,474 cases of TB were notified and registered at NTP. Among these, 98% (31,723) were incident TB cases (New and

Relapse).71% of among all TB cases were pulmonary TB, and out of them, 80% were bacteriologically confirmed. Among those bacteriologically confirmed, 30% (9,897) were confirmed using Xpert MTB/RIF testing..Province 3 holds the highest proportion of TB cases (24%). Kathmandu district alone holds around 41% (3,183 TB cases) of the TB cases notified from the province 3 while its contribution is around 10% in the national total. Whereas in terms of eco-terrain distribution, Terai belt reported more than half of cases (18,590, 57%) .Most cases were reported in the productive age group (highest of 50% in 15-44 year of age).The childhood TB is around 5.5% while men were nearly 1.73 times more than women among the reported TB case.

Case notification rate (CNR) of all forms of TB is 112/100,000 whereas CNR for incident TB cases (new and relapse) is 109/100000 population. Among all New cases of drugs sensitive TB cases registered last year, 91% of them were treated successfully, with nearly 89% treatment success rates for Retreatment cases as well. The burden of DR TB is not as high as the regional or global burden. There are estimated around 1500 (0.84 to 2.4) cases of DR TB annually. However, 350 to 450 MDR TB cases are notified annually. This year alone 420 MDR TB cases were notified. In 2016/17, a total of 257 RR/ MDR TB, 91 Pre-XDR TB and 18 XDR TB were enrolled for treatment. TSR of RR/MDR patients was 71%. However, the TSRof Pre-XDR TB is 58% and XDR TB is 61%, which were marginally lower than the RR/ MDR TB cases.

TB services were provided through 4,323 treatment centers. There are further 96 Urban DOT centers providing DOT services in the country. Regarding diagnostic services, there are 624 Microscopic centers and 55 Genexpert centers (with 58 Genexpert machines in total) in the country. DRTB services were provided through 21 treatment centers and 86 Treatment Sub-centers. Though the DRTB services are ambulatory, facility-based services were also provided through 2 referral centers located in Nepalgunj and Kalimati Kathmandu, 6 hostels and 1 DR home

- **HIV/AIDS and STI**

Making up 3.8% of the total estimated people living with HIV (PLHIV) (31,020), there are about 1,192 children aged up to 14 years who are living with HIV in Nepal in 2017, while the adults aged 15 years and above account for 96.2%. Almost 73% of total estimated infections (22,807) among population aged 15-49 years. By sex, males account for two-thirds (61%) of the infections and the remaining more than one-third (39%) of infections are in females. The prevalence of HIV among 15-49 years of age group is 0.15% in 2017 and the incidence per 1000 is 0.03. The epidemic that peaked in 2000 with almost 4,455 new cases in a calendar year has declined to 835 in 2017 (reduced by 81%). In FY 2074/75, of total tested (3,30,460), the HIV positivity yield percentage is 0.6% (2,101). Total 439,225 tests were done among pregnant women (ANC and Labour) and 70 women were identified as HIV positive. Total 16,428 PLHIV were on ART treatment by the end of FY 2074/75.

- **Non Communicable Diseases**

Non-Communicable Diseases (NCDs) are emerging as the leading cause of death in Nepal due to changes in social determinants like unhealthy lifestyles, urbanization, demographic and economic transitions. The deaths due to NCDs (cardiovascular disease, diabetes, cancer and respiratory disease) have increased from 60% of all deaths in 2014 to 66% in 2018 (WHO Nepal Country profile 2018). They are already killing more people than communicable diseases. Thus, Nepal has adapted and contextualized the PEN intervention for primary care in low resource setting developed by WHO. The epidemic of Non communicable disease is recognized by UN and addressed in Sustainable Development Goal 3 i.e. “ensure healthy life and promote well being for all at all ages” of this goal 3.4 targeted to “reduce by one third premature mortality from NCDs through prevention and treatment and promote mental

health and well being". PEN Implementation Plan (2016–2020) has been developed in line with the Multisectoral Action Plan for prevention and control of NCDs (2014-2020).

- **Mental Health**

Mental health and substance abuse is recognise as one of health priorities and also addressed in Sustainable Development Goals (SDG). Within the health goal, two targets are directly related to mental health and substance abuse. Target 3.4 requests that countries: "By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being." Target 3.5 requests that countries: "Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol." Nepal has high burden of mental illness but there are limited interventions to address the epidemic of mental diseases.

- **Epidemiology and Disease Outbreak Management**

In Nepal communicable disease outbreaks occur commonly in different geographical distributions in different period of the year. In this fiscal year, 32 outbreaks of seven different diseases/events were reported to EDCD. There were outbreaks of Acute gastroenteritis and diarrhoea, cholera, influenza, food poisoning, leptospirosis, malaria, viral fever and viral hepatitis out of which AGE and ILI caused the major outbreaks. 11 outbreaks of AGE have been reported from 11 different districts affecting 1029 people in total with 3 mortalities. Similarly, a total of 12 outbreaks of ILI have been reported with more than 4000 cases throughout the country including 10 deaths.

- **Disaster management**

The collaborative programme between MoHP/DoHS/EDCD and WHO-EHA has been committed to enhancing health sector emergency preparedness, disaster response and epidemiology and outbreak management capabilities in close coordination & collaboration with key players in the country. In the fiscal year 2074/75, no any such disaster event was recorded which affected the health of people. Health sector contingency planning, Rapid Response training, Emergency and disaster preparedness planning activities were carried out for disaster preparedness.

- **Surveillance and Research,**

Disease surveillance and research is an integral part of Epidemiology and Disease Control Division. The mission of the communicable diseases Surveillance program is to protect and improve the health of Nepalese citizens by tracking and responding to the occurrence of disease in the population across the country. In 2074/75 an additional 5 sentinel sites were trained on EWARS bringing the number of EWARS sentinel sites to 69. Similarly Water quality surveillance Central committee (WQSCC) meeting with stakeholder and organized water quality surveillance workshop at different districts. Surveillance of reportable diseases is responsible for collecting, analyzing, interpreting, and reporting information for infectious diseases.

- **Geriatic and Gender Based Violence**

The MOHP has established geriatric ward in eight referral hospitals providing geriatric services and is in the process of establishing four more in different hospitals across the country. Office of Prime Minister and Council of Ministers (OPMCM) developed a multi-sectoral action plan to address the GBV issues in 2010 with the celebration of the international GBV years. In line with the action plan and to

address needs of GBV survivors in an effective and efficient way, MoHP has establish a Hospital Based "One Stop Crisis Management Centres" (OCMCs) in forty-four districts. Each OCMC aims to provide an integrated package of services for survivors of gender based violence (GBV) through a 'one-door' system that follows three core principles: (i) ensuring the security and safety of GBV survivors; (ii) maintaining confidentiality, and (iii) respecting the dignity, rights and wishes of survivors at all times. The guideline for running OCMCs is the "Hospital-based OCMC Operational Manual (MoHP, 2011)". Based on the multi-sectoral approach, OCMCs are supposed to provide comprehensive services such as medical treatment, counselling, temporary shelter, security (including support provisions for police for necessary services), legal and rehabilitation. OCMCs are an innovative and challenging initiative for GoN's health system.

- **Social Security/Bipanna Nagrik Aaushadi Programme**

The Impoverished Citizens Service Unit of **Social Health Security Section** provides the funding for impoverished Nepalese citizens to treat serious health conditions and provisions were Up to NPR 100,000 per patient via notified hospitals for free medication and treatment of severe diseases including cancer, heart disease, head and spinal injuries, Alzheimer's, Parkinson's and sickle cell anaemia, medication costs up to NPR 100,000 for post-renal transplant cases, free dialysis services as per certified by doctors and renal transplantation costs up to NPR 400,000 per patient. In FY 2074/75, managed the provision of free treatment to impoverished citizens including 12,930 Cancer, followed by 5,144 Kidney free treatment services and 4,385 Heart disease.

- **Female Community Health Volunteers**

The major role of the Female Community Health Volunteers (FCHVs) is promotion of safe motherhood, child health, family planning, and other community based health services to promote health and healthy behavior of mothers and community people with support from health workers and health facilities. At present there are 51,420 FCHVs actively working all over the country. FCHVs contributed significantly in the distribution of oral contraceptive Pills, Condoms and Oral Rehydration Solution (ORS) packets and counseling and referring to mothers in the health facilities for the service utilization. In FY 2074/75, the number of mothers participating in health mother's group meetings were increased, despite of that FCHVs distributed fewer pills, condoms and iron tablets in comparisons to FY 2073/74 . Service statistics also show that, FCHVs assisted the immunization against polio of children below 5 years on National Immunisation Day, the community-based management and treatment of acute respiratory infections and control of diarrheal diseases, community nutrition programmes and other public health activities.

- **Inpatients/OPD services**

In 2074/75, curative health services were provided to outpatients, including emergency patients, and inpatients including free health services. Inpatient services were provided different level of hospitals including INGOs/NGOs, Private medical college hospitals, nursing homes, and private hospitals. In this fiscal year 2074/75, 74% of the total population received outpatients (OPD) services, 1,241,941 patients were admitted for hospital services and 2,047,323 patients received emergency services from hospitals.

- **Health Training**

The National Health Training Centre is the apex body for human resource development in Nepal's health sector. The overall goal of NHTC is to build a technical and managerial capacity of health service

providers at all levels to deliver quality health care services towards attainment of the optimum level of health status. National health training network co-ordinates seven Provincial Health Training Center The hospital-based training sites conduct Family Planning, Skilled Birth Attendance, Mid-Level Practicum, Safe Abortion Services, Rural USG, Anesthesia Assistant, Pediatric Nursing, Medico-Legal and other types of training program.

- **Vector Borne Disease Research & Training,**

The objective of Vector Borne Disease Research and Training Center is primarily to fill the knowledge gap and generate scientific evidences in the field of Vector Borne Diseases. Therefore, VBDRTC is responsible for researchs and trainings that relate with VBDs such as Malaria, Kala-azar, Dengue, Chikungunaya, Lymphatic filariasis, Scrub typhus and Japanese encephalitis. In the FY 2074/75, VBDS trainings for physicians/ pediatrician, VBDs focal persons, health workers, basic as well as refresher malaria microscopic trainings were conducted to enhance their level of knowledge and skills related with prevalent vector borne diseases. This fiscal year, Surveys conducted by this center include the entomological surveys of Kala-azar & malaria vectors, monitoring of insecticide resistance, the susceptibility tests of malaria vector species with DDT and Malathion, Transmission Assessment Surveys (Pre TAS,TAS-I, & TAS - III) in different districts.

- **Health, Education, information and ommunication**

NHEICC is responsible for the implementation of health promotion activities and delivery of health information and messages using multimedia, methods and channels up to individual level for the demand creation and increased use of available health services.

In coordination with concern divisions and centres, evidence based annual plans and programmes are formulated and implemented by NHEICC in line with the health policy and sustainable development goals. Modern digital media as well as print, audio-visual and social media are used in promoting health behaviours in the areas of communicable and non communicable diseases, reproductive and child health and environmental sanitation. Social behaviour change communication approaches are applied with social mobilization through health volunteers and communication channels at the door step of target audiences. The health promotion activities are currently more focused on capturing hard to reach areas and marginalized populations through new technology and programmes.

- **Health Service Management,**

The Management Division (MD) is responsible for DoHS's general management functions. DoHS's revised Terms of References (ToR) of MD describing it as the focal point for information management, planning, coordination, supervision, and the monitoring and evaluation of health programmes. The division is also responsible for monitoring the quality of air, water and food products. It also monitors the construction and maintenance of public health institution buildings and supports the maintenance of medical equipment. More activities assigned to this division include including policy and planning related to health infrastructure and logistic management The current HMIS software system (DHIS 2 software) meet the basic requirements of the recently revised HMIS. Existing software related errors have been resolved with upgrading of System to dHIS 2.3. Few problems related to Nepali Calender are on the progress of sorting out with the help of DHIS 2.

- **Logistics Management**

The main role of Logistics Management (LM) is to support in delivering quality health care services providing by program divisions and centers through logistics supply of essential equipments, vaccines, family planning commodities and free health drugs to all regional /district stores and health facilities. The major function of MD is to forecast, quantify, procure, store and distribute health commodities, equipments, instruments and repairing & maintaining of the bio-medical equipments/instruments and transportation vehicles. The quarterly LMIS and monthly Web-based LMIS have facilitated evidence based logistics decision making and initiatives in annual logistics planning, quarterly national pipeline review meetings, the consensus forecasting of health commodities and the implementation of the pull system. MD has form an authorized 23 members Logistics Working Group (LWG) under the chaired of MD Director with representation of Divisions, Centers, supporting partners and other stakeholders. LWG address all issues and challenges on procurement and supply chain on health commodities and materials in center, region and district level.

- **Health Laboratory Services**

The National Public health laboratory (NPHL) is the nodal Institute for capacity building and for the development of public health laboratory sector. There are diagnostic health laboratories in 8 central hospitals, provincial hospitals, 10 zonal hospitals, 62 district hospitals, 22 other district level hospitals, 198 PHCCs, 150 Health posts and more than 1,700 private health institutions.

In the fiscal year 2074/75, NPHL provided various types of specialized laboratory services with routine services in the areas of Biochemistry, Haematology, Parasitology, Immunology, Virology, Endocrinology, Microbiology, Histopathology/Cytology and Immunohistochemistry tests carried out in this fiscal year. It has performed licensing and regulatory activities related to health laboratory and blood bank transfusion centre related services.

- **Personnel Administration**

The Personnel Administration Section (PAS) is responsible for routine and programme administrative function. Its major functions include upgrading health institutions, the transfer of health workers, level upgrading of health workers up to 7th level, capacity building as well as internal management of human resources of personnel. MoHP has more than 30,000 employees of whom more than 24,000 are technical personnel and 6,300 are administrative staff across the 179 sanctioned types of technical and administrative posts.

- **Financial Management**

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 programmes. Finance Section is the focal point for financial management for all DoHS programmes. Out of total National Budget of Rs. 11,38,70,75,00,000 a sum of Rs. 31,42,81,75,000 (2.75%) was allocated for the health sector during the fiscal year 2074/75. Of the total health sector budget, Rs. 20,12,73,65,000 (63.33%) was allocated for the execution of programs under the Department of Health Services Network.

- **Monitoring and Evaluation**

As in previous years the Integrated Health Information Management System (IHIMS) Section collected, collated and provided information on the activities undertaken at the district level to all DoHS divisions, centers and the 77 districts. Annual performance review workshops were conducted in all districts / national level. Several trainings were conducted on programme management to improve the skills of health workers.

Eye care

Nepal's eye care programme is run by Nepal Netra Jyoti Sangh and other public & private eye hospital health care centres and clinics. The prevalence of blindness in Nepal has reduced at the current time. In the fiscal year 2074/75, Nepal's hospitals, eye care centres and outreach clinics provided 4,544,266 outpatient consultations and performed 390,565 eye surgeries.

Human Organ Transplant services

National Transplant Center's main objectives are to strengthen and expand organ transplantation services, provide specialized services beyond transplantation along with high quality health care at a low price/free of cost and produce high level human resources by providing structured training in various aspects of services to expand the services across the country.

917 minor surgeries and 648 major surgeries were concucted in the FY 2074/75 which is quite higher than the past years. Similarly, the number of kidney transplantation also escalated from 132 to 153 in FY 2074/75.The number of sessions of paid dialysis decreased from 8,351 in FY 7073/74 to 3,229 in fiscal year 2074/75. There has been a slight decrease also in the free dialysis sessions from 26,342 in FY 2073/74 to 26,051 in FY 2074/75.. The number of lab tests done in FY 2074/75 was 127,609. The number of ultrasound tests and X-ray in the FY 2074/75 was 3,951 and 3,467 respectively. Similarly, the number of ECG done was 1,311 while that of the echocardiograph was 737 followed by 594 endoscopy and colonoscopy. The total number of BCM done was 114 and that of ABG was 28

Medico-legal Services

Medico-legal services include forensic, pathology, autopsy, clinical forensic medicine and toxicology services. Medico-legal services have been neglected in Nepal's health system. The report presents five recommendations for improving medico-legal services in Nepal: recognizing the specific nature of the forensic/medico-legal service sector, training district medical officers and other health professionals to provide medico-legal services, providing facilities, providing incentives and remuneration and improving coordination between investigating authorities

Health Councils

The six professional health councils (Nepal Medical Council, Nepal Nursing Council, Nepal Ayurvedic Medical Council, Nepal Health Professional Council, Nepal Pharmacy Council and Nepal Health Research Council) accredit health-related schools and training centers and regulate care providers. Moreover, Nepal Health Resarch Council controls and regulates researching health sector with in Nepal.

Health Insurance Program

The Health Insurance Program (HIP) is a social security program of the Government of Nepal that aims to enable its citizens to access to quality health care services minimizing a financial burden on them. HIB is responsible to carry out the health insurance program in Nepal. Although good progress has been made on improving access, much remains to be done. Health insurance program is a family-based program.

There were 13,507 people insured in FY 2072/73 and 228,113 people were insured in FY 2073/74. A total of 1,130,141 peoples are enrolled in the health insurance program at the end of FY 2074/75. Among them 129,148 people are insured on the basis of ultra-poor category whose contribution is paid solely by Nepal Government in FY 2074/75.

Development Partners Support in health

Development partners support the government health system through a sector-wide approach (SWAp). The SWAp now supports the implementation of the new Nepal Health Sector Strategy (NHSS, 2016–2021). The Joint Financing Arrangement (JFA) has been signed by various partners and the government. The JFA describes in detail the arrangement for partners' financing of the NHSS. The JFA elaborates the pool funding arrangement and parallel financing mechanism as bilaterally agreed between the government and the donor partners.

National Health Policy- 2071

1. Background

The relationship between health of general population and overall development of country is intertwined. Progresses made in the health sector are considered the main indicators of development. Despite poverty and conflict in past decades, Nepal has achieved remarkable success in the health sector.

In the context of health as a fundamental right of the people established by Nepal's constitution, it is the responsibility of the nation to maintain the achievement made in controlling communicable diseases, to reduce infant and maternal mortality rate to the desired level, to control the ever increasing prevalence of non-communicable diseases and timely management of unpredictable health disasters, and to provide quality health services to senior citizens, physically and mentally impaired people, single women especially poor and marginalized and vulnerable communities.

This national health policy 2071, a complete revision of the national health policy 2048, has been introduced to promote, preserve, improve and rehabilitate the health of the people by preserving the earlier achievement, appropriately addressing the existing and newly emerging challenges and by optimally mobilizing all necessary resources through a publicly accountable efficient management.

2. Past Attempts

In Nepal, only limited people had access to ayurvedic and modern health care services at Singhadarbar Vaidyakhana established nearly 300 years ago, and Bir Hospital established in 1947; most ordinary people had to rely on traditional healers such as dhamijhakri, jharphuke, guvaju etc.

After the introduction of the periodic developmental plan in the country from B.S. 2013, a planned development process began also in the health sector. In this process the first 15 year long-term health plan and the second 20 year long-term health plan were introduced in B.S.2032 and 2054 respectively.

People actively and remarkably participated in health programs such as Smallpox Eradication, Malaria Control, Tuberculosis Control, Polio Eradication, Filariasis Elimination, Leprosy Elimination, as well as regular administration of vitamin 'A' to the children. Female Community Health Volunteer program started from B.S. 2045 in Nepal has been a model program for the whole world. Meanwhile, a policy for integrating vertical health programs from the perspective of cost effectiveness and ease of implementation was adopted and the integration of malaria, leprosy, tuberculosis, smallpox, and family planning / maternal child health programs was completed by B.S. 2047.

After the opening for private-sector investment in the health sector through the enactment of The National Health Policy 2048, Institutes for the study of health sciences as well as private health facilities were established in massive scale. The involvement of private sector in health has been mainly in curative services, production of medicines and equipment, and they are concentrated in urban areas. At the same time, Nepal Health Sector Program-1 (2060-2065) and Nepal Health Sector Program-2 (2066-2071) have been formulated and implemented in order to enhance the effectiveness of the investment of Government, Non-Government and Donor agencies.

3. Current Situation

Due to concerted efforts of past sixty years, significant achievements have been made in the health sector. Network of health facilities providing primary health care services have been accessible to all people. Though concentrated in urban centers and confined to curative services only, the participation of private sector has been increased. Human resources required for almost all levels of health care are being produced within the county. Country is increasingly becoming capable to producing high and medium level human resources. About four dozens of pharmaceutical companies currently operating in the country have developed the capacity of producing 40 percent of medicine required by the country.

Likewise, though the services are not widely available, a number of specialized care facilities relating to eye, cancer, heart, kidney, neurology, orthopedic, and plastic surgery have been established under Government and Non-Government sector. Diagnostic centers and lab services have been strengthened and expanded. The major health problems of past decades that have been Malaria, Tuberculosis, Diarrhea, respiratory diseases, Typhoid, Chickenpox, Whopping Cough, Diphtheria, Tetanus, Filariasis, Kala Ajar, Trachoma, HIV, are in control and burden of these diseases are in descending trend. Smallpox has been eradicated and polio is down to zero in Nepal. Leprosy is in state of elimination. Maternal and neonatal tetanus has been eliminated and trachoma is in process of elimination. Campaign for control of filarial disease is ongoing.

Various regulatory bodies (Medical Council, Nursing Council, Pharmacy Council, Health Council, Ayurvedic Council, National Health Research Council) responsible for ensuring quality of production of human resource for health, health care, drug supply and researches, several institutions have been established and are operational.

Collaboration and partnership with health related international organizations, donor communities, and countries have been developed. Health awareness in general public has been increased. Considerable development in education, communication, agriculture, and food supply has contributed to the development of health.

As the result of above efforts, remarkable progress has been made in the health sector which is justified by the indicators in table below.

Indicator	Decade of B.S. 2007 (A.D. 1950)	B.S. 2048 (A.D. 1991)	B.S. 2068 (A.D. 2011)	Source
a) Infant mortality rate (per thousand live births)	200	107	46	Nepal Health and Demographic Survey, 2011
b) Maternal mortality rate (Per 100,000 live births)	1800	850	170	Millennium Development Goal Progress Report, 2011
c) Average life expectancy (year)	32	53	68.8 (A.D. 2011)	Nepal Human Development Index Report, 2014
d) Under 5 children mortality (per thousand)	280	197	54	Nepal Health and Demographic Survey, 2011
e)Total fertility rate	7	5.8	2.6	Nepal Health and Demographic Survey, 2011
f) Fully immunized children (Percentage)	70	88/87		Nepal Health and Demographic Survey, 2011

4. Issues and Challenges

In spite of considerable achievement in the health sector and country progressing towards positive direction, there are still many problems and challenges that need to be addressed. Some major problems and challenges are as follows:

Major Issues:

- Citizens of all localities, levels, classes, groups and communities do not have yet easy and affordable access to health care as aspired by the constitution.
- Despite the continuous effort of the state, about a half of under 5 children and women of reproductive age are undernourished whereas the problem of obesity is growing among urban population.
- Health problems created by the situations like climate change, raising food insecurity and natural disasters are on the rise.
- Prevalence of cancer, hypertension, diabetes, and illnesses related to heart, kidneys, liver, lungs, along with other non communicable diseases like mental illnesses, dental problems are on the rise. Likewise, deaths due to road and injuries are increasing day after day.
- State has not been able to provide adequate priority on primary health care programs in urban areas, health of senior citizens, mental disorders, genetic and congenital diseases, environmental health, occupational hazard, sexual and reproductive health of adolescents and health promotion on school-age children, etc.
- Access to quality medicine for people, right use of medicine, production and distribution of essential drugs and medical equipments within the country are not effective and people oriented.
- Laboratory services and medical equipments are not yet up to the quality standard.
- The issues such as complexities seen in rational production of various skilled health professionals that take social responsibility, brain drain of health professionals, transfer of health and other personnel, continuous presence of health personnel in health facilities, security of health personnel, etc., have not yet been addressed in a planned way.
- Not been able to mobilize private-sector investment in health for the benefit of the people and divert their investment to appropriate areas.
- Not been able to effectively regulate health sector according to law and rules. There is a lack of sufficient harmony between the organizations producing health personnel and the organizations utilizing them.

Major Challenges:

- There is a need for appropriate implementation of a two way referral system in order to improve the quality standard of health care services.
- There is a need for immediate management of highly infectious diseases (like Bird-flu) or potential new diseases, controlling of epidemic, emergency preparedness for minimizing human casualty due to earthquake and other natural disasters and retrofitting of hospitals and other health institutions.

- In order to reduce new born, child and maternal mortality rate, there is a need for maximizing the effectiveness of controlling Diarrhea, acute respiratory infection, Malaria, Kala Azar, Encephalitis, Filariasis, Dengue, Tuberculosis, Leprosy, HIV, and other diseases that can be prevented through immunization.
- It has been difficult to control the spread of human and animal related diseases due to the open border with neighboring countries.
- There is a need for creating opportunities by strengthening health institutions down to the grass root level and establishment of a social health insurance system so that health services, health education and information are equally available for all citizens.
- There is a need for increasing state's investment to the health sector in proportion to population growth.
- There is a need for urgently addressing regional disparity in health indicators.
- There is a need for implementing health-related acts, rules, policies, strategies and action plan in a comprehensive and integrated manner. Likewise, country is committed to the international treaties and agreements, and therefore, it should continue actively participating for their successful implementation.
- The nation being a party to a convention on the Rights of Persons with Disabilities, it needs to increase investment for providing all necessary health services to the people with blindness, visual impairment, hearing impairment, mental impairment, and physical impairment.
- There is a need for empowering local government and holding them accountable for health services along with improving people participation in rural health programs.

5. Need for new policy, guiding principles and vision

As the existing health policy 2048 is insufficient to ensure citizen's right to quality health care through appropriate response to the above problems and challenges, this new national health policy had to be promulgated. While preparing this policy, a few guiding principles were formulated and based on those guiding principles, policies, and strategies have been proposed. The National Health Policy 2071 will be implemented based on the guiding principles presented below:

- As a fundamental right of citizens, provision for obtaining quality health care will be ensured.
- Right to information related to the health services provisioned for citizens will be ensured.
- In order to ensure the health services provisioned by the state is accessible to poor, marginalized, and vulnerable communities; based on equality and social justice, programs will be designed and implemented accordingly.
- People will be participated in every kind and level of health services.
- Policies and programs related to health promotion, protection, improvement, and rehabilitation will be gradually incorporated into state's other policies.
- Participation of private sector will be promoted ensuring citizen's easy access to quality health services at fair price.
- Resources obtained from internal and external agencies will be mobilized for effective implementation of this policy and the programs formulated under this policy.

- All health services, provided by government or organized differently through a network of government and private sector, will be regulated.
- Flow of health services will be made fully accountable.

This policy has been deemed necessary for successful implementation of the above guiding principles.

5.1 Vision

All Nepalese citizens would be able to live productive and quality life; being physically, mentally, socially, and emotionally healthy.

5.2 Mission

Ensure the fundamental right of citizens to remain healthy through a strategic collaboration among service provider, beneficiaries, and stakeholders and optimum utilization of available resources.

5.3 Goal

To ensure health for all citizens as a fundamental human right by increasing access to quality health services through a provision of just and accountable health system.

5.4 Objectives

1. To make available free the basic health services that existed as citizen's fundamental right.
2. To establish an effective and accountable health system with required medicines, equipments, technologies and qualified health professional for easy access to acquire quality health services by each citizen.
3. To promote people's participation in extending health services. For this, promote ownership of the private and cooperative sector by augmenting and managing their involvement.

6. Policies

1. To make available in an effective manner the quality health services, established as a fundamental right, ensuring easy access within the reach of all citizens (universal health coverage) and provision of basic health services at free of cost.
2. To plan produce, acquire, develop, and utilize necessary human resources to make health services affordable and effective.
3. To develop the ayurvedic medicine system through the systematic management and utilization of available herbs in the country as well as safeguarding and systematic development of other existing complementary medicine systems.
4. To aim at becoming self-sufficient in quality medicine and medical equipment through effortless and effective importation and utilization with emphasis on internal production.
5. To utilize in policy formulation, program planning, medical and treatment system, the proven

behaviors or practices obtained from researchers by enhancing the quality of research to international standard.

6. To promote public health by giving high priority to education, information, and communication programs for transforming into practice the access to information and messages about health as a right to information.
7. To reduce prevalence of malnutrition through promotion and usage of quality healthy foods.
8. To ensure availability of quality health services through competent and accountable mechanism and system for coordination, monitoring and regulation.
9. To ensure professional and quality service standard by making health related professional councils capable, professional, and accountable.
10. To mainstreaming health in every policy of state by reinforcing collaboration with health-related various stakeholders.
11. To ensure the right of citizens to live in healthy environment through effective control of environmental pollution for protection and promotion of health.
12. To maintain good governance in the health sector through necessary policy, structure and management for delivery of quality health services.
13. To promote public and private sectors partnership for systematic and quality development of health sector.
14. To increase the investment in the health sector by state to ensure quality and accessible health services and to provide financial security to citizens for medical cost and as well as effectively utilize and manage financial resources obtained from private and non government sector.

7. Strategies

1. **Following strategies (related to policy 1) will be adopted to make available in an effective manner the quality health services, established as a fundamental right, ensuring easy access within the reach of all citizens (universal health coverage) and provision of basic health services at free of cost.**

    1.1. Basic health service will be provided at free of cost by making acts relating to basic health service.

    1.2. As Nepal is the signatory of international convention on Rights of Persons with Disabilities, all necessary health services needed for people who are blinds, visually impaired, hearing impaired as well as mentally, cognitively and physically disabled will be included in urgent health service category.

    1.3. National health guidelines and protocols will be prepared and implemented to ensure all citizens have received standard quality health care by reforming basic health program of state for fulfilling basic health needs of citizens.

    1.4. Impartial service will be delivered on the basis of equality by strengthening programs delivering health services in rural areas as well as including marginalized groups in urban areas.

1.5. Quality health treatment care of national standard will be catered by keeping priority on preventive and promotive service and by using proper medicine and technology.

1.6. Nepal will be developed as regional hub for health tourism and medical science studies by confirming areas delivering highly specialized and international standard services and developing those areas.

1.7. Integrated program of health service, care and support will be formulated and implemented according to the need of senior citizens.

1.8. Current situation of managing infectious diseases will be modified and implemented under periodic plan on timely basis with essential additional immunization service. Respective services are implemented effectively on the basis of policies related to prevention and control of non communicable diseases, prevention and treatment of accidents and injury, and mental health.

1.9. Affordable health services will be made available all over the country through telemedicine (ehealth).

1.10. Arrangement of a doctor and a nurse along with other health technicians will be made available in every VDC and one nurse midwife in every ward according to population. Necessary number of health promotion and monitoring officer will be mobilized in every constituency to monitor quality of health service and make promotive health service available widely in local level.

1.11. Laboratory and x-ray service will be expanded respectively in VDC level health institutions.

1.12. Blood transfusion service will be made systematic in coordination with non-government sector by regulating through government sector.

1.13. Institutions providing specialized and highly specialized service will be established and expanded gradually for providing services accessible to the residents of all regions in country. Intensive care facility with specialists will be expanded to district level hospitals gradually on the basis of criteria. Effective two-way communication system will be arranged between health institutions at community level to highly specialized service providers to make treatment service systematic.

1.14. Arrangements will be made to provide pharmacy service owned itself by hospital and to distribute medicines to patients through qualified pharmacy personnel.

1.15. Periodic health related programs and action plans will be implemented by stating target based on important health and development indicators such as maternal mortality rate, infant mortality rate, under-five child mortality rate, average age. Reports from health institutions will be made more scientific, timely, reliable and periodic.

1.16. Primary Health care service will be decentralized gradually by making local government authorized and accountable for health services by increasing technical capability of local government.

1.17. Arrangement will be made to contact ambulance service using one symbol number throughout the country. Arrangement of service with essential medicines, oxygen, and skilled health personnel will be ensured in ambulance. Air ambulance service will be operated by making certain criteria for providing medical care by rescuing those in crisis.

1.18. Network of health personnel capable of making first aid treatment with essential drugs and equipment will be arranged within the distance of one hour maximum in major highways for treating injured people quickly.

1.19. At least one-village-one-health-institution will be established in the distance of 30 minutes maximum on the basis of geographical location and population ratio. Programs in periodic plans will be included to establish one primary health care center in every 20 thousand population and one 25-bed-hospital for every one hundred thousand population. Likewise one primary health care center will be established in every industrial area.

1.20. Mental health care service from the level of community to hospitals providing specialized service will be implemented gradually by including in periodic plan.

1.21. Family planning including sexual and reproductive health will be included as integrated form of service. Concept of Youth and adolescent friendly health service will be incorporated in all organizations delivering health services. Reproductive health act will be introduced.

1.22. Integrated child health program managing diseases relating to child will be implemented continuously through strengthening on timely basis.

1.23. Flow of health service related to oral, eye and ear care will be actively implemented throughout the country.

1.24. Establishment of referral hospitals on various subjects of medicines including dental and ear, nose, throat will be done.

1.25. Development of international standard referral laboratory will be done by increasing capacity of national public health laboratory and national drug laboratory.

1.26. Country being signatory to International treaty, agreements and commitments including treaty related to controlling tobacco will be implemented actively.

2. Following strategies (related to policy 2) will be adopted to plan, produce, acquire, develop, and utilize necessary human resources to make health services affordable and effective.

2.1 Master plan will be implemented for managing and developing human resources in health sector along with projection of necessary workforce required within and outside the country. Expenditure in human resources will be considered an investment.

2.2 Minimum integrated national curriculum will be implemented to produce human resources of various kinds at various levels in health sector having appropriate skills and knowledge capable of taking social responsibility according to national need. Educational institutions operating under private and government investment will be supported and regulated by creating high level mechanism with authority for monitoring educational institutions and quality of human resources produced there.

2.3 Active and continuous presence of human resource in health sector will be ensured by creating an environment to make them work compulsorily in assigned duty. Special facility and opportunity will be created for health workers and their dependent families working in remote areas.

2.4 Quality health services will be ensured by creating new positions of human resources by having skills mixed on the basis of population.

2.5 Arrangement of one doctor along with 23 health workers will be ensured for every 10 thousand population gradually. Special arrangement will be made for remote and mountainous areas.

2.6 Arrangements for encouragement of health workers including doctor will be done for enhancing their capacity by creating opportunity of higher education, in-service training, and participating them in research and study.

2.7 Regional and zonal hospitals are included in specialization course provided by government academy.

2.8 Brain drain of human resources is discouraged by taking effective measures such as career development and various kinds of financial and non-financial incentives to stop currently visible brain drain and to create conducive working environment.

2.9 Skilled human resource will be produced for safe motherhood by initiating midwifery education. Opportunity of midwifery education will be provided for enhancing capacity of working nurses.

2.10 Transparent and scientific rotation transfer system will be developed and implemented to systematize transfer of health workers and staffs.

2.11 Policy will be adopted for utilizing skilled private sector workers into government service according to need. Likewise arrangement will be made for utilizing health workers produced in private sectors into governmental entities according to need.

2.12 Study, research and training center of international standard will be set up by utilizing outstanding achievements obtained in Nepal's health sector.

2.13 Capacity of female community health volunteers will be developed with necessary incentives to improve their quality of services.

3 **Following strategies (related to policy 3) will be adopted to develop the ayurvedic medicine system through the systematic management and utilization of available herbs in the country as well as safeguarding and systematic development of other existing complementary medicine systems.**

3.1 Ayurveda will be developed gradually. Development and reformation will be done by assessing quality of service in this area from research. Long term plan will be developed and implemented for the safeguard, development, and expansion of homeopathy, unani (Greek), and other complimentary medicine system.

3.2 Development and expansion of appropriate structure will be done gradually for implementation of ayurveda system effectively.

3.3 Emphasis is given for production and commercialization by ensuring quality of herbal medicine produced by government and private ayurveda medicine manufacturer with special plan and programs for the safeguard and proper use of locally available herbs.

3.4 Study and research of ayurveda, and development of skilled human resources related to research will be operated as a priority program by arranging and developing appropriate human resources for national ayurveda research and training center.

3.5 Special focus will be given to enhance the quality of ayurveda health service by regulating inappropriate activities in the name of ayurveda and herbs.

4. Following strategies (related to policy 4) will be adopted to aim at becoming self-sufficient in quality medicine and medical equipment through effortless and effective importation and utilization with emphasis on internal production.

4.1 Country will be made self sufficient in production of medicine. Arrangement will be made for production and supply of all essential medicines.

4.2 Supplied to private and government sector, manufactured either within country or imported, system will be developed according to the criteria for ensuring quality of medicines, medical tools, equipments, and items used in laboratory.

4.3 Special arrangement will be done for controlling misuse of freely distributed drugs and will increase gradually the types and numbers of freely distributed essential drugs from every health institutions.

4.4 Making estimates, purchases, and distribution of drugs more effective and making current arrangement of purchase and supply system strong, procedural reform including participation of skilled pharmacist will be done in this process.

5. Following strategies (related to policy 5) will be adopted to utilize in policy formulation, program planning, medical and treatment system, the proven behaviors or practices obtained from researchers by enhancing the quality of research to international standard.

5.1 Current organizational, institutional and procedural state of affair of Nepal health research council will be improved timely to increase quality of health research to international standard. Special programs will be launched to enhance the capacity of council for the promotion and facilitation of health research.

5.2 Health research will be regulated for providing new findings and suggestions for promoting, safeguarding, improving and rehabilitating health of citizens and arrangement will be made for using suggestions from research more effectively in policy making, planning and implementation.

5.3 Report and conclusion obtained from research will be made further accessible to all.

5.4 Encouragement will be done to include health in research of other sectors.

5.5 Health researcher and scientist will be encouraged to do research in various subjects of health and environment will be created to respect their expertise.

5.6 Network of national and international organizations related to study and research will be established.

5.7 Universities related to health and governmental and nongovernmental educational institutions will be encouraged and facilitated to participate in research.

5.8 Special priority will be given for scientific exploration and research of herbs available in country.

6. Following strategies (related to policy 6) will be adopted to promote public health by giving high priority to education, information, and communication programs for transforming into practice the access to information and messages about health as a right to information.

6.1 National health information system will be developed to provide information of works done in health sector in simple and easy manner to the access of all citizens.

6.2 Wide use of health education information and communication will be put in high priority to promote health by increasing awareness of individual or community, to control diseases, to obtain health gain in time and to change behavior.

6.3 Advertisement and promotion of items having adverse effect on health of citizens such as tobacco, substance with tobacco, alcohol, and other alcoholic beverages will be banned. Likewise any kind of medium of communication that affects the sexual life of citizens directly or indirectly will be banned.

6.4 Governmental and nongovernmental sectors will be mobilized to disseminate user friendly and acceptable information in local languages that are informative, promotive and able to raise awareness among public.

6.5 All citizens will be encouraged to obtain health information using all medium of communication including electronic in optimum manner.

6.6 School health program that is recognized as effective and capable of providing high return will be implemented in all schools of country in coordination with ministry of education. For this, action plan with detail working procedure will be developed for all programs ongoing currently in schools by unifying them and health programs will be carried out by arranging one health worker at least in secondary school.

6.7 Arrangement will be done to provide all kinds of information of health service particularly related to the treatment of patient for establishing a right to information to the respective consumer.

7. Following strategies (related to policy 7) will be adopted to reduce prevalence of malnutrition through promotion and usage of quality healthy foods.

7.1 Necessary arrangement will be made to free from the condition of malnutrition in the long run by emphasizing promotion, production, and usage of food items available and could be produced locally through the means of educational program in nutrition based in community.

7.2 Current multi-sector policy and programs related to nutrition including food security will be implemented with high priority by updating them to improve the situation of malnutrition.

7.3 Regular feedback will be given to agriculture development and other ministries to increase the self sufficiency in food as there is direct relationship between food security and nutrition, under the community health program backyard garden will be promoted with the involvement of local body, and daily consumption of green vegetable and fruits will be increased up to 400 grams.

7.4 Necessary act, procedure, and human resources will be arranged to discourage the usage of processed and readymade food (junk food) that damage the body, alcohol and beverages, and to monitor the quality of food distributed and sold from hotels and restaurants.

7.5 Coordinate with respective stakeholders will be done to eliminate chemical substances and poisons used in food and meat items which have adverse effect on human health.

7.6 Appropriate life style will be promoted to control food related diseases and overweight.

7.7 Arrangement will be made to bring within legal domain to control food adulteration that has adverse effect on health.

8. **Following strategies (related to policy 8) will be adopted to ensure availability of quality health services through competent and accountable mechanism and system for coordination, monitoring and regulation.**

8.1 Receipt of quality health services will be ensured provided by government and private sectors by arranging legal institution for regulating all health services.

8.2 Current legal arrangement will be amended to regulate drugs used in modern, ayurveda, and alternative method of treatment used in human and animals to make it more effective. Arrangement of drug inspectors in right numbers will be placed in every district by restructuring department of drug administration.

8.3 National directives and protocols will be prepared for ensuring receipt of quality health services. Arrangement will be made to implement protocols according to the local need of hospitals for treating diseases.

8.4 Regular monitoring and regulation will be done to ensure delivery of high quality health service to citizens with criteria to keep the quality of human resources providing services, technologies used, medicines, equipments including supplies.

8.5 Laboratory/blood transfusion centers along with services provided by such laboratory/ centers will be regulated for standardization according to criteria. Arrangement of legal provision will be made for laboratories to function only after the accreditation.

8.6 Provision of punishment and penalty will be done on regular basis by monitoring and evaluating health services provided by government and non-government sector in any geographical region of the country.

8.7 Necessary organizational structure will be arranged to listen grievances and complaints of patients or health service user for providing legal remedy. Consultation will be provisioned for using technology to the availability in the process of treatment.

8.8 Necessary strategy will be adopted to make investment of private sector to the benefit of public by legal arrangement and to increase investment in appropriate place.

8.9 Legal arrangement will be made under the Infectious disease act 2020 to compulsorily inform the designated entity in specified time for the diseases likely to become pandemic. Infectious disease act, 2020 will be amended.

8.10 Arrangement will be made for mentioning generic name of medicine by doctor to be understandable clearly by all.

9. Following strategies (related to policy 9) will be adopted to ensure professional and quality service standard by making health related professional councils capable, professional, and accountable.

9.1 Work of various established councils will be made effective, transparent and accountable to ensure the quality of varieties of education related to health and health services provided.

9.2 Current act and rules will be implemented through amendment to bring uniformity on the services provided by health institutions and councils.

9.3 Health institutions and councils will be strengthened more through legal and physical means.

9.4 Collaboration will be promoted with professional association /organizations established in private and non government sector to deliver health services and doing study and research.

10. Following strategies (related to policy 10) will be adopted to mainstreaming health in every policy of state by reinforcing collaboration with health-related various stakeholders.

10.1 Current multilateral cooperation will be made stronger by accepting health as a main agenda of development. Issues of health will be included in all associated acts.

10.2 Action plans will be implemented in coordination with multi sector as various aspects such as safe drinking water, hygiene, energy, food security, climate, environment, education, accommodation, road including physical development impact the receipt of health services.

10.3 Sustaining the progress made in millennium development goal set for 2015 by Nepal, goal set thereafter will be addressed effectively.

10.4 Coordination with all the stakeholder entities will be done for making multi sectoral action plan by utilizing national network and mechanism and opportunities for addressing negative effect on health due to climate change for overall management.

10.5 Proper arrangement will be done for effective coordination and collaboration with stakeholders entities for managing diseases communicated through animals and insects.

11. **Following strategies (related to policy 11) will be adopted to ensure the right of citizens to live in healthy environment through effective control of environmental pollution for protection and promotion of health.**

11.1 Collaboration for leadership will be taken for regulation by developing mechanism for controlling adverse effect of environmental pollution and climate change for health safeguarding and promotion.

11.2 Effective arrangement will be done for managing waste generated from the entities providing health services in scientific manner. Current legal system for managing waste will be implemented strictly.

11.3 Act will be implemented to manage radioactive materials used in health sector according to national and international standards.

12. Following strategies (related to policy 12) will be adopted to maintain good governance in the health sector through necessary policy, structure and management for delivery of quality health services.

12.1 Changes will be made to acts and rules according to need after reviewing them to make health services in operation more effective and trustworthy. Integrated public health service act will be implemented by integrating health related acts and rules according to need by timely revising them.

12.2 System of result oriented utilization and management will be adopted for effectively mobilizing foreign aid in health sector by integrating all partner entities.

12.3 All physical infrastructure constructed will be made friendly to disable people, children, and will be made earthquake resistant. Infrastructures that are being used currently but at risks will be strengthened using available technology to make earthquake resistant. To provide service to all physical infrastructures additional necessary infrastructure like store etc will be added and systematized.

12.4 Health institutions are constructed according to the prevailing building standard on the basis of physical location and population.

12.5 Modern information technology will be used at maximum for health management.

12.6 Multi-sectoral action plan will prepared and implemented to address emergency health issues instantly arising from natural disaster and other causes.

12.7 Individuals having social prestige and respect, and individuals regarding health service as charity, professionals, and local community will be involved in forming development committees of various hospitals and operations and management committees of health institutions. Community involvement is encouraged in management of health service, easy access and continuation.

12.8 Act will be implemented for management and regulation of hospital management committee including other committees.

12.9 Good governance action plan will be prepared and implemented for ensuring qualitative service by incorporating government, private, community and cooperative in health service delivery. Local cooperatives having many consumers will be participated in management of local level health institutions by developing criteria for delivering health service.

12.10 Health good-governance action plan will be prepared and implemented for making health service delivery transparent, responsive and publicly accountable.

12.11 Action of withdrawing tissues or blood related substance, or transplanting or action of human organ transplanting will be systematized by law.

12.12 Action of organ donation will be eased by defining brain dead in scientific and professional manner, in relation to selecting appropriate organ recipient with the goal of providing organs for transplanting will be systematized by law.

12.13 Arrangement will be made to have only one official professional trade union in relation to current situation of many trade unions present in one health institution.

12.14 Infertility is systematized by the law of surrogacy.

13. **Following strategies (related to policy 13) will be adopted to promote public and private sectors partnership for systematic and quality development of health sector.**

13.1 Public and private partnership will be developed complimenting each other to promote further the concept of public and private partnership.

13.2 Arrangement of legal system will be made to encourage and manage the concept of cooperative needed for health sector.

13.3 Grant will be providing to health institutions in nongovernmental sector by making clear criteria.

14. Following strategies (related to policy 14) will be adopted to increase the investment in the health sector by state to ensure quality and accessible health services and to provide financial security to citizens for medical cost and as well as effectively utilize and manage financial resources obtained from private and non government sector.

14.1 Arrangement will be done for allocating budget on the basis of population by determining per capita investment in health sector by acknowledging spending made in health is not expenditure but an investment. Per capita investment will be increased gradually.

14.2 As current personal expenditure of individual is 55 percent of gross expenditure made in health, such percentage will be reduced gradually.

14.3 Amount appropriated for health sector will be distributed equitably by making criteria.

14.4 Nationwide insurance plan will be rolled out by making law and directives for ensuring delivery of affordable health service by making financial management sustainable. Arrangement will be made to provide discount for Incapable and financially poor.

14.5 Vaccine fund set up with the aim of preventing fund scarcity will be systematized through law to conduct immunization program without interruption.

14.6 Action will be encouraged to find or help others to find new ways to manage finance of health sector. Other funds of health sector will be made systematic and effective.

14.7 Arrangement will be made to use local level program and fund for health service and infrastructures.

14.8 Production and sales and distribution of substance with tobacco and other substance harmful to health will be discouraged with high taxes. Sources of fund obtained this way are spent in health service.

15. Miscellaneous

15.1 Current sectoral policy and newly made such policies will be helpful and complementary to implement provisions contained in this national policy.

15.2 Partnership and collaboration will be done with private, commercial groups, cooperatives, communities and development partner organizations and not for profit service providers with the aim of providing quality, sufficient, relevant, timely service of appropriate kind.

8. Structural arrangements

For effective implementation of this policy, departments, divisions, branches, subdivision etc of current organizational structure from center to rural level along with additional regulating bodies, and employee positions according to these levels will be added or reduced according to need under the ministry of health and population by taking care of state restructuring.

9. Financial resources

Government sources, foreign loans and assistance, and investments of private sector in this sector in totality will be the sources of implementation of this national health policy.

10. Monitoring and evaluation

1. Responsive and effective mechanism will be arranged to monitor and evaluate health programs at every level regularly. For this, effective monitoring and evaluation system will be developed by taking into account of the result based monitoring and evaluation model formulated and practiced by national planning commission as well as monitoring and evaluation system implemented by the ministry of local development.

2. Health management information system will be amended timely and will be upgraded to complete computerized system.

11. Risks

1. In the absence of overall resource mobilization strategy in health sector, chances of difficulty in resource mobilization will be present.
2. Health policy may need to be readjusted by segregating programs to be included in the domain of center and federation after the country is transformed into the federal structure.

12. Revocation

National health policy 2048 has been revoked.

Summary of Nepal Health Sector Strategy 2015-2020

Under the auspices of National Health Policy 2014, Nepal Health Sector Strategy 2015-2020 (NHSS) is the primary instrument to guide the health sector for the next five years. It adopts the vision and mission set forth by the National Health Policy and carries the ethos of Constitutional provision to guarantee access to basic health services as a fundamental right of every citizen. It articulates nation's commitment towards achieving Universal Health Coverage (UHC) and provides the basis for garnering required resources and investments. NHSS places health at the centre of overall socio-economic development. It guides the health sector's response in realizing government's vision to graduate Nepal from 'Least Developed Country' to 'Middle Income Developing Country' by 2022.

NHSS is developed within the context of Sector Wide Approach (SWAp) and it sees partnership as a cornerstone for health development in Nepal. NHSS was developed jointly by the government and its development partners. Both the government and development partners commit to align their efforts to NHSS priorities and are jointly accountable to achieve the results. NHSS also harnesses multi sectoral approach to address social determinants of health. In the past two decade, Nepal has made notable progress on improving the overall health outcomes of the citizens. Between the period of 1990 and 2014, Nepal impressively reduced under-five mortality by 73% and infant mortality by 67%. Similarly, Nepal was able to reduce maternal mortality by 76% between the period of 1996 and 2013. During this period, polio is towards eradication phase while leprosy is at elimination stage. Considerable efforts have been made to halt and reverse the trends of tuberculosis, HIV and malaria. However, comparably less progress was made in reducing neo-natal mortality and malnutrition.

Despite this progress, the country faces many health challenges including inequity. Many citizens continue to face financial, socio-cultural, geographical, and institutional barriers in accessing health services. Despite efforts to reduce gender inequality, the women of Nepal are still marginalized in society which affects their health and wellbeing. Therefore, the government has introduced special programmes and incentives, such as free health care programme and safe delivery incentive scheme, to reduce inequity in health. For the last few decades, the government has emphasized on improving access to health care services by expanding health facilities and strengthening community based interventions. Extension of access to health care services and improving the quality of health care remain a major challenge. The expansion of urban health services, owing to rapid urbanization is a burning challenge. Shifting burden of diseases and natural disaster induced health problems is yet another challenge. While communicable diseases continue to pose problems, there is now a growing prevalence of non-communicable diseases. There are also increasing threats of natural disasters due to climate change. Likewise, there are increasing number of deaths and injuries due to road accidents.

The devastating earthquake of April 2015 and subsequent aftershocks resulted in 1200 health facilities being affected. Reconstruction and maintenance of these health facilities is another challenge. This calls for a strong effort for emergency preparedness and response management. The current structure of MoHP, which is more than 25 years old, may not be prepared enough to address the contemporary and emerging health challenges. There is a need of restructuring of MoHP in line with the federalist structure as provisioned by the constitution and ensure equitable distribution of health facilities with reference to geography and population. Apart from that, certain components of health systems need further strengthening to improve the health outcome of the citizens.

To sustain the achievements made in the health sector and address the aforementioned challenges, NHSS stands on four strategic principles:

1. Equitable access to health services
2. Quality health services
3. Health systems reform
4. Multi-sectoral approach

Under these strategic principles, NHSS envisions for equitable service utilization, strengthening service delivery and demand generation to underserved populations, including the urban poor. NHSS calls for greater partnerships with local level institutions and community groups to empower women, promote supportive cultural practices and curb gender-based violence in the society. NHSS focuses on improving the quality of care at points of service delivery. As warranted by National Health Policy 2014, an autonomous accreditation body will be established during NHSS period for quality assurance of health services in public and private sectors. NHSS emphasises on strengthening research and promoting the use of evidence. It also aspires to leverage modern technologies for better health information management, increased access to health services, better management of procurement and supply chain, and more effective and efficient construction of health facilities.

To strengthen decentralization planning and budgeting, NHSS prioritises the implementation of the Collaborative Framework for Strengthening Local Health Governance in Nepal. NHSS also expands state and non-state partnership by building mutually beneficial partnerships between the public and private sectors. At the same time, NHSS aims to strengthen institutional capacity of MoHP to better regulate public and private health systems.

NHSS recognises the importance of multi-sector approach to address social determinants of health. While the culture of inter-sectoral workings in health has been going on for a long time, NHSS emphasises on more institutionalized way of setting-up multi-sectoral approaches. For the next five years, NHSS focuses on promoting healthy lifestyles and healthy environment through multi-sectoral action. This includes: recognizing young people as a starting point to promote healthy lifestyle; leveraging health facilities as a learning environment for healthy lifestyle and behaviour; tackling malnutrition and promoting the consumption of healthy foods; reducing the ever-rising deaths and injuries through road traffic accidents; and promoting healthy environment including better response to climate change related health risks..

NHSS strives towards the goal to 'improve health status of all people through accountable and equitable health service delivery system.' NHSS stipulates the following nine outcomes to achieve this goal:

1. Rebuilt and strengthened health systems: Infrastructure, HRH management, Procurement and supply chain management.
2. Improved quality of care at point-of-delivery
3. Equitable utilization of health care services
4. Strengthened decentralised planning and budgeting
5. Improved sector management and governance
6. Improved sustainability of health sector financing
7. Improved healthy lifestyles and environment
8. Strengthened management of public health emergencies
9. Improved availability and use of evidence in decision-making processes at all levels.

In order to move towards UHC, NHSS lays out the necessary service delivery arrangements. It calls for Basic Health Services, which is delivered free of charge to the citizens, and defines the Basic Health Package. Services that are beyond the scope of basic health package are delivered through different social health protection arrangements, including health insurance.

The government will assess the financial needs and identify the resource gap to implement this strategy. The Government of Nepal will progressively seek to fund the implementation of this strategy from its own internal resources. Specifically, over the next five years, the government will aspire to fund the provision of Basic Health Services entirely from government revenues. Likewise, as guided by the Development Cooperation Policy (2014), external resources will also be mobilized to narrow the resource gap.

The NHSS Implementation Plan (IP) and subsequent Annual Work Plan and Budget (AWPB) will translate the NHSS into action. The MoHP will lead the implementation, monitoring and evaluation of this strategy with participation of line ministries, development partners, non-governmental agencies, civil society, private sector, cooperatives and local communities. The NHSS Results Framework will be the basis to monitor the sector performance through annual reviews and a Mid Term Review (MTR).

Introduction

1.1 Background

Constitution of Nepal 2015 has clearly mentioned health as fundamental right of the citizen. Article 35 of this constitution further elaborates provision of free health care, information about health care, equal access to health care and access to clean drinking water and sanitation. Furthermore, it also emphasizes right to information on any matter of his or her interest or public interest to every citizen. Good Governance Act 2008, in clause 41, vividly mentioned that every department should submit annual report. In line with the constitution of Nepal and Good Governance Act, Department of Health Services (DoHS) has published this Annual Report of fiscal year 2074/75 (2017/18). This is the 24th consecutive report of its kind and it is the second Annual Report after restructuring of Ministry of Health and Population (MoHP).

This report focuses on DoHS performance in 2074/75 and content of the report include following areas

- Programme's policy statements, including goals, objectives, strategies, major activities and achievements.
- Programme's indicators.
- Problems, issues, constraints *and* recommendations on improving performance and achieving targets.

This report also provides information on the contributions of the Department of Ayurveda and Alternative Medicine (DoAA), Department of Drug Administration (DoA), the health councils, partners and stakeholders on contemporary issues in the health sector as well as the progress of major programmes implemented by DoHS, health directorates of seven provinces, provincial health offices (PHOs), and health facilities.

This report is basically the result of the National Annual Review (NAR) workshop that was held at Bode-Bhaktapur district from 17th to 19th December 2018. The workshop was attended by senior personnel from the ministry, departments, health directorates, divisions, centres and sections, central level hospitals, and by representatives of external development partners (EDPs) and non-governmental organizations (NGOs and INGOs).

Workshop participants reviewed the policy statements of each programme and analysed data generated by the Integrated Health Management Information System (IHIMS) and from other sources on selected indicators. These data were interpreted during the technical program's presentations and panel discussions.

The objectives of National Annual Review Workshop were:

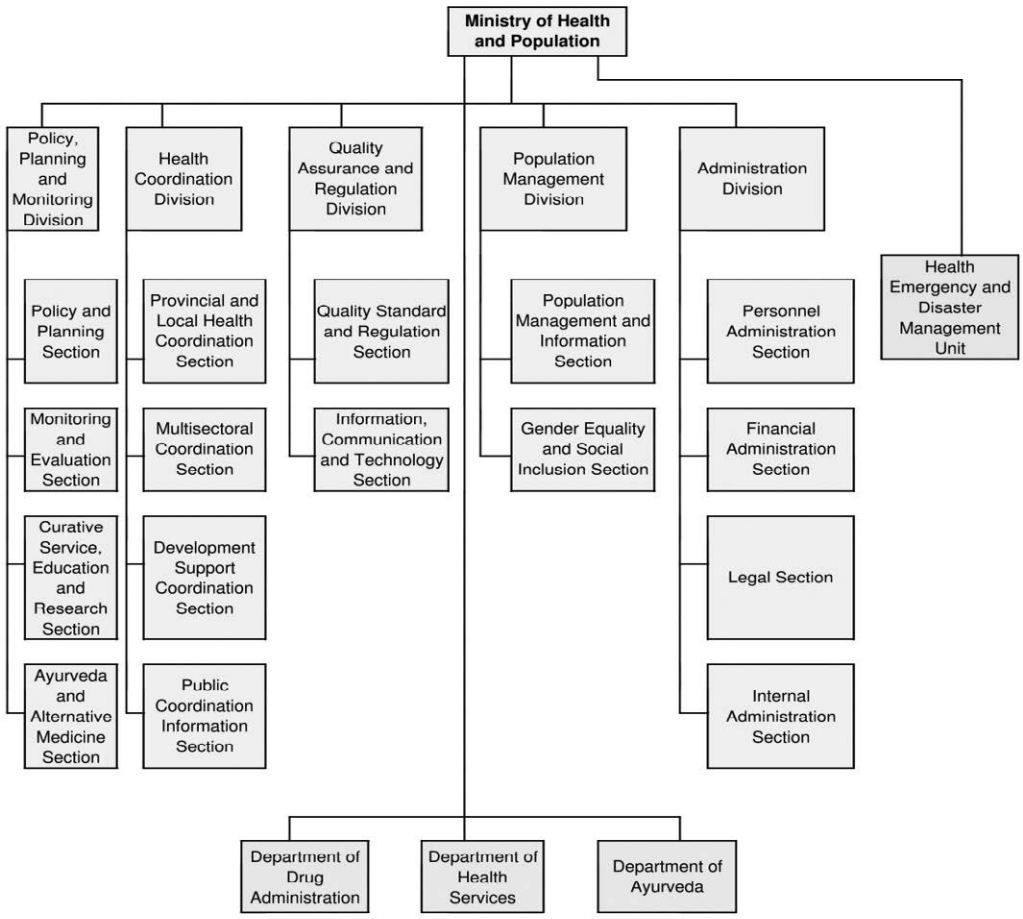
- Jointly review the progress of Nepal Health Sector Strategy (2015/16 – 2020/2021) Implementation Plan and ensure all stakeholders develop a shared understanding of progress in the sector;
- Identify the highest priority areas that need to be addressed to strengthen health system in the changing context; and

- Agree on the strategic actions to be included in the next year's Annual Work Plan and Budget (AWPB).

The MoHP provides guidance to DoHS as well as provincial- and local-level governments to deliver promotional, preventive, diagnostic, curative, and palliative health care services and carries out related policy, planning, human resource, financial management and monitoring and evaluation functions. In newly restructured MoHP organogram, it has five divisions: The Policy, Planning & Monitoring Division; the Health Coordination Division; the Quality Assurance & Regulation Division; the Population Management Division and the Administration Division. In addition, the six professional councils: Nepal Medical Council, Nepal Nursing Council, Nepal Ayurvedic Medical Council, Nepal Health Professional Council, Nepal Pharmacy Council and Nepal Health Research Council) accredit health-related schools and training centres and regulate care providers.

Department of Health Services (DoHS), the Department of Ayurveda and Alternative Medicine (DoAA) and the Department of Drug Administration (DDA) come under MoHP. These three departments are responsible for formulating and implementing programmes, the use of financial resources and accountability, and monitoring and evaluation. DDA is the regulatory authority for assuring the quality and regulating the import, export, production, sale and distribution of drugs. The Department of Ayurveda and Alternative Medicine is responsible to care with Ayurvedic services and implements health promotional activities (Figure1.1).

Figure 1.1 Organogram of Ministry of Health and Population



1.2 Organization Structure of MoHP and its Entities

According to the recently restructured DoHS organogram (Figure1.2), Nepal's public health system has the following five centres that have a degree of autonomy in personnel and financial management: National Health Education, Information and Communication Centre (NHEICC); National Health Training Centre (NHTC); National Centre for AIDS and STD Control (NCASC); National Tuberculosis Centre (NTC); National Public Health Laboratory (NPHL).The NHTC coordinates all training programmes of the divisions and implements training by sharing common inputs and reducing the travelling time of care providers. All information, education and communication (IEC) and behaviour change communication (BCC) activities are coordinated by NHIECC. The centres support the delivery of essential health care services (EHCS) and work in coordination with the respective divisions.

The DoHS is responsible for delivering preventive, promotive, diagnostic and curative health services. The director general is the organisational head. The DoHS has five divisions, major responsibilities of the divisions are summarized in Table 1.1 and Figure 1.2.

Table 1.1: Summary responsibilities area of DoHS's five divisions

	Division	Areas of responsibility
1	Management Division (MD)	Health Information Management, Infrastructure development, Environmental health and Logistics management
2	Family Welfare Division (FWD)	Expanded Programme on Immunization (EPI), Nutrition and Integrated Management of Childhood Illness programme (CB-IMCI) and newborn care, Reproductive health care (including safe motherhood and neonatal health) and family planning.
3	Epidemiology and Disease Control Division (EDCD)	Outbreak management, control of epidemics, pandemic and epidemic diseases, Neglected tropical diseases, vector borne diseases, zoonotic and other communicable diseases, Non Communicable Diseases (NCD), mental health, leprosy control, disability prevention, surveillance, Early Warning and Reporting System (EWARS), water quality and research activities.
4	Curative Service Division (CSD)	Hospital service monitoring and strengthening including emergency and basic health care, ENT, Eye and Oral health.
5	Nursing and Social Security Division (NSSD)	Capacity building of Nursing professional, Social security, Geriatric and Gender based violence.

Figure 1.2: Oranization Structure of MoHP and its entities

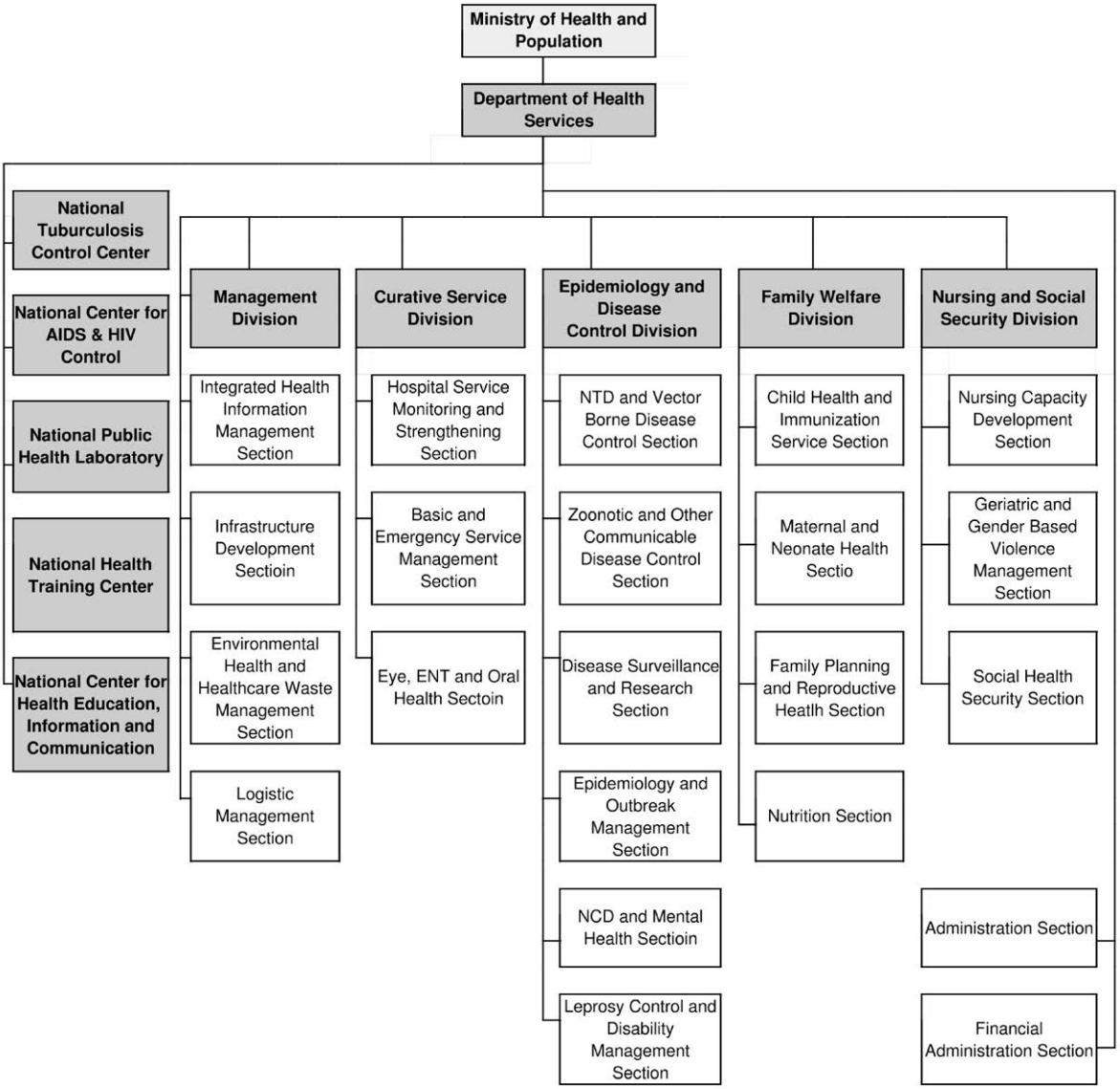
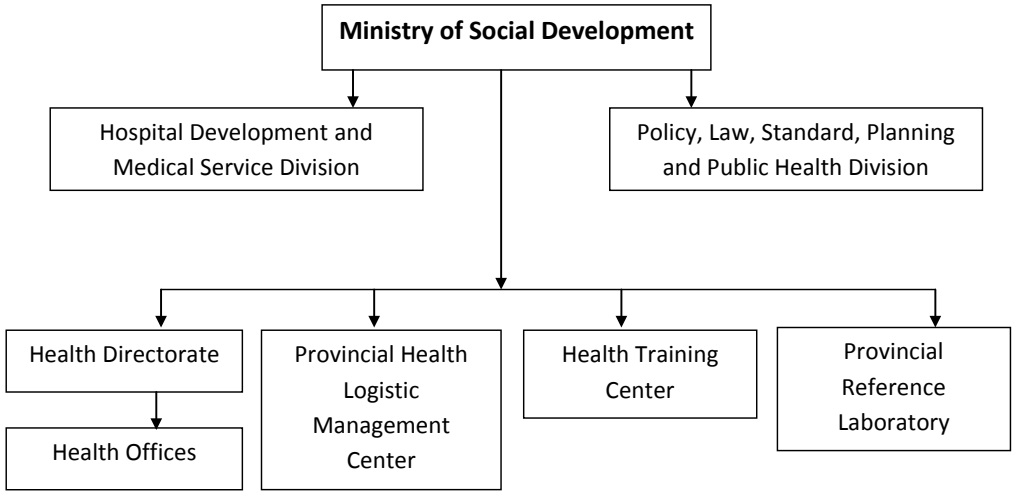


Figure 1.3: Organogram of the health system at province level



DoHS's main functions are as follows:

- Advise the Government of Nepal (GoN) on formulating health related policies and developing and expanding health institutions in line with these policies.
- Determine the required human resource for health institutions and developing them by preparing and implementing short and long term plans.
- Manage the procurement and supply of drugs, equipment, instruments and other logistics at regional, district and below levels.
- Coordinate activities and mobilize resources for the implementation of approved programmes.
- Manage the immediate solution of problems arising from natural disasters and epidemics.
- Establish relations with foreign countries and international institutions to enhance and develop health services and assist MoHP in receiving and mobilizing foreign resources by identifying areas of cooperation.
- Encourage the private sector and non-govern
- ment and foreign institutions to participate in health services, maintain relations and coordination, and control the quality of health services by regular supervision and monitoring.
- Manage free medication and treatment for severe diseases (cancer, heart disease, Alzheimer's, Parkinson's disease, head injuries, spinal injuries, renal failure and sickle-cell anaemiaand Kidney Dialysis, Kidney Transplant and Kidney Treatment) for impoverished citizens.
- Manage information systems related to health facilities, health services, logistics, training and finance to support the planning, monitoring, and evaluation of health programmes.
- Maintain data, statements and information on health services update & publication of DoHS Annual Report.
- The financial management of DoHS, and the settlement of irregularities.

The seven-provincial health directorates provide technical backstopping and programme monitoring to district health systems and come directly under Ministry of Social Development of Province. The regional, sub-regional, zonal hospitals and district hospitals are planned to be categorized into three level of hospitals; Primary, Secondary and Tertiary. There are also training centres, laboratories, TB centres (in some regions) and medical stores at the provincial level.

Furthermore, Cabinet has decided to establish one health office in 77 districts which are under provincial health directorate. All Primary Health Care Centres (PHCC) are planned to be upgrade into primary level hospital which will be under local authority. Health Posts (HP) are present at ward level in the changed context. Moreover, on the need basis, community health units and urban health clinics are being run by local bodies.

Health posts are the first institutional contact point for basic health services. These lowest level health facilities monitor the activities of Female Community Health Volunteers (FCHVs) and the community-based activities of Primary Health Care Outreach Clinics (PHC-ORCs) and Expanded Programme on Immunization (EPI) clinics. In addition, they are the referral centres of FCHVs as well as venues for community based activities such as PHC-ORC and EPI clinics. Each level above the health post level is a referral point in a network from PHCCs on to primary and secondary level hospitals, and finally to tertiary level hospitals. This hierarchy is designed to ensure that most of the population can receive public health and minor treatment in accessible places. Inversely, the system works as a supporting mechanism for lower levels by providing logistical, financial, monitory supervisory and technical support from the centre to the periphery.

1.3 Sources of Information and Data Analysis

The Integrated Health Information Management System (IHIMS) provided the main source of information for this report. The report also uses information from other management information systems (MISs), disease surveillance systems, vital registration, censuses, sentinel reporting, surveys, rapid assessments and research. The main health sector MISs include the IHIMS, the Logistics Management Information System (LMIS), the Financial Management Information System (FMIS), the Health Infrastructure Information System (HIIS), the Planning and Management of Assets in Health Care System (PLAMAHS),the Human Resource Information System (HuRIS), the Training Information Management System (TIMS), the Ayurveda Reporting System (ARS) and the Drug Information Network (DIN). ti

All data are downloaded from the DHIS-2 software and analysed and explained by the respective divisions and sections. A technical working group ultimately finalized each sections and chapters of annual report.

1.4 Structure/Framework of the Report

This report has eleven chapters. Chapter 1 covers the background to annual report preparation, the structure of DoHS, and sources of information on Nepal's health sector. Chapters 2 covers progress against Nepal Health Sector Strategy (NHSS), Chapter 3 presents of others departments (DoA and DoAA) progress under MoHP, Chapter 4 to 8 covers DoHS's different health care related and support programmes; Chapter 9 presents the programmes of the health sector councils, Chapter 10 presents the progress on national health insurance while Chapter 11 gives details of the health sector external development partners (EDPs, INGOs and NGOs) contributions in the health sectors.

Majority of the data source is abstracted from Integrated Health Information Management System (IHIMS). The data presented here were downloaded through dHIS-2 system which was retrieved after the completion of national annual review workshop. The service statistics of reported data is only presented here; those who didn't report in time are excluded.

Annex 1 presents the achievement of targets of DoHS's programmes activities while Annex 2 gives the programme targets for the next fiscal year 2075/76 and health services raw and analysed data by the indicators of different programmes disaggregated by national, provinces and districts.

Due to the bulky nature of DoHS Annual Report in the past years, raw and analysed data are not incorporated in this report. To make it easy for analysis, the electronic version of raw and analysed data has been uploaded in the website of DoHS- "www.dohs.gov.np".

PROGRESS AGAINST NHSS

Nepal Health Sector Strategy (NHSS) was developed in 2015 by the Ministry of Health and Population (MoHP) to guide the health sector for next five years (2016-2020). It was developed in a background of unitary system of government. The vision of the NHSS is "All Nepali citizens have productive and quality lives with highest level of physical, mental, social, and emotional health" and the mission "Ensure citizen's fundamental rights to stay healthy by utilising available resources optimally and through strategic cooperation between service providers, service users, and other stakeholders."It foresees nine outcomes and 26 outputs. They are measured through 29 outcome level indicators with 56 corresponding output level indicators. This report summarises the activities carried out in the health sector FY 2074/75 (2017/18) against the outcomes mentioned in the NHSS along with existing challenges and the way forward.

With the transition towards federalism, multiple changes have been observed in the government structure and functions; subsequently it has implications in the implementation of the NHSS. The constitution has defined three levels of governance and functions mandating the local levels to deliver the package of basic health services. The development of standards and policies, management of hospitals, regulation of medicines, control of outbreaks and disasters, and international cooperation will remain with the federal and provincial governments. The federal government will also play a supporting role in enhancing the capacity of local and provincial governments.

Major factors that have an impact on the delivery of the NHSS at the national level are:

- Three levels of governance: federal, provincial, and local.
- Assignments which define the responsibilities of the federal, provincial, and local levels.
- Allocation of the health budget to provincial and local governments.
- Allocation of health workers to local governments.
- Alignment of various activities with respect to the new governance structure by the MoHP.

Major achievements in the fiscal year 2074/75

The MoHP carried out various activities in the fiscal year 2074/75. Majority of the activities were aligned with the NHSS (2016-2021). The annual work plan and budgeting process was changed due to transition to federalism. The responsibility for several activities has been shifted to the federal, provincial and local governments. Following were the major achievements in fiscal year 2074/75.

- Restructuring of MoHP and Department of Health Services.
- Establishment of Provincial Health Directorate and Provincial District Health Offices.
- Following three health related acts have been endorsed and in action:
    - Public Health Service Act
    - Safer Motherhood and Reproductive Health Act
    - Social Health Insurance Act
- The transition plan to manage federalism in health was developed together with External Development Partners (EDP).

- MoHP was reorganised as per the new structure under federalism.
- Mid-Term Review (MTR) of NHSS (2015- 2020) has been initiated.
- Provincial Governments and Local Governments are allocating a significant sum of budget to health, which will supplement the federal conditional allocation to the Provinces and Palikas.
- The structure of Regional Health Directorate has been completely abolished.
- The structure of District (Public) Health Office has been temporarily retained till Mid-July 2018 to provide support to Palikas.
- HRH at the point of service delivery are largely not affected. However, HRH at the management and supervisory level (basically District and Regional) have been affected due to transition.
- The Basic Health Care package has been defined.
- The Minimum Service Standards for Hospitals and Health Post has been developed.
- Federal health budget for FY 2075/76 (2018/2019) has been allocated to both provincial and local level as a conditional grant. The federal budget was announced on June 1, 2018 as provisioned in the Constitution.
- The program implementation guideline for local levels was prepared and made available in the MoHP website.
- Dissemination of Nepal National Micro-nutrient Survey 2016 was carried out.
- A review of activities was carried out by the the MoHP with the Provinces in September 2018.
- Altogether 56 districts have been declared “Fully Immunized” out of 77 districts.
- Fractional dose of Injectable Polio Virus (IPV) vaccine has been introduced in the national immunization schedule.
- Of the total 32,747 ever reported HIV infected persons, 16,428 persons are on Anti-Retroviral Treatment (ART) (www.ncasc.gov.np Accessed 25 Nov 2018)
- As of November 2018, above 1.5 million members have been enrolled in the Social Health Insurance program so far (www.shs.gov.np). So far, 36 districts are covered.
- All the Municipality have at least one birthing center to provide delivery service.
- All the Municipality in five districts have ensured availability of all five methods of modern family planning.
- Health promotion related activities have been carried out in almost all Municipality.
- Procurement Improvement Plan (PIP) for FY 2016/17-2020/21 is prepared and has been endorsed. PPFM committee at MoHP and CAPP Monitoring Committee at departmental level is monitoring the progress of PIP implementation.
- Pre-bid and Post-bid information system like TSB, LMIS/e-LMIS, QAP, CMS have been activated.
- Federal level Consolidated Annual Procurement Plan (CAPP) prepared and endorsed.
- Two Standard Operating Procedures (SOPs) for procurement and e-GP have been prepared, endorsed and distributed to local and province level.
- Standardization of procurement process through new SBDs for health sector initiated and e-GP-II implemented in the bidding process
- An Internal Control Guidelines revised endorsed by MoHP on 4th July, 2018. (www.moh.gov.np)
- The FMR templates were revised and approved by MoHP on 16 May 2018 as a requirement of the Disbursement Linked Indicators (DLI).

- OCMCs have been established, one in each of the forty-four districts.
- Total of thirty-two Social Service Units in referral hospitals have been established.
- Total of 400 Urban Health Centres expanded and 24 Urban Health Promotion Centres established as of now. A total of 450 Community Health Units were established as of now in strategic locations and made operational across 77 districts.
- Social Audit has been implemented in 2,138 health facilities across 77 districts.
- Geriatric health services available in eight referral hospitals.
- Initiated the development of Safemotherhood.
- Development of the training manual based on the Standard Treatment Protocol for Prescribers and the Reference Manual. Based on this manual, ToT was conducted and further trained 706 Medical Officers and Health Assistant in 9 different districts of 6 provinces.
- e-Reporting of HMIS expanded to 1,200 health facilities.
- Health facility registry has been developed and made available at MoHP website.
- Web-based RDQA tool and e-learning package have been developed and made available at MoHP website
- Monitoring and Evaluation (M&E) guideline in federal context has been drafted.

Overview of progress against NHSS results framework

The latest progress against each indicator of the NHSS Results Framework is available on the MoHP website (www.mohp.gov.np). This web based application allows the compilation and analysis of indicators alongside the key interventions that contribute to achieving the outputs and outcomes.

Table 1 shows the ten goal level indicators with their baseline data and achievements against the defined milestones for 2018 and the targets for 2020.

Table 2.1 : NHSS Results Framework goal level indicators

Code	Indicators	Baseline			Milestone	Achievement*		2020/21
		Data	Year	Source	2016/17	2018	Source	Target
G1	Maternal mortality ratio (per 100,000 live births)	190	2013	WHO	148	239	NDHS[1] 2016	125
G2	Under five mortality rate (per 1,000 live births)	38	2014	NMICS[2]	34	39	NDHS 2016	28
G3	Neonatal mortality rate (per 1,000 live births)	23	2014	NMICS	21	21	NDHS 2016	17.5
G4	Total fertility rate (births per 1,000 women aged 15–19 years)	2.3	2014	NMICS	2.2	2.3	NDHS 2016	2.1
G5	% of children under-5 years who are stunted	37.4	2014	NMICS	34	35	NNMSS[3] 2016	31
G6	% of women aged 15-49 years with body mass index less than 18.5	18.2	2011	NMICS	13	14.5	NNMSS 2016	12
G7	Lives lost due to road traffic accidents per 100,000 population	34	2013	Nepal Police	23	7.1	Police Mirror 2016; CBS[4] population projection 2016	17
G8	Suicide rate per 100,000 population	16.5	2014	Nepal Police	15	17.8	Police Mirror 2016; CBS population projection 2016	14.5
G9	Disability adjusted life years lost due to communicable, maternal and neonatal, non-communicable diseases, and injuries	8,319,695	2013	BoD[5], IHME	7,487,726	9.015,320	GBD Study 2016	6,738,953
G10	Incidence of impoverishment due to out-of-pocket expenditure in health	NA	2011	NLSS[6]	20	NA	NLSS	Reduce by 20%
Refer to full NHSS Results Framework for means of verification of the targets and required data disaggregation								
****Achievement against target- Green: 100%; Yellow: >50%; Red: <50%***								

1 Nepal Demographic and Health Survey
2 Nepal Multiple Indicator Cluster Survey
3 Nepal National Micronutrient Status Survey
4 Central Bureau of Statistics
5 Burden of Disease, Institute for Health Metrics and Evaluation
6 Nepal Living Standards Survey

Major Progress against NHSS Outcome targets

The progress against NHSS outcome targets have been reported in the National Annual Review Report 2018 (2075 BS) and can be referred for additional detail. This section highlights only the major progress.

Outcome 1: Rebuilt and Strengthened Health Systems: Infrastructure, Human Resources for Health, Procurement, andSupply Chain Management

- Nepal Health Infrastructure Development Standards (NHIDS) 2074 (2017) are starting to be used in developing infrastructure and service delivery priorities at provincial level planning
- Health infrastructure information system (HIIS) has been used to develop a risk assessment of the physical location of all health facilities in the country.
- Staff Adjustment Act (2074) was enacted on 15th October 2017.
- One new health academic institution (Rapti Academy of Health Sciences, Province 5) in Dang district was approved by GoN
- PIP for 2017-21 has been prepared and endorsed by MoHP in 2017/18.
- The formation of a nine member CAPP monitoring committee (CAPP-MC) under the chairmanship of the Director General (DG) of the DoHS, and the endorsement of the ToR of the CAPP-MC.

Outcome 2: Improved Quality of Care at Point-of-delivery

- In line with the new organogram of MoHP in the federal context, the "Quality Assessment and Regulation Divisions" has been established.
- Public Health Service Act 2018 has been enacted, which lays the foundation for meaningful quality improvements in health.
- A Health Institution Quality Assurance Authority Act was drafted which provisions the establishment of an autonomous body for accreditation of private (including NGO) health institutions. The Public Health Act 2018 provisions institutional arrangements for accreditation.
- The Basic Health Care Package has been defined.
- A High-Level Steering Committee on Antimicrobial Resistance has been formed with representation from other sectors.

Outcome 3: Equitable Distribution and Utilisation of Health Services

- A draft of the basic healthcare services (BHCS) package was finalized. The pack includes emerging health care needs such as psychosocial counseling, mental health, geriatric health, oral health, non-communicable diseases (NCD), Ayurveda, and rehabilitative services.
- The social health insurance (SHI) programme has been implemented in 36 districts with about 1.5 million members enrolled.

Outcome 4: Strengthened Decentralised Planning and Budgeting

- The fiscal year 2017/18 has been a landmark towards decentralized planning and budgeting. As per the constitutional provision and the federal structure, the budget was provided to the local level in two components, namely: an equalization grant and a conditional grant. In the past, the MoHP had initiated providing a block grant to districts to address specific needs at the district level as per their specific needs within the provided framework.
- The equalization grant is unconditional by nature and can be used for administrative and developmental activities including for the health sector. The conditional grant is earmarked to

specific sectors and should be spent as per the conditions provided. As per the allocation of the budget in 2017/18, the conditional grant is allocated mainly for the education, health, and agriculture sectors.

Outcome 5: Improved Sector Management and Governance

- Restructuring of health sector of three levels of governance in accordance with federalism approved and being implemented.
- Major roles and responsibilities of each restructured unit has been approved and implemented.
- A transitional plan of health sector has been developed jointly with partners and is under implementation.

Outcome 6: Improved Sustainability of Healthcare Financing

- Government health expenditure as a percentage of the Gross Domestic Product (GDP) for FY 2017/18 is 1.9% compared to 1.8% in FY 2016/17. There has been a 0.5% increase compared to the baseline year and 0.3% increase compared to the NHSS target.
- The GoN has rolled out several social protection schemes to reduce out of pocket expenditure in health. The GoN had expanded the coverage of the health insurance programme in 36 districts by the end of 2017/18. The cumulative number of people enrolled in the SHI has increased to 1.1 million by the end of FY 2016/17 (and more than 1.3 million by the endof Nov 2018, which is 8.3 % of the catchment population in the implemented districts).

Outcome 7: Improved Healthy Lifestyles and Environment

- Established Mental Health Section at EDCD
- International mental health conference organized in February, under the theme of mental health promotion, prevention, treatment and rehabilitation
- International conference on child and adolescent mental health was organized in November, 2018.

Outcome 8: Strengthened Management of Public Health Emergencies

- Restructuring of Epidemiology and Diseases Control Division
- A section for Non-Communicable Diseases (NCD) and mental health has been established
- Leprosy Control and Disability Management Section has also been brought under the EDCD

Outcome 9: Improved Availability and Use of Evidence in Decision Making Processes at All Levels

- This year the MoHP continued the expansion of electronic reporting of service data from health facilities. A total of 1200 public health facilities now submit the HMIS monthly reports electronically.
- A web-based Routine Data Quality Assessment (RDQA) tool has been developed to improve the quality of health facility based data reported mainly via health management information system (HMIS). Along with the assessment tool, an e-learning package to facilitate its use has been developed and is available on the MoHP website.

PROGRESS OF OTHER DEPARTMENTS UNDER MoHP

3.1 Department of Drug Administration

3.1.1 Background

Government of Nepal has promulgated the Drug Act 1978, to prohibit the misuse or abuse of medicines and allied pharmaceutical materials as well as the false or misleading information relating to efficacy and use of medicines and to regulate and control the production, marketing, distribution, export-import, storage and utilization of those medicines which are not safe for the use of the people, efficacious and of standard quality.

To implement and fulfill the aim of Drug Act 1978 and various regulations under the act, Government of Nepal established Department of Drug Administration (DDA) in 1979.

In accordance with the objectives of the National Health Policy 1991, the National Drug Policy 1995 has been formulated and implemented. It focuses on establishing co-ordination among government, non-government and private organizations involved in the activities related to medicine production, import, export, storage, supply, sales, distribution, quality assessment, regulatory control, rational use and information flow. Achieving the aims and objectives of National Drug Policy is another important area for DDA.

Under the Drug Act 1978, the following regulations and codes have been implemented as supporting tools for the active enforcement of Drug Act.

1. Drug Consultative Council and Drug Advisory Committee rules, (2037 BS).
2. Drug Registration Rules, (2038 BS).
3. Drug Standard Rules (2043 BS).
4. Enquiry and Inspection rules (2040 BS).
5. Codes on Sale and Distribution of Drugs (2071 BS).
6. Codes on Drug Production (2072 BS).

Drug Donation guidelines have been implemented for the quality assurance of donated medicines.

3.1.2 Objectives

The main objective of DDA is to regulate all functions related to the modern, veterinary and traditional medicines, including misuse and abuse of medicines and its raw materials, to stop false and misleading advertisement and make available safe, efficacious and quality medicine to the general public by controlling the production, marketing, distribution, sale, export-import, storage and use of medicines.

3.1.3 Strategies

- Selection of essential medicine to promote rational use of medicines.
- Establishment of regional offices at all five regions for effective decentralization.
- 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.

3.1.4 Functions of Division and Branch Offices of Department of Drug Administration

Drug Evaluation and Registration Division

❖ **Medicine and Biological Evaluation Section**

- Scientific evaluation of new medicine and allied products for manufacturing, import, export and marketing.
- Scientific evaluation of vaccines and biological for manufacturing, export, import and marketing.
- Research and Development of new medicine and Clinical trials.
- To co-ordinate with the related experts for the evaluation of new medicine
- To issue permission for research and development and clinical trials.

❖ **Import Section**:

- To approve foreign manufacturer for importation of medicine.
- To register products for export and import after evaluation.
- To issue the recommendation letter for import/export of medicines
- To renew the recommendation letter for import-export.
- To register vaccines and biological for export and import after evaluation.
- To issue recommendation letter for import/export of vaccines and biological.

❖ **Industry Section;**

- To issue recommendation letter for establishment of pharmaceutical industry and issue Product Manufacturing License and renew them.
- To approved layout of pharmaceutical industry.
- Register new products and issue marketing permission for the sale and distribution.
- Issue letter of recommendation for the import of raw materials and renew them.

- To register and issue registration certificates to open retail / wholesale pharmacy outlets and renew them.
- Issue and renew certificates for persons authorized to sale medicines.
- Update the record of pharmacies and approve variation in the licenses.

Planning, Co-ordination and Management Division

❖ **Training and Drug Information Section:**

- Conduct the refresher training to medicine sellers.
- Disseminate information about medicines particularly side effects, contraindication, drug interaction and storage condition and other necessary information regarding medicines.
- Publish Drug Bulletin of Nepal (DBN) and distribute to health institutions, industries, medical doctors, health personnels, pharmacist and other concerned person and institutions.
- Revise National List of Essential Medicines and Nepalese National Formulary periodically.
- Recommend for import of narcotic, psychotropic, precursors substances and liaise with International Narcotic Control Board.
- Conduct activities related to Pharmacovigillance and Adverse Drug Monitoring Reporting.
- Webpage development, updating and computer networking.

❖ **Planning and Coordination section**

- Organization development, planning, budgeting, foreign aid.
- Central and provincial government coordination and foreign coordination.
- Prepare yearly planning for activities conduct by DDA and regional office.
- Coordinate with Ministry, Department and other government and non government organization for conducting activities and submit the report to Ministry of Health and Population {MoHP).
- Collect, prepare and forward monthly, quarterly and yearly report.

❖ **Pharmacovigilance section**

- Post marketing surveillance of the Medicine and allied products.
- To act as a National pharmacovigilance center and co-ordinate and collaborate with regional centers and WHO Collaborating Centre for international Drug Monitoring (The Uppsala Monitoring Centre)
- To facilitate the policy development and design on Drug Use Evaluation.

❖ **Financial/Administration section**

- Entry and Dispatch of letters.
- Management of human resources (recruitment, posting, promotion, transfer etc)
- Performance evaluation of employees and maintained harmony.
- Perform Procurement related activities
- Monitoring, evaluation and co-ordination of regional offices activities.
- Management of Premises, building, work places and Library.
- Internal financial management, revenue collection and audit.

- Plan and prepare budget expenditures.
- Procurement and expenditure management.
- Financial irregularities management (Beruju).

❖ **Inspection, Evaluation and Law Enforcement Division**

- Take legal and administrative action on cases of non-compliance as per the provision of Drug Act and its Regulations.
- Regulate sales and distribution of psychotropic and narcotic drugs.
- Co-ordinate Good Manufacturing Practice Audit within and outside the country.

❖ **Inspection and Evaluation Section**

- Inspection for the effective implementation of Drug act 2035 and other regulations under Drug Act.
- Inspect drug industries, wholesale, retail and hospital pharmacies regularly.
- Prepare indicators for inspection and evaluation.
- Prepare national standards for inspection of Drug Industry and Pharmacies.
- Set an annual target for inspection and evaluation.
- Assist on periodically and annual review.

❖ **Law Enforcement Section**

- Prepare necessary document for registering the case on court against Drug Act.
- Assist on legal aspect to Department.
- Training to Drug Inspectors on Inspection, Investigation and Case filing.
- Surveillance on legal aspects related to pharmacy practice.
- Assist on the amendment of Drug act, Regulation and Guidelines.

❖ **GMP Audit and Certification Section**

- Perform GMP certification and Recertification related activities.
- Inspection of pharmaceutical industry as per plan.
- Coordinate with regional offices for GMP related inspection.
- Prepare work plan for foreign industry Audit inspection
- Take action for noncompliance.

Branch Offices:

DDA has its branch offices at Biratnagar, Birgunj and Nepalgunj. These offices carry out the responsibility of inspection as well as Pharmacy registration and renewal.

3.1.5 National Medicines Laboratory (NML)

National Medicines Laboratory is the principal body of Government of Nepal for testing and analysis of drugs. It has various sections like chemical analysis, microbiology, pharmacology and instrumental analysis. The main functions of NML are to:

- Test and analyze the quality of medicines as empowered according to the Drug Act 1978.
- Issue Lot Release Certificate for vaccines.
- Conduct training on Good Laboratory Practices.
- Audit laboratories of Nepalese pharmaceutical industries.

3.1.6 Analysis of Achievements by Major Activities

Activities carried out in FY 2074/75 (2017/2018)

Table 3.1: Target Vs Achievement, FY 2074/75

S N	Activities	Unit	Target	Achievement	Achievement in %
1	Drug information to the public by different media	Number	30	32	107
2	Publication of Drug Bulletin of Nepal	Issue	3	3	100
3	Conducting examination of veterinary drug sellers' training	Number	2	2	100
4	Inspection of domestic Pharmaceutical Industries	Number	100	90	90
5	Inspection to drug retailers & wholesalers	Number	2900	3691	127
6	Drug sample Analysis	Number	1000	1004	100
7	Audit of Pharmaceutical Analytical Laboratories	Number	30	32	107
8	Inspection of Foreign Companies	Times	5	8	160

Table 3.2: Other activities

S. N	Activities	Achievement
1	Registration of new foreign pharmaceutical Industry	32
2	Registration of new medicine (import)	160
3	Renew of import license	3159
4	Issue of marketing license	492
5	Issue of product license	829
6	Import license for raw material for domestic industry	765
7	Registration of new pharmacy	916
8	Renew of pharmacy	4204
9	Renew of professional license	1036
10	Deregistration of pharmacy	259
11	Recall of medicine from market due to inferior quality	55

Table 3.3: Financial allocation and Expenditure

Budget in thousands (000)

S.N	Budget heading	Budget allocation	Budget expenditure	%
1	Capital budget	27116	25257	93.14
2	Recurrent budget	95402	78777	82.57
3	Total	122518	104034	84.91

3.1.7 Revenue generated :NRs

Total revenue: 41,797,342.37

3.1.8 Challenges

SN	Challenges
1	Organizational Structure for federal, provincial and local government.
2	Lacking mechanism (legal and organizational for regulation of HTP).
3	Information Management, Transparency and lacking of dynamic and Responsive Information system
4	Illegal import of medicine due to open border and, SFs regulation and control.
5	Lacking of resources (human, Technology)
6	Regional harmonization and uniformity, MRH and SRA collaboration.
7	Pharmacovigilance, post marketing surveillance
8	Good governance and accountability
9	Medicine Shortages issues.
10	Lack of organization structure for price monitoring.

3.2 Department of Ayurveda and Alternative Medicine

3.2.1 Background

Department of Ayurveda and Alternative Medicine (DoAA) primarily manages the delivery of Ayurveda & Alternative Medicine Services and promotes healthy lifestyles through its network facilities all across the country. The Department of Ayurveda & Alternative Medicine, one of the three departments of the Ministry of Health & Population (MoHP) is responsible for programming, management of information, and supervision, monitoring and evaluation of the Ayurveda Service programs.

Ayurveda is an ancient medical system and indigenous to Nepal with deep roots. The sources of Ayurvedic medicine are medicinal herbs, minerals and animal products. The system works through simple and therapeutic measures along with promotive, preventive, curative and rehabilitative health of people. Ayurveda health services are being delivered through one Central Ayurveda Hospital (Nardevi), one Provincial Hospital (Dang), 14 Zonal Ayurveda Dispensaries, 61 District Ayurveda Health Centers and 305 Ayurveda dispensaries across the country. The Ayurveda and Alternative Medicine unit in the Ministry of Health & population (MoHP) is responsible for formulating policies and guidelines for Ayurveda and other traditional medical system.

Various national and international policies have highlighted the importance of Ayurveda services in primary health care and for prevention of Non Communicable Diseases (NCDs). The Constitution of Nepal has called for the protection and promotion of traditional Ayurveda medicines along with naturopathy and homeopathy. The National Health Policy (2014) has called for expansion of Ayurvedic services in line with the National Ayurveda Health Policy (1995) and National Urban Health policy (2015).

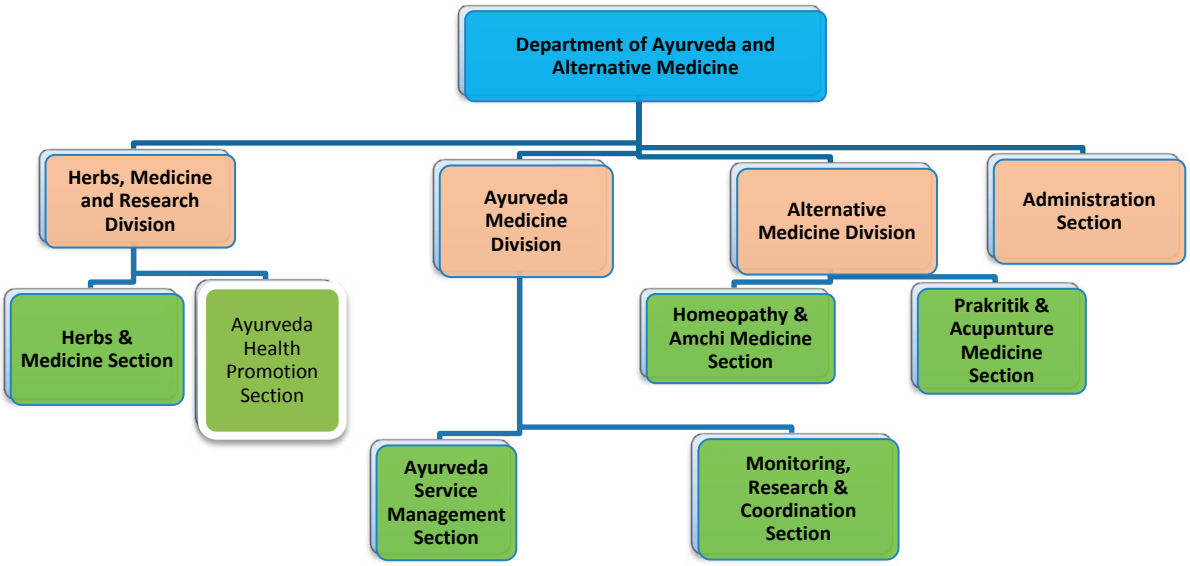
Fifteen Plan of Government of Nepal (2019/20-2023/24) has guided planned development & expansion of Ayurveda, Naturopathy, Homeopathy & other alternative medicines. More specifically, it says: a) Structural development suitable for identification, prevention, collection & promotion of locally available medicinal herbs, minerals & animal origin medicines. b) Management & regulation of other alternative medicines based on standards & norms. c) Establishment of Ayurveda, Yoga & Naturopathy

Center and utilization of Ayurveda for promotion of health tourism.

Federal Level	Provincial Level	Local Level
•DoAA •Nardevi Hospital •NARTC •Singhadurvar Vaidhyakhana •NAMC •Ayurveda and Alternative Medicine Section (MoHP)	•District Ayurveda Health Centers-61 •Anchal Ayurveda Dispensaries-14	•Ayurveda Dispensaries-305

Organization structure

Organization of Department of Ayurveda & Alternative Medicine:



3.2.2 Objectives

- To expand and develop functional, physical Ayurveda health infrastructure;
- To improve quality control mechanism for Ayurveda health services throughout the country;
- To develop and manage the required human resources;
- To mobilize the adequate resources for medicinal plants;
- To promote community participation in the management of the health facility & utilization of local herbs;
- To promote health status & sustainable development of Ayurveda system using locally available medicinal plants;
- To promote positive attitudes towards health care & awareness of health issues;

3.2.2 Strategies

- Provide preventive, promotive & curative health services in the rural areas;
- Establishment & development of Ayurveda institutions;
- Strengthen & expand the Ayurveda health services;
- Develop skilled manpower required for various health facilities;
- Strengthening of monitoring & supervision activities;
- Development of information, education & communication center in the Department;
- Develop Inter sectoral co-ordination with Education Ministry, Forestry, local development
- sector & other NGO's & INGO's;
- Establishment of regional Ayurveda Hospitals & Ayurveda Dispensaries;
- Strengthening & expansion of research & training center of international level;
- National & International level training for the capacity enhancement of its human resources

3.2.3 Major Activities

Central level

- Procurement & Supply of essential Ayurveda drugs to districts.
- Non communicable disease Prevention and Control Program.
- Celebration of National/ International Yoga Day, Dhanvantari and ArogyaDiwas.
- Guidelines, Protocol, Manual development.
- Panchakarma training to Kaviraj.
- Establishment of patient recording reporting networking system software among Ayurveda institutions.
- Establishment of National Ayurveda, Panchakarma and Yoga Center in Budhanilkantha.
- Establishment of Regional Ayurveda Hospital at Dhangadi & Jhapa
- Strengthening program of Naturopathy, Yoga, Homeopathy, Unani, Aamchi etc.
- Purvakarma, Naturopathy & Yoga Health camp.
- Yoga, Physiotherapy and Disability Training to Ayurveda Physician.
- Quality monitoring of different Ayurveda Products available in Nepalese market.
- Monitoring of services provided by private Ayurveda & Alternative Medical Systems
- Annual review meeting in each district and center.
- Revision, evaluation, monitoring and update of Ayurvedic health policy and development of
- code of ethics.
- Evaluation and monitoring.

Local Level

- Swasthaya Jeevan program.
- Yoga and Lifestyle management program for Kaviraj and Vaidhyas.

- Connection of Internet at Zonal Ayurveda Aushadhalayas& District Ayurveda health centre.
- Powder (Churna) medicine production in ZAD & DAHC.
- Strengthening of herbal garden.
- Workshop and discussion with local traditional healers.
- Preparation IEC materials on Ayurveda.
- School Ayurveda health program.
- Construction of compound wall of Ayurvedic institutions.
- Building construction of Ayurveda institutions.
- Promotive Panchakarma / Rasayan and Yoga programme for Senior Citizens
- Awareness program on medicinal plants
- Program for lactating mother (Distribution of galactogogue medicine).
- Skill development training.
- Procurement of treatment equipment
- Procurement of vehicles for ayurveda institutions

3.2.4 Analysis of Achievement

Based on the treatment report of different Ayurveda institutions following diseases were classified as top ten diseases:

- Amlapitta (Gastritis)
- Udarrog (Abdominal diseases)
- Swasan Bikar (Respiratory diseases)
- VataVyadhi (Osteorthritis, Rheumatoid Arthritis & other neuromuscular Diseases)
- Jwar (Pyrexia)
- Bal Roga (Pediatric diseases)
- Karna, Nasa, Mukha, Danta & Kantharog (ENT, Oral, Dental diseases)
- Strirog (Gynecological diseases)
- Brana (Wound, Abscess & Other Skin Diseases)
- Atisar/Grahani (Diarrheal diseases)

3.2.5 Service Statistics for fiscal year 2074/2075

Table 3.4: Number of people served by province in FY 2074/75 .

Province	Province No. 1	Province No. 2	Province No. 3	Gandaki Province	Province No. 5	Karnali	Sudur-Paschim Province	Total
OPD	213232	133270	159924	213231	226558	146597	239885	1332697
Stanpayee	3054	1909	2291	3054	3245	2099	3436	19078
Jestha Nagarik	5340	3338	4005	5342	5674	3671	6008	33378
Purvakarma	4697	2936	3523	4697	4991	3229	5284	29357
GaunGhar Clinic	**13722**	**8576**	**10292**	**13722**	**14580**	**9434**	**15438**	**85764**
SwasthyaSibir	**7110**	**4443**	**5332**	**7110**	**7554**	**4868**	**7998**	**44415**
National	**247155**	**154472**	**185367**	**247156**	**262602**	**169898**	**278049**	**1544699**

3.2.6 Problems/Constraints

Problems/Constraints	Actions to be taken	Responsibility
Lack of experts and inadequate qualified manpower.	Production of qualified Ayurvedicmanpower(BAMS, MD)	DOAA, MoHP MOE
Inadequate financial support for district level Ayurveda institutions toconduct monitoring supervision &publicity program.	Allocate sufficient Budget	MoHP
Poor storage & dispensing Practices of medicines in curativeaspects of Ayurveda institutions.	Provide good furniture & dispensing materials Training on storage & Good dispensing Practice.	DOAA MoHP
Lack of inter sectoral co-ordination.	Co-ordination with related ministries, NGO's & INGO's Increase qualified manpower.	DOAA MoHP
Lack of community based program for publicity of Ayurveda.	Increase manpower production and allocation of adequate budget.	DOAA MoHP
Lack of Workshop, Training & Seminar for properPlanning of Ayurveda.	Allocate adequate budget, Develop policy & Long term, Mid term and Short term plan on Ayurveda	DOAA MoHP
Lack of appropriate recording & reporting system.	Upgrading of Ayurveda Information Management System (AIMS) Allocation of adequate budget. Training on AIMS For Ayurveda Personnel	DOAA MoHP
Inadequate Specialized Human Resources underDepartment of Ayurveda.	Scholarship for higher studies, recruitment & placement	MoHP DoAA
Lack of Evidence Generation & Documentation about the successful treatment of certain incurable disease with Ayurveda therapy claimed by practitioners.	Goal formation. Allocate budget.	DOAA MoHP

3.2.6 Programs formulated for the fiscal year 2075/76

Miscellaneous Programs: Ayurved Vibhagh (3701293/4), Department of Ayurveda

- ✓ OPD expansion at proposed National Ayurveda, panchakarma& Yoga Center
- ✓ National Health Policies & Strategies Plan
- ✓ Grant for effectiveness study of Ayurveda Service Program
- ✓ Quality Medicinal Herbs & Medicine Management, Standards & Guidelines
- ✓ NCDs Prevention & Management
- ✓ Ayurveda Services Guidelines, Manual, Protocol
- ✓ Traditional treatment related Policy, Standard & Management
- ✓ Yoga/Panchakarma TOT training for Ayurveda Physicians
- ✓ AHIMS upgrading
- ✓ Alternative Medicine Strengthening/Policy, Standards

Provincial Programs

- ✓ Lifestyle Management Program in PHC
- ✓ Training on "Operation & Management of Ayurveda Programs" for ayurveda personnel
- ✓ Procurement & Transportation of Ayurveda Medicines
- ✓ Free Health Camps
- ✓ National/International Yoga Day; National Arogya Diwas & Dhanwantari Jayanti
- ✓ ICT materials development

Ayurveda Sewakaryakarm (3708093/4) : DAHC/ZAD & Ayurveda Dispensaries

- ✓ Procurement of Sirodhara table/Vaspaswed Set & other Medicinal materials
- ✓ Gaaughar/Sahari Clinic, NCDs Management Program
- ✓ Health Promotion Program for Senior Citizens
- ✓ Medicinal Herbs powder preparation
- ✓ Local medicinal herbs introduction program & enlistment
- ✓ Swasthya Jeevan Program
- ✓ Panchakarma/Purvakarma Program
- ✓ Procurement of Ayurveda Medicines
- ✓ School Ayurveda & Yoga Education Program
- ✓ National/International Yoga Day; National Arogya Diwas & DhanwantariJayanti
- ✓ Distribution of medicinal herbal powder for lactating mothers

FAMILY WELFARE

CHILD HEALTH AND IMMUNIZATION

Introduction

Child Health and Immunization Service Section is one of the four sections of Family Welfare Division, which plans, executes and monitors several activities of child health and immunization services. Logistics Management Section of Management Division procures stores and distributes vaccines throughout the country as planned by Child Health and Immunization Service Section, Family Welfare Division, while NHEICC develops routine and supplementary child health and immunization IEC and social mobilization materials in close coordination with this section. Capacity building of health staff on routine immunization in close coordination with this section is executed through National Health and Provincial Health Training Centres. Immunization and IMNCI related information is collected through HMIS Section (Integrated Health Information Management Section), Management Division, and is shared quarterly for review and feedback. Child Health and Immunization Service Section of Family Welfare Division coordinate with several stakeholders of immunization and child health to execute activities of the annual work plan. This section has two programs: 1) National Immunization Program and 2) IMNCI program

4.1. National Immunization Program

4.1.1 Background

National Immunization Program (NIP) of Nepal (Expanded Program on Immunization) was started in 2034 BS and is a priority 1 program. It is one of the successful public health programs of Ministry of Health and Population, and has achieved several milestones contributing to reduction in morbidity and mortality associated with vaccine preventable diseases.

NIP works closely with other divisions of Department of Health Services and national centres of Ministry of Health and Population, and different partners, including WHO and UNICEF, supporting the National Immunization Program. In the Decade of the Vaccines (2011 – 2020), NIP has introduced several new and underutilized vaccines contributing towards achievement of Global Vaccine Action Plan targets of introducing new and underutilized vaccines in routine immunization. Currently, the program provides vaccination against 11 vaccine preventable diseases. Recently, in August 2018, fractional dose of Inactivated Polio Vaccine was introduced in routine immunization of Nepal. As per comprehensive Multi-year Plan for Immunization (cMYP) 2017 - 2021, several other vaccines, including rotavirus vaccine, are planned for introduction in Nepal. Immunization services are delivered through 16,500 service delivery points in health facilities (fixed sessions), outreach sessions, and mobile clinics.

NIP has cMYP 2017 - 2021 aligned with global, regional and national guidelines, policies and recommendations to guide the program for five years. All activities outlined in the cMYP are costed and has strategies for implementation.

NIP has a very good track record of meeting the targets for control, elimination and eradication of vaccine preventable diseases. Small pox has now become history due to eradication in 2034 BS (1977 AD). Maternal and neonatal tetanus (MNT) was eliminated in 2005 and the elimination status has been sustained since then. The last case of polio in Nepal was in 2010, and along with other countries of the South East Asia Region, Nepal was certified polio free in 2014. This status has been maintained since then. Nepal is one of the first countries in the world to introduce JE vaccine in routine immunization. In 2016, JE vaccine, which initially was given only in 31 endemic districts, was scaled up all over the country, thus, further contributing towards control of Japanese encephalitis in Nepal. In August 2018, Nepal was certified as having achieved control of rubella and congenital rubella syndrome. This certification is two years ahead of the regional target year of 2020 and one year ahead of the national target of 2019. However, the national target of achieving measles elimination by 2019 will not be met. Measles, which is the most infectious disease, will require very high coverages (> 95%) with both the first and second doses of measles-rubella (MR) vaccine in every community, district, province, and nationally. Overall, the National Immunization Program is considered as the main contributor towards decline of infant and child mortality (Source: Nepal and the Millennium Development Goals, Final Status Report 2000-2015, National Planning Commission), and has contributed significantly in achieving MDG Goal 4 of reducing child mortality.

Nepal is the first country in the South East Asia Region to have Immunization Act, thus supporting and strengthening the National Immunization Program. Immunization Act 2072 was published in the Official Gazette on 26 January 2016. Based on the Act, Nepal also has Immunization Regulation 2074, which was published in the Official Gazette on 6 August 2018. The Immunization Act of Nepal has recognized immunization as a right of all children. In line with this, one of the seven provinces of Nepal (Gandaki province) also has its provincial Immunization Act.

For supervision and guidance of the National Immunization Program, functional committees for both VPD surveillance and immunization exist in the country. The National Immunization Committee (NIC), National Immunization Advisory Committee (NIAC), and AEFI investigation committee are the committees mandated by the Immunization Act 2074, thus giving these committees status by legislation to guide the country immunization program.

Since FY 2069/70 (2012/13), Nepal has initiated and implemented a unique initiative known as 'full immunization program'. This program addresses issues of social inequity in immunization as every child regardless of social or geographical aspect within an administrative boundary are meant to be fully immunized under this program. Over the years, Nepal has witnessed participation of all stakeholders at all levels to achieve full immunization. As of end of FY 2074/75, a total of 80 % palikas, and 56 out of 77 districts have been declared 'fully immunized'. Gandaki Province has declared their province as fully immunized province.

NIP produces evidences on burden of vaccine preventable diseases and impact of vaccine introduction. Nation-wide surveillance of acute flaccid paralysis (for polio), measles and rubella, neonatal tetanus, and Japanese encephalitis is conducted through WHO supported surveillance. Further, with support of WHO, sentinel surveillance of selected vaccine preventable diseases (invasive bacterial diseases, rotavirus, and congenital rubella syndrome) is conducted in collaboration with academia and research institutes.

NIP with the support of WHO works with various immunization and vaccine preventable diseases surveillance committees and task-forces which function as advisory and quality monitoring bodies of the program. The committees include Inter-Agency Coordination Committee on Immunization, National Immunization Advisory Committee, AEFI Committee, and National Certification Committee

for Polio Eradication, National Verification Committee for Measles and Rubella/CRS Elimination, National Task Force for Laboratory Containment of Polio, Expert Review Committee for Polio, Polio Legacy Committee, etc.

Guiding documents of National Immunization program

There are several global, regional and national guiding documents for the National Immunization Program. The main documents which have been taken in account and incorporated in cMYP 2017 - 21 are Global Vaccine Action Plan, South East Asia Regional Vaccine Action Plan, National Immunization Act 2072 and Nepal Health Sector Strategy (2016-2020).

Comprehensive Multi-Year Plan for Immunization (cMYP)

The comprehensive Multi-year Plan for Immunization (cMYP) 2012 - 16 ended in 2016 and new cMYP 2017-21 is in place. The cMYP 2017-2021 provides a plan for five years to achieve immunization related goals of the country. The objectives, strategies and activities set forth in the plan provide the framework required to meet the goal of reducing infant and child mortality and morbidity associated with vaccine-preventable diseases (VPDs). Furthermore, this plan addresses new challenges and expands the previous plan by providing guidelines for introduction of new vaccines, eradication, elimination and control of targeted VPDs and strengthening of routine immunization.

4.1.2 Vision

Nepal: a country free of vaccine-preventable diseases.

4.1.3 Mission

To provide every child and mother high-quality, safe and affordable vaccines and immunization services from the National Immunization Program in an equitable manner.

4.1.4 Goal

Reduction of morbidity, mortality and disability associated with vaccine preventable diseases.

4.1.5 Strategic Objectives

Objective 1 Reach every child for full immunization;

Objective 2 Accelerate, achieve and sustain vaccine preventable diseases control, elimination and eradication;

Objective 3 Strengthen immunization supply chain and vaccine management system for quality immunization services;

Objective 4 Ensure financial sustainability for immunization program;

Objective 5 Promote innovation, research and social mobilization activities to enhance best practices

4.1.6 National Immunization Schedule

Table 4.1.1: National Immunization Schedule

SN	Type of Vaccine	Number of Doses	Schedule
1	BCG	1	At birth or on first contact with health institution
2	OPV	3	6, 10, and 14 weeks of age
3	DPT-Hep B-Hib	3	6, 10, and 14 weeks of age
4	fIPV	2	6 and 14 weeks of age (applicable from FY 2075/76; previously given as IPV at 14 weeks)
5	PCV	3	6,10 weeks and 9 months of age
6	Measles-Rubella	2	First dose at 9 months and second dose at 15 months of age
7	JE	1	12 months of age
8	Td	2	Pregnant women: 2 doses of Td one month apart in first pregnancy, and 1 dose in each subsequent pregnancy
9	Rotavirus vaccine also planned for introduction in Nepal.		

4.1.7 Major Activities Conducted in FY 2074/75

- Regional/provincial level ToT and district level health worker and vaccinator training on fIPV and rota vaccine introduction
- Training on Immunization program for the health workers of private/non-governmental health institutions and urban health clinics, and regional level training for new health workers on immunization and AEFI surveillance
- Immunization data verification, validation and monitoring for sustainability of municipality for Full Immunization Declaration program
- Sustainability of Full Immunization Declaration program by developing partnership in the municipalities having less vaccination coverage, difficulty in operating immunization services, and review of local resource mobilization
- Declaration of full immunization in twenty district
- Advocacy meeting about sustainable Immunization Programme with the members of the parliament, Policy makers, private sectors and civil society
- District level review of the hygiene promotion through immunization program
- Orientation training for municipality micro-planning
- Orientation/training to health facility in-charge, municipality CEO, and ward secretary to ensure full immunization and its sustainability
- Planning and orientation to FCHVs for identification of hard to reach and drop-out children for full immunization
- Commencement of National Immunization Act, 2074
- Review and expansion of electronic immunization registration system
- Conduction of financial cost effectiveness analysis of immunization service to district level account officer

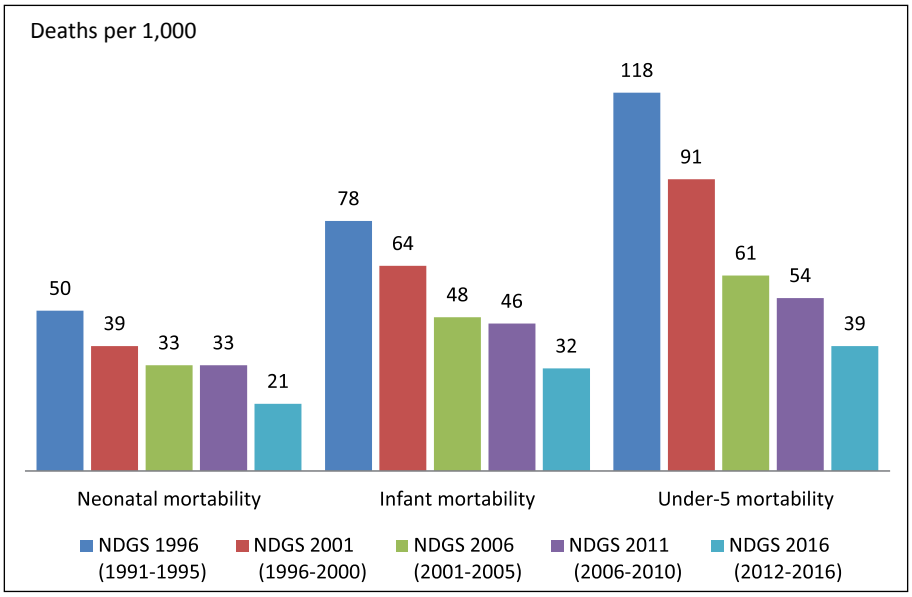
- Effective implementation of concurrent immunization supervision and monitoring mechanism through program staff, partners, SMO network, independent monitors, and immunization and VPD committee members at low performing areas
- Successful application submission to Gavi, the Vaccine Alliance, for MR SIA support planned in the last quarter of 2019
- Focused district activities for immunization intensification
- Introduction of new vaccine FIPV in the routine immunization program
- Even when district health structure was temporarily dissolved to due structural changes in the federal system, with coordination from all levels, the supply of vaccine was maintained through the same/old system to assure proper maintenance of cold chain
- Conduction of Outbreak Response Immunization Program
- Management of logistic with support from partners
- Conduction of Workshop to review and update injection safety policy, Multi-dose Vial vaccine policy, school td, Rota Vaccine Usage guideline, vaccine disposal policy and cod chain policy, DQSA Guideline

4.1.8 Major Achievement

4.1.8.1 VACCINATION TARGET vs. ACHIEVEMENT, FY 2074/75

The cMYP 2017-21 has set the goals to reduce child mortality, morbidity and disability associated with vaccine preventable diseases, and one of the strategic objectives is to reach every child for full immunization. The NDHS survey 2016 shows that in 20 years, there has been significant reduction in infant and child mortality (Fig. 4.1.1). The National Immunization Program has contributed significantly in reduction of child mortality by preventing vaccine preventable diseases.

Figure 4.1.1. Trends in early childhood mortality



Source: NDHS 2016

4.1.8.2 National vaccination coverage:

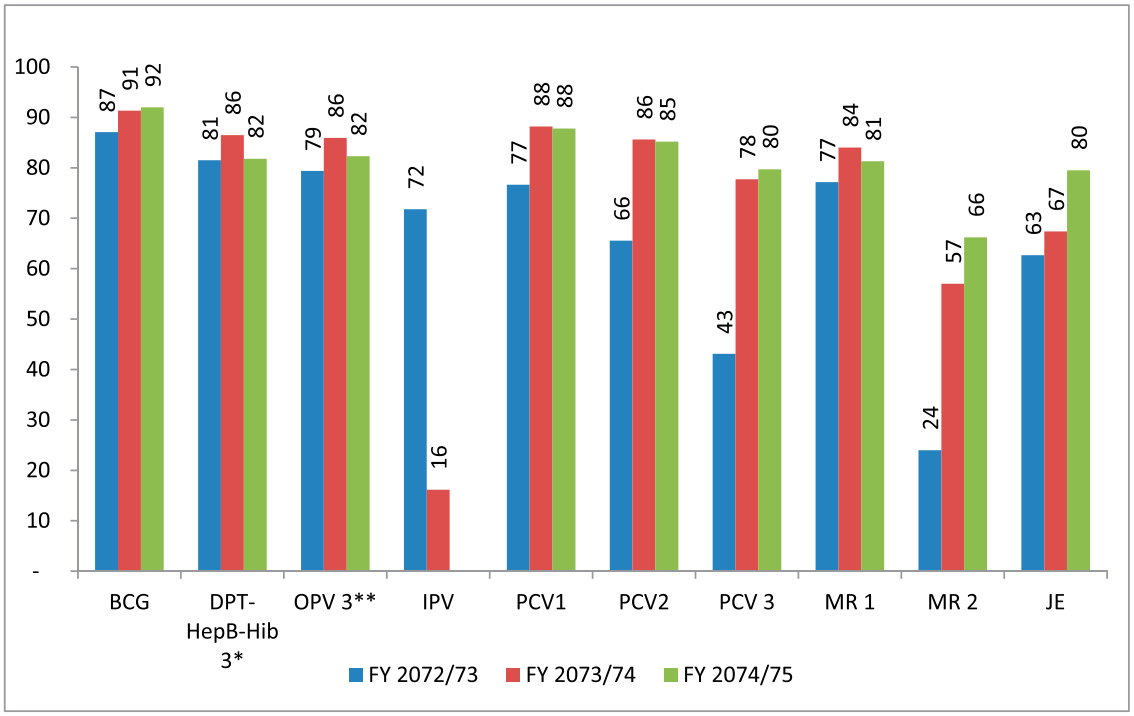
The table and maps presented below show the routine immunization vaccination coverages and achievement status in FY 2074/75.

Table 4.1.2: National vaccination coverage by vaccine, FY 2074/75

SN	Antigens	Target population	Targets	Achievement	% Achieved
1	BCG	under 1 Year	623394	573796	92
2	DPT-Hep B-Hib 1	under 1 year	623394	550619	88.3
3	DPT-Hep B-Hib 2	under 1 year	623394	532168	85.4
4	DPT-Hep B-Hib 3	under 1 year	623394	509979	81.8
5	DPT-Hep B-Hib 3 Including delayed dose given after 1 year of age	under 1 year	623394	538055	86.3
6	OPV 1	under 1 year	623394	552337	88.6
7	OPV 2	under 1 year	623394	537234	86.2
8	OPV 3	under 1 year	623394	513111	82.3
9	OPV 3 Including delayed dose given after 1 year of age	under 1 year	623394	541187	86.8
10	IPV	15 Months	619197	4047	0.65
10	PCV1	under 1 year	623394	546196	87.6
11	PCV2	under 1 year	623394	531093	85.2
12	PCV3	under 1 year	623394	497126	79.7
13	Measles-rubella 1st dose	under 1 year	623394	506764	81.3
14	Measles-rubella 2nd dose	15 Months	619197	409771	66.2
15	JE	12 months	619197	492017	79.5
16	Td 2 & Td2 +	Pregnant women	758652	472069	62

Source: HMIS/MD, DoHS

Figure 4.1.2. National Routine Immunization Administrative Coverage (%), Nepal, FY 2072/73 to 2074/75



Source: HMIS/MD, DoHS

*DPT-HepB-Hib 3 coverage including delayed doses given after 1 year of age is:

FY 2072/73: 87.4%

FY 2073/74: 91.6%

FY 2074/75: 86.3%

** OPV3 coverage including delayed doses given after 1 year of age is:

FY 2072/73: 85.3%

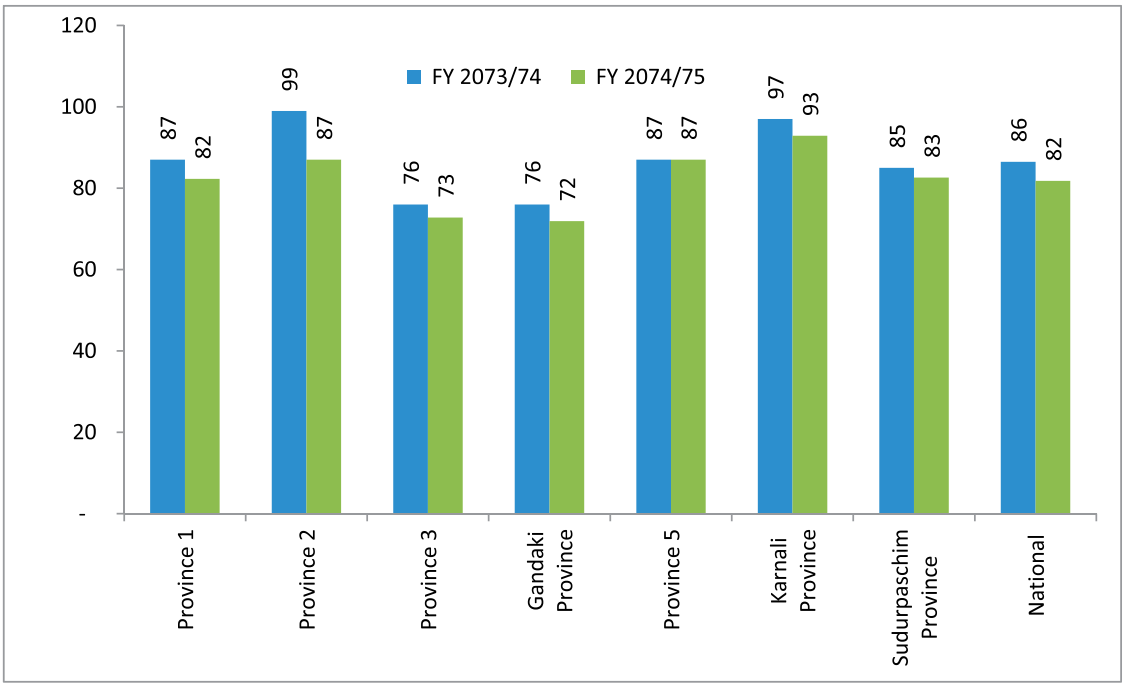
FY 2073/74: 91.1%

FY 2074/75: 86.8%

The Figure 4.1.2 shows vaccine wise national administrative coverage for three years, from FY 2072/73 to FY 2074/75. BCG coverage has increased by 1% point in FY 2074/75. However, the coverage of DTP-HepB-Hib 3 and OPV 3 has decreased by 4% points compared to previous year. IPV global shortage started from FY 2073/74. Therefore, the coverage of IPV is only 16% in FY 2073/74 due to shortage of the vaccine. Instead of IPV (given one dose intramuscular at 14 weeks), fractional dose of IPV (given intradermal at 6 and 14 weeks) has been introduced since August 2018 (FY 2075/76) so IPV received only 0.65% of child under 1 year and fIPV was not received on fiscal year 2074/75. PCV 3 coverage has improved slightly, whereas the coverage of MR 1 has decreased compared to previous year. MR2 coverage has increased by 9% points compared to previous year. For measles elimination, high coverages of both MR 1 and 2 is required (≥ 95%). Therefore, coverages of both MR 1 and MR 2 is still not satisfactory. JE vaccine was introduced in routine immunization of 31 endemic districts in phase-wise manner following phase-wise campaigns starting from 2006. In July 2016 (FY 2073/74), JE vaccine was introduced in all remaining districts of the country. In FY 2074/75, the coverage of JE vaccine has improved significantly compared to the previous years.

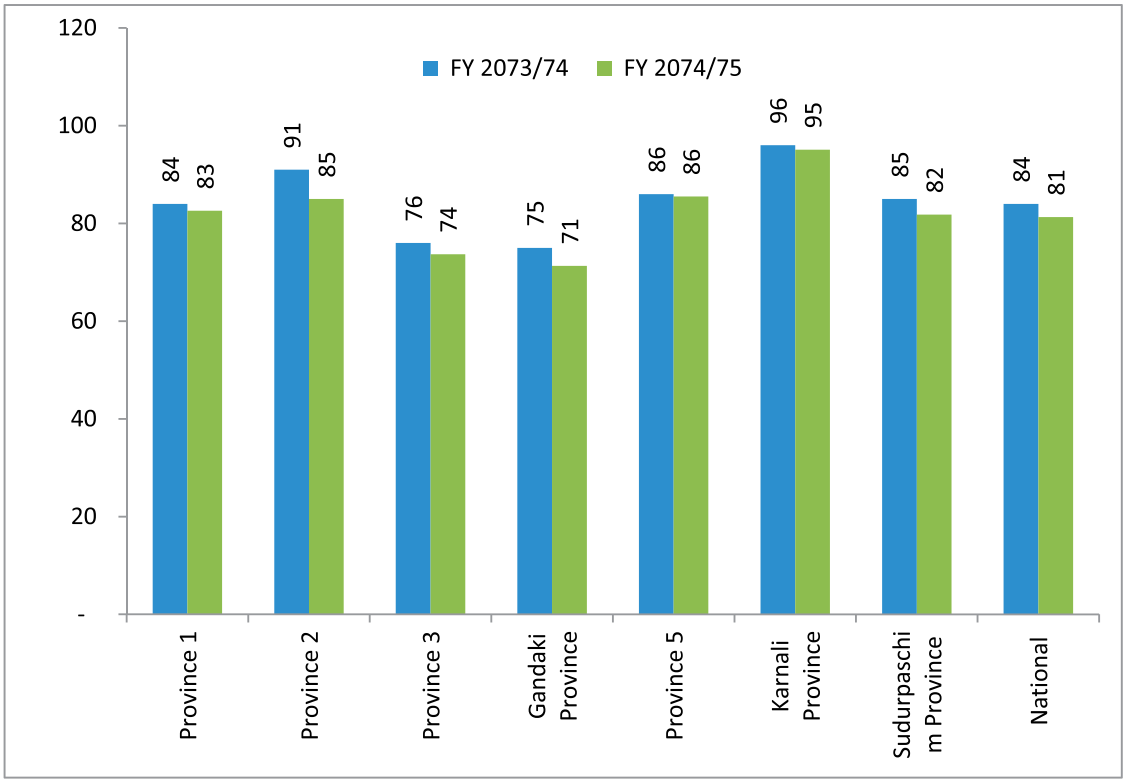
4.1.8.3 Vaccination coverages by province:

Figure 4.1.3. Province wise coverage (%) of DPT-HepB-Hib 3, FY 2073/74 to FY 2074/75



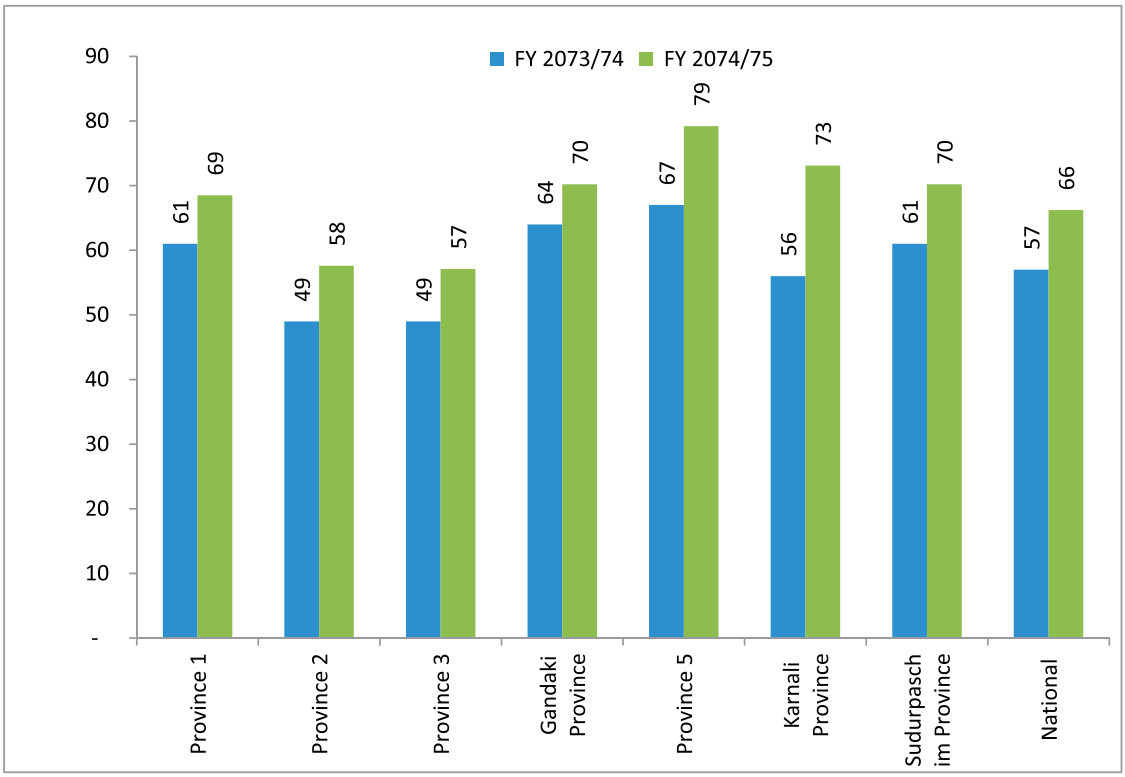
Source: HMIS/MD, DoHS

Figure 4.1.4. Province wise coverage (%) of measles-rubella first dose, FY 2073/74 to FY 2074/75



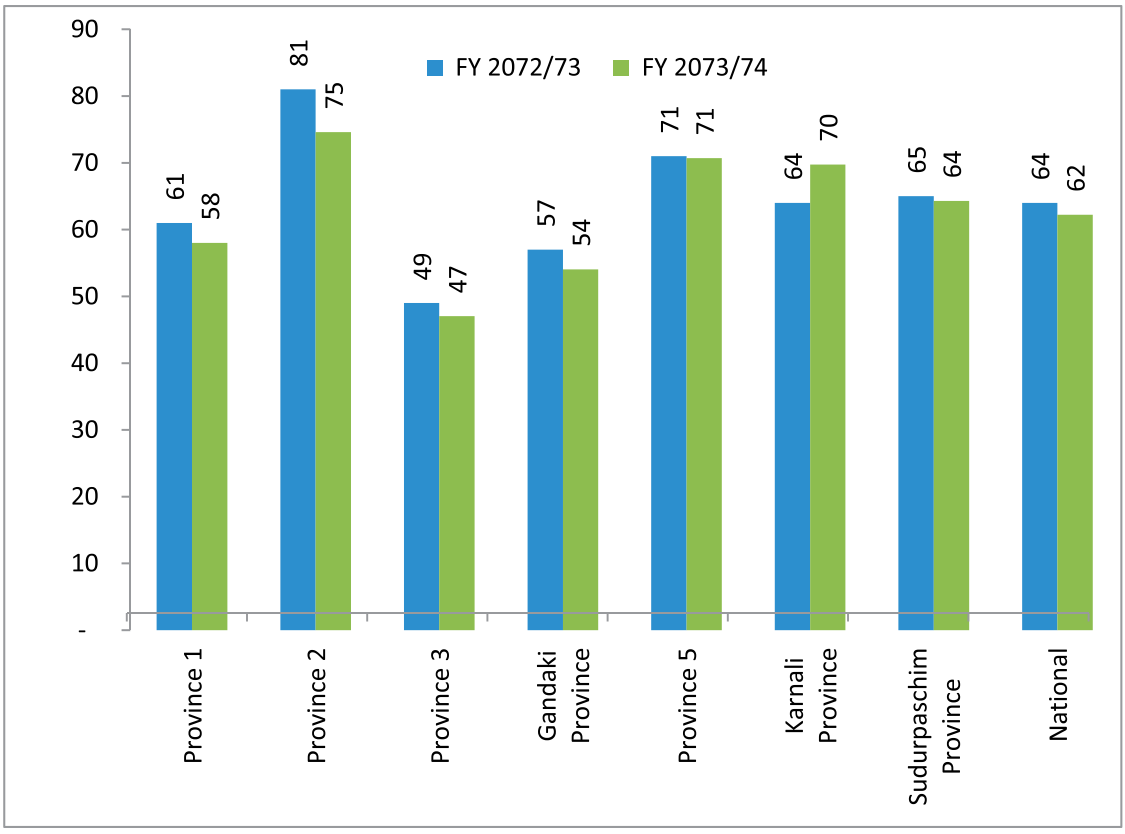
Source: HMIS/MD, DoHS

Figure4.1.5. Province wise coverage (%) of measles-rubella second dose, FY 2073/74 to FY 2074/75



Source: HMIS/MD, DoHS

Figure 4.1.6. Province wise coverage (%) of Td 2 and Td 2+, FY 2073/74 to FY 2074/75

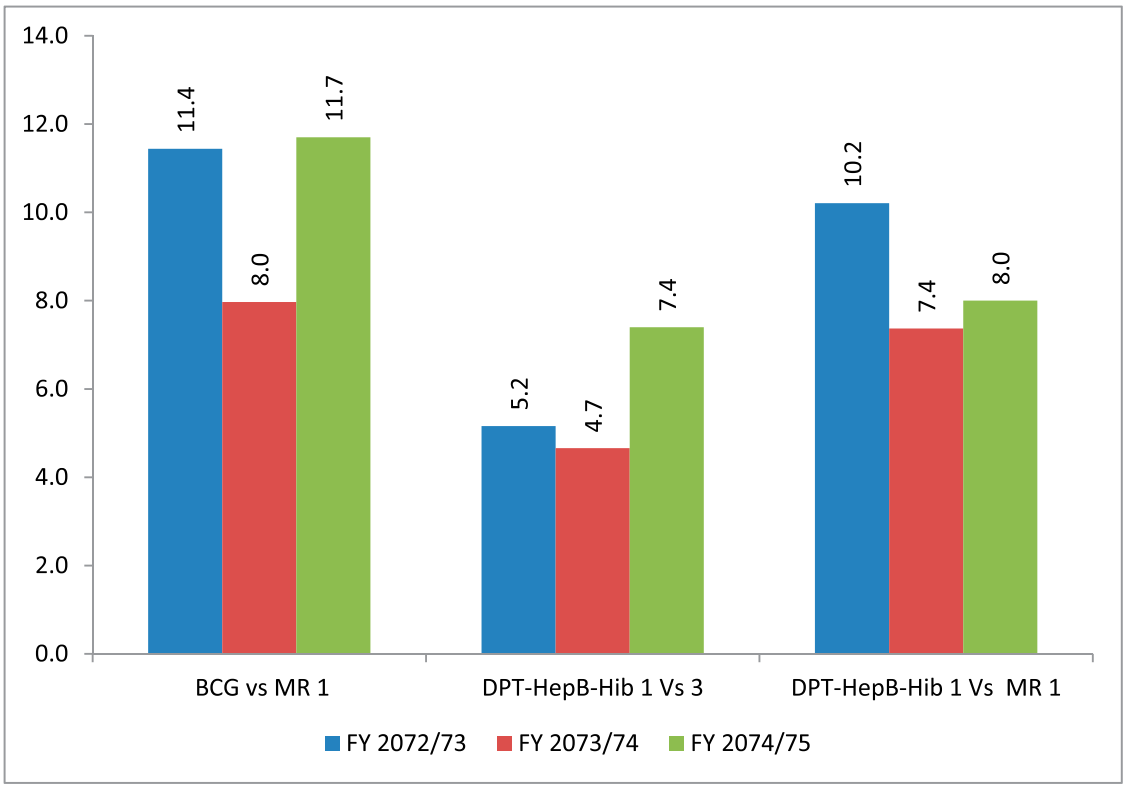


Source: HMIS/MD, DoHS

Figure 2.1.3 to 2.1.6 show province wise coverage for DPT-HepB-Hib 3, MR 1, MR2, and Td 2/Td 2+ respectively. For DPT-HepB-Hib 3 and MR1, Karnali Province has reported highest administrative coverages whereas Province 3 and Gandaki Provinces have reported relatively lower coverages. For MR 2, Province 5 has reported the highest coverage in FY 2074/75; whereas, for Td 2/Td 2+, Province 2 has reported the highest coverag es.

4.8.1.4. Droput rates of vaccination:

Figure 4.1.7. Dropout rates (%) of different vaccinations, FY 2072/73 to FY 2074/75

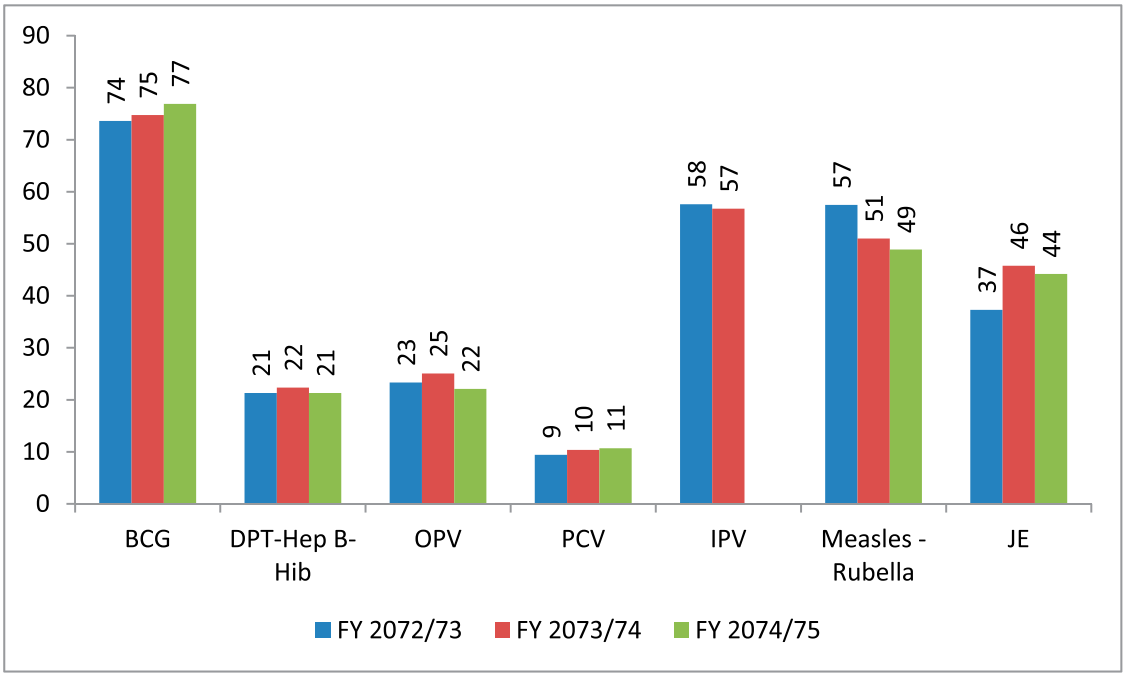


Source: HMIS/MD, DoHS

Figure 4.1.7 shows that national dropout rate for DPT-HepB-Hib 1 vs 3 and MR 1, although it has increased compared to previous years, is within 10%. However, the dropout rate of BCG vs MR 1 is 11.7% in FY 2074/75.

4.8.1.4. Vaccine wastage rates:

Figure 4.1.8. Vaccine wastage rates (%), FY 2072/73 to FY 2074/75

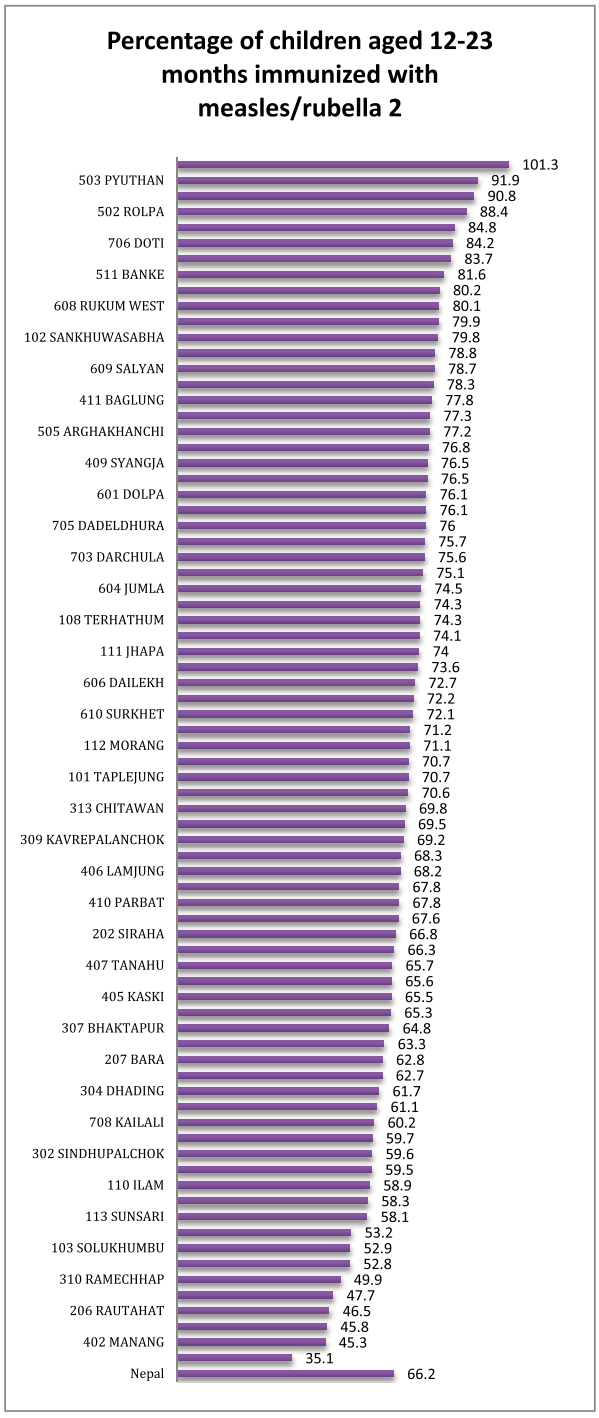


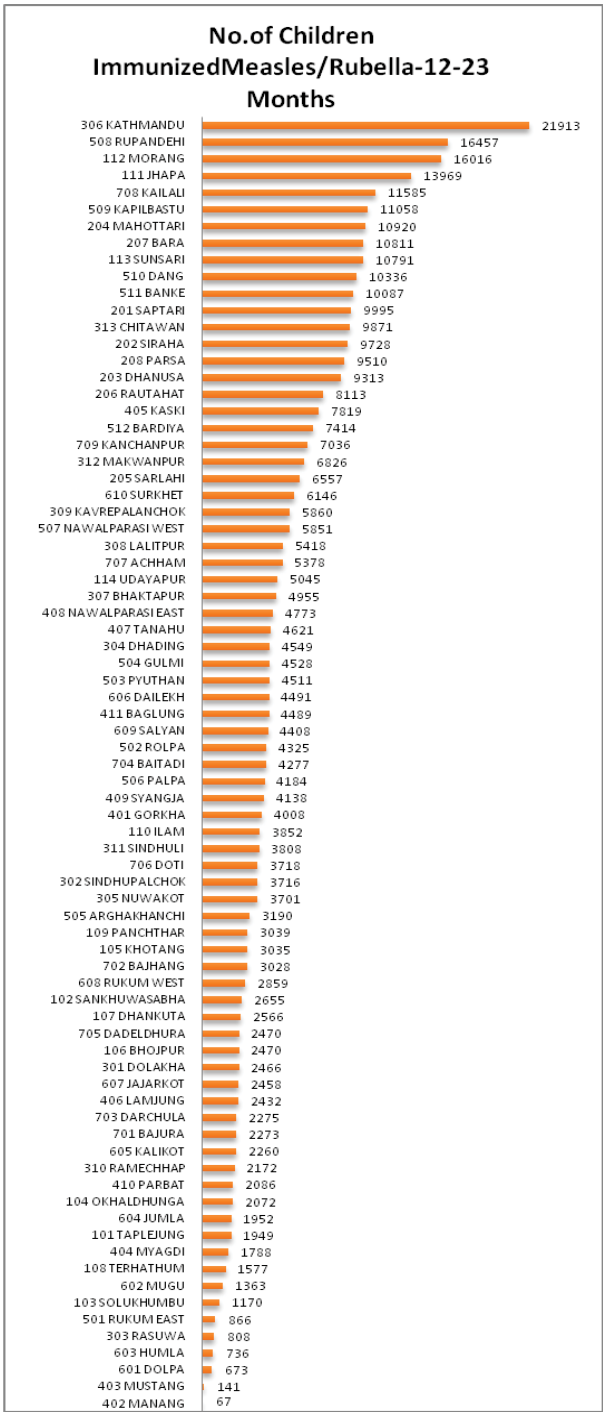
Source: HMIS/MD, DoHS

For all re-constituted vaccines (BCG, MR, and JE) that need to be discarded within 6 hours (1 hour only for JE) or at the end of immunization session whichever comes first, wastage rates are expected to be higher. Further, in Nepal, for BCG, MR and JE vaccines, at least 'one vial per session' policy is used, and small session sizes because of sparse population in hilly and mountainous terrain have to be allowed higher wastage rates. Because of these reasons, the wastage rates for BCG and JE are higher that the indicative wastage rates of 50% and 10% respectively. However, the wastage rate of MR has improved, and is below the indicative wastage rate of 50%. Both MR and JE wastage rates have improved compared to previous year. For DPT-HepB-Hib and OPV, the national wastage rates are below the indicative wastage rate of 25% for both vaccines, and have omproved compared to previous year. For PCV vaccines, the national wastage rate is around indicative wastage rate of 10%.

Measles-rubella second dose coverage, number of immunized and unimmunized children by district:

Figure 4.1.9. MR 2 coverage (%) and number of immunized children by district, FY 2074/75

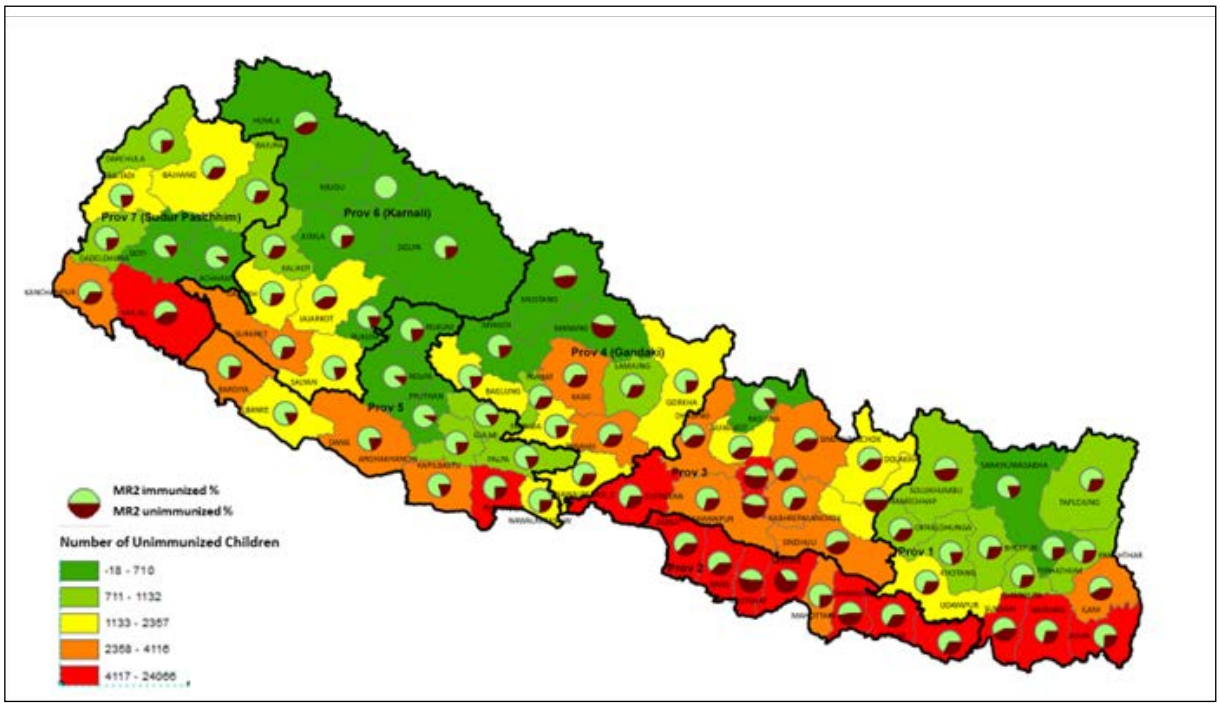




Source: HMIS/MD, DoHS

Figure 4.1.9 shows the coverage of MR 2 by district, and number of children vaccinated with MR 2 by district. Only 3 districts (Mugu, Pyuthan, and Accham) have achieved MR 2 coverage above 90%, whereas 9 districts have MR2 coverage between 80-89%, 60 districts have MR2 coverage between 50-79%, and 5 districts have coverage below 50%. The national coverage of MR 2 is 66.2%. Figure 2.1.10 shows the coverage of MR 2 and number of unimmunized children for FY 2074/75. Thirteen districts in the Terai, and Kathmandu and Lalitpur Districts have relatively higher number of unimmunized children for MR 2 compared to other districts.

Figure 4.1.10 Coverage and number of unimmunized for MR 2 by district, FY 2074/75



Source: HMIS/MD, DoHS

4.1.8.6 Access and utilization of immunization services:

National Immunization Program evaluates the status of the districts by accessibility and utilization of immunization services. Districts are categorized in category 1 to 4 on the basis of DPT-HepB-Hib 1 coverage and dropout rate of DPT-HepB-Hib1 vs DPT-HepB-Hib 3 to know the accessibility and utilization of immunization services respectively.

Table 4.1.3. District categorization based on access (DPT-HepB-Hib 1 coverage) and utilization (DPT-HepB-Hib 1 vs. DPT-HepB-Hib 3 drop-out), FY 2074/75

Category 1 (less Problem) High Coverage (≥80%) Low Drop-Out (<10%)	Category 2 (Problem) High Coverage (≥80%) High Drop-out (≥10%)	Category 3 (Problem) Low Coverage (<80%) Low Drop-out (<10%)	Category 4 (Problem) Low Coverage (<80%) High Drop-out (≥10%)
Taplejung, Sankhuwasabha, Khotang, Bhojpur, Panchthar, Jhapa, Morang, Sunsari, Udayapur, Saptari, Bara, Parsa, Rasuwa, Sindhuli, Makwanpur, Myagdi, Syangja, Baglung, Rolpa, Pyuthan, Gulmi, Nawalparasi West, Rupandehi, Kapilbastu, Dang, Banke, Mugu, Dailekh, Salyan, Surkhet, Bajura, Bajhang, Darchula, Baitadi, Dadeldhura, Doti, Achham **37 districts**	Siraha, Dhanusa, Mahottari, Sarlahi, Rautahat, Kavreplanchowk, Chitwan, Rukum East, Dolpa, Humla, Jumla Kalikot, Jajarkot, Rukum West **14 districts**	Solukhumbu, Okhaldhunga, Dhankuta, Terhathum, Ilam, Dolakha, Sindhupalchok, Dhading, Nuwakot, Kathmandu, Bhaktapur, Lalitpur, Ramechhap, Gorkha, Manang, Mustang, Kaski, Lamjung, Tanahu, Nawalparasi East, Parbat, Arghakhanchi, Palpa, Bardiya, Kailali, Kanchanpur **26 distric**	**No distict**

Source: HMIS/MD, DoHS

Note: the given DPT-HepB-Hib 3 coverages used in the table above does not included delayed vaccines given after 1 year of age

Table 4.1.3 shows that 37 districts are in category 1 (good access, good utilization), 14 districts are in category 2 (good access, poor utilization), 26 districts are in category 3 (poor access, good utilization), and no districts are in category 4 (poor access, poor utilization).

4.1.8.7. Vaccine preventable diseases surveillance

One of the strategic objectives of cMYP 2017-21 is to accelerate, achieve and sustain vaccine preventable diseases control, elimination and eradication. Strategic approaches within this objective is to sustain polio-free status for the global eradication of the disease, achieve measles elimination and rubella/CRS control by 2019, accelerate JE control, sustain MNT elimination status, accelerate hepatitis B vaccination, and expand surveillance of other vaccine preventable diseases. While high coverages with vaccines included in routine immunization is important to achieve this objective, high quality surveillance is important to know the status of these diseases to progress towards achievement of this objective.

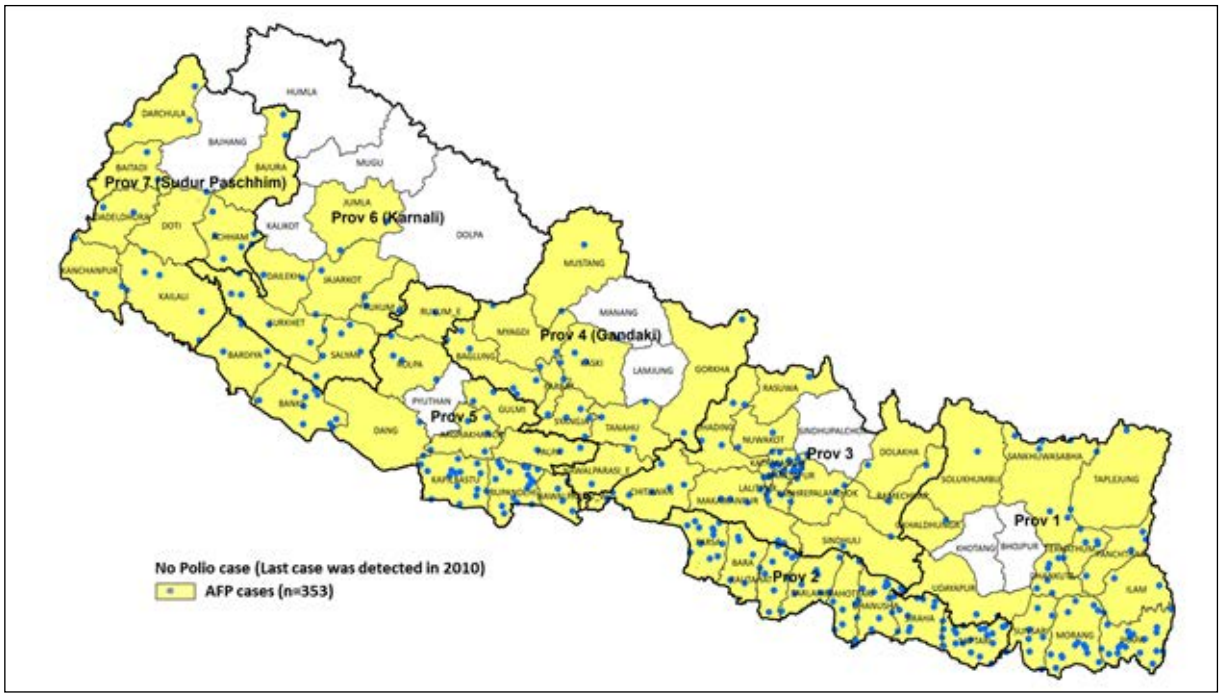
To support polio eradication activities, surveillance of acute flaccid paralysis for polio was started in Nepal in 1998. In 2003, measles (and rubella) and neonatal tetanus surveillance was integrated in the AFP/polio surveillance network. In 2004, surveillance of acute encephalitis syndrome for Japanese encephalitis was integrated in the AFP/polio surveillance network. Supported by WHO-IPD, surveillance for these diseases are conducted throughout the country through 735 routine weekly zero reporting sites, 79 active surveillance sites, 520 case-based measles surveillance sites and more than 1100 informers. Further, sentinel surveillance of invasive bacterial diseases, rotavirus, and congenital rubella syndrome are also conducted in Nepal.

Sentinel surveillance for invasive bacterial diseases (pneumococcus, Hib, and meningococcus) has been conducted at Patan Hospital with WHO support since 2009. Similarly, sentinel surveillance for rotavirus disease has been conducted at Kanti Children's Hospital (clinical site) and Public Health Research Laboratory, TUTH, IOM (laboratory site) with WHO support since 2009. Surveillance data from IBD sentinel surveillance site was crucial for informed introduction of Haemophilus influenzae type b vaccine (introduced in 2009), and pneumococcal conjugate vaccine (introduced in 2015) in routine immunization of Nepal. Similarly, data from rotavirus sentinel surveillance site was crucial for informed recommendation for rotavirus vaccine introduction in Nepal. In February 2018, rotavirus sentinel surveillance sites have been expanded to two more sites with geographical representation – B.P. Koirala Institute of Health Sciences and Nepalgunj Medical College. Further, sentinel surveillance of CRS (congenital rubella syndrome) is conducted through four sentinel sites in Kathmandu Valley. (Surveillance data given below have been calculated from mid-July to mid-July to align with the government fiscal year).

4.1.8.8 Acute flaccid paralysis surveillance, FY 2074/75

The last case of polio in Nepal was reported in August 2010. Along with the other countries in the South East Asia Region, Nepal was certified polio free in 2014. Since then, Nepal has maintained this status. For sensitive surveillance of polio, there are two main cardinal indicators: 1) non-polio AFP rate which should be at least 2 per 100,000 under 15 years population, and 2) adequate stool collection rate which should be 80% or more.

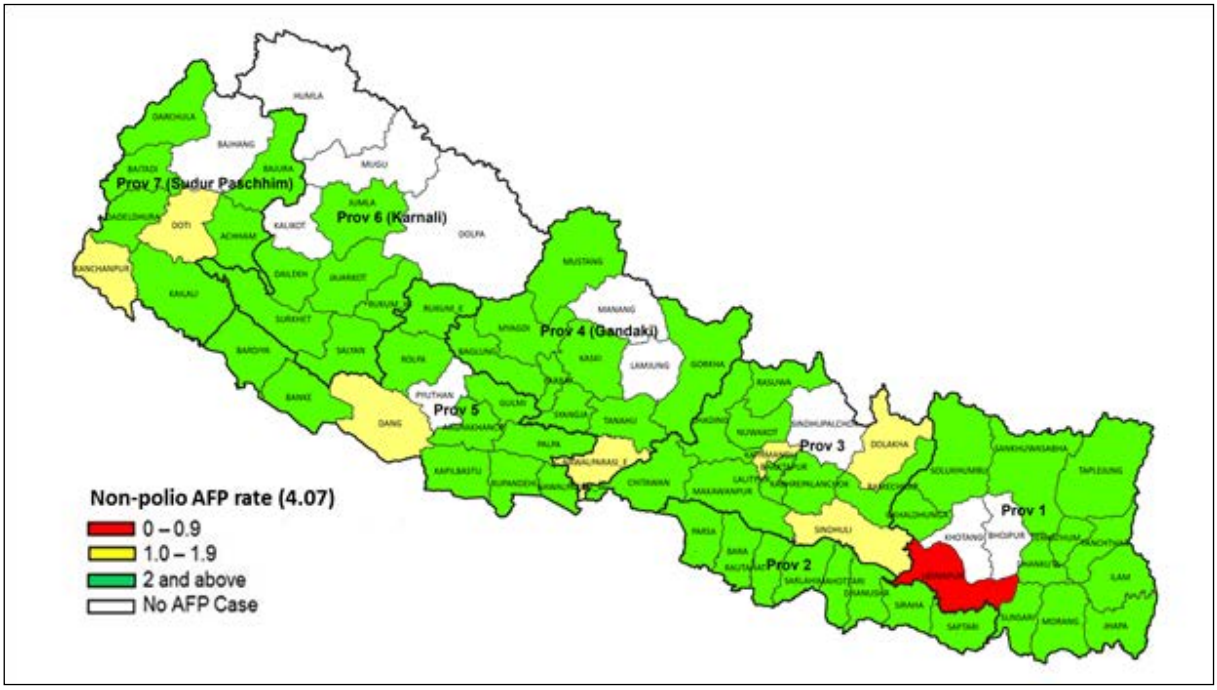
Figure 4.1.11. Reported acute flaccid paralysis (AFP) cases by district, FY 2074/75



Source: FWD and WHO-IPD, Nepal

Figure 4.1.11 shows total reported AFP cases by district for FY 2074/75. The total number of AFP cases reported were 353 cases from 66 districts. The remaining 11 districts (Humla, Mugu, Dolpa, Bajhang, Kalikot, Pyuthan, Manang, Lamjung, Sindhupalchok, Khotang and Bhojpur) did not report any AFP case. Most of these districts are sparsely populated with relatively less number of under 15 years age population. At least one AFP case per year from any district with 50,000 under 15 years population is expected for quality surveillance of AFP.

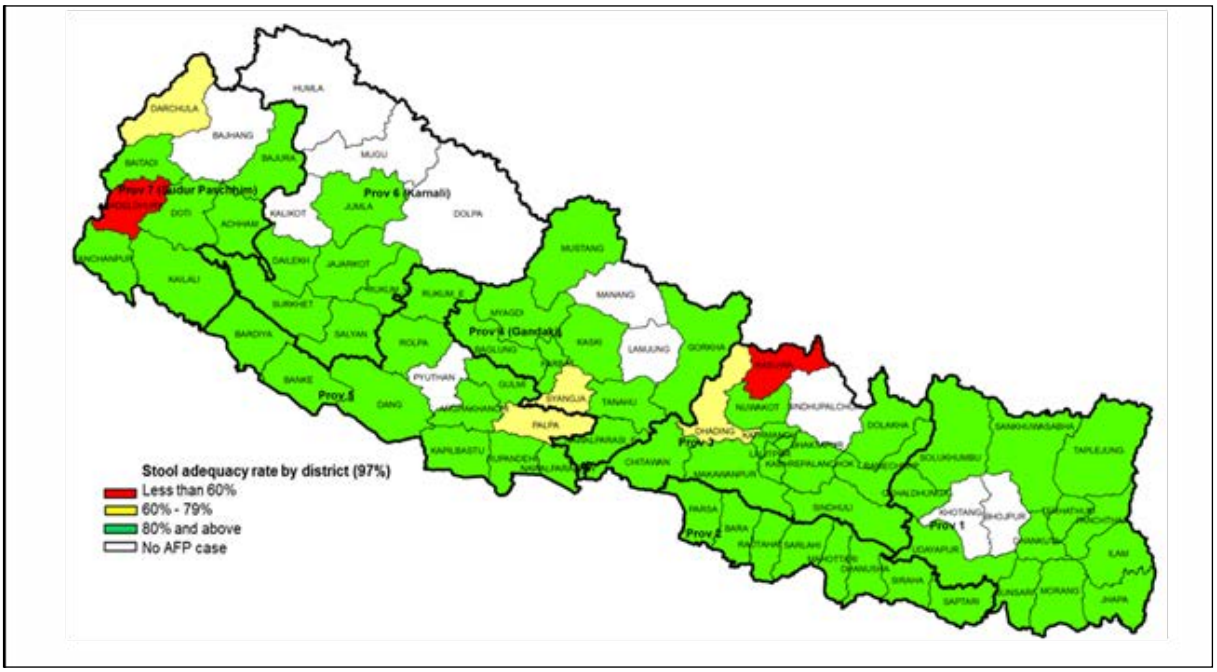
Figure 4.1.12. Non-polio Acute Flaccid Paralysis (NP AFP) rate by district, FY 2074/75



Source: FWD and WHO-IPD, Nepal

Figure 4.1.12 shows non-polio AFP rate by district. National non-polio AFP rate is 4.07 per 100,000 under 15 years population, which is above the required rate of at least 2. There are 66 districts which have reported AFP cases, out which 58 districts have met the non-polio AFP target rate of 2 or more, whereas 7 districts have non-polio AFP rate between 1 – 1.9, and 1 district has non-polio AFP rate below 1 per 100,000 under 15 years population.

Figure 4.1.13. Adequate stool collection rate of AFP cases by district, FY 2074/75



Source: FWD and WHO-IPD, Nepal

Figure 4.1.13 shows adequate stool collection rate from reported AFP cases. The national AFP stool collection rate is 97%, which is above the target of 80% or more for this indicator. Out of the 66 districts which have reported AFP cases, the majority have achieved adequate stool collection rate of at or above 80% except four districts with the rate between 60%-79%, and two districts with adequate stool collection rate less than 60%.

Table 4.1.4. Non-polio AFP rate and stool collection adequacy rate by province, FY 2074/75

Province	NP AFP Cases	NP AFP Rate	Stool Adequacy
Province no. 1	70	4.85	97
Province no. 2	88	4.88	100
Province no. 3	52	2.81	94
Gandaki	28	3.78	96
Province no. 5	70	4.76	99
Karnali	20	3.83	100
Sudur Paschhim	25	2.96	92
Total	**353**	**4.07**	**97**

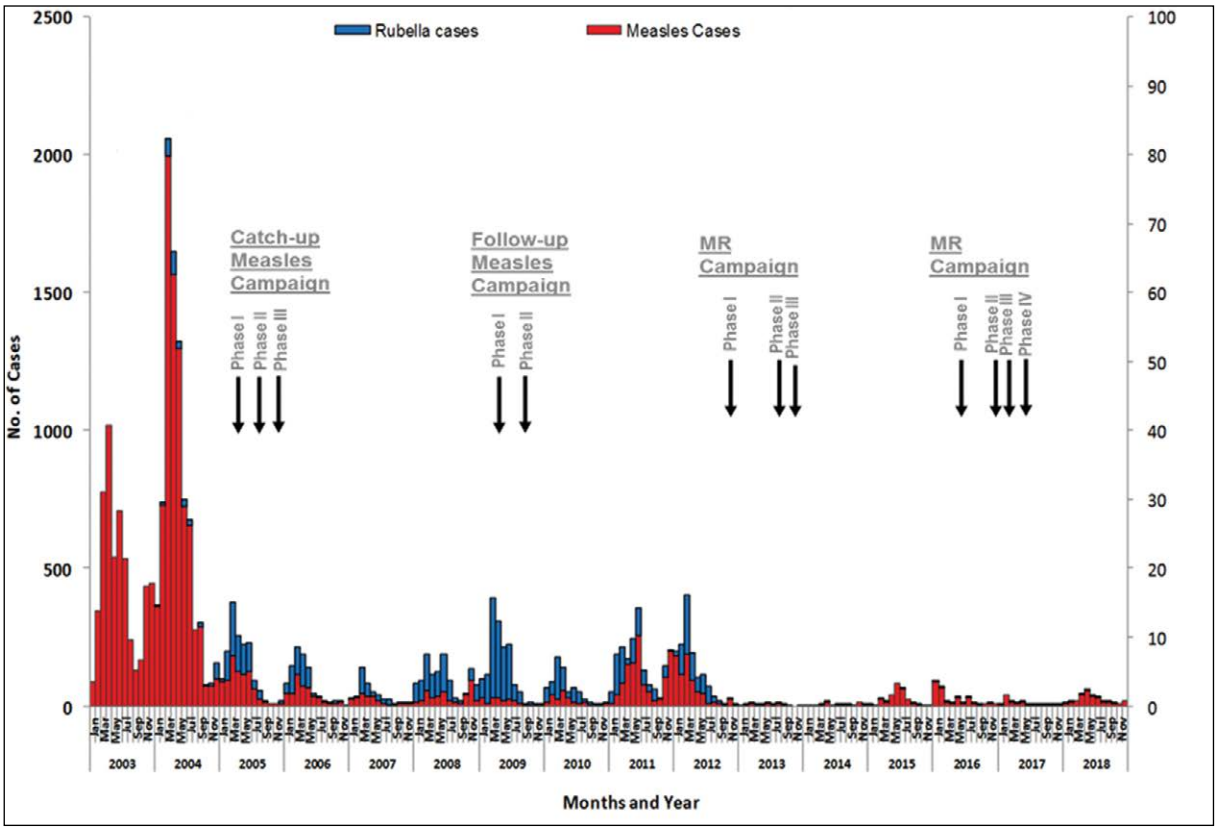
Source: FWD and WHO-IPD, Nepal

The Table 4.1.4 shows non-polio AFP cases and rate, and adequate stool collection rate by province. Each province has achieved non-polio AFP rate above 2 per 100,000 under 15 years population, and adequate stool collection rate above 80%. Province 1, 2 and 5 have reported non-polio AFP rate above 4. Province 2 and Karnali Province have achieved 100% adequate stool collection rate.

4.1.8.9 Measles-rubella surveillance, FY 2074/75

In August 2018, Nepal was certified as having achieved control of rubella and congenital rubella syndrome. This certification is two years ahead of the regional target year of 2020 and one year ahead of the national target of 2019. Control of rubella and CRS is achieved if there is 95% or more reduction in number of rubella cases from 2008 levels. Nepal achieved 97% reduction by 2017. However, even though reduction in number of measles cases has been 98% in 2017 compared to 2003 levels, measles cases have not been reduced to zero which is required for measles elimination. Figure 4.1.14 shows that there has been drastic reduction in measles and rubella cases in Nepal. Supplementary immunization activities, introduction of rubella vaccine, and achievement of high coverage of measles-rubella first dose in routine immunization have been the main factors for this achievement. For elimination of measles, high coverage of both doses of measles-rubella vaccination is required (≥ 95%). The coverage of measles-rubella second dose is still not satisfactory at only 66% in FY 2074/75.

Figure 4.1.14. Confirmed measles and rubella cases, Nepal, 2003-2018



Source: FWD and WHO-IPD, Nepal

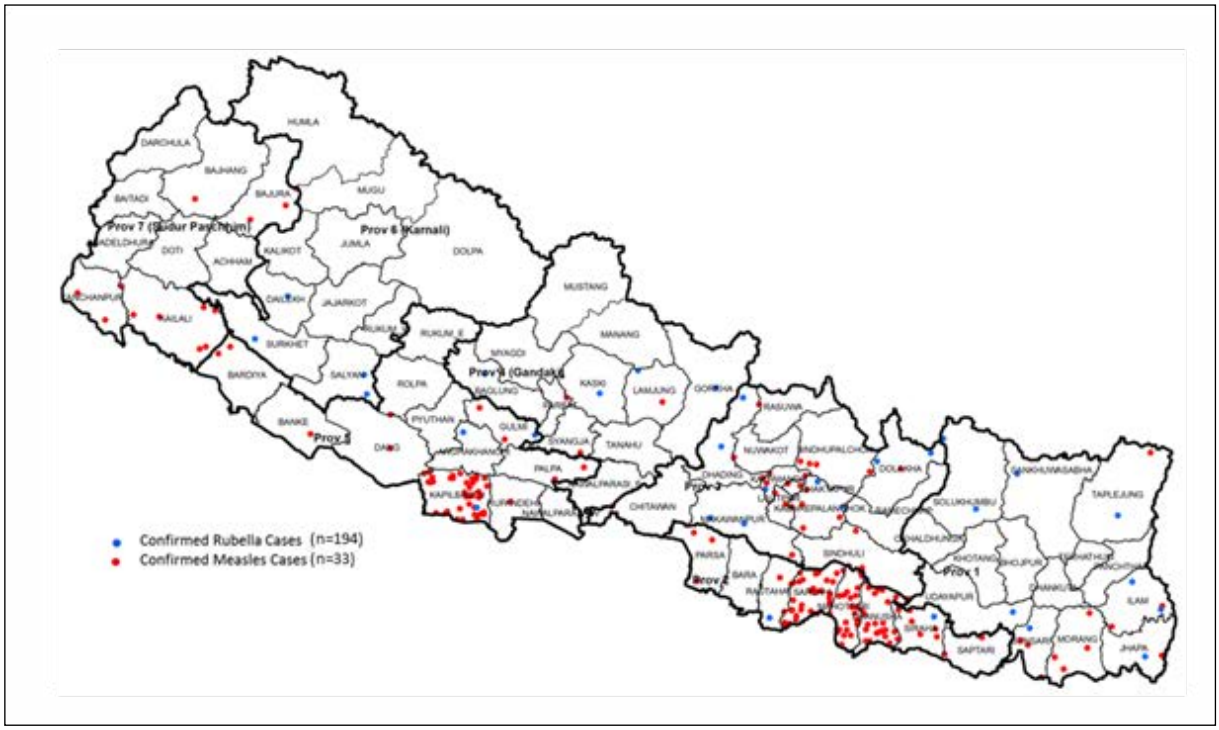
Measles vaccination given in Nepal since the start of EPI in all districts (covered 75 districts by 1988)

MR first dose started in 2013; MR second dose started in September 2015

Figure 4.1.15 and Table 4.1.5 shows laboratory confirmed measles and rubella cases by district and province respectively in FY 2074/75. There were a total of 193 confirmed measles and 33 confirmed rubella cases identified through suspected measles surveillance. This includes a total of five confirmed measles outbreak with combined total 83 confirmed measles cases. Among total confirmed measles cases in FY 2074/75, the majority is from Province 2 (47%), followed by Province 5 (25%). Province 2 and Province 5 combined account for 72% of confirmed measles cases in Nepal in FY 2074/75.

One of the cardinal indicators for measles-rubella surveillance is non-measles non-rubella rate (NMNR rate) which should be at least 2 per 100,000 population. That is, at least 2 suspected measles/rubella cases (which after laboratory test is non-measles and non-rubella) per 100,000 population should be reported for quality measles-rubella surveillance. All provinces except Sudur Paschim have achieved NMNR rate above 2. The national NMNR rate is 3.73 per 100,000 population.

Figure 4.1.15. Confirmed measles and rubella cases by district, FY 2074/75



Source: FWD and WHO-IPD, Nepal

Table 4.1.5. NMNR rate, and confirmed measles and rubella cases by province, FY 2074/75

Province	NMNR cases	NMNR rate	Confirmed Measles	Confirmed Rubella
Province no. 1	244	5.05	11	9
Province no. 2	253	4.20	92	3
Province no. 3	250	4.04	25	9
Gandaki	106	4.26	4	4
Province no. 5	115	2.33	48	3
Karnali	69	3.96	0	5
Sudur Paschim	46	1.63	14	0
Total	**1083**	**3.73**	**194**	**33**

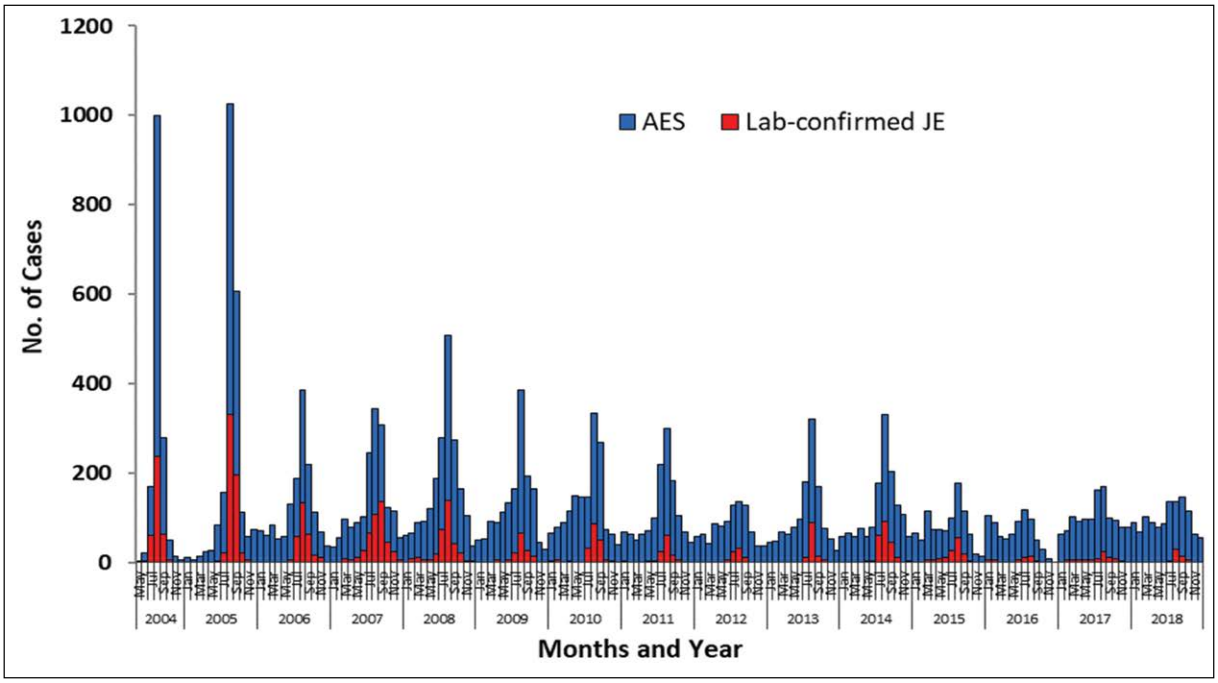
Source: FWD and WHO-IPD, Nepal

NMNR: non-measles non-rubella

4.1.8.10 Acute encephalitis syndrome (AES) surveillance, FY 2074/75

As a concentrated Japanese encephalitis (JE) control measure, phase-wise mass vaccination campaigns were started in 2006 and were completed in 31 high-risk districts by 2011. JE vaccine was introduced in phase-wise manner in the routine immunization of these 31 districts by 2012. After these measures were taken, JE burden reduced significantly in Nepal. However, over the years, as identified by surveillance, JE was reported from other districts of Nepal as well. Following mass-vaccination campaign in the remaining districts in 2016, JE vaccine was introduced in the routine immunization of all remaining 44 districts in July 2016. As shown in Figure 2.1.16, JE burden in Nepal has reduced significantly in 2018 compared to the initial years when surveillance was started.

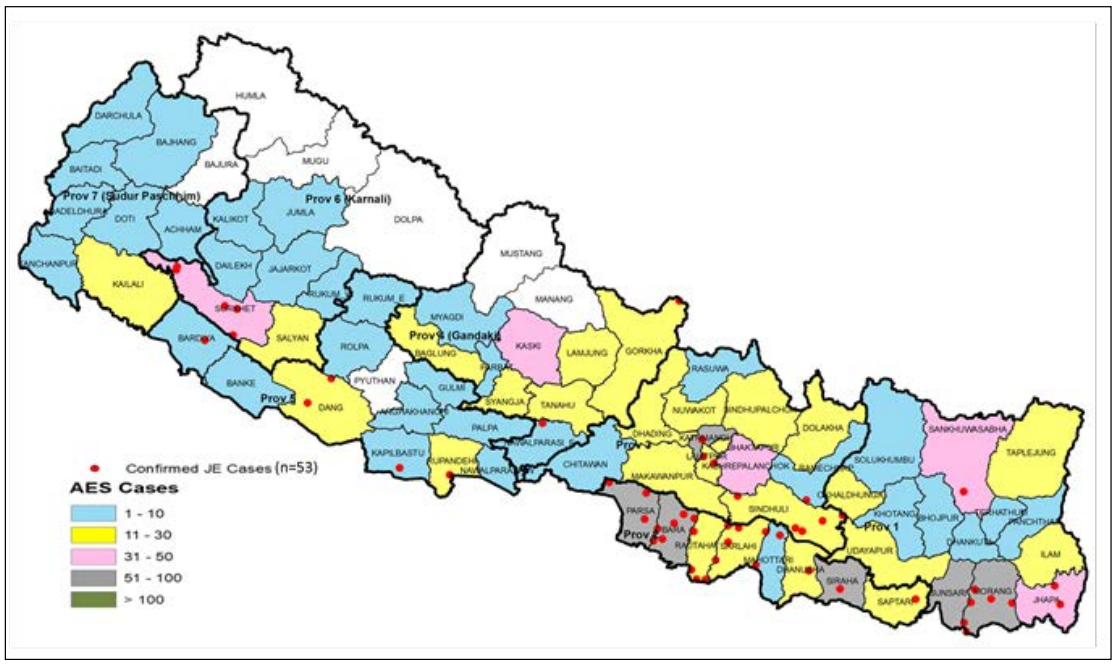
Figure 4.1.16. Reported AES and lab confirmed Japanese encephalitis cases, Nepal, 2004 - 2018



Source: FWD and WHO-IPD, Nepal

Figure 4.1.17 shows that 70 districts have reported AES cases in FY 2074/75. Out of these 70 districts, six districts (Kathmandu, Parsa, Bara, Siraha, Sunsari, Morang) have reported higher number of AES cases (between 51-100). In total, 1186 cases of AES were reported (Table 4.1.6), with the majority from Province 1, 2, and 3. Among the total reported AES cases, only 53 (4.5%) were laboratory confirmed for JE. This is a major reduction compared to the years before JE vaccination was started when around 50% of the AES cases were positive for JE. The majority of laboratory confirmed JE cases (23 out of 53; 43.4%) were reported from Province 2.

Figure 4.1.17. Reported AES and laboratory confirmed Japanese encephalitis cases by district, FY 2074/2075



Source: FWD and WHO-IPD, Nepal

Table 4.1.6. Reported AES cases and confirmed JE cases by province, FY 2074/75

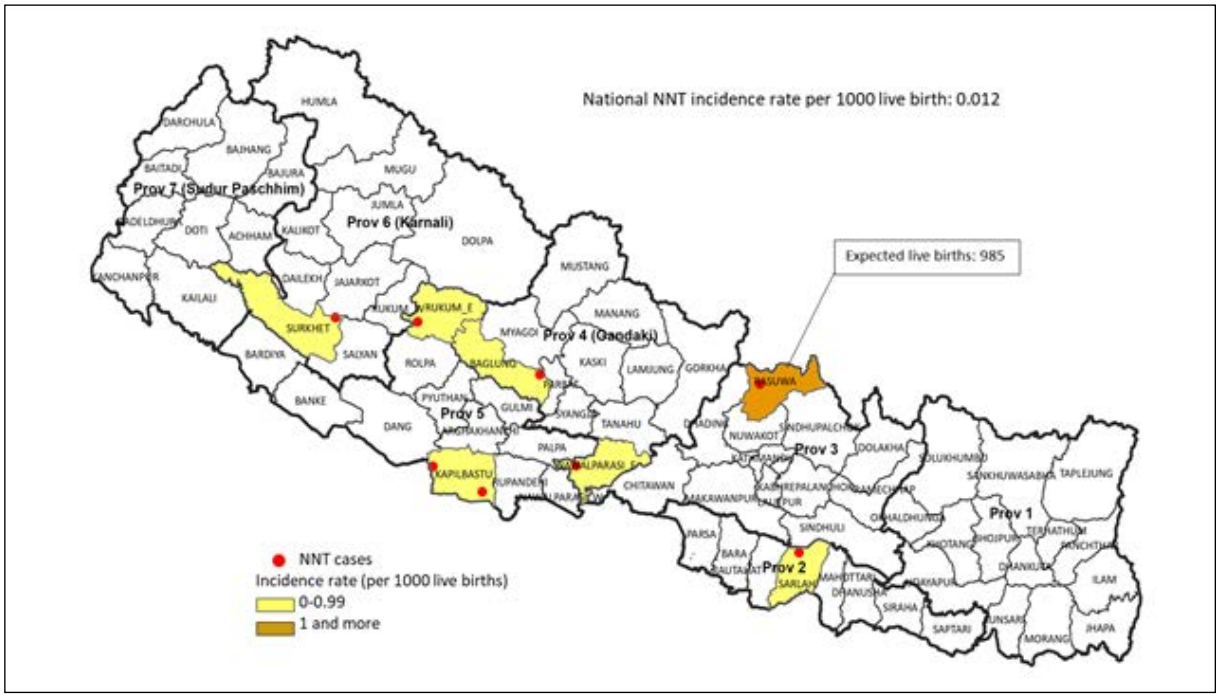
Province	AES cases	JE cases
Province no. 1	313	9
Province no. 2	313	23
Province no. 3	270	9
Gandaki	112	2
Province no. 5	71	5
Karnali	61	5
Sudur Paschim	46	0
Total	**1186**	**53**

Source: FWD and WHO-IPD, Nepal

4.1.8.11 Neonatal tetanus surveillance, FY 2074/75

In Nepal, neonatal tetanus (NNT) elimination was achieved in 2005. This status has been maintained since then. In FY 2074/75, 8 NNT cases were reported (1 each from 6 districts, and 2 cases from 1 district; Fig 2.1.18). The national incidence rate of NNT is 0.012 per 1000 live births.

Figure 4.1.18. Neonatal tetanus cases, FY 2074/75



Source: FWD and WHO-IPD, Nepal

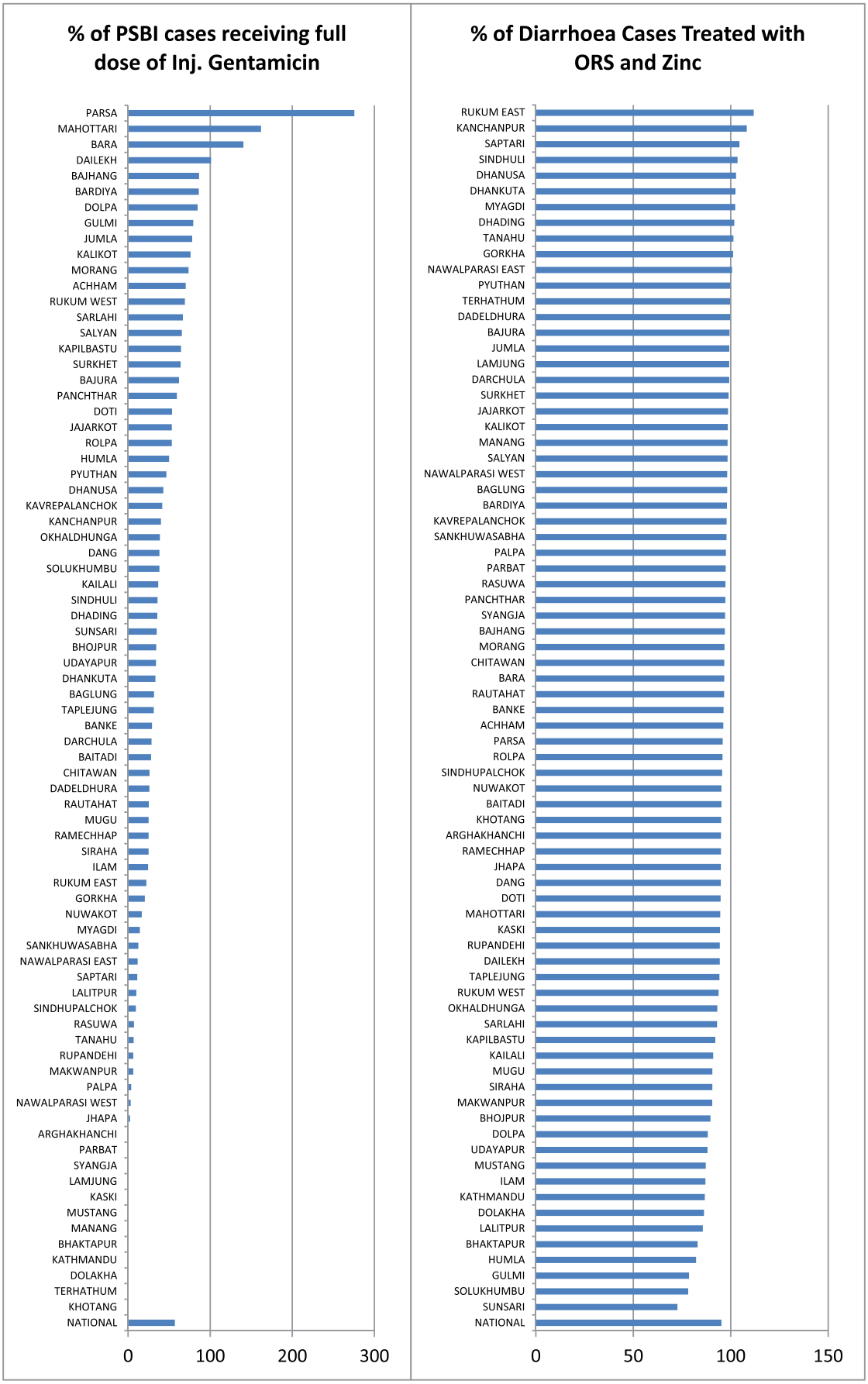
4.1.8.12 Problems/constraints and actions to be taken

National Annual Review 2017/18 (2075 mangsir 2-3) identified the following problems and constraints and recommended action to be taken at different levels of immunization delivery system.

Table 4.1.7 problems identified during FY 2074/75, action to be taken and responsibility

Problems/Constraints	Action to be taken	Responsibility
1.Delay in procurement and supply	▪ Framework agreement guideline approval process in progress Technical support to province for procurement and supplies related issues	MoHP/DoHS/DHO, Local Government
2.Mechanism of supply chain management	▪ Three tier supply chain management system to be developed ▪ Federal (federal level health facilities and 7 provinces) ▪ Provincial (provincial level health facilities and 753 local) ▪ Local (within the local government)	MoHP/DoHS/FWD
3.Inadequate HRH especially in Metro/Sub - Metropolitan, MCH / Institutional clinics and ill-defined JD of AHW & ANM (for vaccinations)	Provision for sufficient vaccinators for the Metro / Sub - Metropolitan, MCH / Institutional Clinics Incorporate responsibility of delivering immunization service in Job Description of all HA, SAHW, AHW/ANM to conduct immun.ization sessions	
4.Poor quality immunization data: Under and over reporting	Joint supportive supervision of Immunization as per HMIS. Strengthen supportive supervision at all levels Quarterly review of performance of data at HF/DHO level as –HMIS 9.2, 9.3 and 2.5 Provision of DQSA to the Provincial health directoriat and Municipal.	MoHP, MoFALD, DoHS/FWD, Province, municipal
5.Poor Inventory keeping and distribution system	Update inventory of cold chain equipment with their cold chain capacity and vaccine, syringes, diluents etc. and use of stock control register. Maintain maximum and minimum stock level. Always make vaccine requisition by deducting the stock at hand from maximum stock level of vaccine/ syringes/diluents at all levels	MoHP/DoHS/DHO, Local Government

6.Poor Cold Chain and Vaccine management	Effective implementation of EVM training at all level Supportive supervision and onsite coaching at all levels Strengthen bundling ▪ Sharing of district stores by multiple nearby palikas - MoHP will support and facilitate local governments to establish their own stores (EDPs are encouraged to provide support) ▪ Development of model cold chain system in selected local governments ▪ Province level medical stores will be established in Province 2 and Karnali provinces – in progress	MoHP/DoHS/DHO, Local Government
7.Inadequate CC Equipment and inadequate repair, maintenance and replacement, lack of technician	Provision of engineer and refrigerator technician at regional / provincial level Supply of cold chain spare parts Replacement of ageing equipment regular repair of cold chain equipment	Mohp/Dohs/FWD
8.Delayed release of budget specially by partners		Mohp/Dohs/FWD
9.Inadequate Vaccine Store Capacity specially central level	Strengthen the vaccine stores with new buildings in central store Establishment of new vaccine store at Province No.6.	MoHP, DoHS, MD, FWD
MR 2 vaccines not implemented in some district	Effective Implementation of MR 2 in all districts	MoHP, DoHS/ FWD,Province, municipal
Measles outbreak in some district	Conduction of Outbreak Response Immunization program Strengthen routine vaccination program Effective implementation of MR2 in all district or heath facility where it has not yet been started Active surveillance of measles	MoHP, DoHS/FWD, Province, municipal
Delay in supply of vaccines due to delay in purchase and vaccines shortage	Judicious purchase of vaccine in sufficient quantity Strengthen vaccine supply chain management	MoHP, DoHS/FWD,


% of PSBI cases receiving full dose of Inj. Gentamicin
PARSA
MAHOTTARI
BARA
DAILEKH
BAJHANG
BARDIYA
DOLPA
GULMI
JUMLA
KALIKOT
MORANG
ACHHAM
RUKUM WEST
SARLAHI
SALYAN
KAPILBASTU
SURKHET
BAJURA
PANCHTHAR
DOTI
JAJARKOT
ROLPA
HUMLA
PYUTHAN
DHANUSA
KAVREPALANCHOK
KANCHANPUR
OKHALDHUNGA
DANG
SOLUKHUMBU
KAILALI
SINDHULI
DHADING
SUNSARI
BHOJPUR
UDAYAPUR
DHANKUTA
BAGLUNG
TAPLEJUNG
BANKE
DARCHULA
BAITADI
CHITAWAN
DADELDHURA
RAUTAHAT
MUGU
RAMECHHAP
SIRAHA
ILAM
RUKUM EAST
GORKHA
NUWAKOT
MYAGDI
SANKHUWASABHA
NAWALPARASI EAST
SAPTARI
LALITPUR
SINDHUPALCHOK
RASUWA
TANAHU
RUPANDEHI
MAKWANPUR
PALPA
NAWALPARASI WEST
JHAPA
ARGHAKHANCHI
PARBAT
SYANGJA
LAMJUNG
KASKI
MUSTANG
MANANG
BHAKTAPUR
KATHMANDU
DOLAKHA
TERHATHUM
KHOTANG
NATIONAL
0
100
200
300
% of Diarrhoea Cases Treated with ORS and Zinc
RUKUM EAST
KANCHANPUR
SAPTARI
SINDHULI
DHANUSA
DHANKUTA
MYAGDI
DHADING
TANAHU
GORKHA
NAWALPARASI EAST
PYUTHAN
TERHATHUM
DADELDHURA
BAJURA
JUMLA
LAMJUNG
DARCHULA
SURKHET
JAJARKOT
KALIKOT
MANANG
SALYAN
NAWALPARASI WEST
BAGLUNG
BARDIYA
KAVREPALANCHOK
SANKHUWASABHA
PALPA
PARBAT
RASUWA
PANCHTHAR
SYANGJA
BAJHANG
MORANG
CHITAWAN
BARA
RAUTAHAT
BANKE
ACHHAM
PARSA
ROLPA
SINDHUPALCHOK
NUWAKOT
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ARGHAKHANCHI
RAMECHHAP
JHAPA
DANG
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MAHOTTARI
KASKI
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KATHMANDU
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SOLUKHUMBU
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NATIONAL
0
50
100
150

4.2 Integrated Management of Neonatal and Childhood Illnesses

4.2.1 Background

Chronological development:

Community Based-Integrated Management of Childhood Illness (CB-IMCI)

In Nepal, Child survival intervention began when Control of Diarrhoeal Disease (CDD) Program was initiated in 1983. Further, Acute Respiratory Infection (ARI) Control Program was initiated in 1987. To maximize the ARI related services at the household level, referral model and treatment model at the community level were piloted. An evaluation of this intervention in 1997 revealed that treatment model was more effective and popular in the community than referral model. In 1997/98, ARI intervention was combined with CDD and named as CB-AC program. One year later two more components, nutrition and immunization, were also incorporated in the CBAC program. IMCI program was piloted in Mahottari district and was extended to the community level as well. Finally, the government decided to merge the CBAC into IMCI in 1999 and named it as Community-Based Integrated Management of Childhood Illness (CB-IMCI). CB-IMCI included the major childhood killer diseases like pneumonia, diarrhoea, malaria, measles, and malnutrition. The strategies adopted in IMCI were improving knowledge and case management skills of health service providers, overall health systems strengthening and improving community and household level care practices. After piloting of low osmolar ORS and Zinc supplementation, it was incorporated in CB-IMCI program in 2005. Nationwide implementation of CB-IMCI was completed in 2009 and revised in 2012 incorporating important new interventions.

Community-BasedNew Born Care Program

Up to 2005, Nepal had made a huge progress in reduction of under-five and infant mortality, however, the reduction of neonatal mortality was observed to bevery sluggish because the country had no targeted interventions for newborns especially at community level. State of world report, WHO showed that major causes of mortality were infections, asphyxia, low birth weight and hypothermia. The Government of Nepal formulated the National Neonatal Health Strategy 2004. Based on this 'Community-Based New Born Care Program (CB-NCP)' was designed in 2007, and piloted in 2009. CB-NCP incorporated seven strategic interventions: behaviour change communication, promotion of institutional delivery, postnatal care, management of neonatal sepsis, care of low birth weight newborns, prevention and management of hypothermia and recognition and resuscitation of birth asphyxia. Furthermore, in September 2011, Ministry of Health and Population decided to implement the Chlorhexidine (CHX) Digluconate (7.1% w/v) aiming to prevent umbilical infection of the newborn. The government decided to scale up CB-NCP and simultaneously, the program was evaluated in 10 piloted districts. Upto 2014, CB-NCP was implemented in 41 districts covering 70% population.

As a result of CB-IMCI program strategy, the prevalence of pneumonia and diarrhoea has reduced significantly over the last decades. The care-seeking practices and household level practices have been improved. CB-IMCI program has become one of the role models for a community-based program of Nepal. Other interventions which have ahighcontribution to the reduction of post-neonatal child mortality arebi-annual supplementation of Vitamin A program, expanded program on immunization. On the other hand, essential newborn care practices were improved in CB-NCP implemented districts.

In both of the programs (CB-IMCI and CB-NCP), FCHVs were considered as frontline health service providers but quality and coverage of service were very low. CB-NCP and CB-IMCI have similarities in interventions, program management, service delivery and target beneficiaries. Both programs have duplicated interventions like management of neonatal sepsis, promotion of essential newborn care practices, infection prevention, and management of low birth weight. Though FCHVs are doing very good on the promotion of healthy behaviours, they are found poorly performing in service delivery. Moreover, they are overburdened with workloads and massive resource was used in a fragmented manner for the same purpose. Also, inequity in quality service delivery and utilization are the major challenges in newborn and child health programs. Health governance issue is also affecting to better functioning of the health system. Considering the management of similar kind of two different programs, MoH decided to integrate CB-NCP and IMCI into a new package that is named as CB-IMNCI.

Community-Based Integrated Management of Newborn and Childhood Illnesses (CB-IMNCI)

CB-IMNCI is an integration of CB-IMCI and CB-NCP Programs as per the decision of MoH on 2071/6/28 (October 14, 2014). This integrated package of child-survival intervention addresses the major problems of sick newborn such as birth asphyxia, bacterial infection, jaundice, hypothermia, low birth-weight, counseling of breastfeeding. It also maintains its aim to address major childhood illnesses like Pneumonia, Diarrhoea, Malaria, Measles and Malnutrition among under 5 year's children in a holistic way.

In CB-IMNCI program, FCHVs are expected to carry out health promotional activities for maternal, newborn and child health and dispensing of essential commodities like distribution of iron, zinc, ORS, chlorhexidinewhich do not require assessment and diagnostic skills, and immediate referral in case of any danger signs appeared among sick newborn and children. Health workers will counsel and provide the health services like management of non-breathing cases, low birth weight babies, common childhood illnesses, and management of neonatal sepsis. Also the program has provisioned for the post-natal visits by trained health workers through primary health careoutreach clinic.

Development of IMNCI training site has already been started. The program has envisioned that CHD will act as the quality assurance and monitoring entity forthe CB-IMNCI program. Clinical training sites and PHTC will be the lead agency for training in near future. IMNCI section has been focusing on the phase-wise implementation of the program with continuous monitoring and supportive supervision to strengthen the program and onsite coaching to enhance the clinical skill among health workers. CB-IMNCI program has been implemented in 77 districts.

Facility-Based Integrated Management of Childhood and Neonatal Illnesses

The Facility-Based Integrated Management of Neonatal and Childhood Illnesses(FB-IMNCI)package has been designed specially to address childhood cases referred from peripheral level health institutions to higher institutions. The package is linked strongly with the on-going Community Based Integrated Management of Neonatal and Childhood Illness (CB-IMNCI). The package is expected to bridge the existing gap in the management of complicated neonatal and childhood illnesses and conditions. With the gradual implementation of this package, further improvement in neonatal and child health can be expected. This package addresses the major causes of childhood illnesses including Emergency Triage and Treatment (ETAT) and thematic approach to common childhood illnesses towards diagnosis and treatment especially newborn care, cough, diarrhoea, fever, malnutrition and anemia. It also trains common childhood procedures needed for the diagnosis and treatment. It aims to capacitate team of health workers at district hospital with required knowledge and skills to manage complicated under-five and neonatalcases and to ensure timely and effective management of referralcases. This training

package will be delivered to paramedics and nursing staffs (3 days) and doctors (6 days) district, zonal, sub-regional and regional hospitals.

Comprehensive Newborn Care Training package

As indicated by various evidences, extra efforts are necessary for overcoming barriers to accelerate the reduction in neonatal mortality. As a result of the step towards reducing these newborn deaths, "Comprehensive Newborn Care Training Package (For Level II Hospital Care)" was developed in order to provide training to paediatricians, senior medical officers and medical officers working in the hospitals providing level II care services. This will help on building a strengthened health system supported by fully trained and skilled health workers in all tiers of health facilities. This is a 6 days training package focused to help the health workers to develop basic skills and knowledge necessary for management of normal as well as sick newborn. This package covers counselling, infection prevention, care of normal newborn, feeding, neonatal resuscitation, thermal protection, fluid management, identification and management of sick neonates, disorder of weight and gestation, neonatal sepsis and common neonatal procedures. The training was started from 19th December, 2016 and has covered all development regions.

In this fiscal year, National Health Training Centre has developed Comprehensive Newborn Care Training (Level II) package and has been conducting training for Nurses in coordination with Family Welfare Division.

Free Newborn Care Services

The Government of Nepal (GoN) has made provisions on treating sick newborn free of cost through all tiers of its health care delivery outlets. The aim of this program is to prevent any sorts of deprivation to health care services of the newborn due to poverty. Based on the treatment services offered to the sick-newborn, the services are classified into 3 packages: A, B and C. The new born corners in health posts and PHCs offer Package 'A', district hospitals with Special Newborn Care Unit (SNCU) offer Package 'B' and zonal hospitals and other tertiary hospitals offering Neonatal Intensive Care Unit (NICU) provide services for Package 'C'. The government has made provisions of required budget and issued directives to implement the free newborn care packages in Nepal. The goal of the Free Newborn Care Service Package is to achieve the sustainable development goal through increasing access of the newborn care services to reduce newborn mortality. The program makes the provision of disbursing **Cost of Care** to respective health institutions required for providing free care to inpatient sick newborns.

4.2.2 Goals, targets, objectives, strategies, interventions and activities of IMNCI program

- **Goal**
  - Improvenewbornandchildsurvivalandhealthygrowthanddevelopment.
- **Targets of Nepal Health Sector Strategy (2015-2020)**
  - Reduction of Under-five mortality rate (per 1,000 live births) to 28 by 2020
  - Reduction of Neonatal mortality rate (per 1,000 live births) to 17.5 by 2020

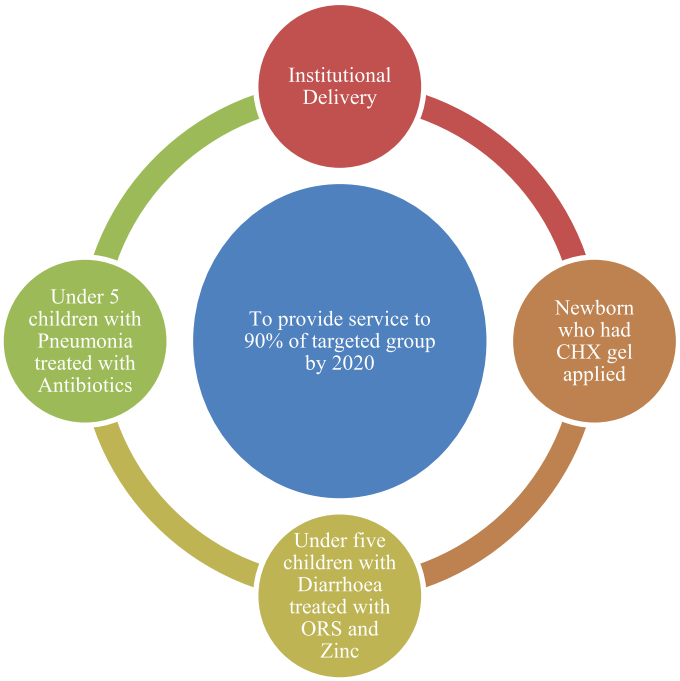
- **Objectives:**
  - To reduce neonatal morbidity and mortality by promoting essential newborn care services
  - To reduce neonatal morbidity and mortality by managing major cause so fillness
  - To reduce morbidity and mortality by managing major causes of illness among under 5 years children
- **Strategies**
  - Quality of care through system strengthening and referral services for specialized care
  - Ensure universal access to health care services for new born and young infant
  - Capacity building of frontline health workers and volunteers
  - Increase service utilization through demand generation activities
  - Promote decentralized and evidence-based planning and programming

4.2.3 Major interventions

- **Newborn SpecificInterventions**
  - Promotion of birth preparedness plan
  - Promotion of essential new born care practices and postnatal care to mothers and newborns
  - Identification and management of non-breathing babies at birth
  - Identification and management of pre termand low birth weight babies
  - Management of sepsis among young infants (0-59days) including diarrhoea
- **Child SpecificInterventions**
  - Case management of children aged between2 -59 months for 5 major childhood killer diseases (Pneumonia,Diarrhoea,Malnutrition,MeaslesandMalaria)
- **Cross-CuttingInterventions**
  - Behaviour change communications for healthy pregnancy, safe delivery and promote personal hygiene and sanitation
  - Improved knowledge related to Immunization and Nutrition and care of sick children
  - Improved interpersonal communication skills of HWs and FCHVs

Vision 90 by 20

Figure 4.2.1 CB IMNCI Program Vision



CB-IMNCI program has a vision to provide targeted services to 90% of the estimated population by 2020 as shown in the diagram below.

4.2.4 Major activities

Major activities carried out under the IMNCI programme in FY 2074/75 were as follows:

- FB-IMNCI training package piloting (for both Medical Officer and paramedics /nursing), revision of package, ToT and two batches of paramedics training conducted
- Two batches Comprehensive Newborn Care (Level II) training conducted
- Procurement of equipment for SNCU/NICU
- Procurement of equipment and medicines for IMNCI program
- Revision of Comprehensive Newborn Care (Level II), FB-IMNCI training package, Free newborn Care Guideline and Equity and Access Guideline
- Implementation of Free Newborn Care Services
- Implementation of Remote Area Guideline for CB-IMNCI program
- Establishment/Strengthening of SNCU
- Printing of CB-IMNCI, Comprehensive New born Care (Level II) Training Materials (Guidelines, Handbook, Chart, Flex, etc.)

4.2.5 CB-IMNCI Program Monitoring Key Indicators

Regular monitoring is important for better management of program. Therefore, CB-IMNCI program has identified 6 major indicators to monitor the programs that are listed below:

- % of Institutional delivery
- % of newborn who had applied Chlorhexidine gel immediately after birth (within one hour)
- % of infants (0-2 months) with PSBI receiving complete dose of Injection Gentamicin
- % of under 5 children with pneumonia treated with antibiotics
- % of under 5 children with diarrhoea treated with ORS and Zinc
- Stock out of the 5 key CB-IMNCI commodities at health facility (ORS, Zinc, Gentamicin, Amoxicillin/Cotrim, CHX)

All indicators except the last one are obtained from HMIS**.** It is expected that if there is high institutional delivery, there would be good essential newborn care and immediate management of complications like birth asphyxia that will ultimately contribute to reduce the neonatal mortality.

Status of CB-IMNCI programmemonitoring indicators are summarized below in as follows (Table 4.2.1).

Table 4.2.1: Status of CB-IMNCI programme monitoring indicators by province (FY 2074/75)

Province	% of institutional deliveries	% of newborns applied chlorhexidine (CHX) gel	% of PSBI cases received complete dose of inj. Gentamicin	% of pneumonia cases treated with antibiotics	% diarrhoeal cases treated with ORS and zinc
Province 1	49.12	42.66	44.89	172.7	89.8
Province 2	43.90	77.13	84.93	296.5	97.0
Province 3	52.78	48.10	21.35	147.8	93.5
Gandaki	45.99	50.66	13.85	218.6	98.7
Province 5	69.28	80.10	60.90	193.0	95.1
Karnali	60.15	81.50	73.43	173.8	96.4
Sudur Pachhim	67.80	78.04	53.12	160.2	97.8
National	**54.56**	**63.71**	**56.94**	**193.1**	**98.2**

Source: HMIS, 2074/75

National average for Institutional deliveries in 2074/75 was 54.56percent. By province the lowest was observed in Province 2(43.90%) and highest (67.80%) in Sudur Pachhim. Chlorhexidinewas applied in 63.71percentnew-born's umbilicus (HF+ FCHV) among total expected live births. The average use of CHX was highest (81.50%) in Karnali and lowest (42.66) in province 1 (42.66%).

Compliance of injection Gentamicin at national level for PSBI cases among under two months child was 56.94 percent, which was highest in province 2 (84.93%) and lowest in Gandaki (13.85%). Percentage of Under 5 years children with pneumonia treated with antibiotics (excluding FCHV) was 193.1percent. In the previous years, the pneumonia cases reported by FCHV were used to be included. But, from the last fiscal year the indicator is in the process of revision and the cases of pneumonia reported by FCHVs are excluded. The figure exceeded 100 percent because the treatment of cases by antibiotics other than

pneumonia was also added like skin infection, ear infection etc. which is actually the reporting error. As per CB-IMNCI treatment protocol, all diarrhoeal cases should be treated with ORS and Zinc. Based on HMIS data, U5 children suffering from diarrhoea treated with ORS and Zinc at National level was 98.20 percent, which was highest in Gandaki (98.70%) and lowest in province 1 (89.80 %).

4.2.6 Key Achievements forManagement of 0-28 day newborn

Since FY 2064/65, CB-IMCI services data (as received from Health Facilities, VHWs/MCHWs and FCHVs) has been incorporated into HMIS. Therefore, from FY 2064/65 onwards, service provided at community level (PHC/ORCs and FCHVs) is considered as community level data whereas total service provided from Health Facility level in addition with community level constitutes the national aggregated data for this program. CB-IMNCI program has been initiated from FY 2071/72 and from FY 2071/72 Health Facility Level and Primary Health Care/Out Reach Clinics (PHC/ORC) data has been incorporated into HMIS. Consequently, the role of FCHV at community level has been redefined and limited to counselling service for newborn care. Obviously, the treatment protocol has also been changed and role of FCHVs at the community level has been assigned as health promoters/counsellors rather than health service providers. As per the new reporting and recording system, the achievements of management of under 5 children are given in the table below.

Table 4.2.2: Classification and treatment of 0-28 day newborn cases by province (FY 2074/75)

Indicators	Year	Province 1	Province 2	Province 3	Gandaki	Province 5	Karnali	Sudur Pachhim	National	
									No.	% among total cases
Total cases (HF+ORC)	2073/74	4,573	2,370	2,989	1,888	5,694	3,967	4,261	**25,742**	**NA**
	2074/75	3,902	3,055	2,839	2,156	6,425	3,608	3,693	**2,5678**	**NA**
Possible severe bacterial infections (PSBI) (HF+ORC)	2073/74	578	217	246	124	1035	752	761	**3,713**	**14.4**
	2074/75	414	270	265	142	1,096	727	666	**3,580**	**13.9**
Local bacterial infections (HF+ORC)	2073/74	2,549	1,660	1,296	904	1,887	1,745	2,255	**12,296**	**47.8**
	2074/75	2,206	1,820	1,239	786	1,942	1,220	1,954	**11,167**	**43.5**
Jaundice (HF+ORC)	2073/74	298	122	320	296	339	181	184	**1,740**	**6.8**
	2074/75	255	149	252	324	280	144	121	**1,525**	**5.9**
% of Low weight or feeding problem (HF only)	2073/74	3.98	5.23	5.16	7.40	6.06	8.55	10.55	**1,605**	**6.8**
	2074/75	5.9	3.8	6.9	6.0	6.1	14.4	6.8	**1838**	**7.2**
Referred (HF+ORC)	2073/74	357	183	214	88	252	131	185	**1,410**	**5.5**
	2074/75	215	258	214	98	259	288	186	**1518**	**5.9**
Deaths (HF+ORC)	2073/74	7	2	13	2	45	12	23	**104**	**0.4**
	2074/75	12	1	11	4	30	19	14	**91**	**0.4**

FCHV										
Sick baby	2073/74	2,607	2,105	1,794	783	1,982	1,391	2,357	**13,019**	**NA**
	2074/75	2,671	2,285	1,862	653	2,469	1,535	1,782	**13,257**	**NA**

Source: HMIS, 2074/75

In FY 2074/75, a total of 25,678 newborns cases were registered and treated at health facilities and PHC/ORC level (HF-23,854 and PHC/ORC-1824) which is slightly less than that of previous year by 64 in total. Province 5 (6,425) had highest number of registered cases followed by province 1 (3,902) and least case load was in Gandaki (2,156). Out of total registered cases in FY 2074/75, 3,580 cases were classified as Possible Severe Bacterial Infection (PSBI) which accounts for 13.9 percent at national level which is slightly less than that of previous year (14.4%).

The proportion of PSBI was highest in Karnali (20.1%) followed by Sudur Pachhim (18%). Among the total registered cases at the national level (Health facilities and PHC-ORC level), 43.5 percent cases were classified as LBI, 5.9% as Jaundice, and 7.2% as Low Birth weight or Breast Feeding Problem. The proportion of LBI and Jaundice decreases compared to last year whereas Low Birth weight or Breast Feeding Problem increased which were 47.8%, 6.8% and 6.8% respectively last year. Among the total registered cases the proportion of LBI was highest in province 2 (59.6%) followed by Province 1 (56.5%) with the least in Province 5 (30.2%). All classified cases were treated accordingly following the national protocol and out of the total recorded cases (25,678) in FY 207/75, i.e. 26.3 (27.5) percent were treated by Amoxycillin paediatrics , 5.9 (5.5) percent cases were referred and 0.35 percent was reported dead from health facilities and PHC-ORC level. There was slight increase in proportion treated by Amoxycillin paediatrics and referral which was 26.3% and 5.5% respectively. However the proportion of death slightly decreased from 0.4%.

4.2.7 Key achievement for Management of 2-59 months children

Diarrhoea

Classification of diarrhoeal cases by province 2074/75

CB-IMNCI program has created enabling environment to health workers for better identification, classification and treatment of diarrhoeal diseases. As per CB-IMNCI national protocol, diarrhoea has been classified into three categories: 'No Dehydration', 'Some Dehydration', and 'Severe Dehydration'. The reported number and classification of total new diarrhoeal cases has been presented in table 4.2.3 below.

Table 4.3.3: Classification of Diarrheal cases by province (FY 2074/75) (2-59 months children)

Indicators		Year	Province 1	Province 2	Province 3	Gandaki	Province 5	Karnali	Sudur Pachhim	National
Total diarrhoeal cases (HF+ORC+FCHV) 2074/75		2073/74	186090	205477	181071	76889	206359	128064	200170	1184120
		15.72%	17.35%	15.29%	6.49%	17.43%	10.82%	16.90%	100.0%	
		180260	208779	166644	73526	203879	127271	187879	1148238	
		15.70%	18.18%	14.51%	6.40%	17.76%	11.08%	16.36%	100%	
HF + ORC diarrhoeal cases	Total	2073/74	55,474	88,821	47,379	22,220	65,641	45,216	58,433	383,184
		2074/75	51,792	94,447	43,143	22,088	67,989	42,918	54,183	376,560
	No dehydration	2073/74	42,643	69,566	40,920	19,288	56,679	35,058	49,793	313,947
			76.9%	78.3%	86.4%	86.8%	86.3%	77.5%	85.2%	81.9%
		2074/75	41201	74,202	37,366	19,570	58,791	33,716	47,160	31,2006
			79.6%	78.6%	86.6%	88.6%	86.5%	78.6%	87.0%	82.9%
	Some dehydration	2073/74	12,589	18,937	6,285	2,909	8,585	9,796	8,449	67,550
			22.7%	21.3%	13.3%	13.1%	13.1%	21.7%	14.5%	17.6%
		2074/75	10397	19,858	5,690	2,475	8,696	8,801	6,891	62,808
			20.1%	21.0%	13.2%	11.2%	12.8%	20.5%	12.7%	16.7%
	Severe dehydration	2073/74	242	318	174	23	377	362	191	1687
			0.4%	0.4%	0.4%	0.1%	0.6%	0.8%	0.3%	0.4%
		2074/75	194	387	87	43	502	401	132	1746
			0.37%	0.41%	0.20%	0.19%	0.74%	0.93%	0.24%	0.46%
FCHV (diarrhoeal cases) 2074/75		2073/75	130,616	116,656	133,692	54,669	140,718	82,848	141,737	800,936
		11.03%	9.85%	11.29%	4.62%	11.88%	7.00%	11.97%	67.64%	
		128,468	114,332	123,501	51,438	135,890	84,353	133,696	771,678	
		11.19%	9.96%	10.76%	4.48%	11.83%	7.35%	11.64%	67.21%	

Source: HMIS, 2074/75

In FY 2074/75, a total of 1,148,238diarrhoeal cases were reported outof which about one third (33%) were reported from health facilities and ORC and rest two third (67%) by FCHVs which showed similar trend like that of previous year. Among registered cases in Health Facilities and PHC/ORC more than three fourth (83%) were classified as having no dehydration, about one fifth (16.7%) some dehydration. Severe dehydration remained below 1% across all provinces and in national level.

Classification of diarrhoea disease incidence

Table 4.2.6: Incidence and case fatality of Diarrhea among children under 5 years of age by province (FY 2074/75)

Indicators	Year	Province 1	Province 2	Province 3	Gandaki	Province 5	Karnali	Sudur Pachhim	National
Estimated <5 year population that are prone to diarrhoea	2073/74	494,301	613,361	629,577	254,998	502,216	177,389	287,244	2,959,086
	2074/75	495671	619384	636059	253948	505950	179486	289739	2980237
Incidence of diarrhoea/1,000 <5 years population	2073/74	376	335	288	302	411	722	697	400
	2074/75	364	337	262	290	403	709	648	385
Diarrhoeal deaths (HF+ORC)	2073/74	7	16	4	1	1	2	2	33
	2074/75	8	14	6	0	12	3	4	47
Diarrhoea Case fatality rate per 1000 (HF+ORC)	2073/74	0.13	0.18	0.08	0.05	0.02	0.04	0.03	0.09
	2074/75	0.16	0.15	0.14	0.00	0.18	0.07	0.07	0.13

Source: HMIS, 2074/75

As shown in table 4.2.4,Incidence of diarrhoea per thousand under age 5 children was 385 in FY 2074/75, being highest at Karnali (709) followed by Sudur Pachhim (648). Similar trend was seen in the previous fiscal year. Further, the lowest incidence was in province 3 (262). Total diarrhoeal death in health facility and PHC/ORC was 47 which increased by 42% than the last fiscal year. Case fatality rate across all the provinceswas below 1 per thousand.

Treatment of diarrhoea

Table 4.2.7: Treatment of diarrhoea cases by province (FY 2074/75)

Indicators	Year	Province 1	Province 2	Province 3	Gandaki	Province 5	Karnali	Sudur Pachhim	National
Total cases (HF + ORC + FCHV)	2073/74	186090	205477	181071	76889	206359	128064	200170	1184120
	2074/75	180260	208779	166644	73526	203879	127271	187879	1148238
Diarrhoeal cases treated with ORS and zincr (HF + ORC + FCHV)	2073/74	160798	194706	166946	74298	183273	123139	187923	1091083
		86.41%	94.76%	92.20%	96.63%	88.81%	96.15%	93.88%	92.14%
	2074/75	161794	202520	155749	72597	193976	122678	183792	1093106
		89.76%	97.00%	93.46%	98.74%	95.74%	96.39%	98.82%	95.20
Intravenous (IV) fluid (HF)	2073/74	1113	2282	1026	285	937	975	1117	7735
		0.60%	1.11%	0.57%	0.37%	0.45%	0.76%	0.56%	0.65%
	2074/75	633	1458	351	148	1369	727	1029	5715
		0.35%	0.70%	0.21%	0.20%	0.67%	0.57%	0.55%	0.50%

Source: HMIS, 2074/75

In FY 2074/75, the proportion of diarrhoeal cases treated with ORS and Zinc as per IMNCI national protocol at national level was 95.2% which was slightly higher than that of previous year (92.14%). Highest proportion was seen in Sudur Pachhim (98.82%) and lowest in province 1 (89.76%).

Acute Respiratory Infections

ARI management is one of the components of CB-IMNCI program. As per CB-IMNCI protocol, every ARI cases should be correctly assessed and classified as no pneumonia, pneumonia or severe pneumonia; and given home therapy, treated with appropriate antibiotics or referred to higher centre as per the indications. (See Table 4.2.5)

Table 4.2.6: Acute respiratory infection (ARI) and pneumonia cases by provinces (FY 2074/75)

Indicators	Year	Province 1	Province 2	Province 3	Gandaki	Province 5	Karnali	Sudur Pachhim	National
Target population (<5 years that are prone to ARI)	2073/74	494,301	613,361	629,577	254,998	502,216	177,389	287,244	2,959,086
	2074/75	495671	619384	636059	253948	505950	179486	289739	2980237
Total ARI cases (HF + ORC + FCHV)	2073/74	354,323	289,278	276,317	152,164	289,294	164,473	284,873	1,810,722
	2074/75	329,148	274,633	268,850	145,659	283,138	170,271	278,969	1,750,668
ARI incidence per 1,000<5 year population	2073/74	717	472	439	597	576	927	992	612
	2074/75	666	448	427	571	564	960	971	592
Total Pneumonia cases (HF+ORC)	2073/74	43,913	32,333	32,032	13,247	27,707	20,811	24,619	194,662
	2074/75	33,938	25,259	25,149	10,430	25,379	18,985	20,673	159,813
Incidence of pneumonia per 1,000 <5 children	2073/74	89	53	51	52	55	117	86	66
	2074/75	118	66	60	52	80	171	130	87
% of pneumonia among ARI cases	2073/74	12.15%	10.88%	11.29%	8.59%	9.36%	12.14%	8.31%	10.47%
	2074/75								
% of severe pneumonia among ARI cases	2073/74	0.25%	0.30%	0.30%	0.11%	0.22%	0.51%	0.33%	0.29%
	2074/75								
Deaths due to ARI at HF	2073/74	11	58	7	62	13	5	20	176
	2074/75	46	6	23	9	21	13	9	127
ARI Case fatality rate per 1000 at HF	2073/74	0.09	0.63	0.07	1.16	0.12	0.08	0.22	0.28
	2074/75	0.09	0.01	0.04	0.05	0.04	0.11	0.04	0.05

Source: HMIS, 2074/75

In FY 2074/75, a total of 17,50,668ARI cases were registered, out of which 10.5% were categorized as pneumonia cases and0.29% were severe pneumonia cases. The incidence of pneumonia (both pneumonia and severe pneumonia at HF and PHC/ORC) at national level was 66 per 1000 under five children. The incidence of pneumonia among under five children has decreased sharply because in the past years, the reported cases of pneumonia by FCHV were included in the numerator, but from this fiscal year the indicator is in the process of revision and the cases of pneumonia reported by FCHV is excluded from the numerator. Likewise, highest ARI incidence was seen at Sudur Pachhim (992/1000 U5 children) followed by Karnali (927/1000 U5 children) and least at Province 3 (439/1000 U5 children). Similarly, Provinces 1 and 6 had the highest percentage of pneumonia cases among ARI cases (12.15% and 12.14%) and Sudur Pachhim has the lowest (8.31%). (Table 4.2.6)

The total ARI-related deaths at health facilities were reported to be127which isslightly lowercompared to previous FY 2073/74 which was 176. The ARI case fatality rate per thousand at health facility also decreased to 0.05 per 1000 in FY 2074/75 compared to last fiscal year FY 2073/74(0.28). ARI case fatality rate shows a wide variation in between the provinces ranging from the lowest 0.01 per 1000 in province 2 to the highest 0.09 per 1000 in province 1.

Other common childhood illnesses

CB-IMNCI Program also focuses on identifying and treating Malaria, Malnutrition, Measles, and other common illnesses among children under five. The interventions to address malnutrition among children are being led by Nutrition Section and interventions to address measles and other vaccine preventable diseases are being led byImmunization Section, and Malaria is led by EDCD. IMNCI Section would actively collaborate with EPI, Nutrition Sections and with EDCD for the reduction of Malnutrition and Measles and other common childhood diseases in an integrated approach to childhood diseases.

Table 4.2.7: Classification of cases as per CB-IMNCI protocol by province (FY 2074/75)

	Malaria		Very severe febrile disease	Measles	Ear infection	Severe malnutrition	Anaemia
	Falciparum	Non-falciparum					
Province 1	28	32	0	152	14,082	971	619
Province 2	52	140	0	418	25,084	4,601	1454
Province 3	20	28	0	388	9,428	683	730
Gandaki	5	71	0	56	5,733	290	279
Province 5	13	62	0	141	16,233	2,485	1106
Karnali	35	47	0	85	8,155	1,469	343
Sudur Pachhim	58	67	0	69	10,346	2,230	667
National	**210**	**447**	**0**	**1309**	**89,061**	**12,729**	**5198**

Source: HMIS, 2074/75

Under the CB-IMNCI programme, health workers identified 210 falciparum malaria cases, 447 non-falciparum malaria cases, 1,309 measles cases, 89,061 ear infection cases, 12,729 severe malnutrition cases and 5,198 anaemia cases in children under five years of age in 2074/75. There were no reported cases of very severe febrile disease in this fiscal year.

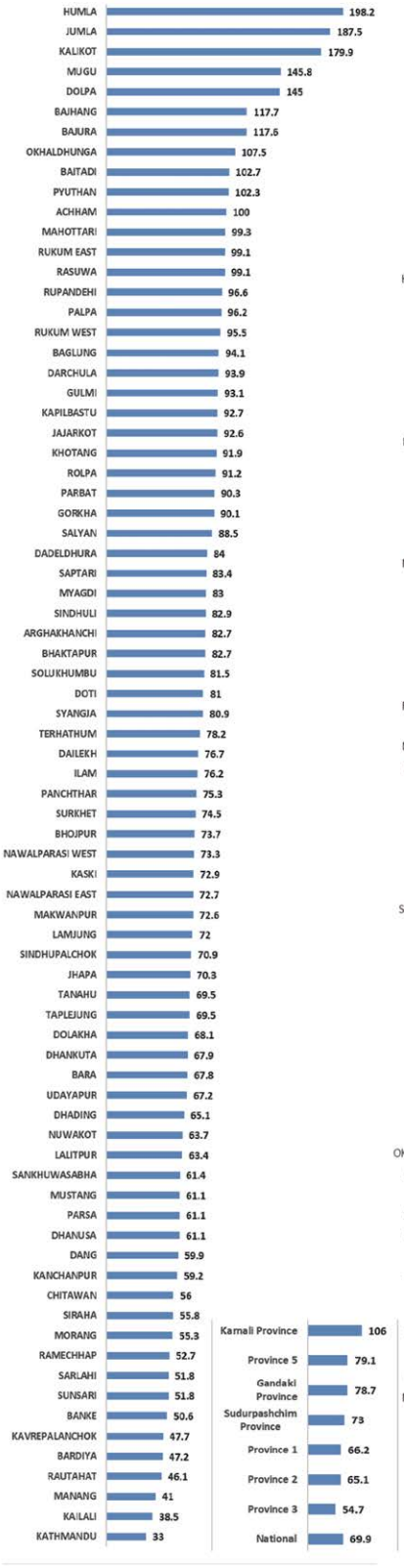
4.2.8 Problem, constraints and actions to be taken and responsibility

Table 4.2.8: Problem, constraints and actions to be taken

Problem/Constrains	Action to be taken	Responsibility
No sanctioned position for CB-IMNCI focal persons at municipal and provincial levels Unclarity in roles of staffs (including CB-IMNCI focal person) in the new federal context	• Policy level decision needed to allocate sanctioned position, and make necessary arrangements so that there is no void in implementation of the program and in service delivery during the transition period	MoHP, DoHS, FWD
Unable to implement free newborn care guideline since last FY as expected.	• Better coordination and collaboration between related hospitals, Palikas, D/PHOs and CHD. Better orientation about the program and clsrity in its implementation modality	Hospitals, Palikas, HO, FWD
Insufficient Human Resource in Hospital to implement SNCI/NICU	• HR to be deployed by Contract • training to MO and nursing staff about NICU	MOHP,FWD, Province, NHTC
Limited IEC/BCC interventions as compared to the approved program implementation guideline, so as to improve the demand of CH services	• More priority be given to the IEC/ BCC interventions so as to improve the demand for CH services by all concerned stakeholders	NHEICC, FWD, HO, Palikas, HF
Frequent stockouts of essential commodities in districts and communities	• The timely supply of commodities	FWD, MD
Lack of equipment to deliver newborn and child health services at service delivery points	• The timely procurement and supply of equipment	MD, FWD
Poor service data quality	• Carry out routine data quality assessments • Strengthen regular feedback mechanisms	MD, FWD
Poor quality of care	• Strengthen quality improvement system • Enhance the use of health facility quality improvement tools • Onsite coaching • Supportive supervision	MD, FWD, Province, HO
Increase in percentage of severe pneumonia cases	• Targeted interventions (BCC activities, and for early detection, treatment and referral) needs to be focused	Provonce, HO
Though recent research findings have shown more care seeking practice towards private sectors, there has been limited engagement of private sectors to ensure their better involvement	• Ensure better involvement of private sector to ensure quality services are provided with proper follow up of childhood treatment protocols.	DoHS, FWD
Poor referral mechanism	• Strengthen the referral mechanism	FWD, HO

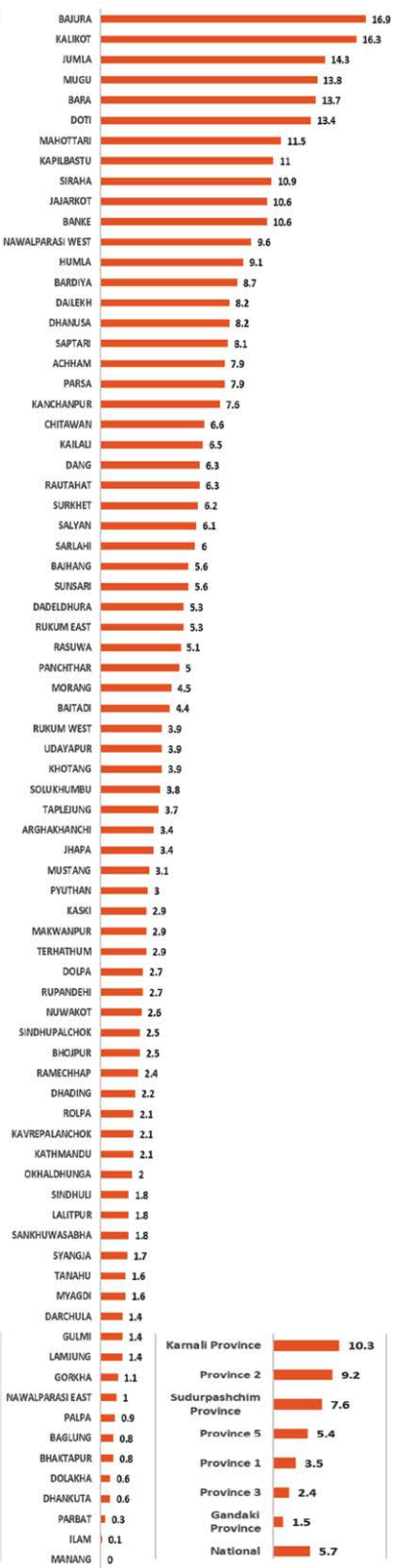
Growth Monitoring Status, FY 2074/75 (2017/18)

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



Percentage of children 0-11 months registered for growth monitoring who were underweight

Percentage of children 12-23 months registered for growth monitoring who were underweight



4.3 Nutrition

4.3.1 Background

Nutrition section under Family Welfare Division (FWD) is responsible for national nutrition program for improving the nutritional status of children, pregnant women and adolescents. Its goal is to achieve nutritional well-being of all people to maintain a healthy life to contribute in the socio-economic development of the country, through improved nutrition program implementation in collaboration with relevant sectors. Nutrition interventions are cost effective investments for attaining many of the Sustainable Development Goals. In alignment with international and national declarations and national health policies, the Government of Nepal is committed to ensuring that its citizens have adequate food, health and nutrition. The Constitution (2015) ensures the right to food, health and nutrition to all citizens. Hunger and under-nutrition often result in the vicious cycle of malnutrition and infections that leads to poor cognitive and intellectual development, less productivity and compromised socioeconomic development.

Focus on nutrition — Nutrition is a globally recognized development agenda. Since the year 2000, several global movements have advocated nutrition for development. The Scaling-Up-Nutrition (SUN) initiative calls for multi-sectoral action for improved nutrition during the first 1,000 days of life. The Government of Nepal as an early member of SUN, adopted the Multi-sector Nutrition Plan (MSNP) in 2012 to reduce chronic nutrition. Recently, the UN General Assembly declared the 2016–2025 period as the Decade of Action on Nutrition.

Policy initiatives — The National Nutrition Policy and Strategy was officially endorsed in 2004 to address all forms of malnutrition including under-nutrition and over-nutrition. This policy provides the strategic and programmatic directions in the health sector while the MSNP provides a broader policy framework within and beyond the health sector under a Food and Nutrition Security Secretariat of the National Planning Commission that coordinates its implementation. The National Health Policy, 2071 highlights improved nutrition via the use and promotion of quality and nutritious foods generated locally to fight malnutrition. The Nutrition Technical Committee was established in then Child Health Division now FWDin 2011 to support multi-sectoral coordination for developing nutrition programmes.

Aligning with the MSNP and current global initiatives, FWD – nutrition section has developed strategies and plans for improving maternal infant and young child nutrition assisted by experts from the Nutrition Technical Committee. Moreover, as recommended by the Nepal Nutrition Assessment and Gap Analysis (NAGA) and guided by MSNP, in 2012–2013 MoHP conducted an Organization and Management Survey towards establishing a National Nutrition Centre for implementing MSNP in the health sector.Recently, MSNP -2 has been approved for 2075/76 – 2079/80.

4.3.2 Malnutrition in Nepal

Despite a steady decline in recent years, child under-nutrition is still unacceptable in Nepal. Maternal malnutrition is also a problem with 17 per-cent of mothers suffering from chronic energy deficiency alongside the increasing trend of overweight mothers (22 %, NDHS, 2016). Although Nepal's effort in micronutrient supplementation such as the National Vitamin A Programme have been globally recognized as a successful programme, nutritional anaemia remains a public health issue among women, adolescents and children. Forty-one percent of women of reproductive age and 46 percentof pregnant women are anaemic. About 68 percent (NDHS 2016) of children aged 6-23 months are anaemic while the prevalence of that among adolescent women (15-19) has been increased from 38.5 percent in 2011 to 43.6 percent in 2016 (NDHS).

4.3.3 Efforts to address under-nutrition

MoHP has implemented several programmes to counter malnutrition. This began with growth monitoring and breastfeeding promotion followed by community-based micronutrient supplementation. Most recent national nutrition programmes have taken a food-based approach to promote improved dietary behaviour among vulnerable groups. FWD's Nutrition Section has implemented the programmes in Box 4.3.1.

Box 4.3.1: Nutrition programmes implemented by FWD Nutrition Section (1993–2018)

Nationwide programmes:

- Growth monitoring and counselling
- Prevention and control of iron deficiency anaemia (IDA)
- Prevention, control and treatment of vitamin A deficiency (VAD)
- Prevention of iodine deficiency disorders (IDD)
- Control of parasitic infestation by deworming
- Mandatory flour fortification in large roller mills.
- Maternal, Infant, and Young Children Nutrition (MIYCN) programme

Scale-up programmes:

- Comprehensive Nutrition Specific Interventions
- Integrated Management of Acute Malnutrition (IMAM)
- Micronutrient Powder (MNP) distribution linked with infant and young child feeding(IYCF)
- School Health and Nutrition Programme
- Vitamin A supplementation to address the low coverage in 6–11month olds
- Multi-sector Nutrition Plan (MSNP)

The overall objective of the national nutrition programme undertaken by nutrition section is to enhance nutritional well-being, reduce child and maternal mortality and contribute to equitable human development.

The specific objectives of the programme are as follows:

- To reduce protein-energy malnutrition in children under 5 years of age and women of reproductive age
- To improve maternal nutrition
- To reduce the prevalence of anaemia among adolescent girls, women and children
- To eliminate iodine deficiency disorders and vitamin A deficiency and sustain elimination
- To reduce the infestation of intestinal worms among children and pregnant women
- To reduce the prevalence of low birth weight
- To improve household food security to ensure that all people can have adequate access, availability and use of food needed for a healthy life
- To promote the practice of good dietary habits to improve the nutritional status of all people
- To prevent and control infectious diseases to improve nutritional status and reduce child mortality

- To control lifestyle related diseases including coronary disease, hypertension, tobacco related diseases, cancer and diabetes
- To improve the health and nutritional status of schoolchildren
- To reduce the critical risk of malnutrition and life during very difficult circumstances
- To strengthen the system for analysing, monitoring and evaluating the nutrition situation
- Behaviour change communication and nutrition education at community levels
- To align health sector programmes on nutrition with the Multi-Sectoral Nutrition Initiative.

4.3.4 Targets

4.3.4.1 Current Global Nutrition Targets

a. Sustainable Development Goal

Goal 2 — End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round;
- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons;
- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment;

b. Global Nutrition Target by 2025 (World Health Assembly [WHA])

- Reduce the global number of children under five who are stunted by 40 percent
- Reduce anaemia in women of reproductive age by 50 percent
- Reduce low birth weight by 30 percent
- No increase in childhood overweight
- Increase the rate of exclusive breastfeeding in the first six months up to at least 50 percent
- Reduce and maintain childhood wasting to less than 5 percent.

4.3.4.2 National Nutritional Status and Targets

Table 4.3.1: Nepal's progress against the MSNP 2 targets (2001–2016)

Indicators	Status (%)				Target (%)		
	NDHS 2001	NDHS 2006	NDHS 2011	NDHS 2016	MSNP 2022	WHA 2025	SDG 2030
Stunting among U5 children	57	49	41	36	28	24	15
Wasting among U5 children	11	13	11	10	7	<5	4
Underweight among U5 children	43	39	29	27	20	15	10
Percentage of LBW	-	14	12	12	10	≤1.4	≤1.4
Exclusive breastfed	-	53	70	66	80	85	90
Fed according to recommended IYCF practices	-	-	24	36	60	70	80
Over-weight and obesity among U5 children	-	-	-	2.1	1.4	1	<1
Anaemia among U5 children	-	48	46	53	28	20	<15
Anaemia among children under 6-23 months	-	78	69	68	-	60	<50
Anaemia among women (15-49)	-	36	35	41	24	20	<15
Anaemia among pregnant women	-	42	48	46	-	35	<25
Anaemia in adolescent women (15-19)	-	39	38.5	43.6	25*	35	<25
Body mass index (<18.5kg/m^2) among women	26	24	18.2	17	12	8	<5
overweight or obese among women	-	9	14	22	18	15	<12
*Anaemia in adolescent women for 10-19 years aged							

4.3.5 Programme strategies

The main overall strategies for improving nutrition are i) the promotion of a food based-approach, ii) food fortification, iii) the supplementation of foods and iv) the promotion of public health measures. The specific nutrition strategies are listed in Box 4.3.2.

Box 4.3.2: Specific strategies to improve nutrition in Nepal

Control of protein energy malnutrition (PEM)

- Promote breastfeeding within one hour of birth and avoid pre-lacteal feeding.
- Promote exclusive breastfeeding for first six months and the timely introduction of complementary food.
- Ensure continuation of breastfeeding for at least 2 years and the introduction of appropriate complementary feeding after 6 months.
- Strengthen the capacity of health workers and medical professionals for nutrition and breastfeeding management and counselling.
- Improve skills and knowledge of health workers on growth monitoring and nutrition counselling
- Strengthen the system of growth monitoring and its supervision and monitoring.
- Promote the use of appropriate locally available complementary foods such as jaulo and SarbottamPitho.
- Increase awareness on the importance of appropriate and adequate nutrition for children and pregnant and lactating mothers.
- Strengthen the knowledge of health personnel on the dietary and clinical management of severely malnourished children.
- Distribute fortified foods to pregnant and lactating women and children aged 6 to 23 months in food deficient areas.
- Improve maternal and adolescent nutrition and low birth weight through improved maternal nutrition.
- Create awareness of the importance of additional dietary intake during pregnancy and lactation.
- Strengthen nutrition education and nutrition counselling.

Control of iron deficiency anaemia (IDA)

- Advocate to policy makers to promote dietary diversity.
- Iron folic acid supplementation for pregnant and post-partum mothers.
- Iron fortification of wheat flour at roller mills.

Household food security

- Promote kitchen garden and agricultural skills.
- Promote the raising of poultry, fish and livestock for household consumption.
- Inform community people how to store and preserve food.
- Improve technical knowledge of food processing and preservation.
- Promote women's group income generation activities.

Improved dietary practices

- Conduct a study to clarify the problems of culturally-related dietary habits
- Promote nutrition education and advocate for good diets and dietary habits.
- Develop and strengthen programmes for behaviour change to improve dietary habits.
- Strengthen nutritional education and advocacy activities to eliminate food taboos that affect nutritional status.
- Promote the household food security programme.

Infectious disease prevention and control

- Promote knowledge, attitudes and practices that will prevent infectious diseases.
- Ensure access to appropriate health services.
- Improve nutritional status to increase resistance against infectious disease
- Improve safe water supplies, sanitation and housing conditions.
- Improve food hygiene.

School Health and Nutrition Programme

- Build capacity of policy and working level stakeholders.
- The biannual distribution of deworming tablets to grade 1 to 10 school children.
- Celebrate School Health and Nutrition (SHN) week each June to raise awareness on malnutrition at the community level through school children and health workers.

- Multiple micronutrient supplementation for children aged 6-23 months.
- Create awareness of importance of iron in nutrition, promote consumption of iron rich foods and promote diverse daily diets.
- Control parasitic infestation among nutritionally vulnerable groups through deworming pregnant women and children aged 12-23 months.

Control of iodine deficiency disorders

- The universal iodization of salt.
- Strengthen implementation of the Iodized Salt Act, 2055 to ensure that all edible salt is iodized.
- The social marketing of certified two-child logo iodized salt.
- Ensure the systematic monitoring of iodized salt.
- Increase the accessibility and market share of iodized packet salt with the two-child logo.
- Create awareness about the importance of using iodized salt to control iodine deficiency disorder (IDD) through social marketing campaign.

Control of vitamin A deficiency

- The biannual supplementation of high dose vitamin A capsules to 6-59 month olds.
- Post-partum vitamin A supplementation for mothers within 42 days of delivery.
- Strengthen implementation of vitamin A treatment protocol for severe malnutrition, persistent diarrhoea, measles and xerophthalmia.
- Nutrition education to promote dietary diversification and consumption of vitamin A rich foods.
- Ensuring the availability of vitamin A capsules at health facilities.
- Increase awareness of importance of vitamin A supplementation.
- The biannual distribution of vitamin A capsules to 6 to 59-month olds through FCHVs.
- Advocate for increased home production, consumption and preservation of vitamin A rich foods.
- Strengthen the use of the vitamin A Treatment protocol.
- Distributefirst aid kits to public schools.
- Introduce child-to-child and child-to-parent approaches.

Integrated management of acute malnutrition

- Build capacity of health workerson managing acute malnutrition and of other community workers on screening and the referral of cases.
- Establish and implementthekeyparts of the IMAM programme: community mobilization, inpatienttherapeutic care, outpatient therapeutic care and management of MAM.
- ImplementtheIMAM programme based on maximum coverage & access, timeliness of service provision, appropriate care and care as long as it is needed.
- Integrate the management of acute malnutrition across sectors to ensure that treatment is linked to support for rehabilitating cases and to wider malnutrition prevention programme and services.
- Support and promote IYCF, water, sanitation and hygiene (WASH), early childhood development, social protection and child health and care along with the management of acute malnutrition.
- Promote the IMAM programme as the bridge between emergency and development programmes.
- The supportive supervision and monitoring of IMAM programme activities.
- Harmonize the community and facility-based management of acute malnutrition.
- Strengthen the coordination and capacity of nutrition rehabilitation homes.

Nutrition in emergencies

- Develop adequate capacity and predictable leadership in the nutrition sector for managing humanitarian responses.
- Formulate an emergency nutrition in emergency preparedness and response contingency plans.
- Establish and strengthen stronger partnerships and coordination mechanisms between government, UN and non-UN agencies.
- Agencies to respond in emergencies through the activated nutrition cluster.

- Promote the consumption of vitamin A rich foods and a balanced diet through nutrition education.
- Provide vitamin A capsules (200,000 IU) to postpartum mothers through healthcare facilities and community volunteers.

Low birth weight

- Reduce maternal malnutrition by preventing PEM, VAD, IDD and IDA.
- Reduce the workloads of pregnant women.
- Increase awareness of the risks of smoking and alcohol to pregnant women.
- Increase awareness of risks of early pregnancy to infant and maternal health.
- Promote activities for nutrition monitoring and counselling at antenatal clinics.

Lifestyle related diseases

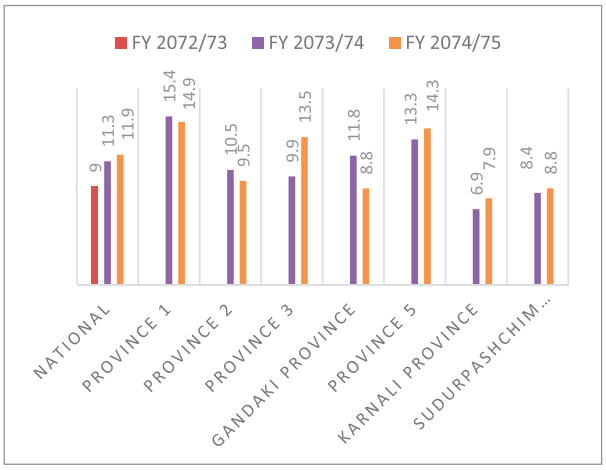
- Create awareness among adults about the importance of maintaining good dietary habits.
- Develop the capacity for nutritional counselling at health facilities.
- Create awareness among adolescents and adults about the importance of controlling smoking and body weight.
- Create awareness to increase physical activity and improve stress management.

4.3.6 Major achievements

4.3.6.1 Growth monitoring and promotion

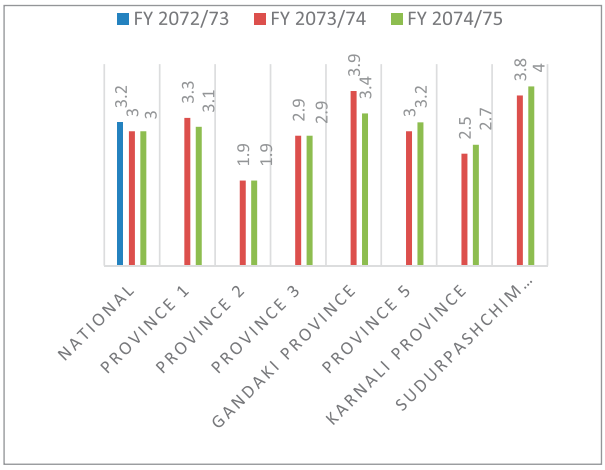
Monitoring the growth of children less than two years of age helps prevent and control protein-energy malnutrition and provides the opportunity for taking preventive and curative actions. Health workers at all public health facilities monitor the growth of children once a month using the growth monitoring card that is based on WHO's new growth standards.

Figure 4.3.1: Percentage of newborns with low birth weight (<2.5 kg) among total delivery by health workers



Source: HMIS/MD/DoHS

Figure 4.3.2: Average no. of growth monitoring visits per child (0–23 months)



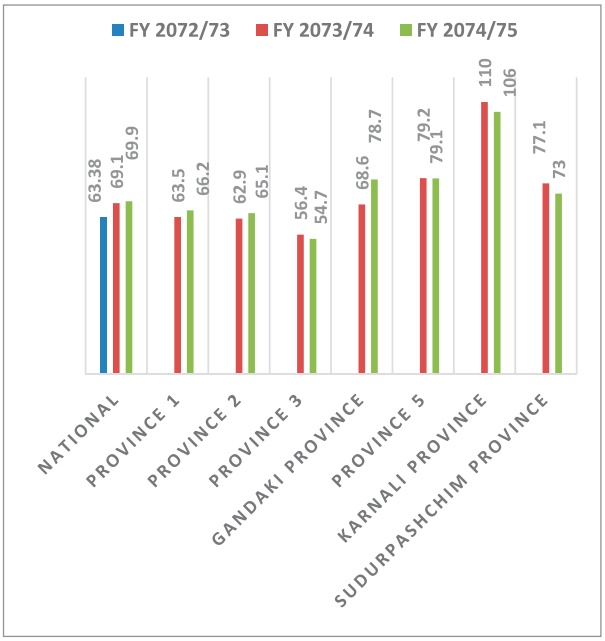
Source: HMIS/MD/DoHS

In FY 2074/75, the percentage of new-born with low birth weight (<2.5 kg) was increased to 11.9 % at national level from 9% in FY 2072/73. Similar increased was seen across the provinces except for Gandaki Province and Province 1 this year. However, Province 1 still contributed highest percentage of low birth weight among new-borns (14.9 percent) in national data. Whereas, Karnali province had least

percentage of new-borns with low birth weight (7.9 percent), which is again higher than of last fiscal year, that was (6.9 percent) (Figure 4.3.1).

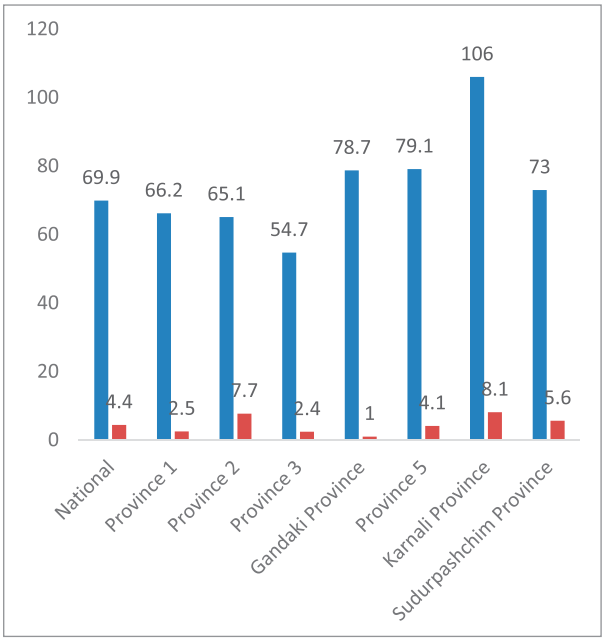
Nationally, there was an average of 3 visits per child in FY 2074/75, similar to that of FY 2073/74 but slightly low than of FY 2072/73. As far as provinces are concerned, the Province 1, Gandaki Province, Province 5 and Sudurpachim province had average visits more than that of the national average whereas the province 2 had the lowest average visits across the provinces (Figure 4.3.2).

Figure 4.3.3: Percentage of children aged 0–23 months registered for growth monitoring



Source: HMIS/MD/DoHS

Figure 4.3.4: Percentage of registered children aged 0-23 who were underweight (New)



Source: HMIS/MD/DoHS

The percentage of children aged 0 to 23 months registered for growth monitoring in 2074/75 (69.9 per cents) was increased sluggishly from the previous fiscal years. Across the provinces, the Karnali province had the highest percentage (106%) while province 3 had the lowest percentage (54.7%) of children aged 0 to 23 months registered for growth monitoring in 2074/75 (Figure 4.3.3).

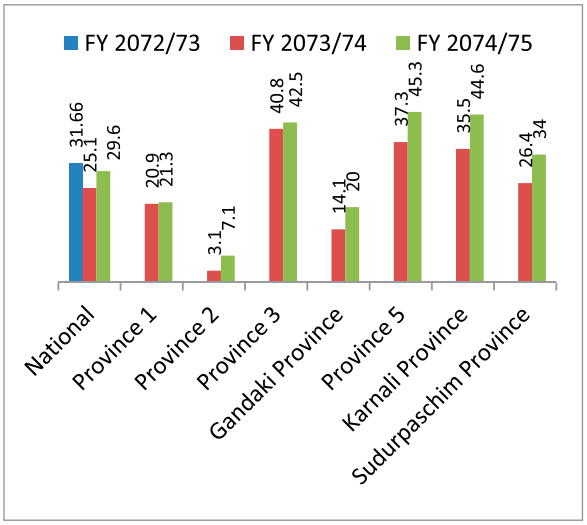
In 2074/75, among 69.9 percent,4.3 percent of 0-23month olds were reported as underweight at national level. The highest proportion (8.1%) of underweight children were from the Karnali provinces followed by Province 2 (7.7%) while the least was from Gandaki Province (1%) (Figure 4.3.4).

4.3.6.2 Infant and young child feeding

Appropriate feeding practices are essential to enhance the nutrition, survival, growth and development of infants and young children. These infant and young child feeding (IYCF) practices include exclusive breastfeeding for six months and the providing nutritionally adequate and complementary feeding starting from six months with continued breast feeding to two years of age or beyond. Improving care and practices related to IYCF is a priority strategy of MoHP. The IYCF programme was scaled-up in all 77 districts from FY 2072/73.

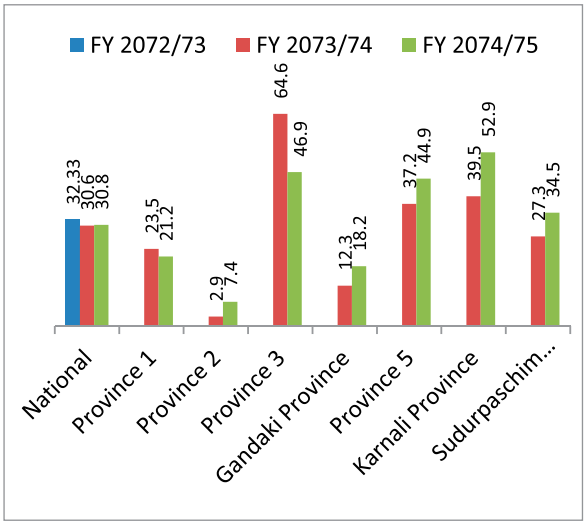
IYCF is also linked with the distribution of micro-nutrient powder (Baal Vita) in 42 districts and with child cash grants (CCG) in Huma, Mugu, Jumla, Dolpa, KalikotKarnalidistricts. However, more effective counselling and monitoring mechanisms are needed for these programmes.

Figure 4.3.5: Percentage of 0–6-month olds registered for growth monitoring who were exclusively breastfed for their first six months



Source HMIS/MD/DoHS

Figure 4.3.6:Percentage of 6–8-month olds registered for growth monitoring who had received solid, semi-solid or soft foods



Source HMIS/MD/DoHS

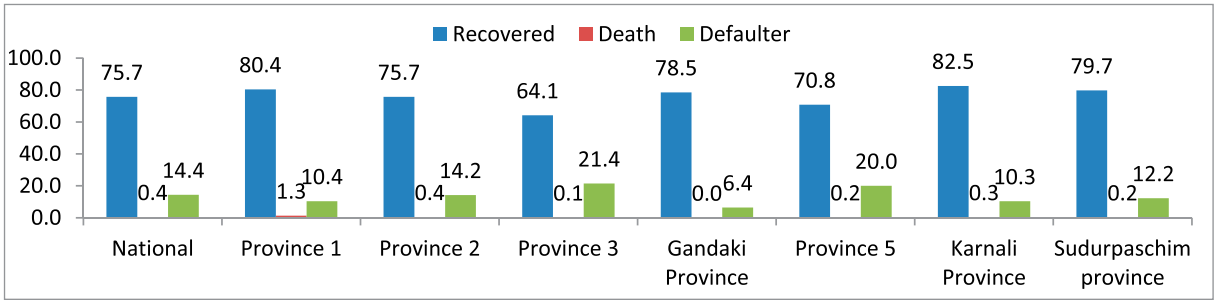
There is a large provincial difference in the percentage of children aged 0-6 months that registered for growth monitoring and were exclusively breastfed in their first six months. In FY 2074/75, 42.5 percent of these children were exclusively breastfed in the province 3 compared to only 7.1 percent of such children in the province 2 (Figure4.3.5). The national average was 29.6 percent, which was increased by 4% from the previous year. Moreover, it is much less than the 2016 Nepal Demographic and Health Survey (NDHS) figure - 66 percent. This may be assumed as less recording and reporting from primary reporting centres. Secondly, this may be due to early initiation of semi-solid and solid food in first 6 months of life.

The proportion of 6-8 months old children registered for growth monitoring who received complementary foods varied in FY 2074/75 from about 7.4 percent of these children in the province 2 to 46.9 percent in the province 3 (Figure 4.3.6). Nationally, only 30.8 percent of these children received complementary food which is much lower than the NDHS 2016 figure of 84 percent. This may be assumed as less recording and reporting from primary reporting centres. Timely introduction of complementary feeding and the consequent need to provide appropriate counselling to mothers and caregivers improve the feeding practices.

4.3.6.3 Integrated management of acute malnutrition

The Integrated Management of Acute Malnutrition (IMAM) Programme (previously known as Community based Management of Acute Malnutrition [CMAM] programme) manage Severe Acute Malnutrition (SAM) in children aged 0-59 months through inpatient and outpatient services at facility and community level. This programme was being implemented in 11 districts (Achham, Kanchanpur, Bardiya, Jajarkot, Jumla, Mugu, Kapilbastu, Sarlahi, Dhanusha, Saptari and Okhaldhunga) untilFY 2072/073 and was scaled-up in 10 districts in FY 2073/074. The scaled-up districts wereKalikot, Humla, Dolpa, Dadeldhura, Bajhang, Bajura, Baitadi, Panchthar, Khotang, and Parsa, (10 Districts) In Chitwan, the program was implemented in only few VDCs covering the Chepang population. Along with MIYCN promotion and support, IMAM aims to integrate nutrition support across health, early childhood development, WASH and social protection sectors for the continued rehabilitation of cases and to widen malnutrition prevention programme and services. The programme also acts as a bridge between emergency and development nutrition interventions.

Figure 4.3.7: Province wise IMAM performance, FY 2074/75



Source HMIS/MD/DoHS

In FY 2074/75, total 26984children of 6 months to 5 years with SAM admitted in outpatient therapeutic centres of 55 districts. Among them, 25682 were discharged with 19441 with complete recovery. Among all discharged SAM cases, 75.7 percent were recovered, less than 1 percent died and 14.4 percent were defaulter, which were within the SPHERE standards of effectiveness of IMAM Program: recovery rate >75 percent, defaulter rate <15 percent and death rate <10 percent. However, few provinces, including province 3 and province 5 achieved substantially below average results (Figure 4.3.7).

4.3.6.4 Nutrition rehabilitation homes

The first Nutrition Rehabilitation Home (NRH) was established in 1998 in Kathmandu aiming to reduction of child mortality caused by malnutrition through inpatient rehabilitation of acute malnutrition among the children. Since then, NRH has been scaled-up in 19 districts across Nepal. The NRH not only treat and manage acute malnutrition with inpatient service, but also provide nutrition education and counselling to the guardians of admitted children on good nutrition and health care of their children. In FY 2074/75, total 2250 children were provided with nutritional care through 17 NRH; and among them 2152 children were more than of 5 years and 98 were less than or equal to five. Those not recovered were referred to the tertiary health facilities for advance treatment. Along with the treatment of children, 6215 mothers were counseled in the NRH and in hospital OPD.

Nutritional Rehabilitation Homes restore severely malnourished children to good health while educating their mothers about nutrition and child care. When mother and child return to their village, the mother shares her new knowledge with her family and neighbors. This program is very effective which involves the mothers in the process for built-in sustainability to bring back children's optimal health.

Table 4.3.2: Admission and discharge status of nutrition rehabilitation homes, 2074/75

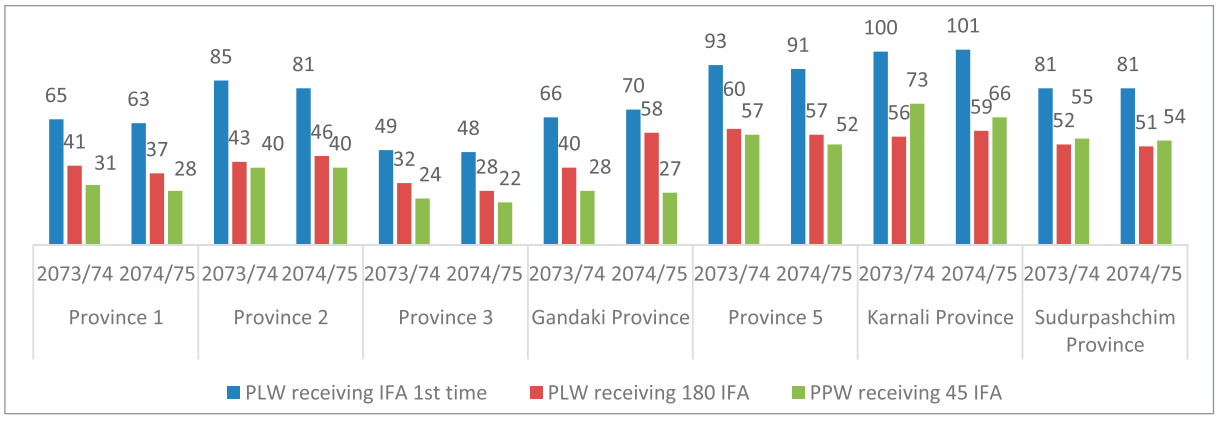
S.N	NRH	Total admission	Male	Female	Less than five years	More than or equal to five years	Total Discharge	Counseling to mother (inhouse and Hosp. OPD)
1	Kathmandu	239	123	116	180	59	251	1235
2	Bhadrapur	111	63	48	111	0	110	661
3	Biratnagar	80	28	52	80	0	82	80
4	Rajbiraj	183	86	97	178	5	188	226
5	Janakpur	193	107	86	193	0	202	240
6	Birgunj	212	111	101	206	6	203	383
7	Pokhara	121	58	63	121	0	119	188
8	Baglung	113	59	54	107	6	100	110
9	Bharatpur	153	76	77	153	0	150	946
10	Butwal	102	41	61	96	6	94	178
11	Nepalgunj	194	79	115	190	4	196	258
12	Dang							
13	Dailekh	56	21	35	55	1	60	93
14	Surkhet	112	65	47	112	0	84	253
15	Dhangadi	145	80	65	145	0	141	467
16	Kanchanpur	155	78	77	155	0	150	749
17	Dadeldhura	81	42	39	70	11	72	148

Source: HMIS/MD/DoHS, Nepal Youth Foundation

4.3.6.5 Prevention and control of iron deficiency anaemia

MoHP has been providing supplementary iron folic acid (IFA) to pregnant and post-partum women since 1998 to reduce maternal anaemia. The protocol is to provide 60 mg elemental ironand400 microgram folic acid to pregnant women for 225 days from their second trimester. To improve access, in 2003, the Intensification of Maternal and Neonatal Micronutrient Programme (IMNMP) began IFA supplementation through female community health volunteers (FCHVs). This programme covered all 75 districts by 2014. The intensification programme improved coverage, although compliance with taking 180 tablets during pregnancy and 45 tablets post-partum remains an issue.

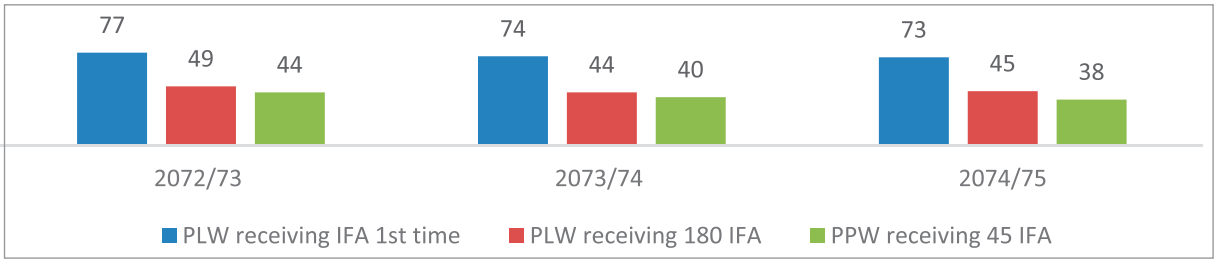
Figure 4.3.8: IFA distribution as percentage in different Provinces.



Source: HMIS/MD/DoHS

The coverage of first-time iron distribution is high at 73 percent nationally with the highest coverage in Karnali province and Province 5 (101 percent and 100 percent respectively), but the compliance of taking 180 tablets throughout the pregnancy (45 percent) and 45 days post-partum (38 percent) is substantially low. Province 3 has the lowest coverage amongst all for all three indicators.

Figure 4.3.9: IFA distribution as percentage of expected live births in Nepal in last three years



Source: HMIS/MD/DoHS. Note: PP = postpartum

Nationally the trend of first time, 180 days and 45 days post-partum IFA distribution has been declining slightly over the periods (Figure 4.3.*9*). Frequent shortage of IFA tablets has further deteriorated the coverage.

4.3.6.6 Integrated Infant and Young Child Feeding and Micro-Nutrient Powder Community Promotion Programme

The NDHS 2006 found that 78 percent of 6-23 months old children were anaemic, mostly due to poor IYCF practices. A Plan of Action subsequently endorsed Sprinkles as the key intervention to address anaemia in young children. In 2007, the National Nutrition Priority Workshop endorsed the piloting of sprinkles supplementation as a preventive measure. In June 2009, MoH piloted the home fortification of complementary food with MNPs for 6-23 months olds in six districts integrated with the Community IYCF Programme. The successful pilot programme led to MoH expanding it to an additional nine districts in 2012.

The promotion of MNPs is linked with improving complementary feeding. Mothers and caregivers are counselled to introduce complementary foods at six months of age, on age-appropriate feeding frequency, on improving dietary quality of complementary foods by making them nutrient and calorie dense, as well as on hand washing with soap before feeding. Mothers and caregivers are trained to prepare 'poshilojaulo' (pulses, rice and green vegetables cooked in oil) and 'lito' (mixture of blended and roasted cereal and legume flours). A feasibility study of the programme in 2008/09 found strong community acceptance with a very high coverage and compliance on the use of MNP. The linking of IYCF with MNPs has contributed to significant improvement in IYCF practices. The prevalence of anemia among children age 6-23 months has decreased to 68% (NDHS, 2016) from 78 percent. However, it still calls for continuous effort as the coverage of the program is not very promising.

Table 4.3.3: Micronutrient powder (Baal Vita) distribution status, 2074/75

S.N	Districts	% 6-23 months children taking 1st cycle of MNP	% 6-23 months children taking 3rd cycle of MNP
1	SANKHUWASABHA	46.2	12.1
2	OKHALDHUNGA	126.2	17.6
3	KHOTANG	44.7	0.4
4	MORANG	59.9	18.0
5	SUNSARI	69.9	17.6
6	SAPTARI	0.0	0.0
7	DHANUSA	0.5	2.2
8	MAHOTTARI	0.0	0.0
9	SARLAHI	0.0	0.0
10	RAUTAHAT	0.0	0.0
11	BARA	39.0	0.0
12	PARSA	66.7	13.9
13	DOLAKHA	68.4	16.8
14	SINDHUPALCHOK	74.5	22.9
15	RASUWA	49.8	26.1
16	DHADING	67.9	31.1
17	NUWAKOT	22.0	17.4
18	KATHMANDU	51.3	6.0
19	BHAKTAPUR	36.5	29.0
20	LALITPUR	58.0	29.8
21	KAVREPALANCHOK	49.7	76.2
22	RAMECHHAP	39.8	19.9
23	SINDHULI	79.1	36.7
24	MAKWANPUR	42.8	12.8
25	GORKHA	78.2	28.6
26	NAWALPARASI EAST	6.7	0.0
27	SYANGJA	14.3	2.2
28	BAGLUNG	50.3	0.6
29	RUKUM EAST	50.1	17.4
30	PALPA	58.6	23.6
31	NAWALPARASI WEST	11.1	0.0
32	RUPANDEHI	65.0	25.0
33	KAPILBASTU	75.9	21.0
34	DANG	39.2	10.1
35	BARDIYA	51.9	32.4
36	RUKUM WEST	37.9	11.6
37	BAJURA	23.8	0.0
38	BAITADI	44.5	0.0
39	DADELDHURA	57.1	29.0
40	DOTI	29.0	0.0
41	ACHHAM	85.2	32.0
	Average Total	45.6	15.6

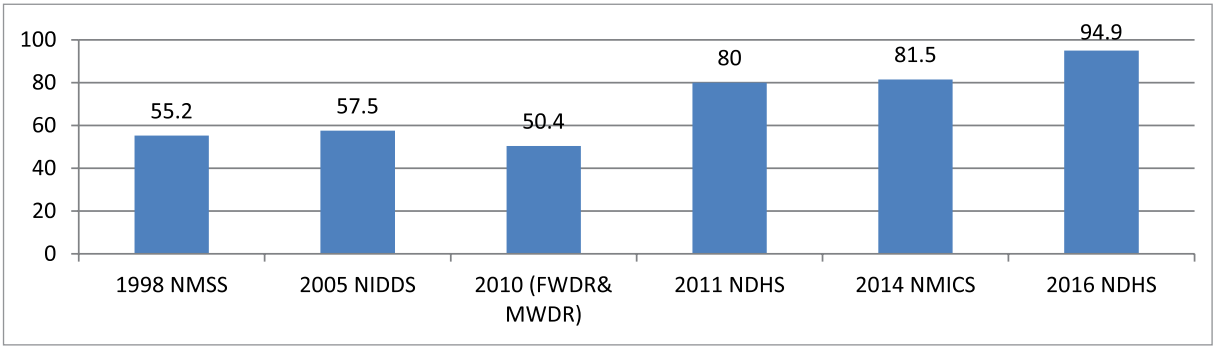
Source: HMIS/DoHS

In 2074/75in average 45.6 percent of children aged 6 to 23 months had taken their first dose of multiple micronutrient power (MNP-Baal Vita) in the 41 programme districts.Achham has the highest coverage while Saptari, Mahottari, Sarlahi, Rautahat has zero coverage. This may be due to no reporting of the program. Compared to the 1st cycle of MNP intake, the 3rd cycle of intake indicating the compliance is drastically low at 15.6 percent. Here, it is important to mention that coverage of 1st cycle intake is calculated based on the target population of 6-23 months, while that of 3rd cycle is calculated among the children aged 6-23 who have ever taken MNP. This was done because the population who have ever taken MNP are the one who completes the cycle. Overall, effective nutrition education, counselling and follow up to the mothers/caretakers is essential to improve coverage as well as comply with the recommended doses of MNPs.

4.3.6.7 Prevention and control of iodine deficiency disorder

MoHP adopted a policy to fortify all edible salt in 1973 to address iodine deficiency disorders (IDD) through universal salt iodization. The Salt Trading Corporation is responsible for the iodine fortification of all edible salt and its distribution, while MoH is responsible for promoting iodized salt and its marketing to increase consumption. The government uses the Two-Child-Logo to certify adequately iodized salt and DoHS has been implementing a social marketing campaign of this salt to improve awareness of its use in households. National surveys report an increase in the number of households using adequately iodized salt from 55 percent in 1998 to 95 percent in 2016 (Figure 4.3.10).

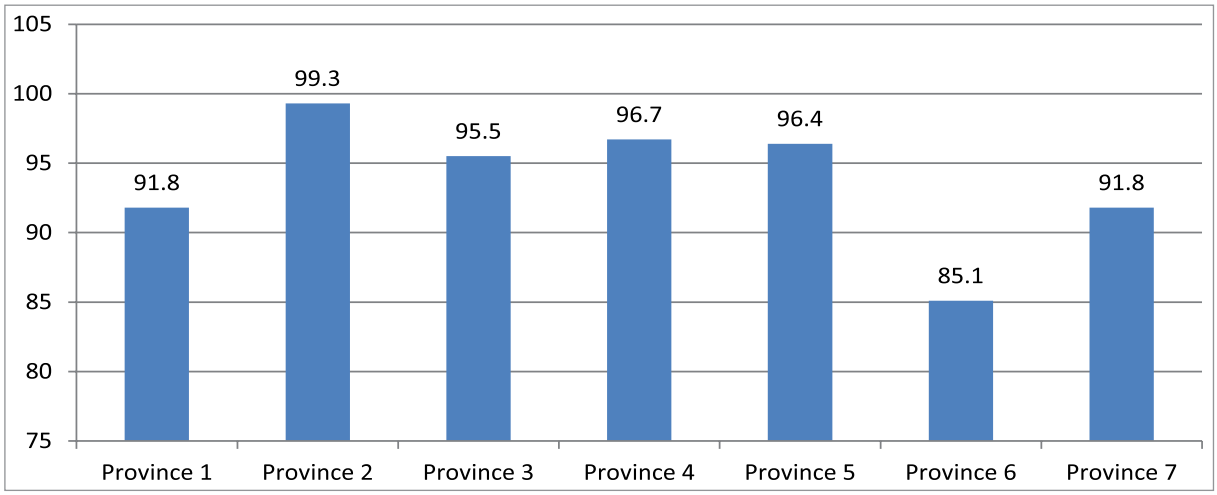
Figure 4.3.10: Percentage of households using iodized salt



Source: FWD/ Nutrition Section

Iodine month was celebrated in February 2018 in all 77 districts to raise awareness on the use of two-child-logo salt for optimum iodine intake to combat iodine deficiency disorders. There are, however, disparities in the use of iodized salt. The NDHS 2016 found the Province 2 to have the highest coverage (99.3 percent), while the Province 6 had the lowest (85.1 percent) (Figure 4.3.11).

Figure 4.3.11: Percentage of households using adequately iodized salt

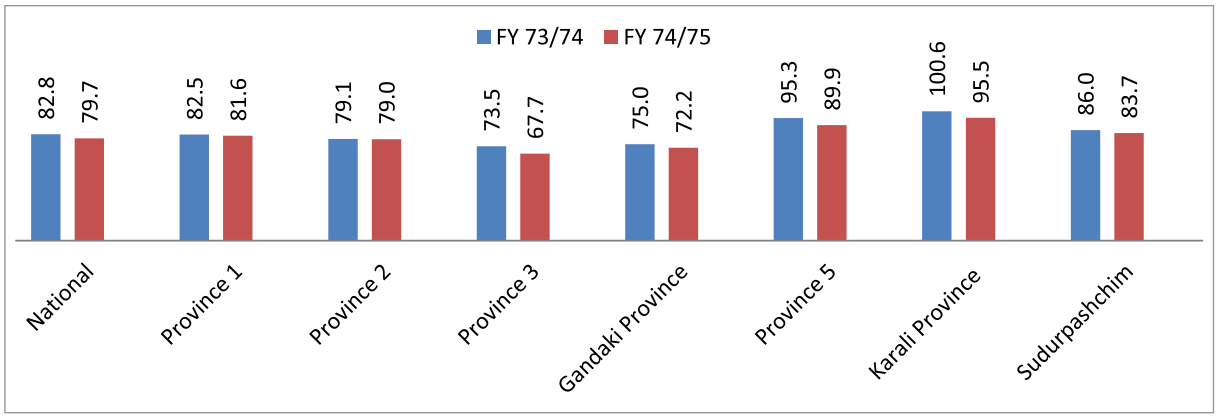


Source: NDHS, 2016

4.3.6.8 Control of vitamin A deficiency disorders

The government initiated the National Vitamin A Programme in 1993 to improve the vitamin A status of children aged 6-59 months and reduce child mortality. This programme is recognized as a global public health success story. It initially covered 8 districts and was scaled up nationwide by 2002. FCHVs distribute the capsules to the targeted children twice a year through a campaign-style activity.

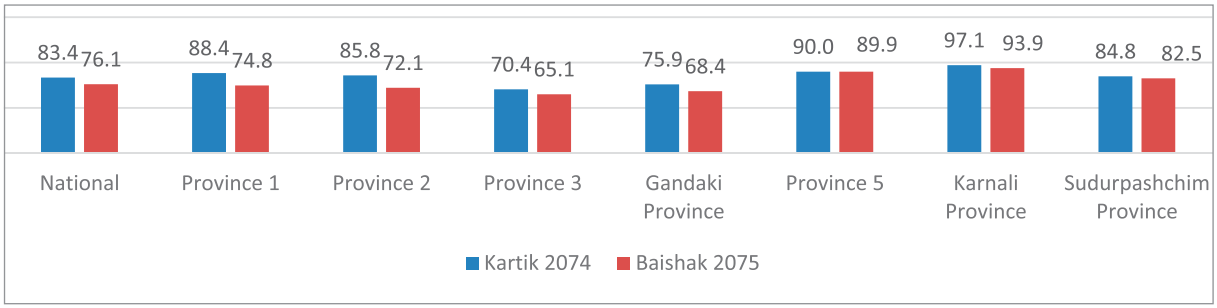
Figure 4.3.12: Trend & coverage of vitamin A supplementation to children aged 6-59 months



Source: HMIS/MD/DoHS

The overall national achievement is around 80 percent among the children aged 6-59 months which is slightly lower than last year (i.e 82.8 percent). The coverage by provinces varies with Karnali province with higher proportion of children receiving vitamin A supplementation while Province 3 has the lowest coverage of 67.7 percentage. If we compare the trend from last year, this year the coverage seems to declined slightly.

Figure 4.3.13: Coverage of vitamin A supplementation to children aged 6-59 months by Distribution Round



Source: HMIS/MD/DoHS

From last fiscal year, the progress on biannual Vitamin A supplementation is presented by 1st Round (Kartik) and 2nd Round (Baishak). The overall national achievement is more than 75 percent among the children aged 6-59 months with 83.4 percent in Kartik and 76.1 percent in Baishak. This is however less than that of last year (85 percent in Kartik and 81 percent in Baishak). Furthermore, the coverage by provinces varies with Karnali province and Province 5 with higher proportion of children receiving vitamin A supplementation and lower proportions of children receiving it in Province 3.

Figure 4.3.14: Coverage of vitamin A supplementation by age groups for Kartik 2074

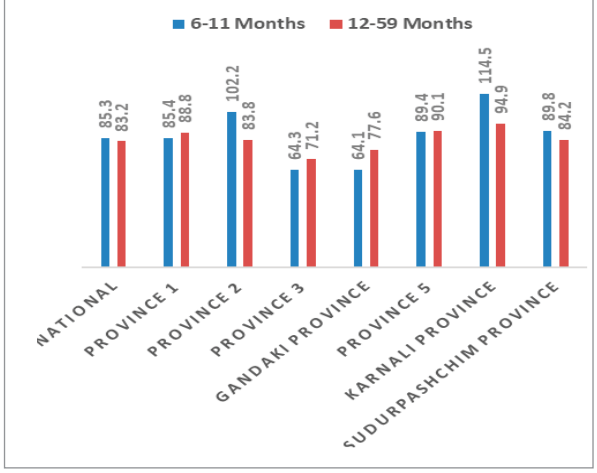
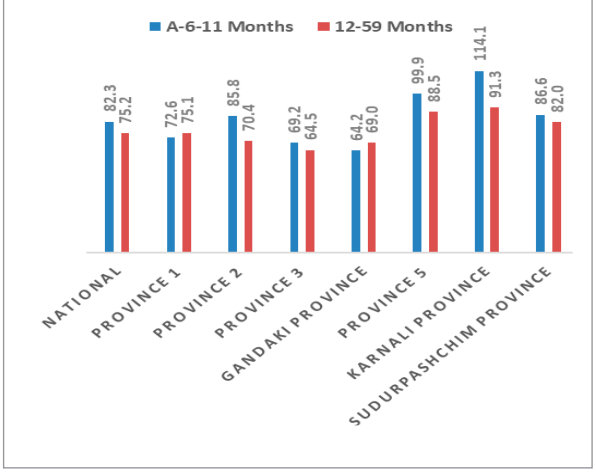


Figure 4.3.15: Coverage of vitamin A supplementation by age groups for Baishak 2075



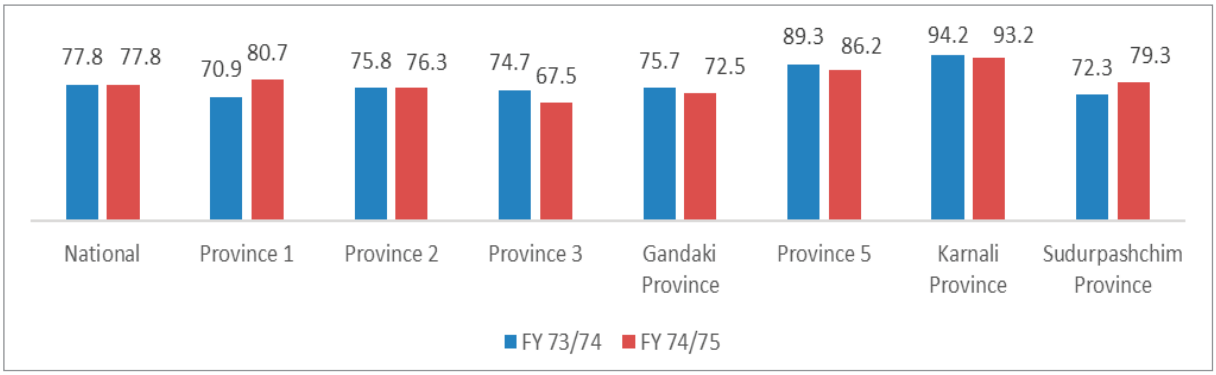
Source: HMIS/MD/DoHS

In both rounds at national level, relatively higher percentage of children aged 6-11 month had received Vitamin A compared to the children aged 12-59 months. However, while calculating the target population for aged 6-11, number of target population in age group 12-59 was subtracted from number of target population in age group 6-59 as target population for age group 6-11 months is not available in HMIS estimation. That may be the reason due to which it seems that more than hundred percentage children received the Vitamin A supplementation. Moreover, the relatively higher coverage of the children aged 6-11 months in the Mid-western and Far Western regions could be due to the introduction of new strategy of vitamin A supplementation to the infants aged 6-11 months in 2014/15. This strategy allowed health facilities and FCHVs to provide vitamin A to children immediately after they reached six months of age. Under this strategy, children then receive the second dose at the regular biannual supplementation events. Majority of the districts in provinces 2, 6 and 7 are supplementing Vitamin A with this new service delivery mechanism.

4.3.6.9 Biannual Deworming Tablet Distribution to the Children aged 12-59 months

Family Welfare Division is implementation biannual deworming tablets distribution to the children aged 12-59 months aiming to reduce childhood anaemia with control or parasitic infestation through public health measures. This activity is integrated with biannual Vitamin A supplementation to the children aged 6-59 months, which takes place nationally in every ward on first week of Baisakh and Kartik each year. Deworming to the target children was initiated in few districts during the year 2000 integrating with biannual Vitamin A supplementation and with gradual scaling-up, the program was successfully implemented nationwide by the year 2010.

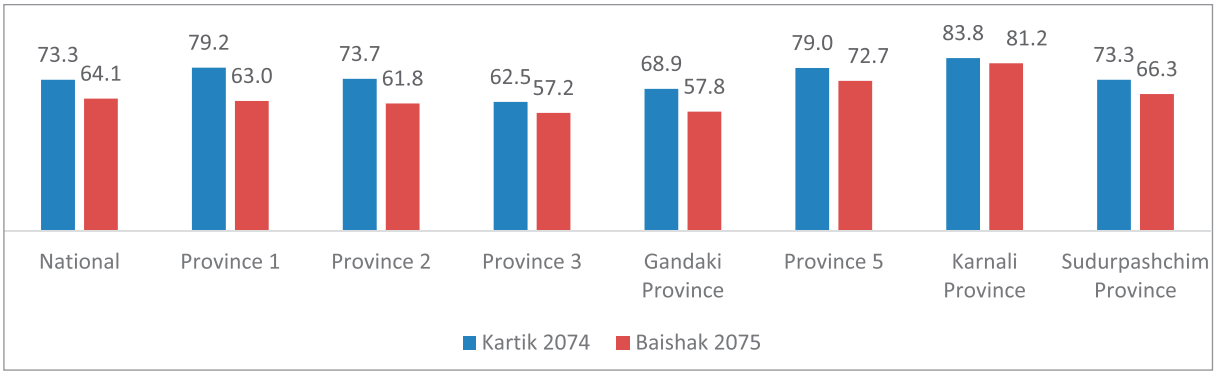
Figure 4.3.16: Coverage of Deworming Tablets distribution to the Children aged 12-59 months



Source: HMIS/MD/DoHS

As shown in figure 4.3.16, the national coverage of deworming tablet distribution is 78.8 percent unchanged from last year. For all the provinces, the coverage is higher than 70 percentage except for Province 3. Karnali province has the highest coverage while Province 3 has the lowest coverage. Province 1, Province 2 and Sudurpachim Province somewhat has increased its coverage while Province 3 has decreased its coverage a little compared to last year.

Figure 4.3.17: Round wise coverage of Deworming Tablets distribution to the Children aged 12-59 months



Source: HMIS/MD/DoHS

The report is presented separately for Baishak and Kartik round of FY 2074/075. As shown in figure 4.3.17, the national coverage of deworming tablet distribution is 73.3 percent in Kartik round and 64.1 percent inBaishakround. For all the provinces, the coverage shown similar pattern with higher in Karik and lower in Baishak. Province-wise, province 5 and 6 shows highest coverage with Gandaki province and Province 3 with relatively low coverage. In Gandaki province, the coverage for Baisakh is substantially low (57.8 percent) than that in Kartik (69 percent).

4.3.6.10 School Health and Nutrition Programme

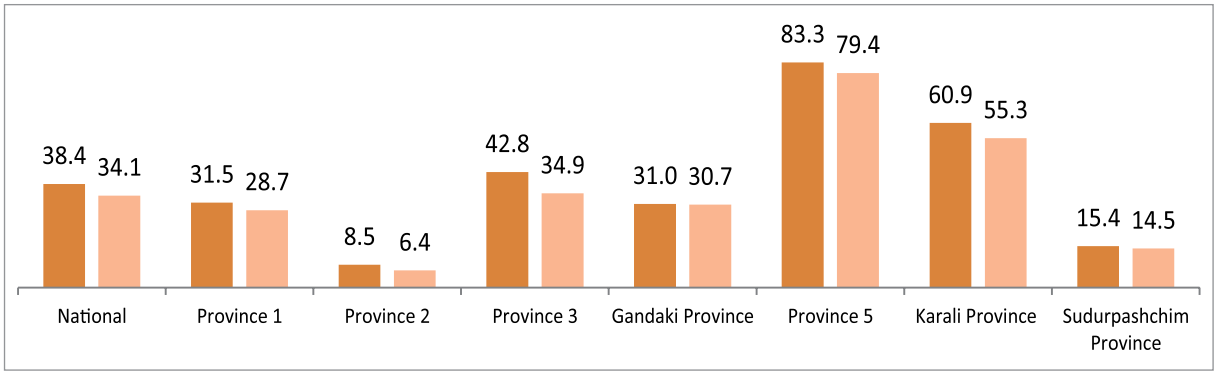
The School Health and Nutrition Strategy (SHNS) was developed jointly in 2006 by Ministry of Health and Ministry of Education to address the high burden of diseases in school age children. In 2008, a five-year Joint Action Plan (JAP) was endorsed to implement School Health and Nutrition (SHN) Program. The improved use of school-based health and nutrition services, improved access to safe drinking water and sanitation, skill-based health education, community support and an improved policy environment are the core elements of the School Health and Nutrition Programme.

During 2008-2012, government had implemented a pilot SHN project in primary schools based on the Joint Action Plan in Sindhupalchowk and Syangja districts. This pilot project has some promising results recommending to scaling up of the program in other districts. With gradual scaling-up, the program has covered all 77 districts by FY 2073/074. The current Joint Action Plan (2071/072 to 2075/76) calls for:

- annual health screening
- biannual deworming of Grade 1–10 school children
- a first aid kit box with refilling mechanism in all primary schools
- hand washing facilities with soap in all schools
- toilets in all schools
- the use of the new attendance registers in all schools
- orient school management committees on facilitating health and nutrition activities
- child club mobilization on health and nutrition issues.

One of the major activities under SHN Program is Biannual School Deworming to all the School-aged-children (SAC) that is conducted in first week of Jestha and Mangsir every year. Until FY 72/73, progress in this regard has not been reported in the annual report due to the very poor, almost no reporting to the system. However, though very low, there is some reporting this FY as presented in the figure 4.3.18 below. As reflected, national coverage of school deworming is 38.4 percent for girls and 34.1 percent for boyswith the highest in Province(83.3 percent for girls and 79.4 percent for boys) and with lowest in province 2 (only 8.5 percent for girls and 6.4 percent for boys).

Figure 4.3.18 Coverage of School Deworming Tablet Distribution



Source: HMIS/DoHS

4.3.6.11 Adolescent Girls Iron Folic Acid Supplementation

From FY 2072/073, the SHN Program has initiated Weekly Iron Folic Acid (IFA) supplementation to the adolescent girls aged 10-19 years aiming to prevent and control the high burden of Iron Deficiency Anemia among this particular group of population. This activity was piloted in Kathmandu, Dolakha, Khotang, Panchthar, Bhojpur, Saptari, Puthan and Kapilvastu in FY 2072/073.

In FY 2073/74 17 more districts, namely Bajura, Bajhnag, Doti, Bhaktapur, Rupandehi, Manang, Surkhet, Mahottari, andBara, were scaled up. Family Welfare Division has completed the Training to the concerned official from all these districts. However, the program has yet not been implemented in few districts due to the various reason.

In FY 2074/075, further scaling up of the program was done inJajarkot, Rukum East, Rukum West, Dailekh, Bardiya, Nawalprasi East, Nawalprasi West, Baitadi, Achham, Dadeldhura, Rolpa, Dang, Kanchanpur and Banke in support of Suaahara. Similarly, in support of UNICEF, FWD scaled up program in Dhanusha, Sarlahi, Rautahat, Parsa. In Udaypur, Kalikot, Dolpa, Jumla, Mugu and Hulmlahealth worker training has been done through Comprehensive Nutrition Specific Intervention training, however, teacher's training has yet to be completed.

In 75/76 the Family welfare division is planning to extend to further 12 districts and by three years up to the 77 districts making it as national program.

Under this component, all the adolescent girls aged 10-19 years are supplemented with weekly Iron Folic Acid biannually in Shrawan (Shrwan-Asoj) and Magh (Magh-Chiatra) rounds. In each round, they are provided with one IFA tablet every week for 13 weeks. So, each adolescent girl should get a total of 26 IFA tablets in a year.

4.3.6.12 Nutrition in emergencies

In addition to the regular nutrition program intervention, Family Welfare Division also provide services of Nutrition in Emergencies. When an emergency caused by any reasons such as natural disasters (earthquake, flood, drought, etc.), conflicts or any other cause occurs affecting the overall health, nutrition, and livelihoods of all the population either in any are of the country or nationwide, Nutrition in Emergencies (NiE) services is provided to the affected areas. NiE interventions focus on the pregnant and lactating women (PLWs) and children under five years of age as they are nutritionally most vulnerable during any emergency. Under NiE interventions following Five Building Blocks of nutrition interventions are implemented in the affected areas of the country.

- Promotion, protection and support to breast feeding of infant and young children aged 0-23 months.
- Promotion of proper complementary feeding to the infant and young children aged 6-23 months.
- Management of moderate acute malnutrition (MAM) among the children aged 6-59 months and among PLWs through targeted supplementary feeding program (TSFP).
- Management of severe acute malnutrition among the children aged 6-59 months through therapeutic feeding.
- Intensification of Micronutrient supplementation for children and women including MNP and vitamin A for children aged 6-59 months, IFA for pregnant and postnatal women.

In 2074/75, response for the floods was done. Nutrition cluster reached 1,400,772 children aged 6-59 months and 160,950 pregnant and lactating women in 18 flood affected districts namely; Jhapa, Morang, Sunsari, Saptari, Siraha, Dhanusha, Mahottari, Sarlahi, Rautahat, Bara, Parsa, Nawalparasi, Rupendehi, Kapilvastu, Dang, Banke, Bardiya and Kailali. In these districts, the progress was as; Vitamin A supplemented to 1,400,772 children aged 6-59 months, counselling of breast feeding and complementary feeding to the caretakers of 0-23 months children (297,281), screening of children aged 6-59 months (630,976), treatment of Severe Acute Malnutrition (15,201), deworming of 12-59 months children (1,209,568), iron and folic acid tablets to Pregnant and Lactating women (160,950). Similarly,

190,379 children aged 6-59 months and 52,902 pregnant and lactating women reached with blanket supplementary feeding; and 23,392 children aged 6-59 months with Moderate Acute Malnutrition and 6,617 women with acute malnutrition reached with Targeted supplementary feeding programme.

The following table shows the progress of 18 flood affected districts on nutrition in emergency response:

Table 4.3.4: Progress of 18 flood affected districts on nutrition in emergency situation

SN	Indicators	Total Achievements	Target	Achievements (%)
1	Number of mothers and caretakers of children age 6-23 months children who are reached with effective complementary feeding counseling with continuation of breastfeeding	306,277	315,587	97.05
2	Number of children age 6-59 months are screened on monthly basis using MUAC	653,030	979,971	66.64
3	Number of children identified as SAM during the screening are admitted in to the OTC for appropriate treatment using RUTF	15,475	15,000	103.17
4	Number of children age 6-59 months reached by biannual supplementation of Vitamin-A in the district	1,400,833	1,277,228	109.68
5	Number of children age 12-59 months reached by biannual distribution of deworming tablet in the district	1,210,113	720,046	168.06
6	Number of PLWs reached by IFA supplementation in the district	160,950	280,374	57.41
7	Number of children aged 6-59 months reached with BSFP	213,700	190,379	112.25
8	Number of MAM children aged 6-59 months reached with TSFP	11,968	23,392	51.16
9	Number of PLW reached with BSFP	44,108	52,901	83.38
10	Number of PLW reached with TSFP	11,772	6,616	177.93

Source: Nutrition Cluster report, 2018

Small Scale Flood Response:

On the evening of 27 August 2018, the Saptakoshi river flooded entered to six wards of HanumannagarKankalini Municipality (ward no. 5, 6, 7, 9, 11 and 12) and two wards of TilathiKoiladi Rural Municipality (ward no. 4 and 5) inundating about 540 households. After the flood, UNICEF provided a joint sanitation, clean water and nutrition response to the affected areas. In case of nutrition, the interventions were as follows:

- Assessed/screened the nutrition situation of children aged 6-59 months and pregnant & lactating women
- Oriented Female Community Health Volunteers and health workers to address the nutrition issues in the affected areas
- Distributed of Multiple Micro-nutrient powder (MNP) to the children aged 6-23 months in the affected areas by FCHVs
- Treated the children aged 6-59 months with severe acute malnutrition (SAM)

Mid-Upper Arm Circumference (MUAC) screening report:

Table 4.3.5: Mid-upper arm circumference (MUAC) screening report

Indicators/Ward No	5	6	7	9	11	12	Total	%
MUAC screening of 6-59 Months children	52	27	46	39	34	66	264	
Normal	45	25	45	34	34	58	241	91.3
Moderate Acute Malnutrition (MAM)	5	2	0	4	0	8	19	7.9
Severe Acute Malnutrition (SAM)	2	0	1	1	0	0	4	1.52
6-23 months' children taking MNP	19	11	26	33	22	32	143	
Pregnant and lactating women Screening	30	1	14	12	16	14	87	
Pregnant and lactating women (MUAC =/>230 mm) screening	12	1	7	6	14	7	47	54.0
Pregnant and lactating women (MUAC <230 mm)	18	0	7	6	2	7	40	46.0

Source: Nutrition Cluster report

The female community health volunteers and health workers gave MNP (Balvita) to moderately acute malnourished children and normal children of 6-59 months, IFA to pregnant and lactating women along with infant and young children feeding counselling.

Some newly screened severely acutely malnourished children were admitted in the OTC following the flood.

Regarding nutrition response, the following was the status of response:

- Total severe acute malnutrition (SAM) admitted for the treatment: 39
- Cured Discharged: 28
- In treatment: 7
- Defaulter discharge: 11 (defaulter case is from distant wards who did not came for follow-up)
- Adequate ready to use therapeutic food (RUTF) stock present in the centre.

SMART nutrition survey in 6 flood affected districts:

As a part of monitoring progress, an assessment of the nutritional status and feeding behavior of children, adolescent, pregnant and lactating women were measured through Standardized Monitoring and Assessment in Relief and Transition (SMART) nutrition survey in six flood affected districts (Rautahat, Sarlahi, Mahottari, Saptari, Jhapa and Siraha. In order to smooth implementation of SMART survey, study protocols and questionnaires were developed, three male supervisors and 36 female enumerators were oriented in methodology and questionnaires. Pre-tests were carried out in advance of the survey to improve the knowledge and skills of enumerators and identify any issues prior to departure for real data collection. The data collection of the survey started from the third week of April 2018 because of a delay in getting ethical clearance from Nepal Heath Research Council (NHRC).

According to the finding of the SMART nutrition survey, the status of under nutrition of children under age of five at risk of all three indicators (Stunting, Wasting and underweight). The acceptable level of stunting is 20 per cent but the status in six districts is 30.1 per cent according to the WHO criteria. Similarly, using weight for height Z-score, the proportion of acute malnutrition (wasting) among

children under 5 years of age is 19.4 per cent (severe: 5.2 per cent) and is critical as defined by WHO. GAM levels of less than 5 per cent are considered as "Acceptable"; 5 to 9 per cent as "Poor"; 10 to 14 per cent as "Serious"; and 15 per cent and more as "Critical". As per this guideline, the 6 districts in terms of incidence of wasting show that the situation ranges from "Serious" to "Critical". Regarding the MUAC assessment, the situation is quite different. The findings show the differences between rapid nutrition assessment after 10 days of flood emergencies i.e. last week of August 2017 was 28.3 per cent and MUAC assessment during SMART nutrition survey done in during end of nutrition in flood emergency response in March 2018 was 7.7 per cent.

In order to provide the response action, UNICEF also provided the nutrition cluster coordination effectively and more than 25 nutrition cluster members participated in the cluster related business including assessment and others.

Cluster coordination:

In nutrition cluster, more than 25 members agencies have been organized. In 2018, 9 nutrition cluster meetings were organized by UNICEF and MoHP jointly. In 2018, through the nutrition cluster meeting following technical working group have been formed and activated to provide technical assistance on different aspects of nutrition programme in emergencies:

- IYCF working group
- IMAM working group
- Micro-nutrient working group
- Information management working group
- M&E working group

Similarly, following documents have been revised/prepared by nutrition cluster in 2018:

- TOR of nutrition cluster
- TOR of five nutrition cluster working groups
- Revised nutrition cluster operation guideline
- Prepared/revised three contingency plans to address the issues of nutrition in flood, earthquake and cold wave emergencies
- 4W mapping
- Update the nutrition cluster roster

Challenges and managerial response:

- Information management through HMIS was a big problem. The data was collected weekly basis through mobilization of partners CSOs and nutrition focal points as well as OTC based health workers.
- Mobilization of health workers and FCHVs was an issue but training/orientation was provided to the health workers and FCHVs and mobilized them jointly with concerned DPHO and CSO partners. In small scale flood in Saptari in 2018, UNICEF assigned its nutrition officers from the field office full time for two weeks and one NGO (Aasman Nepal) was also mobilized for the actions simultaneously.
- It was difficult to continue the programme after abolishment of DPHO. But, the coordination mechanism was strengthened with local government which helped a lot for programme management.

4.4 Safe Motherhood and Newborn Health

4.4.1 Background

The goal of the National Safe Motherhood Programme is to reduce maternal and neonatal morbidity and mortality and improve maternal and neonatal health through preventive and promotive activities and by addressing avoidable factors that cause death during pregnancy, childbirth and the postpartum period. Evidence suggests that three delays are important factors for maternal and newborn morbidity and mortality in Nepal (delays in seeking care, reaching care and receiving care).

The following major strategies have been adopted to reduce risks during pregnancy and childbirth and address factors associated with mortality and morbidity:

- Promoting birth preparedness and complication readiness including awareness raising and improving preparedness for funds, transport and blood transfusion.
- Expansion of 24 hours birthing facilities alongside AamaSuraksha Programme promotes antenatal check-ups and institutional delivery.
- The expansion of 24-hour emergency obstetric care services (basic and comprehensive) at selected health facilities in all districts.

The Safe Motherhood Programme, intiated in 1997 has made significant progress with formulation of safe motherhood policy in 1998. Service coverage has grown along with the development of policies, programmes and protocols. The policy on skilled birth attendants (2006) highlights the importance of skilled birth attendance (SBA) at all births and embodies the government's commitment to train and deploy doctors, nurses and ANMs with the required skills across the country. Introduction of Aama programme to ensure free service and encourage women for institutional delivery has improved access to institutional deliveries and emergency obstetric care services. The endorsement of the revised National Blood Transfusion Policy (2006) was another significant step for ensuring the availability of safe blood supplies for emergency cases. The main programme strategies are listed in Box 4.2.1.

The Nepal Health Sector Strategy (NHSS) identifies equity and quality of care gaps as areas of concern for achieving the maternal health sustainable development goal (SDG) target, and gives guidance for improving quality of care, equitable distribution of health services and utilisation and universal health coverage with better financing mechanism to reduce financial hardship and out of pocket expenditure for ill health.

Box 4.4.1: Main strategies of the Safe Motherhood Programme

1. Promoting inter-sectoral coordination and collaboration at Federal, Provincial, districts and Local levels to ensure commitment and action for promoting safe motherhood with a focus on poor and excluded groups.
2. Strengthening and expanding delivery by skilled birth attendants and providing basic and comprehensive obstetric care services at all levels. Interventions include:
   - o developing the infrastructure for delivery and emergency obstetric care;
   - o standardizing basic maternity care and emergency obstetric care at appropriate levels of the health care system;
   - o strengthening human resource management —training and deployment of advanced skilled birth attendant (ASBA), SBA, anaesthesia assistant and contracting short-term human resources for expansion of services sites;
   - o establishing a functional referral system with airlifting for emergency referrals from remote areas, the provision of stretchers in Palika wards and emergency referral funds in all remote districts; and
3. Strengthening community-based awareness on birth preparedness and complication readiness through FCHVs and increasing access to maternal health information and services.
4. Supporting activities that raise the status of women in society.
5. Promoting research on safe motherhood to contribute to improved planning, higher quality services and more cost-effective interventions.

4.4.2 Major activities in 2074/75

Community level maternal and newborn health interventions

Family Welfare Division (FWD) continued to expand and maintain MNH activities at community level including the Birth Preparedness Package (*jeevansuraksha* flipchart and card) and distribution of *matrisurakshachakki* (misoprostol) to prevent postpartum haemorrhage (PPH) in home deliveries.

Through FCHV, public health system promotes:

- birth preparedness and complication readiness (preparedness for money, place for delivery, transport and blood donors);
- self-care (food, rest, no smoking and no alcohol) in pregnancy and postpartum periods;
- antenatal care (ANC), institutional delivery and postnatal care (PNC) (iron, tetanus toxoid, Albendazole ,Vitamin A);
- essential newborn care; and
- identification of and timely care seeking for danger signs in the pregnancy, delivery, postpartum and newborn periods.

In 2066/67, the government approved PPH education and the distribution of the *matrisurakshachakki (MSC) tablets* through FCHVs to prevent PPH in home deliveries. For home deliveries, three misoprostol tablets (600 mcg) are handed over to pregnant women by FCHV at 8th month of pregnancy through proper counselling to take immediately after delivery and before the placenta is expelled. Forty-eight districts were implementing the programme upto 2073/74. Further two districts, Rasuwa and Nawalparasi started implementing this program in this fiscal year. Recent NDHS (2016) shows that only 13 percent of women who gave childbirth without skilled assistance took MSC tablets, this call for the

importance of strengthening this programme as women who delivered at home are likely to be higher risk. As the programme is not yet implemented nationwide, monitoring is not yet integrated in HMIS.

Rural Ultrasound Programme

The Rural Ultrasound Programme aims for the timely identification of pregnant women with risks of obstetric complication to refer to comprehensive emergency obstetric and neonatal care (CEONC) centres. Trained nurses (SBA) scan clients at rural PHCCs and health posts using portable ultrasound. Women with detected abnormalities such as abnormal lies and presentation of the foetus and placenta previaare referred to a CEONC site for the needed services. This programme is being implemented in the 14 remote districts. In FY 2074/75, a total of 54 SBA were trained on rural ultra sound by NHTC and FWD.

Reproductive health morbidity prevention and management programme

a. *Management of pelvic organ prolapse and Obstetric Fistula:* Pelvic organ prolapse (POP) is common reproductive health morbidity in Nepal and contributes to disability adjusted life years (DALYs) and social consequences. Multiparity, maternal malnutrition, too frequent pregnancies and heavy work after delivery are the main risk factors. Each year the government allocates funds to manage POP including free screening, providing silicon ring pessaries, Kegel's exercise training and free surgical services at designated hospitals.

   In 2073/74 more than 14,600 women were screened for the reproductive morbidity, 23 percent of women (3374 women) were diagnosed of having POP. Among women who were screened 8.9 percent had first degree POP, 6.6 percent second degree POP and 7.5 percent third degree POP. 52 percent of these women with POP received ring pessary treatment. 1308 women received surgical treatment in FY 2074/75 .Moreover, 120 women received free surgical treatment for obstetric fistula.

b. *Cervical cancer screening and prevention training:* Cervical cancer is the most common cancer of women in Nepal, accounting for 21.4 percent of all cancer among 34–64 year old women. The national guidelines on cervical cancer screening and prevention (2010) call for screening at least 50 percent of women aged 30–60 years and for reducing the mortality due to cervical cancer by 10 percent with recommended screening among this group every five years. Cervical cancer screening is done by visual inspection of the cervix by trained nurses or doctors using acetic acid. If any signs of a pre-cancerous lesion are seen, women are referred for cryotherapy to cure the lesion. This approach is cost-effective as the early detection of lesions and early management by cryotherapy will usually prevent progression to cervical cancer, and the cost of scaling up this activity is relatively low. Budget was allocated in all 753 palika's to conduct the cervical cancer screening and prevention program and National coverage was achieved in 2074/75, howeverlimited health worker were trained so it is difficult toensurethat service is in full-fledged. In this reporting year,total 65health workers (doctors and nurses) were trained on visual inspection with acetic acid and cryotherapy.

Human resources

A significant share of FWD's budget goes for recruiting human resource (Staff nurses,ANMs)on short term contracts to ensure 24 hour services on MNH at PHCCs and health posts. FWD also provides funds to DHOs and DPHOs to recruit the human resource mix needed to provide surgical management for obstetric complications at district hospitalsCEONC sites).

FWD has been coordinating with the National Health Training Centre (NHTC) and the National Academy for Medical Sciences (NAMS) for the pre-service and in-service training of health workers. NHTC provides training on SBA, ASBA, Anaesthesia assistant,operating theatre management, family planning (including implants and IUCD), CAC and antenatal ultrasonography. In 2074/75, 620 SBA, 29 ASBA were trained by NHTC and NAMS. By the end of 2074/75 a total of 9,620 SBAs and 197 ASBAs have been trained. The proper placement of trained staff such as ASBAs and anaesthesia assistants (AAs) has been a continuous challenge. FWD continues to monitor the deployment of doctors (MDGP, OBGYN, ASBA) and AAs,and inform DOHS and MOH as necessary for appropriate transfer. This has resulted in improved functionality of CEONC services.

Expansion and quality improvement of service delivery sites

FWD continued to expand 24/7 service delivery sites like birthing centres, BEONC and CEONC sites at PHCCs, health posts and hospitals. The expansion of service sites is possible mostly due to the provision of funds to contract short-term staff locally. By the end of 2074/75 CEONC services were established in 72 districts, only 60 districts were functional throughout the year. During the fiscal year 8-12 districts provided interrupted C-section services. Expansion of delivery services continues through the initiation of local government. Total 2101 health post and 188 PHCC reported to have providing delivery services in 2074/75.

Study in 2013 (FHD 2013) shows that the overcrowding of normal delivery services at referral hospitals has contributed to poor quality of care. To expand and improve the quality of maternity services, FWD has been allocating budget to overcrowded hospitals since 2069/70. In 2074/75,five overcrowded zonal and regional hospitals received funds for recruiting staff and for quality improvement. FWD has also allocated budgets for recruiting staff nurses and ANMs in these hospitals to cope with the overcrowding of maternity wards and MOH is developing master plan for these hospitals to overcome this problem.

Onsite clinical coaching and mentoring

Quality service at the service delivery point is one of the focused themes of NHSS and its implementation plan 2016-2021. On-site coaching and clinical skill enhancement of service providers is considered the most effective means to improve knowledge, skills and practices of health service providers (WHO). FWD had started to implement on-site clinical coaching /mentoring programme since 2073/2074 from 16 districts to enhance knowledge and skill of SBA and non-SBA nursing staffs providing delivery services at BC/BEONC and CEONC service sites. This programme has been scaled up in 15 districts in FY 2074/2075. At the end of FY 2074/2075, total 31 districts implemented onsite clinical coaching and mentoring programme based on coaching/mentoring guideline and Tool. This guideline has included mainly three parts; Clinical coaching/mentoring for MNH service providers (SBA and non_SBA), Infection prevention and MNH readiness QI self-assessment. FWD and NHTC stared to develop district mentors through mentor training since FY 2073/2074. Total 89 district SBA clinical mentors were trained from coaching/mentoring programme implemented districts. They are the key skill persons who visit each BC/BEONC sites and conduct onsite coaching/mentoring along with MNH readiness self-assessment process to enhance capacity of delivery service providers, HF staffs and HFOMC members to make MNH service readiness. A set of models are used for model based practice during clinical coaching. FWD and local Palikas provide these models to SBA clinical mentors to 21 districts. By end of FY 2074/75, total 672 MNH service providers received on-site clinical mentoring from SBA mentors.

MNH readiness Hospital and BC/BEONC Quality Improvement

Improvement in quality of service delivery through self-assessment, infection prevention demonstration and action plan implementation is evidence based effective program as per outcome found in piloting districts, Taplejung and Hetauda hospital in FY 2070/2071. At the end of FY 2074/2075, FWD expanded hospital quality improvement process (HQIP) in 35 CEONC hospitals in 33 districts.

The process of quality improvement is also being implemented in birthing centers in integration with onsite coaching/mentoring process. Total QI reported BC/BEONC sites were 154 (44 in FY 2073/2074 and 110 in FY2074/2075).

PNC home visit(microplanning for PNC)

Access to and utilization of post-natal care services is a major challenge while the majority of maternal deaths occur during post-natal period. As reported above in PNC section women who received PNC according to the protocol is 16 percent. In FY2074/75FWD provided 30 local palikas from 15 districts to strengthen PNC services by mobilizing MNH service providers from health facilities to provide PNC at women's home.Based in HMIS data, PNC per protocol (3 visits)in these 30 Palikas was50% among institutional delivery in FY 2074/75, an increased from 39% in FY 2073/74.

Emergency referral funds

It is estimated that 15 percent of pregnant women will develop serious complications during their pregnancies and deliveries, and 5 to 10 percent of them will need caesarean section deliveries (WHO, 2015) to avoid deaths or long-term morbidity. In cases of difficult geographical terrain and unavailable CEONC services, it is crucial that these women are referred to appropriate centres. To address this issue FWD allocated emergency referral funds to Regional Directorate for air lifting of women in need of immediate transfer to higher centres. A total of 4,000,000 Rupees was allocated to five regions to support women when needed. Additional more than 50 lakh Rupees was allocated to 46 districts to support transport fares women who could not afford referral to high facility. The main objective of this programme is to support emergency referral transport to women from poor, Dalit, Janajati, geographically disadvantaged, and socially and economically disadvantaged communities who need emergency caesarean sections or complication management during pregnancy or child birth. In addition, the regional health directorates also have funds to airlift to women from areas where motorised transport is not available or when immediate transfers are needed. Based on national MNH referral guidelines, free referrals for obstetric complications from birthing centres to CEONC centres are being implemented in Ramechhap and Dolakha districts. In FY 2074/75, total nine women received airlifting service using this fund.

Safe abortion services

Global and national evidence shows that many women face unwanted pregnancy including due to limited access to family planning information and services. Such women who cannot access safe abortion services in a timely way are at a high risk of developing complications due to unsafe abortions, or in the worst case, suicide due to social pressure. In Nepal abortion rate among WRA is 42 per 1000 women of reproductive age women (15-49), highest in central region (59) and lowest in Far Western region (21). Out of all these abortions, only 42 percent were provided legally at government approved service sites, (CHREPA 2016). Thus, there is a need to make safe abortion services available, accessible and affordable to all women with unwanted pregnancies. FWD has defined the four key components of comprehensive abortion care as:

- pre and post counselling on safe abortion methods and post-abortion contraceptive methods;
- termination of pregnancies as per the national protocol;
- diagnosis and treatment of existing reproductive tract infections; and
- provide contraceptive methods as per informed choice and follow-up for post-abortion complication management.

Comprehensive abortion care (manual vacuum aspiration [MVA]) services are available in all 75 district hospitals and majority of PHCCs. Additionally, second trimester abortion services are available in 30 hospitals where CEONC services are also available. Medical abortion (MA) services are being expanded in health posts through the additional training of SBAs. Medical abortion services have been expanded to 60 districts with the support of various partners. In FY 2074/75, a total of 282 ANM, 50 nurses, 112 doctors were listed for providing safe abortion services. A total of 158 sites for MA and 33 site for MVA was listed to provide safe abortion services in Nepal. 61160 women received MA and 37480 received surgical abortion services.

Obstetric first aid orientations

In 2070/71, FHD started orienting paramedics on first aid to manage obstetric complications at health facilities without birthing centres and to enable paramedics to support SBAs and ANMs at times of emergency. In 2074/75, 51 trainers were trained on this subject in 17 districts.

NyanoJhola Programme

The NyanoJhola Programme was launched in 2070/71 to protect newborns from hypothermia and infections and to increase the use of peripheral health facilities (birthing centres). Two sets of clothes (*bhoto*,*daura*, napkin and cap) for newborns and mothers, and one set of wrapper, mat for baby and gown for mother are provided for women who give birth at birthing centres and district hospitals. The programme was interrupted due to financial constraints, however MOH allocated extra budget for due to popular demand.

AamaandFree NewbornProgramme

The government has introduced demand-side interventions to encourage women for institutionaldelivery. The Maternity Incentive Scheme,2005 provided transport in centives to women to deliver in health facilities. In2006, user fees were removed from all types of delivery care in 25 low HDI districts and expanded to nation wide under the Aama Programme in 2009. In 2012, the separate 4ANC incentives programme was merged with the Aama Programme. In 2073/74, the Free Newborn Care Programme (introduced inFY2072/73)was merged with the Aama Programme which was again separated in FY 2074/75 as two different programmes witht he provisions listed in Box 4.4.2.

Box 4.4.2: Provisions of the Aama Programme and Newborn Programme

Aama programme provision

a. For women delivering their babies in health institutions:

Transport incentive for institutional delivery: Cash payment to women immediately after institutional delivery (NPR 3,000 in mountains, NPR 2,000 in hills and NPR 1000 in Tarai districts).

Incentive for 4 ANC visits: A cash payment of NPR 800 to women on completion of four ANC visits at 4, 6, 8 and 9 months of pregnancy, institutional delivery and postnatal care.

Free institutional delivery services: A payment to health facilities for providing free delivery care. For a normal delivery health facilities with less than 25 beds receive NPR 1,000 and health facilities with 25 or more beds receive NPR 1,500. For complicated deliveries health facilities receive NPR 3,000 and for C- sections (surgery) NPR 7,000. Ten types of complications (antepartum haemorrhage (APH) requiring blood transfusion, postpartum haemorrhage (PPH) requiring blood transfusion or manual removal of placenta (MRP) or exploration, severe pre-eclampsia, eclampsia, MRP for retained placenta, puerperal sepsis, instrumental delivery, and management of abortion complications requiring blood transfusion) and admission longer than 24 hours with IV antibiotics for sepsis are included as complicated deliveries. Anti-D administration for RH negative is reimbursed NPR 5,000. Laparotomies for perforation due to abortion, elective or emergency C-sections, laparotomy for ectopic pregnancies and ruptured uterus are reimbursed NPR 7,000 to both public and private facilities.

b. Incentives to health service provider:

For deliveries: A payment of NPR 300 to health workers for attending all types of deliveries ***to be arranged from health facility reimbursement amounts***.

Newborn Care Programme Provision

a. For sick newborns:

There are four different types of package (Package 0, Package A, B, and Package C) for sick newborns case management. Sick newborn care management cost is reimbursed to health facility. The cost of package of care include 0 Cost for Packages 0, and NPR 1000, NRP 2000 and NRP 5000 for package A, B and C respectively. Health facilities can claim a maximum of NPR 8,000 (packages A+B+C), depending on medicines, diagnostic and treatment services provided.

b. Incentives to health service provider:

A payment of NPR 300 to health workers for providing all forms of packaged services ***to be arranged from health facility reimbursement amounts***.

4.4.3 Achievements

Antenatal care

WHO recommends a minimum of four antenatal check-ups at regular intervals to all pregnant women (at the fourth, sixth, eighth and ninth months of pregnancy). During these visits women should receive the following services and general health check-ups:

- Blood pressure, weight and foetal heart rate monitoring.
- IEC and BCC on pregnancy, childbirth and early newborn care and family planning.
- Information on danger signs during pregnancy, childbirth and in the postpartum period, and timely referral to appropriate health facilities.

- Early detection and management of complications during pregnancy.
- Provision of tetanus toxoid and diphtheria (Td) immunization, iron folic acid tablets and deworming tablets to all pregnant women, and malaria prophylaxis where necessary.

Pregnant women are encouraged to receive at least four antenatal check-ups, give birth at a health institution and receive three post natal check-ups, according to the national protocols. HMIS reported since 2066/67 to track the timing of ANC visits as per the protocol. All antenatal indicators performance dropped in 2074/75. The national average of first ANC visits as a percentage of expected live births has increased from 102 percent in 2073/74 to 103percent in 2074/75.As this indicator is measured against total expected live births, the percentage achieved is higher than 100%. The proportion of pregnant women coming their first ANC visit according to the national protocol, by fourth month, declined from 70 percent of expected live births to 66 percent in 2074/75 (Figure 4.4.2). The proportion of pregnant women attending at least 4 ANC visits as per the protocol has declined from 53 percent in 2073/74 to 50 percent in 2074/75 at the national level (Figure 4.4.1).

Figure 4.4.1: Provincial and national trends of percentage pregnant women with four ANC visits(as per protocol) among expected live births

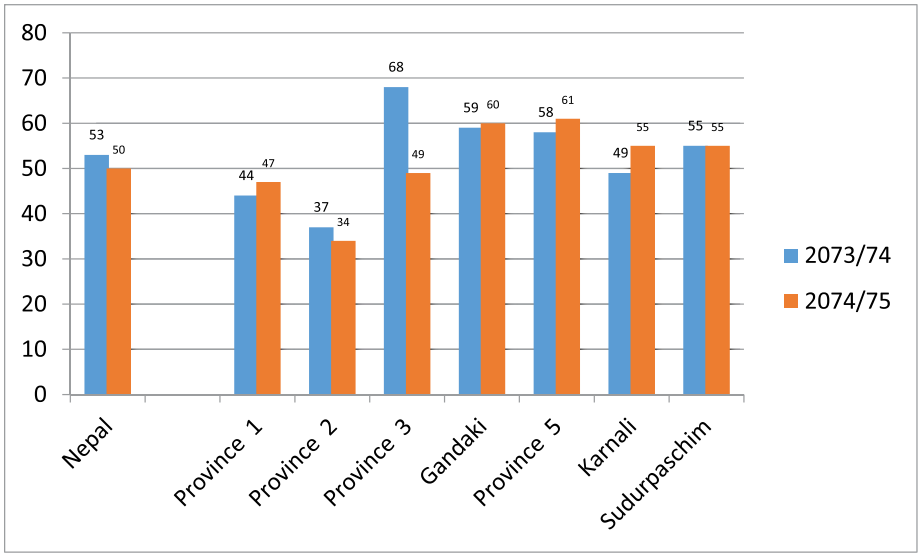


Figure 4.4.2: National trends of percentage pregnant women who visited their first ANC (as per protocol) among expected live births, by ecology

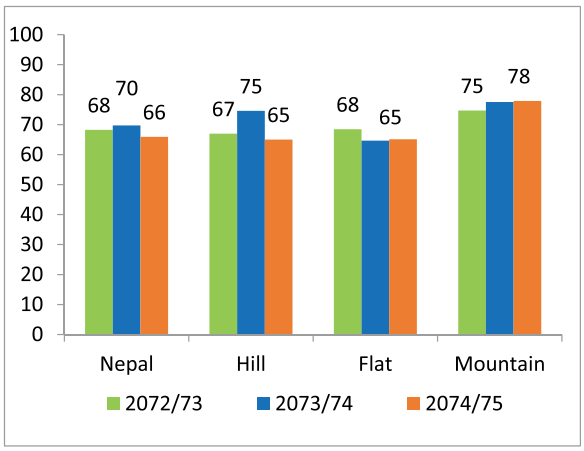
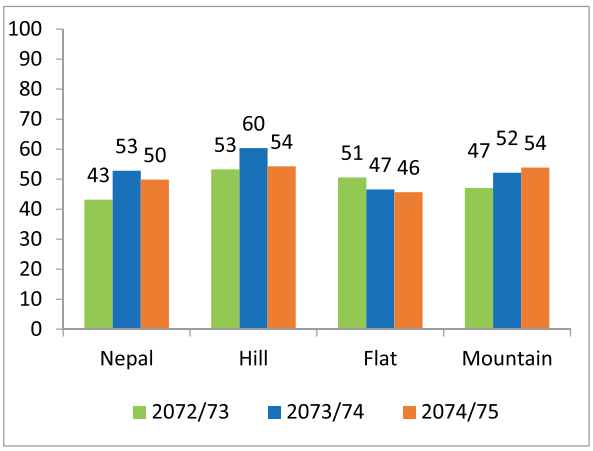


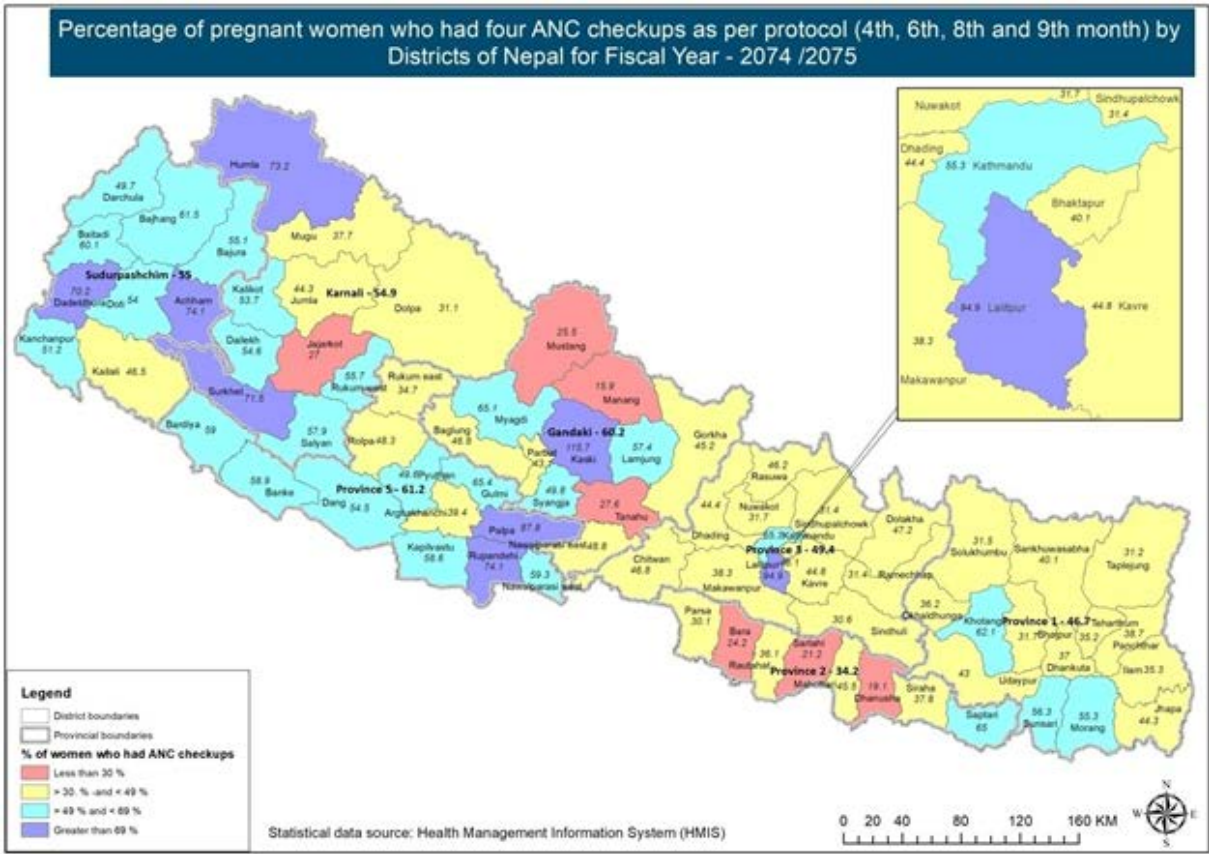
Figure 4.4.3: National trends of percentage pregnant women with four ANC visits(as per protocol) among expected live births, by ecology



ANC first visits per protocol per protocol declined drastically in hilly areas, while is stagnant in mountainous and flat areas. Similarly, ANC four visits per protocol also sharply declined in hilly areas while slight improvement was observed in mountain areas. Province 1, Gandaki province, Province 5 and Karnali province has shown some improvement as compared to last year in ANC visits as per protocol.. However, there is a sharp decline in the percentage of women who had four ANC per the protocol for province 3 from 68 percent to 49 percent. At the same time, Sudurpashchim province remained stagnant.

District wise HMIS data shows that seven districts achieved SDG target of ANC four visits for 2020 that is 71 percent, another five districts achieved SDG's 2017 target that is 75%, while 21 districts achieved more than 50 percent, national average for 2074/75. Twenty districts achieved 30-40 percent and seven districts achieved less than 30 percent (Figure 4.4.4).

Figure 4.4.4: Institutional deliveries by districts 2074/75



Delivery care

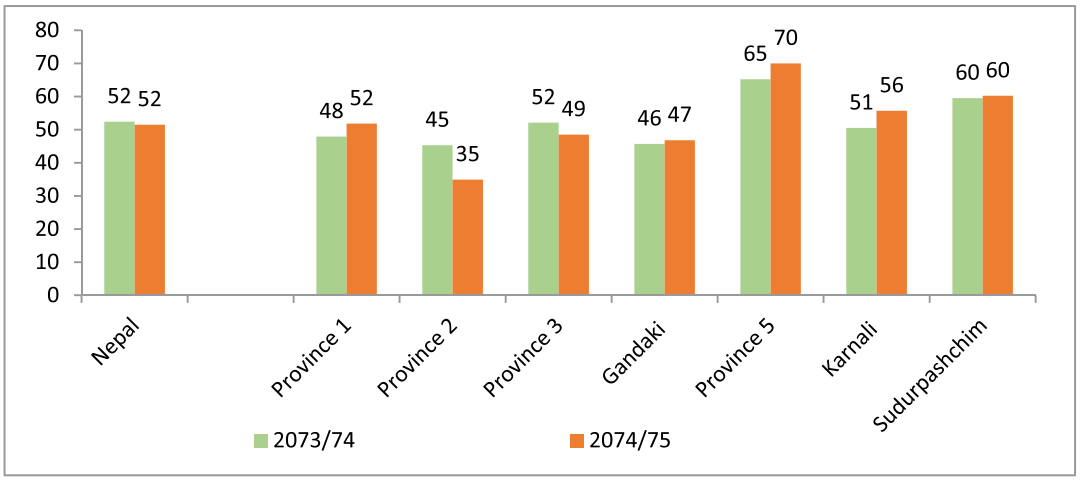
Delivery care services include:

- skilled birth attendance at home and 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
- the registration of births and maternal and neonatal deaths.

Although women are encouraged to deliver at a facility, home deliveri esusing clean delivery kits with provision of misoprostol to prevent post-partum haemorrhage and early identification danger signs and complications,are important components of delivery care in settings where institutional delivery services are not available or not used by the women.

Delivery attended by Skilled Birth Attendants (SBA): Nepal is committed to achieving 70 percent of all deliveries attended by SBAs and at institutions by 2020 (2076/77)toachievetheSDGtargetof 90 percent in 2030. At the national level, percentage of birthsattendedby SBA remained stagnant at 52 percent for both FY2073/74 and FY2074/75. Similarly, Sudurpaschim province also remained at 60 percent for both years. Province five achieved the highest with 70 percent deliveries attended by SBA. The Province 2 has the lowest percentage of delivery attended SBA at 35 percent with a decline in ten percentage point from last fiscal year (Figure4.4.5).

Figure 4.4.5: Provincial and national trends of percentage births attended a skilled birth attendant (SBA) among expected live births



Institutional delivery: Institutional deliveries as a percentage of expected live births remain stagnant at 54 percent in both FY2073/74 and FY2074/75 (Figure 4.4.6). As compared to 2073/74, percentage of institutional deliveries increased in all Provinces except for Province 2 and Province 3.Province 2 observed a ten percentage point decline in the percentage of institutional deliveries from 44 perent in FY2073/74 to 34 percent in FY2074/75. At the same time, Province 5 and Karnali province observed 7 percentage point increase.

Figure 4.4.6: Provincial and national trends of percentage institutional deliveries among expected live births

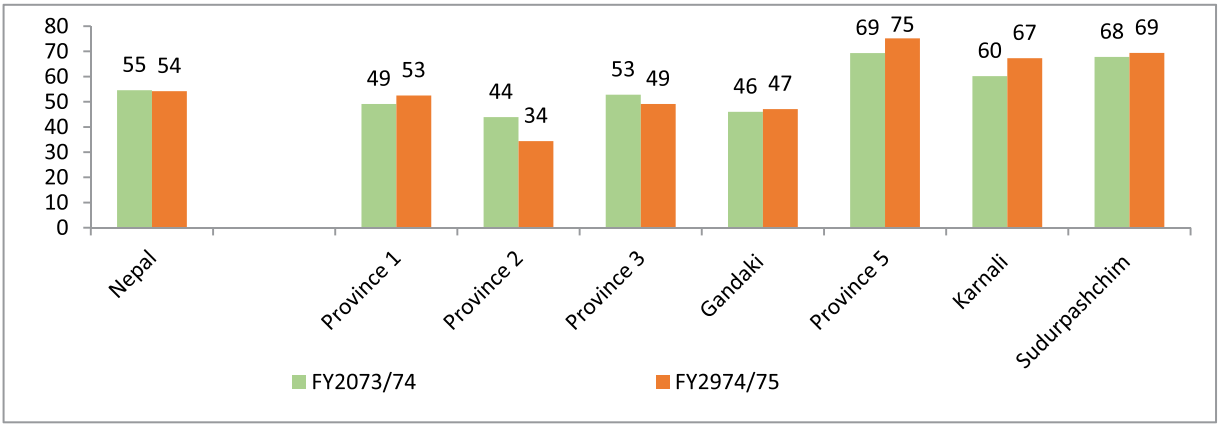


Figure 4.4.7: National trends of percentage births attended a SBA by ecology

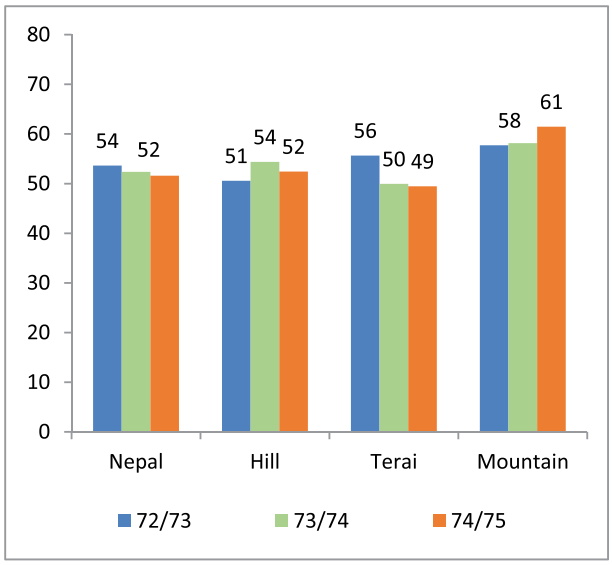
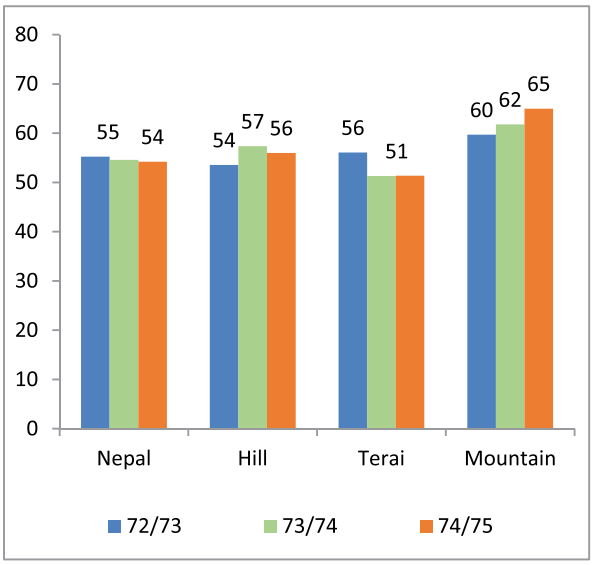
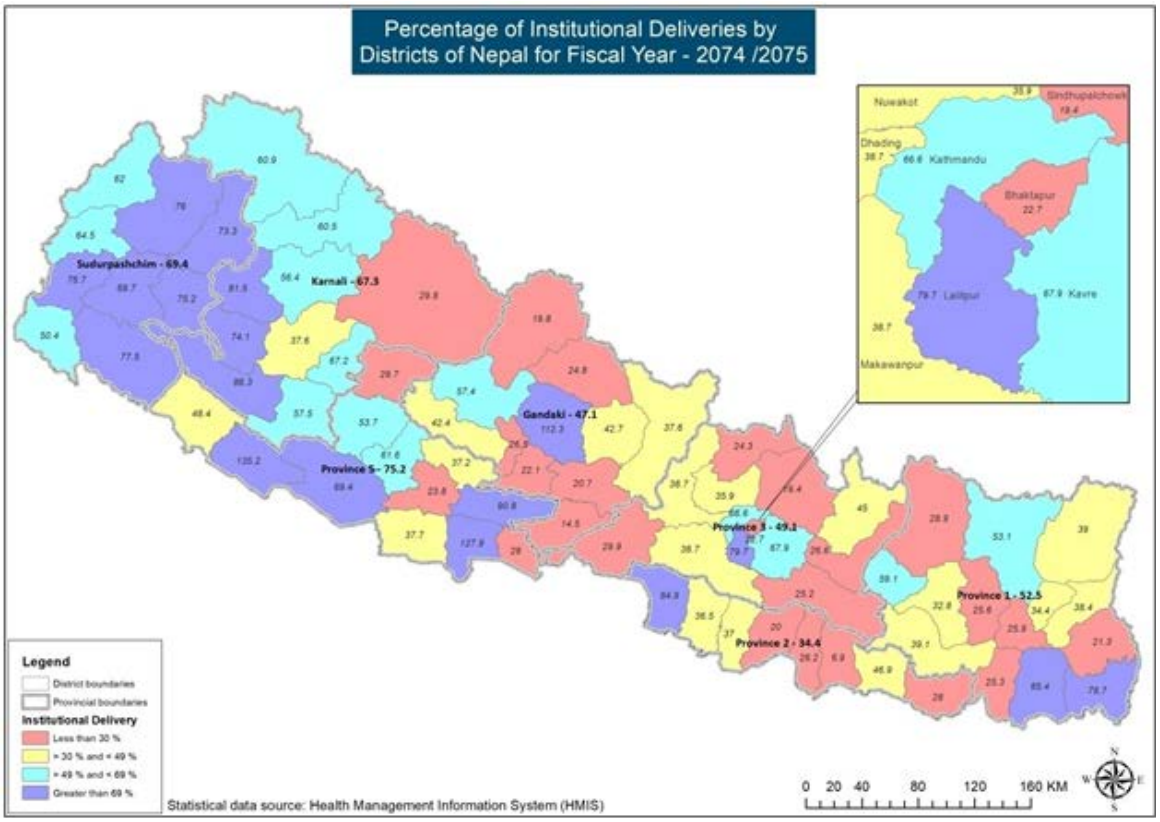


Figure 4.4.8: National trends of percentage institutional deliveries by ecology



Deliveries attended by SBA increased in mountain areas from 59 percent in 2073/74 to 61 percent in 2074/75, while SBA delivery for flat areas stagnant at 50 percent and for hilly areas declined from 54 percent to 52 percent (Figure 4.2.7). The same finding was observed for institutional deliveries. It is increased in mountain areas from 62 percent in 2073/74 to 65 percent in 2074/75, while institutional delivery in both flat and hilly areas stagnant at 51 percent and 57 percent respectively (Figure 4.2.8).

Figure 4.4.9: Institutional deliveries by districts 2074/75 (Nepal map to insert)



Seventeen districts achieved the 2020 target of NHSS 70 percent institutional delivery a slight decline from 18 districts in last fiscal year, while 22 districts achieved less than 30 percent institutional deliveries an increased from 18 districts last fiscal year.Non-reporting of institutional delivery data from referral hospitals such as Janakpurzonal hospital, Bharatpur hospital and some teaching hospitals affect national performance (Figure 4.4.9).

Ninety percent of PHCC and 43 percent of HP are providing delivery services. Despite high number of HP and PHCC providing delivery services, only 30 percent of HP with BC and 60 percent of PHCC are providing more than 60 deliveries per year (5 deliveries per month). The proportion of institutional deliveries taking place at birthing centrs (in health posts and PHCC) slightly declined over the last three years, from 35.3percent of all institutional deliveries in 2073/74 to 34.5 percent in 2074/75. This is a concern considering the increasing number of birthing centres (BCs/BEONC) at health posts and PHCC (Table 4.2.1 and 4.2.2). Share of institutional delivery provided by non-public health facilities increased from 19 percent in 2072/73, to 22 percent in 2073/74 to 23 percent in 2074/75.Majority of deliveries at non-public health institutions are at hospitals with specialisations. Almost 50% of institutional deliveries take place in hospitals (referral hospitals)(Table 3.2.2).

Table 4.4.1: Number of Health Post and PHCC with institutional deliveries services and number of districts with CEONC services (HMIS data)*

Province	Number of HP with deliveries per year				Number of PHCC with deliveries per year				Districts with CEONC**
	> 200	100-199	60-99	10-59.	> 200	100-199	60-99	10-59.	
Province 1	1	3	18	192	2	3	8	26	14
Province 2	15	27	28	82	10	7	4	7	8
Province 3	1	4	15	220	4	6	6	17	12
Gandaki	0	3	12	138	3	5	0	13	9
Province 5	28	48	42	161	10	7	10	2	10
Karnali	1	37	56	164	1	3	6	3	10
Sudurpaschim	23	46	84	182	8	5	1	2	9
Nepal	**69**	**168**	**255**	**1139**	**38**	**36**	**35**	**70**	**72**
	1631* **				**179*** **				**72**

**Health Post and PHCC with less than 10 deliveries per year are not counted in the list*

***Number of districts with CEONC services established in the district*

***Excluding 476 HP and 9 PHCC with less than 10 deliveries per year

Table 4.4.2: Proportions of Institutional Deliveries at Different types of Health Institutions

	HP and PHCC	District and General Hospitals	Referral or Specialised Hospitals[1]	Non-public facilities[2]
2072/73	35.7	12.8	31.8	19.7
2073/74	35.3	14.0	28.7	22.0
2074/75	34.5	14.8	27.6	23.1

1 All public Zonal, Sub-regional, regional, central, specialized and teaching hospitals.Irregular reporting from Sagarmatha zonal hospital, Janakpur zonal hospital, Bharatpur hospital, TUTH, and BPKIHS hospital.

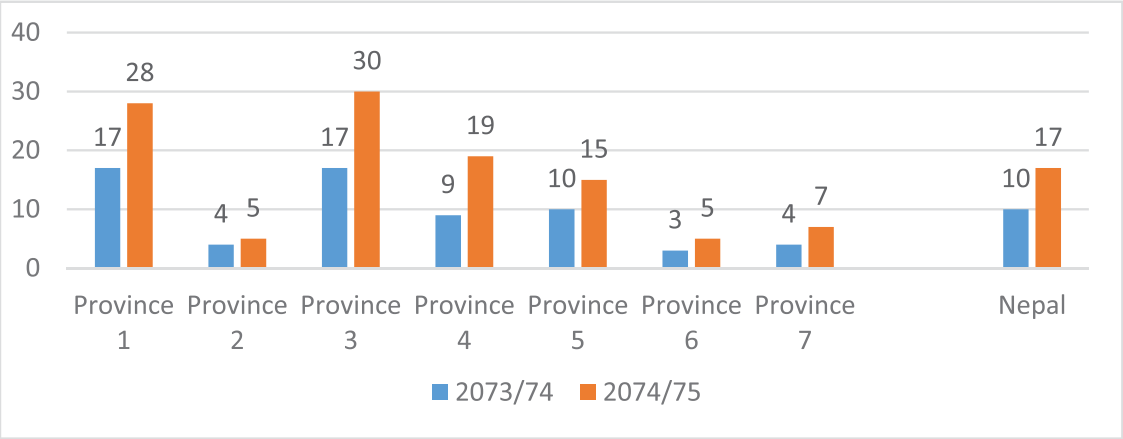
2 Majority of these hospitals are hospitals with specialisation

Emergency obstetric care: Basic emergency obstetric and newborn care (BEONC) covers the management of pregnancy complications by assisted vaginal delivery (vacuum or forceps), the manual removal of placentas, the removal of retained products of abortion (manual vacuum aspiration), and the administration of parental drugs (for postpartum haemorrhage, infection and pre-eclampsia and eclampsia) and the resuscitation of newborns and referrals. Comprehensive emergency obstetric care (CEONC) includes surgery (caesarean section), anaesthesia and blood transfusions along with BEONC functions.

In FY2073/74 more than 80 percent of institutional deliveries are conducted normally followed by 17 percent deliveries by CS and 2.5 percent assisted deliveries. Compared to last fiscal year there is one percentage point increase in the percentage of CS delivery. Very high CS delivery observed in Province 3 (30%), Province 1 (28%) and Gandaki Province (19%) (Fiugre 4.4.10).

Proportion of C-section deliveries among totla institutional delivery was highest in Jhapa districts (53%), followed by Lalitpur (45.5%), Kathmandu (40%, Bhaktapur (38.7%), Kaski (34.4%), Morang (28.4%),Chitwan (26.3%), Rupandehi (24.2%) and Kavre (21%).

Figure 4.4.10: Percentage of deliveries by caesarean section, by province



The met need for emergency obstetric care (EOC) increased to 38percent of estimated complications in 2074/75 from 29 percent the previous year based on Aama reporting (Table 4.2.4). The WHO standard is that 15 percent of expected birth cases suffer major direct obstetric complications throughout pregnancy, childbirth or the immediate postpartum period.

Table 4.4.3: Met need for EOC based on Aama Programme reporting

Fiscal year	Total expected live births	15% of expected live births (estimated proportion needing EmOC)	Number of obstetric complications managed	Met need for EOC services (%)
2072/73	637,263	95,590	22,563	23.6
2073/74	641,899	96,285	28,011	29.1
2074/75	643337	96501	37117	38.0

Postnatal care

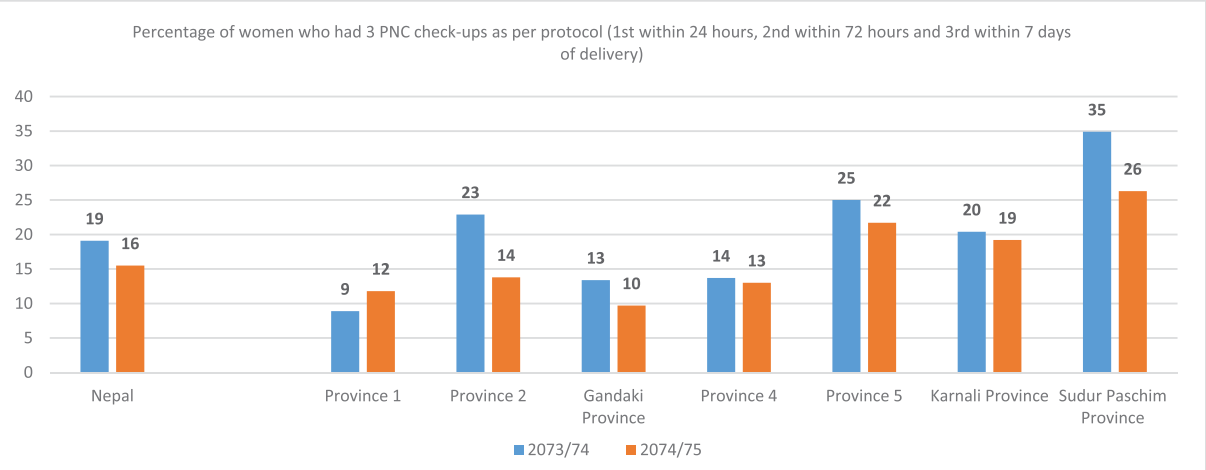
Postnatal care services include the following:

- Three postnatal check-ups, the first in 24 hours of delivery, the second on the third day and the third on the seventh day after delivery.
- The identification and management of complications of mothers and newborns and referrals to appropriate health facilities.
- The promotion of exclusive breastfeeding.
- Personal hygiene and nutrition education, and postnatal vitamin A and iron supplementation for mothers.
- The immunization of newborns.
- Postnatal family planning counselling and services.

The number of mothers who received their first postnatal care at a health facility within 24 hours of delivery is similar to the number of institutional deliveries in almost all health facilities as most health workers reported to have provided post-natal care to both mothers and babies on discharge. The revised HMIS introduced the monitoring of three PNC visits according to a protocol since2071/72.

The proportion of mothers attending three PNC visits as per the protocol declined from 19 percentin 2073/74 to 16 percent in FY2074/75 (Figure 4.2.11). Except for Province 1, the proportion of mothers attending three PNC has declined in all other provinces. It is important to note that proportion of women attending three PNC has always been low compared to other safe motherhood indicators. Cultural and geographical factors affecting the movement of postnatal mothers could be reasons for the low coverage while the perceived low importance of care during the postpartum period could alsobesignificant.There is a need for culturally sensitive interventions to promote access to and the use of postnatal services, especially in geographically challenging areas.

Figure 4.4.11: Provincial and national trends of percentage of women who had 3 PNC check-up as per protocol



Newborn care

Newborn care includes:

- delivery by a skilled birth attendant at home and facility births with immediate newborn care (warmth, cleanliness, immediate breast feeding, cord care, eye care and immunization) for all newborns and the resuscitation of newborns with asphyxia;

- health education and behaviour change communication for mothers on early newborn care at home;
- the identification of neonatal danger signs and timely referral to an appropriate health facility; and
- community based newborn care (see Section 2.3 above).

A separate report on post-natal care to new born is not reported in HMIS and it can be assumed that the percentage of new born who received PNC as per protocol is similar to as of mothers. Among 343,577 live births reported 91 percent received application of Chlorhexidine (Nabi care) at umbilical cord at delivery.

Safe abortions

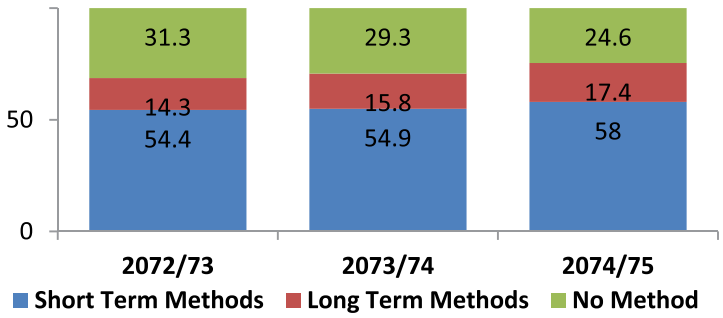
More than 100,000 women have received safe abortion services from certified service sites since the service began in Nepal in 2060/61. The use of safe abortions services increased over the last decade. Total SAS users were 96,417 women in 2073/74 and 98,640 in 2074/75. Share of medical abortion among total safe abortion service users also gradually increased over the last few years, from 53 percent in 2072/73, 56 percentin 2073/74 and 62percent in 2074/75.Proportion of adolescents (< 20 years) among SAS user decline over the last three years for both medical and surgical abortion. Total reported post-abortion complication also decline over the last three years.

Table 4.4.4: Proportion of safe abortion services users, by age

Fiscal year	Aged < 20 years among total Medical SAS users	Aged < 20 years among total Surgical SAS users
2072/73	15%	18&
2073/74	12%	17%
2074/75	10%	11%

Compared to fiscal year 2072/73, the proportion of women who had a safe abortion and then used contraceptives increased over the last three years, from 71 percent in 2073/74 to 75 percent in 2074/75 (Figure 4.2.12). The acceptance of post abortion contraception among medical abortion service users was high compared to among surgical abortion users (medical abortion 82% versus surgical abortion 65%). Overall, post-abortion LARC use is higher among women who had surgical abortion (21percent)0than among medical abortion (16percent).

Figure 4.4.12: Trend of post abortion contraceptive use (%)



Source:HMIS

Implementation of Maternal and Perinatal Death Surveillance and Response (MPDSR)

Maternal and Perinatal Death Surveillance and Response (MPDSR) was designed to measure and track all maternal deaths in real time, to understand the underlying factors contributing to mortality and to provide guidance for how to respond to and prevent future deaths. This is a continuous identification, notification, quantification and determination of causes and avoidability of all maternal and perinatal deaths, as well as the use of this information to respond with actions that will prevent future deaths. GoN prioritized and implemented MPDSR in FY 2073/74 MPDSR with further strengthening and expansion.

MPDSR was scaled up in 5 districts (Sunsari, Sarlahi, Surkhet, Rupandehi and Jumla) and ... Hospitals in FY2074/75. Government of Nepal (GoN) developed MPDSR guidelines 2015. In these districts, both community maternal deaths, hospital maternal deaths and hospital perinatal deaths are reviewed and responses planned.

Community-based MPDSR: Community based MPDSR program was implementing in 11 districts 77 hospitals. In community-based MPDSR programcommunity, maternal deaths and perinatal deaths are reviewed and responses planned.

Hospital-based MPDSR: Currently 77 hospitals are implementing MPDSR program.In hospitals, each maternal death is reviewed individually and perinatal deaths are reviewed in a monthly basis.

Formation of MPDSR Committees at different levels

As per the MPDSR guidelines 2015, there was National MPDSR Committee chaired by the Director General, Directorate of Health Services and MPDSR Technical Working Group (TWG) chaired by Director, Family Health Division. In addition, there are health facility levels MPDSR committees andpalika level committees with separate VA and cause of death assignment teams for community MPDSR program. For each hospital implementing MPDSR, there is MPDSR committee formed as per the level of the hospital.

MPDSR On-site coaching program

Family Health Division conducted on-site coaching program to support the districts and hospitals for implementing MPDSR program. The on-site coaching program was done in district for community based MPDSR and hospitals for hospital based MPDSR. During this program available data, forms and documents were reviewed and discussion was done which mainly focused to address the preventable issuess.

Review of MPDSR:

A review of MPDSR program was conducted in this fiscal year with a objective to review the update progress on MPDSR in implementing hospitals. Review was conducted in Biratnagar, Butwal, Kathmandu and Dhangadi which covered all implementing hospitals in Nepal. 2-3 person from each hospital were invited form each hospitals to participate in the review.

One stop Crisis Management Centre (OCMC)

One stop crisis managementOrientation program wassuccessfully completed in five different district hospital i.e. ChautaraHospita, Sindhupalchowk, Dhulikhel Hospital, Kavrepalanchowk, Sandhikharka Hospital, Argakhachi, Taulihawa Hospital, Kapilbastu and Prithivichandra Hospital, Nawalpara. The objective of the program was to enhance service provider'sknowledge and skill regarding case management.

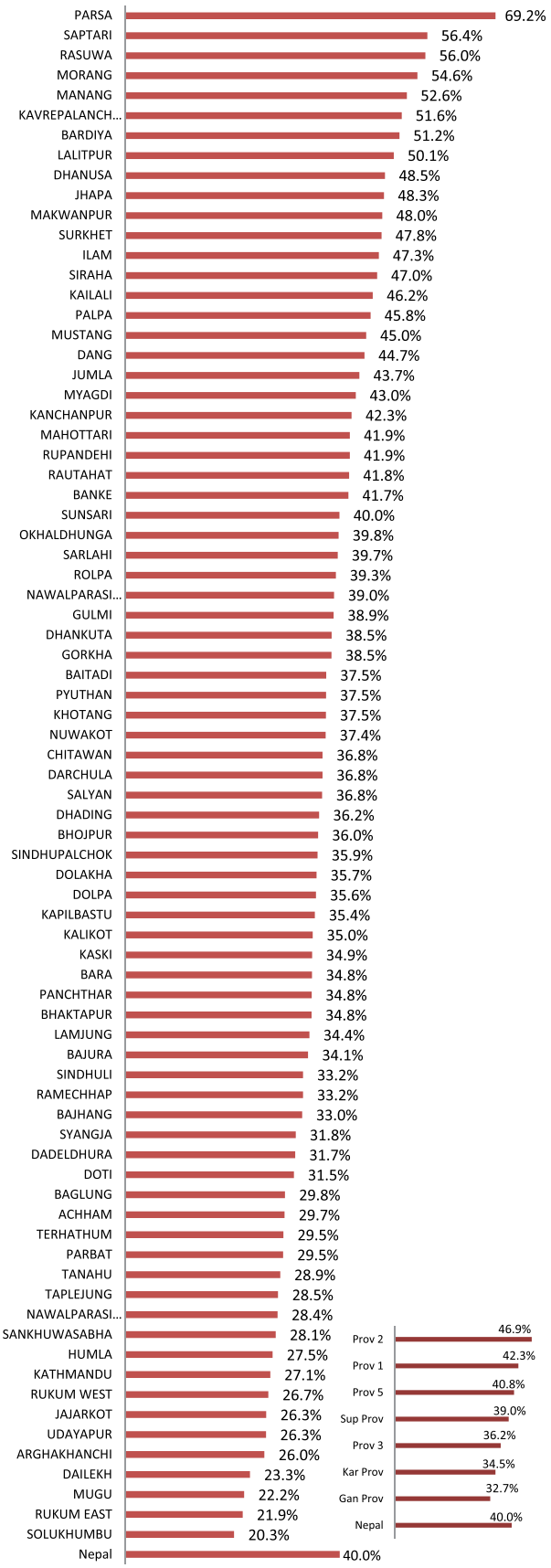
4.4.4 Issues, constraints and recommendations

Table 4.4.7: Issues, constraints and recommendations— safe motherhood and newborn health

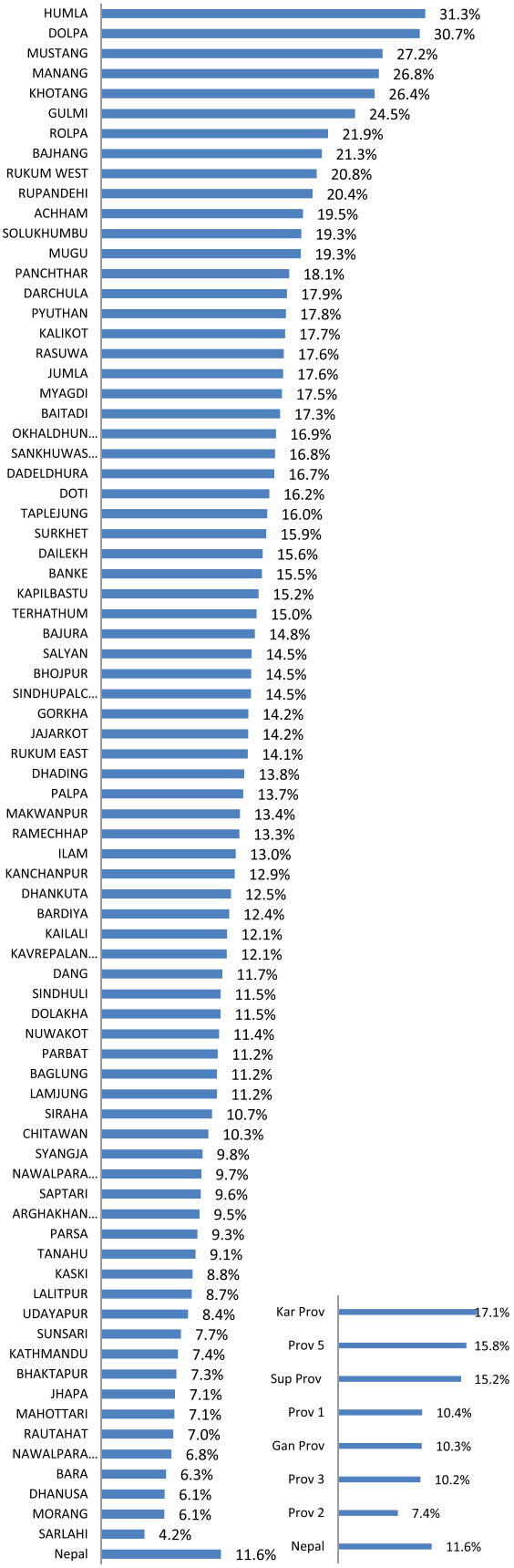
Issues and constraints	Recommendations	Responsibilities
High maternal mortality rate	• Review of programme implementation and effectiveness • Plan for road map to reduce MMR based on global and Nepal evidences	FWD, DoHS, MoH
Referral mechanism needs to be established	• Revise the Aama Programme to facilitate an appropriate referral mechanism and improve access to life-saving services. • Develop Referral Guideline.	FWD
Fluctuating functionality of CEONC and birthing centre services	• Focusing on functionality and quality of existing CEONC sites, rather than establishing new sites. • Monitoring service provision status and availability of human resource • Promote the production of skilled service providers (AAs, MDGPs, MD obgyn) and ensure appropriate skill mix at CEONC sites by deployment and appropriate transfer of skilled human resources • Continue allocation of fund for contracting out short – term service providers • Provide locum doctors and anaesthesia assistants in strategically located referral hospitals for each province • Introduce a special package to provide CEONC services in mountain districts • Support local government for training of human resources in necessary skills	MoH , DoHS, FHD, NHTC

Issues and constraints	Recommendations	Responsibilities
Availability of quality maternity care services at hospitals and birthing centres: • 24/7 availability of services • skills and knowledge of staff • enabling environment and motivation • overcrowding at referral hospitals.	• Introduce quality improvement process for all maternity care services including QIP self-assessment and on-site clinical coaching • Introduce monitoring process indicator for quality maternity care in health facilities • Adequate budgets allocated for equipment in birthing centres and CEONC sites • Regular MNH skills update programmes for nurses focusing on continuum of care • Introduce construction standards for birthing centres • Support birthing centres at strategic locations only • Provide additional budgetary support for overcrowded hospitals	MoH, DoHS FHD (quality of care) FHD FHD, DHOs, DPHOs FHD, DoHS
Plateauing of 4ANC use and timely first ANC visits, and very low PNC coverage	• Raise the quality of ANC counselling services, focusing on continuum of care • Develop a special package to encourage timely first ANC visits. • Initiate PNC home visit in selected councils	DHOs, DPHOs, FHD
Low use of institutional delivery and C-section services in mountain districts, and province number 2 and 6	• Produce a strategy to reach unreached sub-populations • Rapidly assess and expand rural ultrasonography (USG) • Expand services in remote and difficult locations and ensure continuous availability of services (birthing centres and CEONC services)	FHD, DHOs, DPHOs
No CEONC services in some remote districts: Rasuwa, Manang and Mustang	• Discussion with local government on the advantages of have CEONC, and challenges in maintaining CEONC functionality in low population areas	FHD
The high public demand for free delivery services at BPKIHS	• Implement the Aama Programme at BPKIHS	MoH, BPKIHS, FHD, RHDs
The inadequate use of some birthing centres and increasing the number of birthing centres, and increasing use of referral hospitals	• The strategic upgrading of health facilities into birthing centres • Upgrade strategically located birthing centres to provide comprehensive quality primary health care services and aim for 'home delivery free' VDCs • Run innovative programmes to encourage delivery at birthing centres	FHD, DHOs DPHOs
High demand for free surgery for uterine prolapse cases	• Increase the budget and target for regional health Hospitals provides regular services of POP surgery .	FHD
Federal structure and governance of health institutions; limited understanding of health service delivery	• Orientation of local and provincial level government on their roles in health services delivery and governance	FWD/MOHP

mCPR by district 2074/75



Temp. method new acceptors as % of MWRA



4.5 Family Planning and Reproductive Health

4.5.1 Background

Family planning (FP) refers to a conscious effort by a couple to limit or space the number of children through the use of contraceptive methods. Modern methods include female sterilization (e.g. minilap), male sterilization (e.g. no-scalpel vasectomy), intrauterine contraceptive device (IUCD), implants (e.g. Jadelle), injectables (e.g. Depo Provera), the pill (combined oral pills), condoms (male condom), lactational amenorrhea method (LAM) and standard days method (SDM).

The main aim of the National Family Planning Programme is to ensure that individuals and couples can fulfil their reproductive needs by using appropriate FP methods voluntarily based on informed choices. To achieve this, the Government of Nepal (GoN) is committed to equitable and right based access to voluntary, quality FP services based on informed choice for all individuals and couples, including adolescents and youth, those living in rural areas, migrants and other vulnerable or marginalized groups ensuring no one is left behind.

GoN also commits to strengthen policies and strategies related FP within the new federal context, mobilize resources, improve enabling environment to engage effectively with external development partners and supporting partners, promote public-private partnerships, and involve non-health sectors. National and international commitments will be respected and implemented (such as NHSSIP 2015-2020, Costed Implementation Plan 2015-2020 and FP2020 etc.).

From program perspective, GoN through its subsidiary (FWD, PHD, Health section MoSD, and municipalities) will ensure access to and utilization of quality FP services through improved contraceptive use especially among hard to reach, marginalised, disadvantaged and vulnerable groups and areas, broaden the access to range of modern contraceptives method mix including long acting reversible contraceptives such as IUCD and implant from service delivery points, reduce contraceptive discontinuation, scale up successful innovative evidence informed FP service delivery and demand generation interventions.

In Nepal, FP information, education and services are provided through the government, social marketing, NGOs and the private sector (including commercial sectors). In the government health system, short acting reversible contraceptive methods (SARCs: male condoms, oral pills and injectables) are provided through PHCCs, health posts and PHC-ORCs. FCHVs provide information and education to community people, and distribute male condoms and resupply oral contraceptive pills. Long acting reversible contraceptive (LARC) services such as intrauterine contraceptive devices (IUCDs) and implants are only available in hospitals, PHCCs and health posts that have trained and skilled providers. Access to LARC services is provided in remote areas through satellite clinics, extended visiting service providers and mobile camps. Male and female sterilization services (e.g. voluntary surgical contraception [VSC]) are provided at static sites or through scheduled seasonal and mobile outreach services.

Quality FP services are also provided through private and commercial outlets such as NGO run clinic/ centre, private clinics, pharmacies, drug stores, hospitals including academic hospitals. FP services and commodities are made available by some social marketing (and limited social franchising) agencies.

FP services are part of essential health care services and are provided free in all public sector outlets.

4.5.2 Objectives, policies and strategies

The overall objective of Nepal's FP programme is to improve the health status of all people through informed choice on accessing and using voluntary FP. The specific objectives are as follows:

- To increase access to and the use of quality FP services that is safe, effective and acceptable to individuals and couples. A special focus is on increasing access in rural and remote places and to poor, Dalit and other marginalized people with high unmet needs and to postpartum and post-abortion women, the wives of labour migrants and adolescents.
- To increase and sustain contraceptive use, and reduce unmet need for FP, unintended pregnancies and contraception 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.

The five policies and strategic areas to achieve the above objectives are presented in Box 4.5.1.

Box 4.5.1: Policies and strategic areas for FP

1. *Enabling environment*: Strengthen the enabling environment for FP
2. *Demand generation*: Increase health care seeking behaviour among populations with high unmet need for modern contraception
3. *Service delivery*: Enhance FP service delivery including commodities to respond to the needs of marginalized people, rural people, migrants, adolescents and other special groups
4. *Capacity building*: Strengthen the capacity of service providers to expand FP service delivery
5. *Research and innovation*: Strengthen the evidence base for programme implementation through research and innovation

Target of Family Planning

Selected FP goals and indicators to ensure universal access to sexual and reproductive health-care services, including for FP/SRH programmes are as follows:

Table 4.5.1: SDG targets and indicators

Target and Indicators	2015	2019	2022	2025	2030	Source
1. Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods	66n	71	74	76	80	NDHS, NMICS
Contraceptive prevalence rate (CPR) (modern methods) (%)	47.1n	52	53	56	60	NDHS, NMICS
Total Fertility Rate (TFR) (births per women aged 15-49 years)	2.3n	2.1	2.1	2.1	2.1	NDHS, NMICS
Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group	71n	56	51	43	30	NDHS, NMICS

Table 4.5.2: NHSS Implementation Plan (IP) 2016-2021 target of FP Program:

S.N	Indicator	Baseline			Milestone				Target
		Data	Year	Source	2016	2017	2018	2019	2020
1	Contraceptive prevalence rate (modern methods) CPR	47.1	2014	NMICS		50			55
2	Method mix of FP								
	Male sterilization	18	2014	NMICS		18			18
	Female sterilization	30.9	2014	NMICS		29.9			27
	IUCD	4.5	2014	NMICS		4.8			5.7
	Implant	5.3	2014	NMICS		5.8			7.3
	Injectable	21.5	2014	NMICS		21.6			21.9
	Pills	9.7	2014	NMICS		9.7			9.7
	Condom	10.2	2014	NMICS		10.3			10.4
3	Unmet need for family planning (%)								
	Lowest quintile	27.2	2015	NMICS		22.4			19.5
	Highest quintile	24.3	2015	NMICS		22.4			19.5
4	% of women who received post abortion FP	75	2015	NA		80			80
5	% HPs (Health Post) with LARC provide	NA	2015	NA	40	50	60	70	80

4.5.3 Major activities in 2074/75

Key FP activities carried out in 2074/75 are as follows:

- Provision of regular comprehensive FP service
- Provision of long acting reversible services (LARCs)
- FP strengthening program through the use of decision making tool (DMT) and WHO medical eligibility for contraceptive (MEC) wheel
- Micro planning for addressing unmet need of FP in low modern CPR district
- Permanent FP Methods or Voluntary Surgical Contraception (VSC)
- Implementation of PPP program at high population district
- Development of institutionalized family planning service center as a training center
- Provision of RANM and VSP service to increase FP service user
- Integration of FP and immunization service
- Satellite clinic services for long acting reversible contraceptives
- Orientation on family planning services for Obstetrician/Gynecologist & Concerned key players
- Micro planning to address unmet need of FP in targeted communities with low CPR District/ Council & follow up
- Interaction program on FP in marginalized communities
- Initiation of school health nurse programme in selected school of some Provinces

4.5.4 Achievements

Current users

Female sterilization (41%) occupies the greatest part of the contraceptive method mix among all current user, followed by Depo (14%), male sterilization (13%), IUCD (12%) and lastly implant (6%) in 2074/75 (Figure 4.5.1).

Figure 4.5.1: Proportion of FP current user—method mix, 2074/75

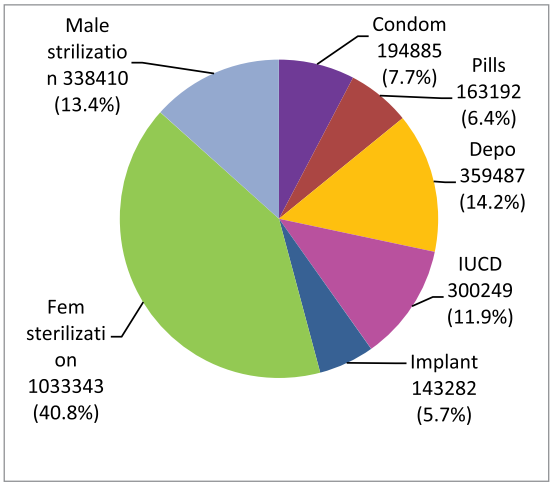
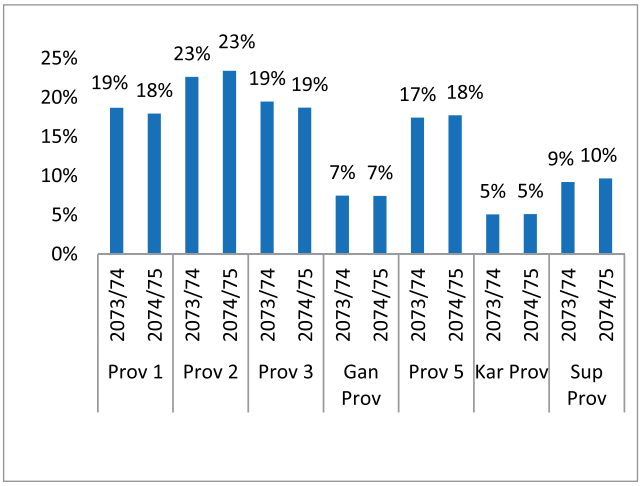


Figure 4.5.2: Share of FP current users (%), all methods, by Province, 2073/74-2074/75



Province 2 has the highest proportion (23%) of current users while Sudurpashchim Province (5%) the lowest (Figure 4.5.2) in 2074/75. Total number of permanent current users exceeds that of spacing method at national level and in Province 1, 2 and Gandaki Province (Table 4.5.3). The trend of share of total current users (in %) shows an increase in 2074/75 nationally and in Province 5 than in previous year (Figure 4.5.2). Nationally, current users (absolute numbers) of all modern methods have decreased by 174,705 in 2074/75 than in previous year. Province wise, the greatest reduction is in Province 3 (by 53,555) and lowest reduction in Province 7 (by 4,555) (Table 4.5.3).

Table 4.5.3: FP current users (modern methods) by Province, 2073/74 to 2074/75 (in 000)

Method	Prov 1		Prov 2		Prov 3		Gandaki Prov		Prov 5		Karnali Prov		Sudurpash-chim Prov		National total users	
Year	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75
Spacing methods	266	217	126	109	304	255	99	86	295	272	80	74	149	145	1,321	1,161
Permanent methods	239	237	486	483	223	218	103	101	176	176	57	55	100	99	1,385	1,371
Total users	505	454	612	592	527	473	202	188	471	448	137	129	249	244	2,707	2,532

The modern contraceptive prevalence rate (mCPR) for modern FP at national level, is 40% in 2074/75 (Figure 4.5.3). Province 2 has the highest mCPR of 46.9% while Gandaki Province 4 the lowest (32.7%). Four Provinces (3, Gandaki, Karnali and Sudurpashchim) have mCPR less than national average. National and Provincial mCPR has decreased in year 2074/75 than that of previous year (Figure 4.5.3). mCPR of Terai (45%) is higher than national average (40%) while that of Mountain and Hill ecological region below the national average (figure 4.5.4).

Figure 4.5.3: mCPR by Province, 2073/74 to 2074/75

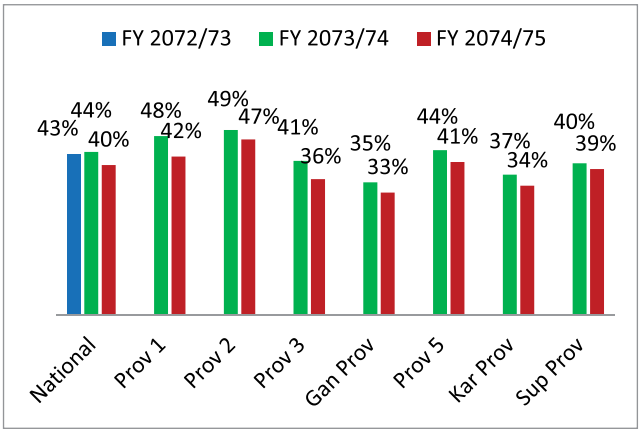
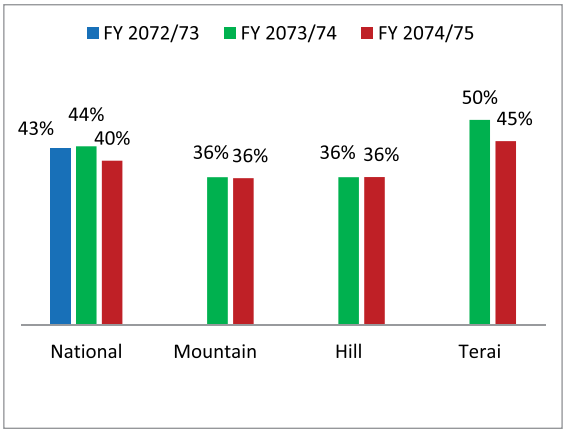
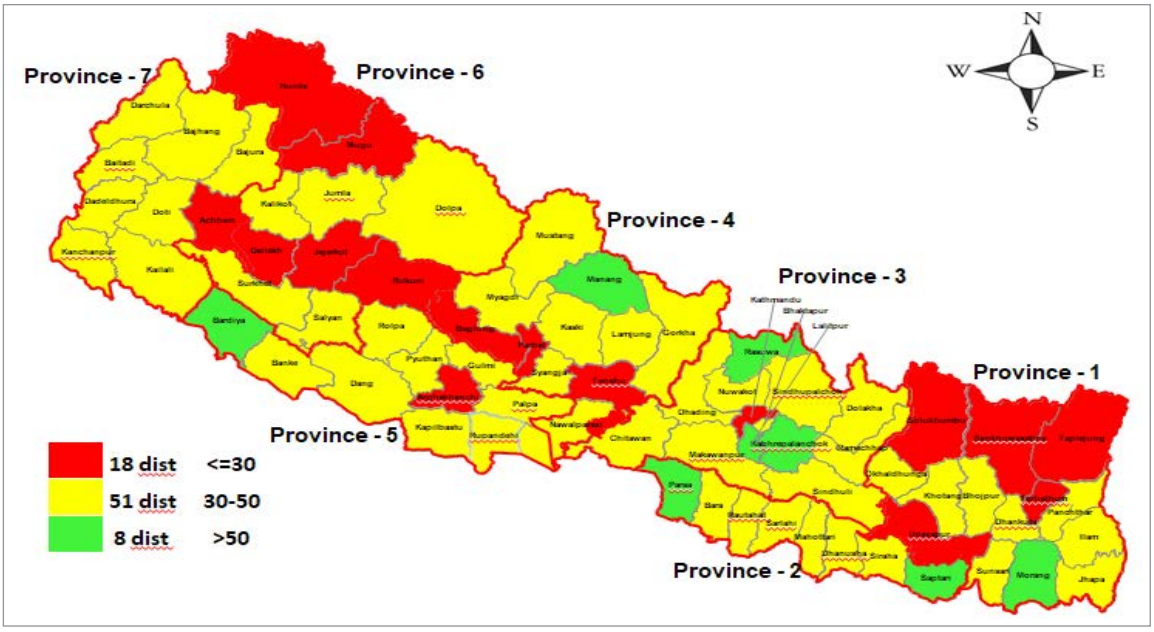


Figure 4.5.4: mCPR by eco-zones, 2073/43 to 2074/75



District-wise HMIS data indicates that in 2074/75 eight districts had mCPR greater than or equal to 50%, 51 districts had mCPR between 30-50% and 18 districts had mCPR less than 30% (Figure 4.5.5 and 4.5.6). Parsa had the highest mCPR (69.2%) while Solukhumbu had the lowest (20.3%).

Figure 4.5.5: mCPR by districts 2074/75



The average mCPR is 53.9% for the top 10 districts and 24.7% for the bottom 10 districts — a difference of 29.1%. The number of districts with mCPR below 30 percent increased from 13 in 2072/73 to 18 in 2074/75 indicating below par performance among the low mCPR districts (Figure 4.5.6 and 4.5.7).

Figure 4.5.6: S-Curve pattern of CPR growth, 2074/75

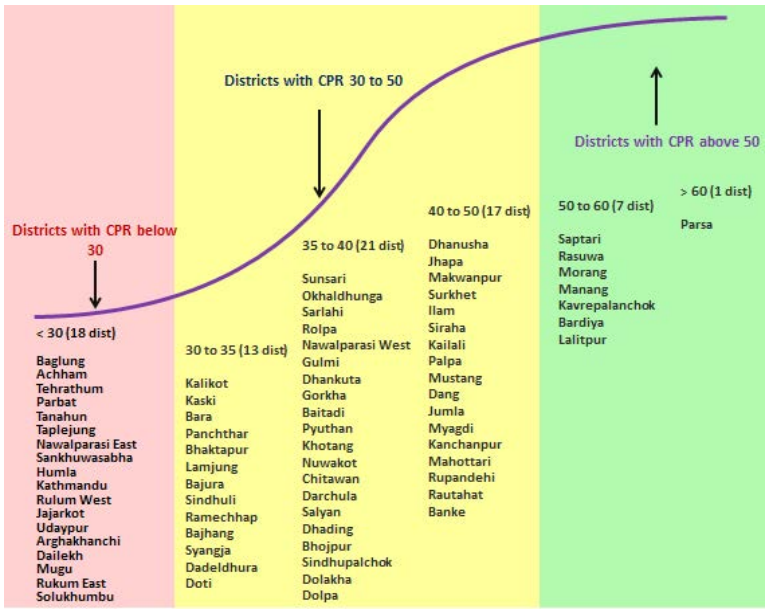
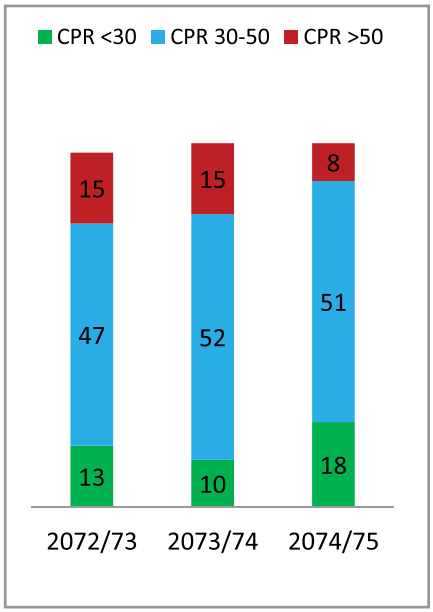
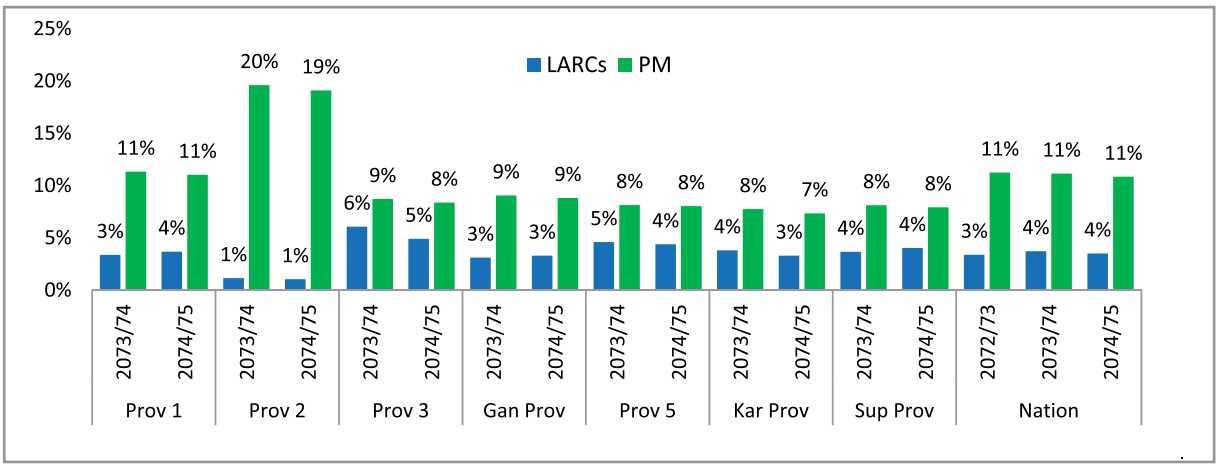


Figure 4.5.7: Trends in mCPR by districts, FY 2072/73-2074/75



Majority of share of current users of long acting (IUCD and implant) and permanent (NSV and ML/LA-sterilization) methods is from permanent method in all provinces and most prominent in Province 2 (Figure 4.5.8). However, the trends of current users of permanent methods are in decreasing trend. Trend of long acting reversible contraceptive currents users is almost stagnant at national level but is in increasing trend in Provinces 1 and Sudurpashchim (Figure 4.5.8). Except Province 2 all Provinces have higher proportion of share of LARCs method.

Figure 4.5.8: S-Curve pattern of CPR growth, 2074/75



Female sterilization (ML/LA) contributes about 37% in contraceptive method mix in Province 2 (Figure 4.5.9). It is evident that female sterilization (minilap under local anaesthesia--ML/LA) is popular in Terai (Figure 4.5.10) which have contributed also in national average. Male sterilization (NSV) on the other hand is more popular in Mountain and Hiil than Terai (Figure 4.5.10). Contraceptive implant compared to IUCD seems to be more popular among women of reproductive age in all ecological region of Nepal. As mentioned earlier, female sterilization carries the highest proportion of current user in Terai ecoregion (Figure 4.5.10).

Figure 4.5.9: Sterilization current users as of % MWRA, 2074/75

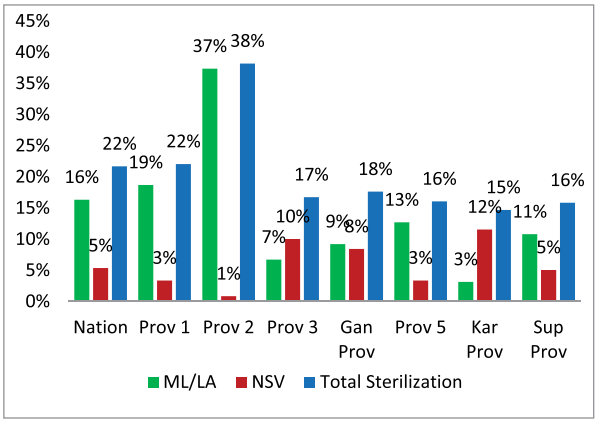
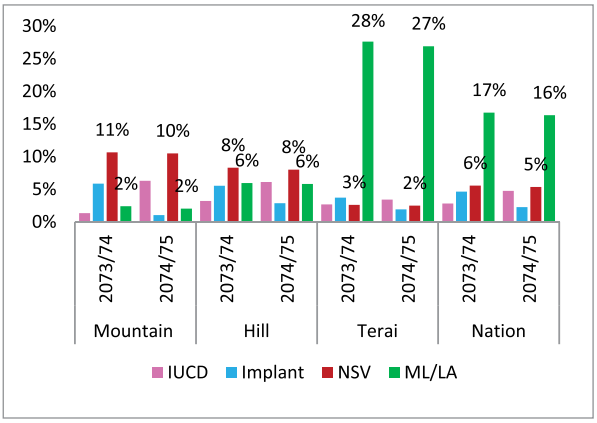


Figure 4.5.10: Trend of long acting and permanent method (LAPM) current users as % of MWRA by ecological region, 2073/74 to 2074/75



Contraceptive defaulters (for all temporary methods excluding condom), a proxy indicator for contraceptive discontinuation, is high in Nepal. About 59% of contraceptive users have discontinued using the method or switched to another contraceptive method (Figure 4.5.11). These women may choose (switch to) less effective methods or remain method unused (discontinued while still in need) leading to risk of unintended pregnancy and its consequences. Province 3 and Gandaki Province (50%) has the lowest defaulter rate (50%) while Karnali Province has the highest (86%) (Figure 4.5.11). Compared to SARCs (short acting reversible contraceptives—pills and Depo), LARCs has low defaulter rate (Figure 3.1.12) in all Provinces. LARCs are the most effective as well as most cost-effective contraceptives. Trends of contraceptive discontinuation have increased in 2074/75 (Figure 4.5.11). Globally, LARCs are promoted as first line contraceptives for all prospective clients. The high discontinuation of SARCs and low uptake of LARCs in Nepal indicates concerns over and the need of programmatic focus on both supply and demand aspect sustaining the past gains and focusing more on LARCs.

Figure 4.5.11: Percentage of contraceptive method defaulters, 2073/74 to 2074/75

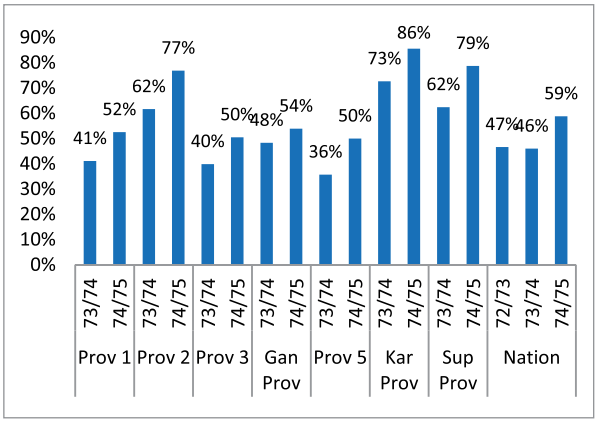
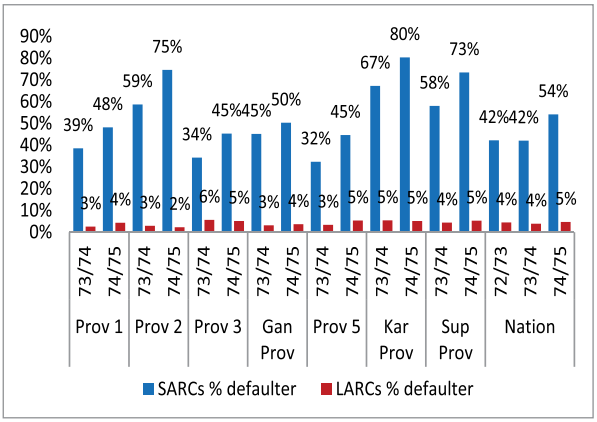


Figure 4.5.12: Percentage of contraceptive method defaulters by methods, 2073/74 to 2074/75



New acceptors

Depo (37%) occupies the greatest part of the contraceptive method mix for all method new acceptors, followed by condom (27%), implant (19%), IUCD (4%), female sterilization (ML 3%) and lastly male sterilization (NSV 1%) in 2074/75 (Figure 4.5.13). FP new acceptors (all method) as % of MWRA has decreased in all provinces (Figure 4.5.14)

Figure 4.5.13: Share of FP method mix among all new acceptor, 2074/75

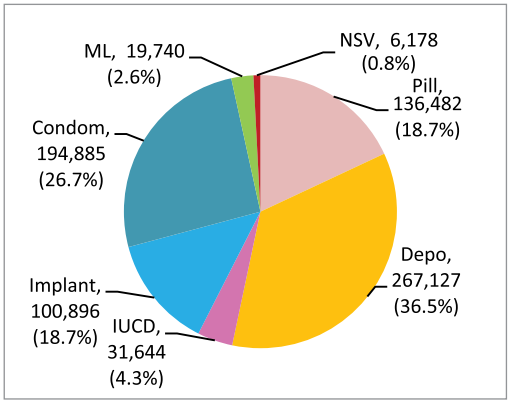
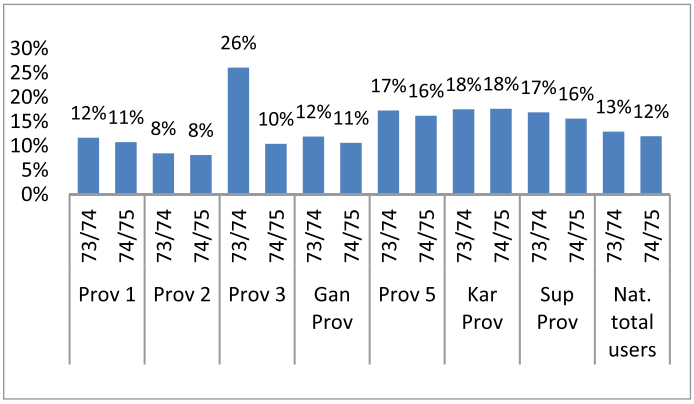


Figure 4.5.14: Trend of FP new acceptors as (all method) % of MWRA, 2073/74 to 2074/75



New acceptors VSCs

Province 2 recorded the highest number of VSCs/permanent methods (8,909) while Gandaki Province the lowest (1,642) (Table 4.5.4). Note that the projected numbers of new VSC acceptors was reduced from 40,000 in 2073/74 to 30,000 in 2074/75 (Table3.1.5). The trend of share of new acceptors (absolute numbers) shows a decline in 2074/75 than in previous year in all Provinces except that of Karnali Province (Table 4.5.4). Nationally, new acceptors of all modern methods (absolute numbers) have decreased by 4,315 in 2074/75 than in previous year. Province wise, the greatest reduction is in Province 3 (by 12,426) and lowest reduction in Sudurpashchim Province (by 6,098) (Table 4.5.4).

Table 4.5.4: New acceptors (all modern methods) by Province, 2073/74 to 2074/75 (in 000)

Variables	Prov 1		Prov 2		Prov 3		Gandaki Prov		Prov 5		Karnali Prov		Sudurpash-chim Prov		National total users	
Year	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75
SARCs	95	86	85	79	108	100	54	47	157	146	55	57	85	81	642	598
LARCs	21	25	12	14	35	32	10	11	25	27	7	7	15	14	129	132
Permanent methods	5	3	9	8	3	3	1	1	3	4	1	1	3	2	30	25
Total new acceptors	123	115	108	102	148	135	67	61	186	177	64	66	103	97	802	756

Percentage of share of sterilization (ML) new acceptors among total new acceptors is highest (34%) in Province 2 and in increasing trend (Figure 4.5.15). Women and men in Gandaki Province and Karnali Province accepted least number of VSCs (Table 4.5.4). Male acceptors dominated in Province 3 and Karnali Province (Figure 4.5.15). Likewise, Province 2 has the highest numbers (absolute number) of sterilization in 2074/54 and also in previous year (Table 4.5.4)

Figure 4.5.15: Share of ML and NSV new acceptors among total sterilization new acceptors, 2073/74 to 2074/75

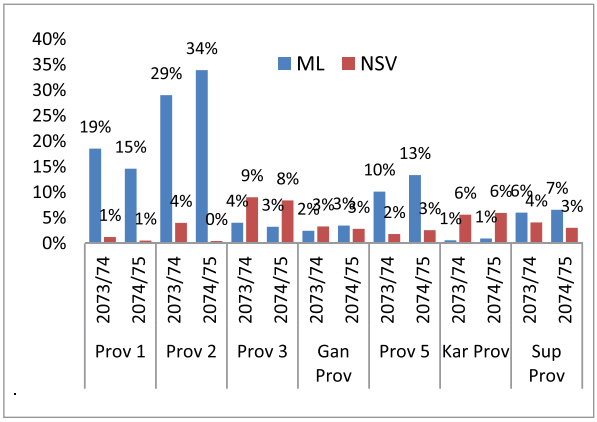
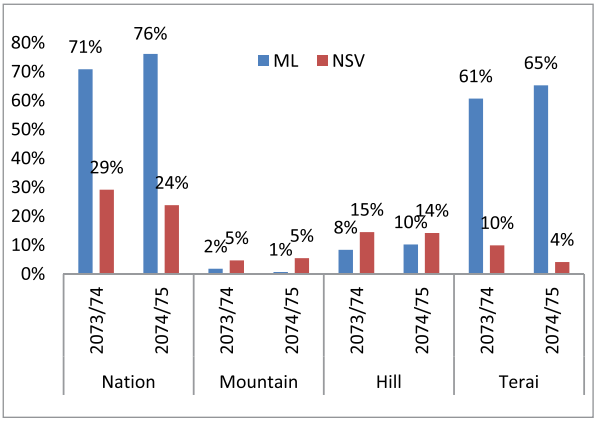


Figure 4.5.16: Share of ML and NSV new acceptors among total sterilization new acceptors, 2073/74 to 2074/75



Female VSC new acceptors were highest in Terai ecological region followed by Hill (Figure 4.5.16). Male VSC acceptors exceeds that of female VSC in Hill ecological region (Figure 4.5.16)

Achievement, minilap and Vasectomy new acceptors, against the projection for 2074/75 is 86.4%. Nation wise, total numbers of VSC new acceptors have reduced in 2074/75 (by 4,315). Province 4 achieving the lowest (68.4%) while Province 5 the highest (100%) (Table 4.5.5). However, in absolute numbers as expected, Province 2 outperformed others (by 8,909),

Table 4.5.5: VSC new acceptors against projection by Province, 2074/75

Variables	Prov 1		Prov 2		Prov 3		Gandaki Prov		Prov 5		Karnali Prov		Sudurpash-chim Prov		National total users	
	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75
Projected	6875	5450	11600	9300	6100	3775	2400	2400	6600	4100	2150	1950	4275	3025	40000	30000
Achieve-ment	5989	3930	9988	8909	3955	3020	1749	1642	3617	4135	1880	1792	3055	2490	30233	25918
% achieve-ment	87.1%	72.1%	86.1%	95.8%	64.8%	80.0%	72.9%	68.4%	54.8%	100%	87.4%	91.9%	71.5%	82.3%	75.6%	86.4%

New acceptors of spacing methods

Nationally, new acceptors of all temporary methods (absolute numbers) have decreased by 41,719 in 2074/75 than in previous year. Highest numbers of new acceptors for spacing (temporary) methods in 2074/75 are reported in Province 5 (173,849) and the lowest numbers in Gandaki Province (59,511) (Table 4.5.6).

The trend of share of new acceptors shows a decline in 2074/75 than in previous year in all Provinces except that of Karnali Province (Table 4.5.6). Province wise, the greatest reduction is in Province 3 (by 11,491) and lowest reduction in Province 2 (by 5,016). Karnali Province observed an increase of new acceptors by 1,828 in 2074/75.

Table 4.5.6: New acceptors (all temporary methods) by Province, 2073/74 to 2074/75 (in 000)

Variables	Prov 1		Prov 2		Prov 3		Gandaki Prov		Prov 5		Karnali Prov		Sudurpash-chim Prov		National total users	
	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75	73/74	74/75
IUCD	3.9	3.7	5.1	5.4	10.7	9.2	3.5	2.7	6.3	6.7	0.8	0.6	3.2	3.1	33.9	31.6
Implant	17.7	21.6	7.7	8.8	25	22.9	7.2	9	19.2	20.6	6.5	6.5	12	11	95.6	100.8
Depo	45.7	41.7	38.3	37.5	55.2	52.3	20.6	17.6	61.9	55.5	26	29.1	31.1	33.2	279.2	267.1
Pills	23	21.7	21.8	18.8	23	23.5	13.6	10.9	33.8	33.7	11	12.7	16	14.8	142.7	136.4
Condom	26.7	22.6	25.3	22.7	30.2	24.7	20.8	19.1	61.6	57	18	15.4	38.3	33	221.3	194.8
Total new temporary methods acceptors	117.3	111.5	98.4	93.4	144.3	132.8	65.9	59.5	183	173.8	62.5	64.4	100.9	95.4	772.7	731

Method wise Depo followed by condom topped in all Provinces. Among LARCs, implant significantly dominated over IUCD in all provinces (Table 4.5.6 and Figure 4.5.17). Likewise, implant acceptors are higher than IUCD in all ecological regions (Figure 4.5.18).

There has been nominal increase in post-partum uptake of FP method (Figure 4.5.19). Implant uptake within 48 hours of delivery as reported in HMIS reports needs to be verified as the National Family Planning Protocol (NMS Vol 1, 2010) has yet to promote this practice in Nepal. This could be reporting error or providers are already inserting implants to post-partum women before discharge from hospitals or birthing centres.

FP use after abortion is encouraging (Figure 4.5.19). Contraceptive uptake among total reported abortion services is 75.4%, an increase from past year (70.7%) (Figure 4.5.22) but only 23% is contributed by LARCs indicating women after abortion are relying on less effective methods (Figure 4.5.20, 4.5.21, 4.5.22). The lowest uptake is in Province 2 and Karnali Province (Figure 4.5.21).

Figure 4.5.19: Post-partum FP method acceptance as proportion among expected live births, 2073/74 to 2074/75

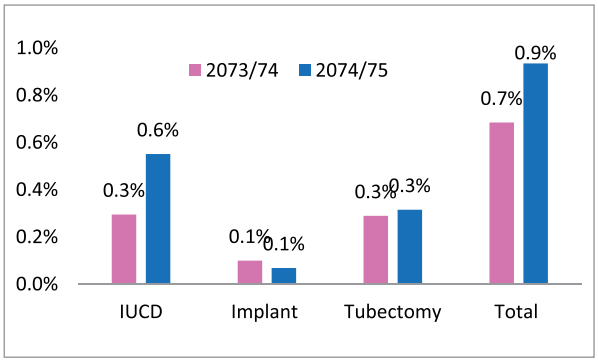
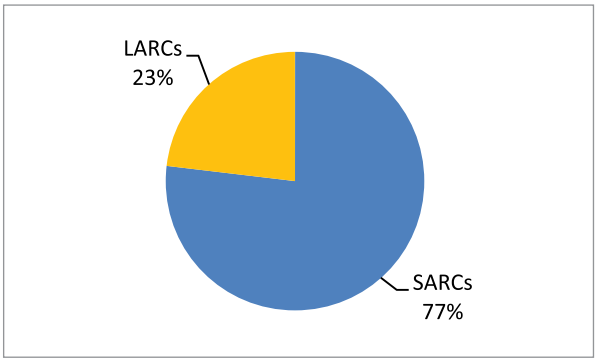
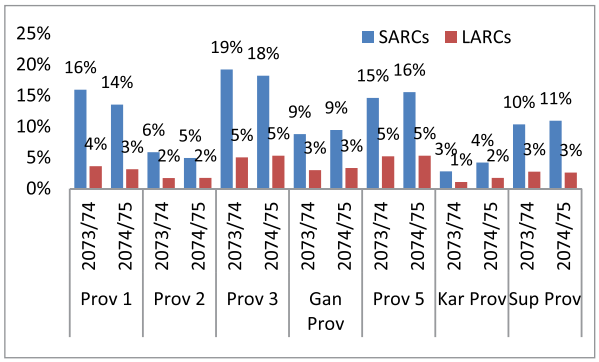


Figure 4.5.20: Proportion of post abortion FP method uptake by method type, 2074/75



4.5.21 ; Post abortion FP uptake among total new acceptors of post abortion FP, 2073/74 to 2074/75



4.5.22; Proportion of post abortion FP method uptake, 2073/74 to 2074/75

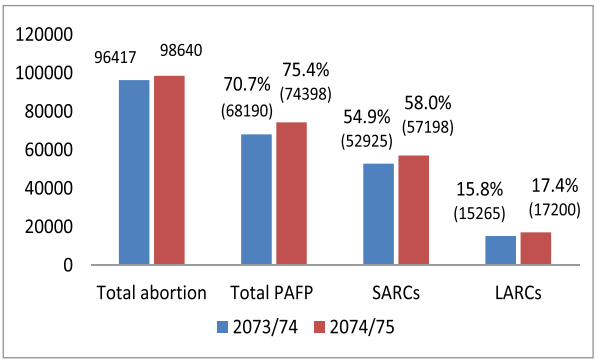


Figure 4.5.17: Share (%) of temporary methods of new acceptors among total new acceptors, 2072/73 to 2074/75

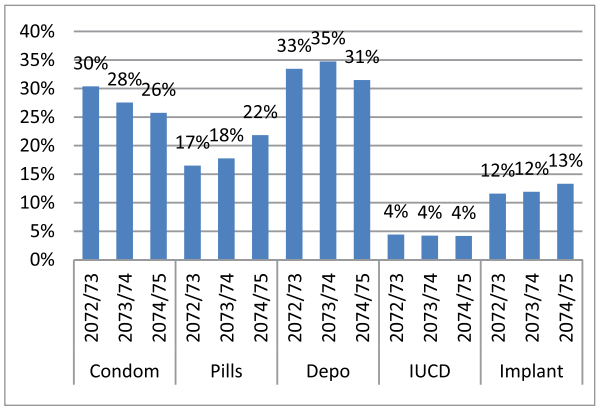
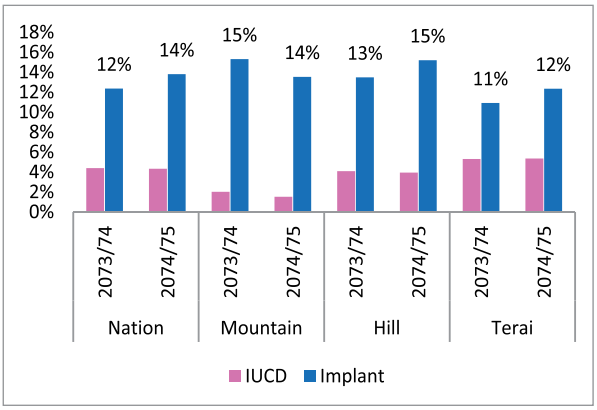
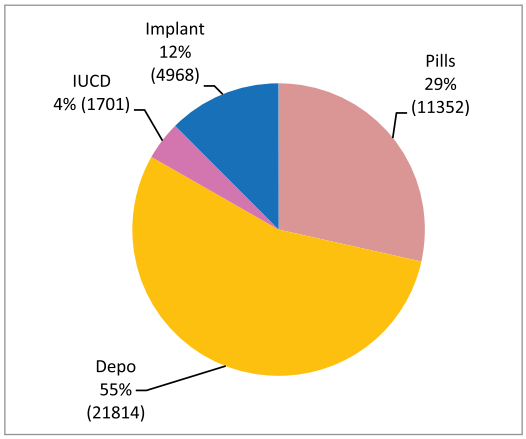


Figure 4.5.18: Share (%) of LARCs methods of new acceptors among total new acceptors, 2073/74 to 2074/75

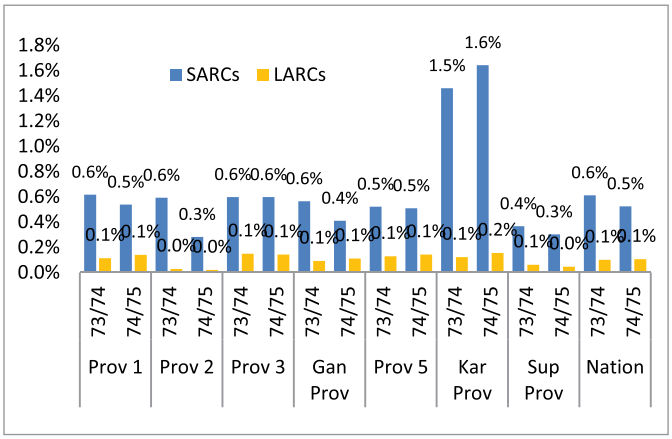


Less than 1% of under 20 years of age population (a proxy for adolescent population) accepted modern contraceptive methods (except condom—data not shown). More than half of the method mix is contributed by Depo (55%--Figure 4.5.23). Adolescents in Province 2 reported to accept lower proportion of contraceptives compared to other Provinces (Figure 4.5.24). Adolescents have high unmet need while contraceptive use is low, this is indicative of implementation challenges of comprehensive sexual and reproductive health programmatic in general and adolescent's family planning program in particular in Nepal.

4.5.23: Share of temporary method mix among under 20 total new acceptors, 2074/75



4.5.24: Under 20 years temporary method new acceptors as % of MWRA, 2073/74 to 2074/75



4.5.5 Issues, constraints and recommendations

Table 3.1.7: Issues and constraints — family planning

Issues and constraints	Recommendations	Responsibility
• Suboptimum access to and use of FP services by hard to reach communities including adolescents • Limited health facilities providing five contraceptive methods • High contraceptive discontinuation • Underutilized LARCs • Inadequate trained human resources on LAPM	• Implementation of FP micro-planning in low mCPR wards/ municipalities • Conduct targeted mobile outreach and satellite clinics focusing on LARCs • Mobilize VSPs for LARC services	FWD, PHD, MoSD, municipalities
	• Ensure availability of LARCs commodities • Improve delivery of quality of FP services	LS/MD, FWD, PHD, MoSD, municipalities
	• Improve FP education, information and services for adolescents including CSE • Scale up school health nurse programme • Scale up integrated FP/EPI clinics and postpartum and post-abortion services	FWD, MOE, PHD, MoSD, municipalities
	• Strengthen FP services in urban health and community health clinics	FWD, PHD, MoSD, municipalities
	• Strengthen and expand the capacity of FP training sites	FWD, NHTC, PHTC, PHD, municipalities
	• Strengthen FP services in private hospital	MoHP, FWD, MD, PHD, MoSD
	• Update the knowledge of FCHVs on LARC	FWD, PHD, municipalities

4.6 Adolescent Sexual and Reproductive Health

4.6.1. Background

National Adolescent Sexual and Reproductive Health is one of the priority program of Family welfare Division (FWD),DepartmentofHealthServices.Nepal is one of the country in South Asia developed and endorsed the first National Adolescent Health and Development (NAHD) Strategy in 2000.To address the needs of emerging issues of adolescents in the changing context, the NAHD strategy is revised in 2018 the main aim of revision of strategy was to address the problem face by the adolescent in Nepal. Adolescents aged 10 to 19 constitute 24% (6.4 million) of the population in Nepal. Nepal is 3rd highest country in child marriage though legal age at marriage is 20. Seventeen percent of girls aged 15-19 years are already mothers or pregnant with their first child. Only 15% of currently married adolescents use a modern method of contraceptives. The Adolescent Fertility Rate (AFR) is an increasing trend from 81 in 2011 to 88 in 2016 per 1,000 women of 15-19 years.

Vision:

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

Mission:

Maximum 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 Objectives

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

Specific Objectives

- To create safe, supportive and protective environment for all adolescents.
- To increase adolescents' access to scientifically sound and age appropriate information about their health and development
- To enhance life skills and improve the health status of adolescents
- To increase accessibility and utilization of adolescent friendly quality health and counseling services.

Targets:

To make all health facilities as adolescent friendly as per the envision of National Health policy (2014) and NHSS (2016-2021)

To ensure universal access to ASRH services, the Nepal Health Sector Strategy Implementation Plan (2016-2021) aims to:

- *scale up Adolescent Friendly Service (AFS) to all health facilities;*
- *behavioral skill focused ASRH training to 5,000 Health Service Providers and*
- *more than 100 health facilities to be certified with quality AFS by 2021*

The programme aims to reduce the adolescent fertility rate (AFR) by improving access to family planning services and information.

Prioritizing the integration and effective program management, FWD established Family planning and reproductive health Section in four thematic areas: Adolescent Sexual and Reproductive Health (ASRH); Family Planning (FP); Reproductive health morbidity and PHC-Out reach Clinic since BS FY 2074/75 (FY 2017/18).

To support district health managers to operationalize the strategy, an implementation guideline on Adolescent Sexual and Reproductive Health (ASRH) was developed in 2007 and piloted in 26 public health facilities of 5 districts (Bardiya, Surkhet, Dailekh, Jumla, Baitadi)

National Health Sector Program (NHSP)-IP-II (2010 to 2015) set a target of expanding 1000 public health facilities for provision of Adolescent Friendly Service (AFS) and revised the National ASRH Programme Implementation Guideline accordingly and is implementing from 2011.

As per recommendations of the ASRH barrier study entitled *"Assessing supply side constraints affecting the quality of adolescent friendly services (AFS) and the barriers for service utilization"* carried out in 2014 under leadership of FWD or interventions were implemented in BS.2072 (2015) as part of system strengthening (*capacity building, certification for quality delivery of AFS in friendly manner) and awareness raising interventions among adolescents and key stakeholders.*Over the period of time ASRH training package was revised as per national standards; establish and strengthen ASRH clinical training sites within RH comprehensive training sites and additional 2 training sites in Bharatpur Hospital and Koshi Zonal Hospital were established. Different training materials, quality improvement tools were developed and printed which were subsequently distributed in different districts for strengthening health system.

4.6.2. Achievements in FY 2074-75 (FY 2017-18):

Result # 1. Scale-up of Adolescent Friendly Service:

The National ASRH program has been gradually scaled up to 75 of the 77 districts covering ..... health facilities till the end of current fiscal year 2074/75.

Result # 2. Strengthening Health facilities for AFS:

4.6.2.1 ASRH Clinical Training site development:

ASRH clinical training sites were established at in different Fiscal yearKoshi Zonal Hospital, Biratnagar, Regional Health Training Center (RHTC), Dhankuta, Regional Health, Training Center, Pathalaiya, Bara , PMWH, FHD, NHTC, NHEICC Kathmandu and Bharatpur Hospital , Western Regional Hospital, Pokhara and RHTC Pokhara , Bheri Zonal Hospital, Nepalgunj, RHTC and RHD, Surkhet , Seti Zonal Hospital, RHTC, Dhangadhi, Kailali, National Health Training Center, Teku, Kathmandu.

4.6.2.2 Competency based ASRH training to the Health service providers: Total 1768 health service providers trained on behavioural and skill focused competency based 5 days ASRH training from 2015 to Dec 2018 (BS. FY 2071/72 to 2074/75) from AFS sites to be implemented for making Adolescent Friendly Services under leadership of National Health Training centre. Among 1768 trained HSPs, 74 trainers received Training of Trainers (TOT) and developed pool of trainers on ASRH first time in Nepal at national and regional level.

Result # 3: Demand generation interventions on ASRH Program:

Different awareness raising activities on ASRH was carried out in this FY under leadership of National Health Education Information and Communication Center (NHEICC) and FWD among the adolescents at community level. Different approaches like My First Baby (MFB), Partner Defined Quality for Youth (PDQY), school health program etc were applied to raise the awareness among adolescents and other communities.These very many activities helped adolescents to understand the problems during adolescents, their mitigation approach and services available at HF addressing their needs.

4.6.3.1 Establishment of AFICs in schools: A total of 297 AFICs established in school in order to link between AFS in health facilities and AFICs in schools. The AFICs is equipped with ASRH related IEC/BCC materials such as 8 sets of ASRH booklet, Adolescent health and development flip chart; comic book on ASRH, poster on finger pointing to AFS, brochure on delay marriage, danger signs during pregnancy with orientation to the teachers, parents, school health management, and health service providers from AFS to utilize the IEC materials by both teachers and adolescents girls and boys as well as access to AFS services by adolescents when and as needed. A total of 2,822 teachers, parents, students and Health Service Providers were sensitized on ASRH, AFIC, and CSE, contributing to an open and enabling environment in the community and promote the utilization of AFS during this fiscal year.

AFICs can create double impact because they strongly link with AFS centers. Therefore adolescents can easily have access to both information and service related to their sexual and reproductive health whenever and wherever they need.

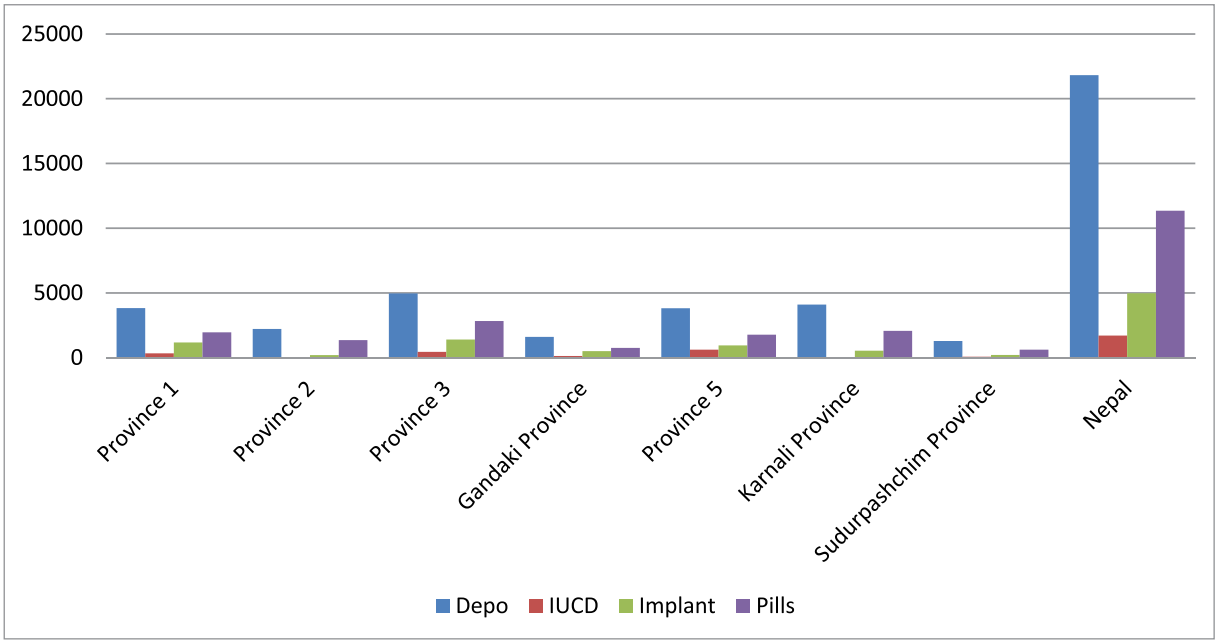
4.6.3.2 Menstrual Hygiene Management (MHM): Menstrual Hygiene management is implemented in 77 district with distribution of sanitary pad from local level for limited school . The MHM training package was developed jointly by Ministry of Health and Ministry of Education and designed to build capacity of teachers of the AFIC in schools and health workers of the Adolescent Friendly service sites. The school teachers who are trained on MHM are regularly conducting menstrual management session in schools. The schools with AFIC are also coordinating with the trained health service providers to conduct session on MHM for students.

4.6.3.3 Comprehensive Sexuality education (CSE) in schools: Total 87 trainers of 29 Educational Training Centres trained on CSE, who will be a trainer for teachers training at the district level.Advocated with and support the MOE in integrating CSE in the education curricula; reviewing the curriculum and national policies to assess the inclusion of CSE and supporting to fill the gaps in collaboration with NCED, CDC and the Ministry of Education are ongoing interventions. As a result of our recommendations, the School Sector Development Plan 2017-2022 has included the importance of CSE in their strategy, where they have included the provision of teachers' training and curriculum revision. Moreover, UNFPA has been providing technical support to the governmental entities in integrating CSE components into the curriculum. Furthermore, a high-level technical working group has been created, with the presence of national health and education partners including FHD/MOH, to discuss the inclusion of CSE in the national strategies and plans at all levels.

Result # 4 ASRH Service Utilization:

The Number of pills users is observed highest in Province 3 followed by karnali province, whereas Depo users was highest in Province # 3 followed by province karnali and provience 1. (Figure 1).

Figure 4.6.1. : New users of Family Planning Tempoary Methods Among Adolescent



Source: HMIS raw data

In 2074/75, the proportion of adolescents getting antenatal check-ups among total ANC check-up visits, both at any time and as per the protocol, is highest in Karnali province and lowest observed in province number 5.

Table 4.6.1: Proportion of adolescent ANC among total ANC visits by provinces (2074/75)

National and Province	First ANC Visit (any time)	First ANC as per protocol	Four ANC as per protocol
National	18.1	19.5	16.3
Province 1	19.8	25.1	17.4
Province 2	21.5	25.1	18.1
Province 3	**12.1**	**16.6**	**13.1**
Gandaki	20.1	20.6	17.1
Province 5	15.4	16.2	14.2
Karnali	**30.5**	**30.6**	**27.8**
Sudurpaschim	16.6	16.8	14.7

Source: HMIS

4.3 Safe abortions: The proportion having medical abortions was highest in the province number 3 and lowest in province number 5 whereas the proportion of surgical abortion was highest in province number 3 and lowest in province number 5. The proportion of adolescent abortion at National level by both medical and surgical procedure was 0.3% of the total abortion done in this reporting Fiscal Year.

Table 4.6.2: Proportion of adolescent safe abortion service users among total safe abortion service users by provinces (2074/75)

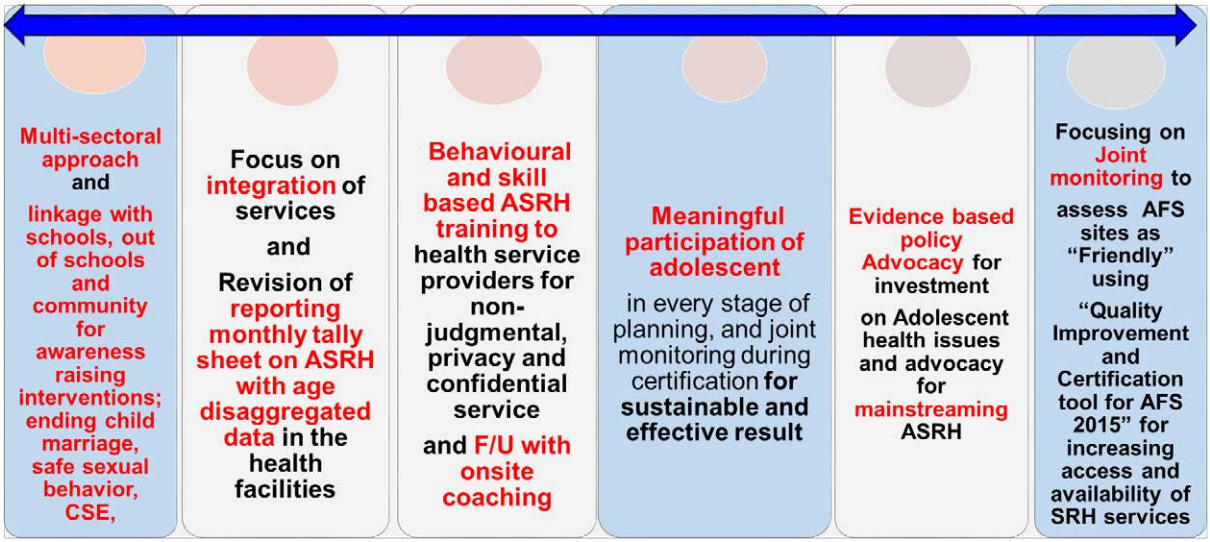
National and Provincial level	Medical abortion	Surgical abortion	total abortion among adolescent
National	9.6	11.4	10.3
Province 1	8.7	8.4	8.6
Province 2	10.4	7.2	9.4
Province 3	14.7	21.0	17.4
Gandaki	6.9	7.7	7.2
Province 5	6.6	5.7	6.2
Karnali	11.8	10.2	11.2
Sudurpaschim	7.2	7.8 9	7.5

Source: HMIS

Number of Abortion cases (medical and surgical among Adolescents) at province level.

The figure above showed that the number of cases of abortion by both Medical and surgical procedure is highest in Province Number 3 followed by Province Number 1 which is lowest in Karnali province. There might be different reasons behind this.

4.6.4. Lessons learnt and way forward:



4.6.5. Issues and recommendations — Adolescent Sexual and Reproductive Health

Issues and problems raised at recent regional and national review meetings and during joint monitoring of the certification process are summarized in Table 4.6.6.

Table 4.6.6: Issues & problem raised at regional and national review meeting

Issues	Recommendations	Responsibility
Lock of privacy and confidentiality of Health services from health facility	maintain proper privacy and confidentiality of health services seek by adolescent	FWD,DHO, health facility
High prevalence of early marriage and teenage pregnancy	Intensify community awareness activities and effectively implement the law	NHEICC, FWD, MoH, line ministries and partners
Low CPR and high unmet need for contraception among vulnerable populations including adolescents	Run innovative activities to increase access to family planning services and information in hard to reach areas and among vulnerable populations including adolescents	FWD, DoHS, MoH
Quality assurance of ASRH Programme	Certify health facilities using "the quality improvement and certification tool for AFS 2015" to promote the delivery of adolescent friendly quality services.	FWD and ASRH partners
Inadequate trained human resources on ASRH in health facilities	Strengthen ASRH clinical training sites and develop the capacity of service providers with "behavioural and skill focused competency based 5 days ASRH training" at all health facilities and specially AFS sites	NHTC and ASRH Partners
Inadequate monitoring	Increase the number of joint monitoring visits to AFS sites at different levels	WD, MD, DHOs and ASRH partners
Inadequate resources allocated to the programme	Allocate sufficient resources at central, district and local levels	FWD, DHOs
Inadequate links with other programmes (family planning, safe motherhood, HIV)	Advocate for the functional integration of ASRH issues and services in other thematic areas/programmes	FWD and ASRH partners

Issues	Recommendations	Responsibility
Inadequate IEC/BCC materials	Ensure the supply of ASRH related IEC/BCC materials to health facilities	FWD, NHEICC, DHOs and ASRH partners
Lack of disaggregated ASRH data (by age/sex) and integration in HMIS	Revise the monthly/annual reporting format (Annex 5: ASRH Programme Implementation Guidelines, 2011) and advocate to incorporate in HMIS	FWD,MD NHTC, and ASRH partners

Table 4.6.3: List of Certified AFS sites with pre- certification and certification score obtained disaggregated by Provincial level (From Dec 2015 to Dec 2017)

S.N.	District	AFS sites	Pre-score	Certificati on Score	Date of Certification
Province 1					
1	Sunsari	Harinagara PHC	90.09%	90.90%	May 2018
2	Sunsari	Chatra PHC	90.09%	91.53%	May 2018
3	Sunsari	Sitapur HP	92.00%	91.00%	April 2016
4	Sunsari	Ithari PHCC	91.30%	93.00%	April 2016
5	Udaypur	Hadiya HP	81.37%	91.93%	June 2018
6	Udaypur	Tapeshwari HP	89.63%	88.23%	June 2018
7	Udaypur	Jogidah HP	98.70%	98.80%	November 2017
					27
8	Udaypur	Sundurpur HP	94.70%	94.70%	November 2017
9	Udaypur	Hardeni HP	94.70%	94.70%	November 2017
Province 2					
10	Mahottari	Bardibas Hospital	90.70%	93.30%	November 2016
11	Mahottari	Gaushala PHCC	89.40%	94.00%	November 2016
12	Mahottari	Bharatpur HP	94.60%	81.00%	November 2017
13	Rautahat	Basantpatti HP	83.43%	83.38%	June 2018
14	Rautahat	Barahampuri HP	89.83%	96.19%	June 2018
15	Rautahat	Kanakpur HP	93.00%	93.00%	November 2016
16	Rautahat	Patura PHCC	85.60%	91.50%	November 2016
17	Rautahat	Sarmujwa HP	90.00%	96.80%	November 2016
18	Sarlahi	Sisautiya HP	90.00%	96.19%	June 2018
19	Sarlahi	Bhaktipur HP	96.20%	98.40%	November 2016
20	Sarlahi	Achalgad PHCC	94.40%	96.90%	November 2016
21	Sarlahi	Pipariya HP	95.50%	98.40%	November 2016
22	Saptari	Hanumanagar HP	90.90%	96.80%	November 2017
23	Saptari	Bordhebarsain HP	91.50%	93.10%	November 2017
24	Saptari	Patthagada HP	91.50%	93.40%	November 2017

S.N.	District	AFS sites	Pre-score	Certificati on Score	Date of Certification
Province 3					
25	Kathmandu	SPN Clinic, Putalisadak	100.00%	92.60%	August 2017
26	Sindhuli	Sirthuali PHC	92.30%	98.41%	March 2018
27	Sindhuli	Chapauli HP	93.12%	94.07%	March 2018
28	Sindhuli	Belghari PHCC	87.20%	87.00%	December 2015
29	Sindhuli	Beseshwor HP	92.30%	96.00%	December 2015
30	Sindhuli	Shilapati HP	90.70%	97.00%	December 2015
Gandaki					
31	Kaski	SPN Clinic, Pokhara	95.00%	87.80%	August 2017
Province 5					
32	Arghakanchi	Thada PHC	89.13%	92.20%	January 2017
33	Arghakanchi	Hanspur HP	96.00%	92.20%	January 2017
34	Dang	Gaduwa HP	92.26%	91.41%	July 2018
35	Dang	Sashaniya HP	95.00%	94.70%	July 2017
36	Dang	Satbariya HP	95.00%	91.00%	July 2017
37	Kapilvastu	Jaynagar HP	91.73%	91.53%	May 2018
38	Kapilvastu	Barkalpur HP	98.41%	98.41%	May 2018
39	Kapilvastu	Gauri HP	83.00%	92.00%	August 2016
40	Kapilvastu	Tilaurakot HP	90.00%	98.00%	August 2016
41	Kapilvastu	Shivpur HP	98.00%	98.00%	August 2016
42	Pyuthan	Khaira HP	88.75%	95.63%	July 2018
43	Pyuthan	Sotre	83.01%	89.43%	July 2018
44	Pyuthan	Puranthanti HP	92.00%	95.00%	December 2015
45	Pyuthan	Okharkot HP	92.00%	95.00%	December 2015
46	Pyuthan	Bhingri PHC	92.80%	95.60%	July 2017
47	Pyuthan	Gothiwang HP	93.40%	89.70%	July 2017
48	Rolpa	Kotgaun HP	94.60%	93.01%	July 2018
49	Rolpa	Khumel HP	92.60%	96.20%	November 2017
50	Rolpa	Libang HP	94.70%	94.70%	December 2017
51	Rukum	Sylakapha HP	94.70%	96.80%	September 2016
52	Rukum	Bafikot HP	96.00%	96.20%	September 2016
53	Rukum	Smiruti HP	96.00%	96.20%	September 2016
54	Achham	Duni HP	91.80%	96.00%	December 2015
55	Achham	Kalika HP	85.10%	83.00%	December 2015
56	Baitadi	Kuwakot	96.80%	96.82%	April 2018
57	Baitadi	Sharmali	98.40%	98.41%	April 2018
58	Baitadi	Shankarpur HP	84.70%	94.97%	July 2018
59	Baitadi	Kesharpur PHC	86.70%	90.08%	July 2018
60	Baitadi	Bhunali HP	88.00%	97.00%	December 2016
61	Baitadi	Siddheswor HP	86.80%	90.60%	December 2016

S.N.	District	AFS sites	Pre-score	Certificati on Score	Date of Certification
62	Bajhang	Sunkuda HP	84.77%	95.63%	July 2018
63	Bajhang	Bhairavsthan HP	81.30%	85.00%	December 2015
64	Bajhang	Deulekh PHC	94.00%	97.20%	December 2015
65	Bajhang	Kharitadi	91.50%	98.00%	December 2016
66	Bajhang	Chhana HP	83.70%	90.00%	December 2016
67	Bajura	Tate HP	92.06%	92.06%	April 2018
68	Bajura	Kaileshmandu HP	86.00%	98.30%	May 2017
69	Bajura	Jaguda HP	90.00%	95.00%	May 2017
70	Dadeldhura	Samaiji HP	80.00%	92.19%	July 2018
71	Dadeldhura	Nawdurga	80.00%	93.10%	May 2017
72	Dadeldhura	Bagarkot HP	87.00%	93.10%	May 2017
73	Dadeldhura	Aalital HP	91.00%	87.80%	June 2017

4.7 Primary Health Care Outreach

4.7.1 Background

Health facilities were extended to the village level under the National Health Policy (1991). However, the use of services provided by these facilities, especially preventive and promotive services, was limited due to accessibility factors. Primary health care outreach clinics (PHC-ORC) were therefore initiated in 1994 (2051 BS) to bring health services closer to communities.

The aim of these clinics is to improve access to basic health services including family planning, child health and safe motherhood. These clinics are service extension sites of PHCCs and health posts. The primary responsibility for conducting outreach clinics is of ANM and paramedics. FCHVs and local NGOs and community based organisations (CBOs) support health workers to conduct clinics including recording and reporting.

Based on local needs, these clinics are conducted every month at fixed locations, dates and times. They are conducted within half an hour's walking distance for their catchment populations. ANMs/AHWs provide the basic primary health care services listed in Box 4.7.1.

Box 4.7.1: Services to be provided by PHC-ORCs according to PHC-ORC strategy

Safe motherhood and newborn care:
- Antenatal, postnatal, and newborn care
- Iron supplement distribution
- Referral if danger signs identified.

Family planning:
- DMPA (Depo-Provera) 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 3 years children
- Treatment of pneumonia and diarrhoea.

Health education and counselling:
- Family planning
- Maternal and newborn care
- Child health
- STI, HIV/AIDS
- Adolescent sexual and reproductive health.

First aid:
- Minor treatment and referral of complicated cases.

4.7.2 Service coverage

In 2074/75, 2.6 million people were served at 131,382 outreach clinics (Table 4.7.1). A total of 131,382 clinic were run which represents 90 percent of the targeted number (131,382 clinics x 12 = 1,576,584 in a year). An average of 20 clients were served per day per outreach clinic, a increase from 19 the previous year with the highest average number being in province 5.

Table 4.7.1: PHC-ORCs conducted and people served in 2074/75 by Province

Province	Total no. clinics	Services provided to clients (new+old)
Province no. 1	24,732	439,984
Province no. 2	23,243	455,360
Province no. 3	20,324	356,260
Gandaki	15,547	274,550
Province no. 5	21,203	477,063
Karnali	10,293	216,813
Sudur Paschhim	16,040	386,814
National	**131,382**	**2,606,844**

Source: HMIS

Table 4.7.2: PHC-ORC Clinic distributed medicines/served peoples as per program by province in FY 2074/75

Province	**Deworming Tablets**	**Iron Tablets**	**Vit A for Postpartum**
Province no. 1	12464	49206	5936
Province no. 2	32178	109977	21190
Province no. 3	6583	25252	3391
Gandaki	3619	18801	1628
Province no. 5	14233	63453	4042
Karnali	5890	17702	2234
Sudur Paschhim	4199	20133	2929
National	79166	304524	41350

Above table shows that the ratio of people served by clinic in FY 2074/75 by province, where province no. 2 is higher than other province (Table 4.7.2).

4.7.3 Services provision

The number of people served by PHC-ORCs increased in the past two years (Table 4.7.3). In FY 2074/75 primary treatment has been increased in comparison to last FY (Table 4.7.3).

Table 4.7.3: Trend of services provided by PHC-ORCs

Service Types	**2072/73**	2073/74	2074/75
Primary treatment	736,538	817,748	894,377
Depo (times)	193,030	189,686	175,555
ANC (times)	227,230	249,525	236,238
PNC (times)	45,968	43,752	37,707
Growth monitoring	852,701	385,076	929,851

Source: HMIS

4.7.4 Issues, constraints and recommendations

Table 4.7.4: Issues, constraints and recommendations— primary health care outreach

Issues / constraints	Recommendation	Responsibility
All the PHC-ORCs are not functional	Functionalize all PHC-ORCs by resolving all issues at every levels	FHD, DPHOs

EPIDEMIOLOGY AND DISEASE CONTROL

5.1.1 Malaria

5.1.1.1 Background

Nepal's malaria control programme began in 1954, mainly in the Tarai belt of central Nepal with support from the United States. In 1958, the National Malaria Eradication Programme was initiated and in 1978 the concept reverted to a control programme. In 1998, the Roll Back Malaria (RBM) initiative was launched for control in hard-core forests, foothills, the inner Tarai and hill river valleys, which accounted for more than 70 percent of malaria cases in Nepal. Malaria is a greater risk in areas with an abundance of vector mosquitoes, amongst mobile and vulnerable populations, in relatively inaccessible areas, and during times of certain temperatures.

Malaria risk stratification 2018 was tailored to suit the changing epidemiology of malaria in the country and to ensure appropriate weightage is allotted to key determinants of malaria transmission as recommended by external malaria program review. Malaria data from last three years reveals that even within Rural Municipalities or Municipalities, malaria is concentrated within some wards while other wards remain relatively free of malaria. In these settings, transmission is typically sufficiently low and spatially heterogeneous to warrant a need for estimates of malaria risk at a community level, the wards. In order, to refine the risk stratification at the community level and thereby define the total population at risk of malaria; malaria risk micro- stratification was conducted at the wards level of Rural Municipality or Municipalities.

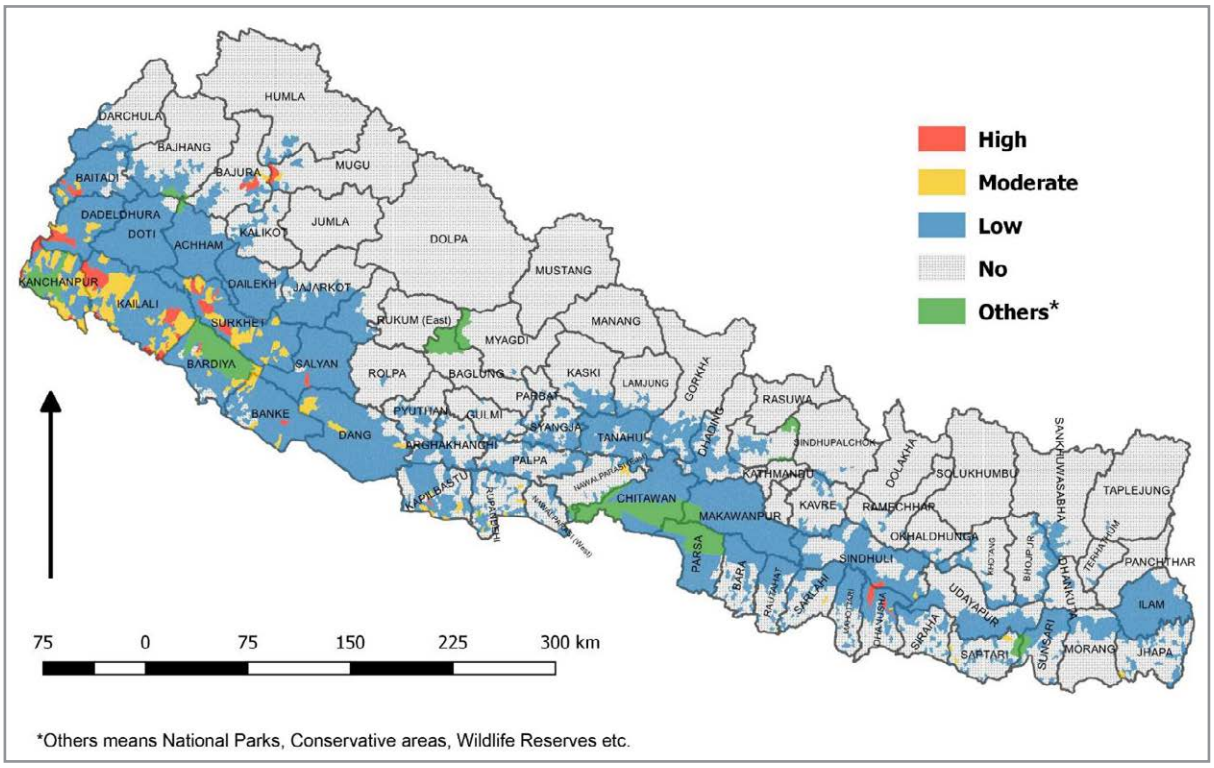
The methodology used recent malaria burden data supplemented by information on the spatial distribution of key determinants of transmission risk including climate, ecology, and the presence or abundance of key vector species and vulnerability in terms of human population movement. The method was based on 2012 and 2016 micro-stratification study and it was recommended by Epidemiology and Disease Control Division (EDCD) and Malaria Technical Working Group (TWG). EDCD provided the overall oversight of the study.

Disease burden, geo-ecology & entomological risk, and vulnerability were given a defined weight and each ward received a weightage response on the three determinants. A median annual API was calculated for each ward based on the last 3 years (16th July 2015-15th July 2018) malaria burden data of the ward and a mean API was derived from the 3 years median API. A standard deviation was calculated and 2 X SD + mean was taken as a high disease burden ward and the ward was allotted 100 % of total disease burden weight (0.6). Similarly, moderate and low disease burden wards were identified and allotted their weightage response. Receptivity was allotted a total weight of 0.3, which was further divided into eco-environment (0.1) and presence of vectors (0.2). Vulnerability was allotted a total weight of 0.1, which was further divided, and weightage response was allotted as: high mobility areas (0.1) and moderate (0.05) to low (0.01) mobility areas. The weightage response of each determinant for a ward was calculated and the summation of the three determinants was converted into percentage. A cut off percentage of 75 or more was agreed as the criteria to define a high-risk ward.

Based on this method, micro stratification 2018 was updated and the wards were designated as high, moderate, low and no risk wards. High risk wards were identified in 49 wards scattered across 13 districts. Out of these high-risk wards, 6 wards in Province 2, 1 ward in Province 3, 3 wards in Province 5, 8 wards in Karnali Province and 31 wards in Sudurpashchim Province while no high-risk ward was detected in Province 1 and Gandaki Province. Furthermore, moderate risk wards were identified in 153 wards in 19 districts (7 additional districts to the 12 districts that contained high risk wards) of these moderate risk wards, 1 ward in Province 1, 8 wards in Province 2, 1 ward in Province 3, 1 ward in Gandaki Province, 31 wards in Province 5, 20 wards in Karnali Province and 91 wards in Sudurpashchim Province.

Malaria transmission is concentrated in the Sudurpashchim and Karnali Province with these two provinces accounting for approx. 80% high risk burden and around 73% moderate risk burden. Malaria transmission has reached low level of endemicity in most of the Tarai regions (plain lands) but malaria infection is increasingly being detected in upper hilly river valleys, which was traditionally classified as “No Malaria” risk. A relative incidence analysis of malaria infection in upper hilly river valleys suggest that malaria infection was endemic in the area, with adults developing immunity with repeated exposures as they grow older and children bearing the brunt of the infection due to immature immunity (incidence is significantly higher in children less than 14 years as compared to adolescents and adults 15+).

Figure 5.1.1.1:Ward Level Risk Classification Map (MS 2018)



Source: Malaria micro stratification report 2018

Nepal's National Malaria Strategic Plan (NMSP, 2014–2025) has shown in Box 5.1.1.1.

Box 5.1.1.1: National Malaria Strategic Plan (2014–2025)

Current National Malaria Strategic Plan (NMSP) 2014-2025 was developed based on the epidemiology of malaria derived from 2012 micro-stratification, 2013 Mid –Term Malaria Program Review, and the updated WHO guidelines, particularly for elimination in low endemic country. This plan has inherent Government of Nepal's commitment and seeks appraisal of external development partners, including the Global Fund, for possible external funding and technical assistance. The aim of NMSP is to attain **"Malaria Free Nepal by 2025".**

The strategic plan was divided into two phases: achieve Malaria Pre - Elimination by 2018 and attain Malaria Elimination by 2025. Malaria pre-elimination targets were set to achieve and sustain zero deaths due to malaria by 2015, reduce the incidence of indigenous malaria cases by 90%, and reduce the number of VDCs having indigenous malaria cases by 70% of current levels by 2018. The baseline year was taken as 2012.

Strategy

The strategy to achieve the targets was identified as follows:

i) to strengthen strategic information for decision making and implement surveillance as a core intervention towards malaria elimination

ii) to further reduce malaria transmission and eliminate the foci wherever feasible

iii) to improve quality ensure and universal access to early diagnosis and effective treatment of malaria

iv) to develop and sustain support through advocacy and communication, from the leadership and the communities towards malaria elimination and

v) To strengthen programmatic technical and managerial capacities towards malaria elimination.

Current Achievement

By 2016, National Malaria Program had achieved 54% reduction in indigenous malaria cases compared to 2012, death was recorded in an imported case of malaria, and no foci have been cleared of malaria transmission.

Rationale for amending the NMSP

Nepal is primarily a low malaria endemic country with around 80% of malaria cases due to P. vivax and the remaining burden due to P falciparum with occasional case reports of P. ovale or P. malariae mostly imported from Africa. Vivax parasites have unique biological and epidemiological characteristics that pose challenges to control strategies that have been principally targeted against *Plasmodium falciparum*. Infection with *P. vivax* typically results in a low blood-stage parasitemia with gametocytes emerging before illness manifests, and dormant liver stages causing relapses. As a consequence of low parasitemia, high prevalence of asymptomatic infection and difficulty in detection of the parasites, ability to infect mosquitoes before development of clinical symptoms, and appearance of relapse within months to years of the primary infection; P. vivax pose a great challenge to malaria elimination. Radical cure with at least 2 weeks of Primaquine is required to clear the hypnozoites but the drug can only be given after a normal G6PD test. Besides, current point of care rapid tests may not identify heterozygotes G6PD deficient female despite a normal rapid test and such a case may hemolyze on exposure to Primaquine. *P. vivax* tolerates a wider range of environmental conditions and is more likely to lead to geographical expansion. Conventional control methods of minimizing human contact with mosquito vectors through insecticide-treated

mosquito nets and indoor residual spraying – may be less effective against *P. vivax*. This is because, in many areas where *P. vivax* predominates, vectors bite early in the evening, obtain blood meals outdoors and rest outdoors. In addition, vector control has no impact on the human reservoir of latent hypnozoite stage parasites residing in the liver, which are responsible for an appreciable proportion of morbidity.

To recollect, National Malaria Strategic Plan has to address the following issues:

1. P. vivax is the overwhelmingly predominant parasite species in Nepal and strategy should reflect the importance of P. vivax in elimination programme and it should target P. vivax with novel and innovative interventions.
2. Traditional conventional interventions are neither effective for P vivax control nor elimination.
3. Novel interventions based on strong evidence are required to clear hypnozoites in the liver and prevent relapse, point of care tests to detect asymptomatic and sub–microscopic infections, and new community based testing and treatment methods to increase access to quality assured and quality controlled diagnosis and prompt effective treatment. Ensure G6PD point of care test and roll out radical cure treatment for P. vivax infection.
4. Without interrupting P. vivax (reduction will not be sufficient) transmission, achieving malaria elimination is unlikely.

Process: National Strategy Updates

With this in mind, EDCD convened in January 2017 a multi-stakeholders meeting to draw a framework for updating the NMSP (2014–2025). A core team was formed to review the existing strategic plan and suggest an action framework for guiding the country towards malaria elimination. The framework was shared in the multi-stakeholders meeting and each identified objectives were discussed in groups at length and a draft presentation of the suggestions were collected. The suggestions of the meeting were aligned in the draft action elimination framework and the final draft was shared with all the stakeholders. The feedback was discussed in the core team meeting and relevant alignment was done and the final Malaria Elimination Action Framework was shared in a meeting with EDCD and multi- stakeholders. The suggestions of the meeting were addressed in the final Malaria Elimination Action Framework and the framework was presented to the Technical Working Group/ Malaria for endorsement.

Elimination Framework: Objectives & Activities

The updated National Malaria Strategic Plan identifies the following key activities to implement in order to achieve the vision of “malaria free Nepal” by 2025.

1. Strengthen strategic information for decision making and implement surveillance as a core intervention towards malaria elimination

Malaria Burden

Progression towards malaria-free status is a continuous process, and not a set of independent stages. As intervention coverage is increased and malaria incidence is reduced, the heterogeneity in incidence and transmission rates is likely to further increase whereby malaria infection and disease are more likely to be concentrated in a small proportion of individuals, such as small groups of households, or hotspots that are at a substantially increased risk of malaria transmission. Hotspots maintain transmission and targeting hotspots is a highly effective and efficient way to reduce malaria transmission.

A key approach to ensure optimal response will be a structured malaria programme based on risk stratification by malaria burden and an analysis of past malaria incidence, transmission risk determinants, the environment and an analysis of access and use of health care services. The

burden of malaria and the geographical area at risk of malaria will be defined by evidence based on the micro stratification study, 2016. This will be validated by Malariometric Survey, 2017 and Health Facility Survey 2017.

Malaria risk is defined up to the smallest unit of community - the wards, which are classified as high risk wards, adjoining wards to high risk wards, moderate risks, low risk, and no risk wards. Targeted interventions based on risk stratification are likely to be more effective, efficient, and may add more value to money.

Malaria information from private sector is mostly unreported. Despite an estimated adjustment of additional 20 % to HMIS data based on the concept of free drug for malaria treatment in only public health facilities throughout Nepal, yet actual private sector data is lacking and estimate of adjustment may be an understatement.

Notification

A legal framework to notify each and every case of malaria in the public as well as private sectors should be in place by 2018. National Malaria Elimination Steering Committee (NMESC) will develop the legal framework for notification.

Web Based Reporting and Recording

Malaria Disease Information System (MDIS) should be implemented in both the public and private sectors throughout the country. Only targeted districts are currently reporting through MDIS with minimal engagement of private sectors. Private sectors inclusion and scale up of MDIS throughout the country should be operational by 2018.

Case Based Surveillance

Each reported malaria case should undergo investigation to confirm and classify the case within 72 hours of notification. Investigation should be conducted by local health facility with support from the district. Case finding in the households and among the neighbours around an indigenous case should be conducted within 3 days of notification. An assessment to identify and classify the characteristics of malaria transmission in the area (focus) and respond appropriately to clear the foci within 7 – 10 days of notification should be implemented by 2017. A malaria data bank with detail line listing of all malaria cases should be operational by 2018 in the districts and the data should be compiled and collated in to a national data bank in NMETF/EDCD.

Foci Identification

Districts should identify, classify, respond and update malaria foci in their districts with support from the region and canter. Although foci activity has just started recently, scale up of the activity will be implemented by 2017 to gradually achieve target coverage of 15% cleared foci by 2018, 35% cleared foci by 2019, 60% of cleared foci by 2020, 80% of cleared foci by 2021, and 100% of cleared foci by 2022; and sustain it thereafter. Foci response will target early quality diagnosis and effective treatment in the community using community testing, malaria mobile clinics, and detection and treatment of asymptomatic and sub-microscopic malaria; achieving universal coverage with LLINs distribution, and focal IRS spraying to clear the area from transmission of malaria. Mapping hot spots and hot pops within a focus may be beneficial for more effective and efficient targeted interventions.

Drug Efficacy Study

Regular first line drug efficacy study will be conducted for ACT and Chloroquine. Although, the number of cases may be difficult to enrol in the study from one study site, the use of multiple sites as one study site should be helpful for the study.

Operational Research

Map active foci with qPCR to identify asymptomatic and sub microscopic malaria and define hot spots and hot pops for more effective and efficient targeted interventions by 2018.

Implement MDA in closed and isolated setting with MPPT for P. vivax after G6PD testing by 2017-2018 and disseminate the results by 2019-2020.

Imported Malaria

As countries move toward malaria elimination, imported infections become increasingly significant as they often represent the majority of cases, can sustain transmission, cause resurgences, and lead to mortality. The changing epidemiology of imported malaria in Nepal is a big challenge to malaria elimination. Imported malaria is one of the main threats to achievement and maintenance of elimination, with greatest risk for countries neighbouring high-endemic areas such as Nepal with an open border with India. Despite consistently low reports of malaria cases, a major epidemiological shift is taking place within the country: imported cases have risen from 16% of the total confirmed malaria cases in the country in 2004 to 45 % in 2016. Large `numbers of Nepalese go to work in neighbouring malaria endemic states of India such as Assam, Gujrat, West Bengal and Maharashtra and may return with malaria infection. Besides, seasonal migration for work for couple of months during the peak malaria season to endemic states and home coming for celebrating major festivals is way of life in Far West and Mid-West Regions. An operational research to map migrant and mobile population will be conducted along with social networking, developing awareness through IEC about malaria prevention and increase in early health seeking behaviours, enhanced surveillance and increase in health-care access through Malaria Mobile Clinics in high and moderate risk areas from March to October. Reduction in malaria receptivity in such high risk mapped areas by LLINs distribution and focal IRS spray and personal protection by distribution of prevention package during transit will be promoted. Screening incentives will be explored at the border entry with enhanced health seeking behaviours and target networks and use of mobile alerts and reminders on return. Cross border collaboration needs to move away from just being an idea to be actually implemented with concrete mechanisms and focal points to exchange data with the Indian National Vector Borne Disease Control Programme (NVBDCP) and agreed chain of actions in areas where cases are originating. Such mechanisms and agreement on actions to be undertaken in the affected areas (in both India and Nepal) require formal and regular meetings with EDCD's counterpart in India. WHO is best placed to hold/gather such meetings at a high level to get firm commitment from India after the past failed attempts.

Mapping the Private Sector

Engagement of private sector will ensure reliable information on malaria burden and the state of diagnosis and treatment in the sectors. An operational research to map and estimate private sector contribution to malaria service will be conducted in 2017. This will be the basis of starting a dialogue process with the private sectors targeted towards compliance with malaria case notification, recording & reporting, and also ensuring compliance with NMTP 2016. But, In order to bring the private sector facilities aboard, a *"win win"* strategy and agreement based on 1) EDCD/MoH action and support to strengthen diagnostic and treatment capability and quality of private facilities and

2) compliance of private facilities with notification, reporting and NMTP 2016, will be rolled out by the end of 2017 (see objective 4.)

2. To further reduce & interrupt malaria transmission and eliminate foci.

Integrated Vector Management (IVM)

Integrated Vector Management (IVM) has been adopted as the key vector control strategy and IVM guidelines have been endorsed by TWG/malaria. IVM guidelines will be rolled out by 2017. The guidelines highlights evidence based information on vectors, insecticides, and effectiveness and efficacy along with intersectoral partnerships and collaboration and community engagement and participation.

Universal Coverage: LLINs

Universal coverage with mass LLINs distribution will be promoted in high risk wards and adjoining wards and moderate risk wards. Continuous distribution of LLINs to pregnant women will be promoted in high risk wards and adjoining wards and in moderate risk wards through ANC visit. Mass LLINs distribution by government agency will be explored from 2018.

The coverage, use, and durability of LLINs after 3 -6 months of distribution will be tracked as a baseline and a longitudinal study will be conducted after 12, 24, and 30 months. Operational research related to technical and economic feasibility of using WHOPES-approved long lasting insecticide treatment of conventional nets (IconMaxx) will be explored.

Vector Bionomics & Behaviours

A detail vector lists with their bionomics and behaviours should be prepared based on the geo-ecological strata of the country. Updated vectors lists and their bionomics and behaviours in each of the geographical and ecological strata where transmission of malaria is possible should be documented by 2017. Regular five yearly updates will be sufficient in the coming years. Entomology study conducted in 2016–2017 may be identified as the baseline year and may be of particular interest in framing the document since similar exercise was conducted way back in the 1990S. A plan for strengthening entomology capability should be finalized by 2017 and it should be rolled out by 2018.

Vector Susceptibility Monitoring

Regular yearly sentinel site monitoring for vector susceptibility to insecticides should guide the use of insecticides. This approach will be implemented as a core activity of an Integrated Vector Management (IVM).

Entomology Capacity Building

A long term plan to strengthen entomology capability in the country should start with a roll out of a diploma/bachelor course in entomology by 2018. In the meantime, short term plan to conduct month long field based training should continue with facilitation by national and international entomologists.

IRS

As outlined in the IVM guidelines, IRS will be conducted as follows:

- During malaria outbreak / epidemic

- During humanitarian crisis and national disasters in malaria endemic areas
- In areas where API is more than 1/1,000.
- As responsive measure to clear malaria foci

IRS will be conducted in an integrated manner to address other vector borne diseases such as Dengue and Kala-azar.

Interrupt Transmission:

Foci Identification and Delimitation

Each district will identify and classify malaria transmission foci in their district with support from region and canter by the end of 2017. Foci are classified as Active, Non-active Residual, or Cleared. An active focus is defined as an area with ongoing malaria transmission with locally acquired case(s) detected during the current malaria season. A non-active residual focus denotes recent interrupted transmission meaning last locally acquired case(s) was detected in last season or up to 3 years ago (1–3 years ago). A cleared focus denotes an area with previous cases but no current transmission or within the last 3 years (only imported, induced or relapsing case) detected this year. No locally acquired case detected up to 3 years earlier.

Each district will implement foci response and delimit foci in the district as follows: (cumulative) – 15 % foci by 2018, 35 % by 2019, 60 % by 2020, 80% by 2021, and 100% of foci responded by 2022 and sustained it thereafter. Foci identification will be conducted by DHO/DPHO with participation of local health facilities and with active support from the center in the first year, but during foci updates in subsequent years DHO/DPHO will conduct the exercise.

Appropriate response to delimit and eliminate the foci consists of early diagnosis and prompt complete treatment (in addition to 3 days ACT, single low dose Primaquine for uncomplicated falciparum malaria and for uncomplicated vivax malaria administer G6PD test and on normal test result treat with 3 days Chloroquine and 14 days Primaquine).

Increase access to diagnosis and treatment in the area is ensured through community test treat and track by FCHVs (or modified approach) and Malaria Mobile Clinics. Universal coverage with LLINs and /or IRS spray will ensure further reduction in transmission in the area. Case based surveillance along with detection of asymptomatic and sub clinical malaria by PCR done at designated centers further drains the infectious pool of reservoirs in the community. Foci will be mapped with PCR to target hotspots & hot population and implement MMCs in the focus to increase early diagnosis and prompt complete treatment. Updated malaria foci, malaria hot spots and hot pops information will be maintained at METF in the center.

3. Improve quality of and increase access to early diagnosis and effective and complete treatment of malaria.

Quality Diagnosis

Quality malaria microscopy is a critical issue in National Malaria Programme. An external review of malaria microscopy diagnosis in Nepal recommends roll out and scale up of quality assured and quality controlled RDTs (capable to detect Pf & Pv- Combo) in most areas with establishment of designated strengthened microscopy centers at strategic locations for cross check and quality control.

Community diagnosis and up to PHCs and private sectors malaria diagnosis should be done by Quality Combo RDTs throughout the country. Trained microscopists if available in PHCs and private

sectors may utilize microscopy for diagnosis but quality assured and control guidelines should be in place. All positives and 10% negatives RDTs, should undergo cross checking and quality control. Prepare thick and thin slide of the sample and each week send the slide for quality control to designated district microscopy center. Feedback should be sent within a week. Conduct basic, refresher and competency assessment in malaria microscopy for as public and private health care facilities, designated microscopy and referral centers respectively.

Equivocal slides and random sampling of positive and negative slides should be sent to the designated referral centers for review. Feedback should be sent within a week.

Drain Reservoirs in the Community

The spectrum of malaria infection is wide ranging from asymptomatic, sub-microscopic, symptomatic case, relapse case, and recrudescent case. In order to reach elimination, strategy has to address this pool of reservoirs in the community. Malaria Mobile Clinics (MMCs) using RDTs in the community will target proactive case detection (malaria case and asymptomatic infection) in the community in areas of malaria transmission. MMCs will be established through contracts with private health entities which will also involve Village Health Workers operating in the communities. In addition, to interrupt malaria transmission, sub-microscopic and asymptomatic malaria should be detected by qPCR (blood sample collected in DBS and transported to QA/QC designated PCR centers in the regions) and treated as per the national guidelines. Three designated PCR centers are in operation and scale up of further two centers would cover the country.

Disseminate NMTP 2016

NMTP 2016 should be disseminated to public and private health care providers by April 2017. The orientation should target the following:

- Physicians & Medical Officers in public and private sectors
- Health Care Providers in public – AHWs, HAs/
- Drug dispensers in private sectors.

The big challenge is to comply with complete treatment particularly in vivax malaria treatment as per NMTP 2016. There is currently three treatment regimen in operation for P vivax treatment without G6PD testing: a. chloroquine only; b. chloroquine and 5 days Primaquine; c. chloroquine and 14 days Primaquine. Drug adherence, monitoring, and follow up are not implemented. A point of care test (RDTs) will be pre- positioned by Malaria Programme by 2017. Although current point of care test will not address female heterozygotes for G6PD and on exposure to Primaquine they may hemolyze, careful counseling and provision of FST facility in each district may minimize the risk. It is envisioned that within a year, point of care test will address the issue of female heterozygotes. Primaquine administration for 14 days for radical cure of P vivax malaria after a normal G6PD test is the critical element in compliance with treatment protocol.

PSM/Logistics Plan

The Procurement and Supply Management plan requires new interventions that will foster an enable environment for decision making based on evidence for 1) a more accurate forecasting of needs of drugs and diagnostics commodities, 2) a more regular control of stock data reported to avoid stock-out, 3) a stronger quality assurance system, and 4) a more robust plan for minimizing drug expiry and guarantee adequate waste management.

Proposed activities include (but are not limited to):

- Establish and train a central forecasting committee for malaria commodities at EDCD comprising members from Logistic Management Division (LMD), Save the Children (STC), WHO, Department of Drug Administration(DDA), local USAID mission health section. The Terms of Reference for such committee should be completed by July 2017.
- Set-up and conduct monthly meeting to cross-check data reported to LMD and EDCD (LMIS versus MDIS, as well as data reported by VCIs, DHOs or other channels). A joint LMD-EDCD team will conduct these meeting and produce reports to the TWG and NMESC.
- Develop product specifications, prepare cost estimates for procurement and validate the specifications during an annual workshop with national stakeholders.
- Develop updated SOPs on drug dispatch, drug receiving, inventory management, expiry handling, and waste management and make them available to all district drug stores.
- Develop sampling protocols for collecting quality control samples of antimalarial commodities at different points of supply chain. Conduct regular quality control operations.
- Obtain quotation for quality control tests from WHO – pre qualified laboratories and send samples for quality testing

Case Management

Conduct malaria case management training for physicians, medical officers, and health care providers in public and private sectors. Case management will focus on severe malaria in order to address increasing imported cases of severe malaria seeking health care mostly in private sectors.

Community Test, Treat, and Track

Although FCHVs have been trained to recognize malaria on the basis of travel and symptoms yet community testing has been implemented with a modified joint approach with support from local health facility. Early diagnosis and prompt treatment in the community is a pre-requisite for limiting onward transmission from the case. A review of current community test approach will be evaluated by 2017 with participation of all the stakeholders. EDCD will build a strong case for community testing by FCHVs to be implemented in hard to reach remote high and moderate risk districts. Although in the past TWG/Malaria rejected community testing by FCHVs, but recent decision of NPHL to allow piloting the concept in HIV is encouraging. Community testing by FCHVs in hard to reach, remote areas will be piloted in 2017 and the results shared with the stakeholders and TWG/ Malaria. If community testing by FCHVs is not recommended by the group then scale up of current approach will be ensured with trained FCHVs sending SMS to the focal person in the local health facility. Focal person respond within 24 hours and visit the community and with support from FCHV conducts community testing and treatment in the community and FCHVs keep track of the case. Trained FCHVs ensure patient adheres and complies with treatment and keeps track of the cases. Community testing is further augmented by roll out of MMCs in high and moderate risk wards targeting proactive case detection and treatment.

4. Develop and sustain support through advocacy and communication, from the political leadership and the communities towards malaria elimination

National Malaria Elimination Steering Committee (NMESC)

NMESC is required for policy, advocacy, and partnerships building. Such committed would include high level representatives of the Ministries of Health, Education, Environment, Agriculture and

Finance, as well as representatives of Economic Development Partners (EDPs) such as WHO, USAID, UNICEF, DFID, GIZ, AFD, etc.

NMESC would meet annually to review progresses accomplished by the malaria program and examine the current challenges, bottlenecks and requests for policy changes, support or funding.

Develop Private Sector Engagement Strategy

In order to bring the private sector facilities aboard, a *"win win"* strategy and agreement based on 1) EDCD/MoH action and support to strengthen diagnostic and treatment capability and quality of private facilities and 2) compliance of private facilities with notification, reporting and NMTP 2016, will be rolled out by the end of 2017.

As describe under objective 1), such strategy requires first a clear mapping of private facilities by legal registered status, size (visits), specialty of care, and location.

Private sector will report or comply if incentives mechanism (not monetary) or formal partnerships are established including but not limited to:

- EDCD/MoH providing for free the full range of BCC materials, guidelines, protocol materials, RDTs and drugs for quality diagnostic and treatment.
- EDCD providing training, mentoring and monitoring to private facilities staff.
- EDCD inviting private sector representative at District and Central Levels to regular coordination meetings.
- EDCD setting up a recognition system for best reporting/performing facilities (annual awards during annual review of private sector data/achievements for instance).
- Private facilities reporting on a monthly basis the number of clinical cases, diagnosis results and treatment provided following national treatment and case management protocol.
- Private facilities referring cases (severe or not) to recommended public facilities when not able to provide necessary and appropriate services to patients.
- Private facilities offering testing and treatment for free when receiving commodities and training from government.
- Private facilities participating in regular coordination meetings with district or national level authorities.

A national level meeting should be held with government authorities (EDCD, MOH, DHOs) and representative of the private sector organizations/associations to agree on partnership conditions and review on a regular basis the data generated from both sectors.

BCC targeting High Risk Groups

High risk groups (soldiers, forest guards, refugees, etc.) have not been targeted and received specific BCC interventions and materials. There is a lack of data/evidence/documentation on the assumption of the existence of such high risk groups. Studies identifying such groups by evidence are needed. Once identified, specific BCC approaches and packages will be developed.

Cross Border Collaboration

In order to make collaboration with India effective, EDCD will develop a formal proposal to the Government of India and its dedicated program (NVBDCP). Such proposal will list 1) the type of information that should be shared by both countries in order to decrease the number of imported

cases by targeting identified foci on both side of the border, 2) the data transmission mechanism and focal points, and the 3) chain of actions/responses to be undertaken by both parties in affected districts/communities where imported cases are originating from.

It is expected that WHO would play the role of mediator to establish such collaboration but initially hosting a bilateral high level meeting on that matter to introduce both parties to each other, recommend the collaboration, assist EDCD to present its proposal and drive the discussion towards a formal commitment and agreement framing on the collaboration.

In addition EDCD can unilaterally establish and test the relevance of health/check posts at the border of high risk districts which would provide on-site testing, communication materials and prevention commodities packages (prophylaxis, LLINs, repellants, etc.) to targeted migrant workers/ populations.

5. Strengthen programmatic technical and managerial capacities towards malaria elimination

Malaria Elimination Task Force

A Malaria Elimination Task Force will be established by 2017 and will function as a gateway for malaria data banking and management; document success and failures monitor and evaluate the progresses made toward malaria elimination. METF will present the updated progress, success and failures, constraints and challenges in malaria elimination programme to TWG/Malaria for guidance, approval or support. Monthly reports will be sent from the METF to the TWG/M members.

Because the METF staff will be dedicated to the Malaria Program to fully focus on this disease, EDCD will develop specific Job Description for these position, describe the level term of references, responsibilities and authority of the METF, and will internally restructure/shift its organogram to include this team while keeping the same number of employees.

Technical Working Group

Malaria Technical Working Group (TWG/M) will guide the malaria programme towards elimination. The TWG/M will meet upon request from the METF as needed to provide programmatic, technical or strategic guidance, to approve new interventions or changes in the work plan, and to seek additional political, financial or technical support as needed.

Malaria Programme Review

An internal Malaria Programme Review should be conducted in 2017, 2020 and 2022 to review and measure progresses made toward elimination and update as needed the NMSP.

Annual Work Plan

To ensure that all interventions are planned and budgeted in a timely fashion and that activities follow a clear roadmap, the METF will develop every year a work plan that will be reviewed and approved by the TWG/M.

5.1.1.2 Major activities in 2074/75

- 610,252 LLIN was distributed as mass distribution and 54,786 LLIN was distributed to pregnant women at their first ANC visits.
- Conducted the ward-level micro-stratification of malaria cases in 44 districts.
- Introduced case-based surveillance system, including web-based recording and reporting system for districts. The MDIS is now fully operational.
- Conducted a national malaria vector survey.
- Orientated district and peripheral level health workers on case based surveillance and response.
- Carried out detailed foci investigation at more than four sites.
- Revitalized the malaria microscopy quality assurance system with collaboration between the Epidemiology and Disease Control Division (EDCD) and VBDRTC, with technical assistance from WHO.
- Orientated district health workers and FCHVs on the government's malaria elimination initiative and their role in detecting cases and facilitating early treatment.
- Orientated mother groups and school children on malaria prevention and the need for early diagnosis and prompt treatment.
- Conducted quarterly and annual review meetings for district and central level staff. Participants reviewed data from peripheral facilities and revised it based on suggestions.
- Conducted operational research on malaria vector behaviour and insecticide resistance.
- Conducted regular vector control (indoor residual spraying) biannually across high and moderate risk districts.
- Conducted detailed case based investigation and fever surveys around positive index cases.
- Conducted integrated entomological surveillance around twelve different site of thought-out the country.
- Celebrated World Malaria Day on 25 April.

Achievements

Nepal achieved MDG 6 ahead of time by reducing malaria morbidity and mortality rates by more than 50 percent in 2010. Despite political instability, Nepal's malaria programme has successfully implemented planned interventions to eliminate the remaining active malaria foci (VDCs). MoH, with support from its EDPs, has implemented a strong malaria control programme, steadily improving the coverage and quality of indoor residual spraying, introducing long lasting insecticide-treated nets, and increasing access to rapid malaria diagnosis and powerful artemisinin-based combination treatments.

Data generated by public health care facilities in the HMIS, the Early Warning and Reporting System (EWARS) and from studies including malaria micro-stratification show a substantial decline over the last six years in clinical and laboratory confirmed Plasmodium falciparum and P. vivax cases. The findings of the micro-stratification exercise (2013) reduced the number of high and moderate risk district from 31 to 25 and identified 1,254 VDCs (out of 3,972) as presenting a risk of contracting malaria. In 2073/74 (2016), micro stratification was done to assess the risk at ward level. The result was published.

The trends of the malaria epidemiological situation between 2072/73 and 2074/75 show a slightly increasing trend of confirmed cases and 4 deaths (Table 5.1.1.1):

- Confirmed malaria cases increased from 1128 in 2073/74 to 1187 in 2074/75. The proportion of P. falciparum infections is decreased and accounted for 7.1 percent of all cases in current year.
- During 2004–2007, the annual parasite incidence (API) remained stable (0.26-0.27 per 1000 population country wide), and thereafter gradually declined to the lowest level ever recorded (in 2074/75) of 0.08/1000 at risk population (calculated based on denominator set after micro-stratification, 2018/HMIS).
- The trend of clinically suspected malaria cases is also decreasing, mainly due to the increased coverage of RDT, microscopic laboratory service at peripheral level and regular orientation and onsite coaching of service providers. A total of 3,282 probable/clinical suspected malaria cases treated by chloroquine through OPD were reported in 2074/75.
- There was a sharp decrease in the number of indigenous P. falciparum cases with slowly increasing trend of indigenous P.vivax cases. But cases being identified in new areas, especially in mountian, hilly and terain, suggest that P.vivax malaria remains a challenge for the elimination of malaria in Nepal. This raises the need for new country specific elimination strategies.

Table 5.1.1.1: Malaria epidemiological information (FY 2072/73–2074/75)

Items /indicators	2072/73	2073/74	2074/75
Total population at Risk	13,767,000	14944174	15177434
Slide Collection Target	150,000	150,000	150,000
Total slide examined	116,276	118165	207581
Total positive cases	991	1128	1187
Total indigenous cases	506	492	557
Total imported cases	485	636	630
Total P. falciparum (Pf) cases	162	148	82
% of Pf of total cases	16.34	13.1	6.9
Total indigenous Pf cases	70	52	10
% indigenous Pf cases	43.21	35	12
Total imported Pf cases	92	96	72
% imported Pf cases	56.79	65	88
Total P. vivax(Pv)cases	829	980	1105
Total indigenous Pv cases	436	440	547
% indigenous Pv cases	52.6	44.9	49.5
Total imported Pv cases	393	540	558
% imported Pv cases	47.4	55.1	50.5
Annual blood examination rate	0.84	0.79	1.4
Annual parasite incidence	0.07	0.08	0.08
Annual Pf incidence	0.012	0.01	0.01
Slide positivity rate	0.85	0.95	0.57
Slide Pf positivity rate	0.14	0.13	0.04
Probable/clinical suspected malaria cases (not tested but treated by chloroquine)	10642	3904	3282

Source: HMIS/DoHS

The trend of the national malariometric indicators (Table 5.1.1.1) indicates that Nepal has entered in the elimination phase. Despite district variance including on number of cases, the API and slide positivity rates (SPR) and the zero indigenous cases from districts such as Kavre and Sindhupalchok over the last four years suggests a paradigm shift. The highest number of confirmed cases were reported from Kailali district (301), followed by Mugu (143), Kanchanpur (137), Banke (73) and Bajura (60). This shows substantial progress towards elimination targets (bearing in mind that data are only generated by public health care facilities and require continuous attention for improvement).

Table 5.1.1.2: Province wise Malaria epidemiological information of 2073/74 to 2074/75

Province	Annual Blood Examination rate of malaria in high risk districts		Malaria annual parasite incidence per 1000 pop. at high risk districts		Percentage of Plasmodium falciparum cases in high risk districts		Percentage of imported cases among positive cases of malaria		Slide positivity rate of malaria among high risk districts	
	2073/74	**2074/75**	**2073/74**	**2074/75**	**2073/74**	**2074/75**	**2073/74**	**2074/75**	**2073/74**	**2074/75**
National	0.79	1.3	0.08	0.08	13	6.9	56.4	54.2	0.95	0.56
Province 1	0.44	0.56	0.02	0.01	24.5	20.83	77.6	45.83	0.39	0.15
Province 2	0.51	0.49	0.04	0.02	19.9	6.06	28.1	68.18	0.83	0.39
Province 3	0.42	0.55	0.03	0.02	28.9	38.46	37.8	92.31	0.63	0.27
Gandaki	0.87	0.63	0.03	0.03	10.3	25	72.4	66.67	0.32	0.54
Province 5	1.07	1.68	0.08	0.07	16.19	12.13	74.5	68.62	0.77	0.41
Karnali	0.7	1.19	0.13	0.35	5.3	0.48	74.7	21.9	1.7	2.9
Sudurpashim	1.6	4.64	0.3	0.29	8.3	4.1	50.6	53.92	1.6	0.63

Source: HMIS/DoHS

Confirmed malaria is slightly increased due to active surveillance and others many factors may have contributed to the decline of clinical and the decline of the number of endemic districts (and probably of the number of active foci):

- Overall improvements in the social determinants of health (for example, less than 20% of Nepalese people now live below the poverty line against more than 40% in 2000).
- Increased access to simple diagnostic tools like (combo) RDTs.
- The availability of powerful antimalarial medicine (ACTs) in all public health facilities.
- The distribution of around 0.65 million LLINs in FY 2074/75 in endemic areas (Mass and ANC).
- The large financial support from the GFATM since 2004 has played a major role by allowing the programme and partners to scale up essential interventions and malaria control tools to the most peripheral level. Data reported by the districts via HMIS and reports received by the programme may differ for various reasons such as lack of orientation of staff who generate data and statistical officers who enter the data as per the suggestion of vector control officers at district and regional levels. The involvement of the vector control inspector (VCI), statistical officers and lab personnel from districts and regions on data quality coupled with rigorous on-site coaching and support by the central EDCD team (comprising government and contracted staff from Save the Children working at the programme management unit) have paid dividends in helping decrease errors.

Recommendations from regional and national reviews in 2073/74 and actions taken in 2074/75

Problems and constraints	Action to be taken	Action taken
• Confirmation of suspected and probable malaria cases	• Malaria microscopy trainings of all untrained lab personnel • Availability of RDT at non microscopic sites • Orientation of service providers, clinicians, health workers and private practitioners • Validation of probable malaria case through cases investigation	• Increased number of malaria microscopy trainings run at VBDRTC and in other regions including lab personnel from across the country • Database created that lists untrained and trained personnel since 2004. It aims to reduce repetition before two years of basic malaria microscopy training to provide equal opportunities • Regular periodic validation of HMIS data by EDCD in coordination with DPHOs • Decentralized training centres established in mid and far west to train more lab personnel on malaria microscopy
• Low blood slide examination rates for malaria elimination programme	• Train health workers on RDT and microscopy in malaria reported districts	• Supplied RDT at community level • Trained health workers from malaria reported districts
• Orientation on malaria programme to health workers	• Run training programmes with GFATM support	• Ongoing basic and refresher trainings on malaria microscopy for lab technicians and assistants at peripheral facilities • Oriented PHD and DHO finance and store persons on malaria programme • Oriented FCHVs on malaria
• Malaria case reporting and case investigation	• Orient district and peripheral staff on case investigation and reporting	• District and peripheral level staff oriented on case investigation, surveillance, foci investigation and reporting
• Unnecessary variables in HMIS tool (for status of patients)	• EDCD to address to variables during HMIS tools revision	• Discussed with HMIS section and agreed to rectify at next revision
• Malaria cases increasing in non-endemic district	• Programme should address non-endemic districts	• Programme will be added next year to also target non-endemic districts.

5.1.2 Kala-azar

5.1.2.1 Background

Kala-azar is a vector-borne disease caused by the parasite *Leishmania donovani,* which is transmitted by the sandfly *Phlebotomus argentipes.* The disease is characterized by fever for more than two weeks with spleenomegaly, anaemia, and progressive weight loss and sometimes darkening of the skin. In endemic areas, children and young adults are the principal victims. The disease is fatal if not treated on time. Kala-azar and HIV/TB co-infections have emerged in recent years.

The government of Nepal is committed to the regional strategy to eliminate Kala-azar and signed the memorandum of understanding that was formalized at the World Health Assembly in 2005, with the target of achieving elimination by 2015. In 2005, the EDCD formulated a National Plan for Eliminating Kala-azar across preparatory (2005-2008), attack (2008–2015) and consolidation (2015 onwards) phases. See Box 5.1.2.1 for the plan's goals, target, objectives and strategies. The expected outputs of the plan are related to the components of the system that need strengthening. One is to develop a functional network that provides diagnosis and case management with special outreach to the economically back warded people.

5.1.2.2: Goal, objectives and strategies

Box 5.1.2.1: Goal, objectives and strategies

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 rates from Kala-azar 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 - Based on the regional strategy proposed by the South East Asia Kala-azar Technical Advisory group (RTAG) and the adjustments proposed by the Nepal expert group, Government of Nepal, MoHP has adopted the following strategies for the elimination of Kala-azar.

- Early diagnosis and complete treatment
- Integrated vector management
- Effective disease and vector surveillance
- Social mobilization and partnerships
- Improve programme management
- Clinical implementation and operational research.

The national plan was revised in 2010 as the National Strategic Guideline on Kala-Azar Elimination in Nepal that recommended rK39 as a rapid diagnostic test kit and Miltefosine as the first line of treatment in Kala-azar in most situations. The updated national guideline on KA Elimination Program (2019) has also recommended Liposomal Amphotericin B and a combination regimen for Kala-azar and PKDL treatment in Nepal. The Liposomal Amphotericin B has been rolled out in all treatment centers since 2016.

Over the last decade, there have been significant advances in the diagnosis and treatment of Kala-azar. Nepal's national programme made the rK39 dipstick test kit (a rapid and easily applicable serological test) available to PHCC level in affected districts.

5.1.2.3: Major activities in 2074/75

Case detection and treatment — Early case detection and complete and timely treatment is the mainstay of eliminating Kala-azar. Kala-azar related diagnostic and treatment services are provided at PHCC and above levels of health facilities while awareness, health education, follow-up for treatment compliance, identification and referral of suspected cases are also offered at health posts.

Indoor residual spraying in priority affected areas — In 2074/75 two rounds of selective indoor residual spraying were carried out in prioritized Kala-azar affected areas of endemic districts based on the national IRS guideline. IRS is carried out only in villages where kala-azar cases were recorded in the previous year or in areas with an outbreak in the recent past. The kala-azar programme also benefits from IRS for the prevention of malaria.

Use of liposomal amphotericin-B as first line treatment regimen— The WHO Expert Committee on Leishmaniasis in 2010 and the Regional Technical Advisory Group (RTAG) for the kala-azar elimination programme in 2011 recommended Liposomal Amphotericin B (L-AmB) as the first line regimen during the attack phase in the Indian subcontinent. Taking into consideration its high efficacy, safety, ease of use and assured compliance, the results of a phase 3 trial evaluating three regimens for combination therapy showed excellent efficacy and safety across all three regimens. The combination regimens has been recommended as second line regimens for the Indian sub-continent in the attack phase. In the long term, combination regimens are the best way to protect individual drugs from developing resistance. Monotherapy with Miltefosine or Paromomycin is a fourth choice (after Amphotericin B) in the expert committee's recommendations.

L-AmB was introduced in Nepal in December 2015 after training about 60 doctors and nurses from endemic districts. The therapy should be directly observed and patients should be hospitalized for the full duration of the therapy. L-AmB needs a cold chain (<25°Celsius) for storage; and therefore should be made available only in hospitals where proper storage is ensured.

RDT scaling up – RDT is the simple test that can be used at all level of health care services. It does not need highly skilled laboratory staffs and test results expedite the initiation of treatment provided standard case definitions are followed. They are currently the best available diagnostic tool for Kala-azar diagnosis and can be used in any field setting. Therefore, in 2074/75 a diagnostic tool update of reporting tools at all PHCC level has been conducted. Recently rK39 (RDT) is available at Kala-azar affected districts from level II and above health institutions. There is provision of supply on demand to any health facility in high degree of clinical suspicion.

Orientation on updated national guidelines on KA Elimination Program — Medical officers, nursing

staff, laboratory staffs and other paramedics will be offered training in coming year on the revised national Kala-azar guidelines and treatment protocols.

Kala-azar review meeting — A review meeting was held with DHO and district hospital personnel and the focal persons of all Kala-azar endemic and non-endemic districts focusing on data verification, line listing update and the revised treatment protocols.

National Kala-azar Technical Working Group Meeting: One event of national Kala-azar Technical Working Group Meeting was conducted in Kathmandu where various issues regarding Kala-azar were discussed.

Disease surveillance— Kala-azar tends to be under reported as most data is obtained through passive case detection especially from government hospitals. During 2074/75, active case detection was carried out in endemic and non-endemic Rural/Municipalites. This was done through case based and camp based approach. The sites were selected based on the number of new cases reported in the previous and running fiscal year. Community-based house to house searches were carried out by district team, local health facility staffs and FCHVs for suspected kala-azar and PKDL cases. Suspected cases were then screened clinically by physicians and rapid diagnostic kits (rK39) at health facilities by laboratory persons and other health workers. rK39 positive cases were referred to district, zonal hospitals and center for further confirmation and management.

Multi-disciplinary Kala-azar Vector Surviellance: In recent years there has been reported cases of Kala-azar from different non-endemic districts of Nepal. Disease is observing unique features that not only new cases has been reported from non-endemic districts there has been reporting of cutaneous and mucocutaneous leishmaniasis in Western part of Nepal. As well, in previous years cases of Kala-azar has been reported from eastern part of Nepal, therefore, during FY 2074/75 vector surveillance has been conducted in other districts of Nepal.

Trend of kala-azar cases

The number of Kala-azar cases has been decreasing significantly in recent years. In 2072/73 a total of 267 Kala-azar cases were reported out of which 250 cases were native. Of all the native cases 181 (72.4%) were from the 18 program district. However, no cases were reported from Parsa although being one from program district. As well, 32 non-programme districts reported 69 cases in 2072/73.

In 2073/74, 231 Kala-azar cases were reported from various parts of the country which is slight decrease compared to previous year (Table 5.1.2.1). Out of all cases, 151 cases were native from 18 program districts. Moreover, 74 cases were reported from 25 non-programme districts in 2073/74.

In 2074/75, there has been slight increase in reported cases (239 Kala-azar cases) compared to previous year. Out of all cases 122 Kala-azar cases were reported from 17 program districts where the most cases reported are from Palpa (19), Sarlahi (17) and Morang (16) while the programme district Parsa reported no cases this year. However, there has been rapid increase in Kala-azar cases compared to previous years among non-programme districts. 33 non-programme districts reported 117 cases in 2074/75 (Khotang, Sankhuwasabha, Bhaktapur, Chitwan, Dolakha, Kathmandu, Ramechhap, Sindhuli, Gorkha, Syangja, Tanahun, Arghakhanchi, Banke, Bardiya, Dang, Gulmi, Pyuthan, Rolpa, Rupandehi, Dailekh, Dolpa, Humla, Jajarkot, Jumla, Kalikot, Mugu, Salyan, Achham, Baitadi, Bajura, Dadeldhura, Darchula and Kanchanpur). Similarly, out of 239 total cases, 5 cases of Post Kala-azar Leishmaniasis (PKDL) from-Mahottari, Morang, Saptari and Siraha as well as, 12 cases of Cutaneous Leishmaniasis (CL) has been

reported from different districts in the year 2074/75 namely- Baitadi, Kailali, Kalikot, Kanchanpur, Ramechhap, Rautahat, Rolpa, Syangja and Tanahun. This epidemiological shifting indicates that the programme should conduct a vector survey to map the presence of the vector and the indigenous transmission of the disease.

Table 5.1.2.1: Trend of kala-azar cases (FY 2072/73 to 2074/75)

Province	Districts	FY 2072/73		FY 2073/74		FY 2074/75	
		Native	Foreign	Native	Foreign	Native	Foreign
1	Bhojpur	2	0	6	0	7	0
	Jhapa	11	0	6	0	6	0
	Morang	50	0	21	0	16	0
	Okhaldhunga	0	0	2	0	4	0
	Sunsari	14	0	6	0	7	0
	Udayapur	3	0	2	0	1	0
2	Bara	2	0	1	0	1	0
	Dhanusha	8	4	15	1	2	0
	Mahottari	18	7	11	0	8	0
	Parsa	0	0	1	0	0	0
	Rautahat	1	0	1	0	2	0
	Saptari	16	0	6	0	4	0
	Sarlahi	10	6	24	4	17	0
	Siraha	23	0	15	1	11	0
3	Makwanpur	1	0	5	0	3	0
5	Palpa	9	0	16	0	19	0
Karnali	Surkhet	10	0	11	0	10	0
Sudur pashim	Kailali	3	0	2	0	4	0
Total Cases	**Programme Districts**	**181**	**17**	**151**	**6**	**122**	**0**
	Other Districts	**69**	**0**	**74**	**0**	**117**	**0**
Grand Total Cases		**250**	**17**	**225**	**6**	**239**	**0**

Source: EDCD/DoHS

The incidence of kala-azar at national and district level has been less than 1/10,000 population since 2013. The incidence at district level in 2072/73 ranged from 0.48/10,000 in Morang to 0.01 in Rautahat and in 2073/74 from 0.63 in Palpa to 0.01 in Bara, Parsa and Rautahat districts. In 2074/75, the district level incidence per 10,000 people in areas at risk ranged from 0.75, 0.43, 0.27, 0.25 in Palpa, Bhojpur, Okhaldhunga and Surkhet respectively to 0.01 in Bara with an average incidence of 0.11 per 10,000 in the 18 programme districts and 0.11 at the national level (Table 5.1.2.2). The case fatality rate was 2.93 percent in 2074/75 at national level. Similarly, higher (4.27 percent) kala_azar case fatality rate is observed in 33 non programme districts than 1.64 percent in 17 program district.

Note that kala-azar cases reported from DHOs and DPHOs via the HMIS and case reports received by the programme sometimes vary. The HMIS usually receives aggregate data from hospitals and other health facilities while the programme proactively collects data from DHOs and DPHOs through EWARS. EDCD verifies data with the help of line listing report of all cases.

Table 5.1.2.2: Kala-azar cases and incidence (2072/73 to 2074/75)

Districts	Cases			Incidence		
	2072/73	2073/74	2074/75	2072/73	2073/74	2074/75
Bhojpur	2	6	7	0.12	0.36	0.43
Jhapa	11	6	6	0.12	0.07	0.07
Morang	50	21	16	0.48	0.20	0.15
Okhaldhunga	0	2	4	0.00	0.13	0.27
Sunsari	14	6	7	0.16	0.07	0.08
Udayapur	3	2	1	0.09	0.06	0.03
Bara	2	1	1	0.03	0.01	0.01
Dhanusha	8	15	2	0.10	0.19	0.02
Mahottari	18	11	8	0.27	0.16	0.12
Parsa	0	1	0	0.00	0.01	0.00
Rautahat	1	1	2	0.01	0.01	0.03
Saptari	16	6	4	0.23	0.09	0.06
Sarlahi	10	24	17	0.12	0.28	0.20
Siraha	23	15	11	0.34	0.22	0.16
Makwanpur	1	5	3	0.02	0.11	0.07
Palpa	9	16	19	0.35	0.63	0.75
Surkhet	10	11	10	0.26	0.28	0.25
Kailali	3	2	4	0.03	0.02	0.04
Other Districts	69	74	117	0.07	0.03	0.10
Total	250	225	239	0.12	0.11	0.11

Source: EDCD/DoHS

Strengths, weakness, challenges and Recommendations of Kala-azar Elimination Program

Strengths

- Implementation of Health Management Information System (HMIS) and Early Warning and Reporting System (EWARS) for surveillance of Kala-azar.
- Use of multi-disciplinary approach to overcome the challenges for elimination of Kala-azar.
- Use of different approaches of active case detection of Kala-azar like-camp based approach, index case-based approach.

Weakness

- At present disease, surveillance is mostly passive and some of the cases of private sector is missing which is merely covered by the surveillance system.
- Lack of trained staffs to monitor outbreak investigation and response efforts in non-endemic districts.
- Inadequate awareness about disease among community population.

Challenges

- Networking with dermatologists for confirmation of PKDL cases since variable presentation of these cases requires expertise on diagnosis.
- Contribution of varied factors like- local transmission and lack of epidemiological evidence leading to Kala-azar infections.

Recommendations

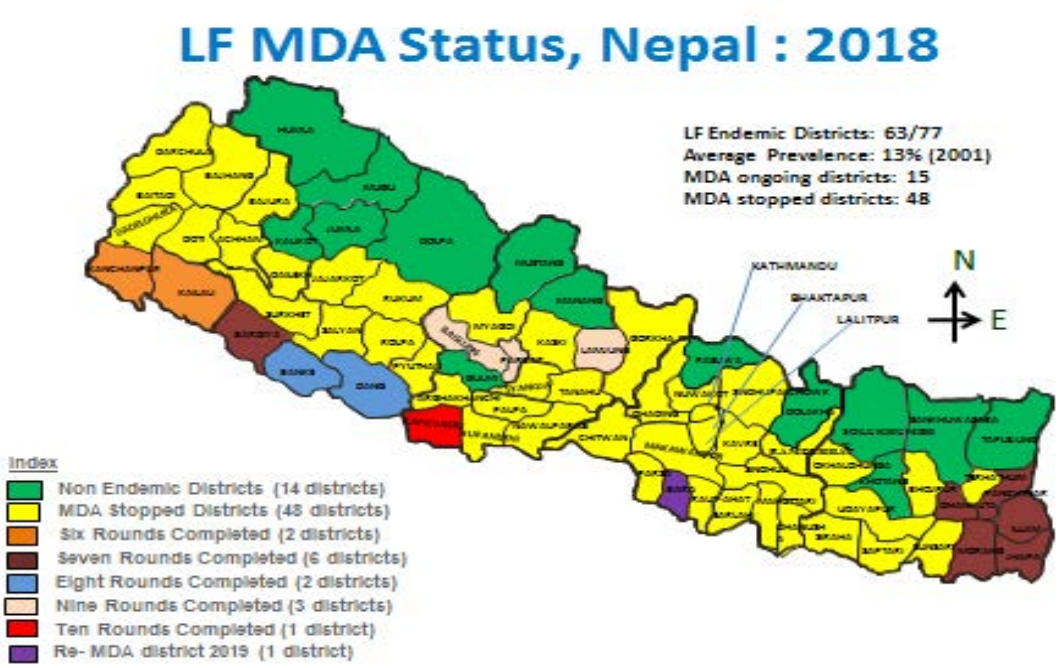
- Dissemination of educational message to public, public health professionals and policy makers related to Kala-azar.
- Improving investigation and management of outbreaks.
- Complete reporting of outbreak within one month of closing the outbreak investigation and response.
- Verification of endemicity status of Kala-azar reporting in new case reported districts.
- Expand Kala-azar related strategies and activities to all districts in the country where cases are seen or where there is probability of transmission.

5.1.3 Lymphatic Filariasis

5.1.3.1 Background

Lymphatic Filariasis (LF) is a public health problem in Nepal. Mapping of the disease in 2012 using ICT (immune-chromatography test card) revealed 13 percent average prevalence of lymphatic filariasis infection in Nepal's districts, ranging from <1 percent to 39 percent. Based on the ICT survey, morbidity reporting and geo-ecological comparability, 61(63) districts were identified as endemic for the disease (Figure 5.1.3.1). The disease has been detected from 300 feet above sea level in the Terai to 5,800 feet above sea level in the Mid hills. Comparatively more cases are seen in the Terai than the hills, but hill valleys and river basins also have high disease burdens. The disease is more prevalent in rural areas, predominantly affecting poorer people. *Wuchereriabancrofti* is the only recorded parasite in Nepal, The mosquito *Culexquinquefasciatus*, an efficient vector of the disease, has been recorded in all endemic areas of the country.

Figure 5.1.3.1: Lymphatic filariasis endemicity, Nepal



Progress towards elimination

The EDCD formulated a National Plan of Action for the Elimination of Lymphatic Filariasis in Nepal (2003–2020) (Box 5.1.3.1) by establishing a National Task Force. The division initiated mass drug administration (MDA) in Parsa district in 2003, which was scaled up to all endemic districts by 2069/70 (2013). As of 2074/75, MDA has been stopped (phased out) in 38 districts, post-MDA surveillance initiated in 39 districts and morbidity management partially initiated in all endemic districts. All endemic districts have completed the recommended six rounds of MDA by 2018. The elimination programme has indirectly contributed to strengthening the system through trainings and capacity building. Since 2003, surveys have been carried out including mapping, baseline, follow up, post MDA coverage and transmission assessment surveys. The transmission assessment survey in 38 districts in 2017 found that the prevalence of infection had significantly reduced. Since 2003 more than 110 million doses of lymphatic filariasis drugs have been administrated to at-risk population.

5.1.3.2 Goal, objectives, strategies and targets

Box 5.1.3.1: Goal, objectives, strategies and targets of lymphatic filariasis elimination programme

Goal — The people of Nepal no longer suffer from lymphatic filariasis

Objectives:

- To eliminate lymphatic filariasisas as a public health problem by 2020
- To interrupt the transmission of lymphatic filariasis
- To reduce and prevent morbidity
- To provide deworming through albendazole to endemic communities especially to children
- To reduce mosquito vectors by the application of suitable available vector control measures (integrated vector management).

Strategies:

- Interrupt transmission by yearly mass drug administration using two drug regimens (diethylcarbamazine citrate and albendazole) for six years
- Morbidity management by self-care and support using intensive simple, effective and local hygienic techniques**.**

Targets:

- To scale up MDA to all endemic districts by 2014
- Achieve <1% prevalence (microfilaraemia rate) in endemic districts after six years of MDA by 2018.

5.1.3.3 Major activities in FY 2074/75

Mass drug administration

MDA was continued in 24 districts in 2074/75. 10 districts completed six, 6 districts completed seven, 4 districts completed eight, 3 districts completed nine and 1 district completed ten rounds of MDA in this year. A total of 64,24,332(70.4%) of the targeted 91,26,506 people in 24 districts were treated this year. The campaign was conducted in February 2017. The campaign mobilized around 10,000 health workers and 50,000 trained volunteers to reach the target populations and for monitoring campaign activities. The main MDA-related activities are listed in Box 5.1.3.2.

More than 8,000 adverse events (mostly mild headaches, dizziness and stomach aches) were reported after MDA. Health workers and volunteers mobilized for the campaign reported nearly 6,500 cases of morbidity due to or suspected to be due to lymphatic filariasis. More than 30,000 cases of lymphedema of the lower and upper limbs, breast swelling and hydrocele were reported from endemic districts during previous MDA campaigns.

The progress and coverage of the MDA campaign is shown in Table 5.1.3.1.

Table 5.1.3.1: Scaling-up and coverage of MDA campaigns

MDA Year	MDA districts	At risk population	Treated population	Epidemiological coverage %	Remarks
2003	1	505,000	412,923	81.8	
2004	3	1,541,200	1,258,113	81.6	
2005	5	3,008,131	2,509,306	83.4	
2006	3	2,075,812	1,729,259	83.3	
2007	21	10,906,869	8,778,196	80.5	
2009	21	10,907,690	8,690,789	80.0	
2010	30	14,162,850	11,508,311	81.3	MDA stopped in 1 district
2011	36	15,505,463	12,276,826	79.2	MDA stopped in 4 more districts
2012	46	20,017,508	13,546,889	67.7	
2013	56	21,852,201	16,116,207	73.8	
2014	41	15,874,069	10,929,305	68.9	MDA stopped in 15 more districts
2015	41	15,981,384	11,117,624	69.6	
2016	35	12,470,213	8,887,666	71.3	MDA stopped in 5 more districts
2017	30	10,827,093	7,870,784	72.7	MDA stopped in 6 more districts
2018	24	91,26,506	64,24,332	70.4	MDA stopped in 6 more districts

Source: EDCD/DoHS

Box 5.1.3.2: MDA related major activities

National level activities — National task force committee meetings; interactions with the media, professionals, organizations and civil society; monitoring and supervision; procurement and supply; and advocacy and IEC/BCC activities.

Regional level activities — Regional level planning meetings in Biratnagar, Nepalgunj, Dhangadhi and Pokhara; regional coordination meetings and monitoring and supervision.

Implementation unit and district level activities — Planning meetings, training of health workers, advocacy, social mobilization, IEC/BCC, monitoring and supervision, interactions with the media, interactions with multi-sector stakeholders including newly elected local body and logistics supply.

Community level activities — Volunteers orientations, advocacy, social mobilization, IEC/BCC, implementation of MDA activities and monitoring and supervision.

Social mobilization activities — The production of revised IEC materials, checklists, reporting, recording, and guidelines for MDA campaign; media mobilization and advertisement of MDA; coordination and collaboration with stakeholders and school health programmes and interactions in schools on the LF disease and MDA.

Monitoring — Monitoring and management of post-MDA complications and adverse events.

Transmission Assessment Survey (TAS)— After completion of six round of MDA with pre-TAS passed, six districts(Terhathum, Sunsari, Lalitpur Rural, Myagdi, Surkhet and Jajarkot) carried out TAS I and five districts (Parsa, Makawanpur, Chitwan, Nawalparasi and Rupandehi) completed TAS III with supported of RTI/ENVISION. All the districts passed TAS.

LF Expert meeting: LF expert meeting was held in Kathmandu from 12-13th March 2018 with the technical and financial support from WHO Nepal. Team of WHO experts facilitated the program with their technical expertise. Health offices and LF focal person from the challenging 15 districts, individual experts in Nepal were the key participants of the meeting. MoHP, DoHS, EDCD, RTI ENVISION, and WHO Nepal actively participated and discussed in the meeting. The experts provided several recommendations for coping the existing challenges and advancing to the validation of elimination of the LF as a public health problem in Nepal.

Morbidity management and disability prevention

Morbidity management and disability prevention is the second strategy adopted by the national elimination programme to reduce suffering in infected people living with chronic and morbid conditions including elephantiasis, lymphedema and hydrocele. This strategy includes activities and interventions ranging from home-based self-care by people living with lymphedema and elephantiasis to hospital-based management and surgical corrections of hydroceles.

The following activities were carried out in 2074/75:

- 2090 hydrocele surgeries have been performed in year 2074/075. This surgery is included in the Red Book and is regularly done in hospitals in endemic districts.
- Morbidity mapping in Panchthar, Bara, Gorkha, Lamjung, Nawalparasi, Palpa, Dang and Baitadi districts.
- All health workers and FCHVs in Panchthar, Bara, Gorkha, Lamjung, Nawalparasi, Palpa, Dang and Baitadi districts were trained on patient self-care.

Post MDA surveillance

Post MDA surveillance is ongoing in MDA stopped (phased out) districts. The monitoring of microfilaria in human populations was done in MDA-stopped districts by collecting night blood samples and performing smear examination for lymphatic filariasis microfilaria. The results were encouraging showing no or low infections.

Challenges and ways forward

The major challenges that remain that need addressing to consolidate the achievements are ensuring quality MDA including achieving high coverage in urban areas and some specific communities, and adverse event management, sustaining low prevalence in MDA phased out districts, expanding morbidity management and disability prevention, and post MDA surveillance. The biggest challenge is the persistent high prevalence in some districts despite completing the recommended rounds of MDA.

The following are the major programme recommendations:

- Continue MDA for Pre TAS un-success districts, and carry out transmission assessment, periodic surveillance and follow up surveys to monitor progress towards elimination.
- Strengthen the capacity of the health system and service providers on morbidity management and disability prevention and post-MDA surveillance.
- Carry out operational research, studies and programme reviews.
- Consolidate all documents related to the programme in a dossier for the later validation and verification of elimination.

Lymphatic Filariasis Elimination Status

Status of Province 1

Districts	LF MDA Status	Survey Status	Up-coming Activity	Remarks
Taplejung	Non Endemic			
Panchthar	MDA	Re-Pre TAS Pass 2018	TAS 2019	Mapped
Ilam	MDA	Re-Pre TAS Pass 2018	TAS 2019	
Jhapa	MDA	Re-Pre TAS Fail 2018	Re-Pre TAS 2020	
Shankhuwasava	Non Endemic			
Terhathum	MDA Stooped	TAS I Pass 2017	TAS II 2020	
Bhojpur	MDA Stooped	TAS I Pass 2018	TAS II 2021	
Morang	MDA	Re-Pre TAS Fail 2018	Re-Pre TAS 2020	
Sunsari	MDA Stooped	TAS I Pass 2017	Mapping 2019	
Dhankuta	MDA	Re-Pre TAS Fail 2018	Re-Pre TAS 2020	
Udaypur	MDA Stooped	TAS I Pass 2018	Mapping 2019	
Solukhumbu	Non Endemic			
Okhaldhunga	MDA Stooped	TAS I Pass 2016	TAS II 2019	Mapped
Khotang	Non Endemic			

Status of Province 2

Districts	LF MDA Status	Survey Status	Up-coming Activity	Remarks
Saptari	MDA Stooped	TAS I Pass 2016	TAS II 2019	Mapped
Siraha	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Dhanusha	MDA Stooped	TAS II Pass 2016	TAS III 2019	
Mahottari	MDA Stooped	TAS II Pass 2016	TAS III 2019	
Sarlahi	MDA Stooped	TAS II Pass 2016	TAS III 2019	
Rautahat	MDA Stooped	TAS II Pass 2016	TAS III & Mapping 2019	
Bara	MDA	TAS II Fail 2016	TAS 2020	Re-MDA, Mapped
Parsa	MDA Stooped	TAS III Pass 2018		

Status of Province 3

Districts	LF MDA Status	Survey Status	Up-coming Activity	Remarks
Dolakha	Non Endemic			
Ramechhap	MDA Stooped	TAS II Pass 2016	TAS III 2019	
Sindhuli	MDA Stooped	TAS II Pass 2016	Mapping 2019, TAS III 2019	
Sindhupalchok	MDA Stooped	TAS II Pass 2016	TAS III 2019	
Rasuwa	Non Endemic			
Nuwakot	MDA Stooped	TAS II Pass 2016	Mapping 2019, TAS III 2019	
Kavre	MDA Stooped	TAS II Pass 2016	TAS III 2019	
Dhading	MDA Stooped	TAS II Pass 2016 TAS III 2019 Mapped		
Kathmandu	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Lalitpur Urban	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Lalitpur Rural	MDA Stooped	TAS I Pass 2017	TAS II 2020	
Bhaktapur	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Chitwan	MDA Stooped	TAS III Pass 2018		
Makawanpur	MDA Stooped	TAS III Pass 2018		

Status of Gandaki province

Districts	LF MDA Status	Survey Status	Up-coming Activity	Remarks
Manang	Non Endemic			
Gorkha	MDA Stooped	TAS II Pass 2016	TAS III 2019	Mapped
Lamjung	MDA	Re-Pre TAS Fail 2018	Re-Pre-TAS 2020	Mapped
Tanahun	MDA Stooped	TAS II Pass 2016	TAS III 2019	
Mustang	Non Endemic			
Kaski	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Parbat	MDA	Re-Pre TAS Fail 2018	Re-Pre-TAS 2020	
Baglung	MDA	Re-Pre TAS Fail 2018	Re-Pre-TAS 2020	
Myagdi	MDA Stooped	TAS I Pass 2017	TAS II 2020	
Nawalpur	MDA Stooped	TAS III Pass 2018		Mapped
Syangja	MDA Stooped	TAS II Pass 2016	Mapping 2019, TAS II 2019	

Status of province 5

Districts	LF MDA Status	Survey Status	Up-coming Activity	Remarks
Nawalparasi	MDA Stooped	TAS III Pass 2018		Mapped
Rupandehi	MDA Stooped	TAS III Pass 2017		
Palpa	MDA Stooped	TAS II Pass 2016	TAS III 2019	Mapped
Arghakhanchi	MDA Stooped	TAS I Pass 2016	Mapping 2019, TAS II 2019	
Pyuthan	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Gulmi	Non Endemic			
Kapilbastu	MDA	Pre-Re-TAS Fail 2018	Pre-Re-TAS 2020	
Dang	MDA	Pre-TAS Fail 2017	Re-Pre TAS 2019	Mapped
Banke	MDA	Pre-TAS Fail 2017	Re-Pre TAS 2019	
Bardiya	MDA	Re-Pre-TAS Fail 2018	Re-Pre TAS 2020	
Rolpa	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Rukum East	MDA Stooped	TAS I Pass 2016	TAS II 2019	

Status of Karnali Province

Districts	LF MDA Status	Survey Status	Up-coming Activity	Remarks
Surkhet	MDA Stooped	TAS I Pass 2017	Mapping 2019, TAS II 2020	
Jajarkot	MDA Stooped	TAS I Pass 2017	TAS II 2020	
Salyan	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Rukum West	MDA Stooped	TAS I Pass 2016	TAS II 2019	
Kalikot	Non Endemic			
Mugu	Non Endemic			
Jumla	Non Endemic			
Humla	Non Endemic			
Dolpa	Non Endemic			

Status of Sudurpashchim Province

Districts	LF MDA Status	Survey Status	Up-coming Activity	Remarks
Bajhang	MDA Stooped	TAS I Pass 2018	TAS II 2021	
Bajura	MDA Stooped	TAS I Pass 2018	TAS II 2021	
Achham	MDA Stooped	TAS I Pass 2018	Mapping 2019, TAS II 2021	
Doti	MDA Stooped	TAS I Pass 2018	TAS II 2021	
Darchula	MDA Stooped	TAS I Pass 2018	TAS II 2021	
Baitadi	MDA Stooped	TAS I Pass 2018	TAS II 2021	Mapped
Dadeldhura	MDA Stooped	TAS I Pass 2018	TAS II 2021	
Kailali	MDA	TAS I Fail 2017	Re-Pre TAS II 2019	
Kanchanpur	MDA	TAS I Fail 2017	Re-Pre TAS II 2019	

5.1.4 Dengue

5.1.4.1 Background

Dengue is a mosquito-borne disease that is transmitted by mosquito (Aedes aegypti) and occurs in most of the districts of Nepal. WHO (2009) classified dengue as : i) Dengue without warning signs, ii) Dengue with warning signs, iii) Severe Dengue. The earliest cases were detected in 2005. Sporadic cases and outbreaks occurred in 2006 and 2010. Initially most cases had travelled to the neighbouring country (India), although lately indigenous cases are also being reported.

The affected districts are Chitwan, Kanchanpur, Kailali, Banke, Bardiya, Dang, Kapilbastu, Parsa, Rupandehi, Rautahat, Sarlahi, Saptari and Jhapa, reflecting the spread of the disease throughout the Tarai plains from west to east. In 2011, 79 confirmed cases were reported from 15 districts with the highest number in Chitwan (55). During 2012 -15, the dengue cases still continued to be reported from several districts but the number fluctuated between the years.

Aedes aegipti (the mosquito-vector) was identified in five peri-urban areas of the Tarai (Kailali, Dang, Chitwan, Parsa and Jhapa) during entomological surveillance by EDCD during 2006–2010, indicating the local transmission of dengue.

Studies carried out in collaboration with the Walter Reed/AFRIMS Research Unit (WARUN) in 2006 by EDCD and the National Public Health Laboratory (NPHL) found that all four sub-types of the Dengue virus (DEN-1, DEN-2, DEN-3 and DEN-4) were circulating in Nepal. Details of Nepal's Dengue Control Programme are given in Box 5.1.4.1.

5.1.4.2: Goal, Objectives and Strategy of Dengue Control Programme

Box 5.1.4.1: Nepal's Dengue Control Programme

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, DHF and DSS.
- Regular monitoring of dengue fever, DHF and DSS cases and 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

5.1.4.3: Major activities in 2074/75

- Trained physicians, nurses, paramedics and laboratory technicians on dengue case detection, diagnosis, management and reporting.
- Orientated municipality stakeholders in 28 programme districts.
- Supplied rapid diagnostic test kits (IgM).
- Dengue case monitoring and vector surveillance.
- Search and destruction of dengue vector larvae (*A. aegypti*) in 28 programme districts.
- Developed and disseminated health education messages.

Achievements

Table 5.1.4.1: Dengue cases (2072/73–2074/75)

Dengue (Total positive)				Dengue (Total positive)			
District	**2072/73**	**2073/74**	**2074/75**	**District**	**2072/73**	**2073/74**	**2074/75**
Jhapa	2	405	543	Arghakhanchi	0	0	21
Morang	0	9	0	Palpa	4	0	14
Sunsari	0	4	0	Nawalparasi	12	3	37
Bhojpur	2	0	0	Rupandehi	2	164	677
Udaypur	1	0	0	Kapilbastu	2	3	57
Province-1	**5**	**418**	**543**	Pyuthan	1	1	12
Saptari	1	1	0	Rolpa	0	0	4
Siraha	1	0	0	Rukum	0	1	0
Dhanusha	0	0	27	Dang	3	8	13
Mahottari	0	3	438	Banke	0	37	1
Sarlahi	1	28	130	Bardiya	0	25	0
Bara	2	4	2	**Province-5**	**24**	**242**	**836**
Parsa	12	7	0	Surkhet	0	22	2
Rautahat	0	0	12	Kalikot	0	1	0
Province-2	**17**	**43**	**609**	Dailekh	0	0	1
Kavre	1	2	0	**Karnali**	**0**	**23**	**3**
Lalitpur	0	1	0	Doti	0	0	0
Bhaktapur	1	0	1	Kailali	1	14	0
Kathmandu	1	5	1	Kanchanpur	4	2	0
Dhading	0	4	67	Dadeldhura	0	0	0
Makawanpur	2	82	3	Achham	0	0	1
Chitwan	70	687	23	Baitadi	0	1	0
Province-3	**75**	**781**	**95**	**Sudurpashim**	**5**	**17**	**1**
Gorkha	2	0	1				
Syangja	1	1	1	**National**	**134**	**1527**	**2111**
Kaski	1	1	1				
Baglung	0	1	4				
Gulmi	1	0	17				
Tanahu	3	0	0				
Gandaki	**8**	**3**	**24**				

Source: EDCD/DoHS

The number of reported dengue cases has significantly increased from 1527 in FY 2073/74 to 2111 in FY 2074/75. The major cause of increasing the reported case is the impact of global dengue outbreak. During FY 2074/75, dengue cases were reported from 28 districts (Table 5.1.4.1). The majority of cases have been reported from Rupandehi (32%), Jhapa (25%), Mahottari (20%) and Sarlahi (6%). As well there were three confirmed deaths due to Dengue — one each from Chitwan, Jhapa and Arghakhanchi.

Note that Dengue cases reported from DHOs and DPHOs via the HMIS/DHIS2 and case reports received by the programme sometimes vary. The HMIS usually receives aggregate data from hospitals and other health facilities while the programme proactively collects data from DHOs and DPHOs through EWARS. EDCD verifies data with the help of line listing report of all cases.

5.1.5 Leprosy

5.1.5.1 Background

The establishment of the Khokana Leprosarium in the nineteenth century was the beginning of organized leprosy services in Nepal. Key leprosy control milestones since 1960 and the goal, objectives and strategies of the national Leprosy Control Programme are:

Evolution and milestones of leprosy control programme in Nepal

Year	Landmarks
1960	Leprosy survey by Government of Nepal in collaboration with WHO
1966	Pilot project to control leprosy launched with Dapsone monotherapy
1982	Introduction of multi-drug therapy (MDT) in leprosy control programme
1987	Integration of vertical leprosy control programme into general basic health services
1991	National leprosy elimination goal set
1995	Focal persons (TB and leprosy assistants [TLAs]) appointed for districts and regions
1996	All 75 districts were brought into MDT programme
1999/2000–2001/02	Two rounds of National Leprosy Elimination Campaign (NLEC) implemented
2008	Intensive efforts made for achieving elimination at the national level
2009 and 2010	Leprosy elimination achieved and declared at the national level
2011	National Leprosy Strategy (2011–2015)
2012-2013	Elimination sustained at national level and national guidelines, 2013 (2070) revised
2013-2014	Mid-term evaluation of implementation of National Leprosy Strategy (2011-2015)
2014-2015	Ministry of Health designated LCD as the Disability Focal Unit
2017	Policy, Strategy and 10 Years Action Plan on Disability Management (Prevention, Treatment and Rehabilitation) 2073-2082 developed and disseminated
2018	National Leprosy Strategy 2016-2020 (2073-2077) develop and endorsed. Revised leprosy guide line in line with national leprosy strategy and global leprosy strategy.

5.1.5.2 Goal, objectives, strategies and targets of the leprosy control programme

Vision: Leprosy free Nepal

Goal : End the consequences of leprosy including disability and stigma

Guiding principles

- Stewardship and system strengthening
- Expedite the elimination process in high prevalence districts
- Collaboration, coordination and partnership
- Community involvement
- Integration, equity and social inclusion
- Linkages with Universal Health Coverage and Sustainable Development Goals

Objectives:

1. Achieve elimination status in all districts by 2020.
2. Expand services for early detection of leprosy cases at health facility, especially in high prevalence districts through Enhancing selected diverse approaches (ISDT)
3. Initiate Post-Exposure Leprosy Prophylaxis to family members and neighbors
4. Achieve the surveillance performance indicators

Strategies

1. Expand and Enhance early case detection through selected diverse approaches (ISDT)
2. Strive to achieve the surveillance performance indicators
3. Modernize and intensify the service delivery pathways for ensuring quality services
4. Heighten the collaboration and partnership for Leprosy-Free Nepal
5. Enhance support mechanism for people infected and affected by leprosy

5.1.5.3 Activities and achievements in 2073/74

MDT service delivery — In , 2074/075 3249 new leprosy patients were detected and put under multi-drug therapy out of whom 2882 cases were under treatment at the end of the fiscal year. During the year, 2852 patients completed treatment and were released from treatment. Secondary and tertiary care services were provided to needy and leprosy-affected patients through the existing network of referral centres with partner support. MDT drugs (that are made available by the Novartis Foundation through WHO) and anti-reaction drugs were freely available and the supply remained uninterrupted throughout the year.

Capacity building — The Leprosy control and Disability Management Section has been conducted following capacity building programmes in 2074/075.

- One day leprosy orientation programmes for media persons, village health promoters, social workers, nursing staff, lab staff and MBBS and selective medical students.
- The 5-days comprehensive leprosy training (CLT) course for health workers.
- The 5 days autism down syndrome and CP course for medical officers
- Regular comprehensive leprosy training for basic health workers.
- One day orientation for province parliament members in province 2.

IEC and advocacy — In order to enhance community awareness, passive case detection, voluntary case reporting and to reduce stigma, IEC activities were regularly undertaken using electronic and print media. Posters highlighting the diagnosis, reactions, treatment and free leprosy services were produced and distributed for display at health facilities in all 77 districts and for raising public awareness. Two infomercials and one music video were produced and broadcast. Leprosy messages were also broadcasted in coordination with Nepal TV and FM radio programmes highlighting the World Leprosy Day. Moreover, as LCDMS has been designated as the Disability Focal Unit by Ministry of Health in 2071 B.S, short promotional video related to disability was produced and broadcasted from NTV.

World Leprosy Day—World Leprosy Day which is celebrated on the last Sunday of in the month of January internationally, similarly 65th World Leprosy Day was commemorated on 29th January 2018

in Nepal by conducting various activities at national, province and district levels. On the same day a media interaction programme was arranged at DoHS in presence of the Director General, warm clothes distribution programme was undertaken for leprosy affected people of Jamariyadevi kustharog aarogaya ashram in Janakpur on the same day.

Reviews — Regular trimester review meetings were held at district and provincial levels where aggregated data, administrative issues and accomplishments were presented and discussed and future plans discussed. Three central trimester review workshops were held to assess the outcome and monitoring of the programme. Regional TB-Leprosy Officers (RTLOs) presented and shared information and issues on the leprosy programme in their regions. Regional medical store chiefs also presented the MDT drugs situation and informed that MDT supply had been uninterrupted over the year.

Early case detection— A mini leprosy campaign for active case detection was run in the four high leprosy endemic districts of Nawalparasi , Kapilvastu, Rupandehi and Kailali districts with the financial support of Sasakawa Memorial Health Foundation, Japan and technical support from TLMN.. 762 health workers, 1463 FCHVs and 49 leprosy affected peoples were oriented on performing house-to-house searches. The searches were then carried out. Leprosy officers, supervisors and partner personnel then supported health facilities to diagnose and manage identified cases. In addition,. Kanchanpur, Surkhet, Chitwan, and Saptari conducted mini leprosy elimination campaign with their regular budget.

Table 5.1.5.1 Summary findings (Mini Leprosy Elimination Campaign)

District	Screened Popula-tion	No. of suspect cases	No. of confirmed new cases					
			MB	PB	Total New cases	Female	Child	G2 Disability
Kapilbastu	168868	858	26	25	51	26	2 (3.92%)	13 (25.49%)
Kailali	359424	681	21	34	55	29	2 (3.63%)	5 (9.09%)
Rupandehi	479373	1057	32	30	62	39	2 (3.22%)	16 (25.86%)
Nawalparasi	96442	1179	34	57	91	33	9 (9.89%)	3 (3.29%)
Total	**1104107**	**3775**	**113**	**146**	**259**	**127 (49%)**	**15 (5.79%)**	**37(14.28%)**

Source : LCDMS/EDCD/DoHS

Continued medical education— A one day medical education event was run for neurologists, surgeons, dermatologists, physicians and other medical officers in Butwal, Nepalgunj and Dhangadi .. The events highlighted the roles of clinical specialists in leprosy control, reducing disease burden and stigma prevention and provided up-to-date information on leprosy management.

Transport support to released-from-treatment cases — The LCDMS provided grants of NPT 1,000 to 2839 patients released from treatment to cover their transport costs after completing MDT treatment. The treatment regularity rate of patients is increasing partly due to the provision of this incentive.

Recording, reporting, update and leprosy case validation— Recording and reporting update and case validation was carried out in Dhanusa district to verify data and records of cases in health facilities, to validate cases diagnosed by health facilities and to strengthen recording and reporting and the release of cases from treatment. This was carried by a joint team of LCDMS, HD, DHO, DPHO, WHO and TLMN.

Accessibility programme — A one day orientation was conducted in district level to raise the awareness of disadvantaged and unreached communities about the signs and symptoms of leprosy. The

communities were also educated on stigma reduction and encouraged to take part in leprosy control activities. A few of the programmes led to participants identifying suspected cases and referring them to health facilities.

Supervision and monitoring — regular supervisory visits were undertaken by LCDMS staff to guide health workers at peripheral health facilities and to DHOs, DPHOs and RHDs.

Involvement of people affected by leprosy— LCDMS has been supporting a networks of people affected by leprosy and empowered them to widen the involvement and participation of leprosy affected people in leprosy related awareness raising and income generation activities. This is highly appreciated by the people affected with leprosy and the partners working in leprosy control activities in Nepal.

Coordination with partners — LCDMS organized coordination meetings among the partners working in the leprosy control and disability prevention sector. Three meetings were held with the participation of WHO, Leprosy Mission Nepal (LMN), Nepal Leprosy Trust (NLT), International Nepal Fellowship (INF), NLR, BIKASH Nepal, Partnership for New Life (PNL), Nepal Leprosy Fellowship (NLF), Nepal Leprosy Relief Association (NELRA), Sewa Kendra, Shanti Sewa Griha, Rehabilitation, Empowerment and Development (READ) Nepal, and IDEA Nepal. The meetings were held to share regular updates on activities, to have common approach to celebrate World Leprosy Day and to develop programme guidelines.

Surveillance for preventing disability— The surveillance of leprosy cases was carried out in seven health facilities (Koshi Zonal Hospital, Anandaban Hospital, Lalgadh Hospital, Seti Zonal Hospital, Butwal Clinic, Patan Clinic and INF-Banke Clinic. Detail information was collected about 200 under treatment cases was collected. Further strengthening of this system is needed to collect timely and quality information with a plan to collect it every three months.

Post exposure prophylaxis —Leprosy post-exposure prophylaxis (LPEP) in which the single dose Rifampicin is given to contacts of newly diagnosed leprosy patients to decrease their risk of developing leprosy, is now extended to Kailali, Dhanusa, Kapilvastu and Rupandehi districts from the initial pilot districts: Parsa, Morang and Jhapa. This programme is being implemented in government as well as partners (The Leprosy Mission Nepal, Netherland Leprosy Relief & Nepal Leprosy Trust) support.

Table 5.1.5.2 Summary of Leprosy post-exposure prophylaxis (LPEP)

Districts	No of cases covered	No of contacts screened	No of contacts with SDR	No of new leprosy cases detected	No of new TB cases detected
Panchthar	6	110	90	0	0
Ilam	34	684	653	0	0
Jhapa	914	20747	19182	117	17
Morang	962	20937	19365	54	2
Udayapur	26		449	1	0
Parsa	563	14031	13640	81	5
Kailali	245	7912	5900	11	0
Kanchanpur	118	2779	2562	2	0
Achham	50	1170	770	8	0
Total	2918	68976	62611	274	24

Source : LCDMS/EDCD/DoHS

Grant to leprosy affected persons— Every year a grant is provided to support leprosy affected residents in the Khokana and Pokhara leprosy ashrams through the Nepal Leprosy Relief Association (NELRA). The grant goes to provide fuel, blanket, food and incentives to approximately 154 leprosy affected people. Rs. 24,50,197 grant has been provided for leprosy affected people.

ACTIVITIES SUPPORTED BY PARTNERS

In 2074/75, WHO supported the supply of MDT drugs, provided technical support for the leprosy control programme, assisted in supervision and monitoring, and supported capacity building, active case detection and the community awareness programme

The Leprosy Mission Nepal, Nepal Leprosy Trust and International Nepal Fellowship supported the following activities in high endemic districts:

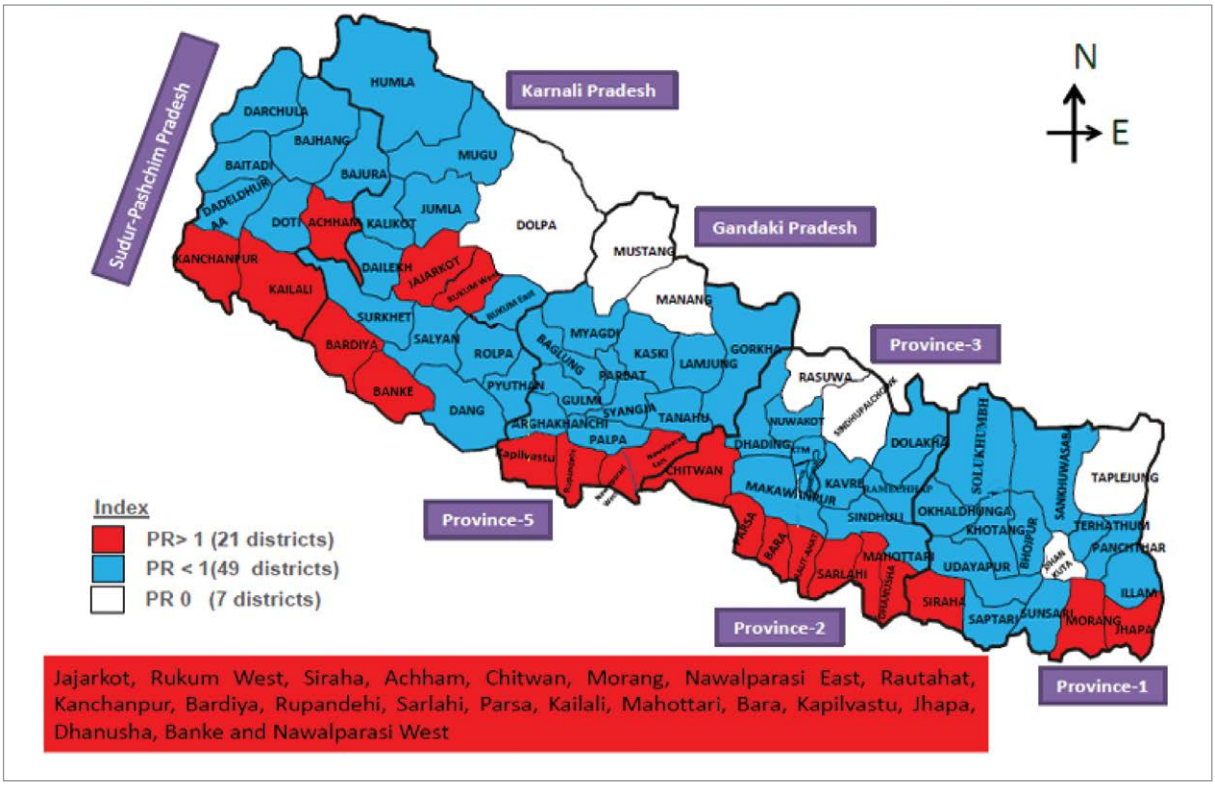
- Community awareness and participation programme
- Orientation of community members
- Provision of primary, secondary and tertiary care at referral centres
- Capacity building activities for government health workers
- Technical support through joint supervision and monitoring
- Prevention of disability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

Prevalence

Overall prevalence

At the end of FY 2074/75 (2016/17), 2882 leprosy cases were receiving MDT in Nepal, which makes a registered prevalence rate of 0.99 cases per 10,000 populations at the national level. This rate is below the cut-off point of 1 case per 10,000 population set by WHO to indicate the elimination of leprosy as a public health problem. This shows that Nepal's elimination status from 2009 is being sustained. The prevalence rate has slightly increased than the previous year. Out of 77 districts, 7 districts reported zero prevalence, 49 districts had a prevalence rate <1 and 21 districts had a rate of more than 1.

Figure 5.1.5.1 : Leprosy prevalence in Nepal, 2074/75 (2016/17)



Source : LCDMS/EDCD/DoHS

The highest number of leprosy cases under treatment was reported from Province-2 (982 cases, 34% of total) and lowest by Gandaki Province and Karnali Province (4% each). The registered prevalence rate was the highest in Province-2 (1.63 case per 10,000 population) followed by Province-5 and lowest prevalence was reported at Province-3 (0.36 case per 10,000 population).

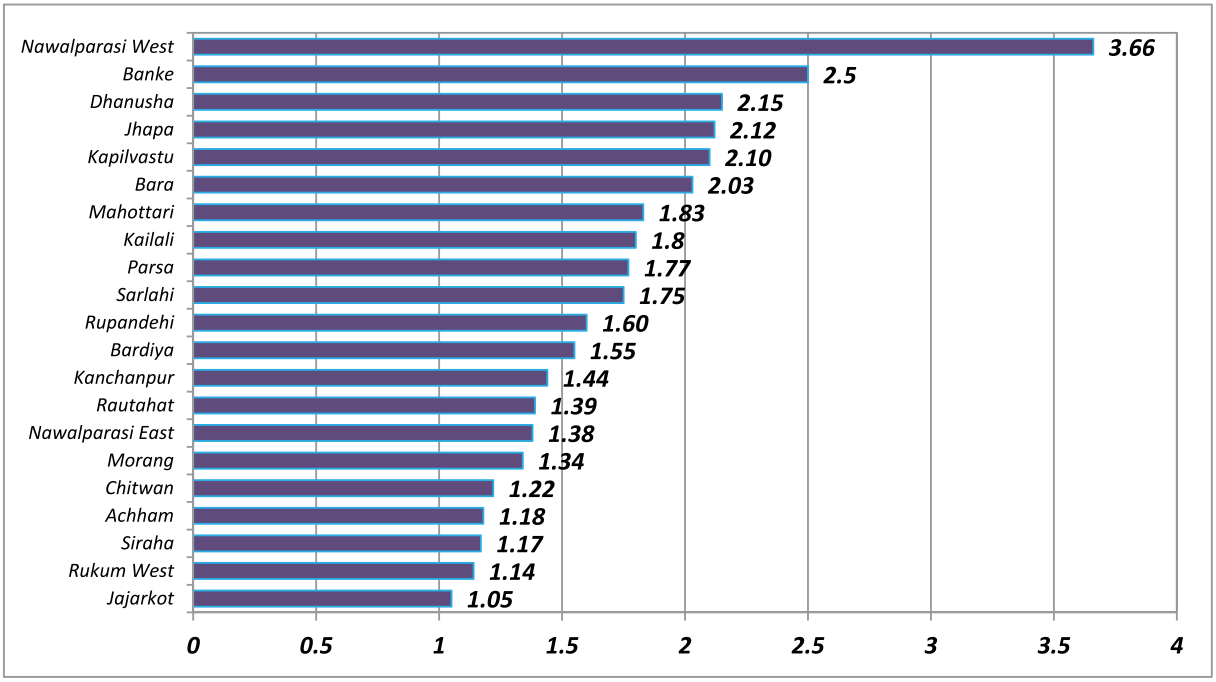
Table :5.1.5.3 Distribution of registered cases and prevalence rate in 2074/75

Provinces	No. of registered prevalence cases at the end of the year		
	Total cases	Percentage	Reg. prevalence rate/ 10,000 population
Province-1	432	14.98%	0.89
Province-2	982	34.07%	1.63
Province-3	225	7.8%	0.36
Gandaki Province	111	3.85%	0.45
Province-5	721	25%	1.46
Karnali Province	114	3.95%	0.65
Sudur Paschim Province	297	10.30%	1.05
National	**2882**	**100%**	**0.99**

Source : LCDMS/EDCD/DoHS

The number of districts reporting a prevalence rate of more than 1 per 10,000 populations increased to 21 from 17 in the previous year (Figure). Fifteen of the 18 districts are in the Terai belt whereas Jajarkot, Rukum and Achham fall in the hilly region. Unlike previous years, Nawalparasi-West reported the highest prevalence rate (3.66 per 10,000 population).

Figure:5.1.5.2 Districts with leprosy prevalence rate above 1 per 10,000 population



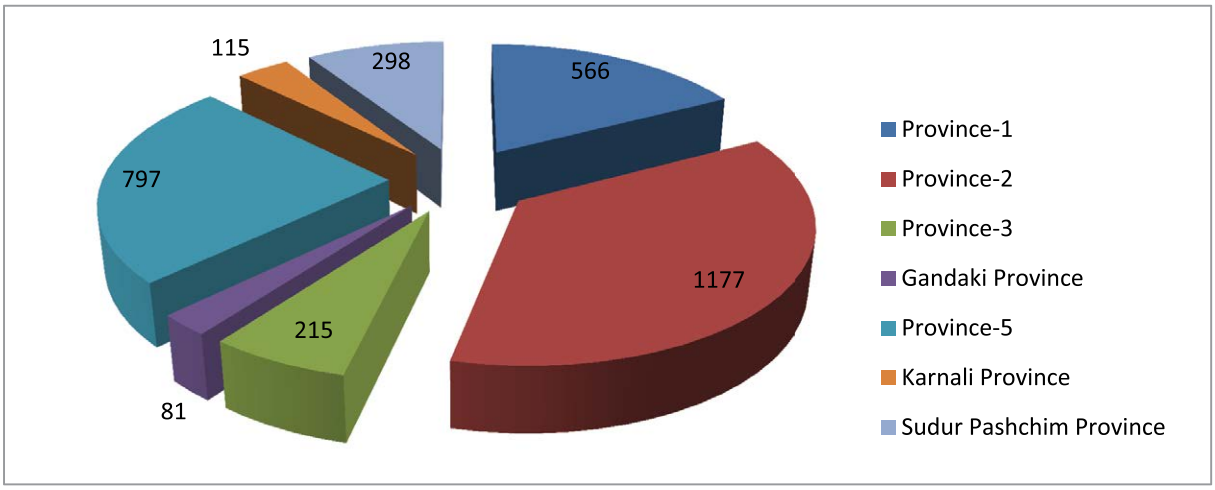
Source : LCDMS/EDCD/DoHS

NEW CASE DETECTION

The detection of new cases signifies ongoing transmission with the rate measured per 100,000 population. A total of 3249 new leprosy cases were detected in 2074/75 with the 36.22% of new cases in Province-2 (1,177 cases). Meanwhile, Province-3 has the lowest new case detection (as shown in the figure). The new case detection rate (NCDR) per 100,000 populations for FY 2074/75 was 11.19 nationally.

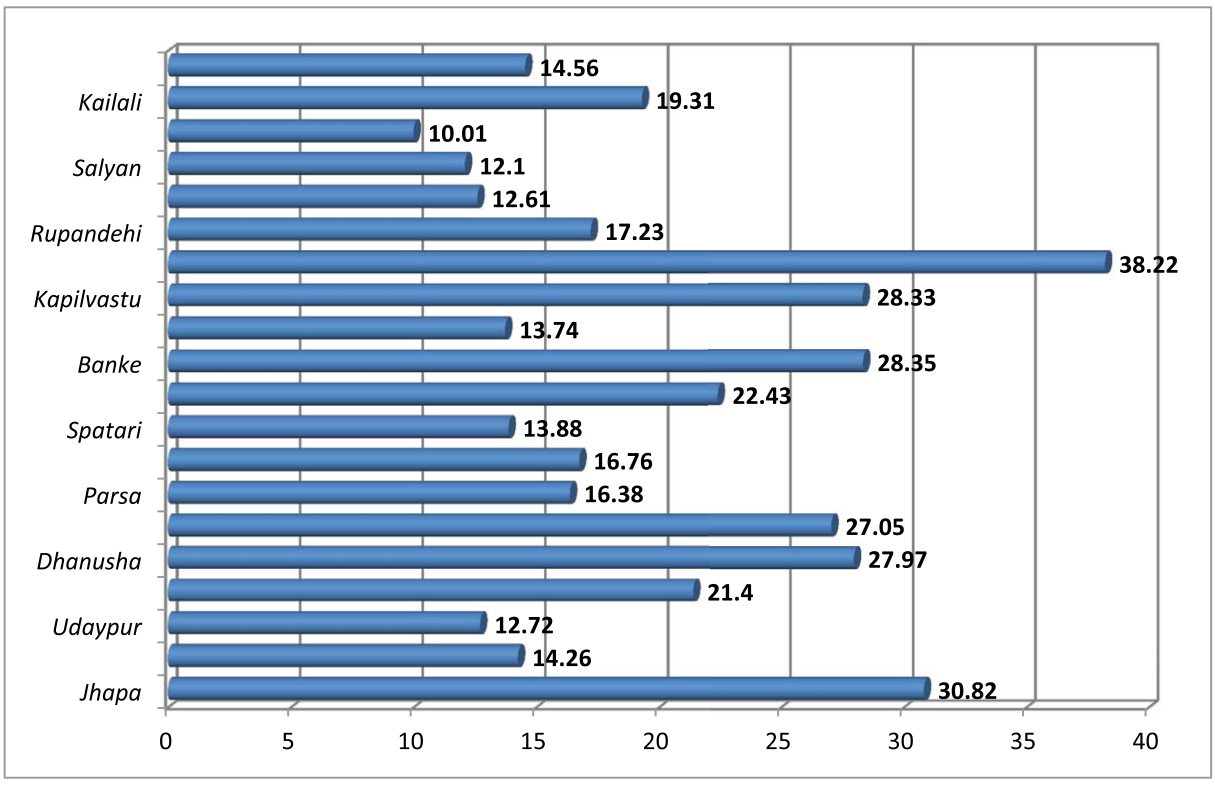
Seven districts (Dhankuta, Taplejung, Rasuwa, Sindhupalchok, Manang, Mustang and Dolpa) reported no new cases this year while 20 districts had case detection rates more than 10 (Figure) of which Nawalparasi West had the highest rate (38.22) followed by Jhapa (30.82). District level mini leprosy elimination campaigns were conducted in these two districts scanning the 60% of the whole district population which resulted in the tremendous increase in NCDR as compared to previous year rate of 34.91 and 26.11 respectively.

Figure 5.1.5.3: Province-wise new leprosy cases, 2074/75



Source : LCDMS/EDCD/DoHS

Figure 5.1.5.4 : Districts with more than 10 new case detection rate per 100,000 population, 2074/75



Source : LCDMS/EDCD/DoHS

Fifty five percent of new cases were multibacillary (MB) and the rest were paucibacillary (PB). This proportion has remained around fifty percent for the last few years. More than one third (42.35%) of the new cases were among females. The female proportion has remained in the range of 30-40 percent for the last five years.

Table 5.1.5.4: Distribution of new leprosy cases (2074/75)

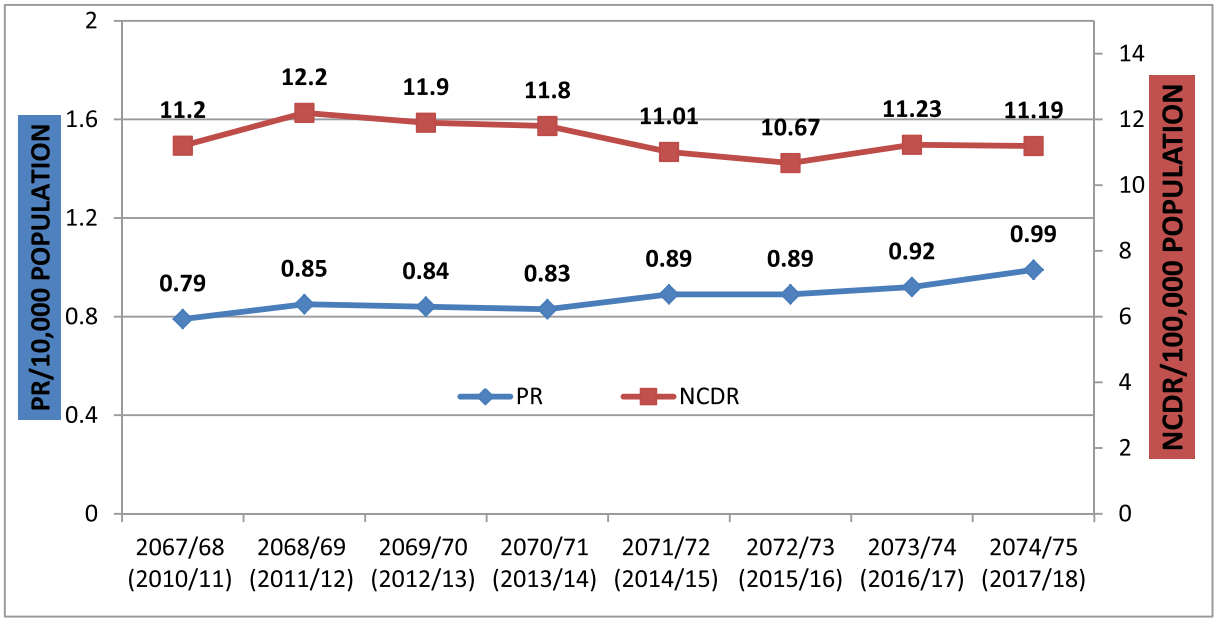
Provinces	Total New Cases	NCDR
Province-1	566	11.71
Province-2	1177	19.56
Province-3	215	3.48
Gandaki Province	81	3.26
Province-5	797	16.16
Karnali Province	115	6.60
Sudur Paschim Province	298	10.55
National	**3249**	**11.19**

Source: LCDMS, EDCD/DoHS

TREND IN PREVALENCE, CASE DETECTION AND RELAPSE CASES

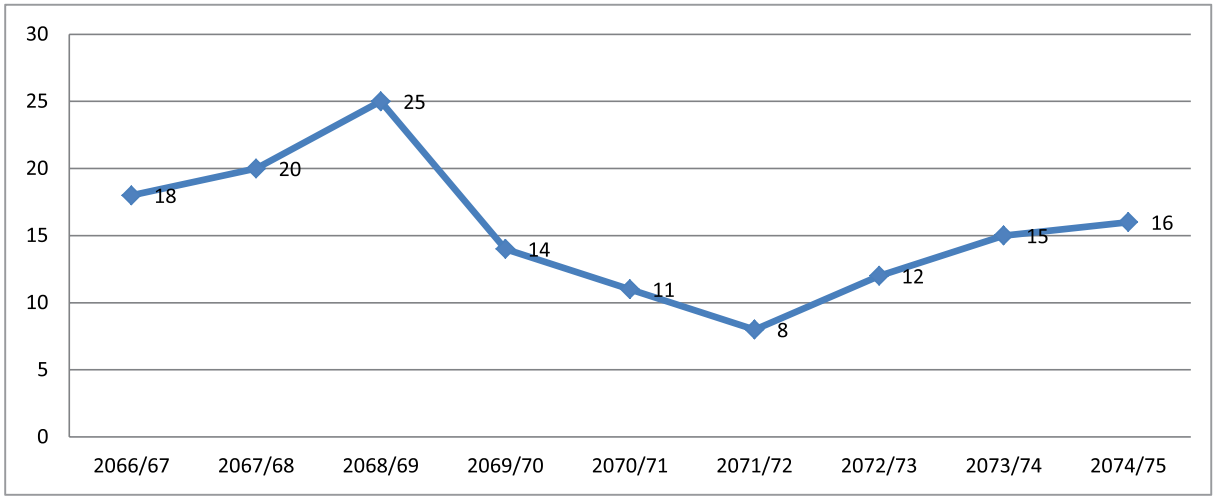
There has been slight decrease in new case detection and the number of registered cases in the last eight years. The prevalence decreased in 2066/67 when elimination status was declared and has been under the elimination rate since then but the prevalence has increased this year. However, the new case detection rate has remained between 10 & 11 since the elimination. The number of relapse cases increased from 15 cases in the previous year to 16 in 2074/75.

Figure 5.1.5.5: Trend in new leprosy case detection rate and prevalence rate from 2067/68-2074/75



Source: LCDMS, EDCD/DoHS

Figure 5.1.5.6: Trend in relapse cases from 2067/68 - 2074/75

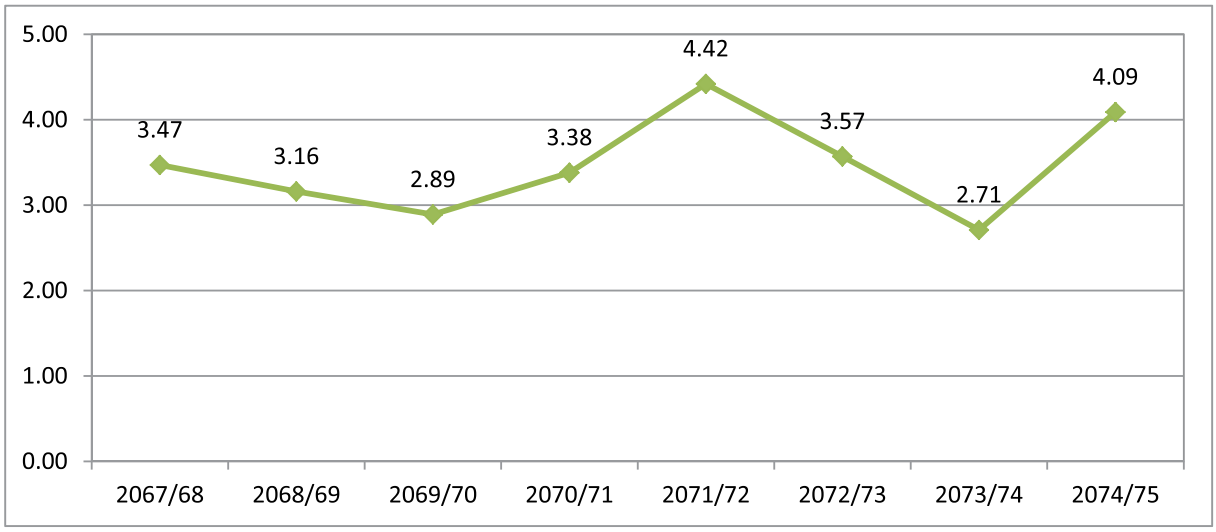


Source: LCDMS, EDCD/DoHS

DISABILITY CASES

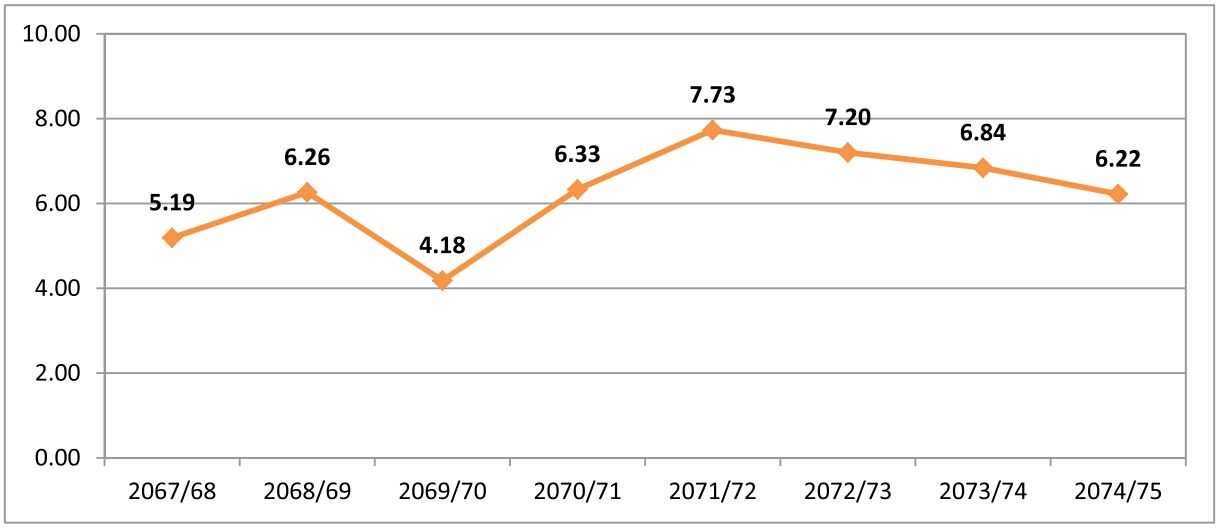
Leprosy cases that are not detected early on or in a timely and complete may results in disabilities. Early detection and timely and complete treatment is crucial for preventing disabilities. The Proportion of Grade 2 Disability (G2D) among new cases and the rate per 100,000 population are major monitoring indicators of early case detection. During 2074/75, 133 cases of visible disability (G2D) were recorded with a proportion among new cases of 4.09% nationally.

Figure 5.1.5.7: Trend in disable cases from 2067/068 to 2074/075



Source: LCDMS, EDCD/DoHS

Figure 5.1.5.8: Trend in child cases from 2067/068 to 2074/075



Source: LCDMS, EDCD/DoHS

A total of 202 new child cases were diagnosed in 2074/75 resulting to 6.22% of new cases. This was a decrease from the previous year although the trend is fluctuating.

Conclusions

The elimination status was maintained at the national level as the prevalence rate remained below 1 case/10,000 population this year although the rate was still high in 21 districts compared to 17 districts last year. The increased proportion of female and child cases could be a result of more early and active case detection activities. Finally, there is good coordination and partnerships with partners.

The figures for the main indicators of leprosy control for the last nine years are summarised in Table while the main strengths, weakness and challenges of the leprosy control programme are listed.

Table 5.1.5.5: Comparison of leprosy indicators (2066/67–2074/75)

Indicators	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)
patients	3,157	3,142	3,481	3,253	3,223	3,053	3,054	3215	3249
New case detection rate	11.5	11.2	12.2	11.9	11.18	11.01	10.67	11.23	11.19
Under Treatment cases at the end	2,104	2,210	2,430	2,228	2,271	2,461	2,559	2626	2882
PR/10,000 population	0.77	0.79	0.85	0.82	0.83	0.89	0.89	0.92	0.99
No. new child cases	212	163	218	136	204	236	220	220	202
Proportion child cases	6.71	5.19	6.26	4.24	6.33	7.73	7.20	6.84	6.22
New G2D cases	86	109	110	94	109	135	109	87	133

Indicators	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)
Proportion G2D cases	2.72	3.47	3.16	2.89	3.38	4.42	3.57	2.71	4.09
G2D rate/100,000	0.31	0.39	0.39	0.35	0.40	0.49	0.38	0.33	0.41
New G2D Child cases	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2
Proportion G2D Child cases	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.06
New female cases	1,030	892	1,100	1,004	1,143	1,100	1,169	1361	1375
Proportion female cases	32.6	28.4	31.6	30.8	35.46	36.03	38.28	42.33	42.32
Released from treatment	3,844	2,979	3,190	3,374	3187	2,800	2,902	3040	2852
No. Defaulters	25	31	24	43	24	38	44	57	93
No. relapse cases	18	20	25	14	11	8	12	15	16

Source : LCDMS/EDCD/DoHS

Table 5.1.5.6: Strengths, weakness and challenges for the leprosy control programme

Strengths	Weaknesses	Challenges
• Commitment from political level –government's commitment to Bangkok Declaration for Leprosy • Accessible of leprosy service • Free MDT, transport service for released from treatment cases and other services for treating complications • Uninterrupted supply of MDT • Good communication and collaboration among supporting partners • Improving participation of leprosy affected people in national programme • Steering, coordination and technical committees formed and conducting meeting in regular basis • Contact examination/ surveillance of patient, family members and neighbours • Introduction of Leprosy Post-Exposure Prophylaxis in 7 of the high	• Low priority for leprosy programme at periphery • Low motivation of health workers • Very few rehabilitation activities • Inadequate training and orientation for newly recruited health workers and refresher trainings for focal persons and managers • Poor institutional set-up and inadequate human resources • Problem for reaction and complication management at periphery level • Poor result-based output, recording and reporting of contact examination activities • Poor coverage and monitoring of LPEP in implementing districts . • Under and over reporting of leprosy data in IHIMS.	• To sustain the elimination achieved at national level and elimination at district level • To maintain access and quality of services in low endemic mountain and hill districts • To strengthen surveillance, logistic, information, and job oriented capacity-building for general health workers, and an efficient referral network • To assess the magnitude of disability due to leprosy • To further reduce stigma and discrimination against affected persons and their families • Insufficient activities in low endemic districts for reducing the disease burden • To maintain access and quality service at HF level • Strengthening of index case & contact surveillance, recording and reporting system • Strictly use of IHIMS. data in program monitoring.

Future course of action and opportunities

- Implement the national strategy 2016-2020 within MoHP and through partners.
- Use and follow national operational guideline as per the new strategy.
- Intensify IEC activities to raise community awareness on early diagnosis and treatment, the prevention of disability, rehabilitation and social benefits.
- Strengthen early case detection by focusing on pocket areas of high endemic districts.
- Develop an intensified case search activity for the district level elimination
- Promote community participation in the National Leprosy Elimination Programme.
- Improve the access of unreached, marginalized and vulnerable groups to leprosy services.
- Strengthen the involvement of people affected by leprosy in leprosy services and programmes.
- Build the capacity of health workers for early case detection, management and community based rehabilitation.
- Carry out operational research in high endemic districts and pockets on specific issues for quality services.
- Expand chemoprophylaxis to protect contacts and cut leprosy transmission.
- Intensify vocational education and income generation activities for people affected by leprosy.
- Ensure resource mobilization, partnership and participation of local government and collaboration with new partners, institutions and individuals for leprosy services and rehabilitation.
- Strengthen the capacity of LCDMS for effectively implementing national policies and strategies.
- Strengthen surveillance in low endemic districts and areas.
- Strengthen the evidence-based (laboratory confirmed) reporting of relapse cases.
- Address cross-border issues.
- Sustain the newly initiated programme and services e.g. satellite services, interactions with medical college hospitals, joint monitoring, training and observation in partnership approach.
- Strengthen referral hospital (efficiency, quality service in handed over Zonal hospitals) and proper referral mechanism.

5.2 Eye Care

5.2.1 Background

Globally, 1.5 billion people are estimated to have a vision impairment. This represents a significant proportion of the global population who require eye care and other services and are likely to face barriers in the day-to-day life. This figures includes:

- 36 million people are blind
- 217 million have moderate or severe vision impairment
- 189 million have mild vision impairment
- 1.1 billion people have presbyopia (near vision impairment)

In 1970, the situation of eye care in Nepal was in its early stage. The first long -term health plan (1977-1990) identified eye care as an important area of health service. The Second Long-term Health Plan (1997-2017) and Health Sector Strategy III have stressed on the public-private partnership in health service. The eye care services picked momentum after Nepal Blindness Prevention and Control Project was started in 1990 at the joint initiative of Nepal Government and the World Health Organisation.

A considerable progress was made in the field of Eye Care during the period of 1980 to 1990. During this period a rapid progress was made in the field of infrastructure of eye care, development of trained human resources and the investment and output in the eye care sector. Even in the period that followed, non-governmental and private organisations like Nepal Netra Jyoti Sangh, TU Teaching Hospital, B.P. Koirala Lion Eye Research Centre, B. P. Eye Foundation, Tilganga Eye Foundation, Nepal Eye Hospital, Lions Club and Red Cross made considerable contribution in the expansion and promotion of eye care services.

Nepal Government formed an apex unit for eye care with an intention to run and develop eye care services in a more effective and coordinated way in accordance with the national policy. A sub-committee under this unit has prepared a document of strategic plan on eye care (2002-2019) as well as an outline of a twenty year plan.

'Sight right for all' campaign was formally started from November 19, 1999. A mid-term review of this program was made in 2010. A mid-term evaluation was carried out for eye care in 2010 for Vision 2020. The mid-term evaluation has shown that Nepal has made a considerable progress in the field of eye care services. This can be taken as a good model for public-private partnership (PPP). Studying from the criteria of World Health Organisation (WHO) Nepal's status of blindness has declined from 0.81% in 1981 to 0.35 % in 2011. Though the situation of blindness has decreased more than half, there has been no significant decline in the number of the blind as the population of the country has doubled in comparison with that of 1981.

Though considerable progress was achieved in mitigating blindness in the past decades, there is a need to implement more effective programmes to reduce the blindness to 0.2% and a lot of effort should be made to realise the vision of sight for all. In this period, considerable development has been achieved in the sector of infrastructure development also. At present the services at primary eye care centres/ eye hospitals are available in all the districts of the country. The technology applied in eye care has been regularly updated to the global standard.

In Nepal, there has also been significant increase in the number of specialized human resources for eye care such as Ophthalmologists, Optometrists and Ophthalmic Assistant. Several academic institutions are producing human resource in eye care acquiring self sufficiency in its capacity to train its own Human Resource with expansion of training centers. Altogether 4 academic institutions are producing 35 Ophthalmologists per year and 2 institutions are producing 46 optometrists every year. Likewise 7 eye care institutions are producing 360 Ophthalmic Assistant per year. The productivity of Ophthalmologist is high as 270 surgically active ophthalmologists are performing more than 350,000 surgeries per year. Despite substantial increase in the number of ophthalmologists, ophthalmic assistant and optometrists, the existing number of all categories of human resource in eye care falls some short of the required number as per the WHO VISION 2020 norms.

There is also inequity in distribution of existing eye health human resources (HR) with more than one third (35.37 per cent) of the total ophthalmologist working in province 3 serving only 20.87 percentage of total population followed by 20.8 per cent ophthalmologist working in province number one serving only 17.11 per cent of total population. Likewise only 2 (0.65 per cent of total ophthalmologists) are working in province number six serving around 5.92 per cent of total population. Also there is an inequity in distribution of Ophthalmic Assistant and Optometrists as well with ratio of OA per 100000 populations is lowest in province 3 and 1.3 per cent of total optometrists delivering their service in province 6.

Now Nepal should move forward for integration of primary eye care centres and lower level eye care services in the existing primary health care system. Use of the latest technologies should be encouraged with an objective of gradually improving the quality of eye care services. Provision should be made for necessary coordination and advocacy in order to prevent duplication among eye care service providers and to make information about the availability of services easily available to the people. A multi-sectoral approach should be adopted by including education, women and social welfare, drinking water and sanitation in eye care. Information flow in health care system shall be encouraged through research of scientific facts and publications. Rehabilitation program should be started in all eye hospitals of Nepal.

5.2.2 Goal and Objectives:

To reduce the overall blindness below 0.2% among the visual acuity <3/60 and <0.4% among the visual acuity 6/60 by the year 2020.

5.2.3 Outputs of fiscal year 2017/18

With all this opportunities and challenges the service output of the of the eye care services for the fiscal year 2017/18 are as given in Table 5.1

Table 5.2.1 Eye care service provided in FY 2074/75 by health facilities.

Data 2018			Hospital Base (OPD)			Surgery (Outreach)	Hospital Base (Surgery)		
S.N..	Name of Eye Hospitals	OPD*	Nepali (OPD)	Foreigner (OPD)	**Total (OPD)**		Nepali Surgery	Foreigner Surgery	**Total (Surgery)**
1	NNJS/Bharatpur Eye Hospital	111194	98416	2372	**211982**	2549	284	3889	**6722**
2	NNJS/Biratnagar Eye Hospital	0	44379	254274	**298653**	0	8872	60912	**69784**
3	NNJS/Butwal Lions Eye Hospital	0	68909	309	**69218**	0	1114	26	**1140**
4	NNJS/Chhanda Kale Babu Eye Hospital	0	24115	55000	**79115**	0	1225	9941	**11166**
5	NNJS/Dr.Binod Neeta Kandel Eye Hospital	11328	29737	14647	**55712**	1080	814	590	**2484**
6	NNJS/Dr.Ram Prasad Pokharel Eye Hospital	8007	18712	0	**26719**	342	597	0	**939**
7	NNJS/Fatehbal Eye Hospital	31705	63997	43478	**139180**	384	5157	4644	**10185**
8	NNJS/Gaur Eye Hospital	28014	31219	57978	**117211**	1568	2667	4002	**8237**
9	NNJS/Geta Eye Hospital	0	290588	45926	**336514**	0	10296	21824	**32120**
10	NNJS/Himalaya Eye Hospital	92552	141386	0	**233938**	1660	4130	0	**5790**
11	NNJS/R.M Kedia Eye Hospital	95369	66237	54194	**215800**	1061	4089	9012	**14162**
12	NNJS/Kirtipur Eye Hospital	5111	15072	0	**20183**	366	313	0	**679**
13	NNJS/Lamahi Eye Hospital	0	40239	35	**40274**	0	1225	374	**1599**
14	NNJS/Lunbini Eye Institute	0	99513	146943	**246456**	0	8701	24244	**32945**
15	NNJS/Mahendranagar Eye Hospital	1093	18638	3289	**23020**	63	729	129	**921**
16	NNJS/Palpa Lions Lacoul Eye Hospital	0	46351	0	**46351**	0	734	2	**736**
17	NNJS/Rapti Eye Hospital	0	160960	2190	**163150**	1165	3194	0	**4359**
18	NNJS/Sagarmatha Choudhary Eye Hospital	0	251671	214878	**466549**	0	14828	43650	**58478**
19	B.P. Koirala Lions Centre for Ophthalmic Studies	10278	91089	4367	**105734**	256	3359	854	**4469**
20	Birat Eye Hospital Pvt. Ltd	2505	13238	72447	**88190**	217	1025	16450	**17692**
21	Birtamode Eye Hospital	0	35075	17014	**52089**	0	1353	1308	**2661**
22	B.P.Koirala Institute of Health Sciences	0	44537	0	**44537**	223	2125	21	**2369**
23	Chitwan Eye Hospital	0	13145	151	**13296**	0	0	0	**0**
24	Kakarvita Eye Care Center	401	10062	13948	**24411**	27	371	1425	**1823**
25	Kathmandu Medical college,sinamangal	1224	11422	0	**12646**	0	2074	0	**2074**
26	Lions Eye Hospital	238	39289	0	**39527**	0	614	0	**614**

Data 2018			Hospital Base (OPD)			Surgery (Outreach)	Hospital Base (Surgery)		
S.N..	Name of Eye Hospitals	OPD*	Nepali (OPD)	Foreigner (OPD)	**Total (OPD)**		Nepali Surgery	Foreigner Surgery	**Total (Surgery)**
27	Mechi Dibyajyoti eye hospital pvt ltd	300	1172	368	**1840**	0	125	117	**242**
28	Mechi Drishti Eye	610	16962	24407	**41979**	41	4031	5024	**9096**
29	Mechi Eye Hospital	0	71993	114682	**186675**	0	5153	21906	**27059**
30	Mechi Netralaya Eye Hospital	2357	17871	30014	**50242**	216	1226	1816	**3258**
31	MWEH PVT.LTD	0	11322	2528	**13850**	0	55	15	**70**
32	Nepal Eye Hospital	0	96505	14727	**111232**	0	3716	930	**4646**
33	Nepal Medical College Teaching Hopsital	1800	7514	0	**9314**	0	210	0	**210**
34	Nepal Red Cross Society-Shree Janaki Eye Hospital	27945	84199	0	**112144**	2947	3556	0	**6503**
35	Nepal Red Cross Society Surkhet Eye Hosptial	0	35894	0	**35894**	501	624	0	**1125**
36	Ramlal Golchha Eye Hospital Foundation	0	43046	31397	**74443**	0	3069	2224	**5293**
37	Reiyukai Eiko Masunaga Eye Hospital	44912	0	0	**44912**	159	596	267	**1022**
38	Taparia Eye Care pvt. Ltd.	0	23041	34562	**57603**	0	712	1869	**2581**
39	Tilganga Institute of Ophthalmology	187038	441127	5518	**633683**	6990	25634	2,688	**35312**
	All total	**663981**	**2618642**	**1261643**	**4544266**	**21815**	**128597**	**240153**	**390565**

*Note= * (Outreach Camps and Eye Care Centre)*

5.3 Zoonotic Disease

5.3.1 Background

The Epidemiology and Disease Control Division (EDCD) is responsible for responding to different zoonotic public health problems. Priority zoonotic diseases in Nepal are Brucellosis, Leptospirosis, Hydatidosis, Cysticercosis, Toxoplasmosis etc. Our public health activities are focused to poisonous snake bites and dog bites. The division has been working for public health in coordination and collaboration with governmental livestock sector, general public and other non-governmental sectors.

5.3.2 Goals and objectives of the national zoonosis control programme.

Box 5.3.1: Goals and objectives of national zoonosis control programme

Goals:

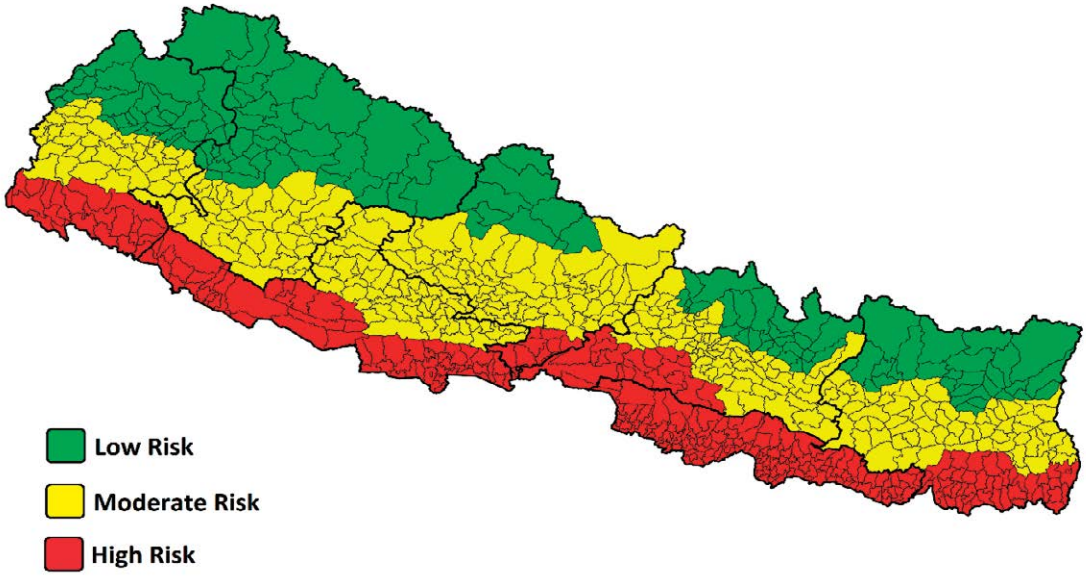
- No people dies of rabies or poisonous snake bites due to the unavailability of anti-rabies vaccine (ARV) or anti-snake venom serum or timely health care services.
- To prevent, control and manage outbreaks and epidemics of zoonosis.

Objectives:

- To strengthen the response and capacity of health care service providers for preventing and controlling zoonoses.
- To improve coordination among and between stakeholders for preventing and controlling zoonoses.
- To enhance the judicious use of ARV and ASVS in health facilities.
- To reduce the burden of zoonotic diseases (especially rabies and other priority zoonoses) through public awareness programmes.
- To provide cell culture ARV as a post-exposure treatment to all victims bitten by suspicious or rabid animals.
- To reduce the mortality rate in humans by providing ASVS and ARV.
- To train health workers on snake bite management and the effective use of ARV and immunoglobulins.
- To reduce the number of rabid and other suspicious animal bites.

Rabies-Rabies is primarily a disease of warm-blooded animals like Dogs, Jackals, Wolfs, Mongoose wild cats etc. Rabies cases are almost all fatal but it is 100% preventable by vaccination, awareness about human and animal interaction. Most of the affected are children. It has been assumed that almost half of Nepal's population are at high risk and a quarter at moderate risk of rabies. It is estimated that around 30,000 cases in pets and more than 100 human rabies cases occur each year with the highest risk are in the Tarai. Latent infections have been reported in dogs and cats. Very few patients take rabies immune globulin (post-exposure prophylaxis). Almost all of human cases (99%) of rabies are result of dog bites. Vaccinating 70% of dogs breaks rabies transmission cycle in an area at risk. So, along with the EDCD, every dog owner and animal health authorities are more concerned to eliminate it as public health problem.

Rabies Risk Zones in Nepal



Activities and achievements in 2074/75 in Rabies control Programme

The following activities were carried out in 2074/75 for the control of rabies cases:

- Awareness program were conducted for the control of rabies.
- Surveillance were conducted for dog bite.
- Orientation program to health workers was conducted on rabies and proper use of Intradermal ARV.
- Procurement of cell culture ARV vaccine and immunoglobulin.

In 2074/75, 35,681 cases animal bites were reported (Table 5.3.1). The number of reported animal bite cases has fluctuated in recent years but the number of rabies deaths has increased four time as compared to last year.

Table 5.3.1: Status of reported animal bites and rabies in Nepal

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 ofARV vials consumed	Deaths
2070/71	31,976	2,540	34,516	195,868	10
2071/72	17,320	3,290	20,610	273,000	13
2072/73	20,133	2,494	22,627	320,139	6
2073/74	37,226	2,518	39,744	227,639	8
2074/75	33,204	2,477	35,681	281,718	32

Source: HMIS & EDCD

Issues, recommendations from reviews and actions taken-Rabies

Issues	Recommendations	Action taken
The under reporting of cases and deaths from dog, Monkey, Jackal, Bear	Develop a regular reporting mechanism to medical stores and EDCD	Increased supervisory visit to reporting sites
Proper awareness about animal bites	Collaborate with different local stakeholders	Coordination with livestocks
Training and Availability of ARV in all health care facilities	Provide regular supply and service at least to PHC level	Training and availability is being increased
Intra dermal vaccination not started to all sites	Training to health worker and proper supervision	Training followed by guidance to start is being expanded
Mass dog vaccination	Coordinate with animal health and local other stakeholders for at least 70% dog vaccination	Proper Coordination& collaboration not started in reality

Snake bites

Poisonous snake bites — Twenty-one of the 79 species of snakes found in Nepal are poisonous (11 pit viper species, 5 krait species, 3 cobra species and 1 each coral and Russel's viper species). Around 15,000 snake bite cases estimated annually of which about 10 percent are poisonous bites. The mortality rate is about 10 percent among poisonous bite cases. The 26 Tarai districts are highly affected. In the last eight years between 1 and 131 deaths have been reported from poisonous snake bites each year. The free distribution of anti-snake venom serum (ASVS) began in 1999/2000. Indian quadrivalent ASVS is being used now. There are 85 snake bite treatment centres are in the country for snakebite management in collaboration with Nepal army, Nepal Red Cross Society, community members. In addition to these, other hospitals in Kathmandu valley has been getting ASVS on basis of cases they manages.

The following activities were carried out in 2074/75 for the control and management of poisonous snake bites:

- Orientation program to Medical officers, nurses and paramedics was conducted on the proper use of Anti snake venom
- Procurement and supply of ASVS for respective centres.

In 2074/75, altogether 5,606 snake bite cases were reported at national level. A total of 794 cases were poisonous resulting in 20 deaths. Table 5.3.2 summarises progress against previous years' data.

Table 5.3.2: Snake bite cases and deaths, Nepal (2070/71–2074/75)

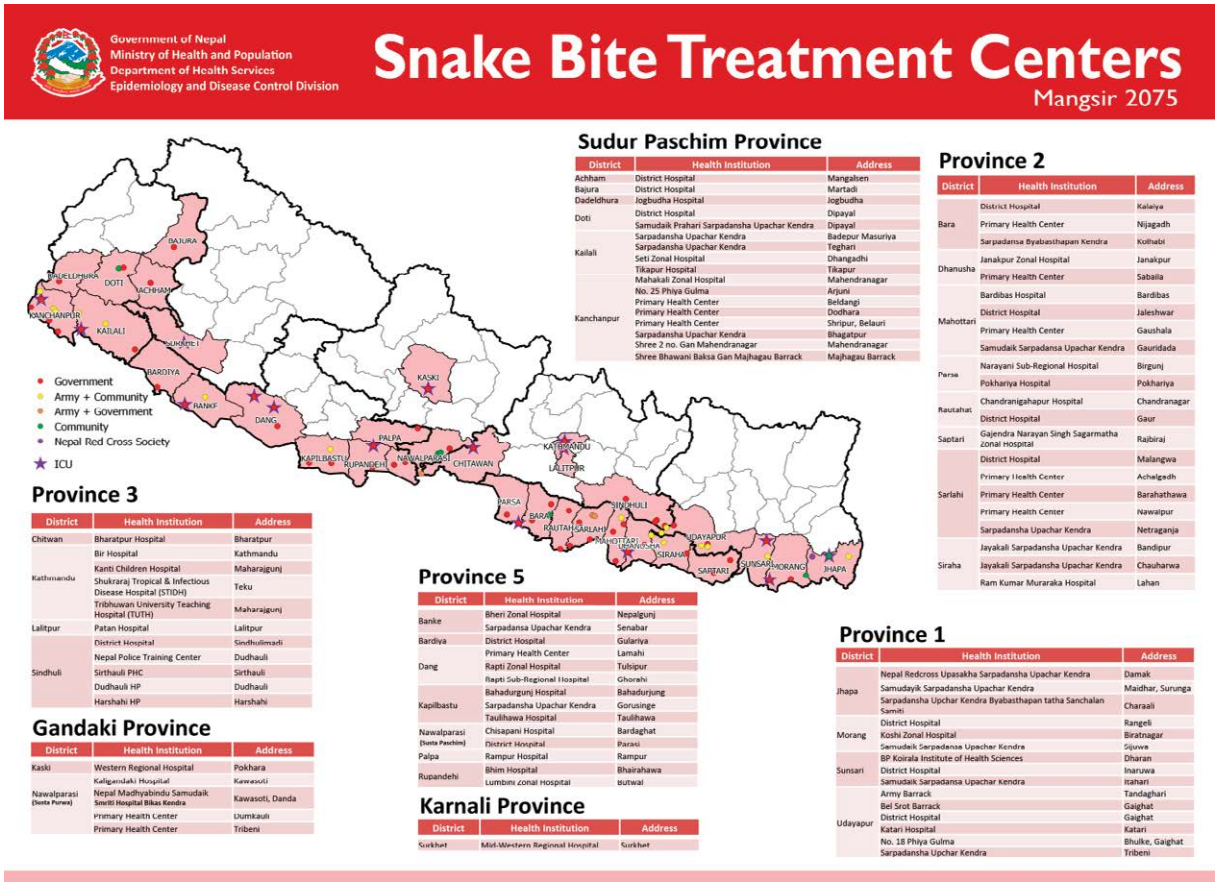
Fiscal year	Total cases	Non-poisonous	Poisonous	Cure	Deaths	% deaths
2070/71	5,143	4,145	998	988	10	1.0
2071/72	4,128	3,461	667	666	1	0.1
2072/73	3,268	2,605	663	643	20	3.0
2073/74	6,121	5,209	912	879	33	3.6
2074/75	5,606	4,812	794	362	20	2.5

Source: HMIS & EDCD

Issues, recommendations from reviews and actions taken-Snake bite management

Issues	Recommendations	Action taken
The under reporting of cases and deaths from Snake bites	Develop a regular reporting mechanism to medical stores and EDCD	Increased supervisory visit to reporting sites
Public being died in community	Coordination with local regarding quick transportation, awareness etc	Awareness about impor-tance of coordination and transportation
Use of ASVS vial	Timely procurement, supply, training and treatment availability	Snake bite management training for health worker
Not included in regular health service	The snake bite treatment centres should be in collaboration with health facilities with at least trained physician	Training and orientation started up to treatment centres
ICU and ventilator	Prepare at least one equipped snake bite management centre in each province	No action is taken
Motivation, security and sustainability to provide snake bite management	All snake bite management centres should be ensured with security, motivation of HR and sustainability of service	Inclusive management by local and security personnel

Snake Bite Treatment Centres in Nepal



5.4 Tuberculosis

5.4.1 Background

Tuberculosis (TB) is a public health problem in Nepal that affects thousands of people each year and is one of the leading cause of death in the country. WHO estimates that around 45,000 people develop active TB every year in Nepal. Nearly fifty percentage of them are estimated to have infectious pulmonary disease and can spread the disease to others.

During this reporting year, National Tuberculosis Programme (NTP) registered 32,474 all forms of TB cases, which includes 31,723 incident TB cases (new and relapse). Among all forms of incident TB cases (new and relapse) 18,000 (57%) were bacteriologically confirmed (PBC) incident TB cases, 4,411 (14%) were pulmonary clinically diagnosed (PCD) incident TB cases and 9,312 (29%) were extra pulmonary incident TB cases reported during the reporting year. Out of total registered cases in NTP, there were 11,889 (37%) female and 20,585 (63%) male.

According to the latest WHO Global TB Report 2018, Tuberculosis Mortality rate was 23 per 100,000 populations, which exclude HIV+TB. As per the Global TB report, 6000 to 7000 people are dying per year from TB disease . However, TB death among registered TB patients was 3% (1,023 deaths) among 31,644 registered TB cases in FY 2073/74. TB mortality is high given that most deaths are preventable if people can access tuberculosis care for diagnosis and the correct treatment is provided. Nepal NTP has adopted the global WHO's END TB Strategy as the TB control strategy of the country.

The Directly Observed Treatment, Short Course (DOTS) has been implemented throughout the country since April 2001. The NTP has coordinated with the public sector, private sector, local government, I/NGOs, social workers, educational institutions and other sectors to expand DOTS and sustain the good progress achieved by the NTP. There are 4,323 DOTS treatment centres in Nepal and the NTP has adopted the global End TB Strategy and the achievement of the SDGs as the country's TB control strategy.

5.4.2 Vision, goal, objectives of the National TB Programme

Vision: TB Free Nepal

Goal

To reduce the TB incidence by 20% by the year 2021 compared to 2015 and increase case notifications by a cumulative total of 20,000 from July 2016 to July 2021, compared to the year 2015.

Objectives

Objective 1: Increase case notification through improved health facility-based diagnosis; increase diagnosis among children (from 6% at baseline, to 10% of total cases by 2021); examination of household contacts and expanded diagnosis among vulnerable groups within the health service, such as PLHIV (from 179 cases at baseline to over 1,100 cases in 2020/21), and those with diabetes mellitus (DM).

Objective 2: Maintain the treatment success rate at 90% of patients (all forms of TB) through to 2021

Objective 3: Provide DR diagnostic services for 50% of persons with presumptive DR TB by 2018 and 100% by 2021; successfully treat at least 75 % of the diagnosed DR patients

Objective 4: Further expand case finding by engaging providers for TB care from the public sector (beyond MoHP), medical colleges, NGO sector, and private sector through results-based financing (PPM) schemes, with formal engagements (signed MoUs) to notify TB cases.

Objective 5: Strengthen community systems for management, advocacy, support and rights for TB patients in order to create an enabling environment to detect & manage TB cases in 60% of all districts by 2018 and 100% by 2021

Objective 6: Contribute to health system strengthening through HR management and capacity development, financial management, infrastructures, procurements and supply management in TB

Objective 7: Develop a comprehensive TB Surveillance, Monitoring, and Evaluation system

Objectives 8: To develop a plan for continuation of NTP services in the event of natural disaster or public health emergency

Box 5.4.1: The End TB Strategy

VISION: A world free of TB

Zero deaths, disease and suffering due to TB

GOAL: End the Global TB Epidemic

MILESTONES FOR 2025:

1. 75% reduction in TB deaths (compared with 2015)
2. 50% reduction in TB incidence rate (less than 55 TB cases per 100,000 population)
3. No affected families facing catastrophic costs due to TB

TARGETS FOR 2035:

1. 95% reduction in TB deaths (compared with 2015)
2. 90% reduction in TB incidence rate (less than 10 TB cases per 100,000 population)

No affected families facing catastrophic costs due to TB

The End TB Strategy was unanimously endorsed by the World Health Assembly in 2014. Its three overarching indicators are i) the number of TB deaths per year, ii) TB incidence rate per year, and iii) the percentage of TB-affected households that experience catastrophic costs as a result of TB. These indicators have related targets for 2030 and 2035.

The main principles for implementing the strategy are:

- government stewardship and accountability, with monitoring and evaluation;
- strong coalitions with civil society organizations and communities;
- the protection and promotion of human rights, ethics and equity; and
- The adaptation of the strategy and targets at country levels, with global collaboration.

The strategy's components (three pillars) and related strategies are as follows:

1. **Integrated, patient- entered care and prevention:**

- Early diagnosis of TB including universal drug-susceptibility testing, and systematic screening of contacts and high-risk groups.
- Treatment of all people with TB including drug-resistant TB.
- Collaborative TB/HIV activities and the management of co-morbidities.
- The preventive treatment of persons at high risk, and vaccination against TB.

2. **Bold policies and supportive systems:**

- Political commitment with adequate resources for TB care and prevention.
- The engagement of communities, civil society organizations, and public and private care providers.
- Universal health coverage policy and regulatory frameworks for case notification, vital registration, quality and rational use of medicines, and infection control.
- Social protection, poverty alleviation and actions on other determinants of TB.

3. **Intensified research and innovation:**

- The discovery, development and rapid uptake of new tools, interventions and strategies.
- Research to optimize implementation and impact and promote innovations.

5.4.3 Major activities in fiscal year 2074/75

- Provided effective chemotherapy to all patients in accordance with national treatment policies.
- Promote early diagnosis of people with infectious pulmonary TB by sputum smear examination and GeneXpert.
- Expansion of culture/DST lab in Province 1, Gandaki and Karnali province
- Implemented active case finding interventions across high burden districts to identify missing tuberculosis cases among high risk groups through sub recipients of Global Fund grant.
- Provided continuous drugs supply to all treatment centres.
- Maintained a standard system for recording and reporting
- Monitored the result of treatment and evaluate progress of the programme
- Strengthened cooperation between NGOs, bilateral aid agencies and donors involved in the NTP.
- Coordinate and collaborate NTP activities with and HIV /AIDS programmes.
- E-TB Orientation to private practitioner to notify the TB patients diagnosed at private health facilities.
- Roll out of DR TB Tracking and Laboratory System at all the DR and GX sites.
- Linkage of DOTS centres to Microscopic centre through courier.
- Provided training to health personnel.
- Training to medical doctors for childhood TB diagnosis.

5.4.4 Progress and epidemiology of TB

Institutional coverage and estimation of TB burden

Nepal adopted the DOTS strategy in 1996 and achieved nationwide coverage in 2001. All DOTS sites are integrated in public health services or run through NTP partner organizations in public and private sectors. In 2074/75, 4,323 institutions were offering TB diagnosis and treatment DOTS-based TB control services. Among them, 4,204 are government health institutions. To increase access to treatment services, NTP has developed partnership with different organizations including private nursing homes, polyclinics, I/NGO health clinics, prisons, refugee camps, police hospitals, medical colleges and municipalities.

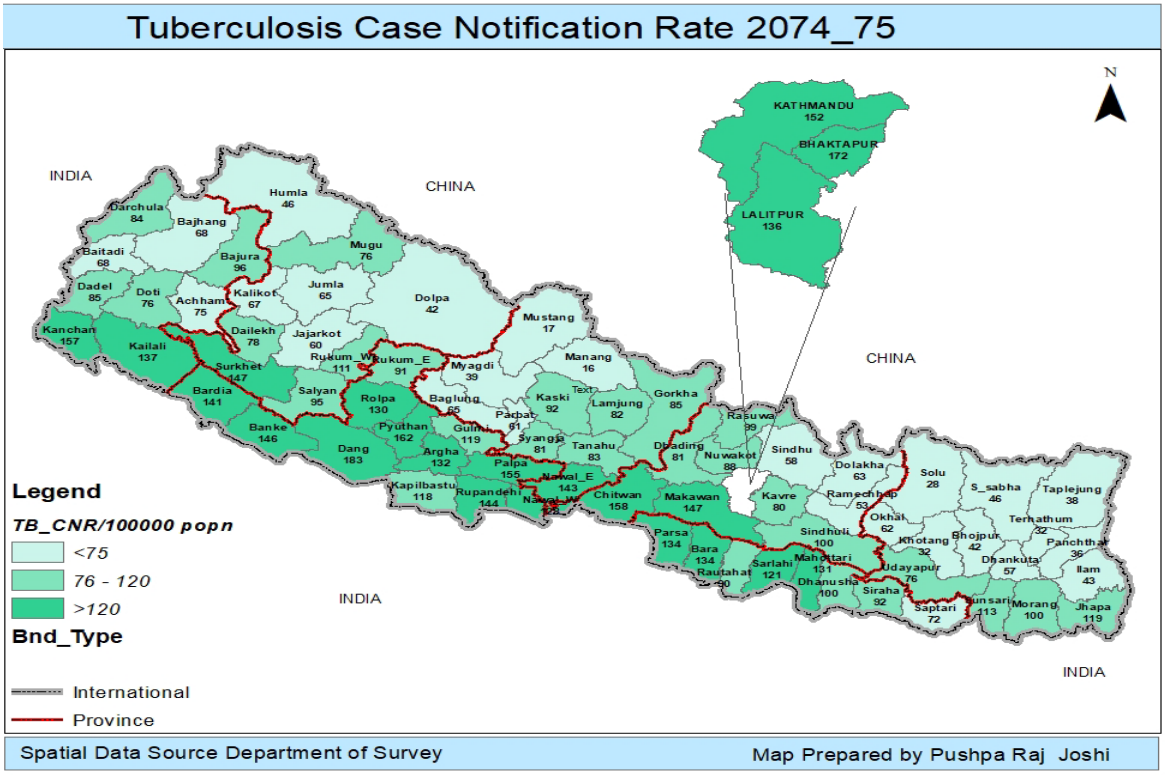
The burden of TB can be measured in terms of incidence (defined as the number of new and relapse cases), prevalence and mortality. WHO estimates the current prevalence of all types of TB cases for Nepal at 60,000 (241/100,000) while the number of all forms of incidence cases (newly notified cases) is estimated at 45,000 (152/100,000).

Case notification

Reported case notification rate (CNR) of all forms of TB is 112/100,000 whereas CNR for incident TB cases (new and relapse) is 109/100000 population. In Fiscal Year 2074/75, a total of 32,474 cases of TB was notified and registered at NTP. There were 97.7% incident TB cases registered (New and Relapse) among all TB cases. Among the notified TB cases, 71 % of all TB cases were pulmonary cases and out of notified pulmonary TB cases, 80% were bacteriologically confirmed. Among those bacteriologically confirmed and notified, 30% (9,897) were confirmed using Xpert MTB/RIF testing.

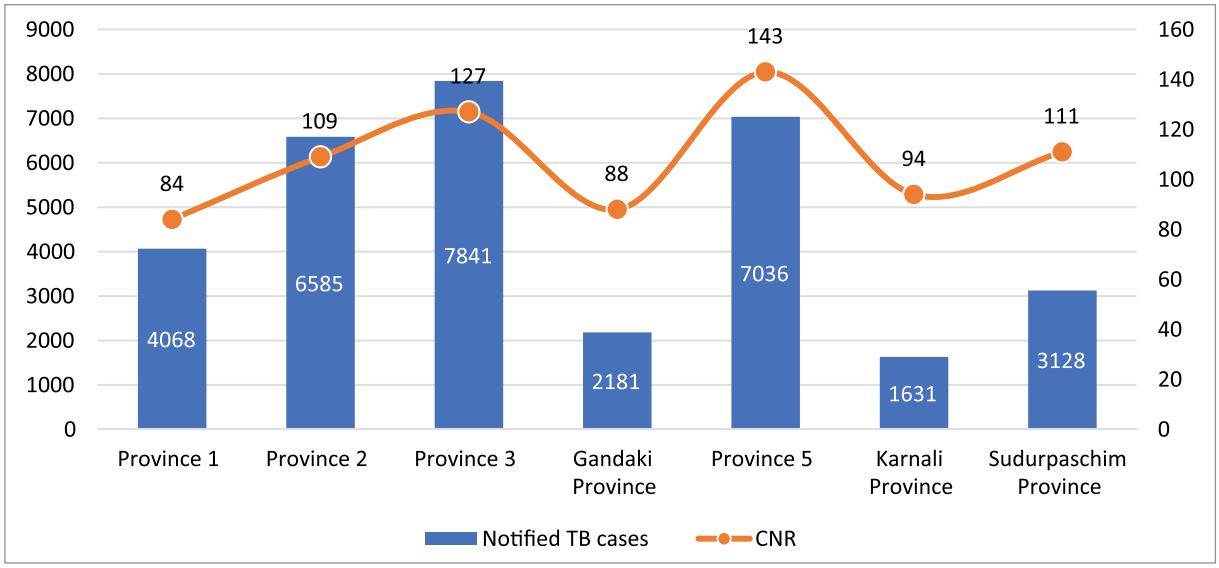
More than three-fifths of all TB cases (21,462, 66%) were reported from Province 2, Province 3 and Province 5. Around 24% of the TB cases were reported from Province 3. Kathmandu district alone holds around 41% (3,183 TB cases) of the TB cases notified from the Province 3 while its contribution is around 10% in the national total. Whereas in terms of eco-terrain distribution, Terai belt reported more than half of cases (18,590, 57%). Most cases were reported in the middle age group with the highest of 50 % in 15-44 year of age. The childhood TB is around 5.5% while men were nearly 1.73 times more than women among the reported TB case.

Figure 5.4.1: Tuberculosis case notification rate, 2074/75



The National Case Notification Rate (All forms) is 112 / 100,000 population. Based on the CNR, there are 22 districts with CNR more than 120, while 29 districts had CNR between 75-120 and remaining 26 districts had below 75 CNR. Among 22 high burden districts, 13 districts are from the Terai belt while remaining 9 are from the Hilly region. Further, more than three-fifths of TB cases (66%) of the cases were reported from Province 2, Province 3, and Province 5 respectively whereas in terms of eco-terrain distribution, Terai belt held more than half of TB cases (57%) in the reporting year.

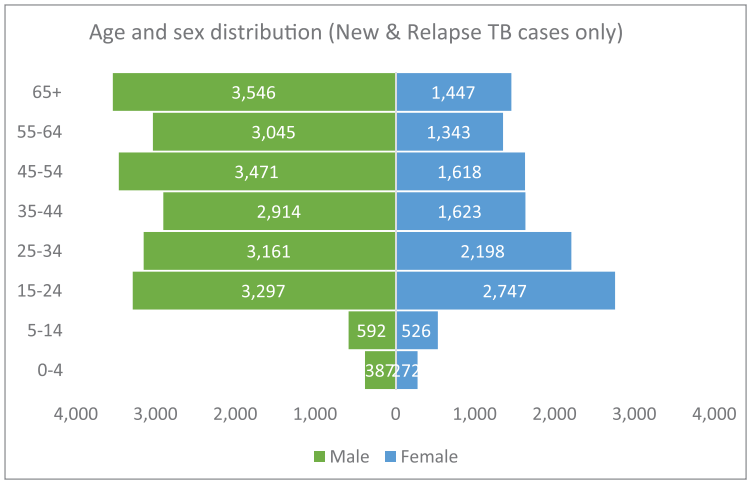
Figure 5.4.2: Notified TB case and Case Notification Rate (CNR) by provinces, FY 2074/75



Souce: NTC

Figure 5.4.2 shows the province wise case notification rate. The Province 5 had the highest CNR (143 per 100,000 population) followed by Province 3, Sudurpaschim Pradesh and Province 2 (127,111 and 109 per 100,000 population) respectively. CNR was lowest at Province 1 (84 per 100,000 population).

Distribution by age and sex

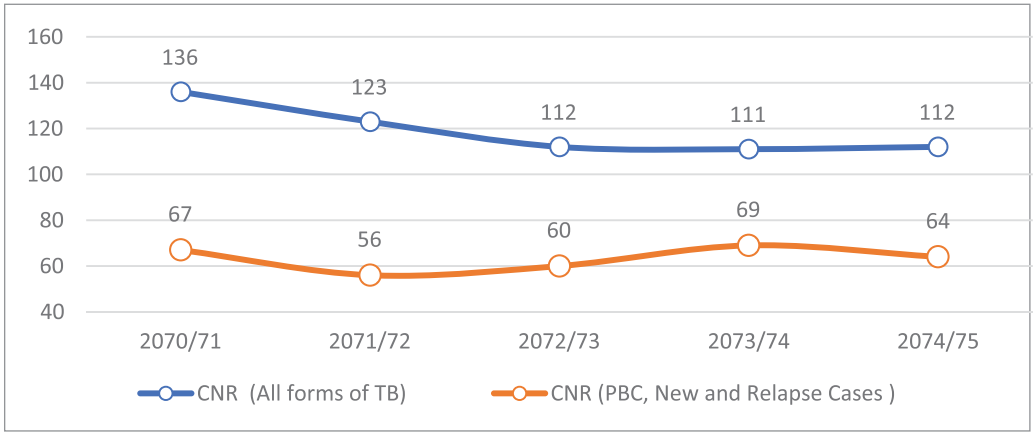


In FY 2074/75, around 5.5% of cases were registered as child TB cases while the remaining 94.5% were registered as adult TB. Among them, male TB cases were reported nearly 1.73 times more than female. Among the child TB cases, most of them (63%) were between (5-14) years of age group. In-country context like Nepal, where access to health services is still a big challenge and where it is estimated that nearly 20-25% of cases are being missed to be diagnosed from the community every year, the estimated TB in children should not be less than 10-15%, hence NTP requires to focus on increasing current (5.5%) proportion of child TB among all notified TB cases. The low proportion of child TB cases suggested the high existence of TB transmission that requires measures of early diagnosis and treatment of child TB. In Nepal, men were nearly twice as more reported to have TB than women which were nearly the same in the region and global context.

Annual trends

Figure 5.4.3 shows the trend of TB cases notification from 2070/71 to 2074/75. It has decreased gradually from 136 per 100,000 population in 2070/71 to 111 per 100,000 population in 2073/74 but has slightly increased this year to 112 per 100,000 population.

Figure 5.4.3: TB case notification rate (2070/71–2074/75)



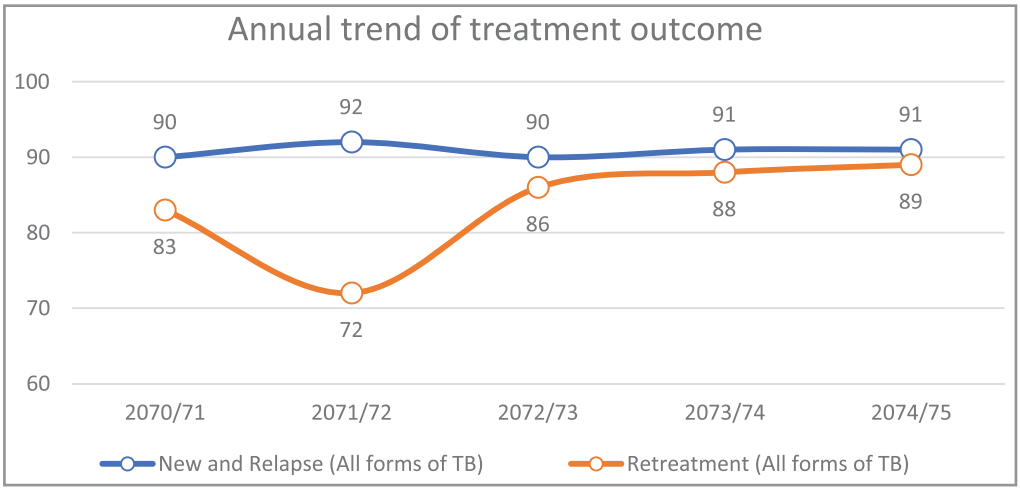
Source:NTC

Treatment outcomes

The NTP has achieved excellent treatment success rate, with or above 90 percent success rate sustained since the introduction of DOTS in 1996. Since then, NTP has always exceeded the global target of 85 percent treatment success.

The trend of TB treatment success rates for TB has been consistently above 90% since the last few years. Annual trend of TB treatment success rates at national level for newer cases (New and Relapse) is constantly high at around 90%, for this FY 2074/75 it is 91%. However, the trend of success rates among the retreatment cases (Failure, Loss to Follow-up and Other previously treated) had been constantly lesser (in comparison to treatment success among newer cases) but it has slightly increased (89%) in this fiscal year.

Figure 5.4.4: TB treatment success trend (FY 2070/71– FY 2074/75)



Source: NTC

Table 5.4.1 shows the treatment outcomes of the TB patients across different provinces. Among the 7 provinces, Karnali province has achieved highest treatment success rate (i.e. 94%). The treatment failure rate was constant across all the provinces. Meanwhile, around 4% of registered TB patients died at Gandaki province, province 5 and Sudurpaschim province during the course of TB treatment. Similarly, Sudurpaschim province experienced high lost to follow up (around 4%) in comparison to other provinces.

Table 5.4.1: Province wise TB treatment outcomes (2074/75)

Province	Success	Failure	Died	LFU	Not Evaluated
Province 1	91%	1%	3%	3%	2%
Province 2	93%	1%	3%	2%	1%
Province 3	85%	1%	2%	1%	11%
Gandaki	91%	1%	4%	2%	2%
Province 5	91%	1%	4%	2%	2%
Karnali	94%	1%	3%	1%	1%
Sudurpaschim	88%	1%	4%	4%	3%
Nepal	**90%**	**1%**	**3%**	**2%**	**4%**

Source: NTC

Drug resistant tuberculosis (DR TB)

Drug-resistant TB (DRTB) has become a great challenge for the NTP and a major public health concern in Nepal. Innovative approaches and more funding are urgently needed for the programmatic management of drug resistance TB nationally to detect and enrol more patients on multi-drug resistant (MDR) TB treatment, and to improve outcomes.

Burden of MDR-TB

The Drug Resistance Survey (2011-12) found that burden of drug resistant forms of TB was increasing, with 9.3 percent of new patient were found resistant to at least one anti-tuberculosis drug. With the expansion of diagnostic services, case finding among new cases has remarkably increased in recent years i.e; new MDR-TB contribution in registration category has increased rapidly in the last 4 years (14.6% in 2071/72, 15.3% in 2072/73, 18.8% in 2073/74 and 32% in 2074/75). It signifies that RR/ MDR-TB cases are diagnosed early and are enrolled in DR TB treatment. Likewise, the contribution of "Category II failure after first line treatment" has been declining (i.e. 30.8% in 2071/72, 28.0% in 2072/73, 24.0% in 2073/74, and 11% in 2074/75) for consecutive year suggesting that the early case diagnosis and treatment is improving treatment outcomes before the cases reach to category II failure.

A total of 420 RR/MDR-TB cases were registered for treatment in FY 2074/75. Among them, 50 cases (12%) were on treatment at DR centers of province 1, 81 cases (19%) at province 2, 96 cases (23%) at province 3, 29 cases (7%) at Gandaki province, 105 cases (25%) at province 5 and remaining 59 cases (14%) were on DR treatment at Sudurpaschim province respectively. One fourth of the notified DR TB patients who are on treatment were from the Province 5. However, there were no patients on treatment at DR centers of Karnali province.

Box 5.4.2 Drug Resistant TB Types

Rifampicin resistant TB **(RR-TB)** is resistant to rifampicin (detected using rapid diagnostic tests), with or without resistance to other anti-TB drugs and covers any resistance to rifampicin.

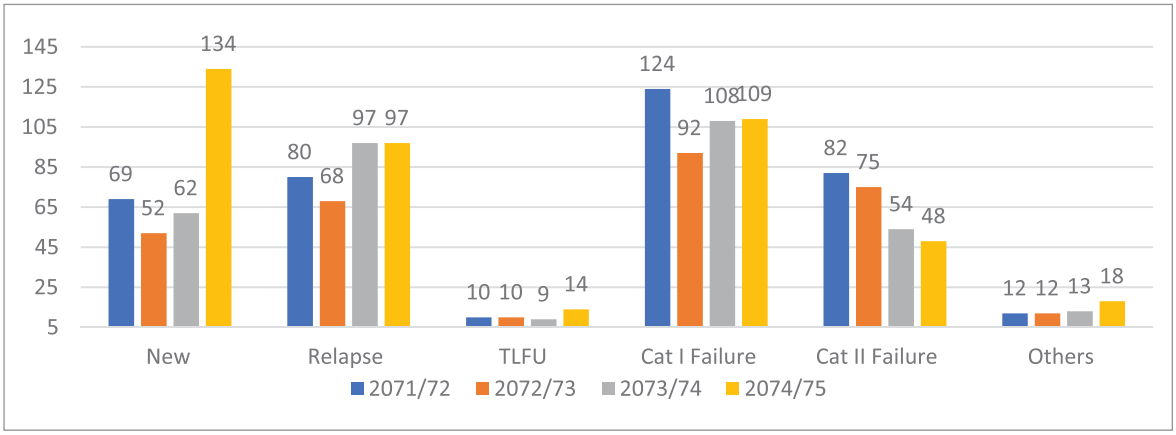
Pre-extensively drug resistant TB **(Pre-XDR TB)** is a multi-drug resistant strain of TB that is also resistant to either one of the fluoroquinolones and all the second line injectable drugs.

Extensively drug resistant TB **(XDR TB)** is a severe form of MDR-TB that is multidrug-resistant (MDR-TB) to all the fluoroquinolones and second line injectable drugs.

Case finding

The National MDR TB Treatment Guideline defines three types of MDR-TB (RR TB, Pre-XDR TB and XDR TB) cases which are further classified in six different categories. Drug resistant forms of TB are detected through GeneXpert, Culture/DST and LPA methods in Nepal. In this reporting period, 420 MDR TB cases were reported to have enroll in the DR treatment shows in figure 5.4.5. Majority of them were New (134, 32%), followed by Cat I failure (109, 26%), Relapse (97,23%), Cat II failure (48, 11%), Others (18, 4%) and Treatment after LFU (14, 3%) respectively. However, in the previous years, the burden of MDR was high among failure and retreatment cases. This could be due to early detection of MDR TB among new TB cases with expansion as well as increased access to GeneXpert machines.

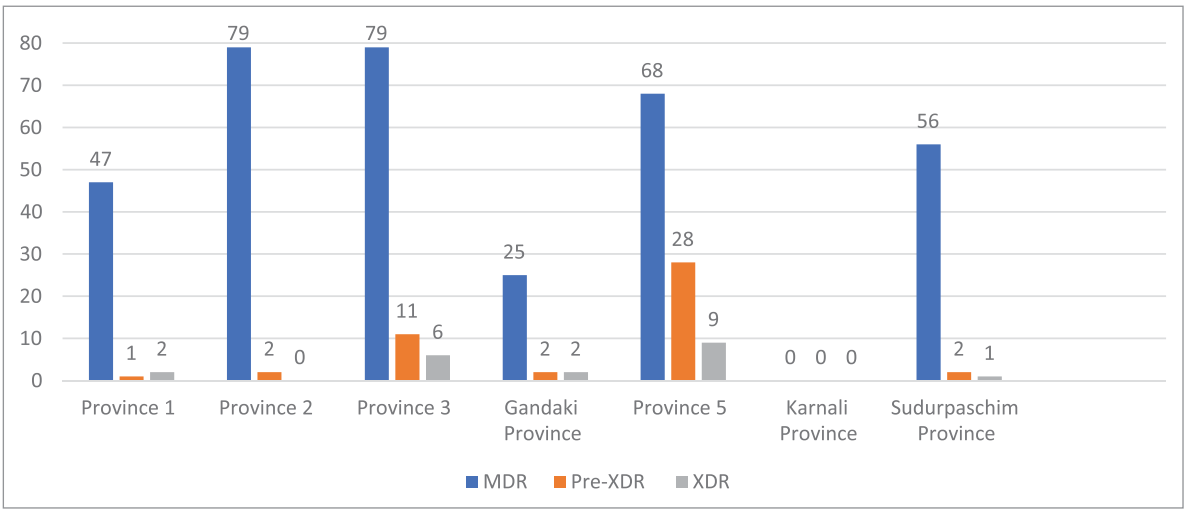
Figure 5.4.5: Number of MDR-TB cases notified (2071/72–2074/75)



Source: NTC

Figure 5.4.6 shows the burden of MDR TB across the different provinces in this fiscal year 2074/75. In terms of number of RR/MDR TB patients notified, province 2 and province 3 were found to have equal burden followed by province 5, Sudurpaschim province and province 1 respectively. Similarly, the burden of Pre-XDR and XDR TB patients was found more at province 5 followed by province 3, Gandaki province, Sudurpaschim province, and Province 1 respectively.

Figure 5.4.6:MDR-TB cases notified by provinces

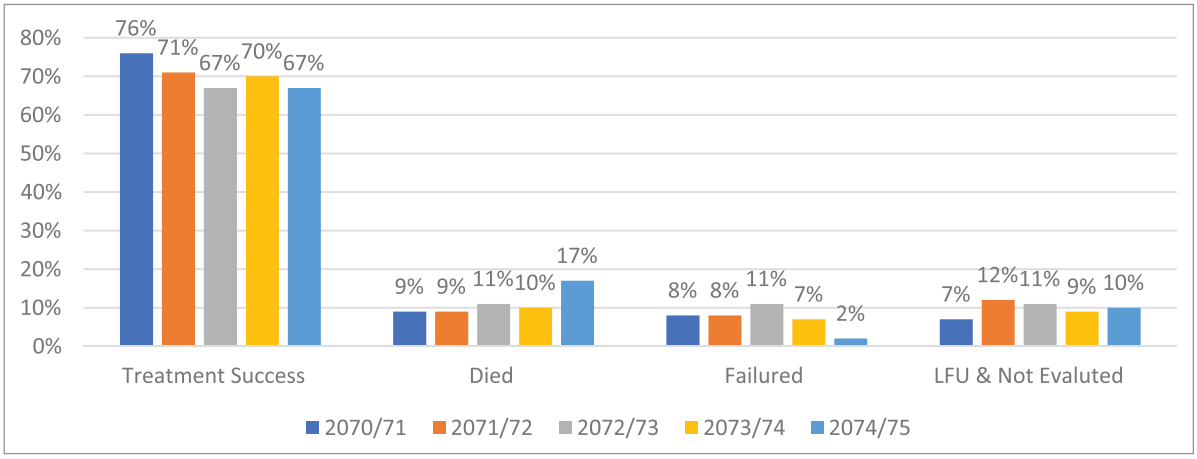


Source: NTC

Figure 5.4.7 shows treatment outcome of DRTB case registered in NTP. The Treatment success rate of MDR TB has slightly decreased to 67% in this reporting period from that of previous year. The best figure was reported 76% in the year 2070/71. Thereafter, treatment success decreased gradually, reach the lowest figure to 67% in 2072/73 and onwards, it started to incline but again it decreased to 67% in this reporting period. The fluctuation in treatment success rate is mainly affected by the proportion of death (17%) which used to be around 10% in the previous years. And another major contributing factor for low treatment success rate is the high rate of lost to follow up, which is second higher proportion (10%) in the cohort period. As per the cohort report of 2072/73, 327 DR TB cases were enrolled in RR/MDR TB treatment, however, 70 RR/MDR cases shifted to Pre-XDR (63) and XDR (7) respectively.

Among the reported RR/MDR TB cases excluding the shifted cases, 71% were successfully treated, 15% died, 1% was treatment failure and the remaining 12% were lost to follow up as well as not evaluated cases.

Figure 5.4.7: Treatment outcomes of MDR TB cases registered between 2068/69–2072/73



Source: NTC

The treatment success rate of XDR-TB has increased to 61% in this reporting period. In the previous years, it was extremely low ranging from 13% to 33%. Remaining 39% of XDR TB cases in this reporting period have died during the treatment period which is one of the main attributes for the low treatment success among XDR TB patients. The main reasons for the death of XDR-TB patients are due to disease severity, complication and toxicity.

NTP's laboratory network

The diagnosis and treatment monitoring of TB patients relies on sputum smear microscopy because of its low cost and ease of administration. It is also the worldwide diagnostic tool of choice worldwide. Nepal has 603 microscopy centers (MCs) that carry out sputum microscopy examinations. Most of the MCs are run by the government health facilities while few are operated by NGOs and private instructions (Table 5.4.2).There are well established networks between the microscopy centres (MCs) at PHCCs, DHOs and DPHO, the five regional TB quality control centres (RTQCCs) and with the National TB Centre (NTC). The microscopy centres send examined slides to their RTQCCs via DHOs according to the Lot Quality Assurance Sampling/System (LQAS) method. At the federal structure, NTP has already initiated coordination and communication with respective provinces to provide technical and financial support to establish provincial structure for the external quality assurance of smear microscopy slides. The overall agreement rate or the concordance of sputum slide examinations between microscopy centres and RTQCCs has been more than 95% in this reporting year 2074/75. The agreement rate has improved in recent years. The external quality assurance (EQA) for sputum microscopy is carried out provincial health directorates (previously regional health directorates) at seven provinces and at the National TB centre in Kathmandu.

Table 5.4.2: NTP laboratory network (no. of institutions) by province

Center	Province 1	Province 2	Province 3	Gandaki	Province 5	Karnali	Sudurpaschim	Total
MC	106	73	136	68	85	33	102	603
GX sites	7	10	14	4	11	4	5	55

Source: NTC

A lot quality assurance sampling/system (LQAS) has been implemented throughout Nepal. At each microscopy centre, examined slides for EQA are collected and selected according to the LQAS. Previously NTP used to collect all positive and 10 percent negative slides for EQA. In LQAS, slides are collected and selected using standard procedures to give a statistically significant sample size. LQAS is a systematic sampling technique that helps maintain good quality sputum results between microscopy centres and quality control centres. The two means of testing for MDR-TB are given in box 5.4.3

Box 5.4.3 Means of testing for MDR-TB in use in Nepal

The GeneXpert MTB/RIF is a cartridge-based technological platform that integrates sputum processing, DNA extraction and amplification, TB and MDR-TB diagnosis. It has a similar sensitivity to culture, targets *M. tuberculosis* specifically and enables the simultaneous detection of rifampicin resistance. The Xpert MTB/RIF test is a valuable, sensitive, and specific new tool for early TB detection and for determining rifampicin resistance. While mono-resistance to rifampicin occurs in approximately 5% of rifampicin resistant strains, a high proportion of rifampicin resistance is associated with concurrent resistance to isoniazid. Thus, detecting resistance to rifampicin can be used as a marker for MDR-TB with a high level of accuracy. The use of Xpert MTB/RIF started in Nepal in 2011/2012 and there are 55 Xpert MTB/RIF centres with 58 GeneXpert machines in Nepal.

The culture of *M. tuberculosis* remains the gold standard for both diagnosis and drug susceptibility testing, and also the method of choice to monitor drug resistant TB treatment. Conventional culture methods using Lowenstein-Jensen (LJ) has the major disadvantage of being very slow. LJ cultures take eight weeks for negative results and four to six weeks after initial culture for drug susceptibility testing. National TB Reference Laboratories (NRL), NTC and GENETUP, are providing culture and drug susceptibility test (DST) services and NTP has envisioned to establish Provincial TB Reference Laboratories in all the seven provinces by 2021 in Surket, Pokhara and Sunsari are planned to be established by 2019 and in all seven provinces by 2021

TB/HIV co-infection

In FY 2074/75, 21750 TB patients with a documented HIV test result (a 26% increase from 2073/74), equivalent to 67% of notified TB cases. This represented a 9-fold increase in the number of people with TB tested for HIV since 2072.

Figure 5.4.8 : TB/HIV Co-infection screening and treatment status.

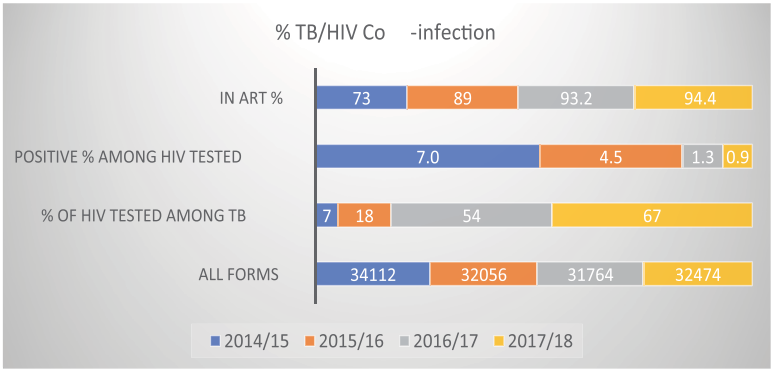


Figure 5.4.8 shows the TB /HIV co-infection status .Out of total screened for TB, 99.1% knew their result and 0.9% were diagnosed to have HIV. In those diagnosed with TB-HIV co-infection, 94.4% were enrolled in ART.

As per the data received from NCASC out of total estimated 31,020 estimated PLHIV 19,702 knew their status and 15,260 were under ART. In FY 2074/75,total of 15,260 PLHIV were screened for TB.

Planning, Monitoring & Evaluation

National Tuberculosis Centre is responsible for formulating long and short terms strategy and plans to fight against Tuberculosis throughout the country Planning and implementation of National Tuberculosis Programme (NTP) is guided by National Strategy Plan (NSP). Currently, NTP is implementing its activities as per the strategy, objectives, and targets of NSP 2016-21. NTC also develops and revise its annual work plan based on strategic information and recommendations of Palika and Province.

M&E Framework of NTP

Input	Process / Activities	Output	Outcome	Impact
• Policy Environment • Human resources • Financial resources • Infrastructure	• Monitoring, Supervision, Review • Training • Drug management • Laboratories • Advocacy, Communication, Social Mobilization (ACSM) • Public-private sector mix • TB/HIV collaboration • Strengthening health systems • Evidence/Research base for management	• **Diagnostic services** in place: - Staff trained - Centers & labs equipped • **Treatment services** in place: - Staff trained - Centers equipped • **Improved recording & reporting**	• Improved knowledge, attitudes, practices: - community - providers • Cases (TB and MDR-TB): - Detected - Treated - Cured	• Reduced incidence of TB infection • Reduced prevalence of TB • Reduced TB mortality

Supervision and monitoring

The supervision and monitoring of TB health care services is carried out by regular visits to all levels of the programme (Figures 5.6.9 and 5.4.10). In addition, the quarterly reporting of activities is carried out at trimester planning, monitoring and evaluation (PME) workshops at all levels of the programme.

The NTP regularly monitors case notification, smear conversion, treatment outcomes and programme management reports from all levels of the programme. Data is initially analysed by TB focal persons of DOTS center and Health Coordinator of respective local level during reporting and planning workshops. Thereafter, TB focal person from the respective health office report at province level planning, monitoring and evaluation workshop. Finally, TB focal persons from provincial health directorates report at national PME workshops. These workshop take place every four months at the Local level province and national level.

Figure 5.4.9: TB supervision system

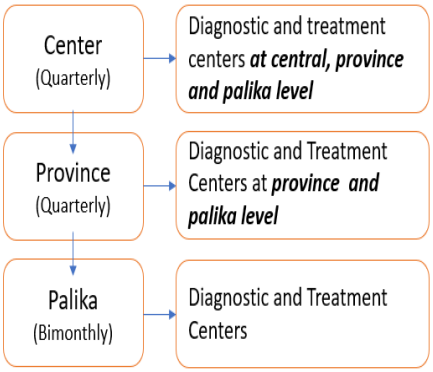


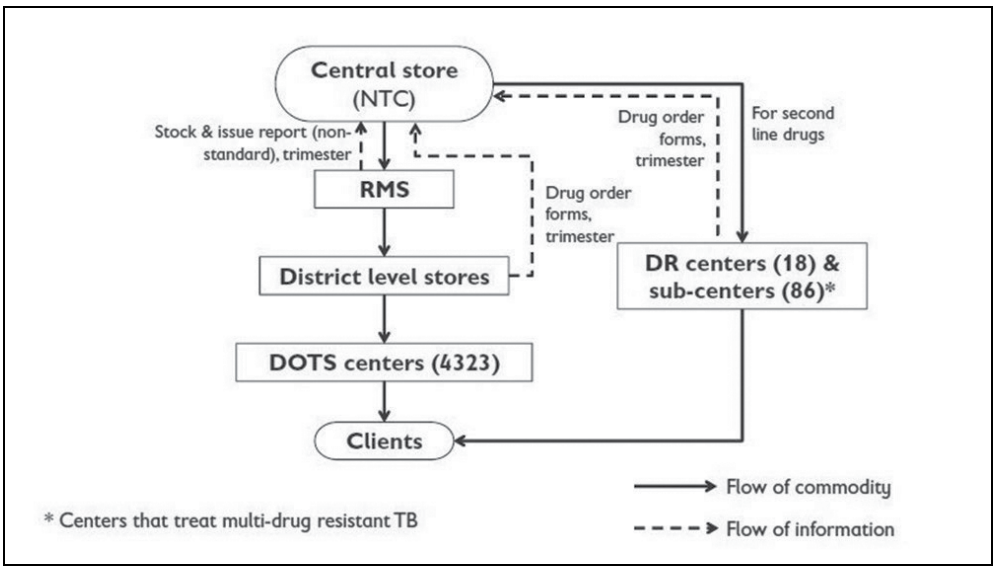
Figure 5.4.10: TB monitoring system

International	International Review	Annual
National	National Reporting & Planning Workshop	Biannual
Provincial	Provincial Reporting & Planning Workshop	Biannual
Palika level (Local body)	Palika Level Reporting & Planning Workshop	4 monthly
Treatment Centre	Treatment Center Reporting & Planning Workshop	4 monthly

Logistics supply management

The NTP's logistics management system supplies anti-TB drugs and other essentials every four months to service delivery sites based on the number of new cases notified in the previous quarter and the number of cases under treatment (Figure 5.4.11). Prior to procurement of Anti TB Drugs, forecasting and quantification is done considering all available data. NTC follows rules and regulations of PPMO to procure drugs from GoN Budget while Pooled Procurement Mechanism (PPM) is adopted to import medicines from the Global Drug Facility (GDF), Switzerland. All the drugs from procurements are received in the central NTC Store and stored by adopting proper storage methods. Drugs are supplied every 4 months to District Medical Store via Regional Medical Store (RMS) after receiving order as a result of workshops in each Region. In case of First Line Drugs buffer of 4 months is added in the order while supplying but no such buffer quantity is given in case of DR Drugs. Supply of DR drugs is done directly to DR Centers and to some DR Sub Centers.

Figure 5.4.11: NTP procurement demand and supply organisational chart



Physical and Financial Progress status

In Fiscal year 2074/75, NTC made 75.33 percent physical progress at the central level and 90.33 percent progress at the district level programme. Financial progress was 48.59 percent(Allocated Amount 993,047,000, Expended Amount 482,597,328) at the central level and 82.54 percent (Allocated Amount 170,261,000, Expended Amount 140,242,328)at the district level programme. Till the date, NTC cleared 9.26 percent of financial irregularities (*beruju*) in the year .

5.4.5 Key Constraint & Challenges

The Nepal NTP has regularly been facing several challenges and constraints, which influence the inability to expand and sustain the vision of the programme. Following are the key challenges and constraints faced by the NTP in order to reach the intended goals and targets of the programme in the last fiscal year.

Challenges:

- Lack of focal person for TB program at Palika and Province in the federal context
- Staff restructuring and its impact on staff motivation
- Insufficient income generation program for the patient and their family members.
- Inadequate TB management training to medical doctors
- Minimum interventions for strengthening PPM component
- Lack of operational research regarding increasing retreatment cases
- Lack of patient-friendly TB treatment service
- Lack of sputum transportation services at all districts
- Availability of TB IEC materials at health facilities
- Difficult to coordinate with regional and provincial hospitals

Action to be taken:

- Expansion of CB-DOTS programme throughout the country
- Endorsement of PPM guideline to strengthen Public-Private Mix approach
- Strengthen the community support system programme
- Explore operational research areas on TB prevention, treatment, and care
- Develop and distribute patients centered on TB IEC materials
- Expansion of Genexpert machine atleast one in each district by 2021
- Expansion and operationalize at least three culture/DST labs at provincial level by 2020
- Operationlize National Chest Hospital by 2021

5.5 HIV/AIDS and STI

5.5.1 Background

With the first case of HIV identification in 1988, Nepal started its policy response to the epidemic of HIV through its first National Policy on Acquired Immunity Deficiency Syndrome (AIDS) and Sexually Transmitted Diseases (STDs) Control, 1995 (2052 BS). Taking the dynamic nature of the epidemic of HIV into consideration, Nepal revisited its first national policy on 1995 and endorsed the latest version: National Policy on Human Immunodeficiency Virus (HIV) and Sexually Transmitted Infections (STIs), 2011. A new National HIV Strategic Plan 2016-2021 is recently launched to achieve ambitious global goals of 90-90-90. By 2020, 90% of all people living with HIV (PLHIV) will know their HIV status by 2020, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy (ART) and by 2020, 90% of all people receiving antiretroviral therapy will have viral suppression.

5.5.1.1 Overview of the Epidemic

Starting from a 'low level epidemic' over the period of time HIV infection in Nepal evolved itself to become a 'concentrated epidemic' among key populations (KPs), notably with People who Inject Drugs (PWID), female sex workers (FSW), Men who have Sex with Men (MSM) and Transgender (TG) People in Nepal. A review of the latest epidemiological data, however, indicates that the epidemic transmission of HIV has halted in Nepal. The trend of new infections is taking a descending trajectory, reaching its peak during 2002-2003. The epidemic that peaked in 2000 with almost 4,455 new cases in a calendar year has declined to 873 in 2017 (reduced by 81%). This decline is further accompanied by the decreasing trend of prevalence of HIV in Nepal as shown in below figures.

Figure 5.5.1: Estimated HIV prevalence among adult population (15-49 Year) 2017 (1985-2020)

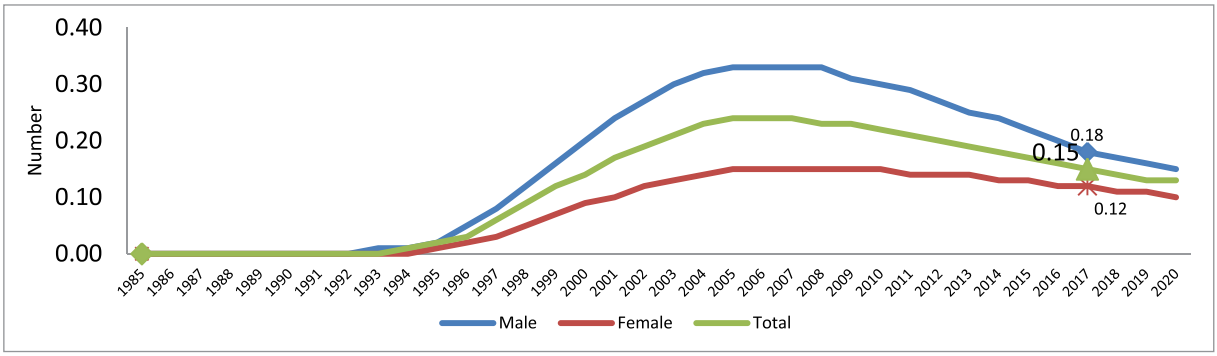
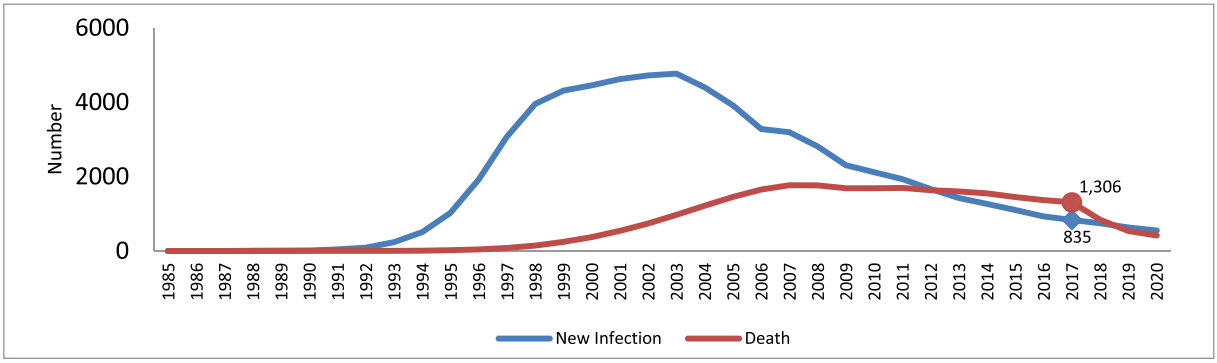


Figure 5.5.2: Estimated Trend of New HIV Infections and Deaths 2017 (1985-2020)



This prevalence has dropped from 0.24% (highest level projected in 2005) to 0.15 in 2017 and is expected to maintain a plateau at 0.13% through 2020 with the current level of efforts.

Figure 5.5.3: Estimated HIV infections by age group, 2017

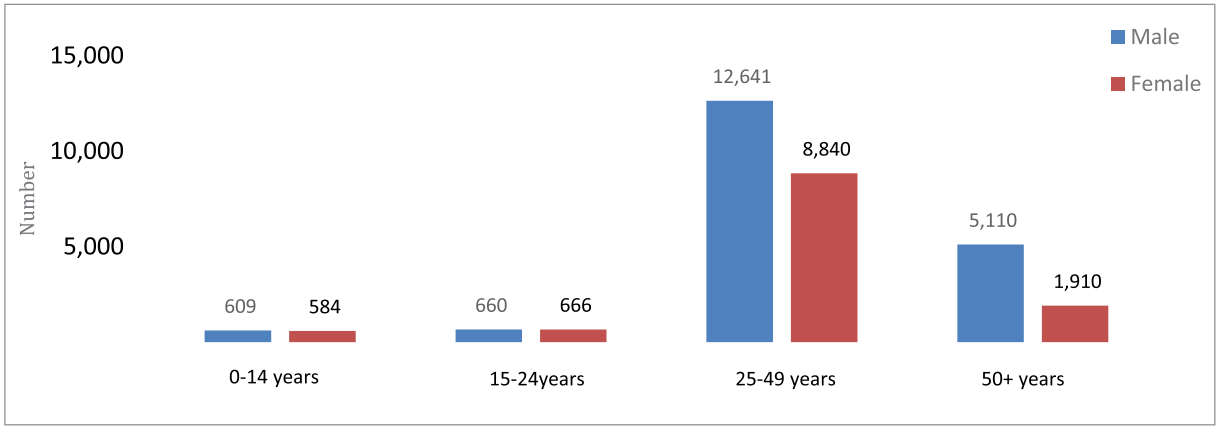
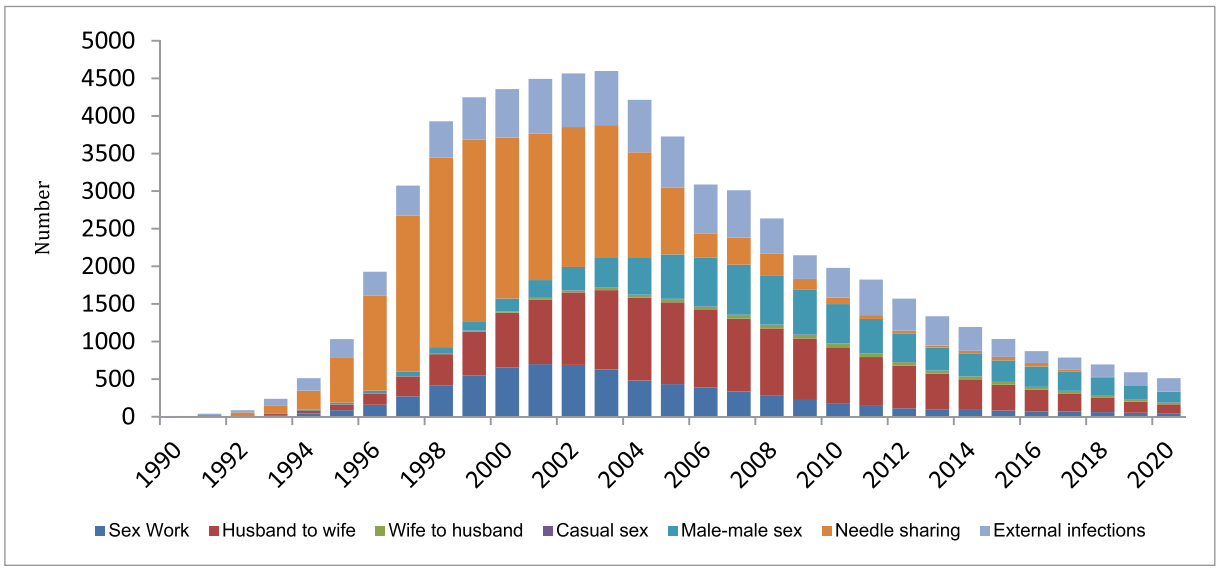


Figure 5.5.4: Annual HIV infections among adults (15+) by route of transmission : 1990-2020

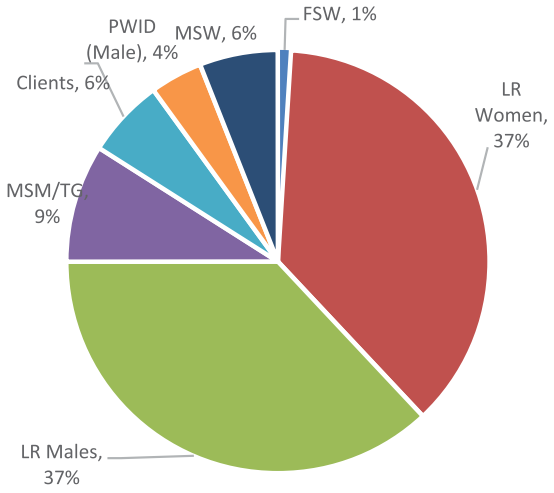


Overall, the epidemic is primarily driven by a sexual transmission that accounts for more than 77% of the total new HIV infections. Making up 3.8% of the total estimated PLHIV (31,020), there are about 1,192 children aged up to 14 years who are living with HIV in Nepal in 2017, while the adults aged 15 years and above account for 96.2%. With an epidemic that has existed for more than two decades, there are 7,020 infections estimated among the population aged 50 years and above (23%). By sex, males account for two-thirds (61%) of the infections and the remaining more than one-third (39%) of infections are in females, out of which around 73% are in the reproductive age group of 15-49 years.

Heterosexual transmission is the major routine of transmission in the total pool of HIV infection in Nepal. The contribution from all bands of KPs is similar in the period of projection 1995-2020, only the level is varying over time.

In 2017, 96.2% of the total infection was distributed among the population having age group 15 years and above. The estimate infections among key populations are as follows: PWIDs (4%), MSWs (6%), MSM and TG (9%), FSWs (1%) and Client of FSWs (6%). These apart, low-risk males including MLM account for 37% and low-risk females account for 37% of the remaining infections. The estimated number of annual AIDS deaths of all ages is estimated to be around 1,306 for 2017.

Figure 5.5. 5: Distribution of People Living with HIV (15 years and above), 2017



Civil societies have also played pivotal roles in the national response. Civil societies, through empowerment of KPs, have been playing instrumental roles in prevention, treatment, care and support as well as bringing about changes in legal and policy environment through advocacy.

External development partners equally support the national response to HIV in Nepal by providing a substantial amount of resources required for combating HIV. The Global Fund to Fight AIDS, TB and Malaria (GFATM), United States Agency for International Development (USAID), United Nations Children's Fund (UNICEF), WHO, AIDS Health Care Foundation (AHF) are the external sources that are contributing to the national HIV response.

5.5.2 Policy Environment and Progress in National HIV Response

5.5.2.1 Introduction

More than two decades of the HIV epidemic has stimulated Nepal to respond with a number of policy initiatives. These policy responses have come cross cuttingly from the health sector as well as other development sectors aiming at creating an enabling policy environment for the containment of HIV as well as mitigation of the epidemic. Notable policy developments taken for guiding the national response to HIV are spelt out here.

The National Health Sector Strategy Implementation Plan (NHSS-IP 2016-2021)

Nepal's HIV and STI response, recognized as a priority one programme by Government of Nepal, is guided by the 'National HIV Strategic Plan 2016-2021', the Sustainable Development Goals, and the National Health Sector Strategy (2015-2020). National Health Sector Strategy Implementation Plan (NHSS-IP) operationalizes objectives of Fast-Tracking HIV response to achieve ambitious 90-90-90 targets by 2020 and ending the AIDS epidemic as a public health threat by 2030.

National HIV Strategic Plan 2016-2021

The National HIV Strategic Plan 2016-2021, the fifth national strategy with the aim of meeting the global goal of 90-90-90 by 2020. By 2020, 90% of all people living with HIV will know their HIV status by 2020, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy, and by 2020, 90% of all people receiving antiretroviral therapy will have viral suppression. The National HIV

Strategic Plan for the period 2016–2021 is a set of evidence-informed strategies focused on building one consolidated, unified, rights-based and decentralized HIV programme with services that are integrated into the general health services of the country. It builds on lessons learned from implementation of the National AIDS Strategy 2011–2016, its mid-term review and the Nepal HIV Investment Plan 2014–2016, and it applies recommendations from the AIDS Epidemic Model exercise and other strategic information from studies, surveys and assessments.

National Health Sector Strategy (2015-2020)

The Ministry of Health and Population, National Centre for AIDS and STD Control is accountable for the implementation of the National HIV Strategic Plan, through the public health service infrastructure at national, regional, district and village level. Its implementation takes place in coordination with other public entities and the private sector, including services that are provided by civil society and other non-government networks and organizations. Because financing the HIV response in Nepal relies heavily on external funding that is rapidly declining, it is imperative that relevant and mutually beneficial public-private partnerships be established and maintained, and that wise, evidence-informed investment choices are made.

The commitment by Nepal of both the global "UNAIDS Strategy 2016-2021," and the "Sustainable Development Goals" adopted by the UN General Assembly, include commitments to Fast-Tracking the HIV response to achieve ambitious 90-90-90 targets by 2020 and ending the AIDS epidemic as a public health threat by 2030.

5.5.2.2 Policy Related Activities/Highlights from FY 074/075

With the aim of effective implementation of the national response to achieve the national goal of 90-90-90, a number of national guidelines also have been put into operation. These include "National HIV Testing and Treatment Guidelines, 2017", National Consolidated Guidelines on Strategic Information of HIV Response, 2017 (refer guidelines for HIV indicators related to national and province level) Prevention of mother-to-child transmission (PMTCT) Training Manual 2017, HIV Treatment Literacy Training Manual 2017, Pediatrics Disclosure Guidelines 2017 and National Guidelines on Community Led HIV Testing in Nepal 2017.

5.5.3 HIV Testing Services and STI Management

5.5.3.1 Introduction

Pursuant to its goal of achieving universal access to prevention, treatment care and support, HIV Testing Services (HTS) has been a strategic focus in the national response to HIV ever since Nepal started its response to HIV. The first ever HTS began in 1995 with the approach of voluntary Client-Initiated Testing and Counseling (CITC). Moving further from its previous approach of voluntary CITC, the national HIV testing and counselling program has been later widened to include Provider-Initiated Testing and Counseling (PITC), as well as CITC as crucial components of the nation's fight against HIV. With the expansion of HIV Testing and Counseling (HTC) sites across the country, there has been parallel development. National Guidelines on HTC was formulated in 2003 and updated in 2007, 2009 and 2011 and later the separate guidelines is merged as a comprehensive guideline on treating and preventing HIV in 2014. The community-based testing approach has also been initiated in key population and as suggested by National HIV Testing and Treatment Guidelines, 2017 Nepal is also moving forward to implement the community-led testing approach in order to maximize HIV testing

among key populations of HIV. For this approach, National Guidelines on Community Led HIV Testing in Nepal 2017'is also endorsed and currently CLT services is implemented in 20 districts targeting MSM and TG, 27 districts targeting PWID and 17 districts targeting FSW.

Human resources for HTC have been trained for public health facilities as well as NGOs-run HTS sites. Along with HTS, detection and management of Sexually Transmitted Infections (STIs) have also been a strategic focus and integral part of the national response to HIV ever since Nepal started its response to HIV. Over the years, STI clinics have been operating across the country maintaining their linkage to KPson the basis of the National STI Case Management guideline which was developed in 1995 and also revised in 2009 and 2014.

5.5.3.2 Key Strategies and Activities

HIV Testing Services

The National HIV Strategic Plan 2016-2021 envisions rapid scaling up of testing services by community-led/based testing in a non-duplicated manner in targeted locations in a cost-effective way to ensure maximum utilization with strong referral linkage to a higher level of treatment, care and support. The National Strategy further prioritizes that the public health system will gradually take up HIV testing services as an integral part of the government health care service.

The Government of Nepal is promoting the uptake of HIV testing among KPs through targeted communications and linkages between community outreach and HTS. Likewise, Provider-Initiated Testing and Counseling (PITC) have been taken to STI clinics, Antenatal Clinic (ANC), childbirth, malnourished clinic, postpartum, Family Planning, and TB services. Thus in this context, the national response, over the years, has seen an expanding coverage of HTS as an entry point to:

- Early access to effective medical care (including ART, treatment of opportunistic infections (OIs), preventive therapy for tuberculosis and other OI and STIs;
- Reduction of HIV in all including mother-to-child transmission;
- Emotional care (individual, couple and family);
- Referral to social support and peer support;
- Improved coping and planning for the future;
- Normalization of HIV in society (reduction of stigma and discrimination);
- Family planning and contraceptive services; and
- Managing TB/HIV co-infection.

Detection and Management of Sexually Transmitted infectios (STI)

In the context of detection and management of STI, the standardization of quality STI diagnosis and treatment up to health post and sub-health post level as a part of primary health care services has been a key strategy in the national response to HIV. This strategy further foresees standardization of syndromic approach with the referral for etiological treatment when needed.

Strengthening documented linkages (referral of follow-up mechanisms) between behavioral change communication (BCC) services and HIV testing and counseling, including the strengthening of linkage between HTC and STI services has been one of the key actions in the context of the concentrated epidemic of Nepal.

5.5.3.3 Progress and Achievement

HIV Testing Services

There are 175 HIV Testing and Counseling sites in Nepal that include 39 non-government sites and 136 government sites operating in the country also maintaining their linkages with KPs as well as with ART sites as well as PMTCT sites. The trends of programmatic data of people who were tested and counseled over the last three years is showed in Table 5.5.1.

Table 5.5.1: Service Statistics HIV Testing and Counseling for the period of BS 2072/73-2074/75

Indicators	2072/73	2073/74	2074/75
Total tested for HIV	122,888	176,228	3,30,460
Total Positive reported	2,163	1,781	2101
Cumulative HIV reported cases	28,865	30,646	32,747

Source: NCASC

The HIV testing is higher in Province 5 (100,333), and Sudurpaschim province (68, 439) whereas the percentage of positivity yield is higher in Province 2 and Province 3. The province-wise detail is also shown in Table 5.52.

Table 5.5.2: Province wise Service Statistics HIV Testing and Counseling in 2074/75

Provinces	Tested for HIV	Positive reported	% of positivity yield
Province 1	45,577	249	0.5%
Province 2	32,261	361	1.1%
Province 3	62,336	445	0.7%
Gandaki	20,081	193	1.0%
Province 5	100,333	585	0.6%
Karnali	1,433	21	1.5%
Sudurpaschim	68,439	247	0.4%
Total	3,30,460	**2101**	**0.6%**

Source: NCASC

5.5.3.4 Key Challenges/Issues and Recommendations

Issues	Recommendations
Huge data gap is found in the HIV program especially the report from many sites (Hospitals and NGOs) are yet to be covered in the electronic IHIMS system.	Coordination between IHIMS and service sites should be strengthened.

The community-based/led HIV testing service among key population is mainly run through NGOs and IHIMS database system does not fully cover NGO setting. The reporting from the working NGO yet to be covered in the electronic IHIMS system.	Coordination between IHIMS and and NGO should be strengthened. All the working NGO must be enlisted in the IHIMS system. So that, the total testing numbers could be incorporated, into national system and national figure of testing can be generated from the one HMIS sytem.
Low HIV testing coverage among key populations (KPs) has been a long-standing challenge in response to HIV. The problem of low coverage is most prominent for the returning labor migrants.	Effective roll out of Community-led HIV Testing and Treatment Competence (CTTC) approach with active monitoring should be in place. Provide testing facilities at transit points as well as destinations of migrant population.
Expansion of HIV testing sites.	The establishment of testing sites in government institutions should be scaled up to increase the accessibility of the service including the community based/led testing service through NGOs.

5.5.4 Prevention of Mother to Child Transmission for Elmination of Vertical Transmission (EVT)

5.5.4.1 Introduction

Nepal started its Prevention of Mother to Child Transmission (PMTCT) program in 2005 with setting up three sites at: 1) B. P. Koirala Institute of Health Science (BPKIHS), Dharan; 2) Maternity Hospital, Kathmandu and; 3) Bheri Zonal Hospital, Nepalgunj. Moving further in this direction, apart from the free provision of maternal ART and prophylaxis for infants, the National Guidelines on PMTCT have been developed and integrated into National HIV Testing and Treatment Guidelines in Nepal, 2017. Human resources, especially from maternal and child health care, have been trained in alignment with PMTCT services. Along with that the preparation and updating of training manuals have taken place. Apart from it, HIV testing has been incorporated into maternal and child health care in the form of PITC. Tailoring to the needs of HIV-infected infants as well as HIV exposed babies; counselling and information on infant feeding have been adjusted accordingly.

5.5.4.2 Key Strategies and Activities

Taking Mother-to-Child Transmission (MTCT) is a potentially significant source of HIV infections in children in Nepal into consideration; National Strategy aims to eliminate new HIV transmission by 2021. In the cognizance of existing coverage (61% in 2074/75) of PMTCT, the current National Strategy envisages the PMTCT programme to be integrated and delivered through Reproductive Health (RH) and Child Health Services. The National Strategy also foresees the integration of PMTCT into RH Programme placing it under the aegis of Family Health Division (FHD). The National Strategy has structured the PMTCT programme around the following comprehensive and integrated four-prong approach:

- Primary prevention of HIV transmission
- Prevention of unintended pregnancies among women living with HIV
- Prevention of HIV transmission from women living with HIV to their Children, and
- Provision of Treatment, Care and Support for women living with HIV and their children and families.

Pursuant to the last two elements of the four prong approach, a package with the entailment of the following services is being provided to pregnant women:

- HIV testing and counseling during ANC, labour and delivery and postpartum
- ARV drugs to mothers infected with HIV infection
- Safer delivery practices
- Infant feeding information, counseling and support,
- Early Infant Diagnosis (EID) of all HIV exposed children at 6 weeks and
- Referrals to comprehensive treatment, care and social support for mothers and families with HIV infection.

With the collaboration of thehealth facilities at community level, the government of Nepal launched Community-Based Prevention of Mother to Children Transmission (CB-PMTCT) program in 2009 taking PMTCT services beyond hospitals and making the services accessible to pregnant women living in remote areas. The CB-PMTCT program, drawing the leverage of community support, has found to have increased ANC coverage as well as HTC uptake among pregnant women (UNICEF 2012). CB-PMTCT programme has been expanded throughout the country.

Apart from CB-PMTCT program, adhering to the key actions envisaged by the National Strategy, the country is scaling up PMTCT service synchronizing with planned ART, HTC /STI, OI services for ensuring access to a continuum of care and ART to pregnant women with HIV. Furthermore, linkages have been established between PMTCT sites and KAP targeted intervention, Family Planning, SRH and counseling services.

5.5.4.3 Progress and Achievement

Pursuant to its commitment to eliminate vertical transmission of HIV among children by 2021, Nepal has scaled up it PMTCT services in recent years. As a result of this scale up of PMTCT sites, the number of women attending ANC and labour who were tested and received results has increased over the years. Despite this relative increase in uptake, the coverage for PMTCT is still low (61%) against the estimated pregnancies. The three-year trend of service statistics is showed in Table 5.53.

Table 5.5.3: Service Statistics on PMTCT in Nepal for the period of BS 2072/73 -2074/75

Indicators	2072/73	2073/74	2074/75
Tested for HIV (ANC &Labour)	276,593	382,887	439,225
HIV Positive Pregnant women	145	128	70
Total Deliveries by HIV +ve mothers	128	126	130
Mothers received ART	163	175	158
Babies received prophylaxis	119	112	123

Source: NCASC

The HIV testing among pregnant women is higher in Province 3 (95,684),and Province 5 (94,128) whereas the percentage of positivity yield among pregnant women is higher in Province 2, than national. The province-wise detail is also shown in Table 5.5.4.

Table 5.5.4: Province wise Service Statistics on PMTCT in Nepal 2074/75

Provinces	Pregnant women tested for HIV	Positive pregnant women identified	Positivity Yield
Province 1	75,605	16	0.02%
Province 2	45,114	12	0.03%
Province 3	95,684	15	0.02%
Gandaki	50,913	6	0.01%
Province 5	94,128	17	0.02%
Karnali	22,994	1	0.00%
Susurpaschim	54,787	3	0.01%
Total	439,225	70	0.02%

Source: NCASC

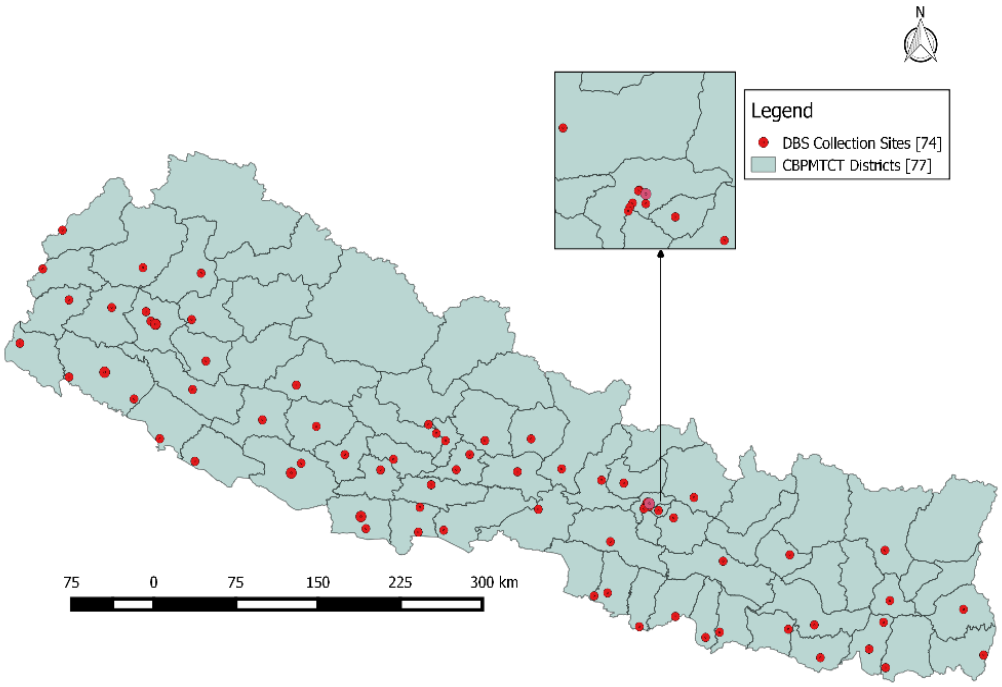
Aiming at the elimination of mother to child transmission, Nepal adheres to Option B+ and embarks for providing lifelong ART for all identified pregnant women and breastfeeding mothers with HIV, regardless of CD4 along with prophylaxis treatment for their infants as well. The rollout of the lifelong treatment adds the benefits of the triple reinforcing effectiveness of the HIV response: (a) help improve maternal health (b) prevent vertical transmission, and (c) reduce sexual transmission of HIV to sexual partners.

Early Infant Diagnosis (EID)

Initiatives for Early Infant Diagnosis (EID) of HIV in infants and children below 18 months of age have been taken with the goals a) of identifying infants early in order to provide them life-saving ART; and b) of facilitating early access to care and treatment in order to reduce morbidity. In this context, a Deoxyribonucleic Acid (DNA) Polymerase Chain Reaction (PCR) testing facility has been set up at National Public Health Laboratory in Kathmandu. Early Infant Diagnosis (EID) coverage has significantly increase within two months of birth in last four years due to widely scale up of sample collection in all ART centers and lab staff widely trained to collect the sample for EID. After the revision of National HIV Testing and Treatment Guideline in 2017, and implementation of EID testing at birth, by the end of 2017 the EID testing within 2 months of age increased. However, still 40 % of EID cases are being reached after 2 months of age due to home delivery, diagnosis of HIV mother during post-natal period and breastfeeding with the support of trained lab personnel at the site.

Table 5.5 5. EID Service Statistics in Nepal

Indicators	2072/73	2073/74	2074/75
Tested (within 2 months)	82	99	193
HIV Positive (Within 2 months)	2	5	9
Tested (within 2-18 months)	75	56	101
HIV Positive (Within 2-18 months)	4	9	14



4.4 Key challenges/Issues and recommendations

Issues	Recommendations
Availability of HIV test kits with limited expiry date.	Ensure timely procurement and supply of test kits to service sites.
Tracking of HIV-positive mothers and exposed baby for EID.	The robust tracking system to track the HIV-positive women should be developed and implemented in all sites, and home-based blood sample for EID test of an exposed baby can be recommended.
Mainstreaming the private hospital in the national reporting system for PMTCT test.	The district should strengthen coordination with private hospitals to regularize the reporting to district.
Supportive monitoring visit at service delivery points from the district and centre.	Frequent monitoring visit should be performed to intensify the services at a birthing centre and beyond birthing centre.

5.5.5 HIV Treatment, Care and Support Services

5.5.5.1 Introduction

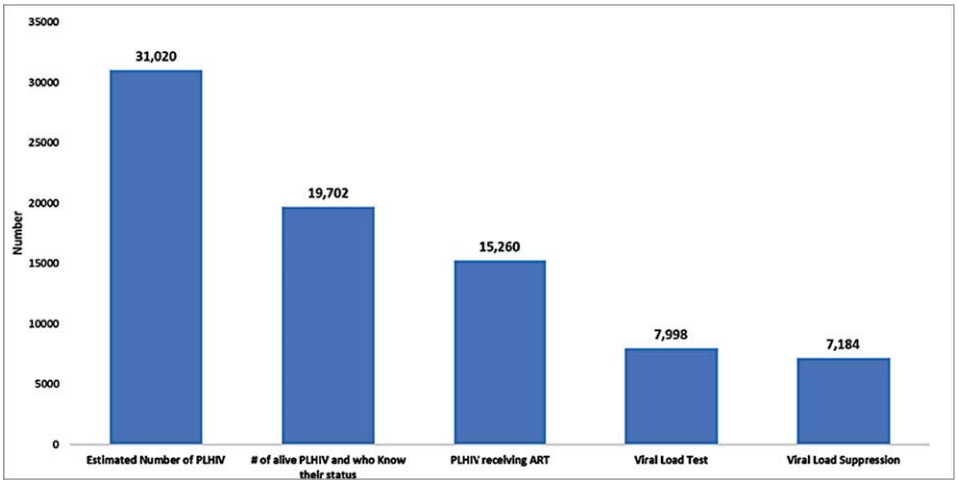
With a primary aim to reduce mortality among HIV-infected patients, the government, in 2004, started giving free ARV drugs in a public hospital and that was followed by the development of first-ever national guidelines on ARV treatment. Since then, a wide array of activities has been carried out with the aim of providing Treatment, Care and Support services to People Living with HIV (PLHIV). Based on National HIV Testing and Treatment Guidelines 2017 county implemented 'test and treat' strategy from February 2017. Necessary diagnostic and treatment-related infrastructures such as CD4 machines and viral load machines have been set up in different parts of the country for supplementing ART

management program. Human resources have been trained for Treatment, Care and Support in parallel with the preparation and updating of training guidelines. People Living with HIV have been empowered aiming at enhancing their supplementary roles in Treatment, Care and Support.

*5.**5.5.2 Progress And Achievement***

By the end of 2017, out of 19,702 PLHIV, only 15,260 of them were on ART. Among the total tested (7,998) almost 90% (7,184) of PLHIV were with their viral load suppressed. The total cumulative number of PLHIV receiving ART by the end of fiscal year 2074/2075 has reached the figure of 16,428 (July 2018). Over the years, there have been gradual increases in the number of people enrolling themselves on ART as well as receiving ARVs (Table 5.5. 6).

Figure 5.5.6. Treatment Cascade in Nepal, 2017



Out of those who are currently on ART, 92.5% are adults and remaining 7.5% are children, while male population makes 51.2%, female population 48.3%, and remaining 0.5% are of the third gender.

Table 5.5.6 ART Profile of the period of FY 2072/73-FY 2074/75

Indicators	**2072/73**	**2073/74**	**2074/75**
People living with HIV ever enrolled on ART (cumulative)	16,499	19,388	22,048
People with advanced HIV infection receiving ARVs (cumulative)	12,446	14,544	16,428
People lost to follow up (cumulative)	1,612	2,049	2,388
People stopped treatment	31	25	22
Total deaths (cumulative)	2,410	2,770	3,201

Source: NCASC

The number of people on ART is higher in Province 3 (4,512) and Province 5 (3,009). The province wise detail is also shown in Table 5.5.7.

Table 5.5.7: Province wise people on ART FY 2074/75

Province	People on ART
Province 1	1,400
Province 2	1,789
Province 3	4,512
Gandaki	2,205
Province 5	3,009
Karnali	538
Sudurpaschim	2,975
Total	**16,428**

Source: NCASC

There are total 73 ART sites across 59 districts till the end of the fiscal year 2074/75 and it shows that 15% of those ever enrolled on ART died and 10% have been lost to follow-up, while 75% are alive and on treatment.

The Program data (FY074/75) showed that of all the patients registered on ART during the period, 88% were still actively on ART after 12 months while 82% were still actively on ART after 24 months of treatment. With the aim of supplementing the ART management program, CD4 counts testing service are available on 33 different sites. Some of the portable CD4 counting machines have been placed in the hilly districts of Nepal to provide timely CD4 count service to monitor ARV effectiveness that leads to support PLHIV to sustain quality and comfortable life. To monitor ART response and diagnosing treatment failure, viral load testing is recommended for people receiving ART. National Public Health Laboratory (NPHL), Bir hospital and Seti Zonal Hospital offer viral load test service to the people on ART treatment. Additionally, the machines for viral load test has been installed in Western Regional Hospital and Koshi Zonal Hospital and the service will be delivered from these additional sites soon.

With the purpose of early diagnosing of HIV infection among children born to HIV infected mother early Deoxyribonucleic Acid (DNA) Polymerase Chain Reaction (PCR) test is done at the National Public Health Laboratory in Kathmandu. The DNA PCR test is done at birth and 6 weeks. This test is recommended for diagnosing HIV status of children below 18 months and for those whose test result is inconclusive by rapid test.

As of 2074/75, total 6,687 has received CHBC services from 57 covering districts (Table 5.5.8). In the same context, 52 districts have CCCs across the country which have been delivering their services to PLHIV (Table 5.5.9).

Table 5.5.8: Service Statistics on CHBC Services in Nepal, as of the end of FY 2074/75

Indicators	Numbers
Number of PLHIV received CHBC services	6,687
Number of PLHIV referred for ART management	1,284
Number of PLHIV referred for management of opportunity infections	565

Table 5.5.9: Service Statistics on CCC Services in Nepal as of the end of FY 2074/75

Indicators	Numbers
Number of CCC sites in Nepal	52
Number of PLHIV received psycho-social counseling support	5,391
Number of PLHIV received nutritional support	6,083
Number of PLHIV referred for management of opportunity infections	565

Key challenges/Issues and recommendations

Issues	Recommendation
Low access to CD4 Count and Viral Load testing services	Placement of point of care CD4 machine and implementing viral load testing by GenXpert and using DBS would enhance the accessibility of services among PLHIV.
Client duplication in the service	The robust, unique identifier system has been developed to track the individual client within and across the service sites but it needs to be implemented at all service sites for its functioning.
Lost or incomplete medical records (Recording and Reporting)	Start an electronic record keeping system with backup capability. In addition, creating a client coding system would facilitate improved record keeping and continuity when clients are transferred in or transferred out.
Poor supply of OIs medicines as per demand	Provide consistent supply of OIs medicines that are supposed to be provided according to the program.
Inadequate financial support for the clients	The PLHIVs face financial problems to treat other comorbidities, but there is not sufficient government support to pay for medical care and treatment. So, the government should establish a mechanism to share the financial burden facing by PLHIV.
CHBC services coverage is declining over time due to limited support from donors.	The government should invest in such an essential service in coordination with NGOs.

5.5.6: Province level HIV related Services and Indicators

In the early 1990s, a national HIV surveillance system was established in Nepal to monitor the HIV epidemic and to inform evidence-based HIV prevention efforts. Since then, integrated biological and behavioral surveillance (IBBS) survey surveys have been conducted every two/three years among key populations at higher risk of HIV (PWID, MSM and TG, FSW and migrants) in identified three epidemic zones (figure 7) to collect information on socio-demographics and biological markers to assess the prevalence of HIV and other sexually transmitted infections (STI), behavioural information (condom use, number of sex partners, needle sharing behaviours). The epidemic zones are based on different distributions of key populations at risk, mobility links and HIV risk behaviour (figure5.5.7).

5.5.6.1 Province Number 1

Province number one lies in the eastern part of Nepal and stretches from the Terai in the south to the Himalayas in the north. It constitutes of one metropolitan, 46 municipalities and 90 rural municipalities in the new federal context. Fourteen districts from previous administrative division (Eastern Development region) constitute of Province one. These districts are as follows: Bhojpur, Dhankuta, Ilam, Jhapa, Khotang, Morang, Okhaldhunga, Panchthar, Sankhuwasabha, Solukhumbu, Sunsari, Taplejung, Terhathum and Udaypur.

Female sex workers and their clients, and MSM & TG, male labour migrants are a major key population at risk for HIV in this province. These key populations mainly reside in highway districts (Sunsari, Morang and Jhapa). NCASC, as per its national surveillance plan has been conducting IBBS surveys among key populations such as FSW, MSM & TG, male labour migrants and PWID in different cluster. HIV prevalence among PWID in Eastern Terai is 3.3% (IBBS, 2017) and 0.3% among Male Labour Migrants in Eastern (IBBS, 2018). Currently, 23 HTS sites are providing HIV testing and counselling services in Province one whereas 9 ART sites are providing treatment and care support to PLHIV. Similarly, 2 opioid substitution therapy (OST) sites are providing OST services to PWID.

OST sites in Province one

i) Koshi Zonal Hospital, Morang

ii) Mechi Zonal Hospital, Jhapa

ART Sites in Province One

I. Bhaktapur Hospital, Bhaktapur

II. Bharatpur Hospital, Chitwan

III. District Hospital, Dhading

IV. Sukraraj Tropical & Infectious Disease Control Hospital, Kathmandu

V. Kanti Children's Hospital, Kathmandu

VI. Maiti Nepal, Kathmandu

VII. Bir Hospital, Kathmandu

VIII. Tribhuvan University Teaching Hospital (TUTH), Kathmandu

IX. Maternity Hospital, Kathmandu

X. Dhulikhel Hospital, Kavre

XI. Sparsha Nepal, Lalitpur

XII. District Hospital, Makwanpur

XIII. Trishuli Hospital, Nuwakot

XIV. District Hospital, Sindhuli

XV. District Hospital, Sindhupalcho

5.5.6.2 Province Number 2

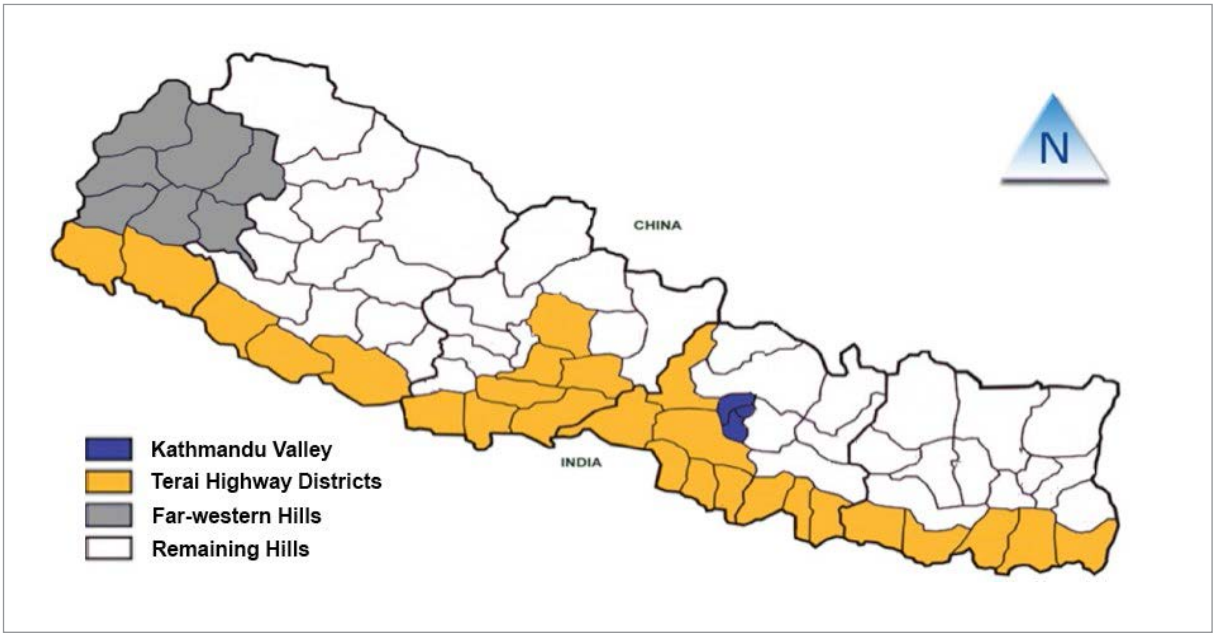
Province number 2 lies in the southeastern planes of Nepal. It consists of 8 districts from Saptrai in the east to Parsa in the west. The province compromises of following districts: Bara, Dhanusha, Mahottari,

Parsa, Rautahat, Saptari, Siraha and Sarlahi. There are one Metropolitan city, three sub-metropolitan cities, 43 Municipalities and 80 rural municipalities in province two. Female sex workers and their clients, PWID, and MSM & TG are main epidemic drivers for HIV in these districts. IBBS surveys are regularly conducted among the key population (FSW, PWIDs, and MSM/TG). In this province, HIV responses are targeted to these groups. Currently, 14 HTS sites are providing HIV testing and counseling services in Province two whereas 8 ART sites are providing treatment and care support to PLHIV. Narayani Sub-regional Hospital is the only site providing OST service to PWID in this province.

ART Sites in Province Two

I. District Hospital, Bara
II. District Hospital, Rautahat
III. District Hospital, Sarlahi
IV. District Hospital, Mahottari
V. Janakpur Zonal Hospital, Dhanusa
VI. Narayani Sub regional Hospital, Parsa
VII. Sagarmatha Zonal Hospital, Saptari
VIII. Ram Kumar Uma Shankar Charity Hospital, Siraha

Figure 5.5.7: HIV epidemic zones in Nepal



5.5.6.3 Province Number 3

Province number 3 lies in the central part of Nepal. Most of the area of this province is hilly and mountainous. The national capital (Kathmandu) also lies in this province. It consists of 3 metropolitans, 1 sub-metropolitan city, 44 Municipalities and 74 rural municipalities as per the new federal structure. Province number 3 consists of 13 districts as per old structure namely: Bhaktapur; Chitwan; Dhadhing; Dolakha; Kathmandu; Kavre; Lalitpur; Makwanpur, Nuwakot, Ramechhap, Rasuwa, Sindhuliand Sindupalchowk. As per epidemic zones, this province consists of highway districts and the Kathmandu

Valley, and its epidemic is mainly driven by PWID (Male and females), FSWs, clients of sex workers and MSM/TG. Some districts in this province are categorized as low HIV prevalence zone where no such risk groups are drivers of HIV epidemic.

IBBS surveys are conducted among FSW, PWID and MSM/TG in the Kathmandu Valley. HIV prevalence among FSW in the Kathmandu Valley is 2.2% (IBBS, 2017) whereas HIV prevalence among PWID and MSM/TG is 8.5% and 6.2% respectively. HIV prevention services are being targeted to these groups and are being provided by the implementation partners whereas treatment, care and support services are provided through government and community organizations. There are 43 HTS sites, 15 ART sites and 8 OST sites providing HIV prevention, treatment and care services in this province.

List of ART sites in Province 3

I. Bhaktapur Hospital, Bhaktapur
II. Bharatpur Hospital, Chitwan
III. District Hospital, Dhading
IV. Sukraraj Tropical & Infectious Disease Control Hospital, Kathmandu
V. Kanti Children's Hospital, Kathmandu
VI. Maiti Nepal, Kathmandu
VII. Bir Hospital, Kathmandu
VIII. Tribhuvan University Teaching Hospital (TUTH), Kathmandu
IX. Maternity Hospital, Kathmandu
X. Dhulikhel Hospital, Kavre
XI. Sparsha Nepal, Lalitpur
XII. District Hospital, Makwanpur
XIII. Trishuli Hospital, Nuwakot
XIV. District Hospital, Sindhuli
XV. District Hospital, Sindhupalcho

List of OST sites in Province 3

I. Tribhuvan University Teaching Hospital (TUTH), Kathmandu
II. Patan Hospital, Lalitpur
III. Richmond Fellowship Nepal (RFN), Chitwan
IV. Aavash Samuha, Bhaktapur
V. SPARSHA, Lalitpur
VI. Saarathi Nepal, Kathmandu
VII. Youth Vision, Kathmandu
VIII. Youth Vision,Lalitpur

5.5.6.4 Gandaki Province

Gandaki province lies in the western part of Nepal and mostly consists of hills and mountain region. It constitutes 1 metropolitan, 29 municipalities and 55 rural municipalities (85 local bodies in total). It consists of 11 districts: Baglung, Gorkha, Kaski, Lamjung, Manang, Mustang, Myagdi, Nawalpur, Parbat, Syangja and Tanahun.

This province consists of highway districts and the Pokhara Valley. FSW and their clients, MSM/TG, PWIDs and migrant workers are key populations in the Pokhara Valley whereas rest of the districts are considered as low HIV prevalence zones. IBBS surveys are conducted in the Pokhara valley in regular intervals among key populations. HIV prevalence among FSW, PWIDs is 0.3% and 2.8% respectively. There are 26 HTS sites, 1 OST site (Western Regional Hospital) and 9 ART centres in this province which are providing HIV prevention, treatment and care services.

List of ART sites in Province 4

I. Dhaulagiri Zonal Hospital, Baglung
II. District Hospital, Gorkha
III. Western Regional Hospital, Kaski
IV. Lamjung Community Hospital, Lamjung
V. District Hospital, Myagdi
VI. District Hospital, Syangja
VII. District Hospital, Tanahun
VIII. District Hospital, Parbat
IX. Walling PHC, Syanja

5.5.6.5 Province Number 5

Province number 5 lies in the mid-western Terai and hilly region of Nepal. It consists of 12 districts namely: Arghakhanchi, Banke, Bardiya, Dang, Gulmi, Kapilvastu, Nawalparasi west, Palpa, Pyunthan, Rolpa, Rukum and Rupandehi. This province consists of Terai highway districts and Hilly regions from where people migrate to India and other countries. Female sex workers and their clients, PWIDs MSM/TG, are key risk populations in Terai districts whereas migrants are the key risk populations in the hilly districts. NCASC conducts IBBS surveys among key population (PWID in Western to Far-western Terai highway districts, MSM/TG in Terai districts, and migrants in western hilly regions). There are 33 HTS sites, 3 OST sites, and 15 ART sites in this province which are providing HIV prevention, treatment and care services.

List of ART sites in province 5

I. Bheri Zonal Hospital, Banke
II. Rapti Sub Regional Hospital, Dang
III. District Hospital, Bardiya
IV. District Hospital, Rolpa
V. District Hospital, Pyuthan

VI. District Hospital, Gulmi
VII. District Hospital, Kapilvastu
VIII. Prithivi Chandra Hospital, Nawalparasi
IX. United Mission Hospital, Palpa
X. Lumbini Zonal hospital, Rupandehi
XI. District Hospital, Rukum
XII. Bhim Hospital, Rupandehi
XIII. District Hospital, Arghakhanchi
XIV. Maharajgunj PHC
XV. Rapti Zonal Hospital, Dang

List of OST sites

I. Bheri Zonal Hospital, Banke
II. Lumbini Zonal Hospital, Rupandehi
III. Youth Vision, Rupandehi

5.5.6.6 Karnali Province

Karnali Province lies in Midwestern hills and Mountain region of Nepal. It consists of 10 districts which are categorized as low HIV prevalence zones in Nepal (Dailekh, Dolpa, Humla, Mugu, Jajarkot, Rukum west, Salyan, Kalikot, Jumla and Surkhet).

There are only 16 HTS sites and 4 ART sites in this province. Only migrants who migrate to high-risk areas such as in Indian cities where HIV prevalence is high are getting HIV infection because of their non-use of condoms with female sex workers.

List of ART sites

I. District Hospital, Dailekh
II. Mid-Western Regional Hospital, Surkhet
III. Kalikot District Hospital, Kalikot
IV. Salyan District Hospital, Salyan

5.5.6.7 Sudurpaschim Province

Sudurpaschim province lies in the far-western region of Nepal and consists of 9 districts. It consisted of 9 districts as mentioned below (Achham, Baitadi, Bajhang, Bajura, Dadeldhura, Darchula, Doti, Kailali and Kanchanpur).

This province comprises of 2 Terai highway districts and 7 districts in hilly and mountains regions. FSW, PWIDs and MSM/TG are key drivers of HIV in Terai region whereas male labor migrants are key populations in the 7 hilly districts. IBBS surveys are regularly conducted among these groups in this province. There are 20 HTC and 13 ART sites in this province that provide HIV prevention and treatment and care services to key population.

List of ART sites in Province 7

I. District Hospital, Achham
II. Bayalpata Hospital, Achham
III. Kamalbazar PHC, Achham
IV. District Hospital, Bajhang
V. District Hospital, Bajura
VI. District Hospital, Baitadi
VII. Dadeldhura Sub-regional Hospital, Dadeldhura
VIII. District Hospital, Darchula
IX. District Hospital, Doti
X. Seti Zonal Hospital, Kailali
XI. Tikapur Hospital, Kailali
XII. Mahakali Zonal Hospital, Kanchanpur
XIII. Chaurmandu PHC, Achham

5.5.6.8 List of Possible Indicators for Province One, Two, Three, Four, Five and Seven

The following indicators might be useful to track HIV response in a particular province considering the drivers of HIV epidemic in that province and HIV services being provided. However, the province can select indicators that are deemed necessary to track HIV response. NCASC will provide any required support to the provinces as and when needed. For detail (numerator, denominator and data source) regarding indicators, refer to 2017 National Consolidated Guidelines on Strategic Information for HIV Response in Nepal.

Impact level Indicators

a) HIV prevalence among key population
b) HCV and HBV prevalence among people who inject drugs

Outcome level indicators

d) Percentage of sex workers reporting condom use with most recent client
e) Percentage of people who inject drugs reporting having used a condom the last time they had a sexual intercourse
f) Percentage of men reporting the use of condom the last time they had anal sex with a male partner
g) Percentage of migrants aged 15-49 reporting the use of condom the last time they had sex with non-regular sexual partner

Output level indicators

h) Needle and syringe distributed per person who inject drugs
i) Percentage of individuals receiving Opioid Substitution Therapy who received treatment for at least six months

j) Number and percentage of key population who had an HIV test in the past 12 months and know their results

k) Percentage of key population reached by HIV prevention programmes - (BCC intervention, condom and lube distribution)

l) Number of key population screened for HIV by trained layperson

m) Percentage of pregnant women with known HIV status

n) Percentage of pregnant women living with HIV who received antiretroviral therapy to eliminate vertical HIV transmission

o) Percentage of reported congenital syphilis cases (live births and stillbirths)

p) Number and percentage of people living with HIV who are receiving HIV care (Including ART)

q) Percentage and number of adults and children on antiretroviral therapy among all adults and children living with HIV at the end of the reporting period

r) Percentage of people living with HIV who are on retained on ART after 12, 24 and 36 months after initiation of antiretroviral therapy

s) Percentage of health facilities dispensing antiretroviral therapy that experienced a stock-out of at least one required antiretroviral drug in the last 12 months

t) Number (and percentage) of adults and children living with HIV currently receiving care and support services from outside facilities

u) Percentage of HIV-positive patients who were screened for TB in HIV care or treatment settings

v) Percentage of TB patients who had an HIV test result recorded in the TB register

5.6 Non Communicable Diseases and Mental Health

5.6.1 Non Communicable Diseases

Non-Communicable Diseases (NCDs) are emerging as the leading cause of death in Nepal due to changes in social determinants like unhealthy lifestyles, urbanization, demographic and economic transitions. The deaths due to NCDs (cardiovascular disease, diabetes, cancer and respiratory disease) have increased from 60% of all deaths in 2014 to 66% in 2018 (WHO Nepal Country profile 2018). They are already killing more people than communicable diseases. Thus, Nepal has adapted and contextualized the PEN intervention for primary care in low resource setting developed by WHO. The epidemic of Non communicable disease is recognized by UN and addressed in Sustainable Development Goal 3 i.e. "ensure healthy life and promote well being for all at all ages" of this goal 3.4 targeted to "reduce by one third premature mortality from NCDs through prevention and treatment and promote mental health and well being". PEN Implementation Plan (2016–2020) has been developed in line with the Multisectoral Action Plan for prevention and control of NCDs (2014-2020).

Multi-sectoral Action Plan (MSAP) for the Prevention and Control of NCD (2014-2020 AD)

Goal and Vision

- **Vision**

  All people of Nepal enjoy the highest attainable status of health, well-being and quality of life at every age, free of preventable NCDs, avoidable disability and premature death.

- **Goal**

  The goal of the multisectoral action plan is to reduce preventable morbidity, avoidable disability and premature mortality due to NCDs in Nepal.

Strategic objectives for MSAP 2014-2020 AD

1. Raise the priority accorded to the prevention and control of non-communicable diseases in the national agendas and policies
2. Strengthen national capacity, leadership, governance, multisectoral action and partnership to accelerate country response for the prevention and control of NCDs
3. Reduce modifiable risk factors for NCDs and underlying social determinants through creation of health-promoting environment
4. Strengthen and orient health systems to address the prevention and control of NCDs and underlying social determinants through people centered PHC and UHC
5. Promote and support national capacity for high quality research and development for the prevention and control of NCDs and mental health
6. Monitor the trends and determinants of NCDs and evaluate progress in their prevention and control
7. Improving basic minimum care of mental health services at the community and improving competency for case identification and initiating referral at primary care level

Targets (At the end of 2025 AD)

1. 25% relative reduction in overall mortality from CVD, cancers, diabetes, or COPD
2. 10% relative reduction in the harmful use of alcohol

3. 30% relative reduction in prevalence of current tobacco use in persons aged over 15 years
4. 50% relative reduction in the proportion of households using solid fuels as the primary source of cooking
5. 30% relative reduction in mean population intake of salt/sodium
6. 25% reduction in prevalence of raised blood pressure
7. Halt the rise in obesity and diabetes
8. 10% relative reduction in prevalence of insufficient physical activity
9. 50% of eligible people receive drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes
10. 80% availability of affordable basic technologies and essential medicines, including generics, required to treat major NCDs in both public and private facilities

Nepal PEN program

Nepal PEN package has been introduce to screen, diagnose, treat and refer cardiovascular disease, COPD, cancer and diabetes at health post and primary health care center for early detection and management of chronic disease within the community. This package has 4 protocol and they are;

1. Protocol 1-Prevention of heart attack, stroke and kidney disease through integrated management of diabetes and hypertension.
2. Protocol 2- Health education and counseling on healthy behavior.
3. Protocol 3- Management of chronic obstructive pulmonary disease (COPD)
4. Protocol 4- Assessment and referral of women with suspected cancer (breast, cervical)

Nepal PEN protocol 1, 2 and concept note was developed and endorsed in June, 2016 and the program started in two pilot districts (Ilam and Kailali) on October, 2016. In addition, Nepal PEN protocol 3 and 4 was endorsed and the program was scaled up in following 8 districts Palpa, Myagdi, Baglung, Achham, Bardiya, Surkhet, Makwanpur and Rautahat in FY 2073/74. PEN program was scaled up in additional 6 (Chitwan, Jumla, Jajarkot, Dhading, Nuwakot, and Gorkha) districts in 2074/75.

Goals

- Achieve universal access to high quality diagnosis & patient-centred care
- Reduce suffering & socio-economic burden of major NCDs
- Protect poor & vulnerable populations from major NCDs
- Provide effective & affordable prevention & treatment through PHC approach
- Support early detection, community engagement and self-care

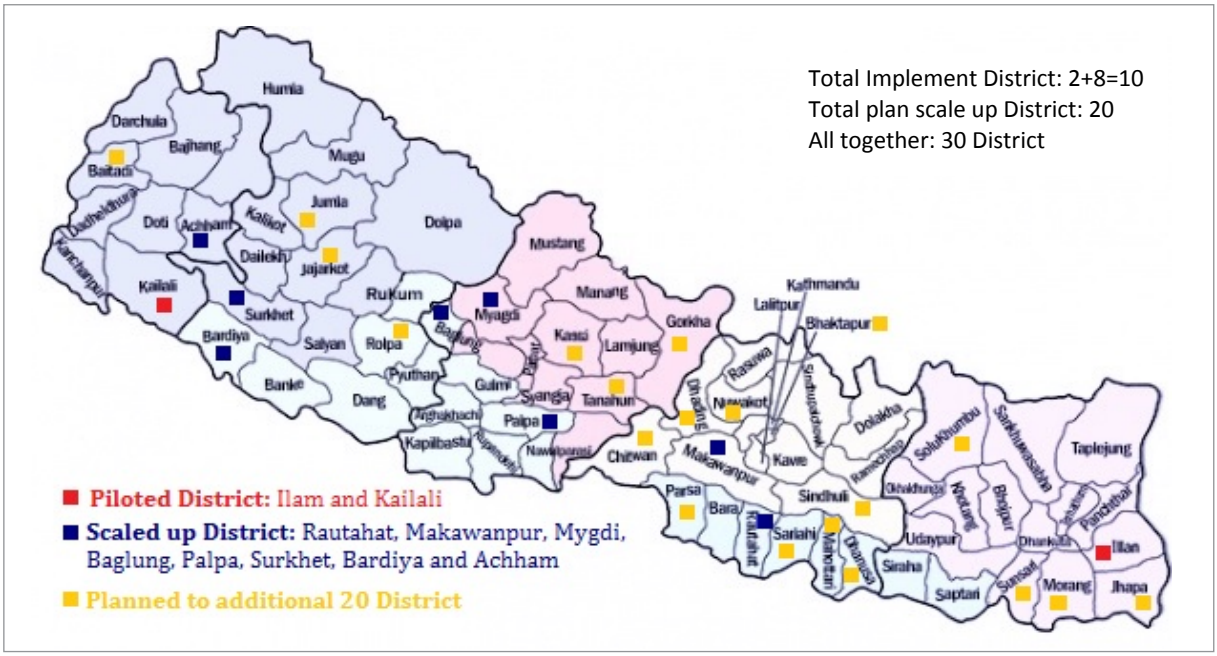
Objectives

- To timely diagnose, treat and management of NCDs.
- To prevent and control risk factors of NCDs.
- To bring uniformity in treatment of NCDs.
- To increase coordination between health facility and community.
- To increase accessibility for Universal Health Coverage (UHC).

Table 5.6.1.1 Major activities, achievement and target

Major Activities (FY 2074/75)	Key Achievements (FY 2074/75)	Target (FY 2075/76)
• Implementation of Nepal PEN Program • Capacity development- PEN MToT and training at community level. • Procurement and supply of NCD Drugs and diagnostic	• Nepal PEN Package 1,2,3 and 4 endorsement • PEN Package Training in 6 districts • NCD drugs procurement • Update recording and reporting tools.	• Expansion in additional 14 Districts during FY 2075/76 • Revision/update of PEN Package trainee manual and trainers guide

Figure 5.6.1.1: National PEN program Coverage



Source: EDCD/DoHS

Table 5.6.2.1: Three years trend of some NCDs.

Disease	Period	Province 1	Province 2	Province 3	Gandaki Province	Province 5	Karnali Province	Su. Pa. Province	Nepal
COPD	2072/73	21817	14590	60485	35978	33960	14136	20263	201229
	2073/74	24014	12848	74478	34368	28148	14651	21663	210170
	2074/75	24901	14248	83231	35503	32304	16963	24535	231685
Hypertension	2072/73	48047	28182	87045	56569	41449	5469	9125	275886
	2073/74	58495	29356	123897	57937	40000	7912	11739	329336
	2074/75	65126	37045	160036	64587	54161	8828	14162	403945
Diabetes Mellitus (DM)	2072/73	18700	5310	43906	26860	17599	977	2764	116116
	2073/74	25847	10637	74541	28128	17236	1096	3862	161347
	2074/75	32127	9436	95781	32287	22851	1972	4659	199113
Breast Cancer	2072/73	43	12	634	748	64	6	28	1535
	2073/74	46	16	1345	390	47	5	14	1863
	2074/75	11	29	1435	278	47	2	6	1808

Source: HMIS/DoHS

Strength, weakness and challenges

Strength	Weakness	Challenges
• Accessible at community level (PHCC and HP)	• Only focused on HF level • Mostly focused on treatment approach however the PEN is public health approach • Focused on TIP ICEBERG of risk people (Those person who visited in HF with high risk population with suspected of disease) • Inadequate recording, reporting and monitoring system	• All NCDs drugs are not included in the essential drug list • Limited budget allocation • Complex drug and diagnostic procurement • Turnover of trained health professional

5.6.2 Mental Health

Mental health and substance abuse is recognise as one of health priorities and also addressed in Substainable Development Goals (SDG). Within the health goal, two targets are directly related to mental health and substance abuse. Target 3.4 requests that countries: "By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being." Target 3.5 requests that countries: "Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol." Nepal has high burden of mental illness but there are limited interventions to address the epidemic of mental diseases. There were different activities conducted in fiscal year 2074/75, to address the burden of mental health related issues and to raise awareness about them. The activities were focused on awareness raising, capacity building of health workers, use of information technology to get proper information regarding mental health and rehabilitation services. Community based Mental health program has been started at 6 districts (Panchthar, Mahottari, Dolakha, Lamjung, Kapilvastu, Kanchanpur).

Non Communicable Disease and Mental Health Section under EDCD, has been assigned as the focal unit for implementation of mental health program in Nepal and will implement mental health program from FY 2075/76.

Community Mental Health Care Package, Nepal, 2074

The package is developed for standardization and uniformity in capacity building of non-specialized mental health professionals ensuring the availability and accessibility of integrated mental health and psychosocial support services (MHPSS) within the primary health care system of the country. The package broadly defines the mental health care packages at the level of health facility and community along with the implementation mechanisms.

Aims and Objectives of Mental Health Care Package

The aim of the Mental Health Care Package is to facilitate implementation of National Mental Health Policy thereby ensuring the availability and accessibility of basic mental health and psychosocial support services for all the population of Nepal.

The general objective of this package is to facilitate integration of mental health services into the primary health care delivery system of the country.

The specific objectives include:

1. To define the mental health and psychosocial support service packages at different layers of primary health care system
2. To define the minimum standard of the MHPSS services at different layers of primary health care system
3. To set the standard of the training packages and manuals for training and supervision of health workers and community volunteer like FCHV.

Better to include a paragraph with the analysis of the situation of Mental Health related disease based on reported cases in OPD morbidity

Table 5.6.2.1 Major activities, achievement and target

Major Program Activities (FY 2074/75)	Key Achievements (FY 2074/75)	Target (FY 2075/76)
Mental Health • Development of Community Mental Health Care Package, Nepal, 2074 • Implementation of community mental health program • Public-private partnership in mental health • Mental health services for prisoners • Drugs procurement and supply.	• Awareness raising on Mental diseases • Training of health workers, FCHV and community stakeholders in mental health in six districts • Mental health services for prisoners in the Kathmandu valley • Guideline for support of self-help group	• Basic Mental health training to health workers • Rehabilitation of people with mental illness • Development and revision of training modules • Studies regarding mental health and suicide • Development of guideline and strategies • Clinical supervision

Strength, weakness and challenges

Strength	Weakness	Challenges
• Community Mental Health Care Package, Nepal, 2074 developed • Community mental health program at six districts • Drugs procurement and supply.	• Program coverage couldn't be achieved as targeted • Training was not topped with availability of medicine	• Recording and reporting • Clinical supervision and mentoring • Availability of psychotropic medicine around the calendar • Limited budget allocation to cover the program district • Turnover of trained health professional

5.7 Epidemiology and Disease Outbreak Management

Epidemiology and Outbreak Management Section in EDCD works in the area of preparedness and response to outbreaks, epidemics and other health emergencies occurring in different parts of the country. The section aligns with the organizational objective to reduce the burden of communicable diseases and unwanted health events through preparedness and responses during outbreak and epidemic situations by using the existing health care system.

5.7.1 Major Responsibilities of Epidemiology and Outbreak Management Section:

- Provide support to Ministry of Health and Population for drafting national laws, policies, and strategies related to epidemiology and outbreak management.
- Provide support to Ministry of Health and Population for drafting national laws, policies and strategies related to preparedness and management of outbreaks/epidemics and other health emergency situations.
- Prepare standards, protocols and guidelines regarding epidemiology and outbreaks/epidemics management.
- Coordinate with provincial and local level for epidemics and outbreak management.
- Provide support for preparation and implementation of annual work plan at federal level related to epidemics and outbreak management.
- Coordinate and collaborate with concerned authorities at federal level for epidemics and outbreak management.
- Coordinate and provide support in conduction of information management training and other federal level programs related to epidemiology, epidemics and other emergency situation management.
- Coordinate with multi sectorial authorities in minimizing the impact of natural disasters in health sector, conduct response activities and control of epidemics.
- Facilitate and coordinate in providing preventive and curative services through provincial and local level to prevent the spread of diseases after natural disasters in displaced communities.
- Monitoring and supervision of disaster preparedness and management activities in coordination with province and provide feedback to the concerned authorities accordingly.
- Carryout outbreak control and management by mobilization of Rapid Response Team (RRT) in order to control epidemic prone diseases.
- Coordinate and facilitate for management of buffer stocks of essential medicines and other logistics required for the control of outbreaks/epidemics.
- Monitoring and supervision of disease epidemics, outbreak preparedness, prevention and control activities and provide feedback accordingly.

5.7.2 Rapid Response Teams (RRTs)

The concept of Rapid Response Team (RRT) was developed in the year 2057 B.S. for the development of epidemic preparedness and response system throughout the country in order to strengthen the information management and surveillance of communicable diseases, preparedness and early identification of potential outbreaks and investigation and prompt response during the outbreaks. RRT had been formed at central, regional, district and community levels and their mobilization during outbreaks and epidemics was done accordingly. However, with the formation of different level of

governments, the structural arrangement and formation of RRT according to the new structure is in process.

Roles and responsibilities of RRTs are as follows:

- Preparedness for potential outbreaks.
- Investigation of outbreaks.
- Responding to outbreaks through awareness and IEC activities, case management, community mobilization and the coordination of stakeholders.
- The monitoring of outbreak potential diseases (malaria, kala-azar, dengue, scrub typhus, acute gastroenteritis, cholera, severe acute respiratory infections, influenza, etc.)at sentinel sites.
- The active surveillance of outbreak potential diseases in outbreak situations.
- Media monitoring and countering rumours.
- Coordinate between the local authorities and local health institutions and the higher-level health authorities and health institutions for mobilizing additional support.
- Identify the risk factors leading to the public health emergency events and recommend measures that would need to be put in place to prevent the recurrence of the disease/syndrome in future.

5.7.3 Major Activities in 2074/75:

- Stock-pilling of emergency drugs and health logistics at strategic locations (Center, Province/ regions and districts).
- Health desk established at major Point of Entries (POE) including Tribhuwan International Airport.
- Multisectoral interaction programme conducted at different districts (Kaski, Chitwan, Rupandehi, Mugu, Kalikot, Mustang) for preparedness of outbreaks, epidemics and unwanted health events.
- Identification of outbreak and epidemic prone districts and communities based on the review of previous data.
- Different level of RRT mobilized throughout the country for investigation of outbreaks and response activities.
- Hospital Emergency Preparedness Plans prepared and updated at different hospitals.
- First National Conference for RRT conducted with participants from all districts.

5.7.4 Major outbreaks in 2074/75

AGE/Cholera:

Outbreaks of diarrhoeal diseases occur throughout the country mostly in the monsoon season but most of them with low case morbidity go under reported. In 2074/75, 11 outbreaks of AGE were reported to EDCD from 11 different districts affecting 1029 people in total with 3 mortalities.

Table 5.7.4.1: Status of AGE/Cholera outbreak in 2074/75

S.N.	District	Location	Total Cases	Deaths
1	Bhaktapur	Siphadole	100	0
2	Dang	Shantinagar Rural Municipality ward no. 3&4	450	0
3	Dolakha	Gauri Shankar Rural Municipality ward no. 9	11	1
4	Kapilvastu	Maharajgunj	60	1
5	Kavre	PokhrelTole, Dhulikhel	45	0
6	Lalitpur	Chysal, Lalitpur Metropolitan City	3*	0
7	Makwanpur	BakaiyaRural Municipality	97	0
8	Parsa	Pokhariya	8 (1*)	0
9	Ramechhap	GokulgangaRural Municipality ward no. 3	37	0
10	Saptari	Tilathi Koiladi-3	193 (3*)	0
11	Sarlahi	Narayankhola	25	1

**Confirmed Cholera* *Source: EDCD/DoHS*

Influenza Like Illness (ILI):

ILI cases are commonly seen in winters and during change of seasons. Persons at increased risk for severe disease includes pregnant women, children under 5 years, elderly people, immune-compromised people and people with chronic underlying medical conditions.

A total of 12 outbreaks of ILI have been reported in FY 2074/75 with more than 4000 cases throughout the country including 10 deaths. Circulating strains of Influenza have been found to be Influenza A H1N1 (pdm 09), Influenza A H3 and Influenza B.

Table 5.7.4.2: Status of ILI outbreak in 2074/75

S.N.	District	Location	Total Cases	Deaths
1	Bajhang	Talkot Rural Municipality -4 & 5 (Panalta&Lokarna)	240	0
2	Bhaktapur	Suryabinayak	200	1
3	Gorkha	Chumanubri Rural Municipality -7, Yarcho	5	3
4	Jajarkot	JuniChande Municipality &Chedagadh Municipality	1845	2
5	Kalikot	Khadachakra -4, Badarigaun, Hirachour	96	1
6	Kavre	Panauti	5	1
7	Lalitpur		7	0
8	Rasuwa	Langbu, Naukunda Rural Municipality	257	0
9	Rasuwa	Thuman, Gosainkunda Rural Municipality	139	0
10	Sindhuli	Kamalamai Municipality	156	0
11	Solukhumbu	Mahakulung Rural Municipality-7; Pelwag	504	1
12	Syangja	Waling Municipality	758	1

Source: EDCD/DoHS

Leptospirosis: In the month of Shrawan, 30 cases with complaints offever, muscle aches, headache, vomiting, jaundice, abdominal pain and diarrhea were reported from Foklandtaapu, Sundar Haraicha Municipality of Morang district. Two of those with similar symptoms expired. Laboratory investigation showed positive for Leptospirosis.

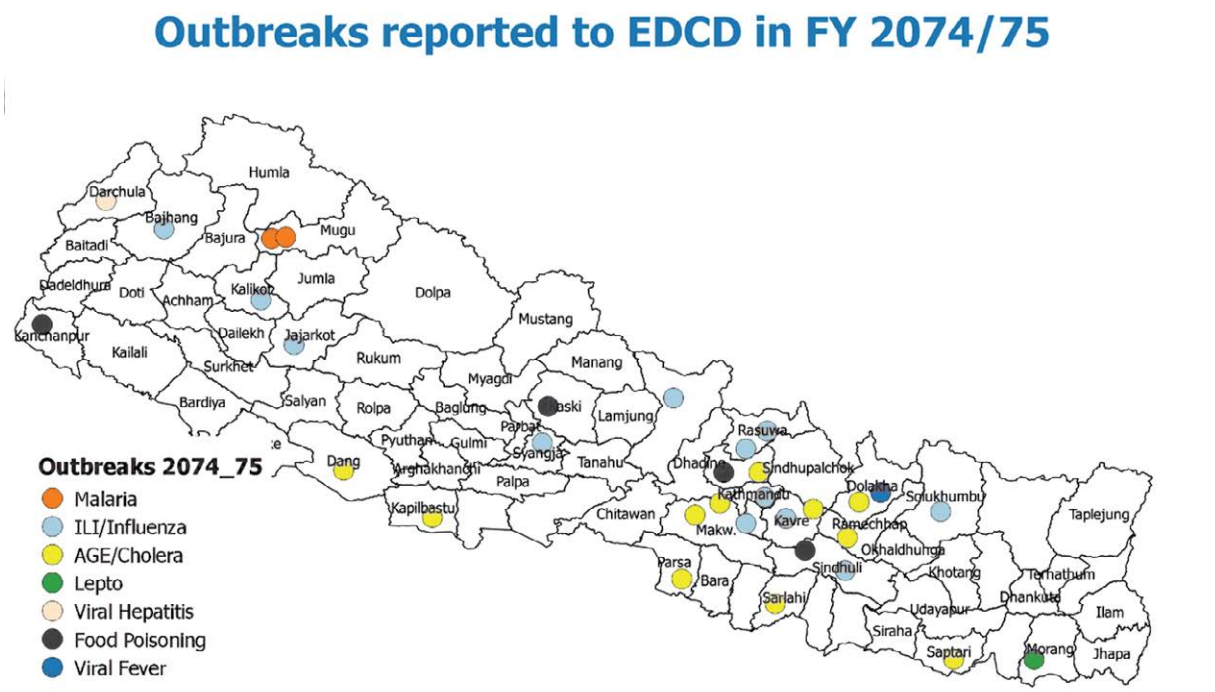
Acute Viral Hepatitis: 23 cases of acute viral hepatitis were reported from ward no. 3 of Malikaarjun rural municipality and the ward no. 6 of Saileshikhar Municipality, Darchula. No deaths occurred.

Malaria: Malaria is endemic in many parts of the country mostly in the Terai regions**.**However, since few years it has been being reported from non-endemic areas in significant numbers. A total of 80 cases of malaria were found in Khatyad, Mugu in a period of 35 days (Aswin 25-Kartik 30).Again, another outbreak occured in the month of Ashar 2075 with197 cases of malaria in a period of four months.

Food Poisoning: Four events of food poisoning were reported to EDCD in FY 2074/75. Total people affected in the event were 16 in Bedkot Municipality-10 of Kanchanpur,15 in Pokhara Lekhnath Metropolitan city ward 16 in Pokhara Metropolitan City of Kaski, 49 in Piple, Nuwakot and 12 in Sitalpati, Sindhuli. However, no deaths occurred during those events.

Viral Fever: In the month of Ashwin 957 cases of viral fever were reported from 7 rural municipalities of Dolakha District. No deaths occurred.

Figure 5.7.1: Outbreaks reported to EDCD in FY 2074/75



Source: EDCD/DoHS

Issues actions taken & recommendations- Epidemiology and outbreak management

Issues	Actions taken	Recommendations
Outbreaks of food and water borne disease	Coordination with the Department of Water Supply and Sanitation for effective interventions Coordination with the Department of Food Technology and Quality Control (DFTQC) for food borne disease surveillance	Improve water supplies, hygiene and sanitation. Food-borne disease surveillance should be initiated (active)
Field epidemiologists to perform thorough outbreak investigation	Outbreak investigations being conducted with available health workers and support from external partners	Organization and management survey to identify gaps in technical human resources at EDCD Train and retain adequate field epidemiologists
Investigation of outbreaks	Mobilization of a comprehensive team for outbreak investigation Collaborating with WHO and other sectors/agencies	Capacity building Guideline toinvestigate outbreak in a more scientific way Deploying trained field epidemiologists to investigate outbreaks
The threat of emerging and re-emerging diseases	Risk Assessments done for Zika and Ebola at central level	Orientation programme at district level Enhance the capacity of response teams through regular capacity development and logistic arrangements
Strengthening of IHR core capacities	Established health desk at TIA and 8 ground crossings	Guideline for the function of POEs and role of health workers Permanent structural arrangement at designated POE sites
RRT structure and functioning in federalism	Interim guideline sent to provincial and local levels	Update& Revise RRT guideline according to federal structure

5.8 Surveillance and Research

Background

Disease surveillance and research section was established in August 2013 and also reformed in 2018 according to Federal structure in Department of Health services. This section has two main activities, Early Warning and Reporting System (EWARS) and Water quality surveillance.

Major responsibilities of the section are:

- Assist Ministry of Health and Population for the preparation of disease surveillance and research related national acts, regulations and strategies
- Preparation of standards, protocols and guidelines related to disease surveillance and research activities
- Coordinate and assist provinces and local levels on disease surveillance and research activities
- Preparation of Federal level annual work plan for disease surveillance and research activities
- Coordinate with Federal level stakeholders for disease surveillance and research activities
- Information management for disease surveillance
- Establishment and expansion of EWARS at local and provincial level hospitals in coordination with respective level of governments
- Manage monitoring, evaluation, surveillance and research activities for disease control as well as emergency management at national level
- Conduct disease surveillance, supervision, monitoring and evaluation and provide feedback to concerned authorities in coordination with Provincial government.

5.8.1 Early Warning and Reporting System (EWARS)

It is a hospital-based sentinel surveillance system and was established in 1997 in 8 sentinel sites and now scales up in 82 hospitals throughout the country. EWARS is designed to complement the country's Health Management Information System (HMIS) by providing timely reporting for the early detection of six selected vector-borne and infectious diseases with outbreak potential.

The hospital based reporting provides timely signal or alert and early detection of possible outbreak due to increased number of cases in the community leading to continuous transmission of the disease for timely response. This dynamic is lacking with HMIS being a monthly reporting system. However, EWARS is an immediate and weekly-reporting system including line listing of notifiable diseases.

The EWARS mainly focuses on the weekly reporting of number of cases and deaths (including "zero" report) of six priority diseases: three vector-borne diseases Malaria, Kala-azar and Dengue and three outbreak potential diseases Acute Gastroenteritis (AGE), Cholera and Severe Acute Respiratory Infection (SARI). It equally focuses on immediate reporting (to be reported within 24 hours of diagnosis) of one confirmed case of Cholera, and severe and complicated Malaria and one suspected/clinical case of Dengue as well as five or more cases of AGE and SARI from the same geographical locality in a one week period. Other communicable diseases should also be reported to the EWARS, whenever the numbers of cases exceed the expected level.

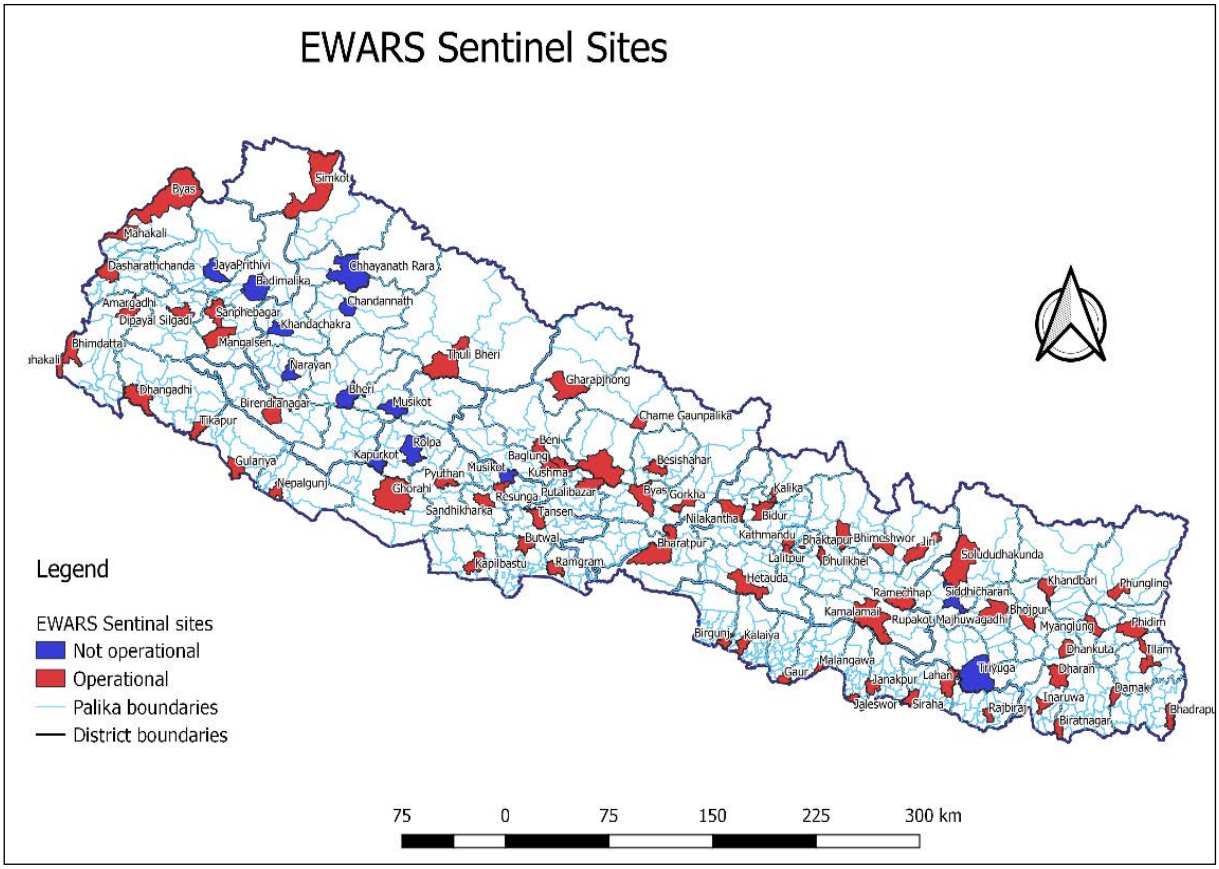
Main Objectives:

- To develop a comprehensive and computerized database of infectious diseases of public health importance
- To monitor and describe trends of infectious diseases through a sentinel surveillance network of hospitals followed by public health action and research
- To receive early warning signals of diseases under surveillance and to detect outbreaks
- To initiate a concerted approach to outbreak preparedness, investigation and response through different levels of RRT
- To disseminate data/information on infectious diseases through an appropriate feedback system.

The four basic elements of surveillance that were the cornerstones of EWARS development:

- Mechanism for hospital inpatient-ward-based case detection,
- Laboratories for identifying and characterizing microbes,
- Intact information systems and
- Immediate response (information feedback and mobilization of investigative and control efforts)

Figure 5.8.1: Location of Sentinel site



Source: EDCD/DoHS

Information flow mechanism and control room responsibilities:

- Sentinel sites report immediately for events and weekly report for indicator based to EDCD and VBDRTC
- If necessary, EDCD confirm the cases from NPHL/reference laboratory test
- EDCD initiate for control and prevention of disease with coordination of RRTs at different levels
- District RRT and community RRT mobilization for control and prevention of disease
- If any error found in reporting system from Sentinel sites, EDCD provides the feedback to concern sentinel sites

A control room is functioning regularly under Disease Surveillance and Research Section of EDCD. Main activities of control room are:

- Maintenance of quality, accuracy, timeliness and completeness of data received from EWARS sentinel sites.
- Analysis of data from EWARS sites, monitoring of disease trends and notifying concerned authorities when outbreaks are suspected or predicted.
- Publication of EWARS bulletin every week on Sunday and sharing of electronic report to all key personnel of MOHP, DoHS, Province health directorate, sentinel sites and stakeholders

5.8.2 Water quality monitoring and surveillance

Background

The National Drinking Water Quality Standards, 2062 published by Government of Nepal under the provision of Water Resources Act, 2049 had set the target to achieve the universal access of safe drinking water. The standards had defined the responsibilities of different stakeholders to achieve the target.

As stated in the standards, Ministry of Health and Population and its line agencies are responsible to conduct water quality surveillance. MoHP has introduced the Water Quality Surveillance Guideline – 2070. According to the guideline, Water Quality Surveillance committee led by the director of EDCD has been formed; where the chief of Disease Surveillance and Research section is working as member secretary. The guideline stated that the EDCD is responsible to conduct the water quality surveillance through EDCD, Ministry of Social development at all provincial level and all local level governments. From 2073/74, EDCD started the surveillance of WSPs in different districts. Based on the need, prepare a surveillance team at district level and conduct the regular surveillance with in district level.

Drinking-water surveillance refers to the continuous and vigilant public health assessment and review of the safety and acceptability of drinking-water supplies. This surveillance contributes to the protection of public health by promoting improvement of the quality, accessibility, coverage, affordability and continuity of water supplies and is complementary to the quality control function of the drinking-water supplier.

Main objectives of Water quality surveillance:

- To explore water quality surveillance methodology and process
- To implement water quality surveillance activities
- To clarify the roles and responsibilities of water quality surveillance to MoHP and other stakeholders
- To describe about methodology and steps of water quality surveillance and water safety plans
- To provide regular feedback to stakeholders about water quality surveillance and water safety plan

EDCD is a secretariat of Water Quality Surveillance Committee. The roles and responsibilitiesof committee are:

- Regular monitoring of drinking water quality from various sources and distribution sites
- Regular surveillance of water borne diseases and coordinate with different stakeholders for quality surveillance.
- Increase capacity of human resources through training, meetings, and other programmes for the surveillance of water quality of the district
- Facilitate testing of water quality of the water distributed in the particular area if any waterborne diseases epidemic occurs in the water distributed in the particular area
- Keep record of drinking water distribution system of country on the basis of Geographical Information System (GIS) and provide feedbacks to the responsible organization**.**

Issues and Recommendation

SN	Issues	Recommendation
1	• Inadequate resources for sentinel site operation	• Vacant post of medical recorder should be fulfilled, • Allocation of budget for data verification and strengthening of infrastructures of sentinel sites
2	• Limited prompt response for disease control and prevention after reporting	• Disease investigation guideline should be prepared and case base investigation should start
3	• Limited feedback to sentinels sites	• Daily feedback system should be developed after reporting, if there was any error identified
4	• No retrospectives data analysis	• Program should engage in retrospective data analysis and publish/disseminate its major findings

NURSING AND SOCIAL SECURITY

Background

The Nursing and Social Security Division was established in 2075 B.S and is responsible for delivery of quality health services through capacity development of nursing and it's professionalism, including planning, coordination, supervision, monitoring and facilitation for various aspect of nursing, midwifery, school health and community nursing services and the evaluation of geriatric and gender based violence programme along with treatment and management facilities for selected diseases to impoverished Nepalese citizens at listed hospitals. The division is also responsible for development and revision of FCHVs and other health related social mobilizer's policy, strategy, standard, protocol and guideline.

Organizational arrangements

The Nursing and Social Security Division has three sections, (Box 6.2.1). The specific functions of sections and units are given below:

Box 6 : Sections under the Nursing and Social Security Division

- Nursing Capacity Development Section
- Geriatric and Gender Based Violence Section
- Social Health Security Section

Nursing Capacity Development Section:-

- Co-ordinate, collaborate and facilitate the concerned agencies for the development and implementation of policy, strategy, standard, protocol and guideline to maintain quality in nursing service.;
- Co-ordinate and facilitate the concerned agencies for the development of law, standard, protocol and guideline to produce, deploy and mobilize qualified and competent human resources in nursing profession.
- Develop capacity of nurses working in field of alternative medicine by developing Standard of practice for quality in nursing service;
- Coordinate and collaborate to develop policy, regulation, and guideline regarding Specialization in nursing care;
- Assist and help the concerned agencies in developing national health related policies, strategies, standards, protocols and guidelines etc. ;
- Conduct research related activities to develop quality in nursing education and nursing services including specialized nursing educations and care services;
- Co-ordinate and facilitate in the various study, research aimed for the enhancement of quality of community and midwifery educations and care services;

- Co-ordinate, communicate, collaborate and facilitate the concerned agencies for the development and promotion of new field /scope of nursing services like school health nurse.
- Co-ordinate and facilitate the concerned agencies for the development and promotion of community nursing care services;
- Co-ordinate and facilitate the concerned agencies for the development and promotion of midwifery education and it's care services;
- Collaborate and coordinate with the concerned agencies in developing nursing and midwifery human resource planning, capacity building, development, management;
- Develop the protocol of public health nursing and midwifery nursing care services.

Geriatric and Gender Based Violence Section :-

- Co-ordinate, collaborate and facilitate the concerned agencies for the development of policy, strategy, standard, protocol and guideline etc. of home based nursing care;
- Co-ordinate and facilitate the concerned agencies for the development and promotion of nursing care services in the field of geriatrics and other new field of heath care services;
- Co-ordinate and facilitate for delivery of quality health services to people affected from gender based violence;
- Develop the standard, protocol and guidelines for the treatment and management of gender based violence;
- Monitor and facilitate while needed of established OCMCs;
- Coordinate with all concerned agencies, stakeholder's organizations that work in the field of geriatrics and gender based violence;
- Develop the protocol, IEC materials for the delivery of quality health services with emphasis on geriatric friendly services from all type of health institutions, like public, private, profit, non-profit etc. ;and
- Provide technical support in promoting capacity of health care workers in geriatric health care and management of gender based violence.

Social Health Security Section:-

- Develop the policy, strategy, standard, protocol and guideline etc. regarding easy access and provision of hospital based services to the target population;
- Overall management of "Bipanna Nagrik Aaushadi Programme", treatment of serious health conditions of citizens, Social Security Unit (SSU} and One-Stop Crisis Management Centre (OCMC); and
- Develop and revise and update the policy, standard for FCHVs and other health related social mobilizers.

6.1 Geriatric and Gender Based Violence

6.1.1 Background:

Geriatric Ward Establishment Programmee

The MoHP has established geriatric ward in eight referral hospitals[1] providing geriatric services and is in the process of establishing four [2]more in different hospitals across the country. Other hospitals apart from the hospitals like BPKIHS, Patan, Bharatpur and Seti have not been able to drive the geriatric services as MoHP envisioned. Even the ones stated above provide services within their limited capacity and resources.

- Geriatric unit (limited bed capacity, limited space availability to adjust supportive geriatric equipment including no separate geriatric male and female ward as per the standard has been a big challenge) in hospitals providing geriatric services is insufficient to occupy all geriatric patients. High flow of senior citizens at hospitals and a huge demand for geriatric services requires an expansion of geriatric services to other wards/department in hospitals including mandatory geriatric services in private and teaching hospitals.
- Interdisciplinary approach has been a major challenge (difficult to manage surgical, medical, gynecology, orthopedic, ENT, ophthalmic and psychiatric patients under the same unit).
- Lack of specialized health care providers for the care of geriatric population. The country has only few consultant doctor for geriatric medicine. A key recommendation made by hospitals providing geriatric services was scarcity of trained human resources for geriatric services as a major challenge. Development of human resources: geriatric medicine/nursing by MCs; training by NHTC and specialised training by university is a must.
- Services required by geriatric patient are wide-ranging (ICU/CCU, CT scan, MRI ,CTVS, device, implants, neuro surgery) but these services are not included under geriatric services, which creates difficulty in providing holistic care (management of preventive, promotive and palliative services- example: elderly immunization).
- High demand of geriatric services in hospitals (BPKIHS, Patan and Bharatpur). However, due to scanty resources they receive from MoHP compared to the patients flow, only limited services can be provided to the patients. Revision of age criteria for geriatric services should be considered.

Gender Based Violence Programmee

Background:

Nepal has ratified various international conventions and introduced national laws and policies in response to gender based violence (GBV) issue. Since 2011, the Ministry of Health and Population (MoHP) has established forty-four one-stop crisis management centres (OCMCs) in forty-four districts. These have been set up in response to Clause 3 of the 'National Action Plan 2010 against Gender Based

1 Patan hospital, Patan Academy of Health and Science, Aayurveda Teaching hospital (Kirtipur), Bharatpur hospital, Western Regional hospital, Pokhara Academy of Health and Science, Bheri hospital (Nepalgunj), Seti hospital (Dhangadhi), BP Koirala Institute of Health and Science, Lumbini hospital (Butwal).

2 Bir hospital, Koshi hospital (Biratnagar), Rapti hospital (Ghorahi, Dang) and Narayani hospital (Birgunj)

Violence' (OPMCM 2010), which calls for the provision of integrated services to survivors of GBV by establishing hospital-based OCMCs. OCMCs are mandated to provide six services toGBV survivors (Box 6.1.1). They should also inform and educate survivors about the services available from the centres and other service providers.

Box 6.1.1: Services OCMCs are mandated to provide

The 'Hospital-based OCMC Operational Manual' (MoHP 2011) says that OCMCs shall provide the following six kinds of services through multi-faceted coordination with other agencies:

- Health services – Immediate treatment of physical and mental health needs of GBV survivors with OCMCs having to stock the equipment and the free health service medicines to provide these services.
- Psycho-social counsellingto survivors and perpetrators.
- Legal advice, counselling and support to survivors through district attorneys and legal counsellors.
- Safe homes — by directing survivors to safe shelter homes.
- Security – by working with the police and district administration offices to provide security to survivors in hospitals, safe houses, and in their communities.

Rehabilitation – by providing further counselling, education, vocational skills training and other livelihood support.

OCMCs are designed to follow a multi-sectoral and locally coordinated approach to provide GBV survivors with a comprehensive range of services including health care, psycho-social counselling, access to safe homes, legal protection, personal security and rehabilitation support through education, vocational skills training and other livelihood support.

In Nepal, many women and children experience gender-based violence (GBV) that results in physical, sexual and psychological damage. A 2012 study on GBV in rural Nepal by the Office of the Prime Minister and the Council of Ministers (OPMCM) found many women survivors had experienced physical, psychological, sexual and reproductive health problems, with 1 in 25 of the study sample having attempted suicide. The problem is exacerbated by survivors being reluctant to report incidents to the authorities for fear of stigmatisation and the lack of support services.

Evidence of the prevalence and nature of violence against women and help-seeking behaviors are less well-developed than for other health variables. Violence against women is overwhelmingly committed by husbands and former husbands. The Nepal Demographic and Health Survey (2016) found 26% of ever-married women reported experiencing spousal violence of an emotional, physical or sexual nature. Physical and sexual violence against women is higher for women who are divorced, separated or widowed (45.7% and 20.3%) than currently married women (25% and 7.8%). Women with more education are less likely to experience spousal violence as are women from more affluent households. Violence against women is also higher in the *Terai* than Hills or Mountain. Violence against women carries personal, family and public health implications and costs for the country, contravenes human rights and underpins the priority it receives in the Constitution.

6.1.2 Major achievements in FY 2074/75

Up to FY 2074/75, the 44 OCMCs have provided support and services to more than 13,000 victims of domestic/sexual and physical violence. Some OCMCs have performed well whereas some need more coaching and backstopping. The hospitals reported that OCMCs have provided essential services required by GBV survivors with 13,400 individuals (12,280 (92.0%) women and 1,120 (8.0%) men) accessing services until July 2018 since establishment. A high percentage of women receiving services (54.0%) were victims of physical assault or domestic violence, while 32.0% had experienced sexual violence,13.0% had suffered extreme emotional/mental abuse and 1.0% 'other types of violence[3]' (Table 6.1.1). District data showed that the main services provided by OCMCs were medical treatment, ranging from basic medical check-ups to psycho-social counselling and medico-legal services and linking survivors for other support services (safe home, legal support, security, rehabilitation and referral for advance health care) required by them.

Table 6.1.1: Total reported GBV survivors at OCMCs (2068/69-2074/75)

SN	Name of district	Sex wise		Total	Rape/ attempt to rape	Physical Abuse/ domestic violence	Mental Torture	Others
		Female	Male					
1	Kathmandu, Paropkar Maternity Hospital	1182	0	1182	1132	45	5	0
2	Acham, Mangalsen hospital	44	3	47	19	22	6	0
3	Baglung, Dhaulagiri Regional Hospital	453	52	505	117	205	181	2
4	Baitadi, BaitadiDistrict Hospital	12	2	14	9	3	1	1
5	Bank, Bheri Hospital	120	11	131	113	17	0	1
6	Bhaktapur, Bhaktapur Hospital	2	0	2	0	2	0	0
7	Chitwan, Bharatpur Hospital	270	31	301	234	65	1	1
8	Dang, Rapti Academy of health sciences	1753	227	1980	464	650	862	4
9	Kavre, Dhulikhel Hospital-KU	260	26	286	61	217	8	0
10	Doti, Doti District Hospital	192	22	214	43	162	8	1

3 Social/psychological, trafficking, witchcraft, child marriage, poisoning, attempted suicide.

SN	Name of district	Sex wise		Total	Rape/ attempt to rape	Physical Abuse/ domestic violence	Mental Torture	Others
		Female	Male					
11	Gorkha, GorkhaDistrict hospital	11	1	12	12	0	0	0
12	Makawanpur, Hetauda Hospital	1167	62	1229	331	804	94	0
13	Kapilbastu Hospital, Taulihawa	29	1	30	21	8	0	1
14	Morang, KoshiZonal Hospital	92	0	92	64	27	0	1
15	Palpa, Palpa District Hospital	5	1	6	4	2	0	0
16	Saptari, Gajendra Narayan Singh Sagarmathal Hospital	752	92	844	75	727	18	24
17	Okhaldhunga, Rumjatar Hospital	186	47	233	32	101	100	0
18	Panchthar, Panchthar District Hospital	468	39	507	132	334	41	0
19	Kaski, Pokhara Health Science Academy	82	5	87	52	31	0	4
20	Pyuthan, Pyuthan District Hospital	195	4	199	91	66	35	7
21	Arghakhachi, Ar-ghakhachiHospital	22	8	30	9	21	0	0
22	Sarlahi, Sarlahi Hospital	328	57	385	9	376	0	0
23	Sindhuli, Sinduhli Hospital	155	25	180	31	65	49	35
24	Sindhupalchowk, Chautara Hospital	37	14	51	13	38	0	0
25	Solukhumbhu, SoluHospial	144	44	188	27	144	17	0
26	Sunsari, Inaruwa District Hospital	887	23	910	307	576	21	6
27	Surkhet, Madhyapaschim Hospital	142	11	153	66	78	5	4
28	Nuwakot, TrisuliDistrict Hospital	15	0	15	8	7	0	0

SN	Name of district	Sex wise		Total	Rape/ attempt to rape	Physical Abuse/ domestic violence	Mental Torture	Others
		Female	Male					
29	Udayapur, UdayapurDistrict Hospital	224	30	254	27	89	131	7
30	Jumla, Karnali Academy of Health Sciences	33	0	33	1	32	0	0
31	District hospital Martadi	47	17	64	23	30	7	4
32	BardiyaDIstrict Hospital	351	33	384	192	183	2	7
33	Tanahu, Damauli Hospital	275	12	287	109	152	25	1
34	Gulmi Hospital	4	0	4	1	2	1	0
35	Kanchanpur, Mahakali zonal Hospital	664	38	702	81	549	71	1
36	Nawalparasi, Prithivi Chandra Hospital	1084	97	1181	68	1084	29	0
37	Rukum, Western Rukum Hospital	45	15	60	60	0	0	0
38	Dhading, Dhading District Hospital	46	1	47	38	7	0	2
39	Dolakha, Charikot Hospital	320	24	344	103	216	17	8
40	Ramechap, Primary Health Care Center, Manthali	83	9	92	25	63	3	1
41	Rupandehi, Lumbini zonal Hospital	51	33	84	74	8	2	0
42	Rautahat, Gaur hospital	13	3	16	12	2	2	0
43	Bara, Kalaiya Hospital	10	0	10	5	5	0	0
44	Dhankuta, DhankutaDistrict Hospital	25	0	25	12	8	5	0
	Grand total (percentage)	12280	1120	13400	4307	7223	1747	123
		(92)	(8)	(100)	(32)	(54)	(13)	(1)

Source: Population Management Division, GESI Section, MoHP

- The highest number of cases of physical assault/domestic violence were reported in Nawalparasi district, with 1,084 of 1,181 cases (92%). Other districts totalled 804 cases in Makawanpur (65%), 727 cases in Saptari (86%), 650 cases in Dang (33%), 576 cases in Sunsari (63%) and 549 cases in Kanchanpur (78%).
- Sexual violence accounted for 32.0% of all reported GBV cases. In Kathmandu (Maternity hospital) 1,132 of a total of 4,307 cases related to sexual violence, mostly rape. Rape cases in other districts were also high, notably in Dang (464 cases), Makawanpur (331 cases), Sunsari (307 cases),Chitwan(234 cases) and Bardia (192 cases).
- Extreme mental abuse, or 'emotional/mental torture' was reported by 1747(13%) of all women including in Dang (862), Baglung(181) and Udayapur (131).
- The breakdown of referrals to OCMCs shows that self-referrals were the most common closely followed by the Police. Referrals from local agencies/safe homes and NGO made up the balance. Service providers at OCMC and hospital further reported that women are becoming more vocal and assertive in seeking GBV services and that local inter-agency collaboration has improved, even if further improvements are needed in this area.
- District data showed that the main services provided by OCMCs were medical treatment, ranging from basic medical check-ups to psycho-social counselling and medico-legal services and linking survivors for other support services (safe home, legal support, security, rehabilitation and referral for advance health care) required by them.
- Overall, the effectiveness of the clinical and other support services available at OCMCs are seen to be encouraging. This is despite OCMC's relative newness, limited awareness and capacity building of hospital staff and other stakeholders.
- A key recommendation proposed from hospitals to improve staff retention and service continuity was the issuing of multi-year contracts to locally recruited staff including the fulfillment of adequate human resources at hospitals from MoHP. Also, timely and regular capacity building of medial officers and staff nurses/OCMC focal on clinical medico-legal training and GBV, psychosocial counseling should be a regular event.

6.1.3 Enabling Factors

- The performance of the 44 OCMCs has been varied. Experiences show that the following good practices enable the successful operation of OCMCs:
- Coordination — Good coordination between and with hospital centers leading to the effective referral of GBV cases to OCMCs, and between concerned personnel and agencies (hospital departments, counsellors, safe homes, police offices, legal aid committees, public lawyers, NGOs and rehabilitation centres).
- Quality of care — The orientation and training of stakeholders and staff; the provision of 24 hour a day services; the maintenance of client confidentiality and security; and police, safe homes, rehabilitation centres and attorneys seriously treating cases referred to them by OCMCs.
- Awareness raising — The running of sensitisation campaigns against GBV in local communities through the dissemination of information about OCMC services and GBV issues through FM radio, brochures and other media.
- Follow-up — The regular monitoring and follow-up of survivors.

6.1.4 Issues and Constraints

- While data are very limited on sexual and gender based violence in Nepal, estimate suggests that it is a major health, human rights and development issue. To increase access to care and support GoN of Nepal has invested in improving the quality and quantity of services offered in public institutions. OCMC is one such endeavour made by government of Nepal, to cater the needs of GBV survivors and poor.
- The Operational manual of OCMC says that OCMC shall have one medical officer and three staff nurses working in the hospital including one trained psychosocial counsellor, however, all OCMCs are understaffed. Shortage of doctors and nurses in the hospital is another problem.
- The newly established OCMCs have limited horizontal coordination and collaboration between GBV district coordination committee (DCC) members. There is a clear need for more effective coordination and collaboration including regular information sharing if OCMC ownership across sectors is to be achieved at both district and central levels.
- Hospital directors shared regarding the shortfall of staff (medical officers and paramedics) in their hospitals. They flagged-out that prevalent human resources gap (fulfillment of vacant posts) at hospitals has been one of the major bottlenecks in smooth delivery of services from the hospitals including OCMCs.
- Medical Officers and OCMC staff stressed the need for effective capacity enhancement of service providers and other stakeholders including clinical medico-legal training and GBV and psychosocial counselling training. High staff turnover in hospitals coupled with inadequate handover arrangements are also believed to have had a negative impact including accessing services (especially forensic and counselling) by GBV survivors from OCMC.
- A number of OCMCs suffer from inadequate space (lacks dedicated rooms as specified by the OCMC operational guidelines) making it difficult to maintain privacy while providing services.
- Referral and rehabilitation of homeless/helpless patients suffering from mental anguish was one of the biggest challenge shared by almost all the OCMCs.

6.2 Social Security

6.2.1 Background

The Social Security, under Social Health Security Section was established in 2075 B.S and is responsible for free treatment and management facilities for selected diseases to impoverished Nepalese citizens at listed hospitals. The division is also responsible for development and revision of FCHVs and other health related social mobilizer's policy, strategy, standard, protocol and guideline.

Organizational arrangements

The Nursing and Social Security Division has three sections and the specific functions of this sections (Box 6.2.1) are given below:

Box 6.2.1: Social Health Security Section

- Develop the policy, strategy, standard, protocol and guideline etc. regarding easy access and provision of hospital based services to the target population;
- Overall management of "Bipanna Nagrik Aaushadi Programme", treatment of serious health conditions of citizns, SSU and OCMC; and
- Develop and revise and update the policy, standard for FCHVs and other health related social mobilizers.

The goal and objective of this sections (Box 6.2.2) are given below:

Box 6.2.2: Goal and objectives of the Programme

Goal — Managed the provision of free treatment to impoverished citizens.

- Objectives —

  i) notified the different types of hospitals for free medication and treatment

  ii) Develop,revise and update the policy, standard, guideline and protocol for"Bipanna Nagrik Aaushadi Programme".

6.2.2 Major ongoing activities

The Impoverished Citizens Service Unit of **Social Health Security Section** provides the following funding for impoverished Nepalese citizens to treat serious health conditions:

- Up to NPR 100,000 per patient via notified hospitals for free medication and treatment of severe diseases including cancer, heart disease, head and spinal injuries, and Alzheimer's, Parkinson's and sickle cell anaemia diseases;
- Medication costs up to NPR 100,000 for post-renal transplant cases;
- Free dialysis services as per doctors certified; and
- Renal transplantation costs up to NPR 400,000 per patient.

6.2.3 Major achievement in fiscal year 2074/75

The following Table 6.2.1 activities present major conducted on a regular or ad-hoc basis and related achievement made in FY 2074/75.

- Managed the provision of free treatment to impoverished citizens including 12,930 Cancer, followed by 5,144 Kidney free treatment services and 3,136 Heart disease (Table 6.2.1).

Table 6.2.1: Number of impoverished new patients provided with treatment support for serious diseases, 2074/75

SN	Name of Hospitals/ particular	Kidney Dialysis	Kidney Transplant	Kidney Treatment	Heart	Cancer	Head Injury	Spinal Injury	Parkinsons	Alzeimers	Sicklecell Anaemia	Total
1	National academy of health sciences, Bir hospital, Kathmandu	86	13	73	1	2118	4	1	1	0	0	2297
2	Tribhuwan university, teaching hospitalm Maharajgunj	73	7	4	0	0	1	26	0	1	0	112
3	Patan academy of health science, patan hospital	86	0	25	9	162	0	13	6	8	0	309
4	B.P. Koirala institute of health science, Dharan	239	0	7	263	125	2	70	33	9	0	748
5	Maternity Hospital, Thapathali	0	0	0	0	12	0	0	0	0	0	12
6	Sahid Gangalal N. Heart centre, Bansbari	0	0	0	1026	0	0	0	0	0	0	1026
7	Civil service Hospital, Minbhawan	0	0	0	0	329	0	0	0	0	20	349
8	Manmohan Cardio Thoracic , Vascular &TC	0	0	0	574	10	0	0	0	0	0	584
9	B.P. Koirala Memoriyal Cancer Hospital, Bharatpur	0	0	0	0	5546	0	0	0	0	0	5546
10	Human Organ Transplant Centre, Bhaktapur	377	121	0	0	0	0	0	0	0	0	498
11	Western Regional Hospital, Pokhara	70	0	0	0	0	0	0	0	0	0	70
12	Narayani sub regional hospital,Birgunj	30	0	0	0	0	0	0	0	0	0	30
13	Rapti sub regional hospital, Dang	14	0	0	0	0	0	0	0	0	141	155
14	Mechi Zonal Hospital, Bhadrapur, Jhapa	50	0	0	0	0	0	0	0	0	0	50
15	Koshi zonal Hospital, Morang	28	0	0	0	31	0	0	0	0	0	59
16	Janakpur Zonal Hospital, Janakpur	20	0	0	0	0	0	0	0	0	0	20

SN	Name of Hospitals/ particular	Kidney Dialysis	Kidney Transplant	Kidney Treatment	Heart	Cancer	Head Injury	Spinal Injury	Parkinsons	Alzeimers	Sicklecell Anaemia	Total
17	Bheri Zonal Hosppital, Banke	16	0	0	0	0	0	0	0	0	444	462
18	Lumbani Zonal Hospital, Butwal	0	0	0	0	0	0	0	0	0	0	0
19	Seti zonal hospital, kailali	41	0	0	0	0	0	0	0	0	172	213
20	Nepal Medical College Jorpati	152	0	0	0	0	0	0	0	0	0	152
21	Gandaki Medical College, Pokhara	65	0	0	0	0	0	0	0	0	0	65
22	Universal Collegeof Medical Sciences, Bhairahawa	131	0	0	0	0	0	0	0	0	0	131
23	Chitwal Medical College Teaching Hospital, Chitwan	112	0	0	186	17	27	15	0	1	0	358
24	College Of Medical Sciences, Chitwan	111	0	0	14	0	31	12	0	0	0	168
25	Nepalgunj Medical College, Banke	178	0	0	0	0	0	0	0	0	0	178
26	Manipal Medical college, Teaching Hopsital pokhara	66	0	0	0	0	0	0	0	0	0	66
27	Bhaktapur Cancer Hospital, Bhaktapur	0	0	0	0	2038	0	0	0	0	0	2038
28	National Kidnye Centre, Banasthali	836	0	0	0	0	0	0	0	0	0	836
29	Golden Hospital pvt.Ltd, Biratnagar	80	0	0	0	0	50	2	0	0	0	132
30	B&B Hospital, Gwarko	20	0	0	0	5	0	0	0	0	0	25
31	Aarogya health pratisthan, Pulchowk	329	0	0	0	0	0	0	0	0	0	329
32	National dyalysis center, Bashundara	203	0	0	0	0	0	0	0	0	0	203
33	Cancer care nepal, Jawalakhel	0	0	0	0	289	0	0	0	0	0	289
34	Siddharatha City Hospital Pvt, Butwal	69	0	0	0	0	0	0	0	0	0	69
35	Alka Hospital Pvt, Jawalakhel	58	0	0	0	0	0	0	0	0	0	58

SN	Name of Hospitals/ particular	Kidney Dialysis	Kidney Transplant	Kidney Treatment	Heart	Cancer	Head Injury	Spinal Injury	Parkinsons	Alzeimers	Sicklecell Anaemia	Total
36	Gautam Buddha Samudayek Heart Hospital, Butwal, Rupandehi	331	0	0	312	0	0	0	0	0	0	643
37	Charak Memoriyal Hospital Pvt, Kaski pokhara	54	0	0	0	0	0	0	0	0	0	54
38	Himal Hopsital Pvt, Gyaneswar, Ktm	46	0	0	0	0	0	0	0	0	0	46
39	Vayoda Hospital Pvt, Balkhu	29	0	0	8	0	0	0	0	0	0	37
40	Kathmandu Cancer Center, Tathali, Bhaktapur	0	0	0	0	522	0	0	0	0	0	522
41	Venus hospital pvt.ltd, Baneshwor, Kathmandu	42	0	0	0	0	0	0	0	0	0	42
42	National Trama Center, Mahabauddha, Ktm	0	0	0	0	0	93	240	0	0	0	333
43	Nobel Medical College Teaching Hospital,Biratnagar	120		0	670	0	33	33	35	2	0	893
44	Nepal Cancer Hospital & rearch center	0	0	0	0	1533	0	0	0	0	0	1533
45	Grandi International Hospital Pvt, Dhapasi	48	0	0	0	0	0	0	0	0	0	48
46	Nepal Swasthye Bikash & Research Sahakari Ltd, Biratnagar, Morang	8	0	0	0	0	0	0	0	0	0	8
47	Crimson Hospital , Manigram Rupandehi	48	0	0	49	0	49	0	0	0	0	146
48	Greencity Hospital pvt. Ltd, Dhapasi, Kathmandu	54	0	0	0	0	0	0	0	0	0	54
49	OM hospital and Research Center	53	0	0	0	0	0	0	0	0	0	53
50	Neuro Cardio Multispeciality Hospital, Biratnagar	0	0	0	21	0	82	4	0	0	0	107
51	Purna Tung Birta city Hospital, Jhapa	39	0	0	0	0	0	0	0	0	0	39

SN	Name of Hospitals/ particular	Kidney Dialysis	Kidney Transplant	Kidney Treatment	Heart	Cancer	Head Injury	Spinal Injury	Parkinsons	Alzeimers	Sicklecell Anaemia	Total
52	Janaki Health Care and Research Center Pvt.Ltd	42	0	0	0	0	0	0	0	0	0	42
53	Dhulikhel Hospital, Kavre	19	0	0	3	31	0	0	0	0	0	53
54	OM shahi Pathivara Hospital, Jhapa	38	0	0	0	0	0	0	0	0	0	38
55	Kist Medical College, Teaching Hospital, Lalitpur	60	0	0	0	0	0	0	0	0	0	60
56	Aanpurna Neurological Institue and Allied Science, Kathmandu	0	0	0	0	0	0	0	0	0	0	0
57	Lake city and critical care Hospital, pokhara	41	0	0	0	0	0	0	0	0	0	41
58	Spinal Injury Rehabilitation Centre	0	0	0	0	0	1	161	0	0	0	162
59	Baratpur Hospital, Bharatpur	95	0	0	0	0	0	16	0	0	0	111
60	Blue Cross Hospital Pvt. Ltd.	35	0	0	0	0	0	0	0	0	0	35
61	Shree Birendra Hospital, Chauni, Ktm	60	0	0	0	0	0	0	0	0	0	60
62	National City Hospital Pvt.Ltd.	0	0	0	0	34	0	0	0	0	0	34
63	Nepal Police Hospital, Ktm	19	0	0	0	0	0	0	0	0	0	19
64	Ghodagodhi Hospital Pvt. Ltd.	0	0	0	0	0	0	0	0	0	163	163
65	Kanti Children Hospital, Ktm	0	0	6	0	128	0	0	0	0	0	134
66	Sumeru Community Hospital Pvt. Ltd.	0	0	53	0	0	0	0	0	0	0	53
67	Rapti Zonal Hospital, Tulsipur	6	0	0	0	0	0	0	0	0	0	6
68	Dhaulagiri Zonal Hospital, Baglung	6	0	0	0	0	0	0	0	0	0	6
69	Mid west Sub Regional Hospital, Surkhet	2	0	0	0	0	0	0	0	0	0	2
Total		**4835**	**141**	**168**	**3136**	**12930**	**373**	**593**	**75**	**21**	**940**	**23214**

Source: *NSSD, DoHS*

6.2.4 Issues, challenges and recommendations

Table 6.2.2: Issues, challenges and recommendations — Bipanna Nagrik Aaushadi Programme

Issues and challenges	General recommendations
Insufficient budget/ fund for impoverished Nepalese citizens to treat serious health conditions	Provide funds or incorporate this programme with health insurance
The monitoring of private health facilities	Establish a task force that supervise the private health facilities

6.3 FCHV Programme

6.3.1 Background

The government initiated the Female Community Health Volunteer (FCHV) Programme in 2045/46 (1988/1989) in 27 districts and expanded it to all 75 districts thereafter. Initially one FCHV was appointed per ward following which in 2050 (1993/94) a population-based approach was introduced in 28 districts. There are 51,420 FCHVs working in Nepal. The goal and objectives of the programme are listed in Box 6.3.1.

Box 6.3.1: Goal and objectives of the FCHV Programme

Goal — Improve the health of local communities 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.

Objectives — i) Mobilise a pool of motivated volunteers to connect health programmes with communities and to provide community-based health services, ii) activate women to tackle common health problems by imparting relevant knowledge and skills; iii) increase community participation in improving health, iv) develop FCHVs as health motivators and v) increase the use of health care services.

FCHVs are selected by health mothers' groups. FCHVs are provided with 18 days basic training following which they receive medicine kit boxes, manuals, flipcharts, ward registers, IEC materials, and an FCHV bag, signboard and identity card. Family planning devices (pills and condoms only), iron tablets, vitamin A capsules, and ORS are supplied to them through health facilities.

The major role of FCHVs is to advocate healthy behaviour by mothers and community people to promote safe motherhood, child health, and family planning and other community based health issues and service delivery. FCHVs distribute condoms and pills, ORS packets and vitamin A capsules, treat pneumonia cases, refer serious cases to health institution and motivate and educate local people on healthy behaviour. They also distribute iron tablets to pregnant women.

The government is committed to increase the morale and participation of FCHVs for community health. Policies, strategies and guidelines have been developed to strengthen the programme. The FCHV programme strategy was revised in 2067 (2010) to promote a strengthened national programme. In fiscal year 2064/65 MoH established FCHV funds of NPR 50,000 in each VDC mainly to promote income generation activities. FCHVs are recognised for having played a major role in reducing maternal and child mortality and general fertility through community-based health programmes.

6.3.2 Major activities in 2074/75

- Dress allowance for FCHVs increased from NPR 6,000 to NPR 7,500.
- Since 2071/72 the government has allocated budget for farewells to FCHVs over 60 years of age as recommended by health mothers' groups.
- The training, orientation and mobilization of FCHVs for national health programmes.
- Biannual FCHV review meeting held and FCHV Day celebrated on 5th December.

6.3.3 Major achievements in 2074/75

Progress reports, which provide the basis for the following analysis, that in fiscal year 2074/75, the number of mothers participating in health mother's group meetings were increased, despite of that FCHVs distributed fewer pills, condoms and iron tablets in comparison to fiscal year 2073/74. (Table 6.3.1 and Figure 6.3.1).

Table 6.3.1: Trend of services provided by FCHVs

Services	2072/73	2073/74	2074/2075
Pills distribution (no. cycles)	840,762	808,138	697,852
Condom distribution (pieces)	10,068,095	9,983,379	9,006,248
Iron tablet distribution	743,297	717,267	664,162
Health mother's group meetings	488,377	506,909	517,285

Source: HMIS

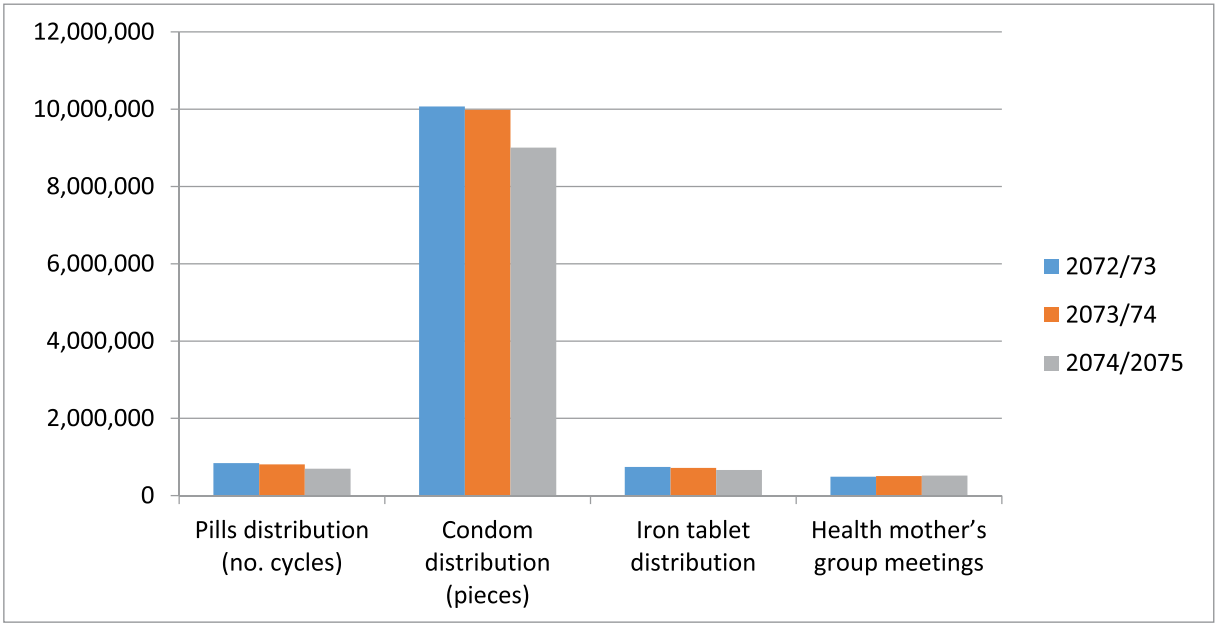


Figure 6.3.1: FCHV contribution on selected health services in FY 2072/73–2074/75

Source: HMIS

Support for home deliveries

FCHVs supported in home deliveries too. In 2074/75 they initiated baby to mother skin-to-skin contact after delivery in 97,550 cases, applied chlorhexidine to the umbilicus after delivery for 93,477 cases and ensured the taking of misoprostol for preventing PPH in 23,320 cases (Table 6.3.2).

Table 6.3.2: Support provided by FCHVs for home deliveries, 2073/74

Region	Initiating skin-to-skin contact after birth	Chlorhexidine applied on umbilicus	Ensured misoprostol tablets taken
Province 1	15608	15498	5680
Province 2	42413	40315	6636
Province 3	8569	6660	2019
GandakiProvince	3677	3816	1112
Province 5	13651	13827	3731
Karnali Province	7918	7714	2908
Sudurpashchim Province	5714	5647	1234
National	97,550	93,477	23,320

Source: HMIS

CB-IMCI service provided by FCHVs at the community level

Fewer CB-IMCI services were provided by FCHVs in communities in 2074/75 (Table 6.3.3). FCHVs treated 126,329 no. of children with infections treated with cotrim. Also, FCHVs assisted the immunization against polio of children below 5 years on National Immunisation Day, the community-based management and treatment of acute respiratory infections and control of diarrheal diseases, community nutrition programmes and other public health activities.

Table 6.3.3: CB-IMCI service provided by FCHVs at the community level

Region	Below 2 Months-Treated with Cortim & referred to HF-≤28 days	Below 2 Months-Treated with Cortim & referred to HF-29-59 days	Months-(2-59) Treated with Cotrim	Months-(2-59) Total Diar-rhoea Cases	Months-(2-59) Treated with ORS & Zinc
Province 1	1266	2943	31761	128468	112690
Province 2	1007	2379	21497	114332	105470
Province 3	314	973	12316	123501	112099
GandakiProv-ince	95	411	5346	51438	50258
Province 5	1005	1785	18092	135890	125726
Karnali Province	672	1827	17277	84353	80814
Sudurpashchim Province	527	1579	20040	133696	127214
National	4886	11897	126,329	771678	714271

Source: HMIS

IMAM services provided by FCHVs at the Household level

IMAM services were provided by FCHVs in 2074/75 (Table 6.3.4). Screening of children through MUAC and categorized their nutritional status as follows, 12,228 are SAM, 94,893 are MAM and 2,771,766 are normal children as well as 462 screened oedema too by FCHVs.

Table 6.3.4: IMAM service provided by FCHVs at the Household level

Region	MUAC-Screening-Green-Normal	MUAC-Screening-Yellow-MAM	MUAC-Screening-Red-SAM	MUAC-Screening-Oedema
Province 1	189185	6706	947	80
Province 2	422164	26626	3807	201
Province 3	1060743	11590	1851	26
Gandaki Province	147568	1679	149	0
Province 5	231524	11755	1569	63
Karnali Province	116629	11330	1464	70
Sudurpashchim Province	603953	25207	2441	22
Nepal	2771766	94893	12228	462

Source: IHIMS, DoHS

Issues and constraints

Table 6.3.4.1: Issues and constraints — FCHVs

Issues and constraints	Recommendations	Responsibility
Low utilization of FCHV Fund	Strictly implement guidelines and audit FCHV fund every year	NSSD, DHOs, HFs, Health Section of local level, rural, urban, sub-metro and metro municipalities
FCHV are not interested in farewell programmes	Re think the farewell package	NSSD, DHOs, Health Section of local level, rural, urban, sub-metro and metro municipalities
Decreasing work performance of FCHV	Motivate FCHV through FCHV Review meeting and orientation for FCHV on related program	NSSD, DPHOs, HFs, Health Section of local level, rural, urban, sub-metro and metro municipalities

CURATIVE SERVICE

Introduction

Curative Service Division (CSD) is one of five divisions under Department of Health Services (DoHS). After the restructuring and institutional reform of Ministry of Health and Population supporting institutionalizing federal system with in ministry, It has developed Terms of Reference (ToR) of different Institution to facilitate the process. In this context since the beginning of fiscal yerar 2074/75 Curative Service Division was established within Department of Health Services. Previously, Curative Service Division was under Ministry, but now in the changed context that dissolved and established as CSD under DoHS. Although the functions and responsibilities are not same as previous CSD of Ministry.

According to the institutional framework of the DoHS and MoHP, the health post (from an institutional perspective) is the first contact point for curative services. Each level above the HP is a referral point in a network from HP to PHCC, on to District, zonal and sub regional, regional hospitals and finally to specialized tertiary hospitals. This referral hierarchy has been designed to ensure that the majority of population will receive minor to specialized treatment in places accessible to them and at a price they can afford. Inversely, the system works as a supporting mechanism for lower levels by providing logistic, financial, supervisory and technical support from the center to the periphery.

The overall purpose of this Division is to look after Curative Health Services activities through its three different sections, namely Hospital Services Monitoring and Strengthening Section, Basic Health and Emergency Management Section and Eye, ENT and oral Health Section .

The major responsibility of CSD is to provide the basic health service free of cost guaranteed by Constitution of Nepal (article 35). CSD regulate and co-ordinate to establish, operate and upgrade of specialized tertiary hospitals. CSD also co-ordinate and provide eye, ENT and oral health services.

Section under Curative Service Division and their key functions

Hospital Service Monitoring and Strengthening Section

- To assist MoHP by law, policy, guidance, quality standard, protocal formulation regarding hospital strengthening,
- To assist MoHP for Development of co-operation between private and public health institution for effective health care service by formulating law, policy, strategy and criteria,
- To facilitate the registration, renewal and regulation of the specialized and tretiary level hospitals,
- To assist MoHP for development of national policy, strategies and guidelines regarding registration upgrade and monitoring of private and non-governmental hospitals, nursing homes, clinics, polyclinics,
- Continuous supervision and monitoring of the hospitals for optimum quality service ,

- Management of radiation used in health care sector as per national and international standard,
- To facilitate for the development and institutionalization of the telemedicine service system,
- To assist MoHP for the development of health tourism by formulating law, policy, strategies, criteria, protocals,
- To co-ordinate for development and management of national level study, research and training center,
- Formulate standard treatment protocal (STP),
- Develop a drug list and revise according to need,
- Studying and monitoring of drugs used in different hospital pharmacy and health facilities,
- Formulation of standard on anti microbial resistance and
- Preparation of training materials of Rational use of drug and conduct training for health workers of various level.

Basic Health and Emergency Management Section

- Define and effective management of Basic Health Services according ti constitutional system and provide it at free of cost,
- Determining the scope and criteria of basic health services,
- Supervision, monitoring and evaluation of the quality of basic health services,
- Evaluation of the effectiveness of basic health services and co-ordinate to all levels of federal structure for continuous improvement by providing feedback,
- Modification and extention of basic health care services based on the emergence of diseases, availability of financial resources and local needs,
- Conduct study and research about basic health service,
- To facilitate for formation of laws, policy, rules, criteria, protocals and guidelines to make emergency health care service effective,
- To facilitate for formation of laws, policy, rules, criteria, protocals and guidelines regarding referral system and
- To assist MoHP for the implementation, monitoring and regulation of emergency service and referral srevice.

Eye, ENT and Oral Health Section

- To facilitate for formulation of national policy, rules, standard, protocals and guidelines related to Eye health,
- To facilitate for formulation of national policy, rules, standard, protocals and guidelines related to ENT services,
- To facilitate for formulation of national policy, rules, standard, protocals and guidelines related to oral health services,
- Evaluation of the effectiveness of Eye, ENT and oral health and co-ordinate to all levels of federal structure for continuous improvement by providing feedback,
- Facilitation and Co-ordonation for integration with eye health, ENT and oral health services to national health service system and
- Study, research related to eye, ENT and oral health services.

Minimum Service Standards for Hospitals

- Minimum Service Standards (MSS) for hospitals is the service readiness and availability of tool for optimal requirement of the hospitals to provide minimum services that are expected from them. This tool entails for preparation of service provision and elements of service utilization that are deterministic towards functionality of hospital to enable working environment for providers and provide resources for quality health service provision. MSS for hospitals reflect the optimally needed minimum criteria for services to be provide but in itself is not an "ideal" list of the maximum standards. This checklist of MSS is different than a program specific quality improvement tool as it will outline the equipment, supplies, furniture, human resource required for carrying out service but not detail out the standards operating procedures of any service.

- The results of Nepal Health Facility Survey 2015 showed that among the health facilities that were assessed only 13 percent of them had all seven basic equipment items- adult weighing scale, child weighing scale, infant weighing scale, thermometer, stethoscope, blood pressure apparatus and a light source for service provision. The availability of all supplies and equipments defined for standard precaution control was as low as 0.2%, all basic laboratory services in 12% and only 3% facilities had client feedback mechanism in place. This was an alarming situation. During that period, minimum service standards was rolled out in 83 district level hospitals and was evident to contribute in quality of services provided by hospitals with instances of improved governance, management, clinical and support services. This encouraged MoHP to put on its efforts on setting the minimum service standards for hospitals secondary and tertiary levels and at the same time contextual revision of MSS for district hospitals to set MSS for primary level hospitals. The revision and development of the tool took into series of steps beginning with formulation of Technical Working Group and selection of subject experts and technical coordinator and consultative workshops and meetings (Figure: Process of MSS revision and development). The key guiding documents are Constitution of Nepal 2072, National Health Policy 2014, Policy on Quality Assurance in Health Care Services, 2064, Public Health Service Act 2075, Nepal Integrated Health Infrastructure Development Standards 2073/74, Nepal Health Sector Strategy 2015-2020 and Guideline on Health Institution Establishment, Operation and Upgrading Standards, 2070 but not limited to them.

- Thus prepared MSS is a comprehensive tool for optimal preparation of the hospitals for the minimum services that are needed to be provided by these health facilities and has potential to bring a positive change. The health sector needs are dynamic and revision of the services and standards in due course is anticipated. The revision of MSS for hospitals is planned to be done every 2-3 years (completion of cycle of MSS in all targeted government hospitals) to incorporate the learning and adapt the documents to the emerging context.

- The MSS tool has been organized in three major sections: Governance and Management, Clinical Service Management and Hospital Support Service Management. It has been prepared in the form of checklist that thrives for the preparedness and utilization that are fundamental to establish services towards quality. For primary hospitals with general services, there are total 645 set of standards with total score of 759, out of which- 105 standards for measuring governance and management and has weightage of 20%, 416 standards for measuring clinical service management and has weightage of 60%, and 124 standards for measuring support service management and has weightage of 20%. Governance and management section includes the minimum standards for six subsections, clinical Service management has thirteen sub sections and hospital support service management has eleven subsections.

- After assessment of all the sections of the standards, for overall scoring, each section is then weighed. The section of the governance and management (Section I) is weighed in 20%, that of clinical service management (Section II) is weighed in 60% and that of hospital support service management (Section III) is weighed in 20%. The sum of these weighed percentage of the subsections give the overall MSS score of the hospitals and based on it color code will be provided. This MSS Score for hospitals measure the existing situation and enables to identify the gap areas that are to be addressed through the development of the actions plan that demands both technical and financial inputs and managerial commitments. The overall process is guided by its implementation guideline that describes on sequences of self assessment and follow up workshops and gap identification for action plan development and striving for optimal MSS Score.
- Ministry of Health and Population strives to implement MSS in hospitals for establishing enabling environment at service delivery point through preparedness and availability for quality service provision to the users. Not being an exhaustive list of facilities and services, hospitals are encouraged to strive for betterment and go beyond the defined set of minimum standards whenever their resources support.
- Minimum Service Standards (MSS) for hospitals was previously lead by Curative Service Division, Ministry of Health and Population. Now in changing context, as per ToR of Division the programme wil run by Curative Service Division, DoHS. Following is the progress data regarding Minimum Service Standards (MSS) score of 84 district level hospitals of F/Y 2074/75.

MSS Score of Hospitals fiscal year 2074/75 by province

SN	Cluster	Hospital	a. Workshop 1	b. Workshop 2	c. Workshop 3	d. Follow up 1	e. Follow up 2	f. Follow up 3	g. Follow up 4	h. Follow up 5
1	C1	Gaur Hospital (Rautahat)	27%	34%	47%	46%	51%	45%	44%	0%
2		Jaleshwor District Hospital (Mahottari)	28%	42%	45%	35%	62%	39%	47%	68%
3		Kalaiya Hospital (Bara)	27%	53%	63%	65%	67%	77%	62%	64%
4		Malangwa Hospital (Sarlahi)	29%	27%	43%	26%	32%	30%	51%	0%
5	C2	Jiri Hospital (Dolkha)	75%	86%	90%	79%	88%	81%	0%	0%
6		Ramechhap District Hospital	54%	69%	73%	66%	77%	71%	0%	0%
7		Sindhuli District Hospital	62%	81%	85%	80%	82%	96%	0%	0%
8	C3	Bardibas Hospital, Mahottari	34%	59%	71%	52%	47%	45%	0%	0%
9		Chandranigapur Hospital (Rautahat)	31%	61%	77%	41%	67%	0%	0%	0%
10		Pokhariya Hospital (Parsa)	47%	40%	62%	62%	48%	55%	0%	0%
11	C4	Dhading Hospital	69%	87%	93%	89%	0%	0%	0%	0%
12		Rasuwa District Hospital	37%	54%	70%	68%	0%	0%	0%	0%
13		Trishuli Hospital (Nuwakot)	72%	77%	79%	68%	0%	0%	0%	0%
14	C5	Bagauda Hospital (Chitwan)	41%	57%	65%	50%	0%	0%	0%	0%

SN	Cluster	Hospital	a. Workshop 1	b. Workshop 2	c. Workshop 3	d. Follow up 1	e. Follow up 2	f. Follow up 3	g. Follow up 4	h. Follow up 5
15		Bakulahar Ratnanagar Hospital (Chitwan)	52%	55%	71%	76%	0%	0%	0%	0%
16		Hetauda Hospital	49%	70%	72%	67%	0%	0%	0%	0%
17	C6	Chautara Hospital (Sindhupalchowk)	45%	76%	82%	66%	0%	0%	0%	0%
18		Methinkot Hospital	61%	63%	73%	61%	0%	0%	0%	0%
19	E1	Ilam District Hospital	60%	72%	75%	55%	59%	61%	73%	72%
20		Panchthar District Hospital	47%	62%	72%	57%	59%	60%	68%	79%
21		Taplejung District Hospital	36%	53%	69%	51%	75%	75%	75%	72%
22	E2	Bhojpur District Hospital	48%	55%	84%	60%	63%	66%	0%	0%
23		Sankhuwasabha District Hospital	52%	65%	78%	68%	70%	81%	0%	0%
24		Terhathum District Hospital	42%	61%	61%	77%	72%	74%	0%	0%
25	E3	Gaighat Hospital, Udayapur	57%	72%	85%	65%	62%	0%	0%	0%
26		Katari Hospital (Udayapur)	40%	60%	67%	53%	73%	0%	0%	0%
27		Khotang District Hospital	40%	75%	87%	60%	63%	70%	0%	0%
28	E4	Phaplu Hospital, Solukhumbu	60%	66%	82%	75%	0%	0%	0%	0%
29		Rumjatar Hospital, Okhaldhunga	48%	64%	75%	80%	0%	0%	0%	0%
30	E5	Dhankuta District Hospital	76%	89%	94%	90%	0%	0%	0%	0%
31		Inaruwa Hospital, Sunsari	40%	59%	69%	51%	0%	0%	0%	0%
32		Rangeli Hospital, Morang	40%	76%	82%	61%	0%	0%	0%	0%
33	E6	Bhardaha Hospital (Saptari)	42%	60%	69%	57%	0%	0%	0%	0%
34		Lahan District Hospital (Siraha)	59%	69%	81%	68%	0%	0%	0%	0%
35		Siraha District Hospital (Siraha)	41%	76%	81%	51%	0%	0%	0%	0%
36	E7	Damak Hospital, Jhapa	48%	0%	0%	0%	0%	0%	0%	0%
37		Mangalbare Hospital, Morang	49%	0%	0%	0%	0%	0%	0%	0%
38	F1	Achham District Hospital	45%	60%	75%	72%	70%	88%	90%	89%
39		Bajura District Hospital	47%	45%	70%	56%	53%	67%	65%	67%
40		Doti District Hospital	45%	75%	76%	53%	47%	59%	68%	73%
41	F2	Baitadi District Hospital	48%	72%	74%	70%	61%	65%	0%	0%
42		Bajhang District Hospital	53%	77%	83%	87%	84%	81%	80%	0%
43		Darchula District Hospital	35%	57%	67%	73%	75%	75%	82%	0%

SN	Cluster	Hospital	a. Workshop 1	b. Workshop 2	c. Workshop 3	d. Follow up 1	e. Follow up 2	f. Follow up 3	g. Follow up 4	h. Follow up 5
44		Gokuleshwor Hospital	39%	59%	68%	70%	58%	66%	82%	0%
45	F3	Jogbudha Hospital (Dadeldhura)	50%	73%	77%	82%	0%	0%	0%	0%
46		Malakhet Hospital	28%	39%	51%	49%	0%	0%	0%	0%
47		Tikapur Hospital (Kailali)	48%	84%	88%	82%	0%	0%	0%	0%
48	M1	Pyuthan District Hospital	48%	61%	69%	64%	59%	76%	72%	64%
49		Rolpa District Hospital	43%	59%	63%	67%	67%	66%	73%	70%
50		Rukum District Hospital	56%	52%	75%	43%	50%	32%	57%	71%
51		Salyan District Hospital	49%	72%	78%	57%	64%	67%	78%	75%
52	M2	Dailekh District Hospital	60%	73%	71%	69%	82%	87%	91%	0%
53		Dullu Hospital	38%	42%	65%	69%	72%	58%	65%	0%
54		Gulariya District Hospital, Bardiya	58%	81%	85%	76%	73%	80%	88%	0%
55		Mehelkuna Hospital, Surkhet	36%	47%	55%	59%	48%	62%	76%	0%
56	M3	Kalikot District Hospital	35%	71%	89%	80%	65%	67%	0%	0%
57		Mugu District Hospital	24%	40%	75%	59%	47%	0%	0%	0%
58	M4	Dolpa District Hospital	69%	0%	59%	73%	0%	0%	0%	0%
59	M5	Humla District Hospital	39%	0%	52%	65%	0%	0%	0%	0%
60	M6	Jajarkot District Hospital	38%	48%	68%	58%	0%	0%	0%	0%
61	M7	Lamahi Hospital, Dang	42%	0%	0%	0%	0%	0%	0%	0%
62	W1	Argakhanchi District Hospital	58%	76%	85%	76%	59%	59%	68%	0%
63		Bhim Hospital, Rupandehi (Bhairawa)	59%	69%	63%	59%	60%	76%	78%	0%
64		Tamghas District Hospital (Gulmi)	57%	72%	78%	69%	73%	69%	71%	0%
65		Taulihawa District Hospital (Kapilvastu)	46%	57%	74%	53%	57%	76%	78%	74%
66	W2	Mustang District Hospital	58%	64%	72%	52%	58%	61%	0%	0%
67		Myagdi District Hospital	75%	89%	91%	85%	82%	84%	0%	0%
68		Parbat District Hospital	53%	84%	91%	59%	56%	64%	0%	0%
69	W3	Bandipur Hospital	45%	52%	55%	66%	69%	72%	0%	0%
70		Damauli Hospital	44%	78%	69%	71%	72%	75%	0%	0%
71	W4	Gorkha District Hospital	71%	75%	78%	80%	0%	0%	0%	0%
72		Manang District Hospital	39%	57%	65%	62%	0%	0%	0%	0%
73	W5	Pipara Hospital, Kapilvastu	50%	51%	55%	54%	0%	0%	0%	0%

SN	Cluster	Hospital	a. Workshop 1	b. Workshop 2	c. Workshop 3	d. Follow up 1	e. Follow up 2	f. Follow up 3	g. Follow up 4	h. Follow up 5
74		Prithivi Chandra Hospital, NawalParasi	61%	57%	74%	60%	0%	0%	0%	0%
75		Shivaraj Hospital (Kapilvastu)	52%	60%	75%	79%	0%	0%	0%	0%
76	W6	Palpa District Hospital	47%	65%	71%	60%	0%	0%	0%	0%
77		Rampur Hospital, Palpa	59%	73%	68%	73%	0%	0%	0%	0%
78		Syangja District Hospital	59%	74%	78%	75%	0%	0%	0%	0%
79	W7	Chapakot Hospital, Syangja	29%	42%	0%	0%	0%	0%	0%	0%
80		Chisapani Hospital, Bardaghat, Nawalparasi	38%	0%	0%	0%	0%	0%	0%	0%
81		Matri Sishu Miteri Hospital, Batalichaur, Kaski	69%	90%	0%	0%	0%	0%	0%	0%
82		Sisuwa Hospital, Kaski	41%	65%	0%	0%	0%	0%	0%	0%
83		Sundar Bazar Hospital, Lamjung	38%	63%	0%	0%	0%	0%	0%	0%
Average score			**48%**	**64%**	**73%**	**65%**	**64%**	**67%**	**71%**	**72%**
Total number of hospital where the events was conducted			83	77	75	75	45	41	25	13

Source: CSD, DoHS

7.1 Inpatients/OPD Services

7.1.1 Background

The Government of Nepal is committed to improving the health status of rural and urban people by delivering high-quality health services. The policy aims to provide prompt diagnosis and treatment, and to refer cases from PHCCs and health posts to hospitals. Diagnostic services and referral mechanisms have been established at different levels to support early diagnosis of health problems.

In December 2006 the government began providing essential health care services (emergency and inpatient services) free of charge to destitute, poor, disabled, senior citizens, FCHVs, victims of gender violence and others in up to 25-bed district hospitals and PHCCs and for all citizens at health posts in October 2007.The Constitution of Nepal, 2015 said that every citizen has the right to basic health services free of costs as provided by the law.

The overall objective of DoHS on curative services is to reduce morbidity and mortality by ensuring the early diagnosis of diseases and providing appropriate and prompt treatment. The main strategies to achieve this are listed in Box 7.1.

Box 7.1: Curative service strategies

- To make curative health services available in an integrated way in rural areas through health posts and PHCCs.
- To establish hospitals on the basis of population density and patient load with at least one hospital per district.
- To establish referral hospitals to provide specialized services related to paediatrics, gynaecology, general surgery, general medicine, eye care, dermatology, orthopaedics and psychiatry.
- To equip central hospitals with sophisticated diagnostic and other facilities to provide specialised and super-specialty services. Specialist curative care services will be extended to remote areas, as and when required, through mobile teams.
- To extend referral systems to provide rural people with access to services from modern well equipped hospitals.
- To strengthen diagnostic services such as laboratories and X-ray services at hospitals.
- To extend service provision through more outreach clinics and by considering the relocation of existing facilities.
- To provide basic curative services free in up to 25 bed hospitals.
- To promote private medical colleges, hospitals, nursing homes and hospitals run by INGOs, NGOs and private practitioners to complement public health care provision.

7.1.2 Major Activities and Achievements in the fiscal year 2074/75

Curative health services were provided at all health facilities including outpatient, emergency and inpatient care and free health services. Inpatient services were provided at all levels of hospitals including INGO and NGO run hospitals, private medical college hospitals, nursing homes and private hospitals. Medical camps were organised mainly in remote areas.

7.1.3 Hospital reporting

Five hundred and sixty Eight hospitals were listed in the HMIS under DoHS in 2074/75, of which 125 (22%) were public hospitals and 443 (78%) non-public hospitals (Table 7.1).

- 92 percent of public and 55 percent of non-public hospitals submitted of monthly reports (Table 7.1);
- HMIS received all 12 monthly progress reports from 74 percent of public hospitals and 30 percent of non-public hospitals respectively (Table 7.2);
- 3 out of the 6 central level hospitals submitted all 12 monthly progress reports. Reporting Percentage is highest among Regional and Sub regional hospital (100%) following by Zonal, District hospital and Other hospital . No received for police hospital (Table 7.3).

Table 7.1: Hospital reporting status, FY 2074/75

Province	No. of Hospital Non Public			Submission of Monthly Report					
				Public		Total			
	Non Public	Public	Total	No.	%	No.	%	No.	%
Province 1	71	18	89	475	55.8	215	99.5	690	64.6
Province 2	52	13	65	96	15.4	149	95.5	245	31.4
Province 3	204	33	237	1413	57.7	311	78.5	1724	60.6
Gandaki Province	47	15	62	285	50.5	161	89.4	446	59.9
Province 5	50	20	70	244	40.7	221	92.1	465	55.4
Karnali Province	6	12	18	19	26.4	136	94.4	155	71.8
Sudur Paschim Province	13	14	27	87	55.8	155	92.3	242	74.7
Total	**443**	**125**	**568**	**2619**	**49.3**	**1348**	**89.9**	**3967**	**58.2**

Source: HMIS, DoHS

Table 7.2: Hospital submitting all 12 monthly progress reports, FY 2074/75

Province	No. of Hospital Non Public			Hospital Reporting 12 months a year					
				Public		Total			
	Non Public	Public	Total	No.	%	No.	%	No.	%
Province 1	71	18	89	31	43.7	17	94.4	48	53.9
Province 2	52	13	65	3	5.8	8	61.5	11	16.9
Province 3	204	33	237	68	33.3	19	57.6	87	36.7
Gandaki Province	47	15	62	17	36.2	10	66.7	27	43.5
Province 5	50	20	70	10	20.0	17	85.0	27	38.6
Karnali Province	6	12	18	0	0.0	9	75.0	9	50.0
Sudur Paschim Province	13	14	27	2	15.4	12	85.7	14	51.9
Total	**443**	**125**	**568**	**131**	**29.6**	**92**	**73.6**	**223**	**39.3**

Source: HMIS, DoHS

Table: 7.3: Status of different levels of hospitals submitting all 12 monthly reports, FY 2074/75

Type of Hospital	No. of Hospital	12 months reporting		No. of Reports		
		No.	%	Expected	Received	%
CENTRAL HOSPITAL	6	3	50	72	69	96
DISTRICT HOSPITAL	52	46	88	624	614	98
GENERAL HOSPITAL	37	23	62	444	392	88
REGIONAL HOSPITAL	2	2	100	24	24	100
REGIONAL HOSPITAL(POLICE)	2	0	0	24	11	46
SPECIALIZED HOSPITAL	8	4	50	96	48	50
SUB-REGIONAL HOSPITAL	3	3	100	36	36	100
TEACHING HOSPITAL	4	2	50	60	35	58
ZONAL HOSPITAL	10	9	90	120	119	99
TOTAL	**125**	**92**	**74**	**1500**	**1348**	**90**

Source: HMIS, DoHS

7.1.4 Inpatient services

Inpatient services are provided through inpatient departments at public and non-public hospitals. Note that the following findings should be interpreted with caution because of incomplete progress reporting (see above).

Bed Occupancy Rates, FY 2074/75

- Among higher-level government hospitals that submitted all 12 monthly reports, bed occupancy rate ranged from 23.8 percent in Seti Zonal hospital to 92.4 percent in Mental Hospital, Patan, with a mean occupancy rate of 58.1 percent (Figure 7.1);

- Bed occupancy rate of public district hospitals ranged from (3.8%) in Manag District Hospital to 98 percent in Darchula District Hospital with an average bed occupancy rate of 50.65 percent (Figure 7.2).

- Bed occupancy rate of other district level hospitals ranged from 0.06 percent in Civil hospital to 65.9 percent at APF hospital , Kathmandu with an average bed occupancy rate of 32.98 percent (Figure 7.3).

FFig 7.1: Bed occupancy rate in higher level hospital, FY2074/75

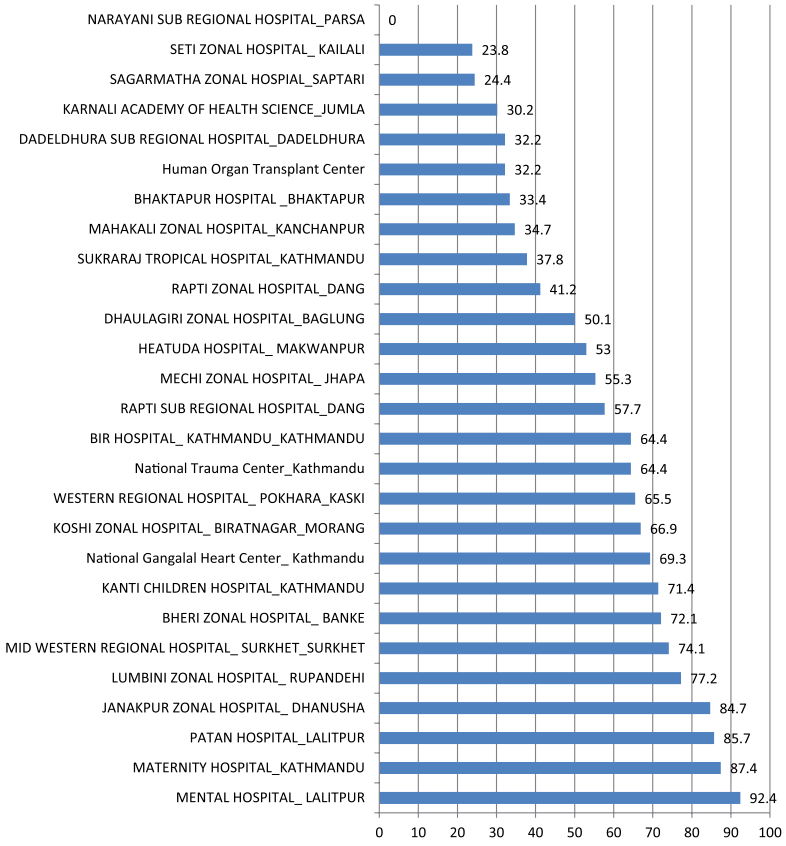


Fig 7.2: Bed occupancy rate in district level hospital, FY2074/75

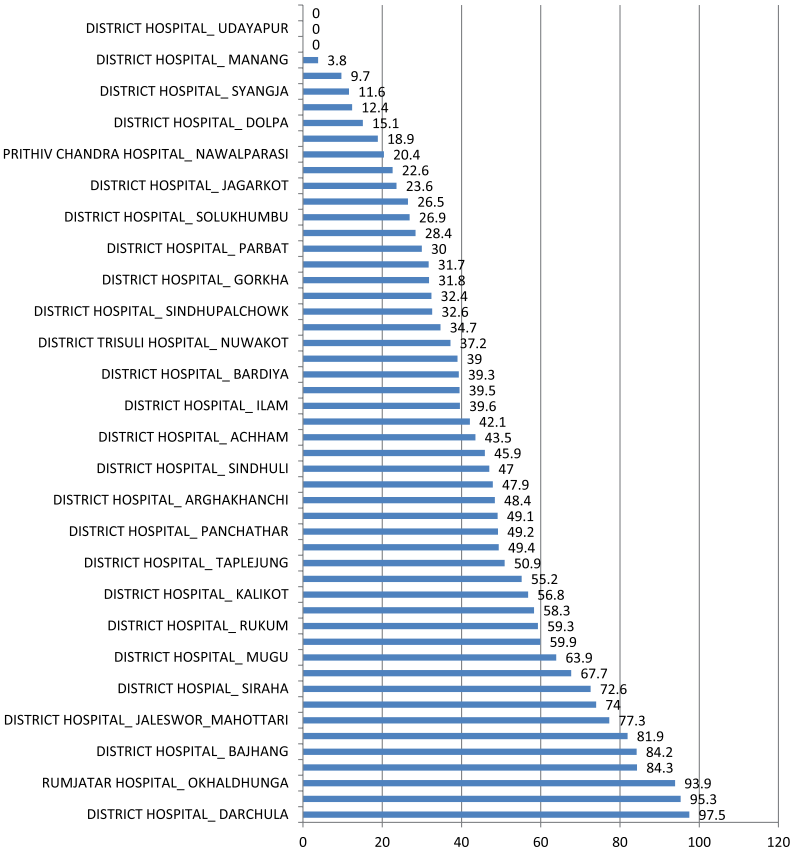
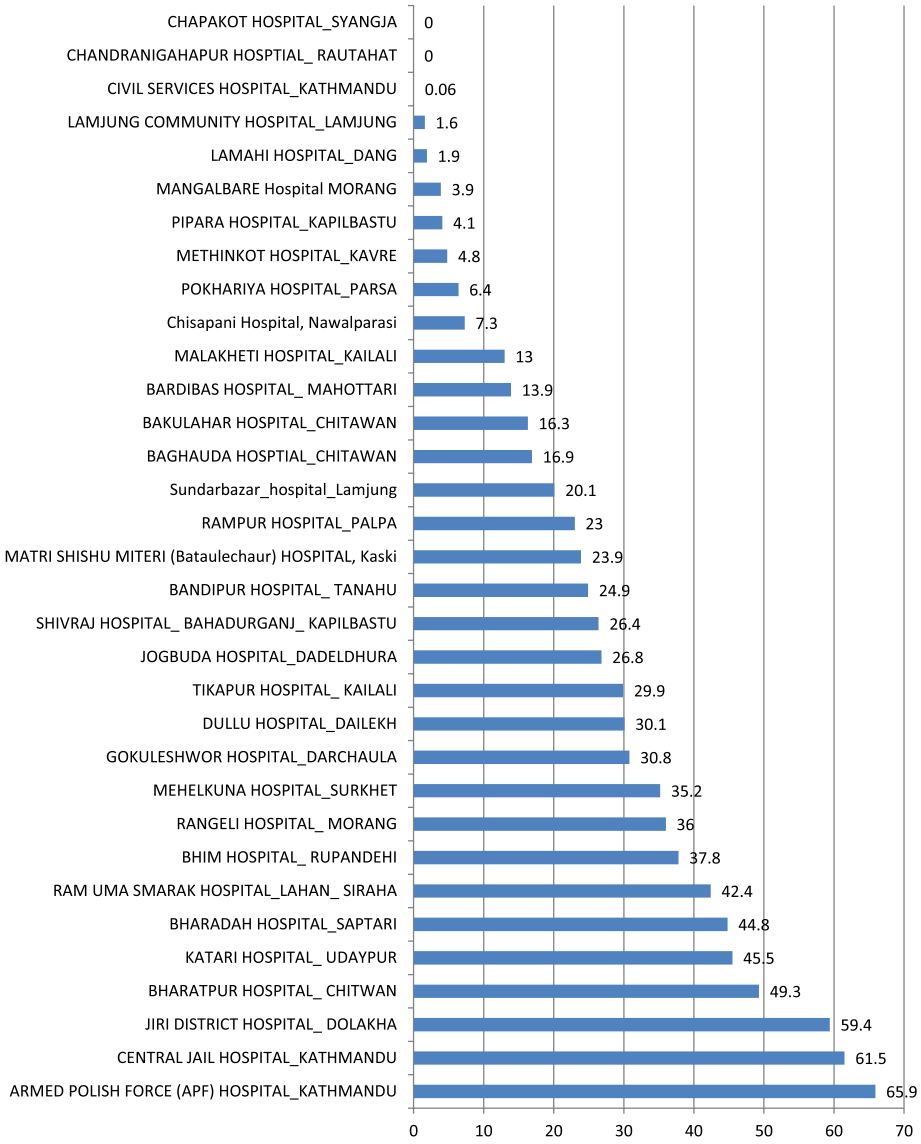


Figure 7.3: Bed occupancy rate in other district level hospital, FY2074/75



Average length of stay — In fiscal year 2074/75, the average length of stay by inpatients:

- at higher-level government hospitals, Average length of stay ranged from 0.01 days at BPKIHS Dharan to 66.8 days at the Mental Hospital, Lalitpur (Figure 7.4);
- at public district hospitals, Average length of stay ranged from 0.14 day at Udayepur district hospitals to 4.2 days at Bajura District hospital (Figure 7.5); and
- in other district level hospitals, Average length of stay ranged from 0.27 day at, Bardibas hospitals to 14.2 days in APF hospital (Figure 7.6).

Figure 7.4: Agerage length of stay by inpatient in Higher level hospital, FY: 2074/75

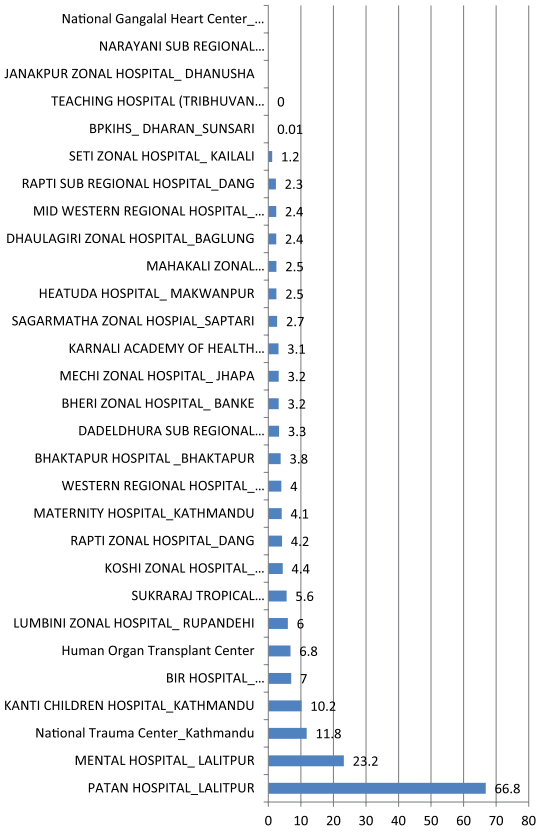


Figure 7.5: Agerage length of stay by inpatient in District level hospital, FY: 2074/75

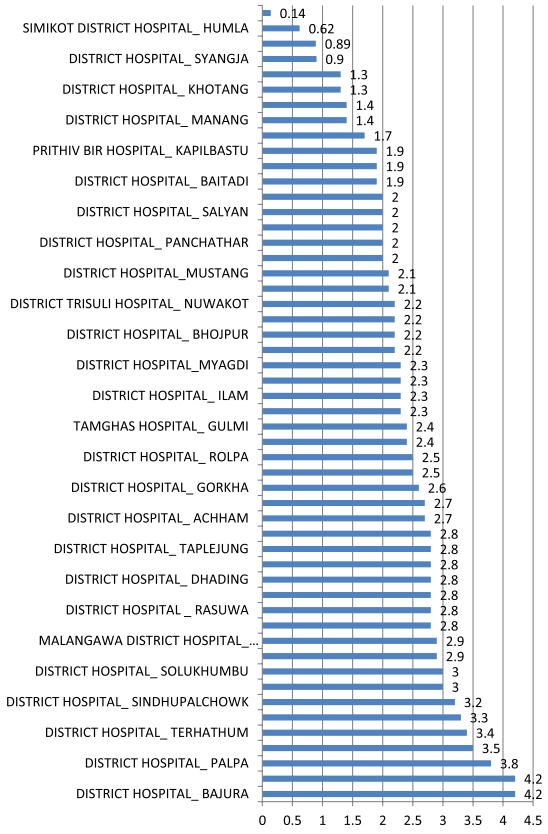
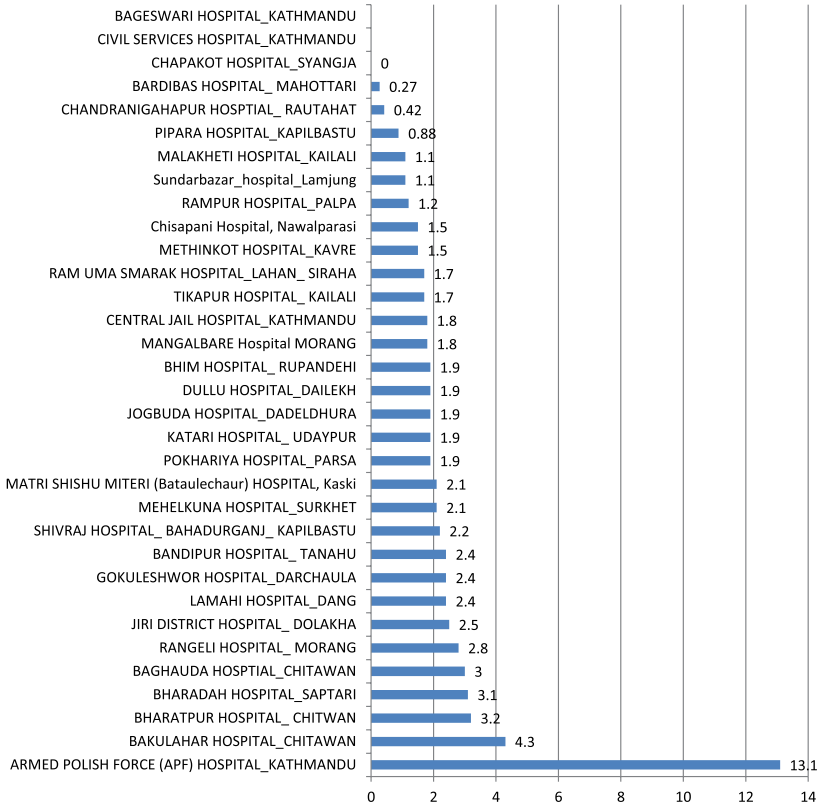


Figure 7.6: Agerage length of stay by inpatient in other District level hospital, FY: 2074/75



7.1.5 Hospital use

The use of hospitals is measured in this section according to emergency room attendance and total outpatient and inpatient admissions

Hospital emergency ward attendance at hospitals with full progress reporting in 2074/75 was as follows:

- Among higher level hospitals, Patan Hospial recorded the highest attendance at its emergency ward (73,161) while HUMAN ORGAN TRANSPLANT CENTER recorded the lowest(151) (Figure 7.7).
- Among public district hospitals Pachthar Hospital had the highest attendance at its emergency unit (17866) while Manang District Hospital had the lowest (438) (Figure 7.8).
- Among other district level hospitals Bharatpur Hospital had the highest attendance at its emergency ward (39348) while Malakheti hospital, Kailali had the least (274) (Figure 7.9).

Figure 7.7: Emergency Ward Attendance in Higher Level Hospitals, FY2074/75

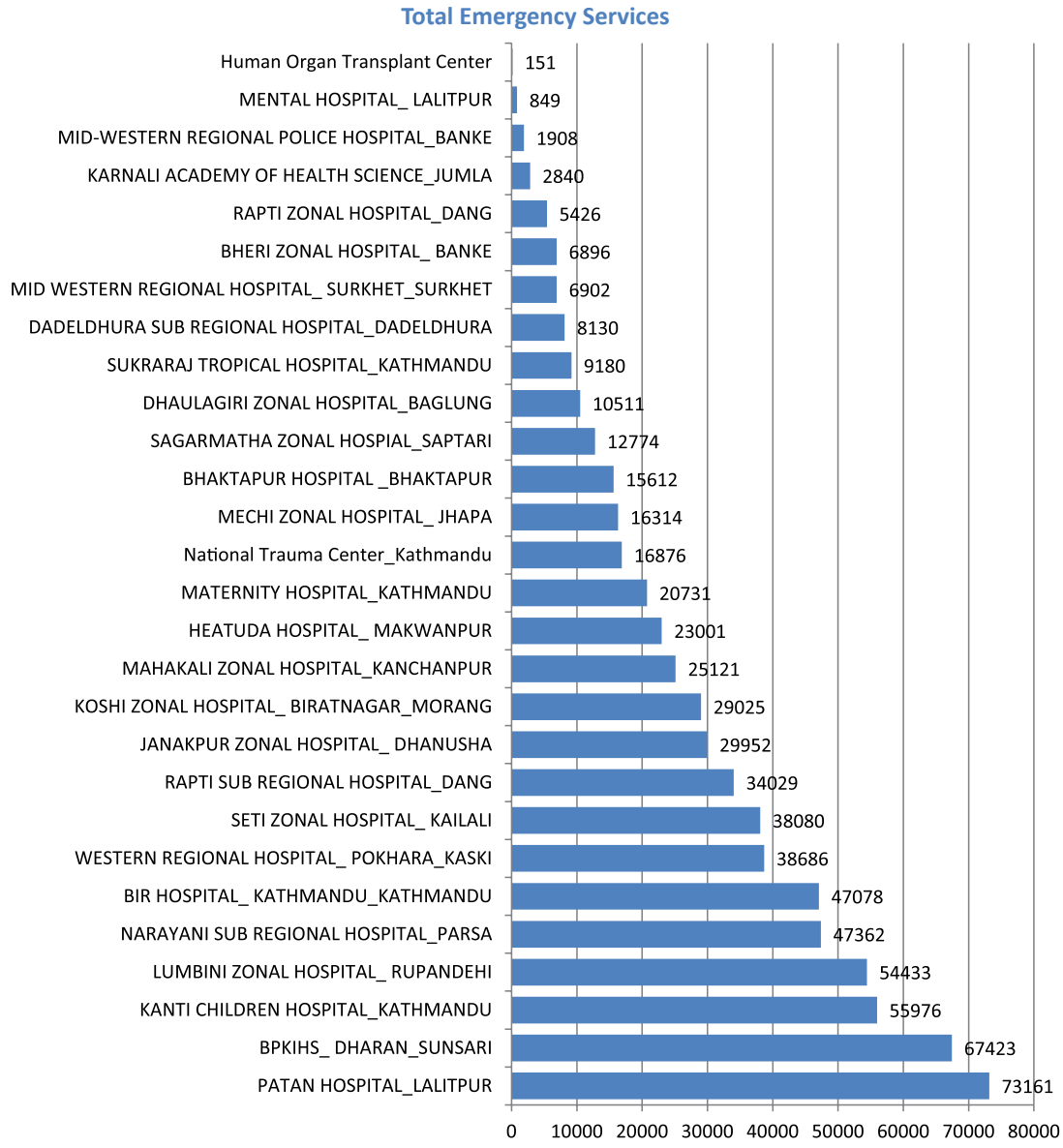


Figure 7.8: Emergency Ward Attendance at District Hospital, FY2074/75

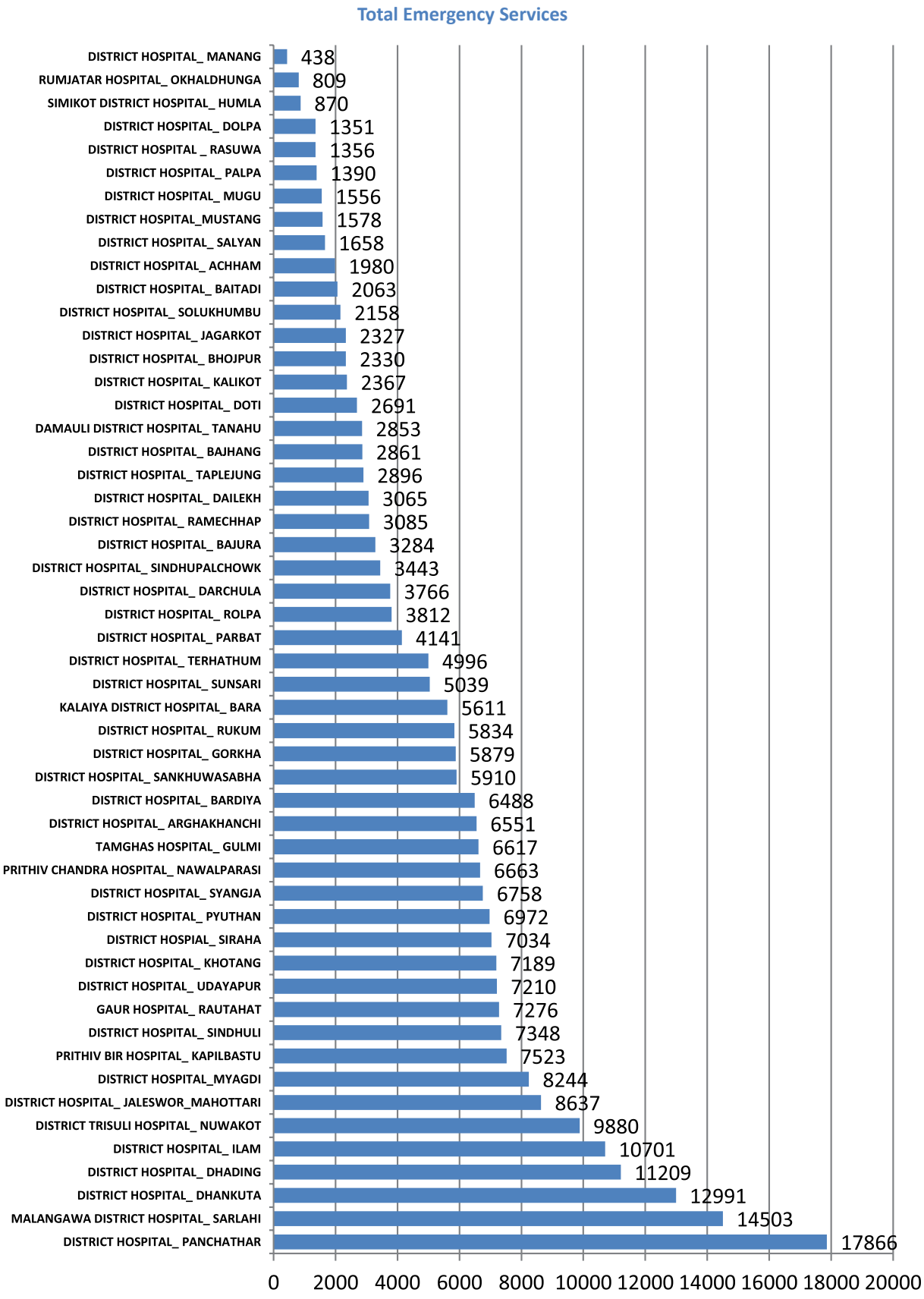
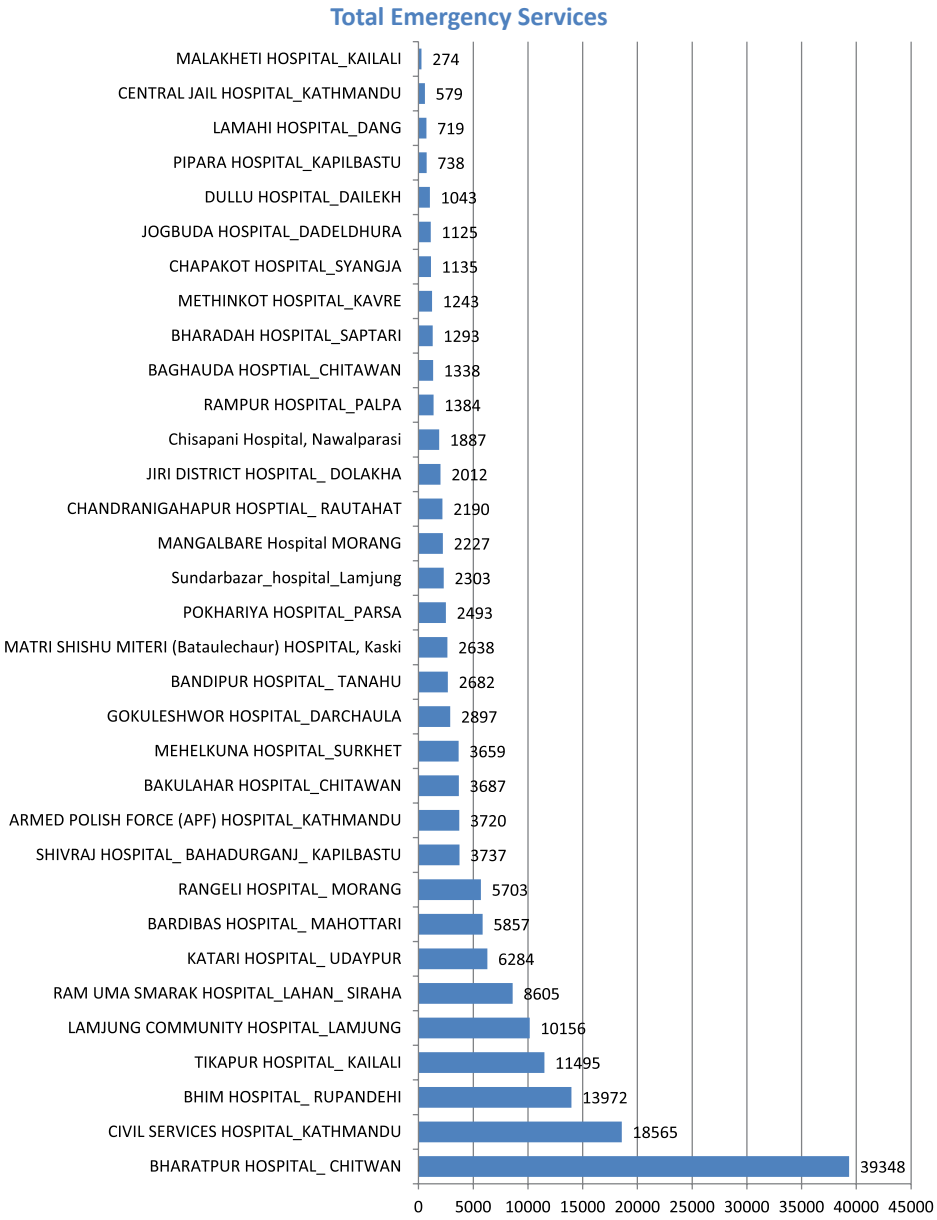


Figure 7.9: Emergency Ward Attendants at Other District Level ospitls. FY2074/75



Outpatient attendance in the fiscal uear 2074/75 at hospitals with full progress reporting was as follows:

- Outpatient attendance at higher level hospitals ranged from 40782 at Mid Western regional Hospital , Surkhet to 3 at Rapti Zonal Hospital (Figure 7.10). This very low number of OPD cases reported from Bir Hospital, Rapti Sub-Regional Hospitals and the Rapti Zonal Hospital is mainly due to under reporting of the services provided by the hospitals.
- Outpatient attendance at district hospitals ranged from 42,578 patients at Dhading District Hospital to 2157 at Manag District Hospital (Figure 7.11).
- Outpatient attendance at other district level hospitals ranged from 69019 at Lamjung Community Hospital, Lamgunj to 53 at Bharatpur hospital (Figure 7.12).

Figure 7.10: Outpatient attendance at higher level hospitals, FY 2074/75

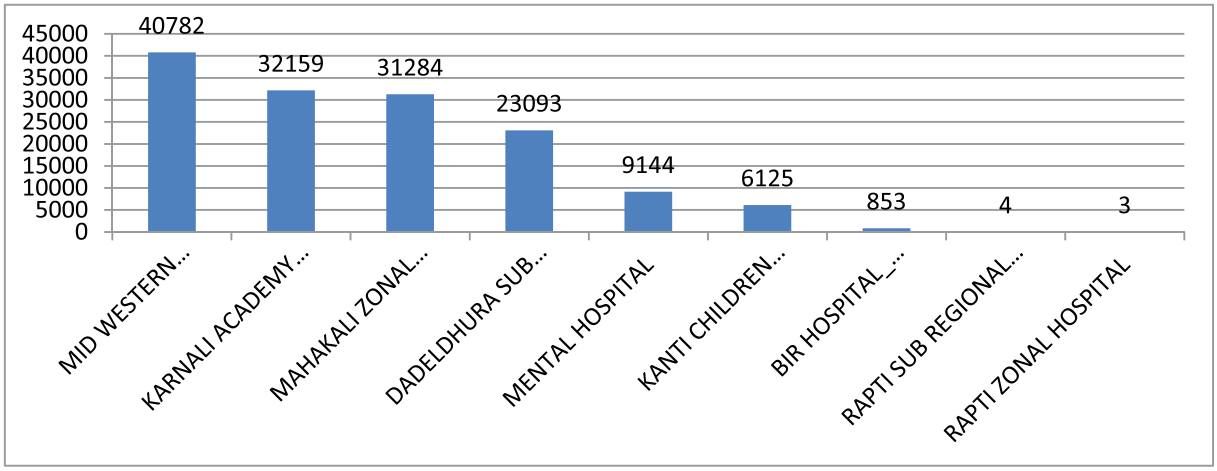


Figure 7.11: Outpatient Attendants at District Level Hospital, FY2074/75

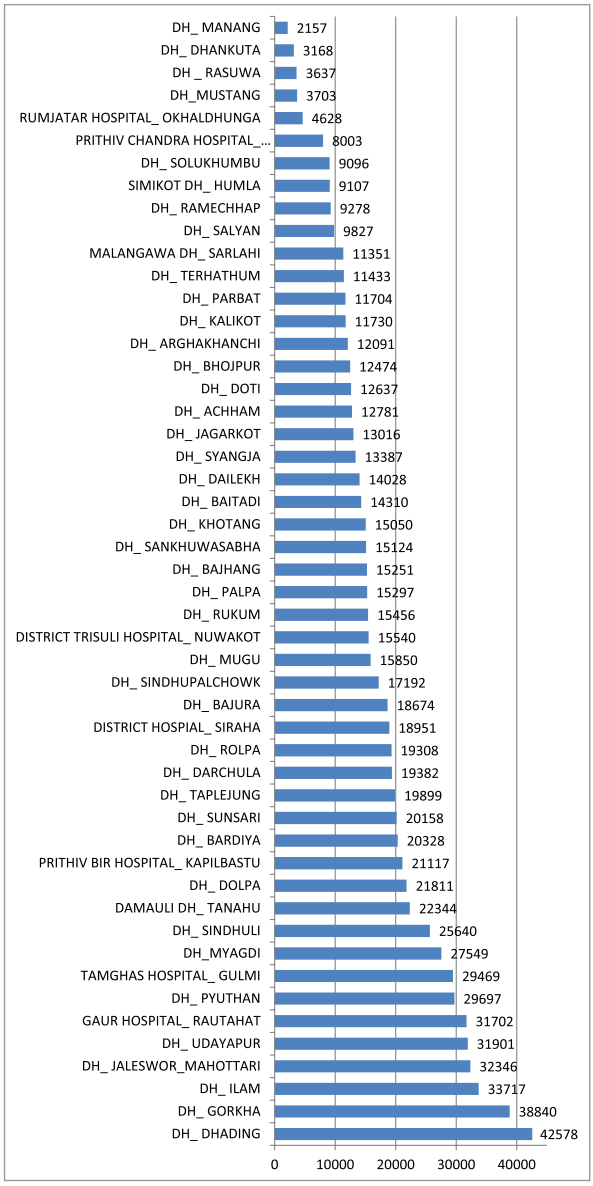


Figure 7.12: Outptient Attendants at Other District Level Hospitals, FY2074/75

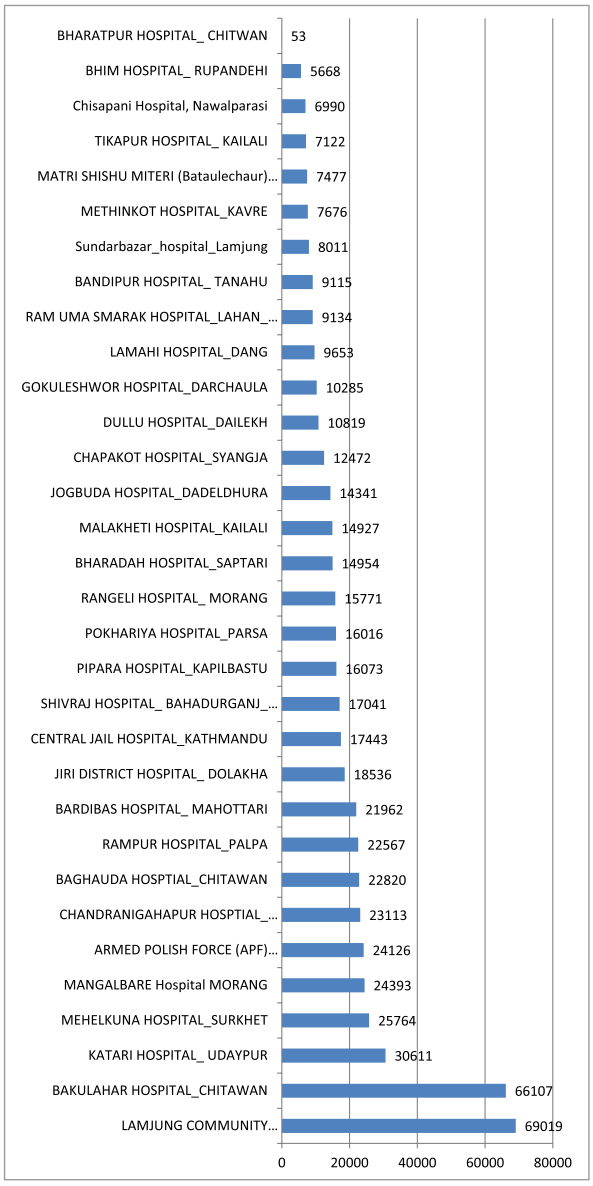
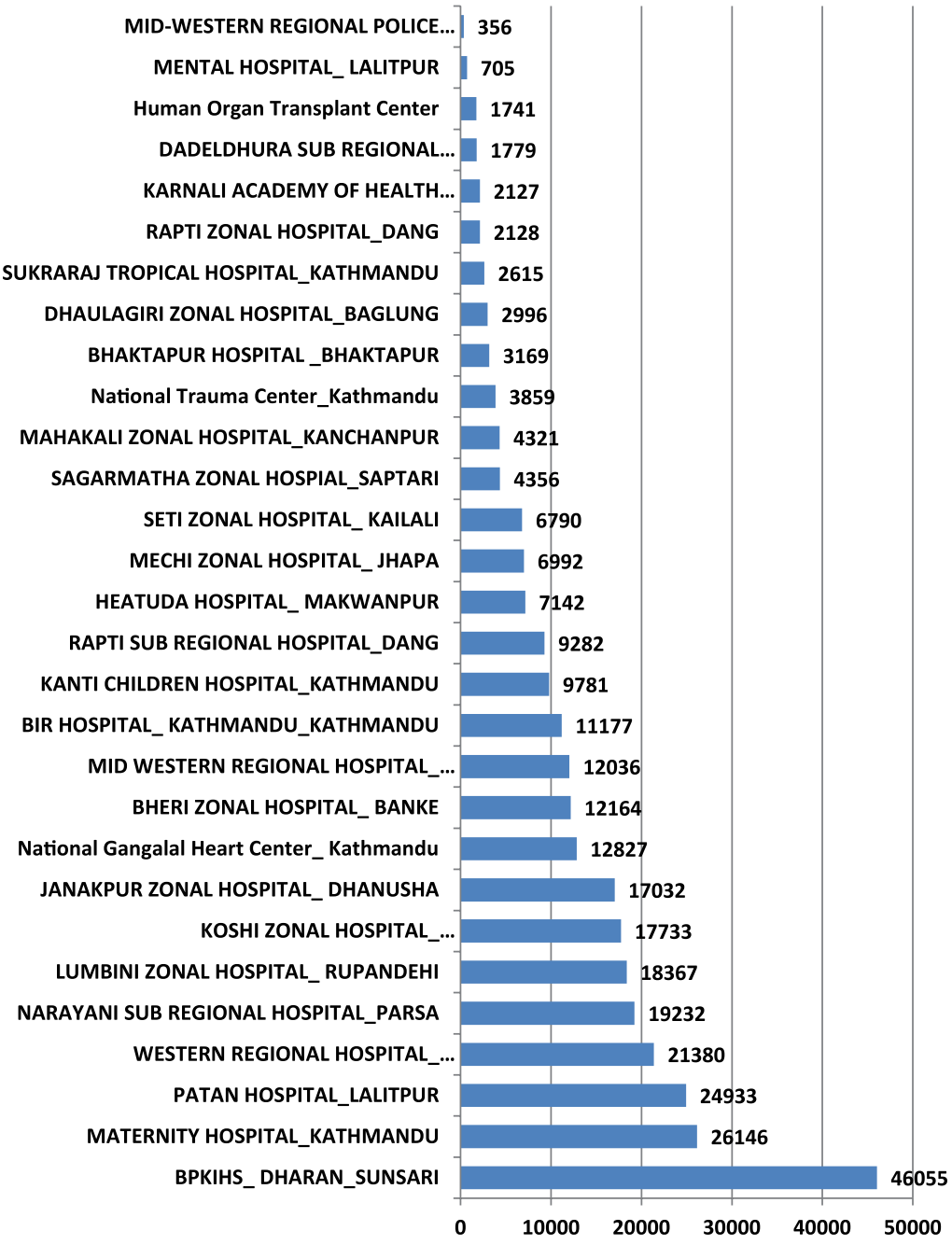


Figure 7.13: Inpatient Admission at Higher level Hosptal,FY2074/75



Inpatient attendance in 2074/75 at hospitals with full progress reporting was as follows:

- BPKIHS Dharan had the most inpatient admissions 46055 with the Mid Western regional police, hospital having the fewest (356) (Figure 7.13)
- Among public district hospitals, Kalaiya Hospital had the most inpatient admissions (5034), while Manang District Hospital had the fewest (95) (Figure 7.14).
- Among other district hospitals Bharatpur Hospital, Chitawan recorded the most inpatient admissions (47018) while Chapakot Hospital syangja recorded the fewest (3) (Figure 7.15).

Figure 7.14: Inpatient Admission at Government District Hosptal,FY2074/75

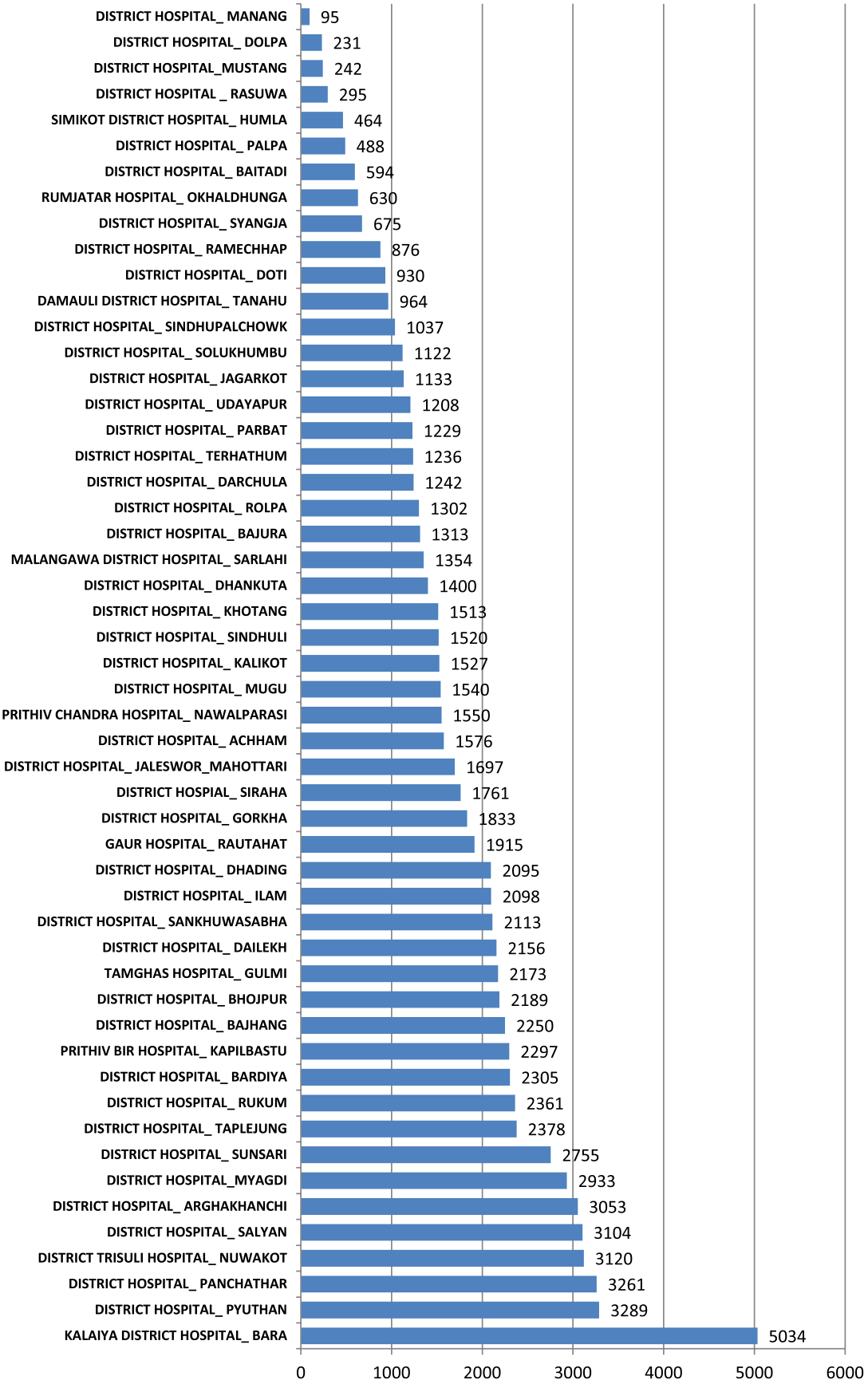
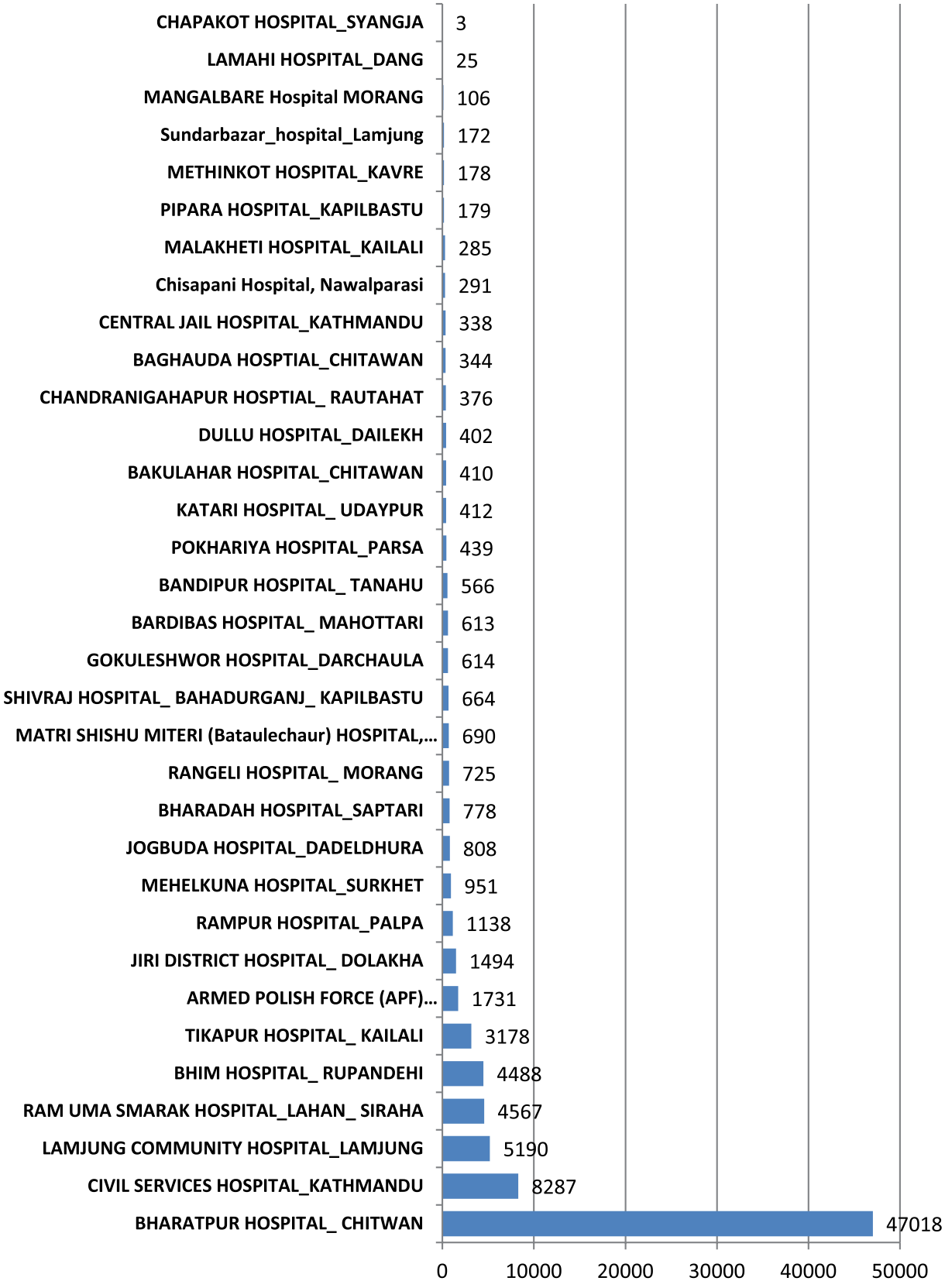


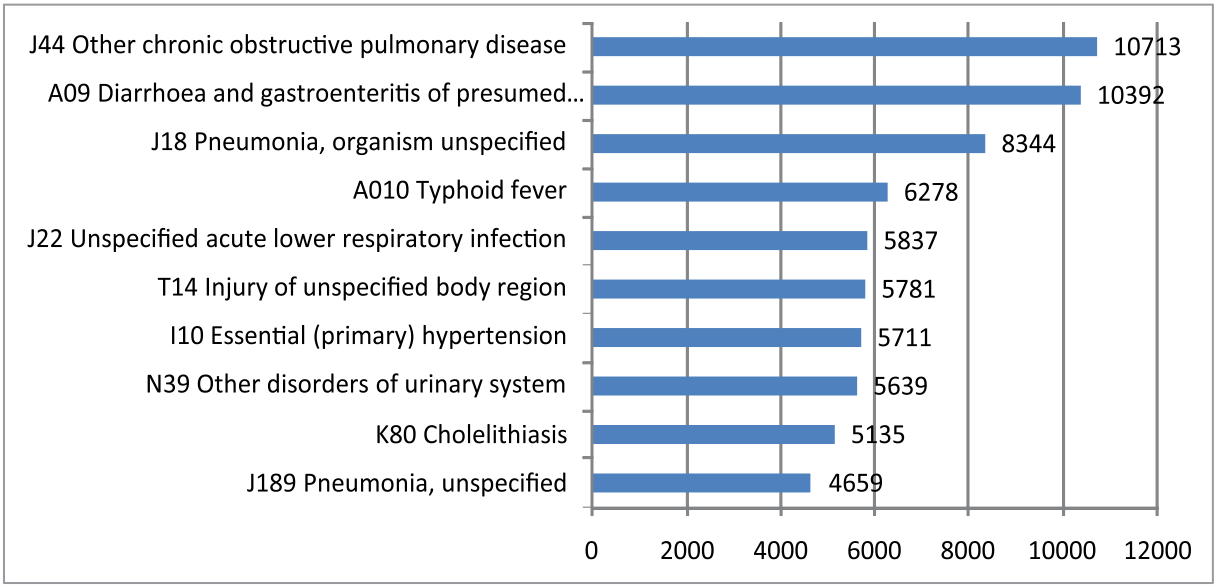
Figure 7.15: Inpatient Admissions at Other District Level Hospitals, FY2074/75



7.1.6 Disease analysis

Top ten morbidities among inpatients — In fiscal year 2074/75 other chronic obstructive pulmonary disease is the number one reason for inpatient admission (10,713) followed by Diarrhoea and gastroenteritis disease (10,392) (Figure 7.16).

Figure 7.16: Top Ten inpatient morbidity, FY 2074/75



Source: HMIS

Total patients — In 2074/75 Nepal's the HMIS recorded 1045062 patients (female 59%–male 41%) being discharged from all types of hospitals (Table 7.5).Of this number 964458 (92%) were recorded as cured or recovered, while 14410 (1.37%) did not show clinical improvement A total of 4,975 (0.47%) patients died within 48 hours of admission, whereas 5,801(0.55%) patients died more than 48 hours after admission. Most patients were aged between 20-29 years (24%), More than a half of the inpatients were aged 15-49 years (54%).

Table 7.5: Inpatient morbidity by age and sex, all hospitals, FY 2074/75

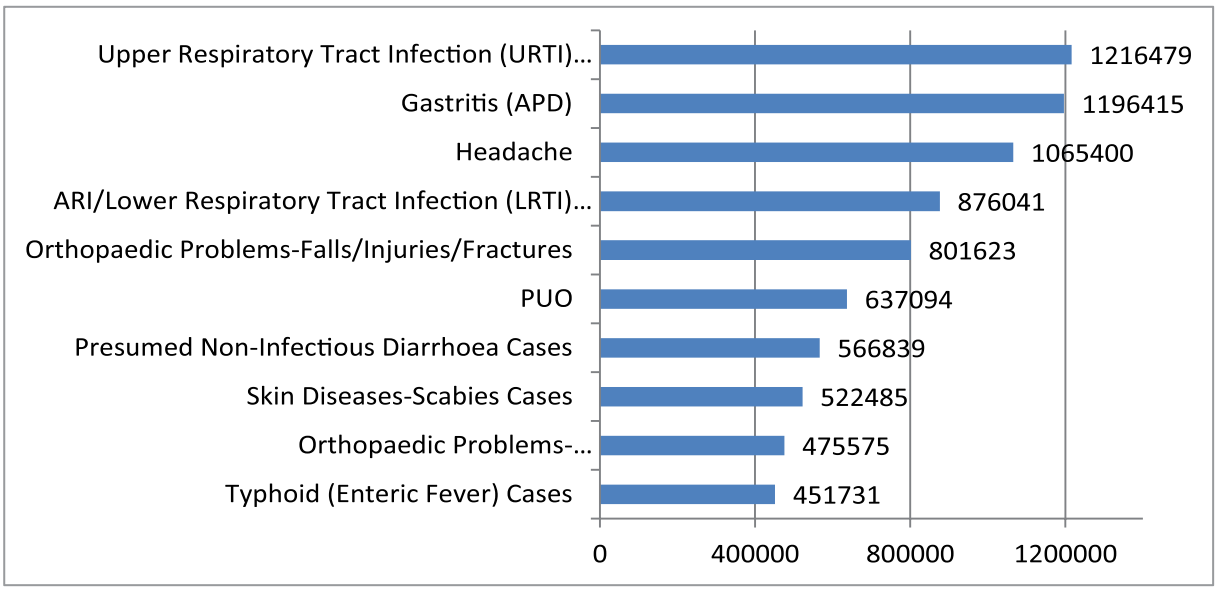
Age Group		≤ 28 Days	29 Days - <1 Year	01 - 04 Years	05 - 14 years	15 - 19 Years	20 - 29 Years	30 - 39 Years	40 - 49 Years	50 - 59 Years	≥ 60 Years	Total
Recovered/ Cured	Female	22720	14198	20615	27380	53782	196731	79319	48167	43315	68222	574449
	Male	28728	23332	28566	38258	25343	46492	43836	42901	41647	70906	390009
Not Improved	Female	247	186	234	340	352	883	713	844	806	1867	6472
	Male	439	445	331	598	430	911	737	935	971	2141	7938
Referred Out	Female	487	556	567	723	926	2520	1179	847	892	1887	10584
	Male	749	805	726	876	493	892	886	926	1015	2123	9491
DOR/LAMA/ DAMA	Female	966	603	816	949	1211	3652	1859	1430	1508	3753	16747
	Male	1192	904	1200	1301	854	1768	1617	1580	1645	4131	16192
Absconded	Female	64	60	84	98	148	451	173	78	67	149	1372
	Male	74	95	100	120	73	135	104	86	98	147	1032
Death < 48 Hours	Female	245	73	50	64	61	194	162	207	259	860	2175
	Male	381	96	65	69	65	157	188	277	431	1071	2800
Death ≥ 48 Hours	Female	260	83	48	71	60	147	194	226	276	1224	2589
	Male	445	129	42	86	52	130	206	348	405	1369	3212
Total	Female	24989	15759	22414	29625	56540	204578	83599	51799	47123	77962	614388
	%	4	3	4	5	9	33	14	8	8	13	100
	Male	32008	25806	31030	41308	27310	50485	47574	47053	46212	81888	430674
	%	7	6	7	10	6	12	11	11	11	19	100
	Total	56997	41565	53444	70933	83850	255063	131173	98852	93335	159850	1045062
	%	5	4	5	7	8	24	13	9	9	15	100

Source: HMIS, DoHS

Note: LAMA = left against medical advice , DAMA discharged against medical advice

Outpatient consultations — The top-most reason for outpatient consultations in 2074/75 was for upper respiratory tract infection (4.6%), followed by gastritis (4.54%) (Figure 7.17).

Figure 7.17: Top ten reasons for outpatient consultations, FY 2074/75



Disease types — In terms of disease types among inpatients and outpatient services in FY 2074/75:

- the number one airborne disease was pneumonia (organism unspecified) (8,344 cases) followed by pneumonia (unspecified) (4,659 cases) and Acute tonsillitis (2,148 cases) (Table 7.6);
- among the 161 cases of vector borne diseases total death case 7, among 47 cases 5 death reported from Viral Encephalitis (Table 7.7);
- diarrhoea and gastroenteritis was the leading cause of inpatient waterborne disease (A09 :10392 cases), followed by typhoid fever (A01: 6278 cases) (Table 7.8);
- 26.3 million communicable and non-communicable diseases were reported by outpatients in 2074/75 (communicable 9.6%, non-communicable 90.4%) (Table 7.9).

Table 7.6: Breakdown of airborne disease cases among inpatients, FY 2074/75

ICD Code	Inpatient Morbidity Cases			Inpatient Deaths		
	Total		Total	Total Deaths		Total
	F	M		F	M	
A15 Respiratory tuberculosis, bacteriologically and histologically confirmed	141	251	392	2	11	13
A150 Tuberculosis of lung, confirmed by sputum microscopy with or without culture	38	83	121	2	3	5
A151 Tuberculosis of lung, confirmed by culture only	17	30	47		2	2
A152 Tuberculosis of lung, confirmed histologically	0	2	2			0
A153 Tuberculosis of lung, confirmed by unspecified means	15	36	51		2	2
A154 Tuberculosis of intrathoracic lymph nodes, confirmed bacteriologically and histologically	1	1	2			0
A155 Tuberculosis of larynx, trachea and bronchus, confirmed bacteriologically and histologically	0	2	2			0
A156 Tuberculous pleurisy, confirmed bacteriologically and histologically	4	6	10			0
A157 Primary respiratory tuberculosis, confirmed bacteriologically and histologically	3	0	3			0
A159 Respiratory tuberculosis unspecified, confirmed bacteriologically and histologically	12	21	33			0
A16 Respiratory tuberculosis, not confirmed bacteriologically or histologically	60	81	141	1		1
A160 Tuberculosis of lung, bacteriologically and histologically negative	19	43	62		1	1
A161 Tuberculosis of lung, bacteriological and histological examination not done	5	11	16			0
A162 Tuberculosis of lung, without mention of bacteriological or histological confirmation	39	62	101	6	3	9
A164 Tuberculosis of larynx, trachea and bronchus, without mention of bacteriological or histological confirmation	0	1	1			0

ICD Code	Inpatient Morbidity Cases			Inpatient Deaths		
	Total		Total	Total Deaths		Total
	F	M		F	M	
A165 Tuberculous pleurisy, without mention of bacteriological or histological confirmation	2	6	8			0
A168 Other respiratory tuberculosis, without mention of bacteriological or histological confirmation	1	4	5			0
A169 Respiratory tuberculosis unspecified, without mention of bacteriological or histological confirmation	121	208	329	8	14	22
A17 Tuberculosis of nervous system	1	0	1			0
A170 Tuberculous meningitis	7	14	21	1	1	2
A178 Other tuberculosis of nervous system	1	6	7			0
A18 Tuberculosis of other organs	106	154	260	2	3	5
A180 Tuberculosis of bones and joints	3	12	15		1	1
A182 Tuberculous peripheral lymphadenopathy	3	1	4			0
A183 Tuberculosis of intestines, peritoneum and mesenteric glands	19	30	49	1	1	2
A184 Tuberculosis of skin and subcutaneous tissue	0	1	1			0
A188 Tuberculosis of other specified organs	11	14	25			0
A19 Miliary tuberculosis	8	20	28	3	2	5
A190 Acute miliary tuberculosis of a single specified site	1	2	3			0
A199 Miliary tuberculosis, unspecified	4	6	10			0
G03 Meningitis due to other and unspecified causes	98	170	268	2	9	11
G030 Nonpyogenic meningitis	1	2	3	1		1
G032 Benign recurrent meningitis [Mollaret]	0	1	1			0
G038 Meningitis due to other specified causes	1	2	3		1	1
G039 Meningitis, unspecified	84	120	204	5	9	14
J02 Acute pharyngitis	151	150	301	0	0	0
J020 Streptococcal pharyngitis	1	2	3			0
J028 Acute pharyngitis due to other specified organisms	2	2	4			0
J029 Acute pharyngitis, unspecified	31	49	80			0
J03 Acute tonsillitis	1148	1000	2148	4	3	7
J030 Streptococcal tonsillitis	23	6	29			0
J038 Acute tonsillitis due to other specified organisms	16	10	26			0
J039 Acute tonsillitis, unspecified	253	257	510			0
J18 Pneumonia, organism unspecified	3574	4770	8344	76	73	149
J180 Bronchopneumonia, unspecified	166	192	358	1		1
J181 Lobar pneumonia, unspecified	85	80	165	1	8	9
J182 Hypostatic pneumonia, unspecified	2	1	3			0
J188 Other pneumonia, organism unspecified	10	7	17		1	1

ICD Code	Inpatient Morbidity Cases			Inpatient Deaths		
	Total		Total	Total Deaths		Total
	F	M		F	M	
J189 Pneumonia, unspecified	2194	2465	4659	54	68	122
J40 Bronchitis, not specified as acute or chronic	251	353	604	0	0	0

Table 7.7: Breakdown of vector borne diseases among inpatients, FY 2074/75

ICD Code	Inpatient Morbidity Cases			Inpatient Deaths		
	Total		Total	Total Deaths		Total
	F	M		F	M	
A50 Congenital syphilis	1	1	2			0
A86 Unspecified viral encephalitis	15	32	47	1	4	5
B50 Plasmodium falciparum malaria	3	4	7			0
B508 Other severe and complicated Plasmodium falciparum malaria	0	1	1			0
B509 Plasmodium falciparum malaria, unspecified	0	4	4			0
B51 Plasmodium vivax malaria	4	13	17			0
B519 Plasmodium vivax malaria without complication	8	14	22			0
B54 Unspecified malaria	7	21	28	1	1	2
B559 Leishmaniasis, unspecified	9	24	33			0
Total	47	114	161	2	5	7

Table 7.8: Water borne diseases among inpatients, FY 2074/75

ICD Code	Inpatient Morbidity Cases			Inpatient Deaths		
	Total		Total	Total Deaths		Total
	F	M		F	M	
A01 Typhoid and para typhoid test	22	34	56			0
A01 Typhoid and paratyphoid fevers	1924	1973	3897	1	1	2
A010 Typhoid fever	3258	3020	6278	6	13	19
A011 Paratyphoid fever A	84	47	131	6	5	11
A03 Shigellosis	62	54	116			0
A030 Shigellosis due to Shigella dysenteriae	8	7	15			0
A038 Other shigellosis	4	5	9			0
A039 Shigellosis, unspecified	96	80	176			0
A06 Amoebiasis	87	49	136			0
A060 Acute amoebic dysentery	96	86	182			0

ICD Code	Inpatient Morbidity Cases			Inpatient Deaths		
	Total		Total	Total Deaths		
	F	M		F	M	Total
A069 Amoebiasis, unspecified	103	99	202	5	1	6
A09 Diarrhoea and gastroenteritis of presumed infectious origin	5487	4905	10392	18	11	29
B15 Acute hepatitis A	24	29	53			0
B150 Hepatitis A with hepatic coma	1	7	8			0
B159 Hepatitis A without hepatic coma	69	66	135	2		2
B17 Other acute viral hepatitis	43	30	73	1	1	2
B172 Acute hepatitis E	1	10	11			0
E86 Volume depletion	207	163	370		1	1
K52 Other noninfective gastroenteritis and colitis	14	18	32		1	1
K520 Gastroenteritis and colitis due to radiation	2	9	11			0
K522 Allergic and dietetic gastroenteritis and colitis	1	4	5			0
K528 Other specified noninfective gastroenteritis and colitis	4	5	9			0
K529 Noninfective gastroenteritis and colitis, unspecified	277	185	462	1	1	2
R17 Unspecified jaundice	258	325	583	3	0	3
Total	12132	11210	23342	43	35	78

Table 7.9: Communicable and non-communicable diseases among outpatients by province, FY 2074/75

Province	Communicable		Non-Communicable		Total
	Cases	%	Cases	%	
Province 1	369732	14.7	4047071	17.0	4416803
Province 2	571696	22.7	2725763	11.4	3297459
Province 3	463826	18.4	6373093	26.8	6836919
Gandaki Province	218121	8.7	2827928	11.9	3046049
Province 5	446093	17.7	3958654	16.6	4404747
Karnali Province	212174	8.4	1562321	6.6	1774495
Sudur Paschim Province	237525	9.4	2311823	9.7	2549348
Nepal	2519167	100.0	23806653	100.0	26325820
	9.6		90.4		

7.2.5 Communicable and non-communicable diseases (inpatients)

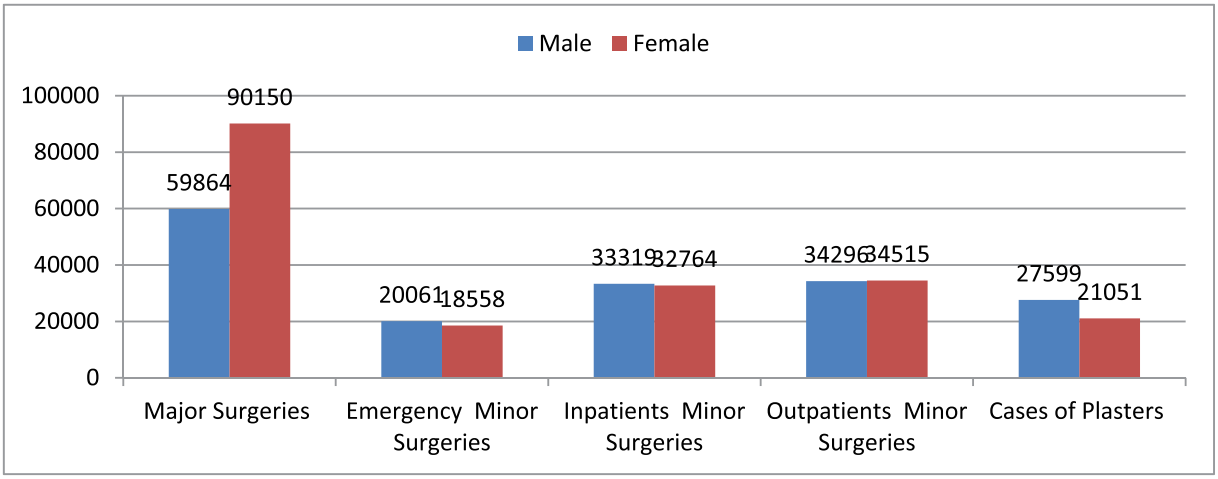
Cases — In 2074/75, 360188 cases were admitted to hospital, of which 91 percent were non-communicable disease cases (Table 7.10).

Table 7.10: Communicable and non-communicable disease cases (inpatients), FY 2074/75

Diseases	Cases	%
Communicable	30357	9
Non-communicable	329831	91
Total	**360188**	**100**

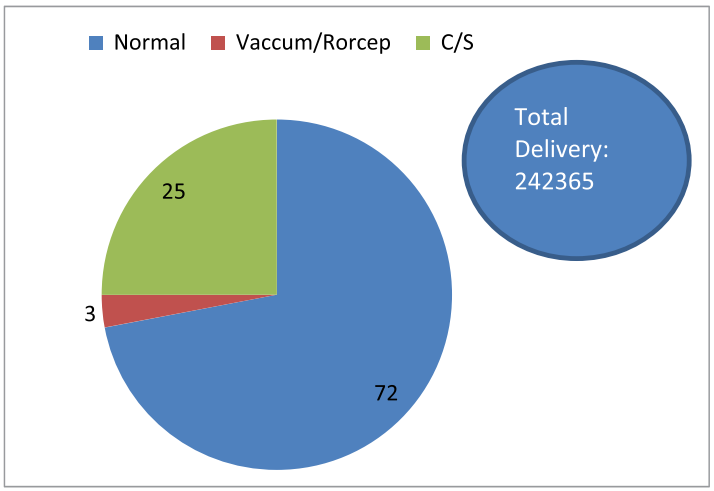
Surgeries — 150014 major surgeries were performed in the reporting period (combined inpatient and outpatient surgeries) of which 60.09 percent were female cases (Figure 7.18). A total of 68,811 minor surgical procedures were performed on hospital outpatients while 66,083 were performed on an inpatient basis. Females accounted for 49.47 percent of all minor surgeries. More of the minor emergency surgery cases were males than females (48.06%–51.94%).

Figure 7.18: Surgeries in hospitals, FY 2074/75



Deliveries —242,365 deliveries were conducted in hospitals in 2074/75 of which 72 percent happened through spontaneous labour, 25 percent through caesarean sections and 3 percent were vacuum assisted (Figure 7.19).

Figure 7.19: Deliveries in hospitals, FY 2074/75



Hospital Brought deaths and Post-mortem cases — In FI 2074/75:

- 3166 brought dead to hospital cases (61% male–39% female) and 8370 hospital post-mortem cases (65% males–35% females) were reported to the HMIS (Table 7.11).

Table 7.11: Hospital brought dead and post-mortem cases, FY 2074/75

	Female	%	Male	%	Total
Brought dead	1243	39	1923	61	3166
Post-mortem done	2889	35	5481	65	8370

7.2 Human Organ Transplant Services

7.2.1 Introduction

Sahid Dharma Bhakta National Transplant Center (SDBNTC) was established in 2012 by the Ministry of Health and Population (MoHP) to strengthen and expand organ transplantation services in the country. This center stated its services merely with the OPD services, but within a few years of its establishment it has extended its services beyond organ transplantation.

7.2.2 Major Milestones of Human Organ Transplant Center (HOTC)

• Establishment	2012, February
• Initiations of Dialysis services	2012, November 12
• Kidney transplantation started from	2013, January 19
• Free Hemodialysis service stated from	2013, March 29
• Human Organ Transplantation Act	2016, February 25
• 1st Pair Exchange Kidney Transplantation	2016, July 27
• Initiation of Cardiac Surgery	2016, November 17
• Human Organ Transplant Regulations	2016, December 1
• First Liver Transplantation	2016, December 7
• Free Kidney Transplantation	2017, April 15
• Second Liver Transplantation	2017, July 2
• Transplantation from a brain dead persons	2017, May 11
• Third Liver Transplantation	2018, June 2

7.2.3 Objectives

- To strengthen and expand organ transplantation services in the country.
- To provide and expand specialized services beyond transplantation
- To provide high quality health care at a low price/free of cost
- To undertake research related to human organ transplant to understand the state of kidney and other organ failure in Nepal.
- To advocate for policy interventions
- To organize free health camps across Nepal to screen any kind of diseases.
- To conduct educational activities to raise awareness regarding organ failure, organ transplantation and organ donation.
- To produce high level human resources by providing structured training in various aspects of services to expand the services across the country.

7.2.4 Major achievements of FY 2074/75

- Played an important role in the cadaveric organ donation, transplantation and pair exchange programs.
- Instigator of 2nd and 3rd liver transplantation in Nepal
- Conducted two kidney transplantations from a brain dead donor for the Second time in the history of Nepal
- Cath lab and CT scan Service
- Carried out 153 kidney transplants in the FY 2074/75

Status of health care services, fiscal year 2073/74 to 2074/75

The number of patients in all these aspects have increased remarkably in the FY 2073/74. There were 31,565 patients served in outpatient department, while the rate of admission and discharge were almost similar with 1741 and 1734 respectively.

There were 917 minor surgeries and 648 major surgeries in the FY 2074/75 which is quite higher than the past years. Similarly, the number of kidney transplantation also escalated from 132 to 153 in FY 2074/75.

The number of sessions of paid dialysis decreased from 8,351 in FY 7073/74 to 3,229 in fiscal year 2074/75. There has been a slight decrease also in the free dialysis sessions from 26,342 in FY 2073/74 to 26,051 in FY 2074/75..

7.2.5 Status of specialized diagnostic services

The number of lab tests done in FY 2074/75 was 127,609. The number of ultrasound tests and X-ray in the FY 2074/75 was 3,951 and 3,467 respectively. Similarly, the number of ECG done was 1,311 while that of the echocardiograph was 737 followed by 594 endoscopy and colonoscopy. The total number of BCM done was 114 and that of ABG was 28

The status of human resources at SDBNTC shows an upward trend in each fiscal year. In the FY 2074/75, there were a total of 199 staffs of which 166 were technical and 33 were non-technical staffs. These both numbers are higher than that of previous years.

7.2.6 Status of Financial Resources

The total budget expenditure in the FY 2074/75 was 25,30,00,000

7.2.7 Physical infrastructures at SDNTC- FY 2074/75

- Hospital owned land: 0 Ropani
- Building:
  - Hospital Room: Inadequate
  - Doctor quarter: Not available
  - Staff quarter: Not available

- Ambulance : Functioning - 1
- Major Medical Equipment:
  - X-Ray machine – 1, USG – 2
  - Laboratory Equipment : Biochemistry, Hematology , dry chemistry analyzer, automated immunoassay analyzer, automated tissue presser, rotary microtome, automated coagulation analyzer, 6 port fully automated hematology analyzer,
  - Dialysis Machine : 60
  - OT/ICU Major Equipments : Ventilator – 4 , Monitor – 15 , Syringe Pump - 10 , Infusion Pump – 10, Defibrillator- 6, Laparoscopy – 1, Endoscopy
  - 256 Slice CT Scan
  - Cath Lab
  - Endoscopic Ultrasound,
  - CUSA
  - Low Temperature Analyzer
  - TEG Analyzer
  - Autologous Blood Salvage System
  - TEE Probe
  - PCA Pump
  - EBUS
  - ECMO
  - ABP
  - Halter
  - TMT

7.2.8 Status of House Keeping at SDBNTC, FY 2074/75

SN	Activities	Remarks
1	Cleanliness of the hospital	Satisfactory
2	Maintenance of hospital premises	Satisfactory
3	Sanitation	Satisfactory
4	Health care waste management	Satisfactory
5	Safe drinking water	Satisfactory
6	Canteen	Satisfactory
7	Triage system	Satisfactory
8	Hospital parking	Poor
9	Hospital garden	Poor

7.2.9 Challenges:

- Lack of awareness
- Lack of adequate space

7.2.9 Aims of SDBNTC in FY 2074/75

- Conduct massive awareness programs on prevention of organ failure, organ donation and transplantation across the nation.
- Produce competent human resources for kidney, liver, heart surgeries through extensive training and technical support
- Conduct at least 200 kidney transplants per year
- Conduct at least 1 liver transplant and 1 heart surgery per month
- Increase the bed capacity to 300 beds
- Develop the center as a multi-specialty hub and health science institution

7.2.10 Available Services of Shahid Dharmabhakta National Transplant Center

- ☞ Kidney Transplant
- ☞ Liver Transplant
  - Nephrology(HemoDislysis, -CAPD), (CRRT) (Plasma exchange), Access surgery (Fistula creation , permanent catheter insertion)
  - (Endo Urology)(Mini PCNL, TURP, TURBT, Cystoscopy, URS)
- ☞ **(Gastroenterology / Hepatology)**
- ☞ (OPD)
  - (Gastroduodenoscopy, Colonoscopy,ERCP) Endoscopic Ultrasound
  - (Laparoscopic Cholecystectomy)
  - HEPATOBILLOIARY SURGERY
  - (Gallstone , GB and Bile duct cancer)
  - (Liver Surgery)

- ☞ **(Cardiology Cardiothoracic & Vascular Surgeon)**
  - **VATS**
  - **Lung Resection**
  - **Open Heart Surgery**
  - **CABG**
  - **Congenital Heart**
  - **Valve Surgery**
  - **Carotid artery surgery**

- (ECG)
- (BCM)
- (Echo Cardiogram)
- Bronchoscopy Lung Biopsy

☞ **(ENT)**

☞ Radio diagnosis

- (X-Ray)
- (Ultrasound)

☞ **(Pathology)**

☞ **(Organ Donation)**

☞ **(Physiotherapy)**

☞ **24 hour Pharmacy**

7.3 Homoeopathic Services

7.3.1 Background

Dr. Samuel Haheneman of Germany had discovered Homoeopathic system before two and half centuries. This is based on fixed principals of "Similia Similibus Curantur". Medicine is provided on the basis of sign and symptom exhibited by patients. Pashupati Homoeopathic Hospital is the only one hospital providing homoeopathic services to the people of Nepal in the public sector. The homoeopathic system is economic, easy and effective having no side effect as well. The hospital provides OPD service only.

7.3.2 Strategies Adopted

This is the only one hospital of Homeopathy in Nepal. This system is economic, easy and convenient, covering most of the diseases with no side effect from the medicine being used. OPD patients are out numbered. But, due to lack of manpower and pathology lab IPD is not in action. The treatment provided here is free of cost.

7.3.3 Summary Of Achievement

The number if patients is increasing day by day. Some of the referred cases are also treated here like allergic rhinitis, urticaria, laryngeal papilloma, PCOD and other skin diseases. Total service provided in FY 2074/75 are summarized in Table 7.1

Table 7.3.1: Description of patients visited in Hospital, fiscal year 2074/75

Particular	Number of Patients
General Medicine	44311
Skin	22209
E.N.T	3237
Eye	1610
Dental	1903
Gyn/Obs.	2231
Other	8394
Total Patients	**83895**

7.3.4 Health Camp Services: Fiscal Year 2074/74

1. **Indrasarowar gaupalika {Kulekhani Health post}, Makwanpur**

   Total number of patients- 373

   Male- 175

   Female- 198

2. **Konjyeosom Gaupalika {Bhardev Health post}, Lalitpur**

   Total number of patients- 335

   Male- 142

   Female- 193

7.3.5 Summary of Financial Allocation and Expenditure

Fiscal Year	Regular Budget in Rs (in thousand)	Development Budget in Rs (in thousand)	Total Budget in Rs(in thousand)
2074/75	16600	3000	19600

7.3.6 Constraints

i. Lack of doctors, paramedics and other staffs made ineffectiveness in its services.

ii. Doctors and other staff are not provided with higher training and education.

iii. There is high need of pathology lab.

7.3.7 Conclusion

This homeopathy hospital is central level hospital. It needs to be ungraded. People of Kathmandu valley and nearby districts can take free and convenient service of the hospital. People far from Kathmandu valley are not able to take the benefits provided by this hospital. It is essential to provide service at all the 7 provinces of Nepal

SUPPORTING PROGRAMS

8.1 Health Training

8.1.1 Background:

National Health Training Center (NHTC) was established in 1993 AD under Department of Health Services (DoHS), Ministry of Health and Population (MoHP) to coordinate and manage all health training under Ministry of Health (MoHP). NHTC is an apex body, responsible to organize and manage training for different cadres of health service providers. In its training network, it has five regional training centers (Dhankuta, Pathaliya, Pokhara, Surkhet and Dhangadi) and one sub- regional training center in Sapahi, Dhanusa. It caters to training needs of all departments, divisions, and centers of the Ministry of Health and Population (MoHP), thus contributing to meet the targets envisioned in the National Health Policy 2071, National Health Sector Strategy (2015- 2020) and Sustainable Development Goals 2030.

8.1.2 Goal:

The overall goal of NHTC is to build a technical and managerial capacity of health service providers at all levels to deliver quality health care services towards attainment of the optimum level of health status.

8.1.3 Objectives:

- To enhance and standardize the training curricula, references, trainer's capacity with the training sites.
- To organize training activities to address the need of quality health services providers in different level of health facilities.
- To address the training requirements reflected in current national health policy and strategies
- To ensure quality of training programs using different mechanisms in adherence to national standards.
- To adopt and promote innovative training approaches
- To strengthen mechanism and capacity for post training follow up and suppor

8.1.4 Strategies:

- Assessing, standardizing and accrediting training and training sites.
- Developing and standardizing training packages.
- The institutional capacity development of all training units.
- Conducting pre-service, in-service, orientation, refresher, long-term and short-term trainings as per national requirements.

- Integrating and institutionalizing training.
- Develop links with professional career development organizations.
- Strengthening the Training Information Management System (TIMS)and training rosters.

8.1.5 Training Network of NHTC:

National health training network co-ordinates seven Provincial Health Training Center (previous Regional Health Training Centers/ Sub-Regional Health Training Center) currently established under SDM of each Province and 38 clinical training sites (Figure 8.1.2). The hospital-based training sites conduct Family Planning, Skilled Birth Attendance, Mid-Level Practicum, Safe Abortion Services, Rural USG, Anesthesia Assistant, Pediatric Nursing, Medico-Legal and other types of training program. The new organizational structure and training network are shown below.

Figure 8.1.1 New Organizational Structure of NHTC:

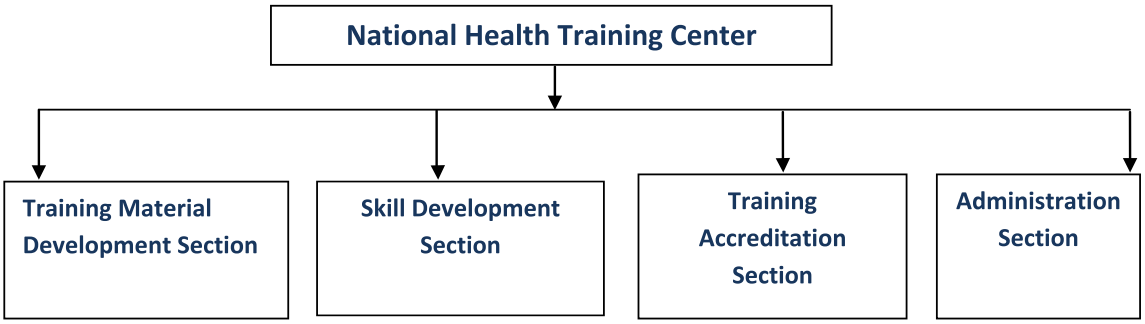
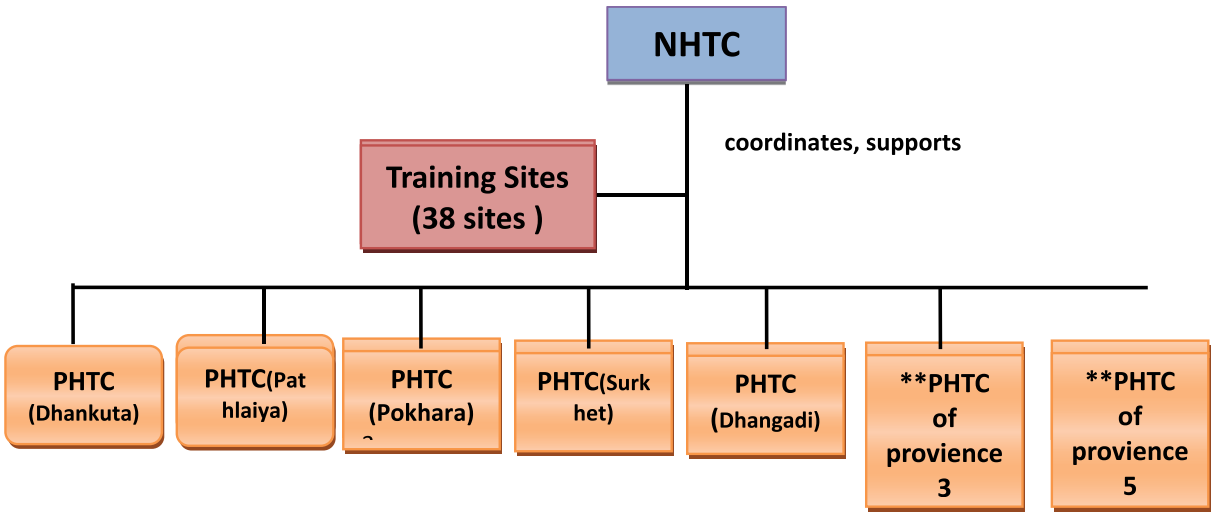


Figure 8.1.2 Training co-ordination Wings : Training Network



***recently 5 previous RHTCs are established as PHTC under each SDM of each Province.**

****PHTC of province 3 and 5 are going to established at of recently approved organogram.**

8.1.6 Different Clinical Training Sites accredited by NHTC:

National Health Training Centre provides following training through different training sites. The detail of training, its objectives, target group, and duration of the trainings are provided in annex 1. In addition, the list of the trainings and the NHTC accredited clinical training sites are provided in annex 2. Further feasibility study is going on for training site in Karnali Academy of Health Sciences of Jumla district.

Table 8.1.1 : clinical training sites

SN	Training	No. of sites	Name of training sites
1	SBA	21	Different accredited central, regional and zonal hospitals
2	ASBA	2	Paropakar Maternity Hospital, Kathmandu and Bharatpur Hospital, Chitwan
3	Anesthetic assistant	3	NAMS Bir Hospital, Dhulikhel Hospital and AMDA hospital, Damak
4	Family planning	15	Accredited hospitals and Family Planning Association of Nepal(FPAN) clinics
5	Ultra sonogram	4	Dhulikhel Hospital, AMDA Hospital, Patan Hospital, Bheri Zonal Hospital, Nepalgunj
6	Medico-legal	2	TU Teaching Hospital and BPKIHS Dharan
7	Safe abortion services	7	Accredited central, regional and zonal hospitals, MS Clinics &FPAN clinic
8	Pediatric nursing	2	BPKIHS, KCH, Bheri Zonal Hospital and Palpa Mission Hospital
9	Intensive and critical care units (ICU, CCU)	2	In process of site development
10	OT management	2	TU Teaching Hospital and Bharatpur Hospital
11	Mid-level practicum	11	Various hospitals

The Training Sites according to the provinces are as shown in Figure 8.1.3:

Figure 8.1.3: Provincial level training sites

8.1.7 Major Activities Conducted By Nhtc

Training Program

Decentralization of many training programs at provincial level has been done and Health and Social Development Ministry is responsible for this task. Accordingly, the main role of NHTC will be transferred of training programs to Provincial Health Training Centers. In central level, NHTC will be more focus on development of program guideline, expenditure guideline; training manual development and revision; monitoring programs; and further facilitate the provincial level for conducting training programs.

The Skill Development Section of NHTC conducted following programs :

a. ***Pre-service training:*** NHTC provides two types of pre-service trainings; the Diploma in Biomedical Equipment Engineering (18 months) and Anesthesia Assistant Course (1 year).The CTEVT accredited DBMEE training is targeted for the plus two science graduate who will work as biomedical equipment technician after training completion to perform preventive and repair maintenance of healthcare equipment. The AA course under National Academy of Medical Sciences (NAMS) is considered as pre-service as well as in service training course which is designed as a task shifting to produce non-doctor AA. Staff Nurses and Health Assistant are the candidates for this course and after graduation; they can help in the conduction of various emergency surgeries, especially the caesarean section in peripheral hospitals where anesthesiologists are unavailable.

b. ***Upgrading Training:*** In-service upgrading trainings are designed and conducted as per the needs of program divisions and centers. The training packages aim to develop the skills to implement new programs and improve job performance. The main courses are listed in Box 2.

c. ***Competency and clinical-based training courses:*** NHTC organize various clinical training for existing government health workers in coordination with multiple clinical training sites to upgrade the knowledge and skills of the service providers in multiple clinical areas. These in-service trainings are based on local need and demand and are supported, developed, and updated according to the national and international practice and scientific evidence. Twenty courses are offered which are listed in box below:

Types of Upgrading and Competency and Clinical-based Training Courses		
Upgrading courses	***Competency and clinical based courses***	
• Senior auxiliary health worker training (6 months) • Senior auxiliary nurse-midwife (6 months) • Auxiliary nurse-midwife Padnam (P) (6 months) • Auxiliary health worker-P (6 months) • Auxiliary health worker(15 months) • Auxiliary nurse-midwife (18 months)	• Skilled birth attendance • Advanced skilled birth attendance • Rural ultrasonography (USG) for senior nurses • Medico-legal Training • Non-scalpel vasectomy • Intrauterine Contraceptive Device (IUCD) • Postpartum intrauterine contraceptive device (PPIUCD) • Minilaps • Implants • Safe abortion services • Comprehensive abortion care • Medical abortion	• Mid-level practicum (MLP) • Palliative care • Pediatric nursing care • Gender based training • Clinical training skills (CTS) • Operation theatre technique and management (OTTM) • Infection prevention (IP) • Mental health • Comprehensive family planning (CoFP) counseling • Primary trauma care (PTC) and emergency trauma management (ETM) • Adolescent and sexual reproductive health (ASRH)

d. ***Refresher training:*** A range of refresher trainings are conducted as per the needs of divisions and centers to develop the skills for implementing new programmes and to improve job performance. In this fiscal year 2074/75, the refresher training courses include for skilled birth attendants (SBAs).

e. ***Orientation programmes:*** NHTC supports the divisions and centers to develop orientation packages and prepare pools of trainers for conducting orientations for health and non-health workers including for Health Facility Operation and Management Committee (HFOMC) members and on Appreciative Inquiry (AI).

f. ***Basic training:*** Basic trainings are organized for Female Community Health Volunteers (FCHVs) who are newly recruited by the local mother's group among the member. The duration of this course is 18 days.

g. ***Induction training:*** NHTC has begun providing induction training for all gazetted 3rd level Officers of all health service groups from 2072/73. The one month courses (24 days working day) are provided for all health service disciplines.

h. ***Other training includes:***

- Induction Training for newly recruited officers (health personnel)
- Training on the Transaction Accounting and Budgetary Control System (TABUCS)
- Biomedical equipment assistant training (BMEAT)
- Biomedical equipment training for users (cold chain, laboratory, X-ray)

8.1.8 Training Guidelines/Manual development

According to ToR of Curriculum Development Section of NHTC , different training manuals were developed or revised this year with support from external development partners (Climate Change and Health Impact, SOP of Medicolegal Training, Minilap , NSV, Basic IUCD, CoFP counseling, implant training packages).Different manuals are on continuous for Developments on FY 2075/76.

8.1.8.1 Accrediation and Certification

Accrediation and certification section of NHTC is responsible for accrediting appropriate non-clinical and clinical competency based training courses that are listed in Box and training sites. All Institutions must be accredited before providing training courses.

8.1.8.2 Institutional Capacity Development

NHTC focuses on the following activities for the institutional capacity development of training:

- Physical facilities:

  NHTC supports /facilitate for infrastructure developments of PHTCs, hospitals and district level training sites(as per need and demand from Provincial Government. Along with this, it reviews and ensures the presence of adequate physical facilities and equipment.

- Training programme development:

  NHTC develops the training programmes as per the need ofMoHP, DoHS and other stakeholders and facilitates coordination between divisions, centre, districts and training sites. NHTC also plans, implements, and manages different trainings and supports training improvement in coordination and collaboration with external development partners, NGOs, private providers and medical colleges.

- Capacity building:

  NHTC develops the capacity of central and regional level staff in different training and development specialized areas. It strengthens and enhances knowledge and skill of staff by providing an opportunity to participate in different national and international workshop, seminar, training, and different programs.

- Training Working Group:

  A high-level Training Working Group (TWG) is formed in the leadership of NHTC. This TWG comprises the membership of government and external development partners which meet on regular basis to discuss training quality improvement, curriculum development, certification, and training accreditation.

- Develop Training Databank (TIMS):

  NHTC is working to update the information in the TIMS. All the training information taken from different training sites is being updated and made available to participants. NHTC plans to update the TIMS at the central level and link it with the regional health training centres another clinical training sites. NHTC is also preparing a trainers' roster.

Key Innovation/Initiatives

- NSV blended learning approach
- IUCD blended learning approach
- Follow up Enhancement Program
- Mental Health Training
- Palliative Care Training
- Primary Trauma Management Training
- PPIUCD Training
- POP Package (Competency Based Standardized)
- Trauma Management Trainings
- Revision of NHT strategy (amendments in according to the federal situation)
- Web based access to training related documents (manuals and references, etc)
- Climate change package development
- Medico legal e-learning Training Program

8.1.9 Training Activities Annual Target and Achievement For Fy 2074/75

a. Program activities

In FY 2074/75 NHTC has achieved most of its annual training target i.e. about 5764 participants among which 1633 male and 4131 female were trained. Under different headings of training activities (Annex 8.1.4.1), NHTC has performed remarkably by achieving 100% of the training target in family planning and youth and adolescent. Likewise, the achievement of health training is 93 percent followed by safe motherhood (91.35%) and other health training activities (84%). Eighty percent of the trainings were funded by Gon and rest 20% were supported by multi-lateral development partners like USAID and UNFPA.

b. Budget and Expenditure at Central and District Level

The data shows that a higher proportion of district as well as central level budget was spent in Fiscal year 2074/075 compared to previous fiscal years.

Status of budget allocation and financial progress in three fiscal year

Budget	FY 2072/073 (in NRs '000)		FY 2073/074 (in NRs '000)		FY 2074/075 (in NRs '000)	
	Allocated Budget	*Expenditure (%)*	*Allocated Budget*	*Expenditure (%)*	*Allocated Budget*	*Expenditure (%)*
Central level (with regional and training sites)	180,371	73.69	188,450	80.62	204,149	90.3

TRAINING ACTIVES PLANNED FOR FY 2075/76

Training activities that are planned for the FY 2075/76 are mentioned at Annex 2

8.1.10 Issues and Recommendations:

Major issues, problems raised at this year's national and regional review meetings are listed in Table. *Major Issues and Recommendations*

Issues	Recommendations
• Manage a separate pool of trainers from different disciplines • Unplanned selection of participants: – Training plan for programme and service (district and respective division) – Training as incentives rather than need based and carrier development • Multi-door trainings • Lack of strategic and uncoordinated approach to training, e.g. staff may be trained but lack the equipment required or opportunities to practice their skills. • Focus of training on transfer of knowledge (theory) rather than developing practical skills • Inadequate training follow up mechanism • Selection process and criteria of Sr. AHW, Sr. ANM(age and level) • System of 'irrational and frequent' transferring of staff	• Consolidate the overall training needs of health service providers • Consolidate all training programme run by divisions and centers through NHTC. • Improve the quality of training by regularly updating trainers, by post-training follow-up, by preparing a roster of master trainers and by ensuring training quality as per guidelines • Recognize competency based training for career development • Design and develop practical training which encourages 'learning by doing' and links directly to an individual's job/ tasks • Establish a national health resource unit at NHTC • Rapidly assess the needs of NHTC, RHTCs and training sites including infrastructure and human resources. • Make transfer policies and guidelines • Revise the selection criteria for upgrading training • Develop regulating bodies to ensure quality and standard of training

8.2 Vector Borne Disease Research and Training

8.2.1 Introduction

Vector Borne Disease Research and Training Center (VBDRTC) was established in the year 1979 AD as a Malaria Research and Training Centre under the Nepal Malaria Eradication Organization (NMEO). On 12th June 1996, the center was named as Vector Borne Disease Research and Training Center (VBDRTC). The key objective of VBDRTC is to fulfill the knowledge gap and supplement with evidene base in the better understanding of Vector Born Disese (VBD) etiology, its transmission intensity and interventions programs implemented by Nepal government. VBDRTC is responsible for research and training of VBDS including Malaria, Kala-azar, Dengue, Chikungunaya, Lymphatic filariasis, Scrub typhus and Japanese encephalitis.

8.2.2 Major activities carried out in fiscal year 2074/75

1. Training

1.1 VBDs training

8.2.2.1 VBDs training for health workers

The objective of this training is to update the knowledge, skills and strengthen management capacity of health workers on VBDs and enhance the level of knowledge and skills of the participants in the management of prevalent vector borne diseases in Nepal. Three days VBDs training was conducted in Chitawan, Siraha & Kavre district. The methodologies used were lecture, adio/visual aids, power-point presentation, group works and discussion**.** A total of 75 persons including MO, VCI/ VCO/ MI, HA, AHWs, ANMs and MR were trained on VBDs as preset program schedule.

8.2.2.2 VBDs training for physicians, pediatricians and medical officers

The objective of this training is to orient the physician, pediatrician and also the medical generalist, working in emergency department on strategies and treatment protocol of VBDs and facilitate early diagnosis, prompt and correct treatment of VBDS. The orientation was conducted in Jhapa. Consultant physician, medical superintendants, physician and pediatrician and & medical generalist/focal persons were used as facilitators. A total of 26 doctors were oriented in the year 2074/75.

8.2.2.3 Malaria microscopy training

With a vision of malaria free Nepal by 2026, Nepal Malaria Strategic Plan 2015-2025 has been developed. Light microscopy (Giemsa Malaria Microscopy) is still the gold standard technique for malaria diagnosis. VBDRTC is providing basic malaria microscopy and refresher malaria training to laboratory technicians/ assistants from malaria endemic areas. Purpose of this training is to generate competent manpower at microscopic centers.

8.2.2.4 The Basic Malaria Microscopic Training

This course is intended to provide training to laboratory personnel who are new to malaria microscopy and are involved in malaria diagnosis. It is 30 days of course with lots of hands on techniques involving smear preparation, staining, and microscopic examination of malaria parasites. The expected outcome

of this training is to provide basic malaria microscopy quality diagnosis and to acquire skillful eyes in differential diagnosis of all species of Plasmodium parasites. A total of 12 persons were trained in basic malaria microscopy.

8.2.2.5 The refresher malaria microscopy training

This course is intended to provide training to those who had previously obtained basic microscopy training to update and upgrade the skills in malaria microscopy and to strengthen the malaria microscopy laboratory services in malaria endemic districts. It is 15 days of course with lots of hands on techniques involving smear preparation, staining, and microscopic examination of malaria parasites, counting, quality assurance and national slide banking. A total of 12 persons were trained in refressor training.

8.2.3 Early warning and reporting system on site coaching programme

The objective of EWARS on site coaching is to improve recording /reporting system, strengthen surveillance system of VBD's and other epidemic potential diseases and encourage timely and complete reporting. It facilitates coordination and early response from sentinel sites and district public health offices (DPHOs). Programme was conducted in 10 sentinel hospitals. A total of 141 persons were participated including medical superintendent, medical officers (MO), medical recorders (MR). The major indicators of EWARS including timeliness, completeness and data quality among the oriented sentinel hospitals were more than 80%.

8.2.4 Molecular diagnosis of Malaria and dengue using PCR at VBDRTC

Polymerase chain reaction (PCR) is a molecular method based on DNA amplification and has been applied to malaria diagnosis since the late 1980s. It is more effective tool to detect low parasitemia (asymptomatic and submicroscopic cases) during elimination phase of malaria programmes.

In VBDRTC, PCR is used to diagnose, quality assurance, surveillance and outbreak investigation of malaria and serotyping of dengue virus. Around 4.88% of sub-microscopic malaria cases had detected by PCR in Baitadi out breaks. Negative samples reported in malariometric study by conventional techniques were blindly screened in VBDRTC and 20% of total samples were processed and tested for malaria PCR. Out of 63 samples, 2 samples were found positive, one in Makawanpur and another in Baitadi indicating possible evidence of sub-microscopic cases in the community. Positives and negative samples diagnosed in field conditions were processed at VBDRTC for validation. In dengue, we have processed more than 23 were obtained from Makwanpur and Birgunj. Samples received from Birgunj were found to be serotypes 2 while samples from Makwanpur were serotypes 1.

8.2.5 Susceptibility test of different species of anopheline mosquitoes with

DDT and Malathion in Dhanusha and Nawalparasi districts

8.2.5.1 Materials and methods

The standard World Health Organization (WHO) test procedures for insecticide resistance monitoring in malaria vector mosquitoes was followed and the recommended diagnostic dosage was used. The insecticide impregnated papers and silicone oil impregnated control papers used in susceptibility test.

Result of Dhanusha:

8.2.5.2 Results of susceptibility test performed with DDT (4%)

Susceptibility test performed on 245 adults female anopheline mosquitoes with DDT (4%), species wise observed mortality in descending order was; *An. aconitus* (100%), *An. tesselatus* (100%), *An. splendidus* (82.9%), *An. pseudowillmori* (82.2%), *An. fluviatilis* (53%), *An. annularis* (50%) and *An. culicifacies* (31.3%) respectively. Similarly, susceptibility testing on 125 adults female anopheline mosquitoes with OC – control papers, 4.5% mortality was observed only in *Anopheles culicifacies.*

8.2.5.3 Results of susceptibility test performed with Malathion (5%)

Susceptibility test performed on 130 adults female anopheline mosquitoes with Malathion (5%), species wise observed mortality in descending order was; *An. fluviatilis* (100%), *An. willmori* (100%), *An. annularis* (100%), *An. splendidus* (100%), *An. pseudowillmori* (97%), *An. culicifacies* (85%) and *An. peditaeniatus* (50%) respectively. Similarly, susceptibility testing on 90 adults female anopheline mosquitoes with OP – Carbamate control papers 3.7% mortality was observed only in *Anopheles fluviatilis.* This susceptibility test was carried out during the time period of 2074/11/09 to 2074/11/15.

8.2.5.4 Conclusion

Results of susceptibility test performed on different species of adult female Anopheline mosquitoes with DDT (4%) in Tulsichaura village ward no.11 of Mithila Municipality of Dhanusha district indicate that tolerance have been developed in *Anopheles fluviatilis.* Similarly, indication of tolerance with DDT has also been observed in other Anopheles species; *Anopheles pseudowillmori, Anopheles culicifacies* and *Anopheles splendidus*. However, *Anopheles fluviatilis* found susceptible with Malathion. Since present susceptibility tests performed in wild caught mosquitoes and number of tested Anopheles species were not sufficient to make decisive conclusion. Therefore, further susceptibility tests need to be carried out in sufficient number of wild caught and F1 generation of the *same species* of same locality.

Result of Nawalparasi District

8.2.6.1 Results of susceptibility test performed with DDT (4%) & Malathion (5%)

Three susceptibility tests with Malathion (5%) were performed in 346 adults female anopheline mosquitoes comprising 7 Anopheles species. Susceptibility test performed in 233 adults female anopheline mosquitoes with 5 percent diagnostic concentration of Malathion. Species wise observed mortality in descending order was; *An. fluviatilis* (100%), *An. annularis* (100%), *An. subpictus* (100%), *An. vagu* (100%), and *An. culicifacies (98%)* respectively. Similarly, susceptibility test performed in 113 adults female anopheline mosquitoes with OP-Carbamate control papers, 9.8% mortality observed in *Anopheles annularis* and 12.8% mortality in *An. culicifacies*. Control mortality was observed between 5% - 20% during the susceptibility tests. This susceptibility test was carried out during the time period of 2075/01/24 to 2075/01/30).

8.2.6.2 Conclusions

Anopheles annularis established vector of malaria and responsible for malaria transmission in plain cultivated terai area of Nepal is found susceptible to Malathion insecticide. Similarly, another suspected malaria vector *Anopheles culicifacies* also found susceptible to Malathion.

8.2.6.3 Recommendations

Pyrethroid insecticides LLINs are being used in the community since long time. Therefore, to know the bio-efficacy of the LLINs that are distributed in the community, bio-assay tests on those LLINs needs to be carried out. Similarly, to know the susceptibility status of the malaria vector species to the pyrethroid insecticides, susceptibility tests needs to be carried out. To supplement these susceptibility tests, further susceptibility tests need to be carried out in F1 generation of the malaria vector species of same locality.

8.2.7 Entomological surveys

Entomological surveys of Kala-azar vector that was carried out in Morang and Sarlahi districts found high density of *Phlebotomus argentipe* despite regular indoor residual spraying (IRS). Similarly, malaria vector surveys were carried out in Jhapa, Sindhuli, Dhanusha, Mohottari, Kavrepalanchok, Nawalparasi, Makwanpur and Mugu districts.

8.2.8 Transmission Assessment Surveys (Pre TAS, TAS-I, & TAS - III)

Lymphatic filariasis (LF) is targeted for global elimination through annual mass drug administration (MDA) and morbidity management. This center has also carried out Transmission Assessment Surveys (Pre TAS, TAS-I, & TAS - III) in different districts in close collaboration with Epidemiology and Disease Control Division (EDCD), RTI and ENVISION.

Survey	Objective	Methodology	Districts/EU	Sample size	Prevalence %	Result
Pre-TAS	Assess the effectiveness of MDA	Clustersurvey (sentinel sites &spot check)	Bhojpur Udaypur Dailekh Dang Banke Kailali Kanchanpur Doti Dandeldhura Achham Bajura Darchula Baitadi Bajhang	611 619 600 600 618 603 610 600 609 600 600 617 602 627	0.16 0.48 0.00 6.33 11.92 6.30 2.78 0.00 0.33 0.00 0.00 0.00 0.00 0.00	Pass Pass Pass Fail Fail Fail Fail Pass Pass Pass Pass Pass Pass Pass

Survey	Objective	Methodology	Districts/EU	Sample size	Prevalence %	Result
TAS-I	Ensure stop LF transmission	School based cluster survey	Sunsari, Lalitpur Rural Myagdi Surkhet&Jajrkot	1684 1540 1392 1684	0.00 0.53 0.06 0.07	Pass Pass Pass Pass
TAS-III	Ensure stop LF transmission	School based cluster survey	Parsa, Chitwan& Makwanpur, (EU I) Nawalparasi &Rupandehi (EU II)	1728 1712	0.17 0.29	Pass Pass

First, the Pre-Transmission Assessment Survey (Pre-TAS), a cross-sectional design was conducted in 14 districts of Nepal. Among the total tested 8822 samples, 208 (2.36 %) were found to be positive were for LF antigen. Among them, 4 districts namely Dang, Banke, Kailali and Kanchanpur had prevalence≥ 2.0%. Hence these 4 districts were taken Pre TAS failed and needed 2 more rounds of MDA and again Pre- re -TAS assessment at later date. Remaining districts passed the Pre TAS and qualified for TAS 1 survey.

Second, TAS – I, school-based cluster survey was conducted in five evaluation units, composed of six districts. In all EUs, the number of positive cases was below the critical cut off, indicating that MDA could be stopped and continued surveillance.

Finally, TAS – III survey was also conducted in two evaluation units composed of five districts. The LF prevalence, the number of positive specimens in these 2 Evaluation Units had been found less than critical cut off value (20) and has been taken as TAS-3 Pass.

Financial Achievement

Fiscal year	Allocated budget	Total Expenses	Expenses %	Remaining	Irregularity (cumulative)
2072/73	21,801,000.00	16,759,192.00	77%	5,041,808.00	29,700.00
2073/74	22,600,000.00	16,366,998.55	72%	6,233,001.45	0
2074/75	30,030,000.00	15,235,068.58	51%	14,794,931.42	0
Total					**29,700.00**

8.2.9 Problems/ constrains

S. N	Problems/ constrains	Action to be taken	Responsibility
1	VBDRTC's Office & dormaory for trainees is occupied by the provincial ministry of social welfare & regional educational directorate.	Provincial ministry of social welfare& regional educational directorate to be managed in other place.	VBDRTC & MoHP/PMoSW
2	Old infrastructure: dormitory, office building and quarters.	Hostels, office and staff quarters to be renovated.	VBDRTC
3	Vacant post: parasitologist, entomologist & vector control officer	Vacant post needs to be filled	VBDRTC
4	Lack of vehicles for training, research, surveys and outbreak investigation of VBDs.	At least one vechicle should be provided for field program.	VBDRTC
5	Membrane feeding apparatus required to feed blood for mosquito	Membrane feeding apparatus need to be procured for mosquito raring	VBDRTC

8.3 Health Education, Information and Communication

8.3.1 Background

The National Health Education, Information and Communication Centre (NHEICC) is the apex body under the Ministry of Health and Population for planning, implementing, monitoring and evaluating Nepal's health promotion, education and communication programmes including periodic surveys and research. The Scope of the centre is guided by the National Health Communication Policy 2012 and the National Health Policy 2014, communication strategies and other health related plans and policies. The centre functions to support health programmes and services to achieve national health goals and SDGs through health promotion, education, information and communication approach. The centre is the lead for all health promotion, education and communication programmes including multi-sectoral health initiatives. The centre uses advocacy, social mobilization and marketing, behaviour change and community lead social change strategies to implement its programmes.

8.3.2 Vision: Every Nepali is healthy and lives a long and productive life.

8.3.3 Goal*:* The goal of the Health Information, Education and Communication Programme is to promote healthy behaviour, prevention and control of diseases and increase use of health services.

8.3.4 Objectives*:*

- Mobilize and use modern and traditional communication multimedia and methods to raise health awareness, knowledge and promote healthy behaviour among the general public.
- Strengthen, expand and implement health communication programmes at all levels.
- Generate, collect and mobilize resources to implement health communication programmes.
- Prevent the unauthorized dissemination and duplication of health related messages or information and materials on different issues.
- Enhance capacity on health communication to develop, produce and disseminate quality, correct, authorized, uniform and appropriate messages and information.
- Provide quality health messages and information through appropriate media and methods to the citizens who otherwise have little access to such messages and information.

8.3.5 Strategies:

Advocacy, social mobilization and behaviour change communication are the major strategies for health promotion, education and communication. The specific strategies are as follows:

- Implementing a one-door integrated approach for all health communication programmes under MoHP.
- Ensuring adequate budget for health communication programmes.
- Coordinating with stakeholders through technical committees and other means.
- Ensuring implementation of health communication programs through health infrastructure at all tiers of federal government, i.e., federal, provincial and palika levels in a decentralized manner.

- Mobilizing communication media, methods and materials for the prevention of diseases and promotion of health.
- Standardizing health messages and information for uniformity and appropriateness.
- Using edutainment approach with an education format for disseminating health messages and information.
- Ensuring that all stakeholders disseminate health messages and information after taking consent from concerned MoHP authorities.
- Encouraging the media to disseminate messages and information on health issues.
- Encouraging the dissemination of health messages and information through public-private partnerships.
- Discouraging messages and information that is harmful to health.
- Prioritizing lifestyle diseases prevention messages and information dissemination.
- Building the capacity of health workers to plan and implement health communication programmes.
- Ensuring the quality, uniformity and standardisation of health messages and materials through technical committees.
- Introducing new communication technologies for health promotion and health communication.
- Coordinating with academia for building the capacity of health workers on health promotion and health communication.
- Strengthening monitoring and supervision activities to determine the gaps in knowledge, attitudes and practices among target audiences and service providers.

8.3.6 Major activities and achievement by national level in 2074/75

Health promotion, education, and communication activities that are carried out by national and district level in this reporting period are listed in the following tables.

Table 8.3.1: Major activities carried out by national level in 2074/75

• Development, production and distribution of IEC materials to stakeholders, regional medical stores, DHOs and DPHOs.	• Initiation of FCTC-2030 Strategic Plan project.
• Development, production and broadcasting of health messages through radio, television, and newspapers (printed and electronic).	• Pen-package promotion regarding the Control of non-communicable diseases.
• Golden 1000 days promotion communication campaign	• Communication Programmes on sickle cell anaemia.
• Communication programme on IMNCI, immunization, nutrition.	• Communication programme on communicable disease and epidemic prevention.
• Mero barsha 2074 for health promotion, ma swasthya, mero desh swasthya promotion programme	• School and adolescent friendly service centre, safe motherhood, delay marriage and family planning related inter-personal, social mobilization and mass communication programme

• Health promotion, reproductive and child health, free health, communicable and non communicable disease prevention related calendar, booklet etc printing and distribution	• Communication program for Health promotion activities on Life style, Free services, Ayurved, GBV
• Broadcasting of health messages through radio and television in packages including jeevanchakra, janaswasthya radio, janaswasthya bahas, golden 1000 days communication campaign, mero barsa campaign.	• communication programme on risk factors of non communicable diseases through social mobilization, interpersonal communication, electronic and print media.

Source : NHEICC

Table 8.3.2: Major activities carried out by district and below district level in 2074/75

• Running sanitation programmes for preventing and controlling epidemics.	• Publication of health messages in print media.
• Production of need-based IEC materials.	• Community interaction programmes for promoting health services.
• Distribution of IEC materials to health facilities.	• Celebration of world health day and other health related occasions.
• Production and airing of health programmes and messages through local FM radio.	

Source : NHEICC

8.3.7 Trend program analysis by national/district and below district level

The physical and financial achievement in the year 2074/75 regarding IEC programme by national/ district below district level was 56.04 percent and 85 percent accordingly and the trend in three consecutive years is shown in the following table (Table 8.3.7.1) where, 79.12 percent and 83 percent of its budget was spent in the reporting year accordingly.

Table 8.3.3: Percentage trend of physical and financial achievement by national and district and below district level in 2072/73 to 2074/75.

Programme	2072/73		2073/74		2074/75	
	Physical	Financial	Physical	Financial	Physical	Financial
National Level	95.85	72.5	90.13	69.55	56.04	79.12
District and below District Level	73.49	55.69	73.00	72.92	85	83

Source : NHEICC

8.3.8 Strength, Weakness and Challenges:

The strength, weakness and challenges of Information, Education and Communication Programme in the year reporting year are shown in the following table.

Table 8.3.4: Strength, Weakness and Challenges

Strength	Weakness	Challenges
National health communication policy, strategy and directive are in place.	There is no or lack of IEC/BCC staffs in district public/health office for the implementation of IEC/BCC activities.	Inadequate compliance with national health communication policy (NHCP)
Good structure of staff pattern at central level for implementing IEC/BCC activities.		Less emphasis in health promotion activities according to changing disease pattern.
Programmes flow from centre to district and below district level		Inadequate allocation of budget on the basis of planned programs

8.4 Health Service Management

Background

The Management Division(MD) is responsible for DoHS's general management functions. DoHS's revised Terms of References (ToR) of MD describing it as the focal point for information management, planning, coordination, supervision, and the monitoring and evaluation of health programmes. The division is also responsible for monitoring the quality of air, water and food products. It also monitors the construction and maintenance of public health institution buildings and supports the maintenance of medical equipment. More activities assigned to this division include including policy and planning related to health infrastructure and logistic management. The objectives and strategies of the Management Division are listed in Box 8.4.1

Box 8.4.1 Objectives and strategies of the Management Division

Objectives — The Management Division aims to support health programmes and DoHS to deliver health services through the following specific objectives:

- Facilitate and coordinate among concerned divisions and centres to prepare annual plans, programmes and to make necessary arrangements to get approval from the National Planning Commission (NPC) and Ministry of Finance.
- Make arrangements for the preparation and compilation of annual budgets and programmes of province and local levels.
- Monitor programme implementation status and carryout periodic performance reviews.
- Manage integrated health information system.
- Manage and coordinate the construction and maintenance of buildings and other public health infrastructure including the maintenance of biomedical equipment.
- Support MoHP to develop and implement environmental health, health care waste management and drinking water-related policies, directives and guidelines
- Support MoHP to develop and update national-level specification bank for drugs and health equipment's.

Strategies:

- Make arrangements to collect and analyse health information and use it to support the planning, monitoring, and evaluation of health programmes
- Strengthen bottom-up planning from community to central levels via the optimum use of available resources including health service information.
- Support MoHP to Conduct and expand regular periodic performance reviews and use outcomes for improvements down to community level.
- Strengthen and guide the monitoring and supervision system at all levels.
- Establish a central data bank linking HMIS with the Human Resources Management Information System (HURIS), health facility and work force registry, surveillances, LMIS, finance, surveys, censuses and other sources of information.

- Expand computerized information systems at all levels.
- Monitor the health services provided by state and non-state health institutions.
- Develop and implement construction, repair and maintenance plans for public health facilities and for biomedical equipment.
- The routine management of integrated health service Information.
- Develop and implement integrated supervision and monitoring plans.
- Establish and develop required infrastructure, human resource and guidelines to conduct other assigned designated and non-routine works.

Organizational arrangements

The Management Division has four sections and one unit for the overall management of functions and service delivery (Box 8.4.2). The specific functions of sections and units are given below:

Box 8.4.2 Sections under Management Division

- Integrated health information Section
- Environmental health and health related waste management Section
- Health Infrastructure Development Section
- PAM Unit

8.4.1. Health Information Management

Intergated Health Information Mangement Section (IHMIS) manages health service information from community to the DoHS level. This system provides the basic information for planning, monitoring and evaluation of the health system at all levels. The major functions of the HMIS are listed in Box 8.4.3

Box 8.4.3 Major functions of the Integrated Health Information Management System

- Facilitate MoHP to develop national level policies, plans, regulation, guidelines, standards and protocols related to integrated information system.
- Timely update and making information digital friendly for effective management and health information.
- Develop, expand and institutionalize existing health sector information system such as HMIS, LMIS, HIIS etc as an integrated information system.
- Identification and revision of sector wise health indication for national level health information.
- Develop periodic and annual health reports and disseminate the funding based on rigorous analysis and existing health information.
- Facilitate for capacity building and health personnel for institutionalization of integrated information system at different level.
- Coordination and cooperation with provincial and local level government for health-related information management system development and implementation.
- Facilitate division of DoHS for developing annual work plan and budget.

- Prepare and document monthly, trimester and annual progress and various activities conducting by divisions under DoHS and need based reporting to MoHP.
- Provide support to MoHP on behalf of DoHS for development of overall plan.
- Improve online data entry mechanisms in all districts and hospitals and gradually extend online data entry to below districts level health facilities. Online data entry mechanism will be established in provinces and local levels.
- Establish a uniform and continuous reporting system from government and non-government health service providers so that all health services provided by government and non-government providers are reported and published.
- Verify, process and analyse collected data and operate a databank.
- Provide feedback on achievements, coverage, continuity and quality of health services to programme divisions and centres, RHDs, hospitals, DHOs and DPHOs. Databased feedback will be provided to provinces.
- Disseminate health information through efficient methods and technologies.
- Improve the information management system using modern information technology.
- Update HMIS tools as per the needs of programme divisions and centres.
- Update geo-information of health facilities.
- Provide HMIS and DHIS 2 tracking as per needed.

Nepal's health sector needs accurate, comprehensive and disaggregated data to gauge its performance, to identify inequalities between social groups and geographic areas, to plan future interventions, and to enable the monitoring of NHSP-2 and NHSS targets to provide evidence to inform strategic and policy level decisions.

The current HMIS software system (DHIS 2 software) meet the basic requirements of the recently revised HMIS. Existing software related errors have been resolved with upgrading of System to dHIS 2.3. Few problems related to Nepali Calender are on the progress of sorting out with the help of DHIS 2 developers. New Dashboards for different level governments have been developed which will facilitate program managers and policy managers to monitor real time health situation. There is still software related errors seen which are raised due to calendar and other issue.

8.4.2. Infrastructure Development Section

Functions of the health infrastructure Development Section are listed in Box 8.4.4

Box. 8.4.4 Major Functions of the Health Infrastructure Development Section

- Support MoHP for development of national level policy, regulation and standards related to physical structure of health facilities and health equipment's.
- Maintain the updated record and upgradation of physical infrastructure and health equipment.
- Facilitate health facilities to develop national plan for need based infrastructure development.
- Coordination with concerned authorities for basic infrastructure management of health facilities.
- Facilitate for development update and monitoring of hospital code of conduct.
- Facilitate for supervision, monitoring and quality control of health infrastructure and equipment.

8.4.3. Environment health and health related waste management section

As per the work description approved from council of ministers federal gvernemtn is responsible for development and monitoring and evaluation guideline, logical framework, quality standard for drinking water, food and air quality. This section was establish to implement the above function of the federal governement. Detail terms of reference of this section is included in Box 8.4.5

Box 8.4.5 Major Functions of the Environmental health and health related waste management section

- Support and facilitate MoHP to develop environmental mental health related policy, guideline, directions and standards.
- Facilitate for carrying out regular surveillance and studies related to impact and drinking water, air and overall environmental on health status and support for environmental pollution control.
- Support MoHP for development of national laws, policies, plans, standards and protocols for health-related waste management.
- Facilitate for scientific management of health-related wastages released for different health facilities under federal, provincial and local level government.
- Carry out monitoring and central activities for scientific management of health-related wastages released from health facilities under federal government.

8.4.4. Logistic Management Section

The function of the Logistic Management section are listed in Box 8.4.6

Box 8.4.6 : Major functions of the *Logistic Management Section*

- Support MoHP for development of procurement and supply related national laws, policies, guidelines, quality standards, protocols.
- Support MoHP to prepare national level standard and specification bank for drugs, health related tools and equipment.
- Procurement of vaccine, family planning commodities and other essential health commodities to the province.
- Facilitate federal and local level government for procurement and supply of the essential medicines and equipment.
- Coordination and facilitation to develop and institutionalize logistic information system at the national level.
- Management of essential commodities at the health facilities under DoHS.

8.4.5. The PAM Unit is responsible for:

- identifying the status of and maintaining medical equipment;
- rolling out the out sourcing of MC nationwide.
- coordinating with government agencies and other stakeholders for the maintenance of health facility and hospital medical equipment.
- Manage and mobilize biomedical engineer and other human resources.

Following the successful maintenance of medical equipment in the FWDR and MWDR with support from Kfw, the Management Division is expanding the maintenance programme nationwide.

Major ongoing activities

The following innovative activities were conducted on a regular or ad-hoc basis in 2074/75 alongside the above-mentioned regular functions.

a) Health Infrastructure Information System — The HIIS is expected to provide the basis for decision making on building construction and maintenance as well as for resource allocation. The system is in process of completion after which it will be regularly updated.

b) Building construction and maintenance— The Management Division oversees the construction and maintenance of health facility buildings and other infrastructure in partnership with the Department of Urban Development and Building Construction (DUDBC). All maintenance within health facilities premises and construction and maintenance works costing less than one million are disbursed through the Management Division. All other construction works costing more than one million is done through DUDBC. Since 2061/062, 2023 facilities have been built while in 2074/075 NPR 5,448 billion was spent on health building construction through DUDBC (Table 8.4.1). An MoHP committee monitors these works.

Table 8.4.1: Summary of building construction by DUDBC (2061/062 – 2074/075)

Detail	Number
Total number of health facilities built	2023
Number of facilities under construction	506
Near to completion facilities	188
Completed/handed over facilities	1329*
Budget allocated (in NPR) in 2074/075	5,72,89,19,000
Expenditure (in NPR) in 2074/075	5,44,82,62,000 (95.10%)

*** Out of 1329 completed/handed over facilities, 50 facilities are completed but final payment is due.**

Table 8.4.2: Building construction scenario in previous five years from DUDBC.

Types of building	2070/71	2071/72	2072/73	2073/74	2074/75
Health posts with birthing centres	115	200	101	275	-
Doctors'quarters	20	-	-	20	-
Staff quarters	25	-	-	36	-
PHCCs	5	7	2	6	-
Birthing centres	12	20	5	8	-
District health stores	2	-	-	-	-
BEOC buildings	1	-	-	-	-
CEOC buildings	1	-	-	-	-
Public health office buildings	10	3	2	-	-
District hospital buildings	4	6	5	3	-
Regional hospital buildings		1	-	-	-
15 bedded hospital building		3	2	-	-
Zonal hospital buildings		2	2	-	-
Sub-regional hospital buildings			2	-	-
Maternity units in zonal hospitals			1	-	-
Emergency blocks in district hospitals			1	-	-
Block A buildings in districts			-	-	-

d) Health facility upgrading— The Management Division has started the process of upgrading PHCCs and below 15 bed district hospitals up to 15 bed hospitals. In line with the upgrading of all sub-health posts to health posts and higher level facilities to at least 15 bed hospitals following certain procedures, division collects demand and recommendations from concerned agencies and process for approval. The status of health facility up-gradation is given in Table 6.8.3.

Table 8.4.3: Status of health facilities upgradation

Year	Type	Number	Status
2065/66	SHP to health post	478	Approved and implementing
2065/66	Health facility to hospital	6	Approved and implementing
2066/67	SHP to health post	522	Approved and implementing
2071/072	SHP to health post	2205	Approved and implementing

e) Operating licenses renewed— The operating licenses of 84 private 51 to 200 bed hospitals were renewed by the Management Division in 2074/75.

Major activities carried out in FY 2074/75

The following are the major activities conducted by the Management Division in 2074/75:

- Conducted 23th National Annual Performance Review Meeting, 2074/75.
- Continued HMIS's web-based online reporting system.
- Prepared dashboards in dHIS-2 so that major indicators can be easily observed.
- Major Problems encountered in dHIS-2 were fixed.
- Prepared, printed and distributed the DoHS Annual Report, 2073/74 (2016/17).
- Conducted HMIS training for newly recruited health workers throughout the country.
- Arranged the printing and supply of HMIS recording and reporting tools.
- Constructed and maintained public Hospitals, PHCCs, health posts, birthing centres, DPHO and DHO buildings.
- Procured electricity supply and furniture for newly constructed facilities.
- Orientated and trained health workers on health care waste management.
- Conducted workshop of improvised citizen programme for health workers.
- Orientation and training on health care waste management to Province and Local level staff.

The Management Division carried out the 45 activities listed in Annex 1 in 2073/74. The division achieved 97.84 percent physical progress in terms of activities carried out and 90.97 percent financial progress in terms of budget spent (Table 8.4.4).

Table 8.4.4: Progress of Management Division against annual workplan and budget in 2074/75

Physical achievement		Financial achievement (NPR ,000)
Total activities:	74	Total budget allocated 1,50,42,27
Activities conducted	51	Total budget received 1,49,31,77
Activities not done:		
• Budget not received from partners:	7	Budget not received from partners: 1,10,50
• Activities not conducted:	16	
Physical progress:	93.56%	Total expenditure (through Management Division): 1,35,06,52
		Financial progress (received budget): 91.16%

Potential areas for further analysis of routine HMIS data

The HMIS captures more than 500 variables through various data collection and reporting forms to monitor more than 100 indicators related to national health programmes. Information obtained from HMIS is critical for evidence-based health policy and planning in Nepal's health sector. Since HMIS gathers population level data, the breadth of data available for analysis makes it useful to draw inferences on time, place and person variations in disease pattern and distribution of health services. HMIS data captures input (such as commodities supplies), process of health care (such as length of hospital stay) and output (such as mortality rates) indicators, which serve as a proxy measures of health care quality. HMIS provides aggregated data at regularly spaced intervals of time, which makes it a much more practical option for measuring the effects of health programmes when randomization or identification of a control group are impractical.

HMIS data is generally longitudinal, aggregated data that can be used to describe trends of health outcomes in absolute numbers, rates or proportions over periods of time; such analysis is useful in monitoring the impact of health programmes over time or studying geographical differences in health programmes and health outcomes. HMIS data can also be analysed comparatively with other data sources such as those generated from national surveys.

This year the Integrated Health Information Management Section (IHIMS), in consultation with programme divisions and centres and development partners, worked on potential areas for further analysis of HMIS data. MoHP encourages researchers, programme managers, statisticians from MoHP, academia and development partners to collaborate with the IHIMS for further analysis of the HMIS data in the identified potential areas.

The potential areas identified for further analysis of HMIS data include the following:

Family Planning

- Association between Contraceptive Prevalence Rate (CPR) and proportion of unmet need across health facilities adjusted by unintended pregnancy
- Impact of Visiting Service Providers (VSPs) on uptake of Intra Uterine Contraceptive Device

(IUCD) and other Long Acting Reversible Contraceptives (LARC)

- LARC up-take rates among adolescents
- Impact of abortion services and migration in CPR
- Facility wise comparisons of CPR, family planning users by contraceptive methods and distribution of contraceptive methods.

Maternal & Child Health and Nutrition

- Evaluation of Community-Based Integrated Management of Neonatal and Childhood Illness (CBIMNCI) Program for selected maternal and child health indicators using HMIS data
- Impact of rural ultrasound programme in maternal and child health indicators
- Reporting status of obstetric complications, and facility wise status of complication type
- Cross district/health facility analysis of coverage of Postnatal Care (PNC) visits as per national protocol
- Access to routine immunization (coverage and drop out) analysis of trend and disparities by geography and ethnicity
- Trend and coverage of distribution of vitamin A, deworming and iron tablets
- Compression of maternal mortality rates reported by HMIS and Maternal and Perinatal Death Surveillance and Response (MPDSR)

Disease Control

- Trend and geographical distribution of prevalence and service coverage related to neglected tropical diseases
- Province/health facility wise analysis of top ten causes of inpatient morbidity and outpatient visits
- Distribution of Chronic Obstructive Pulmonary Disease (COPD) over time, adjusted by altitude and ecological regions
- Assessment of malaria vector control interventions using time trend data from HMIS

Health System

- Coverage of outreach clinic and its impact on maternal and child health indicators
- Benchmarking health system performance based on HMIS data for maternal and child health indicators
- Differences in commodity distribution reported in HMIS and Logistic Management Information System (LMIS) for family planning and safe motherhood programmes
- Equity analysis (absolute and relative difference) in tracer indicators for maternal and child health (by best and least performing districts/facilities) at national and provincial level
- Target versus achievement comparison of selected health indicators, disaggregated by geography and ethnicity
- Small area estimation for CPR, and maternal and child health indicators

Issues, challenges and recommendations

Table 8.4.5: Issues, challenges and recommendations — health service management

Issues and challenges	General recommendations
Inadequate quality human resources	Produce and appoint skilled human resources
Individualized planning in divisions and centres (due partly to time constraints)and negligible bottom-up planning	Ensure strategic joint central annual planning and budgeting under the Management Division for one-door planning from DoHS and promote bottom up planning to address district specific issues
Insufficient budget for building health facility and hospital buildings.	Provide funds and human resource support for upgraded health facilities.
Health facility buildings construction delayed and obstructed (around 4% sick projects).	Mandatory supervision and approval by concerned health facilities before payment for building construction. Self-dependence for health facility building construction in the long term.
The standardization of public hospitals	Strategic planning to bring public hospitals to design standard as per guidelines
The lack of WASH guidelines for health facilities and hospitals	Develop WASH guidelines
Insufficient and poor implementation of waste management guidelines by health facilities and hospitals	Expand programme and budget for health care waste management as per guidelines
Information flow from lower level health facilities and data quality issues	Provide more budgetary support for data quality and its timely flow from lower level health facilities to DHOs and DPHOs and make reporting to DoHS's information system mandatory for all hospitals
The monitoring of private health care	Establish a task force or outsource the supervision of private health facilities

Table 8.4.5: Specific recommendations — health service management

Recommendations	Responsibility
a. Health infrastructure	
• Endorse proposed Central Coordination Committee and Technical Committee • Form joint taskforce representing MoH, DoHS-MD, RHDs and DUDBC officials to assess delayed and ongoing infrastructure projects and make plan to address issues • Operationalise joint monitoring team for the field monitoring of construction projects • Endorse standard building design and guidelines • Develop a building planning cycle • Reallocate budget for building construction (additional NPR 3 billion (3 Arab) in 2072/73 to avoid more 'sick' construction projects • Establish/strengthen a health infrastructure unit with adequate capacity at central and regional levels to be responsible for construction related planning and budgeting. • Update and strictly implement land development criteria considering geographical variation, urban/rural settings (guidelines have been endorsed by MoH with ministerial decision). • Assess regional, sub-regional, and zonal hospitals against standard guidelines and develop standardization plan. • Develop mechanism to standardise PHC-ORC structures in coordination with communities.	MoH, DoHS-MD, PPICD, HDs, HOs,
b. Information management	
• Initiate and continue measures to functionalise and regularize all routine information systems including TABUCS. • Roll-out routine data quality assessment mechanisms at all levels. • The monthly generation of data from all data platforms; sharing and review with concerned programmes, divisions, RHDs, DHOs, DPHOs, and hospitals. • Provide data access through public portal, including meta-data and resources. • Ensure interoperability among all existing management information systems. • Develop and implement a long-term survey plan.	MoH, DoHS-MD, PPICD, HDs, HOs,
c. Supervision and monitoring	
• Update and implement integrated supervision checklist, supervision plan and feedback tools. • Deploy functional feedback mechanism with provision of coaching and mentoring services. • Develop monthly integrated online supervision calendar and submit to higher authority to monitor effective execution at all levels.	All levels

8.4.4 Logistics Management

8.4.4.1 Background

An efficient management of logistics is crucial for an effective and efficient delivery of health services as well as ensuring rights of citizen of having quality of health care services. Logistics Management Division (LMD) was established under the Department of Health Services in 2050/51 (1993), with a network of central and five regional medical stores as well as district level stores. The major function of LMD was to forecast, quantify, procure, store and distribute health commodities for the health facilities of government of Nepal. It also involved repair and maintenance of bio-medical equipment, instruments and the transportation vehicles.

In order to systematize the management of logistics, the Logistics Management Information System (LMIS) unit was established in LMD in 1994. LMIS unit just started Online Inventory Management System in 2 Central Warehouses, 5 Regional Warehouses and 75 District Warehouses in 2073/2074. After the restructure of Nepal's governance in federal structure, the logistic management division was demolished and its functions are being carried out through logistic management section under Management Division of Department of Health Services. Major Functions of Logistic Management section are collection and analysis of quarterly (three monthly) LMIS reports from all of the health facilities across the country; preparation, reporting and dissemination of information to:

- Forecast annual requirements of commodities for public health program including family planning, maternal, neonatal and child health, HIV and AIDS commodities, vaccines, and Essential Drugs;
- Help to ensure demand and supply of drugs, vaccines, contraceptives, essential medical and cold chain supplies at all levels;
- Quarterly monitor the national pipeline and stock level of key health commodities.

Goal

Quality health commodities available at health facilities and community level round the year.

Overall Objective

To plan and carry out the logistics activities for the uninterrupted supply of essential medicines, vaccines, contraceptives, equipment, HMIS/LMIS forms and allied commodities (including repair and maintenance of bio-medical equipment) for the efficient delivery of healthcare services from the health institutions of government of Nepal in the country.

Strategies

- Logistics planning for forecasting, quantification, procurement, storage and distribution of health commodities.
- Introduce effective and efficient procurement mechanisms like e-Bidding, e Submission.
- Use of LMIS information and real-time data in the decision making.
- Strengthen physical facilities at the central, regional, sub-regional and district level for the storage and distribution of health commodities.

- Promote Online Inventory Management System and Non-Expendable/Expendable Items Inventory System in Central, Regional and Districts warehouses.
- Auctioning of non-functional cold chain equipments/furniture, vehicle etc.
- Repair and maintenance of bio-medical, cold chain equipments/instruments and transportation vehicles.
- Capacity building of required human resources on logistics management regarding public procurement, e-bidding, e-procurement, and online Inventory Management System at Central, Regional and District levels.
- Implement effective Pull System for year-round availability of Essential Drugs and other health commodities at all levels (Central, Regional, District and Health Facilities).
- Improvement in procurement and supply chain of health commodities, working on procurement reform and restructuring of federal, provincial and district stores.
- Formation of Logistics Working Group at Central and provincial levels.

8.4.4.2 Major Activities

- Plan for the efficient management on forecasting/quantification, procurement, storage, distribution and transportation of health commodities to all health facilities for the delivery of healthcare services based on LMIS.
- Develop tender documents as per public procurement rules and regulations and procure essential medicines, vaccines, contraceptives, equipment, different forms including HMIS/LMIS and allied commodities.
- Store, re-pack and distribute medicines, vaccines, contraceptives equipment and allied commodities.
- Formation of 9 members Logistics Working Group (LWG) at Central level to solve logistics issues
- Manage to print and distribute HMIS/LMIS forms, stock books and different forms required for all health institutions.
- Support on implementation and functioning of Web Based LMIS. Web based LMIS will be modified and robust into Online Inventory Management SystematCentre, provincial and local level.
- Conduct capacity building in Online Inventory Management System to all New/Old Store Keepers, Computer Assistants for full functioning of OIMS throughout country with live operation.
- Conduct capacity building on Public Procurement Act and Regulations with coordination of Public Procurement Monitoring Office to provincial and local level managers and Store Keepers
- Capacity building of health workers and office assistant of central, provincial and local level on Standard Operating Procedures (SOP) in Effective Vaccine Management (EVM).
- Disposal, De-junking and auctioning of unusableequipment, materials and other health commodities.
- Coordination with partner INGOs and NGOs like UNICEF, Lifeline Nepal for strengthening cold chain capacity through support in disaster resilient cold chain equipment as well as repair and maintenance of refrigerators and freezers.
- Manage to maintain the bio-medical equipment, machineries and transport vehicles.

- Implement and monitor Pull System for contraceptives, vaccines and essential drugs in the districts.
- Coordinate with all development partners supporting health logistics management.
- Supervise and monitor the logistics activities of all medical stores.
- Conduct RDQA for LMIS data Quality Assessment.
- Implement Telemedicine program in the hill and mountain districts.

8.4.4.3 Analysis of Achievement

1. LMIS Reporting Status

The trend of total LMIS reporting from health facilities is consistently above 85percent over three years. However, the reporting percentage decreased to 81 % in 2074/75.Analysing the regionwise reporting percentage, there has been sharp decline in Central Region. The main reason for this decline could be attributed to the massive earthquake of Baisakh 12, 2072 which hit mostly in Central Region. The LMIS reporting trend slightly increased to 88 % in 2073/74 was due to recovery and reconstruction of health facilities at the most affected districts.

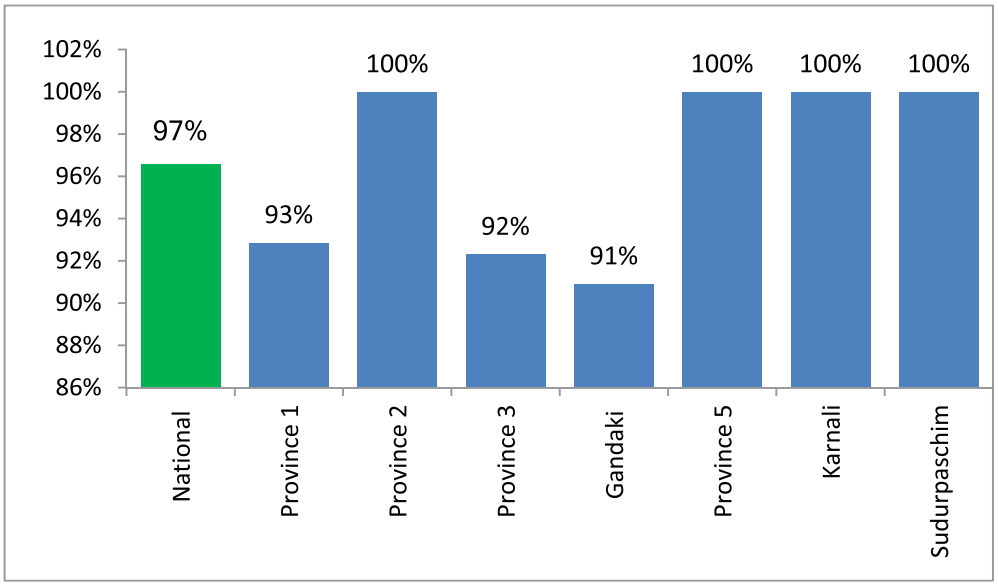
Due to this most of the HFs in affected districts were completely destroyed and could not send the reports. Besides, the political situation after the earthquake was also not favourable resulting in no reporting from HFs especially from Tarai districts. The LMIS has helped to generate accurate and reliable feedback reports, thereby contributing to improve logistics functions like budgeting, quantifying, forecasting, procurement, storage, transportation and distribution of FP, MCH commodities and essential drugs to be procured by the centre. LMIS has played a key role in reducing stock-out rates and increasing year-round availability of key health commodities through close monitoring. Similarly, Logistic Management Section implemented web-based LMIS and Inventory reporting system.

2. eLMIS implementation in Province 5&6:

MD/LMS has successfully implemented the Electronic Logistics Management Information System (eLMIS) in 57 sites, including six central medical stores, two provincial medical stores (PMS), all 22 district stores within Provinces 5 and 6 in the support of USAID GHSC-PSM project in 2018. All of these sites are now generating Ha.Faand Dakhila forms and requisitions through the eLMIS.

3. Online Inventory Management System Reporting Status

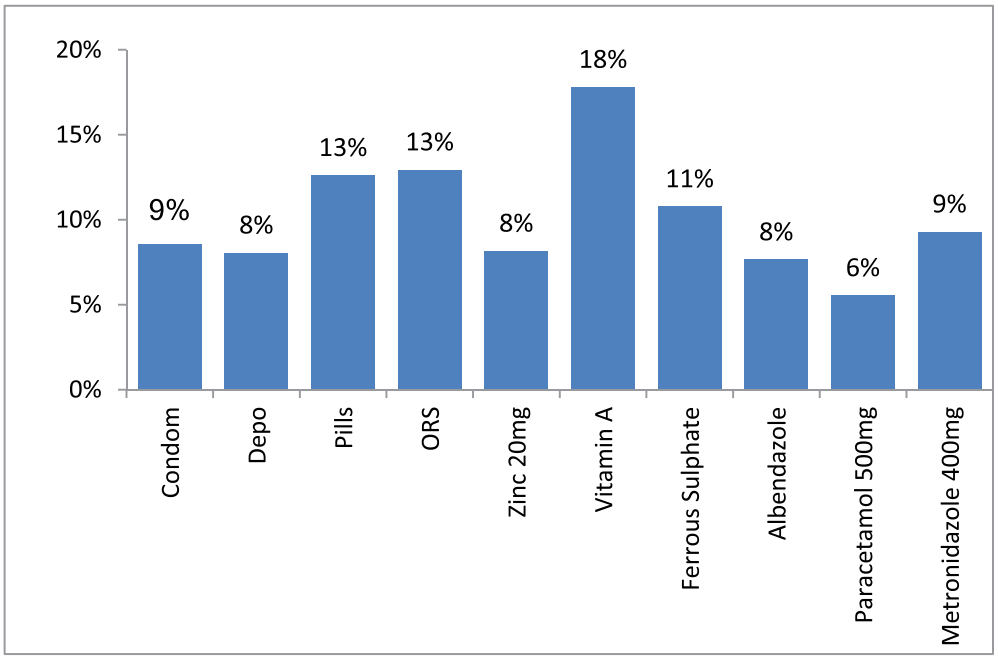
Figure 8.4.2. Online IMS Reporting Status



Web-based LMIS up to the district level is in operation since 2008. In 2016, it was upgrading into online system called online inventory management system.The reporting percentage of districts in beginning year 2073/74 achieved to 93% and year 2074/75 to 97% achieved.

4. Availability of Key Health Commodities

Figure 8.4.3 : Commodity stock out Status



LMIS aims to make year round availability of key health commodities like Condom, Depo, Pills, ORS, Zinc, Vitamin A, Ferrous Sulfate, Albendazole, Paracetamol and Metronidazole 400mgin all health facilities and essential drugs for free health services. The figure show the stock out of (FP/MCH

commodities and essential drugs). Throughout country more than 5000 health facilities have stock out (8 to 13%) of condom, depo, pills, ORS, Ferrous Sulfate, Albendazole lies in between whereas Zinc, Vitamin A, Paracetamol and Metronidazolehave stock out (6-18%)at facility level in 2074/75. However, there is a need to decrease the stock-out of essential drugs in the health facilities by the effective implementation of the Pull System.

8.4.4.4 Major Logistics Activities to Strengthen Health Care Services

a. Procurement

MD/LMS continued and added more commodities in the multi-year procurement. Condom, Injectable, ORS, Iron Tablets, Essential Drugs are now being procured through multi-year mechanism. Multi-year mechanism saves every year bidding and evaluation time for tender. LMS also completed the LICB (limited international competitive bidding) process in coordination with World Bank in the procurement of Implants, which results in procuring directly from the manufacturer in much lower cost.

A district-wise breakdown list of essential drugs and quantities to be procured at the district level, based on consensus forecast was developed by PHCRD and LMD. The list and budget was sent to all districts by the Primary Health Care Revitalization Division (PHCRD). Similarly, on the development of e-bidding software, the terms of reference/guidelines was finalized and sent to prospective e-bidders for their review and feedback.

Training on public procurement for the Province and District level personnel was provided with the financial support of UK AID/NHSSP and technical support of GoN/PPMO.

b. Forecast and Quantification Workshop

Forecast and Quantification Workshop is crucial in identifying long-term need and funding requirement of health commodities. Every year, the working group forecasts for coming three year period with periodic review. The group consists of representation from various divisions under DOHS/MOH, districts, social marketing organizations and EDPs. The workshop convened on March 2017and on March 2018 in the support of USAID GHSC-PSMwith participation from public sector, social marketing sector and EDPs. The main purpose of the workshop is outlined below:

- To estimate the commodity needs and assess stock status of in-country supply pipeline so as to identify and correct supply imbalance.
- To provide data on specific commodity requirements and plan for government budget allocations.
- To support the estimation of commodity procurement cost.
- To inform donors about funding requirements and advocate for commodity procurement.
- To ensure government's commitment for Citizens Right in providing health care service.

The workshop developed a forecasting and quantification of Essential drugs, RH/FP commodities, MNCH commodities, vaccines, syringes and HIV& AIDS commodities. The forecast was based on scientific data, which included demographic data, consumption pattern, morbidity issues and some special programmatic considerations.

The workshop was highly successful in addressing issues on forecast and quantification of health commodities with some important recommendations from the participants. The workshop also incorporated other factors effecting forecasting i.e. non-prescribed drugs, replacing drugs, fast moving drugs and duplication. The success of forecast and quantification is a milestone in logistics management,

but there is always room for continuous improvement.

Similarly, National Level Consolidated Annual Procurement Plan (CAPP) organized by DOHS in collaboration with all concerned division and centre in January 2017with technical assistance and financial support from NHSSP. Procurement Unit of Logistic Management Section took a lead role to prepare CAPP.

c. Quarterly National Pipeline Review Meetings

Pipeline monitoring of FP commodities was started since 1997/98. It now covers FP, MNCH, EPI Vaccines, Syringes, selected Essential Drugs and HIV/AIDS commodities as well. National pipeline reports are now used to monitor the availability of the stock at service delivery points (SDPs) and to monitor the procurement status of key health commodities.

In each quarter, a national pipeline meeting takes place at the Logistic management section to review, monitor, and evaluate the procurement, shipment, distribution, transportation and stock status of family planning and other health commodities.

Quarterly Pipeline Review meetings was conducted where program Divisions of DOHS, External Donor Partners and stakeholders like Social Marketing agency participated. In the meetings shipment schedules, shipment status (planned, ordered and received), actual consumption and months-of-stock-on-hand of 32 health commodities were discussed.

d. Strengthen Storage Capacity

Ideal storage conditions for essential drugs and commodities are required to deliver quality health services to service delivery sites in order to ensure optimal health service utilization by consumers. In the course of implementing the Logistics System Improvement Plan (LSIP) of Ministry of Health and Population (MOH) jointly developed by MOH, a massive clean-up and de-junking activities were carried out across the country during the period of 1994-97. This effort resulted in freeing storage space and generating revenue for the government (from de-junking and auctioning), which revealed that numerous districts seriously lacked ideal storage space for handling health and other allied commodities including vaccines.

An assessment was commissioned in 1999 to identify the current storage conditions and space needed at district level. The assessment was carried out with support from JSI Research & Training Institute and USAID. The study revealed that 58 had immediate storage needs (none of the districts had ideal cold storage facilities) and all districts would require new stores. Space was inadequate and security was poor in 49 districts storerooms were scattered in two or more rooms with none specifically designed for storage and many were in rented buildings. Most of the storerooms were filled with unusable commodities and junk. Every year huge quantities of drugs and other health commodities went missing, damaged or had to be destroyed. Logistic Management Section with GHSC-PSM reorganized the two central warehouses and 4 regional medical stores.

As a support in freeing storage space, auctioning was carried out in health institutions of all districts in need based approach with the support of UNICEF/Lifeline Nepal. Auctioning was carried out in different level of institutions. The process has generated Rs. 2,156,363 revenues for government and cleared over 21,000 sq. ft. area. The process is still going on.

Effective Vaccine Management is one of the core working areas of LMS. Effectiveness of vaccine management widely depends on the effective and proper storage of vaccine as well as cold chain and

supply chain management. To ensure proper cold chain, LMS has mobilized Mechanical Engineers and Refrigerator Technician for immediate repair of damaged refrigerators and freezer to ensure effective vaccine management. LMShad repaired and maintenance of refrigerators and freezers whenever required. By far, 107 cold chain equipment has been repaired in 50 districts.Currently one Refrigerator Technician has been mobilized in Biratnagar for CCE repair and maintenance in Province 1.

Similarly, storage capacity in 45 districts were strengthened by transportation of 96 Godrej Sure chill refrigerators enabling the districts and their sub-stores to store vaccine in proper temperature to provide quality immunization service. Lifeline Nepal supported in distribution, installation and preventive maintenance of refrigerators supported by UNICEF Nepal.

e. Capacity Building in Logistics Management

New Intervention

Real Time Inventory Management System (IMS)

The Web-Based LMIS was introduced in 2008 replaced the quarterly paper based reporting system to monthly, however it did not provide the real-time information needed to make an effective supply chain decision making. Realizing the need of real-time information on heath commodities, Logistic Management Section took an initiative to make real time inventory management system up to the district level with customization of already in use IMS software. This is being online system, gives real-time information of stock status of health commodities of at different level of stores. This allows to make supply chain decision making. Training was provided to all provincial medical store and districts store keepers with the financial supported by UNFPA/ADRA Nepal and Plan is to implement this new system from next Fiscal Year.

Manual Revision and Pull System Training

LMS and National Health Training Center (NHTC) with support from H4L,organizeda facility level pull system trainingto total fifty-nine participants of HFs of Dailekhin February 19-24, 2016and thirty-two participants of HFs of Jumla on April 21-29, 2016. There were many new staff who do not have idea on health logistics and many trained staffs were transferred. The main aim of the training was to improve knowledge, skill and attitude of the store keepers of health facilities so as to ensure the availability of adequate supply of medicine and health commodities in health facilities via pull system to provide effective health care service.

Conduction of basic level logistics training.

LMS conducted basic level logistics training was conducted with support from UNFPA in Kapilvastu, Sindhuli and Rolpa. Similarly SAVE the Children also supported in Dolakha. Procurement and supply chain management was also conducted with support from USAID/GHSC-PSM in all districts.

Development of Basic Logistics Training Manual

LMShas developed Trainers' guide and participants hand book for Basic Logistics Training.

Conduction of eLMIS training:

LMS conducted TOT and roll out training on eLMIS Online and Offline in 22 districts of province 5&6 and in 23 health facilities of Surkhet and Bardiya district.

RDQA: LMS conducted routine data quality assessment as pilot project in three districts at Kavre, Kaski and Makwanpur. The main objective of data quality assessment is to monitor quality of LMIS data at facility level for data accuracy.

Disposal of Unusable Health Equipment and Commodities: A Best Practice

Unusable and/or expired health commodities are a major problem for Nepal's health system. Safe storage conditions for essential drugs and commodities are required to deliver quality health services to service delivery sites. In addition, "de-junking" of unusable commodities helps clear the way for usable commodities. For example, a major de-junking drive in 1994-97 freed up more than 125,000 square feet of free space and generated 25 million Nepali Rupees (NRs.) for the Government of Nepal's treasury.

LMS started several actions to disposal of unused, unwanted or expired have been carried out items. These activities include the provision of technical support in auctioning of unusable commodities for the District for saving space to store valuable lifesaving drugs.

f. Formation and action taken of Logistics Working Group(LWG)

An authentic Group was formation with 9 memberships chaired by Director of Management Division with representation of Divisions, Centers and External Development Partners at center level. The LWG addressed major issues regarding procurement and supply chain management of health-related commodities. The LWG members will be extend on the basis of area and necessary and also plan to extend the Regional level LWG.

8.4.4.5 Issues and Action Taken

Issues raised and action taken:

Issues	Action Taken	Responsibility
Low Budget in Drug Procurement and supply in local level	Budget will be revised as demand in next year.	MoHP/DoHS
Capacity building in procurement, forecasting, quantification and LMIS	LMS has planned to conduct that training at all provinces.	DoHS/MD/LMS
Not functioning of telemedicine program in rural areas	LMS will coordinate to start the well-functioning of telemedicine program	DoHS/MD/LMS
Management of Expired, Wastage and unused materials	LMS will collect those materials from all provinces and destroy or disposed as process.	DoHS/MD/LMS
Inadequate of HMIS/LMIS tools and late supply	Tools will be supplied in time and adequately	DoHS/MD/LMS
High demand of required equipments	LMS will demand budget for equipment procurement.	DoHS/MD/LMS

8.5 Public Health Laboratory

8.5.1 Introduction

National Health Policy- 2071, National Health Laboratory Policy, 2069 and the Guideline for Health Laboratory Establishment & Operations- 2073 identify the National Public Health Laboratory (NPHL) as the central specialised national referral public health laboratory for the country and the regulatory body to licence public and private labs. NPHL is also a focal point for blood safety through its National Bureau of Blood Transfusion Services (NBBTS). Since 2075, NPHL is given, the responsibility of National Coordination Centre for AMR.

There are currently diagnostic health laboratories in 8 central hospitals, 5 regional hospitals, 3 sub-regional hospitals, 10 zonal hospitals, 62 district hospitals, 16 other district level hospitals, 198 PHCCs, 150 health posts and more than 1,700 private health institutions. Almost all of these laboratories need to improve their quality assurance practices, human resources, competency, service range and physical infrastructure. NPHL monitors these laboratories through its external quality assurance of lab services and the quality control testing of samples and periodic supervision of both government and nongovernment laboratories. It conducts the National External Quality Assurance Scheme (NEQAS) programme to monitor testing quality. It sends samples (including biochemical tests, malaria slides, Gram stain, Peripheral Blood Smear, haemoglobin, TC, DC, RBC Count andTransfusion Transmissible Infection (TTI) screening, to the laboratories and Blood Transfusion Service Centres. NPHL/NBBTS provides feedback based on the results. This also helps to enhance the testing capability of lab personnel.

Table 8.5.1: Number and types of laboratories province

Province		Types of Laboratories							
	Central Hospital	Regional Hospital	Sub-regional Hospital	Zonal Hospital	District Hospital	Other District Hospital	PHCCs	Health Post	Private Health Institution
Province 1	0	1	0	2	12	2	40	28	
Province 2	0	0	1	2	6	3	32	26	
Province 3	8	1	0	0	9	2	43	24	
Gandaki	0	1	0	1	8	3	24	22	
Province 5	0	0	1	3	13	3	30	19	
Karnali	0	1	0	0	7	2	13	18	
Sudurpachhim	0	1	1	2	7	1	16	13	
Total	**8**	**5**	**3**	**10**	**62**	**16**	**198**	**150**	**1700**

Source: NPHL/DoHS

Each year various outbreaks and epidemics threaten global health. NPHL is responsible for diagnosing emerging and re-emerging infectious diseases and has established the National Influenza Centre (NIC) in April 2010 and its Bio-Safety Level-3 lab in January 2015. The National Influenza Centre functions through the National Influenza Surveillance Network (NISN) throughout Nepal. NPHL is able to diagnose

influenza A (H1N3, H1N1, H5, H7), Influenza B, and other viruses including R*espiratory Syncytial Virus* (RSV), Hanta, Ebola, *Crimean-Congo haemorrhagic fever* (*CCHF*) dengue, chikungunya, zika, leptospira, and scrub typhus and many others if kits available. It is also measuring HIV viral load, Hepatitis B & C viral load and planning to carry out genotyping.

8.5.2 Objectives:

- To affirm the government's commitment and support for the organization and management of efficient, cost-effective and sustainable health laboratory services.
- To strengthen laboratory services for supporting the diagnosis, treatment, surveillance, prevention and control of diseases, including services of BSL-III lab.
- To establish national standards for laboratory quality systems.
- To ensure the quality of health laboratories through a quality system.
- To empower the establishment, implementation and monitoring of the national health laboratory programme and the national regulatory mechanism for regulating health laboratories.
- To ensure adequate financial and human resources for health laboratory services.
- To monitor adherence to ethical values in laboratory practice, including patient confidentiality, adherence to professional codes of conduct and ethical research practices.
- To encourage research and collaboration to inform and improve the quality of health laboratory services.
- To act as a national reference laboratory, national centre for AMR and focal point for blood safety.

8.5.3 Non-Communicable Disease Department

Four sections (Haematology, Biochemistry, Endocrinology and Histocytopathology) are being run under non-communicable disease department. Both routine and specialized services are being provided from these departments. Acute leukaemia panel (flow cytometric technique), Haemoglobin electrophoresis for haemoglobinopathies (eg. thalassemia, sickle cell disease, etc.), coagulation factor assays and inhibitor assays, fertility panel and thyroid hormone panel including anti TPO and thyroglobulin are some of the specialized services being provided.

Besides diagnostic facilities, molecular tests related to haematology like (BCR-ABL fusion gene, Factov-V leiden mutation) and NCD department in NPHL also monitors sentinel sites for Hemoglobinopathies that are situated in Nepalgunj, Bharatpur, Dhangadi and Butwal. Various research activities are also being carried out in these sections.

8.5.4 Quality Control and Training Section:

Quality control section and training section carries out quality related activities and conducts training for lab personnel. Training for newly recruited lab personnel, bacteriology training, analyser application training and EID trainings are some of the regular trainings conducted. This section is also involved in supervision and monitoring of both government and nongovernment laboratories. Based on supervision and monitoring, license is provided for laboratory operation (as one of the five categories, A to E)

National EQAS (External quality assessment scheme) is also being conducted from this section since 1997. Proficiently test panel for biochemical tests, haematological tests and grams stain are prepared and dispatched to participating laboratories. Feedback is provided based on the results. Samples are sent three times a year. Around 500 labs are enrolled in this program and the number is still increasing.

Likewise EQAS is also being run for Blood transfusion service sites for TTI screening tests (HIV, HBsAg, HCV and VDRL). Around 100 sites are enrolled in the program. EQAS for HIV test (DBS or dried blood spot method) and for CD4 test is also conducted by NPHL.

8.5.5 National Bureau for Blood Transfusion Services:

The National Bureau for Blood Transfusion Services (NBBTS), which is based at NPHL, is the national authority for implementing the National Blood Programme (NBP). NBBTS works to ensure the safe, adequate and timely supply of blood and blood products to meet transfusion needs by developing policies, guidelines, protocols, standard operating procedures and related softwares. NPHL is the national reference laboratory for screening transfusion transmissible infections (TTIs) and is responsible for evaluating conformational testing and for sending proficiency panels to blood transfusion service centres (BTSCs) under the National Quality Assurance Scheme (NEQAS). It is also responsible for training BTSC staff and supervising monitoring licensing BTSCs and motivational program. Also, provide equipments to the BTSCs to initiate or enhance the related services.

8.5.6 HIV Reference Laboratory

HIV and Hepatitis Reference Laboratory is situated at Infectious Disease Block in National Public Health Laboratory, and is mainly focused on the Testing and monitoring the HIV and Hepatitis related programs and tests. It mainly comprised of Molecular Unit and Immuno-serology Unit where every day routine and molecular level tests from all over Nepal are performed and reported.

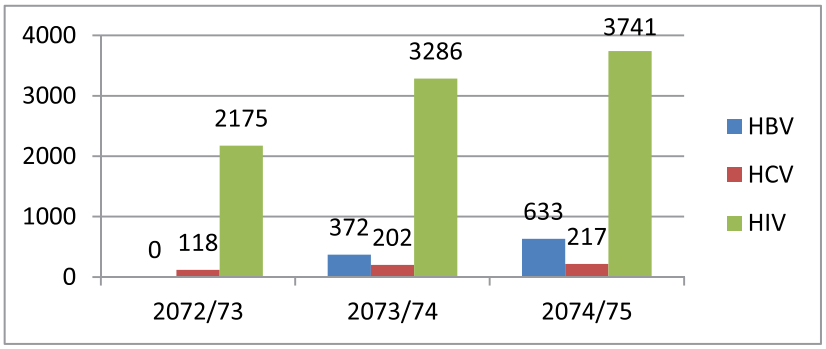
Molecular tests like HIV Viral load (Approx. 10,000/year), HBV Viral load (Approx. 1100/year), HCV Viral load (Approx. 600/year) and Early infant diagnosis of HIV (Approx 250/year) is conducted on routinely basis. In Immunoserology, CD4 testing by flowcytometry, HIV 1&2 Ab ELISA, HIV Ag/AbCombi ECLIA, HBsAg ELISA, HCV Ab ELISA, HAV and HEV test by rapid diagnostic kits and HBeAg, HBeAb, HBcAb, HBsAb by ECLIA is also performed routinely in our laboratory. We have COBAS Ampliprep/COBAS Taqman and Rotorgene 6000 for molecular analysis, BD FACSCalibur and BD FACSCount for CD4 Testing and e411, Roche for ECLIA machine.

To assure our Quality of Reports, we have been participating in Proficiency Testing Program for HIV Viral Load and EID using Dried Tube Specimen by Centres for Global Health, CDC, USA, CD4 test EQAS from Siriraj Hospital, Bangkok and Serology EQAS from NRL, Australia. Currently, National HIV EQAS program is also conducted and monitored by this department which includes retesting of the samples from different ART sites of Nepal.

NCASC and Global fund and WHO has been supporting for several HIV related tests and program. HIV and Hepatitis Unit is actively conducting HIV related Trainings all over Nepal and have been doing research activities like HIV Drug Resistance Survey funded by WHO, DBS validation for HIV Viral load

testing, IBBS survey for HIV by NCASC. We have been planning for Gene sequencing for HIV Drug resistance and HCV genotyping in coming future. Trend of the virol load tests on HBV,HCV and HIV are shown in figure 6.5.1

Figure 8.5.1: HIV Reference Unit (Viral load tests on HBV, HCV and HIV)



8.5.7 National Influenza Centre

National Influenza Centre is one of the newly established and highly equipped departments of National Public Health Laboratory (NPHL) designated by Ministry of Health and Population (MoHP) and recognized by World Health Organization (WHO) for the purpose of participating in WHO Global Influenza Programme. Upon such recognition by WHO, NIC has become member of the WHO Global Influenza Surveillance Network.

Influenza Surveillance was started since 2004 from Jhapa, eastern part of Nepal with the aim to identify the influenza viruses from suspected cases of influenza like illness (ILI) and immediate response to minimize the circulation of viruses during outbreak. Initially, specimens collected from suspected cases of ILI were performed by Rapid Diagnostic Test (RDT) for identification of influenza viruses. Later on, molecular diagnostic assay based influenza surveillance was started with the introduction of Real-Time PCR (RT-PCR) at National Public Health Laboratory (NPHL) from 2009. During pandemic influenza outbreak in 2009, NPHL had played a key crucial role together with Epidemiology and Disease Control Division (EDCD), Department of Health Services including international organizations (WHO, WARUN). NPHL has been designated as National Influenza Centre (NIC) on 19th April, 2010. Influenza virus isolation, identification and characterization by serological molecular diagnostic assay were successfully started within one year and 28 isolates were shipped to WHO Collaborating Centre Summary of the Influeza test done ia as shown in figure 8.5.2 and figure 8.5.3 for 2017 and 2018 respectively

Figure 8.5. 2: Total Influeza Tests done in 2017

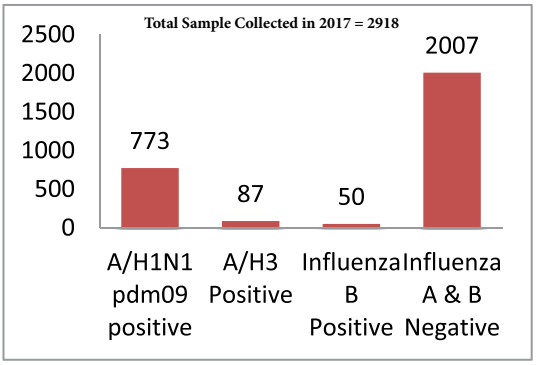
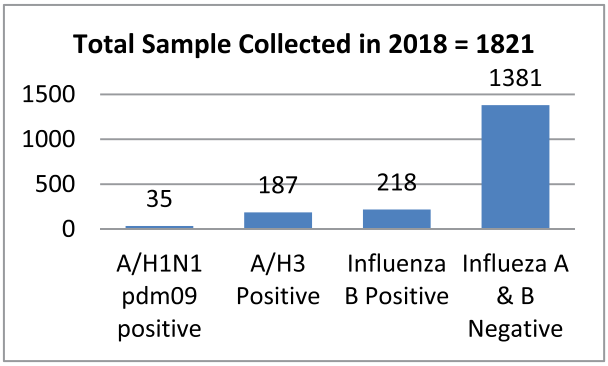


Figure 8.5.3: Total Influeza Tests done in 2018



8.5.8 Japanese Encephalitis, Measles and Rubella Laboratory

The infectious and communicable diseases are of growing concern and continue to be a major public health problem worldwide. Among them, vaccine preventable diseases still have top most mortality rate worldwide among the children below 15 years. In order to reduce and control the mortality and morbidity of such vaccine preventable disease (Japanese Encephalitis, Measles, Rubella, etc.), Immunization Preventable Disease (IPD), a partnership between World Health Organization and Government of Nepal is working in close collaboration with National Public Health Laboratory (NPHL) under the Department of Health Services of Ministry of Health and Population (MoHP).

To achieve the goal of reducing morbidity and mortality due to vaccine preventable diseases, surveillance part is essential which can be best and effective with the maximum co-ordination with laboratory based results that is achieved from the better and efficient lab performance. Sample collection, labelling, proper documentation and storage are critical considerations because any results that laboratory generates will be affected and limited by the above factors.

For the effective and smooth performance, better flow of results and to help with the increasing work load for intensive surveillance program, WHO-IPD had supported two personnel, one Medical Microbiologist and one Laboratory Technician in National Public Health Laboratory. An accurate diagnosis in a timely manner using the most cost effective techniques is indispensable for the better surveillance. As the microbiologist is an integral part of the health laboratory team, the main responsibility is to communicate information promptly regarding the quality, quantity and result of collected and received specimen in laboratory along with the lab work performance regarding receiving of specimens, lab testing, storage of specimens, result reporting and documentation of the work performed which would be effective for the programme. Surveillance and rapid response depends upon the disease identification by laboratory with qualified manpower. The effective surveillance depends on the timely reporting and the analyses of the results.NPHL – JE/Measles lab has been accriditated again by WHO during October 2018.

8.5.9 Major Routine Activities:

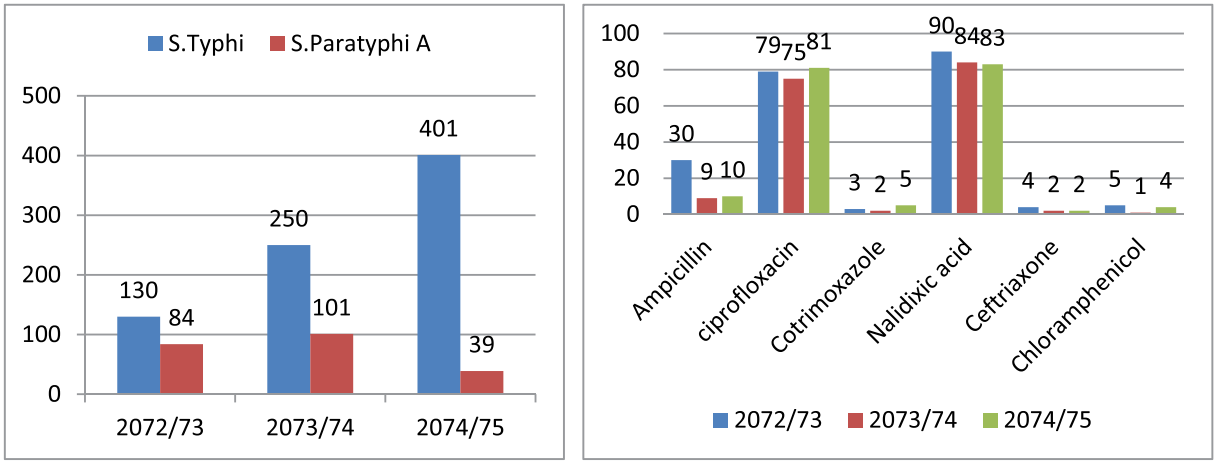
- Routine and specialized diagnostic services including services of referral laboratory.
- Public health related activities (laboratory based surveillance [AES/Japanese encephalitis, measles/rubella, polio, antimicrobial resistance (AMR), influenza)], HIV reference unit, National Influenza Centre, BSL-3 laboratory and outbreak investigation)

- Training and workshops
- Logistics procurement and supply and laboratory refurbishment
- Supervision and monitoring, licensing lab & BTSCS.
- National External Quality Assurance Scheme (haematology, biochemistry, gram stain, microbiology, AMR on selected bacterial pathogens and TTIs)
- Polio containment and its accreditation.
- Assisting MoHP for preparing medical laboratory related, policy, legislation and guidelines.
- Procurement of especial types of kits and reagents and equipments for provincial and local level government laboratories.
- General administration functions.

8.5.10 AMR (Antimicrobial Resistance) SURVEILLANCE ACTIVITIES

NPHL conducts laboratory surveillance on various disease pathogens including on measles-rubella, Japanese encephalitis, influenza and antimicrobial resistance surveillance to monitor the burden of these diseases and to inform disease control strategies. Trend of the enteric fever cause and AMR are as shown in figure 8.5.4

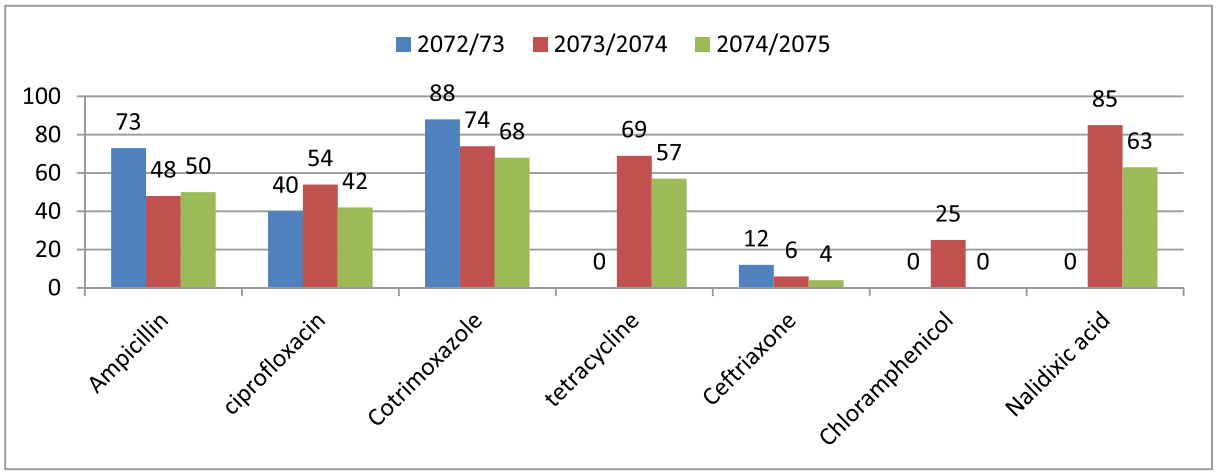
Figure 8.5.4: Trend of enteric fever (cause and AMR)



Salmonella

- S.typhis predominant than S.paratyphi A till date however, the prevalence of S. Paratyphi A is increasing annually indicating changing epidemiology.
- Children below 15 years are most commonly affected.
- No Classical MDR (Resistance to ampicillin, chloramphenicol and cotrimoxazole) at a time among salmonella isolates declined from 2002 onwards, and newly emerged MDR isolates (resistant to fluoroquinolone [ciprofloxacin, ofloxacin] and nalidixic acid with additional resistance to ampicillin and cotrimoxazole) were identified in 2005 and thereafter.
- MDR trend is fluctuating. In 2012, 8% isolates were MDR which Declined to 1% by 2018
- Chloramphenicol sensitivity has re-emerged (99% in 2018).

Figure 8.5.5: Trend of AMR in bacterial diarrhea



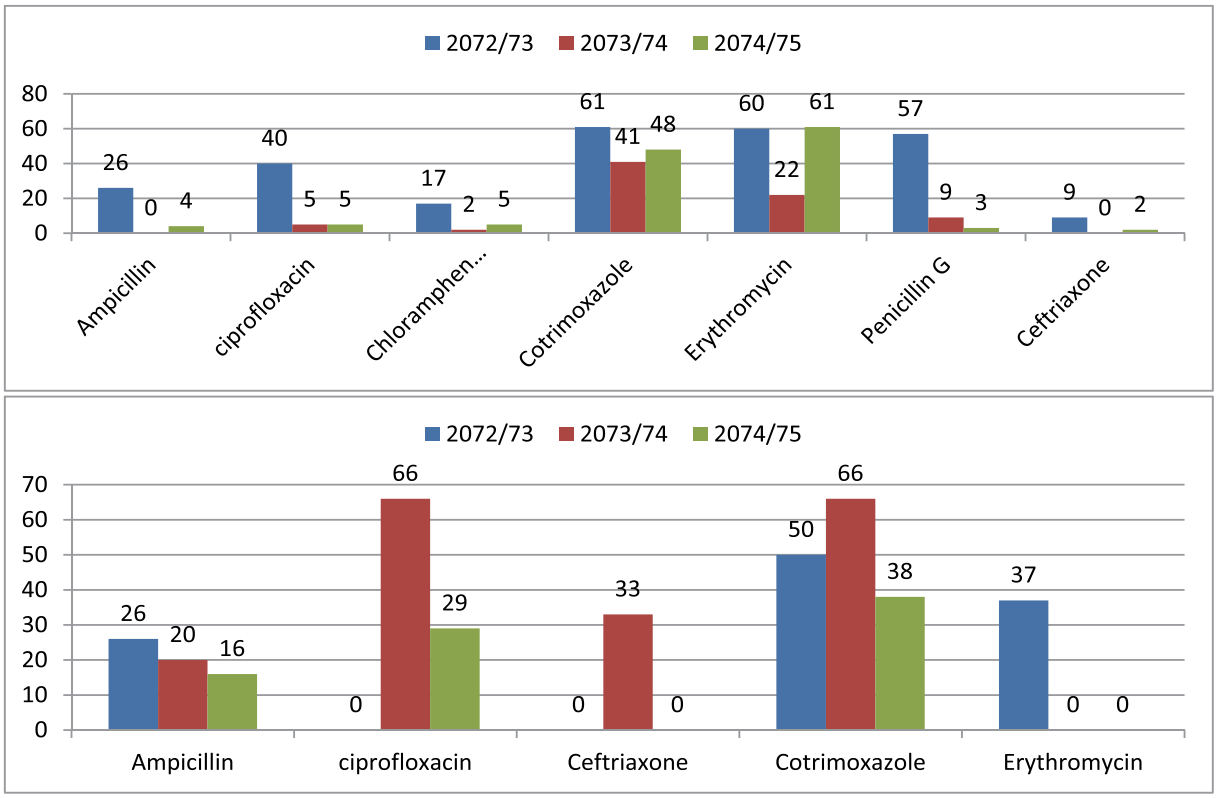
Shigellaspp

- Shifts in the prevalent serogroups have been observed
- Before 2005 *Shigelladysenteriae* was prevalent but *Shigellaflexneri* predominated afterwards.
- In 2017, 37% Shigella isolates were MDR and the most common resistant type was imutaneuosly resistant to Beta lactams/Fluoroquinolones and Tetracyclines.

Vibrio spp

- Shift in serotype observed.
- 2003-2004: V. cholerae O1 Ogawa
- 2005-2006: V. cholerae O1 Inaba
- 2007: All serotypes V. cholerae O1 Eltor Ogawa, Inaba&Hikojima
- Since 2008-2015 : V. cholerae O1 Ogawa
- In 2016 outbreak 169 cholera positive cases were isolated and reported. (Mostly from lalitpur district)
- Of the 169 isolates only two were
- V.cholerae O1 Inabarest all were of Ogawa serotype.
- All the isolates were MDR
- Furazolidone susceptibility is re-emerging (5% resistance in 2016)

Figure 8.5.6 : AMR in respiratory infections



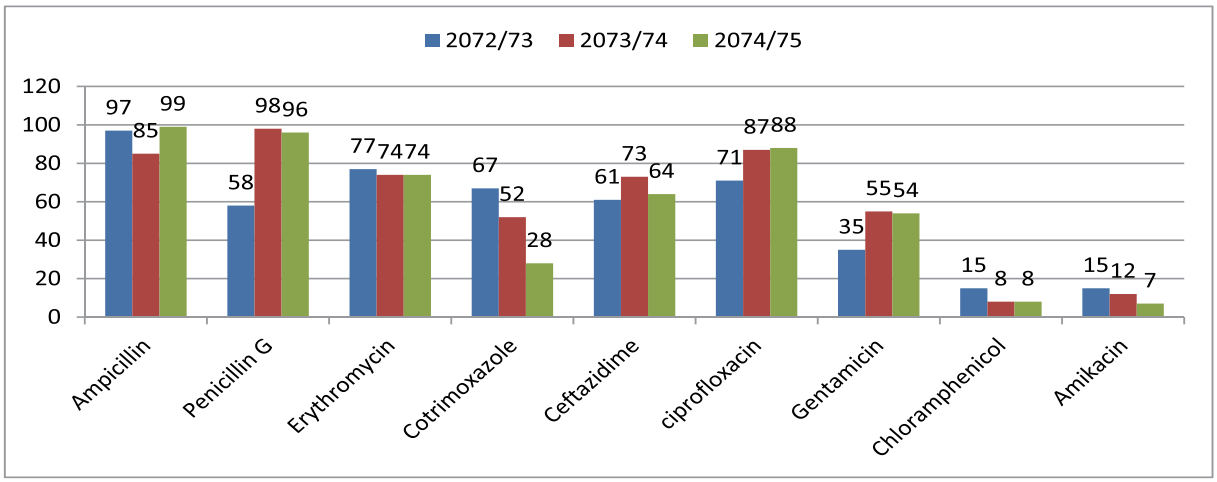
Streptococcus pneumonia

- One-third of the pneumococcal strains were isolated from children below 15 years with 21% of all isolates from children less than five years of age.
- 2 % isolates were resistant also to third generation Cephalosporin (ceftriaxone)
- All the isolates were sensitive to chloramphenicol till 2010 however increased to 13% by 2015.

Haemophilusinfluenzae

- Cotrimoxazole resistance is increasing from 2% in 2005 to 38% in 2018.
- Elderly are most commonly affected (50% from patients above 60 yrs)

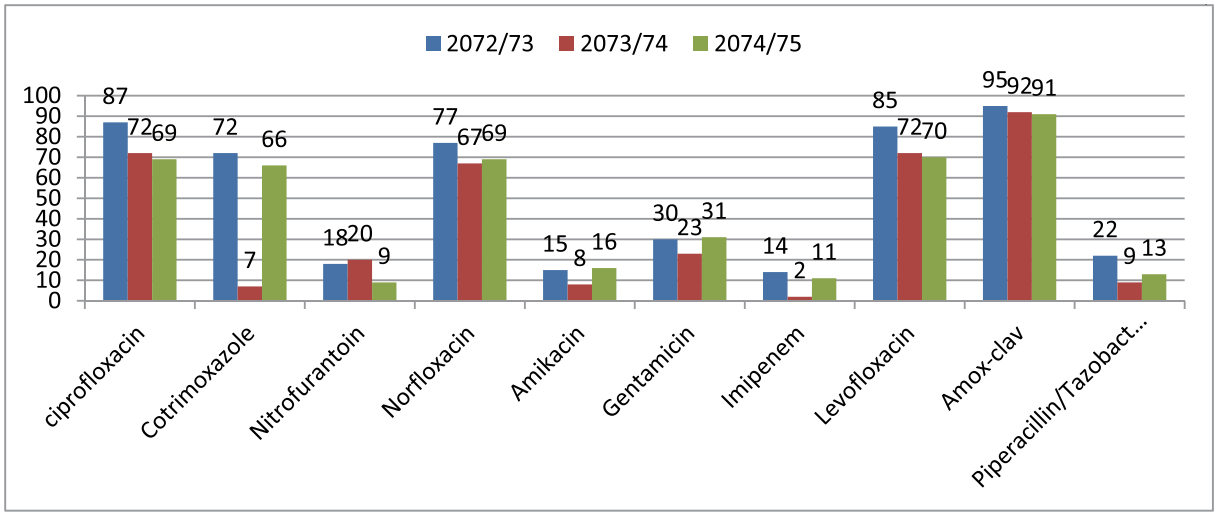
Figure8.5.7: AMR in MRSA



Methicillin resistant S.aureus

- Resistance to Gentamicin increased from 41% in 2013 to 68% by 2015 and then decreased to 54% by 2016
- Resistance to chloramphenicol fluctuated between 9%-15% in recent years.

Figure 8.5.8: AMR in ESBL producing E.coli



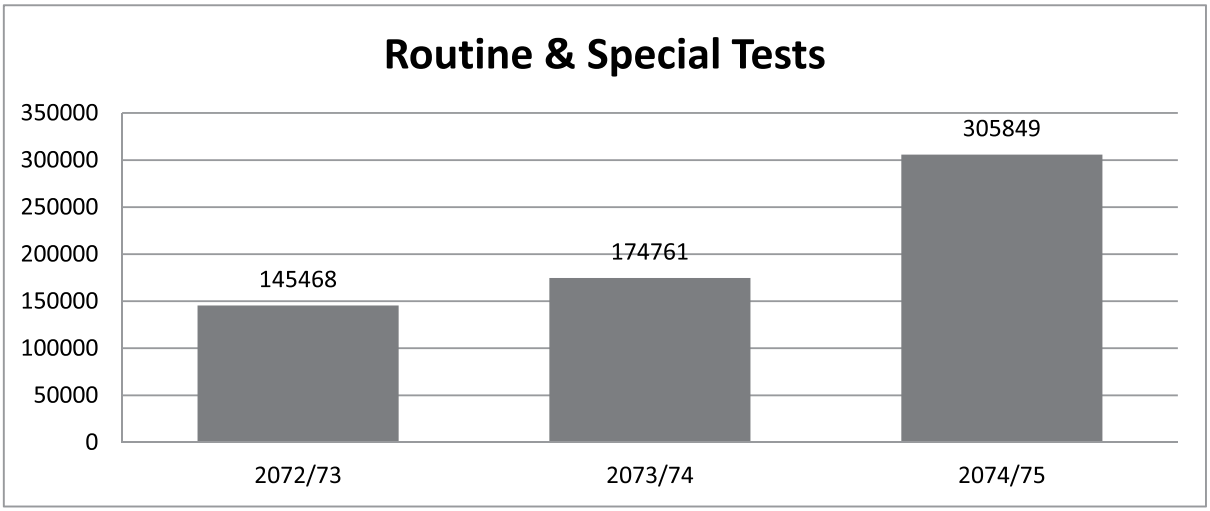
ESBL E.coli

- Increasing resistance against carbapenems (Imipenem,meropenem) is of major concern.
- Beta lactam-Beta lactamase Inhibitor Combination drugs are also becoming less effective.
- Among the commonly used drugs, nitrofurantoin shows less resistance.

8.5.11 Revenue Generation

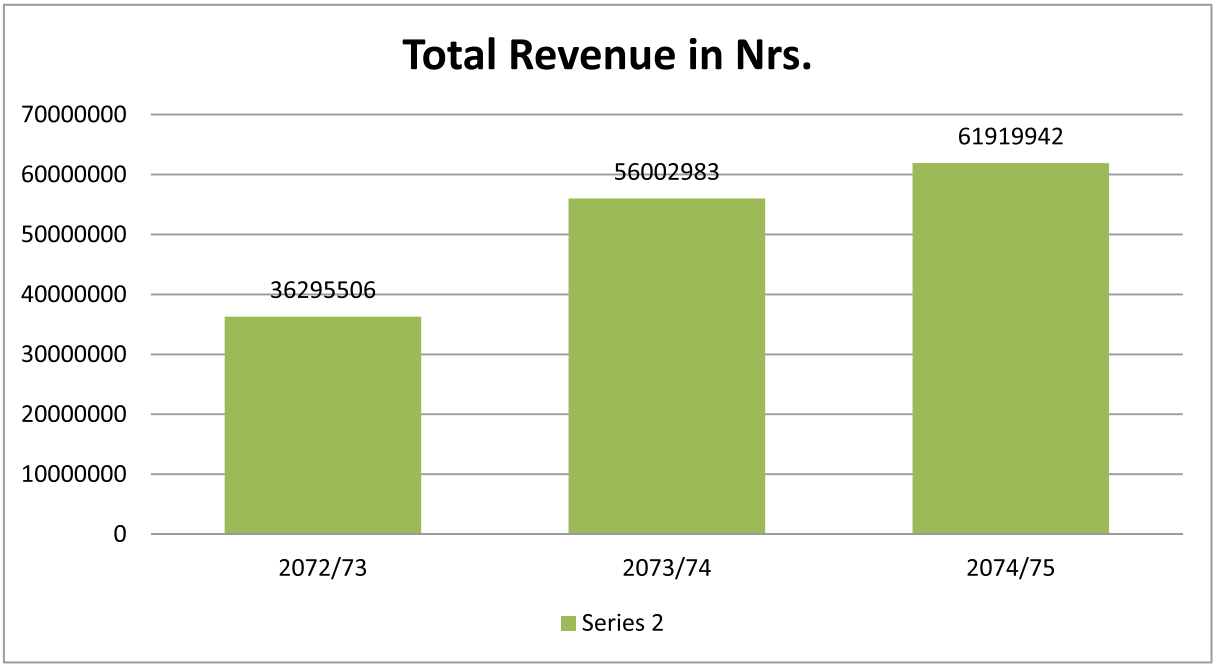
NPHL generate revenue from different laboratory testing service. There is increasing trend on revenue generation in comparison with previous year.

Figure 8.5.9: Total number of laboratory testing services provided by NPHL



Source: NPHL/DoHS

Figure 8.5.10: Trend of revenue generation from laboratory service at NPHL *(amount in Nrs.)*



Source: NPHL/DoHS

8.5.12 Challenges

The major challenges for Nepal's health laboratories are lack of appropriate laws and bylaws most needed for laboratory standardization and accreditation. Other main challenge is lack of separate budget for the quality assurance activities of medical laboratories, in each hospital/labs, so that something is invested every year in a planned manner to improve and sustain quality in the service. Other minor challenges are lack of scholarships for higher education and advance level trainings, lack of pro-research environment and inadequate number of functional human resource. Professionalism and code of conduct of each profession given should also be emphasized adequately from everybody concerned to improve our overall performances.

8.6 Personnel Administration

8.6.1 Background

Human resources are the pivotal resource for health care delivery. Human resource management involves the planning, motivation, use, training, development, promotion, transfer and training of employees. The proper placement and use of human resources is crucial for effective quality health care delivery. DoHS's Personnel Administration Section (PAS) is responsible for routine and programme administrative functions including upgrading health institutions, the transfer of health workers, the upgrading of health workers up to the 7th level, capacity building and the internal management of human resources. The objectives of PAS are listed in Box 8.6.1.

Box 8.6.1: Objectives of the Personnel Administration Section

The main objective of the section is to mobilize human resource to deliver quality health services. The specific objectives are as follows:

- To transfer and manage all posts up to 7th level according to the government policy and law.
- To place health staff at sanctioned posts in public health institutions.
- To manage human resources at the different levels.
- To take disciplinary action according to the law.
- To manage and update personnel information of all levels and institutions under DoHS.
- To manage the posting and transfer of medical officers who completed their studies under government scholarships.
- To execute organisation and management (O&M) surveys to establish and extend the structure of health institutions and organizations under DoHS.
- To recommend to MoHP for approval special leave and education leave requests by health workers.

8.6.2 Routine activities

MoHP has more than 30,000 employees of whom more than 24,000 are technical personnel and 6,300 are administrative staff. DoHS have about 24,000 personnel including in its health facilities across the 179 sanctioned types of technical and administrative posts (across all divisions and sections). The number of sanctioned and fulfilled posts under DoHS of fiscal year 2074/75 is given in Table 8.6.2.1

The routine responsibilities for personnel administration are as follows:

- According to the Health Service Regulations, 2055 and MoHP policy, DoHS is responsible for the transfer of the health workforce up to the 7th level.
- DoHS manage the upgrading of its employees to the 7th level twice a year.
- DoHS work to maintain the professional discipline of its employees.
- DoHS approve house leave, sick leave, delivery leave and other types of leave. It recommends to MoHP for the approval of special and education request by up to 7th level employees.
- DoHS manage the retirement of staff.
- The approval of resignations of staff above the 6th level is made through MoHP.

Table 8.6.2.1: Type and number of DoHS workforce, fiscal year 2074/75

SN	Types of human resources	Grade/level	Sanctioned	Fulfilled
1	Director General (DG)	12th	1	0
2	Director	11th (PHA)	5	5
3	Director	11th (PHA/HI)	1	0
4	Senior Health Administrator	9/10th	6	2
5	Senior Computer Officer	Gazetted II	1	1
6	Senior Community Nursing Administrator	9/10th	2	0
7	Senior Public Health Administrator	9/10th	8	7
8	Chief and Deputy Chief Medical Officer	9/10th	1	1
9	Senior Consultant Dermatologist	9/10th	1	0
10	Senior Consultant Gynaecology/Obstetrics	9/10th	1	1
11	Director and Deputy Director Senior Demographer	Gazetted II	4	4
12	Under Secretary	Gazetted II	1	1
13	Under-Secretary (Finance)	Gazetted II	1	1
14	Section Officer	Gazetted III	7	7
15	Account Officer	Gazetted III	2	6
16	Legal Officer	Gazetted III	1	1
17	Pharmacist	7/8th	2	2
18	Senior Public Health Officer	7/8th	9	9
19	Medical Officer	8th	7	1
20	Electrical Engineer	Gazetted III	2	1
21	Senior Community Nursing Officer	7/8th	1	1
22	Senior Nursing Officer	7/8th	1	0
23	Entomologist	7/8th	1	0
24	Computer Programmer	Gazetted III	1	1
25	Statistics Officer Demographer	Gazetted III	5	5
26	Veterinary Doctor	Gazetted III	2	2
27	Computer Officer	Gazetted III	6	6
28	Mechanical Engineer	Gazetted III	1	1
29	Computer Operator	Non gazetted I	6	4
30	Nayab Subba (Clerk)	Non gazetted I	8	8
31	Accountant	Non gazetted I	6	6
32	Health Assistant /Public Health Inspector	5/6th	18	18
33	Vector Control Assistant	5/6th	2	2
34	Entomologist Assistant	5/6th	1	0
35	Lab Technician	5/6th	1	1
36	Immunization Supervisor	5/6th	2	6
37	Medical Recorder Assistant	5/7th	1	1
38	TB/leprosy Assistant	5/8th	1	1
39	Storekeeper (Tech.)	Non Gazetted I	1	1
40	Public Health Nurse	5/6th	1	1

SN	Types of human resources	Grade/level	Sanctioned	Fulfilled
41	Kharidar	Non gazetted II	3	3
42	Accountant Assistant	Non gazetted II	1	0
43	Cold Chain Assistant	4/5th	4	4
44	Lab Assistant	4/5th	2	2
45	Light Vehicle Driver	Not classified	7	8
46	Office Assistant (Peon)	Not classified	28	26
47	Sweeper	Not classified	2	12
	Total		**179**	**170**

Source: PAS, DoHS

8.6.3 New initiatives

The following new initiatives were taken from the fiscal year 2072/73:

- File tracking system.
- Digital attendance introduced within DoHS.
- An online calendar of operations (online action plan) of divisions and DoHS introduced.

8.6.4 Issues and recommendations

Table 8.6.4.1: Issues and Recommendations — personnel administration

Issues	Recommendations
Insufficient information for strategic placement and transfers	Develop a scientific health workforce transfer criteria and a time-bound transfer management system from district to central level with the decentralization of authority.
Lack of functional database of DoHS personnel	Develop a mechanism for the timely recruitment of contract-based health workers (ANMs and SBAs) to ensure 24/7 services.
Weak management of staff on long leave	Functionalise coordination mechanisms between agencies concerned with producing and deploying human resources including induction training (academia, councils, training centres, MoHP)
Placement of scholarship doctors in Tarai and mountain districts	Authorize DoHS to place doctors at PHCCs.
The one-door placement of medical officers	Develop and implement an incentive package to retain doctors at PHCCs and in remote areas.
Human resource placement in rural and remote facilities	Effectively implement the time-bound transfer of personnel starting from district to central level with the decentralization of authority.
Monitoring of doctors in PHCCs and district hospitals	Initiate an e-attendance system in PHCCs and 50 bed hospitals and then scale-up to all facilities and institutions
Weak coordination between MoHP, department and districts for personnel management	MoHP and MoFALD to work together to fill health worker posts in urban health clinics

8.7 Financial Management

8.7.1 Background

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 programmes. DoHS's Finance Section is the focal point for financial management for all DoHS programmes. All health institutions have their own Finance Section, except PHCCs and health posts. The financial management objectives and targets are given in Box 8.7.1.

Box 8.7.1: Health financial management objectives and targets

Objectives:

- To support all programmes, divisions and centres for preparing their annual budgets
- To obtain and disburse programme budgets
- To keep books of accounts and collect financial reports from all public health institutions
- To prepare and submit financial reports
- To facilitate internal and external auditing
- To provide financial consultations.

Target —To achieve 100 percent expenditure of all budgets in accordance with programme work plans within a specified times as per financial rules and regulations of the government and to maintain the recording and reporting system accurately and on time.

8.7.2 Achievements in the fiscal year 2074/75

Out of total National Budget of Rs. 11,38,70,75,00,000 a sum of Rs. 31,42,81,75,000 (2.75%) was allocated for the health sector during the fiscal year 2074/75. Of the total health sector budget, Rs. 20,12,73,65,000 (63.33%) was allocated for the execution of programs under the Department of Health Services Network (Table 8.7.1).

Table 8.7.1: Health budget details, FY 2074/75 (NPR)

Budget	Total	Recurrent	%	Capital	%
National budget	**11,38,70,75,00,000**	**8,35,33,15,00,000**	**73.35**	**3,35,17,60,00,000**	**40.12**
Health budget	31,428,175,000	24,069,996,000	76.59	7,358,179,000	23.41
Health budget under DoHS	20,127,365,000	13,095,445,000	65.06	7,031,920,000	34.94

Table 8.7.2: Allocation of health budget by source, FY 2074/75

Budget	Total	GoN	%	Donor	%
Health budget under DoHS	20,127,365,000	10,60,63,43,000	52.70	9,521,022,000	47.30

Table 8.7.3: Regular programme recurrent budget, releases and expenditure by programme activities, FY 2074/75

Budget Code No	Programme budget	Total budget (in NPR)		Release budget (in NPR)		Expenditure (in NPR)	
		Amount	%	Amount	%	Amount	% (a)
3700123	Department of Health	143,688,000	9.66	159,364,428	13.29	159,364,428	13.29
3700133	Regional Health Directorates	114,444,000	7.70	103,325,422	8.62	103,325,422	8.62
3700143	District Health Offices	1,169,897,000	78.67	880,443,645	73.43	880,443,645	73.43
3700213	Health Training Centres programmes	58,989,000	3.97	55,958,386	4.67	55,958,386	4.67
Total		**1,487,018,000**	**100**	**1,199,091,881**	**100**	**1,199,091,881**	**100**

Table 8.7.4: Central level recurrent budget allocation by source and programme activities, FY 2074/75

Budget Code No	Programme budget heading	Total budget allocation by sources					
		GoN	%	Donor	%	Total	%
3701133	Tuberculosis Control Programmes	527,083,000.00	10.38	196,299,000.00	4.61	723,382,000	7.75
3701143	National HIV/AIDS Control Programmes	89,516,000.00	1.76	825,682,000.00	19.38	915,198,000	9.80
3701153	FP/MCH Programmes	276,540,000.00	5.45	162,950,000.00	3.82	439,490,000	4.71
3701163	Integrated CHD Programme	844,265,000	16.63	2,003,110,000.00	47.01	2,847,375,000	30.49
3701193	Epidemiology Programme	490,036,000.00	9.65	247,889,000.00	5.82	737,925,000	7.90
3701203	Leprosy Control Programme	82,369,000.00	1.62	9,900,000.00	0.23	92,269,000	0.99
3701213	Indent Procurement	114,520,000.00	2.26	53,950,000.00	1.27	168,470,000	1.80
3701223	Hospital Construction /Management Information System	1,316,961,000.00	25.93	176,050,000.00	4.13	1,493,011,000	15.99
3701233	NHEICC programmes	96,387,000.00	1.90	147,670,000.00	3.47	244,057,000	2.61
3701263	Health Laboratory Services	185,853,000.00	3.66	0.00	0.00	185,853,000	1.99
3701363	PHCRD programmes	743,330,000.00	14.64	400,000,000.00	9.39	1,143,330,000	12.24
3701383	Primary Health RD Avain	155,982,000.00	3.07	0.00	0.00	155,982,000	1.67
3701243	National Health Training Centre programmes	155,283,000.00	3.06	37,950,000.00	0.89	193,233,000	2.07
Total		**5,078,125,000**	**100**	**4,261,450,000**	**100**	**9,339,575,000**	**100**

Table 8.7.5: Central level recurrent budget released by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Released Budget By Source					
		GoN	%	Donor	%	Total	%
3701133	Tuberculosis Control Programmes	272895175.2	5.40	9,688,509.81	0.66	282,583,685	4.34
3701143	National HIV/AIDS Control Programmes	76133534.42	1.51	542,605,891.58	37.13	618,739,426	9.50
3701153	FP/MCH Programmes	181,372,715.59	3.59	152,590,333.41	10.44	333,963,049	5.13
3701163	Integrated CHD Programme	626,046,129.00	12.40	293,766,028.00	20.10	919,812,157	14.13
3701193	Epidemiology Programme	335,292,096.57	6.64	215,353,279.43	14.74	550,645,376	8.46
3701203	Leprosy Control Programme	30,316,942.80	0.60	2,007,235.20	0.14	32,324,178	0.50
3701213	Indent Procurement	106,036,649.32	2.10	14,257,372.68	0.98	120,294,022	1.85
3701223	Hospital Construction /Management Information System	2,229,753,188.00	44.15	111,361,787.00	7.62	2,341,114,975	35.95
3701233	NHEICC programmes	82,480,639.61	1.63	45,111,726.39	3.09	127,592,366	1.96
3701263	Health Laboratory Services	192,113,253.92	3.80	0.08	0.00	192,113,254	2.95
3701363	PHCRD programmes	628,364,098.76	12.44	41,174,034.24	2.82	669,538,133	10.28
3701383	Primary Health Avain	152,622,388.00	3.02	0.00	0.00	152,622,388	2.34
3701243	National Health Training Centre programmes	136,912,783.40	2.71	33,290,680.60	2.28	170,203,464	2.61
Total		**5,050,339,595**	**100**	**1,461,206,878**	**100**	**6,511,546,473**	**100**

Table 8.7.6: Central level recurrent budget expenditure by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Expenditure Budget By Source					
		GoN	%	Donor	%	Total	%
3701133	Tuberculosis Control Programmes	272895175.2	5.40	9,688,509.81	0.66	282,583,685	4.34
3701143	National HIV/AIDS Control Programmes	76133534.42	1.51	542,605,891.58	37.13	618,739,426	9.50
3701153	FP/MCH Programmes	181,372,715.59	3.59	152,590,333.41	10.44	333,963,049	5.13
3701163	Integrated CHD Programme	626,046,129.00	12.40	293,766,028.00	20.10	919,812,157	14.13
3701193	Epidemiology Programme	335,292,096.57	6.64	215,353,279.43	14.74	550,645,376	8.46
3701203	Leprosy Control Programme	30,316,942.80	0.60	2,007,235.20	0.14	32,324,178	0.50
3701213	Indent Procurement	106,036,649.32	2.10	14,257,372.68	0.98	120,294,022	1.85
3701223	Hospital Construction /Management Information System	2,229,753,188.00	44.15	111,361,787.00	7.62	2,341,114,975	35.95
3701233	NHEICC programmes	82,480,639.61	1.63	45,111,726.39	3.09	127,592,366	1.96
3701263	Health Laboratory Services	192,113,253.92	3.80	0.08	0.00	192,113,254	2.95

Budget Code No	Programme budget heading	Expenditure Budget By Source					
		GoN	%	Donor	%	Total	%
3701363	PHCRD programmes	628,364,098.76	12.44	41,174,034.24	2.82	669,538,133	10.28
3701383	Primary Health Avain	152,622,388.00	3.02	0.00	0.00	152,622,388	2.34
3701243	National Health Training Centre programmes	136,912,783.40	2.71	33,290,680.60	2.28	170,203,464	2.61
Total		**5,050,339,595**	**100**	**1,461,206,878**	**100**	**6,511,546,473**	**100**

Table 8.7.7: Central level capital budget allocation by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Total budget allocation by source					
		GoN	%	Donor	%	Total	%
3701134	Tuberculosis Control Programmes	269,665,000	50.70	0	0	269,665,000	28.49
3701144	National HIV/AIDS Control Programmes	0	0.00	50,000,000	12.06	50,000,000	5.28
3701154	FP/MCH Programmes	17,827,000	3.35	0	0	17,827,000	1.88
3701164	Integrated Child Health Programme	6,996,000	1.32	89,860,000	21.67	96,856,000	10.23
3701194	Epidemiology Programme	7,030,000	1.32	0	0	7,030,000	0.74
3701204	Leprosy Control Programme	5,835,000	1.10	0	0	5,835,000	0.62
3701214	Indent Procurement	109,880,000	20.66	213,650,000	51.52	323,530,000	34.18
3701224	Hospital Construction / Management Information System	11,216,000	2.11	0	0	11,216,000	1.18
3701234	NHEICC programmes	1,230,000.00	0.23	0.00	0	1,230,000	0.13
3701244	National Health Training Centre	16,366,000	3.08	0	0	16,366,000	1.73
3701264	Health Laboratory Services	85,801,000	16.13	0	0	85,801,000	9.06
3701364	Primary Health Care Division programmes	0	0.00	61,200,000	14.76	61,200,000	6.47
Total		**531,846,000**	**100**	**414,710,000**	**100**	**946,556,000**	**100**

Table 8.7.8: Central level capital budget released by source and programme, FY 2074/75

Budget Code No	Programmebudget heading	Released budget by source					
		GoN	%	Donor	%	Total	%
3701134	Tuberculosis Control Programmes	207,380,643.00	54.76	0.00	0	207,380,643	26.21
3701144	National HIV/AIDS Control Programmes	0.00	0.00	49,229,993.00	11.93	49,229,993	6.22
3701154	FP/MCH Programmes	2,130,361.40	0.56	0.00	0	2,130,361	0.27
3701164	Integrated Child Health Programme	21,318,333.00	5.63	63,354,824.00	15.36	84,673,157	10.70
3701194	Epidemiology Programme	4,911,207.00	1.30	0.00	0	4,911,207	0.62

Budget Code No	Programmebudget heading	Released budget by source					
		GoN	%	Donor	%	Total	%
3701204	Leprosy Control Programme	4,083,152	1.08	0.00	0	4,083,152	0.52
3701214	Indent Procurement	46,697,030.00	12.33	276,832,970.00	67.11	323,530,000	40.89
3701224	Hospital Construction /Management Information System	9,537,542.00	2.52	0.00	0.00	9,537,542	1.21
3701234	NHEICC programmes	871,421.00	0.23	0.00	0	871,421	0.11
3701264	Health Laboratory Services	81,745,012.00	21.59	0.00	0	81,745,012	10.33
3701364	Primary Health Care Division programmes	0.00	0.00	23,115,618.00	5.60	23,115,618	2.92
Total		**378,674,701.40**	**100**	**412,533,405.00**	**100**	**791,208,106.40**	**100**

Table 8.7.9: Central level capital budget expenditure by source and programme, FY 2074/75

Budget Code No	Programmes Budget Heading	Expenditure Budget by Source					
		GoN	%	Donor	%	Total	%
3701134	Tuberculosis Control Programmes	207,380,643.00	54.76	0.00	0	207,380,643	26.21
3701144	National HIV/AIDS Control programmes	0.00	0.00	49,229,993.00	11.93	49,229,993	6.22
3701154	FP/MCH Programmes	2,130,361.40	0.56	0.00	0	2,130,361	0.27
3701164	Integrated Child Health Programme	21,318,333.00	5.63	63,354,824.00	15.36	84,673,157	10.70
3701194	Epidemiology Programme	4,911,207.00	1.30	0.00	0	4,911,207	0.62
3701204	Leprosy Division Control programmes	4,083,152	1.08	0.00	0	4,083,152	0.52
3701214	Indent Procurement	46,697,030.00	12.33	276,832,970.00	67.11	323,530,000	40.89
3701224	Hospital Construction /Management Information System	9,537,542.00	2.52	0.00	0	9,537,542	1.21
3701234	NHEICC programmes	871,421.00	0.23	0.00	0	871,421	0.11
3701264	Health Laboratory Services	81,745,012.00	21.59	0.00	0	81,745,012	10.33
3701364	Primary Health Care Division programmes	0.00	0.00	23,115,618.00	5.60	23,115,618	2.92
Total		**378,674,701.40**	**100**	**412,533,405.00**	**100**	**791,208,106.40**	**100**

Table 8.7.10:District level recurrent budget allocation by source and programme, FY 2074/75

Budget Code No	Programmebudget heading	Total budget allocation by source					
		GoN	%	Donor	%	Total	%
3708063	TB Control Programmes	119,215,000	4.04	45,670,000	7.69	164,885,000	4.65
3708023	NHEICC Programmes	25,186,000	0.85	0	0	25,186,000	0.71
3708033	National Health Training Centre Programmes	27,750,000	0.94	0	0	27,750,000	0.78
3708043	Integrated Health Services Programmes	2,776,149,000	94.16	548,145,000	92.31	3,324,294,000	93.85
Total		**2,948,300,000**	**100**	**593,815,000**	**100**	**3,542,115,000**	**100**

Table 8.7.11:District level recurrent budget released by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Released budget by source					
		GoN	%	Donor	%	Total	%
3708063	TB Control Programmes	102308366.5	28.26	33,091,186	1.43	135,399,553	5.06
3708023	NHEICC Programmes	22517721	6.22	0	0	22,517,721	0.84
3708033	National Health Training Centre Programmes	19,626,464	5.42	0	0	19,626,464	0.73
3708043	Integrated Health Services Programmes	217,595,372	60.10	2,279,410,534	98.57	2,497,005,906	93.36
Total		**362,047,924**	**100**	**2,312,501,720**	**100**	**2,674,549,644**	**100**

Table 8.7.12:District level recurrent budget expenditure by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Expenditure budget by source					
		GoN	%	Donor	%	Total	%
3708063	TB Control Programmes	102308366.5	28.26	33,091,186.49	1.43	135,399,553	5.06
3708023	NHEICC Programmes	22517721	6.22	0.00	0	22,517,721	0.84
3708033	National Health Training Centre Programmes	19,626,464	5.42	0.00	0	19,626,464	0.73
3708043	Integrated Health Services Programmes	217,595,372	60.10	2,279,410,533.77	98.57	2,497,005,906	93.36
Total		**362,047,923.74**	**100**	**2,312,501,720.26**	**100**	**2,674,549,644.00**	**100**

Table 8.7.13:District level capital budget allocation by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Total budget allocation by source					
		GoN	%	Donor	%	Total	%
3708044	Integrated Health Services Programmes	121,513,000	95.76	3,990,138,000	100	4,111,651,000	99.87
3708064	TB Control Programmes	5,376,000	4.24	0	0	5,376,000	0.13
3708034	NHTC Programmes		0.00	0	0		0.00
Total		**126,889,000**	**100**	**3,990,138,000**	**100**	**4,117,027,000**	**100**

Table 8.7.14:District level capital budget released by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Released budget by source					
		GoN	%	Donor	%	Total	%
3708044	Integrated Health Services Programmes	2,087,221,999	99.75	3,590,969,078	100	5,678,191,077	99.91
3708064	TB Control Programmes	5,142,571	0.25	0	0	5,142,571	0.09
Total		**2,092,364,570**	**100**	**3,590,969,078**	**100**	**5,683,333,648**	**100**

Table 8.7.15:District level capital budget expenditure by source and programme, FY 2074/75

Budget Code No	Programme budget heading	Expenditure budget by source					
		GoN	%	Donor	%	Total	%
3708044	Integrated Health Services Programmes	2,087,221,999	99.75	3,590,969,078	100	5,678,191,077	99.91
3708064	TB Control Programmes	5,142,571	0.25	0	0	5,142,571	0.09
Total		**2,092,364,570**	**100**	**3,590,969,078**	**100**	**5,683,333,648**	**100**

Table 8.7.16: Cumulative financial irregularities up to 2074/75 (NPR In,000)

Irregularity amount to be regularized	Irregularity clearance	Percent
3527321	1439096	40.80

Table 8.7.17: Irregularity clearance status of last three years FY 2071/72 - 2074/75 (NPR In ,000)

Fiscal Year	Total irregularity amount	Irregularity clearance	Clearance %
2074/75	3,52,73,21	1,43,90,96	40.80
2073/74	4,25,95,14	1,92,02,95	45.08
2072/73	4,58,44,31	2,29,87,76	50.14

Source: Finance Section, DoHS

8.7.3 Issues of financial management

Following major Issues of financial management are given in below table:

Problems and constraints
Delay in approval of organizational structure and functionality has affected in the health budget allocation, release and disbursement to the local level health institutions.
Still remain to ensure the rational allocation of health budget to the Provinces and local level programs and availability of human resources.
Mismatch in the allocation of health budget to the LGs in the certain levels.
No single platform for the planning and budgeting to ensure harmonization of budget planning and program implementation across the three layers of government.
Due to newly formed federal structure the health facility capacity remain limited to improvement of the planed budget activities and utilization of allocated budget.
Lack of clarity "On and Off" health budget reporting mechanism in the changed context including expenditure reporting at the local level.
Non-release of committed EDPs budgets in time.
Difficulty in keeping books of accounts and reporting according to differing software e.g. GGAS, TABUCUS, LMBIS and RMIS
Difficulty in financial reporting procedures and reimbursement from External Development Partners (EDPs) due to lack of trained manpower and physical facilities

8.8 Medico-Legal Services

The infancy stage of forensic or medico-legal field in Nepal is now crawling with great difficulty. This field has great wish to grow up in normal way to address and to provide help for Nepali people as there is high degree suffering in society because of improper and inadequate medico-legal service to needy population. This service sector which is supposed to be developed by state is not only ignored but also not adequately recognized and remaining as more or less unidentified. There is no any section or department which can look for medico-legal sector in Ministry of Health and Population or Department of Health Services but each and every hour many medico-legal cases are waiting at any level of health facility throughout the country. As a result of improper, incomplete and nonscientific application of forensic evidences, justice is suffering directly and "Rule of law" or "Law and order" are also suffering indirectly. There are more than enough examples of several year imprisonment for an innocent person and release as reward for a criminal in court cases related with crime against human body.

Constitution of Nepal 2072 in it's article 35 guarantees Right to Health for all Nepali citizen and in articles 20, 21 and 22 Right to justice, Right of victim of crime and Right against Torture also guaranteed. There are other articles like article 42 Right to social justice, article 44 Right of consumer which are all related with medico-legal field for their proper implementation in real life situation. For effective application of above constitutional rights, medico-legal sector in Nepal must be in proper functional state.

Time has compelled to recognize medico-legal field and it is shown by other way with spontaneous appearances of more than four dozens of Nepali doctors specialized in the field of forensic. Now it is high time for Nepal Government to facilitate the environment to utilize those experts in medico-legal field for providing their specialist service to Nepali people.

Few incidents have coming up with the support and advocacy by MELESON (Medico-legal Society of Nepal), a registered professional society of practicing Nepali Forensic Medicine specialists in this country. Some of the positive outcome can be listed as follow:

1. Ministry of Health and Population has created few posts for consultants in this field at four hospitals of the country but most of them are still vacant.
2. A historical first National Medico-legal Workshop was held last year at Kathmandu which was organized by Ministry of Health.
3. Six types of medico-legal examination and reporting formats are prepared and prescribed by Nepal Government with initiation of Ministry of Law and Justice on 2073 BS and incorporated and annexed in State Cases Regulation.
4. National Health Training Center from Department of Health Services (DoHS) requested to MELESON to prepare six various types of Standard Operating Procedures (SOP), Reference Manuals and Training Manuals for standard medico-legal examination and reporting procedures. This task was completed by MELESON and all SOPs have been approved by Ministry of Health and Population on 2018. The SOPs and Manuals are as following:
    a) SOP and manuals for autopsy work
    b) SOP and manuals for injury examination
    c) SOP and manuals for sexual offence cases examination
    d) SOP and manuals for age estimation

e) SOP and manuals for examination of victims of torture

f) SOP and manuals for forensic identification of skeletal remains

5. There are initiations from various medical colleges to have permission for routine medico-legal services to public from their hospitals.
6. Medico-legal Procedures Operational Guideline has been developed by Ministry of Health and Population with the help of Attorney General's Office, Ministry of Home Affairs and Ministry of Law and Justice. This guideline is at the stage of approval by Cabinet of Ministers of Nepal Government.
7. Muluki Criminal Procedural Code Ain 2074 has provisions on use and consultation of experts in medico-legal autopsy and annexed the injury examination and autopsy formats for reporting.
8. Crime investigation Regulation 2075 has provisions on application of medico-legal formats with annexed reporting formats of sexual offences, age estimation and drunkenness examination.

Though there are many problems in health care service delivery system in the country, the forensic service sector which is in pathetic condition must be addressed to keep minimum standard. Implementation part of newly developed medico-legal examination formats and Standard Operating Procedures on medico-legal field needs orientation trainings for doctors. The traditional practices of permission of medico-legal examination and reporting by paramedics who have never taught and trained must be stopped immediately.

The medico-legal services to public must be opened for Forensic Medicine specialists who are spending their time without their main job. New laws and New Health Policy of Nepal still look reluctant to address the medico-legal sector which is creating difficulties for doctors to render this important service to needy people.

There are suggestions provided from the first National Medico-legal Workshop 2074 for very basic and minimum care in forensic sector. If those suggestions or recommendations are cared step by step, it may take no longer to have minimum standard in this service field.

8.9 Monitoring and Evaluation

8.9.1 Background

Increased access to and use of information through the use of Information Communication Technology (ICT) is a direction provided by NHSS. It also emphasises improved and interoperable routine information systems and prioritises surveys and research. Similarly, it strives for improved and integrated health sector reviews at various levels that feed into the planning process. Towards achieving universal health coverage and leaving no one behind, the NHSS and the SDGs emphasise monitoring and reducing the equity gap in the health outcomes of different population sub-groups.

The outputs linked to the stated outcome 9 are as follows:

- Integrated information management approach practiced,
- Survey, research and studies conducted in priority areas
- Improved health sector reviews with functional linkage to planning process

8.9.2 Major Progress in FY 2074/75 (2017/18)

Integrated information management

- This year the MoHP continued the expansion of electronic reporting of service data from health facilities. A total of 1200 public health facilities now submit the HMIS monthly reports electronically. As health posts and primary health care centres are now being managed by the local government, the MoHP is focusing on enhancing their capacities on health information management, including the use of the DHIS2 platform. This will allow for the continuous flow of data from the health facilities to the national HMIS system. The HMIS e-learning modules for the orientation of health workers, statisticians, computer operators and programme managers have been developed and are available on the MoHP website.
- A web-based Routine Data Quality Assessment (RDQA) tool has been developed to improve the quality of health facility based data reported mainly via health management information system (HMIS). Along with the assessment tool, an e-learning package to facilitate its use has been developed and is available on the MoHP website.
- Currently, patient-based data in health facilities are recorded on a paper-based system which cannot be readily analysed, used and shared for decision making. Using open source software technology, the MoHP has designed an electronic health record system – a digital collection and retrieval of a client's medical records - for hospitals, primary health care centres and health posts. It will contribute in building an efficient health information system and also help the local governments to keep track of the health status of their catchment population.
- The MoHP developed a guideline on Health Sector M&E in the federal context. This guideline defines the health sector M&E functions of the local, province and federal government; specifies the way forward and roles of different entities in meeting the data gaps with specific reference to the NHSS Results Framework and Sustainable Development Goals - Goal 3.
- Keeping the idea of interoperability among various health information systems at the core, the MoHP has been developing the core components of the eHealth ecosystem. In the last year, MoHP developed the Health Facility Registry, a tool that keeps track of all health facilities within the country, public and private, as well as key information regarding the facility such as the services offered. At the same time, the registry features an interface that allows for various information systems to connect to it, and keep their individual lists of health facilities up-to-date and synchronized with the MoHP. The registry can be accessed from the MoHP website.

- Digital dashboard has been developed to monitor major health indicators including the NHSS Results Framework and health-related SDG indicators and are published in MoHP website. The dashboard uses data from NDHS, NHFS and HMIS.
- The MoHP has initiated a number of e-health initiatives like web-based grievance management system and file tracking system.

8.9.3 Survey, research and studies

- The Nepal National Micronutrient Status Survey 2016 was completed and the findings disseminated. Key findings of the survey include:
  - 35 percent of children 6-59 months suffer from stunting, 29 percent underweight and 11 percent wasting
  - One-third of the adolescent boys and adolescent girls aged 10-19 years (32 percent each) suffer from stunting.
  - Among non-pregnant women 15-49 years, 11 percent had short stature (shorter than 145 cm),
  - 15 percent were thin or underweight, 19 percent were overweight and five percent were obese.
  - The prevalence of risk of RBC folate deficiency was 16 percent among adolescent girls and 12 percent among non-pregnant women.
  - The median urinary iodine concentration among children 6-9 years was 314.1 µg/L.
- Further analysis of NHFS 2015 was completed and findings disseminated on the following topics:
  - Client Satisfaction and Quality of Curative Services for Sick Children in Nepal
  - Quality of Family Planning Services Delivery and Family Planning Client Satisfaction at Health Facilities in Nepal
  - Quality of Care and Client Satisfaction with Maternal Health Services in Nepal
  - Health Services Availability and Readiness in Seven Provinces of Nepal
- National health accounts covering the three-year period from 2009 -2012 have been prepared in 2017. These provide detailed and updated information regarding the health expenditure by source, financing agents, types of service providers, functions, and status of out-of-pocket expenditure in the country.
- The Nepal Health Research Council (NHRC) carried out a number of research studies in FY 2074/75. The reports of the research are available in NHRC's website.
- MoHP in collaboration with NHRC has initiated the process of preparing a country report based on the global burden of disease (GBD) 2017 data[1]. The study results published by the Institute for Health Metrics and Evaluation shows that:
  - Non-Communicable Diseases (NCDs) are the leading cause of death – two third (66%) of deaths are due to NCDs, with an additional 9% due to Injuries. The remaining 25% are due to communicable, maternal, neonatal and nutritional (CMNN) diseases.
  - Approximately, 59% of disease burden (Disability Adjusted Life Years – DALYs) in 2017 is due to NCDs, 31% due to CMMN diseases and 10% due to injury.
  - Child and Maternal Malnutrition (14.7% of total DALYs), Dietary Risks (10.7% of total DALYs), Tobacco (9.6% of total DALYs), High Systolic Blood Pressure (9.2% of total DALYs) and Air Pollution (9% of total DALYs) are the top five risk factors driving death and disability in Nepal.

1 Global Burden of Disease Study 2017. Global Burden of Disease Study 2017 (GBD 2017) Results. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2016. Available from: https://vizhub.healthdata.org/gbd-compare/

- With the objective of translating the evidence into action, the practice of developing policy briefs has been initiated analysing the available secondary data. The following briefs have been developed and published on the MoHP website:
    - An analysis of caste disaggregates from NDHS 2016 data to assess caste-wise inequalities in the achievement of major health outcome indicators.
    - Analysis of NHFS 2015 data to investigate the predictors of client satisfaction from antenatal care services;
    - Analysis of NDHS 2016 data examining socio-economic differentials in caesarean section rates in Nepal;
    - A brief highlighting the need for a process for engaging health academic institutions in each province to lead the implementation, strengthening and expansion of maternal and perinatal death surveillance and response system within the province;
    - Review of 22 health sector policies, as a part of a broader effort to ensure improved alignment of the country's legal provisions and policies with the spirit of the constitution.
    - Analysis of routine and survey data to identify inequities in maternal health service utilisation in Nepal.

8.9.4 Health sector reviews with functional linkages with the planning processes

- The MoHP prepared a guideline and tools for the health sector review at all three levels. The objective was to standardise the review process at the local and provincial level and link the review at the sub-national level with the federal level review and planning. The guidelines and tools were shared through the MoHP website. The guideline has been instrumental not only to standardise the review process but also in drawing lessons from the sub-national reviews feeding into the federal review and planning.
- The 'Health Sector M&E in Federal Context 2075' also defines the role and process of health sector review at each level of governance.

8.9.5 Challenges

- Limited availability of quality data to meet the health sector data needs at local, province, and federal levels
- Limited use of evidence based decision making at all levels
- Limited use of integrated information management leveraging the ICT at all levels to sustain the good practices and achievements of the health sector
- Slow progress in the institutionalisation and regularisation of national health accounting.

8.9.6 Way Forward

- Develop strategies, standard protocols, and guidelines for improved information management leveraging ICT.
- Effective implementation of the guideline 'Health Sector M&E in Federal Context, 2075.
- Implementation of 'Health Facility Registry' at all levels.
- Develop and operationalise the central standard data repository.
- Standardise, develop, strengthen, and institutionalise e-health initiatives at all levels.
- Institutionalization and regularization of producing national health accounts.

HEALTH COUNCILS

9.1 Nepal Nursing Council

9.1.1 Introduction

Nepal Nursing Council (NNC) is established under Nepal Nursing Council Act 2052 (1996). It came into force on 2053-03-02 (16June 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.

9.1.2 The main functions of the council are:

1. Register the nurse through licensing examination and manage the registration of qualified nursing professionals
2. Formulate policy required to operate the nursing and midwifery profession smoothly and to provide better care to the public
3. Inspect, monitor and recognition to nursing and midwifery academic institutions and monitor the quality of nursing and midwifery services for better nursing care
4. Maintain the standardization in nursing and midwifery education through evaluating and reviewing the nursing and midwifery curriculum, the terms and conditions of admission and examination systems .
5. Formulate professional code of conduct of the nursing and midwifery professionals and to take action against those professionals who violate such code of conduct.
6. Develop the scope of practice for nursing and midwifery professionals to determine the work limit of nursing and midwifery professionals
7. Publish the annual Journal of the Nepal Nursing Council.

As of January 2018 there were 266 Nursing and 3 Midwifery courses running in Nepal among Nursing college , Proficiency level Nursing 120, B. Sc. Nursing 47, Bachelor in Nursing 40, Master level 8 and 51 Auxiliary Nurse-Midwife (ANM).

Table 9.1: Nursing and Midwifery education programs

SN.	Nursing education programs	Number
1	Auxiliary Nurse Midwife (ANM)	51
2	Proficiency Certificate Level (PCL)	120
3	B.Sc. Nursing	47
4	Bachelor in Nursing Science (BNS)	40
5	Master in Nursing (MN/MSC)	8
	Total	**266**
1	Bachelor in Midwifery	3

The Nepal Nursing Council (NNC) had registered 85,042 Nepali Nurses (PCL 53,278 and ANM 31,764) and 842 foreign nurses till 2018 January. Categories of NNC register Nurses are given below.

Table 9.2: Categories of Nurses

SN	Categories of Nurses	Number
1	Nurses	53,278
2	ANM	31,764
	Total	**85,042**
1	Foreign Nurses	842

9.1.3. Major activities carried out by NNC in fiscal year 2074/75

- Online form submission in the license examination for nurses (NLEN) is started
- Curriculum and Minimum requirement to PCL level midwifery education was developed.
- Completed "midwifery educators' training" for two batch 14 participants in each batch with help of UNFPS and GIZ
- Develop the code of conduct for nurses and midwives
- Initiation of specialized online registration for master level of nursing
- Expansion of bachelor level of midwifery education.
- Initiation bachelor level nursing education in oncology
- During the 2074/75 the council held three national licensing examinations for nursing graduates.
- Prepared the proposed draft of NNC act according federal system and sent for Amendment
- Revised the different tools such as accreditation, monitoring, feasibility, self assessment to the all level of education

9.1.4 Ways forward

- Register and license midwives and prepare guideline for licensing exams.
- Revised minimum requirements for different level of nursing course such as proficiency certificate level of nursing, bachelor in nursing, masters of nursing
- Development of rules regulations of midwifery education and practice according to the federal democratic republic of Nepal.
- Maintain the online and up to date information of previously registered nurses
- Development the scope of practice for nurse and midwife
- Separate the licensing system for PCL and bachelor level nursing program
- Standardization of auxiliary nurse midwife (ANM) program by initiation of licensing system.

9.2 Nepal Ayurvedic Medical Council

9.2.1 Introduction

The Nepal Ayurvedic Medical Council (NAMC) is the autonomous body to regulate and control Ayurvedic medicine in Nepal. It was established under the Ayurveda Medical Council Act, 2045. The council is the regulatory and legislative body for Ayurvedic courses, human resources, institutions, practitioners and traditional healers in Nepal. All Ayurveda practitioner and educational institutions have to be register with the council. The council has developed a code of ethics for Ayurvedic doctors and minimum requirements for Ayurvedic educational institutions. The council's main committee consists of an Ayurvedic doctor nominated by the government as chairperson, three doctors nominated by the government, the DoA director, three doctors elected by registered doctors one campus chief nominated by the government and one registrar nominated by the government. The council registers eligible Nepali practitioners. Also, foreigners who want to practice Ayurveda medicine in Nepal, should be provisionally registered with the council (for one year at a time). However it is not possible for foreigners to register to established private clinics in Nepal. The main functions and objectives of the council are listed below.

9.2.2 Functions and objectives of the council

- Arrange for the smooth provision of Ayurveda treatment
- Develop the system of use of Ayurvedic medicines
- Determine the qualification of doctors and to register them
- Advice the government on the production, sale and distribution of Ayurvedic medicines.
- Suggest to the government for making arranging research on Ayurveda.
- Recognise appropriate Ayurveda educational institutions in Nepal.
- Determine the curriculum, terms admission and examination system policies and essential infrastructures of educational institutions.
- Recognise the educational qualifications granted on Ayurveda, modern medicine and surgery and paramedics.
- Prepare a code of conduct for Ayurvedic doctors and to monitor its implementation.

9.2.3 The number of registered members, institutions and courses are given below:

9.2.3.1 MD & Bachelor Level Programme:

- Tribhuvan University, IOM, Ayurveda Campus, Kirtipur (With MD)
- Mithila Ayurveda College & Research Center, Janakpur, Dhanusha (Affiliated by NSU)
- Nepal Ayurveda Medical College, Birgunj, Parsha (Affiliated By T.U.)
- Nepal Sanskrit University, Kendriya Ayurveda Vidhyapeeth, Bijauri, Dang.
- Patanjali Ayurveda Medical College & Research Centre, Dhulikhel, Kabhre. (Affiliated By NSU)

9.2.3.2 Certificate Level Programme (AHA)

- NSU, Janta Vidhayapeeth, Bijauri, Dang
- Dhanwantari Ayurbigyan Adhyan Sansthan, Baphal, Kathmandu (Affiliated by CTEVT)
- Himalayan Ayurveda College, Baneshwor, Kathmandu. (Affiliated by CTEVT)

9.2.3.3 Under CTEVT, Ayurveda Health Worker (AAHW)

- Sailaja Acharya Politechnical Institute, Sishwani, Morang.
- Jagadamba Medical Institute, Rajbiraj, Saptari
- Modern Institute of Health Science, Gaighat, Udayapur.
- Ayurvedic Medical Institute, Janakpurdham, Dhanusha.
- Shankar Technical Training Centre, Janakpur, Dhanusha.
- National Institute of Science & Technology, Bharatpur, Chitwan.
- Bardiya Medical Institute, Gulariya, Bardiya.
- Institute of Community Service Assistant, Dhangadhi, Kailali.
- Dadeldhura Paramedical Campus, Dadeldhura.
- White Park College, Dadeldhura.
- Rastriya Prabidhik Sikhsalaya, Surkhet.
- Triyuga National Institution, Gaighat.
- Ilam Technical Institute, Ilam.
- Bagalamukhi Technical Institute, Itahari.

(NAMC- Nepal Ayurvedic Medical Council , MD - Master of Medicine, BAMMS- Bachelor of Ayurveda & Modern Medicine & Surgery , BAMS- Bachelor of Ayurveda Medicine & Surgery, AHA- Ayurved Health Assistant; AAHW- Auxiliary Ayurveda Health Worker)

9.2.4 Statistics of registration persons (up to date 2075/11/09)

- MD/equivalent 77
- M Pharmacy (Ayu.) 1
- BAMS/equivalent 657
- B Pharmacy (Ayu.) 5
- AHA/Equivalent 1452
- AAHW/TSLC 1953
- Traditional healers 19
- Foreigner practitioners 4
- Academic institutions 22

9.3 Nepal Health Research Council

9.3.1 Introduction

Nepal Health Research Council (NHRC) is the national apical body for promoting health research across the country. NHRC was established in 1991 by an Act of Parliament and was given the responsibility to promote and coordinate health research for improvement of the health status of people of Nepal. The major focus of NHRC is on research regulation, evidence generation, translation of evidence into policy and practice, and capacity building of national scientists in the areas of health research and evidences. NHRC 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 appropriate review, Ethical Review Board (ERB) of NHRC approves these proposals. In its role of generating evidences, NHRC carries out research on its own on national health issues aligning with the national health priorities. The capacity building roles of NHRC encompasses providing education, organizing trainings on various aspects of health system research to national scientists with special emphasis on promoting the research competency of young researchers. NHRC has been providing health research grants to the researchers in order to enhance the research activities throughout the country. NHRC also 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 etc. through the library digital data base and the NHRC Journal.

9.3.2 Major Activities in the fiscal year 2074/75

9.3.2.1 Research Project/Activities

Nepal Health Research Council conducted different research activities with support of Government of Nepal and other different agencies. The research activities conducted by NHRC during the FY 2074/75 are as listed below:

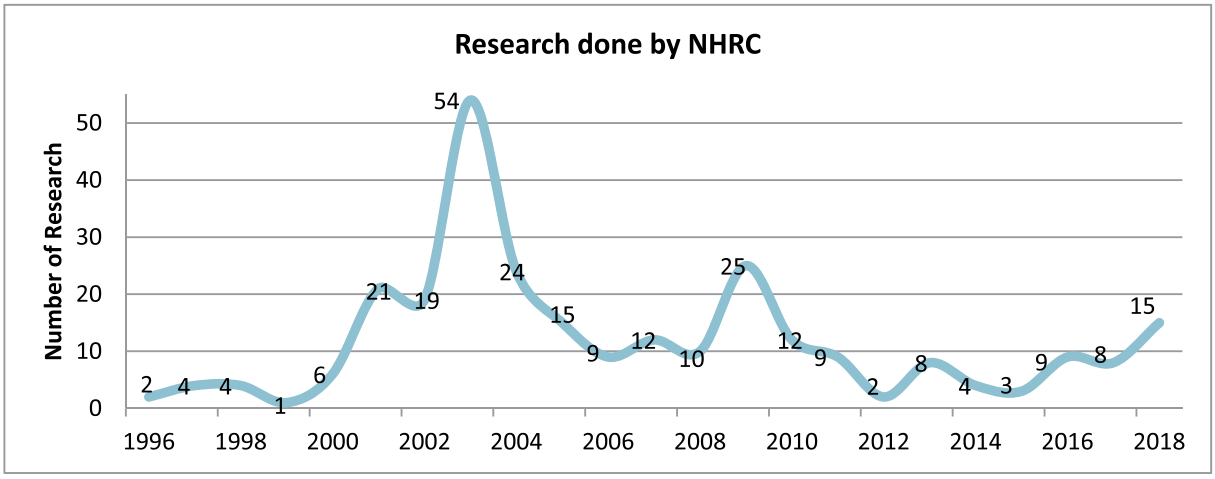
- Prevalence Study of Selected Chronic Diseases (Chronic Kidney Disease, Chronic Obstructive Pulmonary Disease, Diabetes Mellitus, Coronary Artery Disease) in Nepal
- Population Based Cancer Registry ,Nepal
- Population Based Screening of Sickle cell disorder in Tharu community of Bardiya district
- National Mental Health Survey, Nepal – A pilot study
- Verification of Disbursement Linked Indicators
- Non Communicable Disease Risk Factors: STEPS Survey Nepal 2018
- Febrile Illness Outbreak Investigation in Sundarharicha-5 Foklan Tapu, Morang District
- Quality of Essential Medicines in Public Health Care Facilities of Nepal
- Institutional Mapping of Traditional and Complementary Service Outlet in Nepal
- Monitoring of Medical / Health Agencies Designated as Research Centers in Nepal
- Eco-Bio-Social Drivers for Effective Aedes Vector Prevention & Control along a Climatic gradient in Nepal – NAECO
- Assessing Trends of Heat Waves and Perception of People about Health Risks of Heat Wave in Nepal
- Validation of the Accuracy of the Recording and Reporting of the Newborn Health Service Provision in a Tertiary Hospital in Nepal

- Evaluation of the Home Based Record Intervention Package to Improve the Availability , Retention and Use by Caregivers in Nepal
- Evaluation of the Introduction of an Electronic Medical Record System in District Trishuli Hospital, Nepal

9.3.3 Research Trend

The figure below indicates total number of research conducted by the NHRC from 1995 to 2017. Altogether, 263 studies are conducted with the support from the Government of Nepal, External Development Partners and the internal revenue of NHRC.

Figure 1: Research Conducted by the Nepal Health Research Council between 1996 to July 2018



NHRC carries out research in priority areas of the Ministry of Health and Population. Out of total research conducted between 1995 and 2017, majority of research were related to health system, non-communicable diseases, and the environmental health. The table below shows the research activities of the NHRC by research areas between 1995 and 2017.

Table 1: Total Research Conducted by the NHRC between 1995 and 2017 by Research Area

Research Areas	No of Research	Percent
Communicable Diseases	47	17.9
Environment Health	48	20.1
Health System	49	20.5
Reproductive Health	33	13.9
Neonatal and Child Health	12	5.0
Non Communicable Disease	25	10.0
Traditional Medicine	13	5.4
Mental Health	11	4.6
Nutrition and Food Safety	9	3.8
Geriatric Health	7	3.0
Miscellaneous	7	3.0
Injury and Accident	2	0.8
Total	**263**	**100.0**

9.3.4 Publication

NHRC published a number of reports during the last fiscal year, apart from the peer reviewed index journal, Journal of Nepal Health Research Council. The list below summarizes major publications of the NHRC during the FY 2073/74. (Reports are available online: http://nhrc.gov.np/reports)

1. Dhimal, M; Bista, B; Neupane, T; Dahal, S; Pandey, AR;Nepal B; Karki RC Jha, AK; *Assessing trends of heat waves and perception of people about health risks of heat wave in Nepal*. Kathmandu: Nepal Health Research Council,2018
2. Aryal KK; Pandey AR; Dhimal M; Bhattarai S; Makai P; Pandey ;, Jha AK; Assessment of Social Health Insurance scheme in selected districts of Nepal. Kathmandu, Nepal: Nepal Health Research Council, 2018
3. *Evaluation of the Home Based Record (HBR) Intervention Package to Improve the Availability, Retention and Use by Caregivers in Nepal, A Pre-Post Design Study in Three Districts/ Baseline Report, 2017*
4. Sah AK; Pandey A; Dhimal M; Jha AK; *Febrile illness outbreak Investigation in Sundarharicha-5 Foklan Tapu, Morang District* Kathmandu, Nepal: Nepal Health Research Council,2018
5. Karki S; Dhimal M; Jha AK; Institutional Mapping of Traditional and Complementary service outlets in Kathmandu Valley. Kathmandu , Nepal: Nepal Health Research Council,2018
6. Sah AK; Neupane T; Shrestha N; Dhimal M; Jha AK; *An assessment of research activity of research center in Nepal*. Kathmandu: Nepal Health Research council,2018
7. Journal of Nepal Health Research Council, 2018, volume 16, Number 2, Issue 39
8. Journal of Nepal Health Research Council, 2018, volume 16, Number 1, Issue 38
9. Journal of Nepal Health Research Council, 2017, volume 15, Number 3, Issue 37
10. Journal of Nepal Health Research Council, 2017, volume 15, Number 2, Issue 36

9.3.5 Training and Workshop

NHRC conducted 12 trainings on four different topics in the last fiscal year 2074/75. Altogether 2 trainings on Health Research Proposal Development for six days each , while 3 trainings on Data Management and analysis also of 6 days each, similarly 4 trainings on Scientific Writing of 3 days each were organized in NHRC building. Similarly trainings were also held out of Kathmandu valley with a view of sensitizing researcher outside Kathmandu valley. In total 3 trainings namely Health System Research Methodology was organized in three different places Biratnagar, Chitwan and Nepalgung. Total 462 trainees were involved in the workshop organized by NHRC in fiscal year 2074/75.

9.3.6 Fourth National Summit

Health research is one of the cornerstones for shaping health system that is strong, resilient, accessible, affordable, responsive and sustainable. We acknowledge that such health system contributes to achieving Universal Health Coverage. It is a foundation for harnessing demographic dividend, inclusive economic growth, prosperity, equity, social justice and quality of life. We recognize the recent political changes in the country with re-structuring of state and governance systems which provide an opportunity for advancing research and innovations to strengthen health system in the country.

Building on the foundation of health research practices in Nepal, and acknowledging the importance of harnessing evidence to strengthen national health system, Nepal Health Research Council in collaboration with a number of institutions, organized the 4th annual National Summit of Health and Population Scientists in Nepal on 11-12 April 2018. The rich discussions and deliberations at the summit highlighted the 'need for actions' under a number of key areas that are aimed to accelerate accomplishment of the summit theme *'Advancing Evidence for Changing Health Systems in Nepal'*.

We, the delegates, representing the Ministry of Health and Population, Nepal Health Research Council, professional councils and associations, academic institutions, bi-lateral and multilateral agencies, civil society, private sector, and individual researchers and scientists, collectively commit to the following declarations;

1. Undertake a rigorous appraisal of health research system including available resources, institutional and individual expertise, areas of research priority, with a view to advancing research system in federal context addressing needs of different sections of population;
2. Continue quality research for generation, synthetization and application of knowledge towards improving health system performance to contribute to achieve universal health coverage;
3. Continue high-level political advocacy for developing Centers for Excellence in health research;
4. Advocate for effective implementation of the international and national commitments made by the country for allocating adequate resources in health research;
5. Promote and adhere to responsible conduct of research practices;
6. Strengthen mechanisms to promote research capabilities of young researchers and scientists by increasing availability of research grants and capacity building opportunities and
7. Foster partnership among academia, research institutions, private sectors and researchers to enhance research capabilities and innovations – at national and international levels – that would address federal, provincial and local health research priorities.

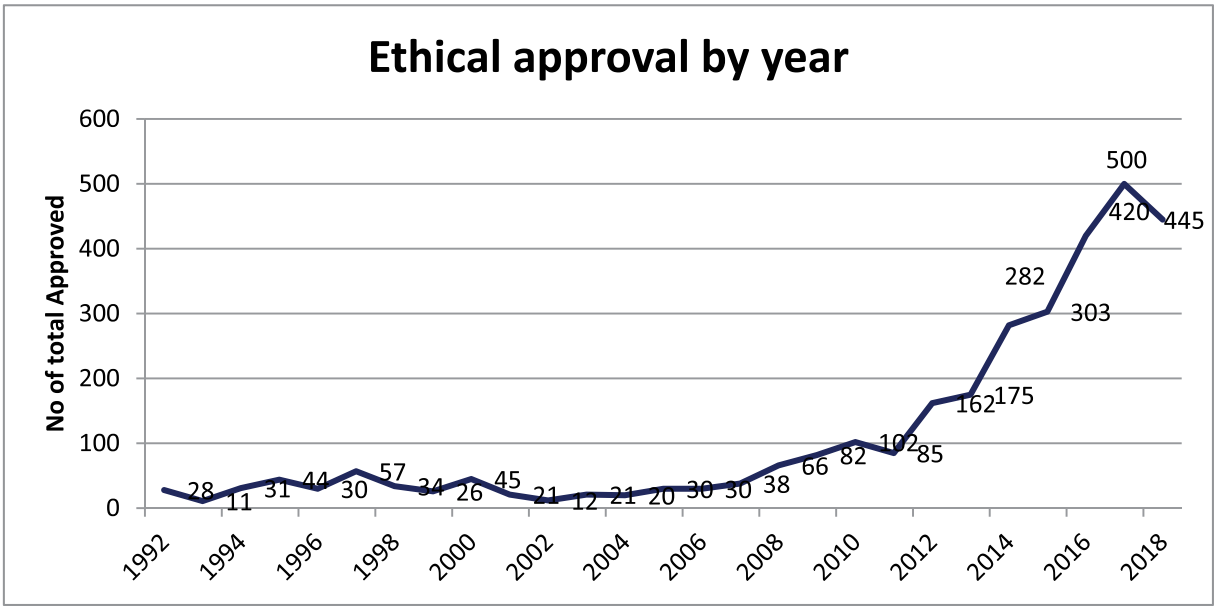
9.3.7 Ethical Clearance of Research Proposals

Ethical Review Board (ERB) of NHRC received 798 health research proposals for ethical clearance in the FY 2074/2075. For this, 40 ERB meetings were held to provide ethical approval for the submitted proposals in the FY 2074/75.Total 699 research proposals got ethical approval in last fiscal year with 75 proposals in process and rest is in pending and withdraw. New ethical review board members have been appointed in last fiscal year. NHRC has developed Online Ethical Review System through its regular budget. The online system is available for researchers to submit their proposal for ethical clearance from 1 January 2017. The beta version of online system is under revision. Regular monitoring and supervision was conducted for approved research proposals along with monitoring of Research Centers. Similarly, research on trend analysis of research proposals submitted for ethical review is undergoing. A task group has been finalized the draft of Revised National Ethical Guideline and SOP.

9.3.7.1 Ethical Clearance Trend

The figure below represents total number of research proposals received by the NHRC for ethical clearance from 1991 to July 16, 2018. Altogether 3109 research proposals were received for ethical clearance till fiscal year 2074/75. NHRC receives proposals from the individual researchers and organizations for ethical approval of research proposals. Similarly, more than 258 ERB meetings have been organized so far.

Figure 2: Total Number of Research Proposal Received for Ethical Approval (1992 to 16th July 2018).



9.3.8 Institutional Review Committees (IRCs)

There are 40 IRCs established until the last fiscal year across the country to promote health research at institutional level especially in medical colleges, health science universities and colleges. Every year, team of NHRC inspects the Institutional Review Committees approved by NHRC. During the FY 2074/75, NHRC conducted monitoring of 10 approved IRC. NHRC have been started online IRC registration from last fiscal year.

9.3.9 Knowledge Management

The Knowledge Management project of the NHRC aims to facilitate translation of research evidence into health policy and practice. The Knowledge Management activities of the NHRC during the FY 2074/75 are as follows:

- **Burden of Disease Workshop (30 August 2017):** Burden of Disease is a cutting-edge measurement technique that allows health researchers to quantify and understand disease epidemiology at national and global levels. Burden of Disease estimates provide an overview of the levels of population health and the causes of loss of health, which can be used as evidence to inform health policy and advocacy. A half day workshop on Global Burden of Disease was designed to introduce policy-makers and researchers to the concepts, technical components and quantitative methods for Burden of Disease measurement. This workshop focused predominately on constructing aggregate measures such as, Years Life Lost (YLL), Years lived with Disability (YLD) and Disability Adjusted Life Years (DALYs). Furthermore, the workshop discussed a range of measurement techniques that combine information on mortality and non-fatal health outcomes for a host of different diseases. The workshop was organized with the technical support of Post Bachelor Fellows from the Institute for Health Metrics and Evaluation.
- **Knowledge Management Committee:** NHRC created a Knowledge management Committee to support its knowledge management activities. Two round of committee meeting was organized during the FY 2074/75. The committee is reviewing a draft guideline on Intellectual Property Right.

- **Global Burden of Disease Study:** NHRC together with the Ministry of Health and Population signed a Memorandum of Understanding with the Institute for Health Metrics and Evaluation to promote Burden of Disease related studies/activities in Nepal. A Technical Working Group created in the FY 2074/75. The Technical Working Group is looking forward to produce a Country paper for Nepal using the Global Burden of Disease data available from the Institute for Health Metrics and Evaluation. Te country paper wills asses' health sector performance with reference to mortality, morbidity and life expectancy.

- **Independent Verification of Disbursement Linked Indicators (DLIs):** NHRC is an independent Verification Agency to assess the achievement of DLIs indicators as described and indicated in the DLIs Verification Protocol. NHRC completed verification of DLIs Year I targets during the FY 2074/75. NHRC is verifying the Year II targets.

- **Evidence Synthesis and Appraisal**: NHRC carried out a policy research on School based Health Workers. The study synthesized available evidence from systematic reviews on effectiveness of School Health Workers in health and education outcomes of students. The study also appraised the local applicability of the available evidence to inform Ministry of Health and Population regarding the implement ability of the School Health Nurse policy in Nepal. The study proposed framework to facilitate the task description of school health nurse in Nepal.

- **Policy change and policy making of NHRC:** NHRC has a mandate of formulation, coordination and promotion of health related research in Nepal. NHRC has contributed immensely in formulating policies and programmatic interventions for health problems of the country. In order to operationalize the commitments of Government into action, NHRC had developed National Health Research Policy 2003-2008 (NHRP 2003-2008), which was further revised on 2014 and now it is high time, that the policy needs to be revised and updated as new health policy 2018 (2074 BS) has been implemented with the consideration of federal structure as defined by constitution of Nepal. The need is to align with the health policies of central and province government, and to revise national health research priorities based on health research priorities of each province and to work hand in hand with the local government. NHRC is working on revising the policy as well as re-defining the national as well as provincial health research priority areas.

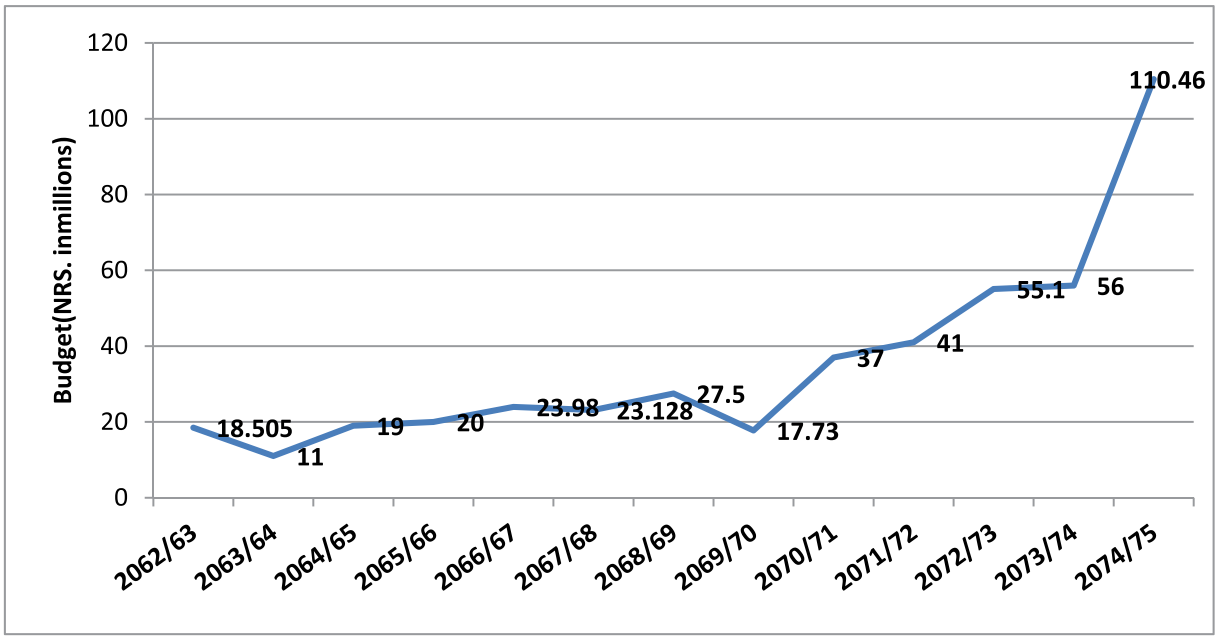
- **Library and Information center:** It was established with the purpose of providing research based health information. It is being utilized by the all health and related professionals involved in research activities. It serves as a repository for health research related information and resources. Award winning work has been done by NHRC Library in international community. Library & Information officer was selected three-year term on the Research4Life Executive Council among 69 least develop county according to World Bank figure. NHRC library was established e-library in 2008. Since 2008 the library has been giving the services using Online Catalogue system, Online Digital Repository where there is available Books, Research Reports, Thesis Reports, Journals, WHO Reports, DOHS Annual report, Bulletin, Demographic and Health Survey, District Development Survey Profile of Nepal, Full text "Demographic and Health Survey" from 2001 to 2016, DOHS Annual Report from 2052/53 – 2073/74 (1995/96-2015/16) Beside that NHRC Journal is also available full text with indexing from 2002 to till date. All the above work has been updating by their requires. 300 reports have scanned by the library for uploading purpose over the online system.

- **National Conference on Climate Change and Health:** Nepal is highly vulnerable to climate change despite low emission of greenhouse gas (GHG), without adequate mitigation and adaptation; climate change poses unacceptable risks to global public health of Nepal. The National Conference on Climate Change and Health brought together experts, policymakers, researchers and practitioners dealing with climate change policies for a two-day discussion and updated work being done in different sectors. The aim of the conference was to bring together a diverse,

interdisciplinary group of experts from Nepal to address the potential effects of global climate change and its adverse effects to human health in Nepal. Based on presentations made by various sectors of people engaged in climate change and health addressed need of evidence and data on climate change and health.

Financing Research

Figure 3: Total Research Budget of NHRC between 2062/63 to 2074/75 (NPR in Million)



The above figure illustrates the total research budget of NHRC between 2062/63 to 2074/75. The Government of Nepal (GoN) covered the major source of research budget. In addition to this, External Development Partners are other imperative sources of budget for research in NHRC.

9.3.10 National Dissemination Workshop

NHRC organized national dissemination workshop of the published studies on 01 November 2017 at NHRC training hall Kathmandu. There were more than 50 participants form Ministry of Health, Government Departments, Non-Government Organizations, Academic Institutions and individual researchers. The program was held under the chair of Dr. Kiran Regmi , Health secretary MoHP. The purpose of the dissemination workshop was to inform policymakers, researchers and community with the evidence obtained from the studies conducted by NHRC. Nine research reports were produced and distributed to the participants.

9.4 Nepal Medical Council

9.4.1 Duties, Responsibilities and Rights

Nepal Medical Council (NMC) is a statutory organization established under the Act. The major functions of Nepal Medical Council is to provide registration to both National Doctors and Foreign National Doctors with Medical Degree/ Diploma, recognize Medical/ Dental Colleges, which meets standard criteria, and permit them to enroll students and run Academic (Medical/ Dental) programs. Nepal Medical Council is also responsible for providing Eligibility Certificate to those who possess minimum qualification and wants to pursue Medical Degree/ Diploma from abroad. If any NMC registered doctors or/ and Medical/ Dental Colleges are found to be violating NMC rules and regulations or involving in any fraudulent acts related with medical practices, Nepal Medical Council have right to stop such misconducts and can recommend legal actions against such deceitful acts.

In addition to this, Nepal Medical Council has been conducting Licensing Examination for under graduates and Speciality Examination for post graduates, effectively studying and investigating the complaints registered against the subjects related with health practices as well as doctors' profession, providing temporary license for foreign doctors to practice medicine in Nepal and preparing and implementing Accreditation Guidelines to operate academic programs for Medical/ Dental Colleges.

9.4.2 Progress of Nepal Medical Council:

- Annual Calendar for both Licensing Examination and Speciality Examination was prepared in order to pre – inform candidates regarding the NMC Examinations.
- Acquired approval to implement Guidelines for Bachelor of Dental Surgery (BDS) and Master of Dental Surgery (MDS) programs from Ministry of Health and Population.
- Emphasizing on upgrading medical education and skills of registered doctors, Nepal Medical Council has implemented Continuing Professional Development (CPD) Program
- Successfully conducted election program and designated 1 Vice Chairman and 8 Executive Members to form NMC Executive Committee for 2074 - 2078 tenure.
- Nepal Medical Council celebrated its anniversary in 2074 B.S. as per the decision to celebrate NMC Foundation Day annually.
- Revised NMC service fees, effective since 2057, as necessary for proper management and got approval from Ministry of Health and Population for its implementation.
- Nepal Medical Council have included age bar as one of the eligibility criteria for Faculties. The age of faculty should not exceed 73 years in clinical discipline, 75 years in Dental discipline and 75 years in Basic Science Discipline.
- Installed Data Server inside the premises of Department of Information and Technology, Singh durbar, Kathmandu, for safety and security of NMC data and data management
- In order to make the registration process simple and accessible, preparation to develop software has been proceeded.
- Faculty list has been included in NMC official website to make functions of NMC more effective and technology friendly.

- In this existing FY 2075/76, NMC furnished with Reception Desk and installed Smart T.V. to display important notices and information.
- Nepal Medical Council has been playing a role of mediator to maintain cooperation and coordination between Government of Nepal, Academies, Universities, Colleges and other related authorities.
- Table 9.4.1 provides detail on NMC registration.

Table 9.4.3 the details regarding registration till 2018 A.D. of Nepal Medical Council

MBBS / BDS:

Program	Number of Male	Number of Female	Total Number
MBBS	14,126	6,907	21,033
BDS	999	1,719	2,718
Total	**15,125**	**8,626**	**23,751**

Post Graduate:

Program	Number of Male	Number of Female	Total Number
Post Graduate	4,940	1,946	6,886
Total	**4,940**	**1,946**	**6,886**

9.5 Nepal Health Professional Council

9.5.1 Introduction

Nepal Health Professional Council (NHPC) has been established to make more effective health services in Nepal, to mobilize the services of health professionals except the qualified doctors and nurses to be registered with the Medical Council in a managed and scientific manner and make provisions on the registration of their names according to their qualifications, according to "Nepal Health Professional Council Act 2053" by the Government of Nepal .

9.5.2 Functions, duties and powers of Council

According to the article 9 of the Act, the functions, duties and powers of the Council shall be as follows:

- To make necessary policies for smoothly operating the health profession related activities.
- To determine the curricula, terms of admission and policies on examination system of educational institutions imparting teaching and learning on health profession and evaluate and review the related matters.
- To determine the qualifications of health professionals and to provide for the registration of the names of health professionals having required qualifications

9.5.3 Registration levels and its qualification requirements

- According the qualification of health professionals, the NHPC will register into respective groups. The health professional with Master degree will be registered into "Specialization" category of the related subject.
- The health professional with Bachelor degree will be registered into "First Class" (A) category of the related subject.
- The health professional with proficiency certificate level or equivalent will be registered into "Second Class" (B) category of the related subject.
- The health professional with only one year study or course on health education or related field will be registered into "Third Class" (C) category of the related subject.

9.5.4 Subject committees of the Council

- For the registration of health professional, the council has 9 different subject committes:
- Medical subject committe
- Public Health subject committee
- Radiology subject committee
- Laboratory Medicine subject Committee
- Physiotherapy and Rehabilitation subject committee,
- Ayurveda subject committee,
- Dental subject committee
- Optometry Science Subject committee
- Miscellaneous subject (Homiyo, Yunani, Naturopathy etc.) committee

9.5.5 NHPC progress upto fiscal year 2074/75

Table 9.5.1 Summary of registration in NHPC up to fiscal year 2074/75

S.N	Subject	Registered FY 2074/075				Cumulative Registered till now			
		Specialization	First	Second	Third	Specialization	First	Second	Third
1	Public Health	109	338			975	3545		
2	Health Education	7				29	74	16	
3	Medicine			1572	3609			13800	57029
4	Medical Microbiology	7	12			137	124		
5	Laboratory		255	763	1723	24	2489	6487	15930
6	Radiography	5	74	243		28	570	1592	43
7	Radiotherapy					1	7	9	
8	Cytrology					1	3		
9	Hematology					18	8		
10	Biochemistry	13				191	71		
11	Virology					7			
12	Nuclear Medicine	2				1	2		
13	Ayurved						6	195	1160
14	Homeopathy		16	14			150	145	
15	Unani						13		
16	Acupuncture		8			3	11	88	51
17	Physiotherapy	27	201	71		115	1305	104	62
18	Community Base Rehabilitation						1		
19	Prosthetic & Arthritic		3				11	1	12
20	Dental Assistant			145	21			956	770
21	Naturopathy		8				48		2
22	Yoga					3	9		1
23	Ophthalmology	7	178	116		10	617	921	
24	Operation Theater and Allied Health Sciences		2	2		6	12	50	
25	Clinical Psychology	4				17			
26	Speech and Hearing	2	9			6	68	1	
27	Forensic Medicine							3	
28	Perfusion Technology					3	3		
29	Anaesthesia		9				53		
30	Cardiology		2				3		
31	Renal Dialysis		2				3		
32	Occupational Therapy						1		
Sub total		183	1167	2926	5353	1575	9207	24368	75060
Total					**9,629**				**1,10,210**

9.6 Nepal Pharmacy Council

9.6.1 Introduction

The Nepal Pharmacy Council is hereby (NPC) established in order to make effective the pharmacy business by managing and operating it in a scientific manner and also provide for the registration of names according to the qualification of pharmacists and pharmacy assistants. The functions, duties and powers of NPC are as follows:

9.6.2 Functions and Duties:

- Established in accordance with Nepal Pharmacy Council
- Function is to work for quality assurance and accreditations of pharmacy institutions to produce quality pharmacy human resources as per the need of county.
- Nine members committee and a registrar appointed by GoN.
- Provision of registration of Pharmacist and Pharmacy Assistant.

9.6.3 Infrastructure and Facilities:

- A shared space in National Medicine Laboratory (about 800 sq.ft).
- Regular staff other than Registrar (vacant),
  - Officer-1,
  - Assistant-1,
  - Helper-1.
- Managed by own financial resource.
- No budget allocation from the government.

9.6.4 Regular Activities:

- Licensure examination (three times a year).
- Registration of Pharmacist and Pharmacy Assistant after passing out the licensure examination.
- Inspection of pharmacy teaching institutions.
- Accreditation of pharmacy teaching institutions.
- Permission for starting a new college after from universities and CTEVT.
- Monitoring and supervision of pharmacy colleges

9.6.5 Specific Activities:

- Revision on the existing guidelines for college.
- Directives for improvement of infrastructure and facilities.
- Code of Ethics for publishing pharmacy text book.
- Issuing “No Objection Letter” for foreign study.
- Routine visit of Pharmacy institutes.
- Information update and use o fIT in documentation.

9.6.6 Approved Colleges:

- Master Program College:- 3 Approved one.
- Bachelor Program College:- 23.
- Diploma Program College:- 36 (CTEVT).

9.6.7 Pharmacy Manpower Status:

- Registered Pharmacist:- 3,560
- Registered Pharmacist Assistants:- 7,049

9.6.8 Examinations conducted: at a glance:

Table 9.6.1: Summary of the examination conducted

a) Pharmacists:

Exam	Pass	Fail	Total	Pass in %
9th	63	148	211	29.85%
10th	205	187	392	52.29%
11th	231	235	466	49.57%

b) Pharmacy Assistants:

Exam	Pass	Fail	Total	Pass in %
9th	184	225	409	44.98%
10th	65	466	531	12.24%
11th	658	306	964	68.25%

***Source**: NPC*

NATIONAL HEALTH INSURANCE

10.1 Introduction

The Health Insurance Program (HIP) is a social security program of the Government of Nepal that aims to enable its citizens to access to quality health care services minimizing a financial burden on them. Health Insurance Board (HIB) is responsible to carry out the health insurance program in Nepal. Although good progress has been made on improving access, much remains to be done. Out-of-pocket expenditure still puts vulnerable households at risk of catastrophic spending and prevents them from using services. Health insurance program is a family-based program. The family have to pay contribution amount to enroll in the program. The enrollment is voluntary now. The households, communities and government are directly involved in this program. The HIP helps to prevent people from falling into poverty due to health care costs i.e. catastrophic expenditure due to accidents or disease by combining prepayment and risk pooling with mutual support. This program also advocates towards quality health services. This program attempts to address barriers in health service utilization and ensure equity and access of poor and disadvantaged groups as a means to achieve Universal Health Coverage. The HIP is started firstly from Kailali district on 25th Chaitra, 2072 and then expanded in other parts of country in phase wise manner.

10.2 Objectives:

- Ensure access to quality health service (equity and equality).
- Protect from financial hardship and reduce out-of pocket payments
- Extent to universal health coverage

10.3 Main features of Health Insurance

It is a voluntary program based on family contributions. Families of up to five members have to contribute NPR 2,500 per year and NPR 425 per additional member.

- Government bears contribution amount for ultra-poor families having a poverty identity card.
- Insurees have to renew their membership through annual contributions.
- Benefits of up to NPR 50,000 per year are available for families of up to five members with an additional NPR 10,000 covered for each additional member. The maximum amount available per year is NPR 100,000.
- Insurees have to choose their first service point. Insurees can access specialized services elsewhere that are not available at the first service point on production of a referral slip from their first contact point.
- It is cash-less system for members seeking health services.
- The program is IT-based with enrolment assistants using smart phones.
- HIB acts as the service purchaser while government and listed private hospitals provide the services.

10.4 Program Implementation Status

The health insurance program in present framework is started from Kailali district on 25th,Chaitra, 2072. Then it is expanded to Ilam and Baglung district on FY 2073/74. Till the end of FY 2074/75 the program is implemented in 36 districts of the country and next 11 districts are in pipe line. HIB is planning to implement this program all over the country as well. The list of HIB program launched districts are as shown in Table 10.1.

Table 10.1: List of districts implementing National Health Insurance program till FY 2074/75

SN	Name of Province	Districts
1	Province 1	Ilam, Jhapa, Sunsari, Bhojpur, Khotang, Solukhumbu
2	Province 2	Rautahat, Mahottari, Parsa
3	Province 3	Bhaktapur, Makawanpur, Chitawan, Sindhuli, Ramechhap
4	Gandaki	Baglung, Myagdi, Kaski, Gorkha, Tanahun
5	Province 5	Palpa, Bardiya, Arghakhanchi, Kapilvastu, Rolpa, Rukum east, Pyuthan
6	Karnali	Jajarkot, Surkhet, Rukum west, Jumla, Kalikot,
7	Sudur Paschim	Kailai, Achham, Baitadi, Bajura, Bajhang

10.5 Enrollment and Health service utilization Status of fiscal year 2074/75

There were 13,507 people insured in FY 2072/73 and 2,28,113 people were insured in FY 2073/74. A total of 11,30,141 peoples are enrolled in the health insurance program at the end of FY 2074/75. Among them 1,29,148 people are insured on the basis of ultra-poor category whose contribution is paid solely by Nepal Government in FY 2074/75.The population coverage in health insurance seemed to be around 5 percent of total population. Among the total insures, about 4,30,483 people have taken health services from listed health facilities in health insurance program in FY 2073/74.Based on the number of enrollments Chitwan, Jhapa and Palpa are leading top three districts, followed by Kaski and Bhaktapur. Table 10.2 present the enrollment status.

Table 10.2: Summary of numbers of enrollment by district by province

S. N.	Name of District	Nos. of Insures	No. service takers	Province
1	Ilam	35,399	18,428	Province 1
2	Jhapa	125,661	46,487	Province 1
3	Sunsari	60,325	22,623	Province 1
4	Bhojpur	11,743	1,803	Province 1
5	Khotang	12,901	1,021	Province 1
6	Solukhumbu	3,406	520	Province 1
7	Rautahat	4,248	697	Province 2
8	Mahottari	4,509	371	Province 2
9	Parsa	3,641	600	Province 2
10	Bhaktapur	47,917	26,020	Province 3

S. N.	Name of District	Nos. of Insures	No. service takers	Province
11	Makawanpur	40,125	21,301	Province 3
12	Chitawan	136,311	79,664	Province 3
13	Sindhuli	32,044	5,376	Province 3
14	Ramechhap	8,793	1,599	Province 3
15	Baglung	26,962	12,207	Gandaki
16	Myagdi	8,418	5,361	Gandaki
17	Kaski	74,885	43,237	Gandaki
18	Gorkha	19,402	8,693	Gandaki
19	Tanahun	38,219	16,304	Gandaki
20	Palpa	98,264	53,540	Province 5
21	Bardiya	60,602	10,098	Province 5
22	Arghakhanchi	20,112	3,367	Province 5
23	Kapilvastu	14,196	1,574	Province 5
24	Rolpa	11,867	1,033	Province 5
25	Rukum east	2,776	103	Province 5
26	Pyuthan	16,960	2,755	Province 5
27	Jajarkot	19,570	4,066	Karnali
28	Surkhet	23,335	10,059	Karnali
29	Rukum west	23,126	8,087	Karnali
30	Jumla	19,173	2,726	Karnali
31	Kalikot	16,692	1,021	Karnali
32	Kailali	69,434	16,327	SudurPaschim
33	Achham	9,601	613	SudurPaschim
34	Baitadi	3,989	1,338	SudurPaschim
35	Bajura	13,865	1,037	SudurPaschim
36	Bajhang	11,670	427	SudurPaschim

10.6 Opportunities in HIP program

- The program is addressed in Constitution of Nepal 2072, in Art no.51 of State's guideline principle
- Health Insurance Act 2074 has envisioned the compulsory enrollment of people working in formal sector.
- High political commitment.
- Designed as tool for providing equitable and quality health service.
- Health system strengthening (generic prescribing, hospital pharmacy, gate keeping system)
- Sustainable approach to provide social health security to Nepalese people.
- Adapted in National health policy and subsequent periodic plan.

10.7 Challenges in HIP program

- Meeting the expectation of insured people.
- Raising the number of enrollment and renewal.
- Availability and accessibility of quality health service
- Strengthening of insurance management information system (IMIS)
- Identification of target group and their enrollment (ultra-pooretc)
- Poverty card related issues.
- Fragmented socialhealth security program (within MOHP and beyond MoHP)

DEVELOPMENT PARTNERS SUPPORT

The outcomes discussed in the previous chapters are the results of combined efforts of the Ministry of Health and its development partners (multilateral, bilateral and international organizations and national NGOs). The Department of Health Services acknowledges its partnership with these organizations and their large contributions to Nepal's health sector. This chapter lists the programme focus of these organizations and their contact details. Partners have also provided technical assistance in their areas of expertise.

Development partners support the government health system through a sector-wide approach (SWAp). The SWAp now supports the implementation of the new Nepal Health Sector Strategy (NHSS, 2016–2021). The Joint Financing Arrangement (JFA) has been signed by various partners and the government. The JFA describes in detail the arrangement for partners' financing of the NHSS. The JFA elaborates the pool funding arrangement and parallel financing mechanism as bilaterally agreed between the government and the donor partners. This time the World Bank has allocated all its commitment through a Program-for-Results, a tool which disburses fund against a verifiable set of results, called Disbursement Linked Results (DLRs). DFID and GAVI are also disbursing part of their commitments against some DLRs identified and agreed with the Ministry of Health and Population (MoHP). The matrix below provides contributions of various partners for supporting the NHSS.

11.1 Multilateral Organizations

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
UNFPA	**Increased capacity to deliver integrated, quality sexual 7and reproductive health services that target women and adolescent girls, especially the most vulnerable, including in humanitarian situations** **Capacity building of public institutions and communities for health response to Gender Based Violence (GBV)**	**National Programme with focus on 19 priority districts,**	**Total allocated budget of all programs activities:** **US$ 5,207,000** **Total expenses of all programs activities:** **US $5,521,000** **The amount includes additional purchase of commodities of amount US $ 1,463,000**	**Office address:** **UNFPA Nepal** **Jhamsikhel, Sanepa, Lalitpur** **Tel: +977 1 5523880** **Fax: +977 1 5523985** **Email: registry-np@unfpa.org** **Web: http://nepal.unfpa.org/**
UNICEF	**Maternal and Newborn Health including PMTCT,** • **Child Health including immunization,** • **Adolescent Health,** • **Health system strengthening ,** • **Health in emergencies,** • **Multisector Nutrition Plan (MNSP)** • **Adolescent, maternal, infant and young child nutrition (AMIYCN) ,** • **Macronutrients,** • **Integrated management of acute malnutrion (IMAM) and** • **Nutrition in emergencies.**	Health intervention Immunization: National with focus in province 2, 5, 6 & 7 MNCAH: 46 priorities municipalities in province 2, 6 & 7 Emergency -10 affected districts – Nutrition intervention MSNP- 308 municipalities in province 1,2,4,5,6,7 IMAM /Emergency: 36 districts AMIYCN/MNP: 36 districts Micronutrients-nationwide	**Total Allocated :** **Health:** **USD 2,808,020** **Nutrition** **USD 1,887,881** **Total Expenses:** **Health:** **USD 2,808,020** **Nutrition** **USD 1,887,881**	**UNICEF Nepal** **UN House, Pulchowk, Lalitpur** **PO Box 1187** **Tel: 977-1-5523200** **Email: kathmandu@unicef.org** **Web: www.unicef.org**

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
WHO Nepal	1. **Vaccine preventable disease surveillance and technical support to strengthen immunization coverage** 2. **Strengthen public health emergency preparedness and response – support to establish health emergency operation centers (HEOCs) and strengthening hub-hospital networks** 3. **Support implementation of package of essential noncommunicable (PEN) disease interventions and development and update of national protocols and frameworks** 4. **Technical support to achieve communicable disease elimination and control targets – Malaria, Lymphatic filariasis, Trachoma, Kala-azar, Leprosy and Tuberculosis**	**National**	**Allocation (Award): 8.1m** **Expenditure: 7.12 m**	**Dr Jos Vandelaer** **WHO Representative** **WHO Country Office for Nepal** **UN House,** **Pulchowk, Lalitpur** **Email: vandelaerjo@who.int** **Phone: + 977-1-552199** **Fax: + 977-1-5527756**

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
The World Bank	**1)To improve efficiency in public resource management systems of the health sector in Nepal**	**Nationwide**	**Total allocated budget of all programs activities:** **US $27,000,000 (planned disbursement)** **Total expenses of all programs activities:** **US $20,000,000**	**Office address:** **The World Bank Group** **Yak and Yeti Complex** **Durbar Marg** **Kathmandu** **Tel:977-1-4236000** **Fax: 977-1-4225112** **Email: infonepal@ worldbank.org** **Web: https://www. worldbank.org/en/country/ nepal**
World Food Program (WFP): CHD, DoHS	1. Blanket Supplementary Feeding Programme (BSFP) 2. Targeted Supplementary Feeding Programme (TSFP) Programme Focus on five building blocks: 1. Prevention and promotion of exclusive and continued breastfeeding 2. Prevention and promotion of complementary feeding 3. Prevention and treatment of severe acute malnutrition 4. Prevention and treatment of moderate acute malnutrition 5. Addressing micronutrient deficiencies and linkages with IYCF and MIYCN counseling	Coverage: 1. Rautahat, Sarlahi, Mahottari, Siraha, Sunsari and Saptari districts under BSFP and TSFP	▪ Estimated Budget 1. USD 3.2 million	Office address: Tel: 977-1-5260607, Fax: 977-1-5260201 E-mail: wfp.kathmandu@ wfp.org Contact emails on nutrition: George Mutwiri Head of Nutrition (SO2 Manager) Email: george.mutwiri@wfp. org Amrit Bahadur Gurung Nutrition Coordinaor Email:amrit.gurung@wfp. org

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
United Nations World Food Programme (WFP) and Ministry of Health and Population (MoHP)	**Title of the Programme**: Mother and Child Health Nutrition (MCHN)	**Planned coverage: Districts**: Mugu, Jumla, Humla, Dolpa, Kalikot, Solukhumbu **- VDCs**: 168	▪ **Government Budget for food procurement: NPR 64,309,147.50** ▪ **WFP Budget: NPR 51,590,000.00** ▪ **Total food procured by the Government: 673.5 mt Super Cereal**	**Office address:** **Tel:** 977-1-5260607**, Fax:** 977-1-5260201 **E-mail:** wfp.kathmandu@wfp.org **Contact emails on nutrition:** **George Mutwiri** **Nutrition Advisor** Email: george.mutwiri@wfp.org **Amrit Bahadur Gurung** **Nutrition Coordinator** Email:amrit.gurung@wfp.org **Web:**http://go.wfp.org/web/wfpgo

11.2 Bilateral Organizations

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
Department for International Development (DFID)	**Health system strengthening, including health policy, planning and budgeting, health governance and devolution (federalism), procurement and public financial management, health infrastructure and hospital retrofitting, improving evidence science and accountability on health including monitoring, evaluation, surveillance and research and social accountability in healthsector, improving access to medicines including safe motherhood and family planning, gender, equity and social inclusion. (Nepal Health Sector Programme 3 and Nepal Family Planning Project)**	**Nationwide**	**Total Allocated:** **£13,650,000 financial aid and £ 5,500,000 technical assistance** **Total Expenses of all programme activities:** **£ 10,715,000 financial aid and £ 5,093,518 technical assistance**	**Office address:** **Ekantakuna, Lalitpur.** **PO Box 106, Nepal** **Tel: +977 1 5542980** **Fax: +977 1 5000179** **Email:nepal-enquiries@dfid.gov.uk** **Web:https://www.gov.uk/government/world/organisations/dfid-nepal**
GIZ/German Development Cooperation (Technical)	1) Health Financing (with a focus on Social Health Insurance) 2) Human Resources for Health and Adolescent Health and **Development** 3) Governance in Health (support to 5 municipalities) 4) Health Information Systems	Municipalities: Thimi, Bidur (Nuwakot), Neelkantha (Dhadhing), Nepalgunj Sub Metropolitan City, Godavari (Kailali)	Total allocated budget of all programs activities: US $ 3,200,000 Total expenses of all programs activities: US $ 3,200,000	Office address: GIZ- S2HSP Sanepa, Lalitpur Metropolitan City Tel: 01-50130188 Email: s2hsp@giz.de Web:www.giz.de

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
KfW/German Development Financial Cooperation	**1) SWAp – Pool Fund** **2) Improvement of Maternal Child Care in Remote Areas** **3) Sector Program Health and Family Planning** **4) Earthquake Reconstruction**	**District number: National** **District number:4 districts in Province 7** **District number: National** **District number:4 district Hospitals**	Total allocated budget of all programs activities: **Total expenses of / Disbursementsfor all programs activities:** **Euro: 4.4 million or US $ 5.06 Million**	**Office address:** **KfW, German Development Cooperation Office, Sanepa** **Tel: +977 1 5523228** **Fax: +977 1 5535693** **Email:** **kfw.kathmandu@kfw.de** **Web:WWW.Kfw.de**
USAID	**1) Maternal Newborn and Child Health** **2) Family Planning & Reproductive Health** **3) HIV/AIDS and STI** **4) Water Sanitation and Hygiene program**	**District number: 47 districts *through different projects (Suaahara II, H4L and SSBH project)*** ***District number : all 75 districts through different projects (GGMS, Suaahara II,SIFPO II, FACT, Redbook and BA project)*** **District number: 17 districts (Linkages project)** **District number: 42 districts *through different projects (SUAAHARA, Safe WASH II, WASH Recovery Activity, Health and Hygiene Activity)***	**Total Allocated Budget of all programs activities:** **US $35,740,000** **Total Expenses of all programs activities:** **US $35,740,000**	**Office address:** **USAID/Nepal** **c/0 U.S. Embassy Building, Maharajgunj** **G.P.O Box: 295** **Tel: 01-4234000** **Fax: 01-4007285** **http://nepal.usaid.gov**

11.3 International Non-Government Organizations

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
ADRA Nepal	1) Health System and Infrastructure Strengthening 2) Family Planning and Adolescent Sexual and Reproductive Health 3) Maternal Newborn and Child Health 4) Basic Health logistics and Procurement System	**District number: 1** **District number: 15** **District number: 1** **District number: 14**	**Total allocated budget of all program's activities:** **US $1527457.44** **Total expenses of all program's activities:** **US $1161327.23**	**Office address:** **Nir Bhawan, Sanepa, Lalitpur-3** **Tel: 01-5555913/555914** **Fax: 01-5554251** **Email:info@adranepal.org** **Web:www.adranepal.org**
Ipas Nepal	1) **To create an enabling environment that supports women and girls' access to high-quality abortion and contraceptive care.** 2) **To ensure high-quality abortion and contraceptive care are available, accessible, and acceptable to women and girls of Nepal.** 3) **To ensure women and girls have the social support, knowledge, and self-efficacy to access safe abortion and contraception.**	**District number: 28**	**Total allocated budget of all programs activities:** **US $: 1,940,911** **Total expenses of all programs activities:** **US $: 1,787,319**	**Office address:** **Baluwatar, Kathmandu Do Cha Marg, Ward No: 4** **Tel: 01-4420787** **Fax: 01-4425378** **Email:ipasnepal@ipas.org** **Web: http://nepal.ipas.org/**

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
Birat Nepal Medical Trust (BNMT Nepal)	**1) Tuberculosis** **2) Sexual and Reproductive Health Rights (SRHR) including Menstrual Health** **3) Mental Health and Psychosocial Support Services (MHPSS)** **4) Water Sanitation and Hygiene**	**District number: 33** **District number: 1** **District number:5** **District number: 5**	**Total allocated budget of all programs activities:** **US $1,633,764** **Total expenses of all programs activities:** **US $1,362,123**	**Office address:** **Lazimpat – 2, Kathmandu, Nepal.** **Tel: 977 1 4436434, 4428240** **Fax: 977 1 4439108** **Email: bnmt@bnmt.org.np** **Web: www.bnmtnepal.org.np**
CARE Nepal/ NURTURE	1) Capacity building of health workers and FCHVs on FPMNCH, safe abortion and post abortion care, nutrition and infection prevention 2) Health system strengthening including Infrastructure and equipment support 3) Health governance and accountability 4) HFOMC strengthening	District number: 45	Total allocated budget of all programs activities: USD 3,668,027.45 Total expenses of all programs activities: USD 3,450,784.39	Office address: Samata Bhawan Dhobighat, Lalitpur Tel: +977-01-5522800 Fax: +977-01-5521202 Email: carenepal@np.care.org Web: WWW.carenepal.org

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
FHI 360 Nepal through USAID-/ PEPFAR-funded LINKAGES Nepal	• **HIV and sexually transmitted infection (STI) prevention education, referral and follow-up through online and offline platforms** • **Condom promotion and distribution** • **HIV testing and counseling (HTC) services** • **STI examination and treatment services** • **Referral to and linkages with antiretroviral therapy (ART) services** • **Care, support and counseling for adherence and retention** • **Gender-based violence (GBV) screening and referral for prevention and mitigation services** • **Stigma and discrimination reduction** • **Demonstration/pilot study on HIV self-testing and pre-exposure prophylaxis (PrEP)** • **Technical support to National Center for AIDS and STD Control (NCASC) and National Public Health Laboratory (NPHL)** • **Support to national networks of key populations and people living with HIV**	**16 districts, 139 *local bodies (5 metropolitan cities, 8 sub-metropolitan cities, 75 municipalities and 51 rural municipalities)*** **Lalitpur district** **National level**	**Total allocated budget:** **US$ 2,576,381** **Total Expenditure:** **US$ 2,173,163**	**Gopal Bhawan, Anamika Galli, Baluwatar, Kathmandu -4, Nepal** **Tel: +977.1.4437173** **Fax: +977.1.4417475** **Email: bhshrestha@fhi360.org** **www.fhi360.org/countries/nepal**

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
Helen Keller International (HKI)	1) Improve nutritional status of pregnant and lactating women, children under 2 years of age, adolescent girls 2) Increase resilience for targeted and most vulnerable populations in Nepal. 3) Study on relationship between maternal exposure to Mycotoxins on birth outcomes and stunting 4) Assessment and Research on young child Feeding in Kathmandu valley	District number: 42 District number: 6 District number: 1 District number: 3	Total allocated budget of all programs activities: US $ 21,751,834 Total expenses of all programs activities: US $ 21,721,43	Office address: P.O Box : 3752 Green Block, Ward #10 Chakupat, Patan, Lalitpur Nepal Tel: 5260247, 5260837, Email ::ddavis@hki.org Web:www.hki.org
International Network for Rational Use of Drugs (INRUD, Nepal)	• Monitoring prescribing practices and availability of free drugs at PHC outlets to improve rational use of medicines/ Standard Treatment Protocol adherence. • Provides technical support to DoHS/MoHP to the set activities since 2009-10.	Different districts.	Allocated Budget: MoHP/DoHS	Office address: 304 Surya Bikram Gyawali Marg,Baneswor,Kathmandu Tel: 4115636 Fax: 4115515 E-mail: kumudkafle@gmail.com Web:www.inrud-nepal.org.np

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
World Vision International Nepal	1) Maternal, child health and nutrition based on MIYCN (Maternal, infant and young child nutrition) 2) PD (Positive deviance) Hearth 3) Construction of PHCORC	District number: 5 (Doti, Achham, Kailali, Sindhuli, Udayapur)	Total allocated budget of all programs activities: US $ 871,555 Total expenses of all programs activities: US $ 784,665	Office address:KC Tower, Kusunti, Lalitpur-13, P.O. Box 21969, Kathmandu, Nepal. Tel: +977-1-5548877 Fax: +977-1-5013570 Email:info_nepal@wvi.org Web: www.wvi.org/nepal
Helen Keller International (HKI)	1) Improve nutritional status of pregnant and lactating women, children under 2 years of age, adolescent girls 2) Increase resilience for targeted and most vulnerable populations in Nepal. 3) Study on relationship between maternal exposure to Mycotoxins on birth outcomes and stunting 4) Assessment and Research on young child Feeding in Kathmandu valley	District number: 42 District number: 6 District number: 1 District number: 3	Total allocated budget of all programs activities: US $ 21,751,834 Total expenses of all programs activities: US $ 21,721,432	Office address: P.O Box : 3752 Green Block, Ward #10 Chakupat, Patan, Lalitpur Nepal Tel: 5260247, 5260837, Email ::ddavis@hki.org Web:www.hki.org

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
United Mission to Nepal (UMN)	1) **Integrated Community Health: Family Planning, Safe-motherhood, WASH, Child Nutrition, strengthening of the Health Mothers Groups and HIV &AIDS** 2) **Community based Mental Health and Psycho-Social Intervention** 3) **Adolescent Sexual and Reproductive Health (ASRH)** 4) **Maternal and Child Health: Safe motherhood including BPP, Promotion of Institutional Delivery including Birthing Center Support,**	**District number: 9 (Partial)** **District number: 5 (Partial)** **District number: 5 (Partial)** **District number: 2 (Partial)**	**Total allocated budget of all programs activities:** **US $: 653,591** **Total expenses of all programs activities:** **US $: 637,905 (97.6%)**	**Office address:** **PO Box: 126, Thapathali Kathmandu** **Tel: +977 1 4228118** **+977 1 4268900** **Fax: +977 1 4225559** **Email: communications@umn.org.np** **Web: www.umn.org.np**
One Heart World-Wide (OHW)	1) **Maternal and Neonatal Health**	**District number: 13**	**Total allocated budget of all program's activities:** **US $1,695,879.00** **Total expenses of all programs activities:** **US $1,470,188.00**	**Office address:PO Box 3764, House No. 496, Dhara Marg, Maharajgunj, Kathmandu, Nepal** **Tel: +977-1-4416191/4417547** **Email:ohwnepal@oneheartworld-wide.org** **Web:www.oneheartworld-wide.org/**

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
JICA Nepal	1) **Medical Equipment support to TU Teaching Hospital** 2) **Reconstruction of Hospital Buildings (Bir and Paropakar Maternity & Women's Hospital)** 3) **Grassroots Grantsfor Strengthening Retina Eye Care in Nepal, Activities for nutritional improvement and lifestyle-related diseases preventionand Sustainable Maternal and Child Health Project.**	**District number: 1 (directly) but indirectly for several** **District number:1 (directly) but indirectly for several** **District number: 4 districts under province 3 & 4.**	**Total allocated budget of all programs activities:** **JPY 754 million** ***(From 2016 to October, 2021)*** **JPY 2,612 million** ***(From 2016 to June 2019)*** **JPY 149.9 million** ***(from May 2016 to April 2020)***	**Office address:** **PO Box No. 459, Kathmandu, Nepal** **National Life Insurance Building, 3rd floor, Lazimpat, Kathmandu** **Tel: 977-1-4425636** **Fax: 977-1-4425658** **Email:np_oso_rep@jica.go.jp** **Web:www.jica.go.jp/nepal/English**

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
Plan International Nepal, Country Office	1) Maternal and Newborn Health: Renovation, equipment & furniture support to birthing centre; SBA training; portable USG training to nursing staffs, Ama Surakshya programme awareness through pregnant women groups, MNH and pregnant women group orientation to newly elected leaders. 2) Early Childhood Development: a) Parenting Education to pregnant women, mothers of less than five years of children and other care takers of family on responsive care and early stimulation for early childhood development. b) Advocacy on Early Childhood Development (pregnancy to eight years of age) through development of advocacy materials. 3) Community based nutrition program- Nutrition screening, key life events for nutrition, food demonstration, nutrition day celebration 4) Childhood disability services – social communication events, screening camps, corrective surgery, service through satellite	District number: 7 (Morang, Sunsari, Sindhuli, Rautahat, Makawanpur, Banke, Bardiya)	Total Allocated Budget of all programs activities: **Rs. 96,022,227** Total Expenses of all programs activities: **Rs. 96,761,337**	Office address: Maitri Marga, Bakhundole, Lalitpur Sub-metropolitan City Ward no. 3, Nepal Tel: +977-1-5535580,5535560 Email; Shanti.Upadhyaya@plan-international.org Web:www.plan-international.org/nepal

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2017/2018	Contact details
Population Services International/ Nepal (PSI/ Nepal)	1) **Improve access to Long Acting Reversible Contraception through private and public sector** 2) **Improve access to safe abortion services through private and public sector;** 3) **Awareness raising about safe abortion services through community level mobilization and mass media** 4) **Support infection prevention at public facilities through provider behavior change related activities and counseling for personal WASH related hygiene behavior change among public facility clients.**	**District number: 44**	**Total allocated budget of all programs activities:** **US $ 3,201,474** **Total expenses of all programs activities:** **US $ 3,199,093**	**Office address:** **Krishna Galli,** **Pulchowk,** **Patan,** **Lalitpur, Nepal** **Tel: +977-01-5553190, 5550620** **Fax: +977-01-5550619** **Email: info@psi.org.np**
FAIRMED Foundation Nepal	1) **Neglected Tropical Diseases** 2) **Maternal Neonatal and Child Health** 3) **Disability inclusion** 4) **Health System Strengthening**	**District number:3 (Kapilvastu, Sindhupalchowk and Baglung)**	**Total allocated budget of all programs activities:** **US $: 557315** **Total expenses of all programs activities:** **US $:512998**	**Office address:** **Kalika Marga, Sanepa – 2 (Cha), Lalitpur** **Tel:01-5013180** **P.O.Box : 10047** **Email: nepal@fairmed.ch** **Web: www.fairmed.ch**

11.4 Non-Governmental Organizations

Organization	Major program focus	Geographical coverage	Budget for health sector for FY 2017/2018	Contact details
NTAG - Nepali Technical Assistance Group	• Maternal and child nutrition • Multi-sectoral training to health workers, FCHVs and others • Promotion and advocacy of National Vitamin A Program • Research and surveys	40 districts 75 districts 5 districts 6 districts	Total allocated budget of all programs activities: NRS: 380,548,599 Total expenses of all programs activities: NRS: 296,238,753	Office address: Maitighar, Kathmandu, Nepal GPO Box 7518 Tel: 977-1-4224884/ 4223477 Fax: 977-1-4221133 Email: info@ntag.org.np/ deepakthapa@ntag.org.np Web: http://www.ntag.org.np
Nick Simons Institute (NSI)	Provide Curative Health Service in Rural Areas. 1. Training: Development of training site and support in training of Human Resource for Health. 2. District Hospital Support Program- Rural Staff Support Program (RSSP)-Human Resource and enabling environment support in Hospitals Hospital Management and Strengthening Program (HMSP)-Implementation of Minimum Service Standard (MSS) in 83 GoN Hospital.	District Number: 14 districts District Number: 18 districts District Number :75 District	Total Budget allocated of all Program activities US$ 3,850,827 Total expense of all Programactivities: US$ 3,257,877	Office address: Sanepa 2 lalitpur Tel 5520322,5550318 Fax 977-1-5554250 Email: nsi@nsi.edu.np Web www.nsi.edu.np

Organization	Major program focus	Geographical coverage	Budget for health sector for FY 2017/2018	Contact details
Marie Stopes International through implementing partner Sunaulo Parivar Nepal	**1 Sexual reproductive Health** • **Family planning (static and outreach services which includes full range of FP methods)** • **Safe Abortion Services** • **Training on reproductive health** • **Contraceptive social marketing (Jodi, Mariprist and others)** • **To contribute and establish MS Ladies network to deliver SRHR, mainly FP and SAS services in remote areas** **1. Adolescent Sexual Reproductive Health**	**Static Centers :36 in 32 districts** **40 districts (sterilization outreach)** **13 districts(LARC Outreach)** **16 districts (MSLadies network)**	**Total Allocated Budget of all programs activities:** **NRs.35 Crores (approx.)** **Total Expenses of all programs activities:** **NRs. 33 Crores (approx.**	**Office address:** **Baluwatar, Kathmandu** **Tel: 01- 4419376** **Fax: 01- 4420416** **Email:** **Sophie.hodder@ mariestopes.org.np** **kp.upadhyay@mariestopes.org.np** **Web:** **www.miestopes.com**
Nepal CRS Company	1. Sales and distribution of FP, MCH and STI commodities 2. Quality assurance program for Sangini franchise network 3. Focused BCC on (a) FP, (b) ANC & Institutional Delivery, (c) Health and Hygiene and (d) Uterine Prolapse through Remote Area Initiative (RAI) program in Ramechhap, Tanahu, Arghakhanchi and Terhathum districts.	District number: 77 District number: 50 District number: 4	Total allocated budget of all program activities: **US$ 4,729,240** Total expenses of all program activities: **US$ 3,736,572.23**	Office address: Mahadevtar, Tokha Road, Kathmandu Tel: 01-4362097 Email: info@crs.org.np Web: www.crs.org.np

Organization	Major program focus	Geographical coverage	Budget for health sector for FY 2017/2018	Contact details
Family Planning Association of Nepal (FPAN)	1) Family planning system strengthening program (including SIFPO2) 2) Comprehensive Sexual Education 3) Advocacy for SRHR 4) Gender and Empowerment	District number: 37 District number: 37 District number: 37 District number: 37	Total allocated budget of all programs activities: US $ 5821187(2018) Total expenses of all programs activities: US $ 5821187(2018)	Office address: Family Planning Association of Nepal Central Office, Pulchowk, Lalitpur P. O. Box 486, Kathmandu, Nepal Tel: 977-1-5010240, 977-1-5010104 Fax: 977-1-5010248 Email:fpandg@fpan.org.np Web:http://fpan.org
Nepal Red Cross Society (NRCS)	1) community Health Promotion Activities (Communicable Diseases/RMNCAH/NCD/Water Sanitation) 2) Emergency Health (Red Cross Emergency Clinic/Rural Emergency Trauma Treatment Strengthening) 3) Ambulance Service 4) Blood Service 5) First Aid	District number:77 District number: 77 District number :67 District number: 66 District number: 77	Total allocated budget of all programs activities: US $ 713216 Total expenses of all programs activities: US $ 534912	Office address: …Nepal Red Cross Society, Red Cross Marg, Kalimati, Kathmandu Tel: +977-01-4270650 Fax: 01-4271915 Email:mona.aryal@nrcs.org Web:www.nrcs.org.
PHASE Nepal	1) Basic Essential Primary Health care. 2) Maternal and Child Health 3) Community awareness program 4) Traditional healers Training	*6 District* *6 District* *6 District* *6 District*	Total Expenditure on Health Program Rs.51196779.83	Office address: PHASE Nepal Dadhikot, Bhatkapur Tel: 016634038/89/118 Email: info@phasenepal.org Web: www.phasenepal.org

Organization	Major program focus	Geographical coverage	Budget for health sector for FY 2017/2018	Contact details
Medic Mobile	1) **Open-source mHealth tool design, configuration and implementation for community-based maternal and child health care coordination. Use cases that are currently deployed include:** a) **Antenatal care & Postnatal care** b) **MPDSR (in those districts where MPDSR has been implemented)**	**District number: 11**	**Total allocated budget of all programs activities:** **US $372,256** **Total expenses of all programs activities:** **US $248,708**	**Office address:** **Medic Mobile Inc. Pvt Ltd.** **Chakupat, Lalitpur** **Tel: +977 9802024110** **Email: nitin@medicmobile.org** **www.medicmobile.org**

Source: Respective EDPs, INGOs and NGOs

ANNEXES

ANNEX 1 Major activities carried out in FY 2074/75

Immunization

SN	Activities	Unit	Targets	Achieved	%
1	Advocacy workshop on sustainable financial management of Immunization programmed for members of parliament and policy makers, industrialist, businessmen, bankers, civil society and stakeholders-2 times	No. of times	2	2	100
2	Monitoring and research of AEFI and meeting of Immunization related committees (AEFI, NCIP, ICC and stakeholders)	No. of times	2	more than 2 times	100
3	Review of electronic registration system of Immunization services (Kanchanpur, Palpa, Kaski, Chitwan, Bhaktapur) and expansion in 1 district	No. of times	1	1	100
4	Financial analysis of entire investment on Immunization services-2 days' workshop (10 districts)	No. of times	1	1	100
5	Introduction of FIPV vaccine programmed and distribution system supervision	No. of times	3		
6	Interaction and review on Immunization Act, Immunization fund and rule, NIP (1 day), annual budget preparation and programmed implementation workshop 2 days for women, children, elderly people and members of social welfare committee and parliament, media persons and stakeholders	No. of times	3	0	0
7	EPI and IMNCI related recording and reporting programmed for EPI and IMNCI focal person and Statistics persons	No. of times	2+2	4	100
8	Facility based IMNCI training to health workers of district hospital	No. of times	2	3	150
9	Newborn related Level II (SNCU) training for Medical Officers	No. of times	5	5	100
10	FBIMNCI TOT	batch	2	2	100
11	Electronic app development and testing (reporting of newborn and children related illness and death)	No. of times	1	1	100
12	Strengthening of statistical and reporting system of newborn related illness/death in district hospitals (SNCU)	No. of times	20	5	25
13	IMNCI programmed evaluation and operation study for university students studying MPH and MN	No. of times	1	0	0
14	Revision of IMNCI guidelines	No. of times	2	2	100
15	Development of FBIMNCI training package	No. of times	1	1	100

Nutrition

SN	Activities	Unit	Targets	Achieved	%
1	Integrated Regional Nutrition Advocacy and Nutrition RDQA workshop	Times	2	2	100
2	Establishment of Multisectoral Nutrition and Food security Committee	Times	6	6	100
3	Scaling up of IYCF integrated with Child Cash Grant in Acham, Rautahat and Bhajhang	Times	3	3	100
4	Scaling up of Nutrition Surveillancein Jumla, Bajura and Parsa	Times	15	15	100
5	District level review and orientation of MBFHI to the stakeholders	Times	3	3	100
6	Basic training on MNSP to the Multisectoral Nutrition and Food security Committee members and stakeholders	Times	21	21	100

Family Planning

SN	Activities	Unit	Targets	Achieved	%
1	Family Planning (FP) current users	Couple		2532848	
2	VSC expected new acceptors	Couple	30000	250918	
3	IUCD expected new acceptors	Couple	48000	31644	
4	Implant expected new acceptors	Couple	90000	100896	
5	FP program strengthening through DMT, EC, MEC wheel	District	49	13	
6	Micro-planning and response actions implementation in low CPR districts	District	58	11	
7	Support to satellite clinic for LARC methods	Time	306	306	
8	FP with VP service	District	20	20	
9	Regular VSC comprehensive service	District	5	5	
10	Support to Institutional Clinic	District	24	24	
11	24 hours CEOC Services	Place	53	3	Newly established
12	Recruitment of Staff Nurse	Number	75	75	
13	Recruitment of ANM	Number	1550	1550	
14	Free blood transfusion service for Aama program	Pint	7500	7500	
15	4th ANC (incentive)	Number	225000	234145	
16	Free delivery and transportation incentive	Number	415000	425000	
17	Onsite coaching for SBA	Number	31	31	
18	UP Surgery	Number	3500	1308	Approved targ=1700
19	Fistula/ UP screening	Number	300	20	Approved targt=20
20	Clinical update for Nursing staff	Number	49	-	
21	MPDSR program implementation	Districts	11	11	continue
22	Free abortion service	Number	80000	80000	

Curative Service Division of all sections program activities:

SN	Activities	Unit	Targets	Achieved	%
Leprosy activities					
1.	Physiotherapy Lab Establishment	Places	2	1	50
2.	Strengthen of data management, web based system	Times	3	3	100
3.	Training on Diagnosis of Autism, Down Syndrome and Cerebral Palsy for Physiotherapist and medical doctors	Times	11	11	100
4.	Conduct reconstructive surgery camp in coordination with supporting partners in the centre and province level	Times	7	7	100
5.	Coordination meeting of Steering, Technical and coordination committees with leprosy and disability related partners	Times	3	3	100
6.	Operational research	Times	2	2	100
7.	Celebration of World Leprosy Day	Times	1	1	100
8.	Surveillance for leprosy and disability prevention	Times	2	0	0
9.	Orientation on leprosy for parliamentarians and health workers	Times	5	5	100
10.	Trimester review meeting	Times	3	3	100
11.	Support to the students of public health and doctors for the conduction of study related to leprosy affected and disability	Times	14	3	21
12.	Preparation of guideline on leprosy and complication management	Times	3	3	100
13.	Early diagnosis and assessment service for Autism, Down Syndrome and Cerebral Palsy	Places	8	4	50
14.	Strengthening & monitoring of Prevention of Impairment and Disability (POID)	Times	7	7	100
15.	Monitoring and technical support for disability programmes	Times	15	15	100
16.	Development and distribution of disability related IEC materials	Times	1	1	100
17.	Preparation, printing and distribution National Guideline on disability & rehabilitation	Times	1	1	100
18.	National Workshop on Disability Management	Times	1	1	100
19.	Technical monitoring and case validation	Places	10	10	100
20.	Continue medical education for doctors on leprosy programme	Times	2	2	100
21.	Active search for leprosy case detection in leprosy endemic community and pocket areas	Places	5	5	100
22.	Purchase of drugs for leprosy complication management	Times	1	1	100
23.	Programme monitoring and supervision	Places	10	10	100
24.	Grant for strengthening of referral centre for specialized service	Places	3	3	100
25.	Operations of physiotherapy and rehabilitation units (Gorkha, Sindhupalchok. Dolakha, Rasuwa, Dhading & Nuwakot)	Times	1	1	100
26.	Grant for leprosy affected of Khokana Arogya Ashram& other groups	Times	3	3	100

Epidemiology and disease control

S N	Activity	Unit	Annual Target	Achieve	%
Epidemic disease control					
1	Construction of cold room for storage of medicines required in emergencies and maintenance of EDCD toilet	No. of building	1	1	100
2	HR and travel costs for Health team of 4 including 2 doctors at Tribhuwan International Airport	No. of times	1	1	100
3	Hiring of staff for official work on agreement	No. of times	7	1	100
4	Cost for RRT mobilization and intra sect oral coordination for outbreak control and disaster management	No. of times	3	3	100
5	Supervision and monitoring for prep reparation of disaster management activities	No of times	10	10	100
6	Monitoring of food quality of restaurants located in highway	No. of times	1	0	0
7	Planning meeting at regional level on vector borne disease control, disaster and epidemic and surveillance activities.	No of times	5	5	100
8	Emergency preparedness plan meeting for hospital	No. of times	3	2	75
9	Orientation to health workers on scrub typhus, malaria, kalaazar including other vector borne diseases	No of times	5	5	100
10	Interaction program and health message promotion regarding cold and its effects in Terai areas	No. of times	1	0	0
11	Interaction program with related stakeholders on effect and management of radio nuclear and biochemical disaster	No. of times	1	1	100
12	Purchase of RRT deployment kits	No. of times	3	3	100
13	purchase and deployment of medicine and necessary equipment for epidemic and disaster management in related district	No of times	1	1	100
14	purchase of water quality test machine for water quality surveillance	No of item	64	64	100
15	Purchase of diphtheria antitoxin, ARV and other vaccine	No. of times	3	3	100
16	Activities to manage sickle cell anemia in affected districts	No. of times	3	3	100
17	1 day regional level interaction program to RHD, chiefs of Medical Colleges, chiefs of Regional/Sub-Regional/Zonal Hospitals, NPHL, directors of various divisions of DoHS on sickle cell anemia and thalassemia	No. of times	1	1	100
18	Baseline survey to find the burden of Hepatitis E in Nepal as suggested by the first National Symposium on Hepatitis E	No of times	1	0	0
19	Various activities to strengthen the implementation of IHR	No of times	3	2	75
20	Form Highway RRT to rescue the casualties in accidents in major highways, orient the highway RRT and prepare Highway RRT mobilization guidelines	No of times	20	0	0

S N	Activity	Unit	Annual Target	Achieve	%
Malaria control					
1	Conduct annual national review meetings	No. of times	1	1	100
2	Capacity Building orientation for medical recorders of new and existing sentinel sites and people from EDCD to strengthening the reporting system	No. of times	4	0	0
3	Quality control of 5000 pcs of malaria slides at central level & monitoring of the blood slide samples examined at districts for quality assurance	No of times	12	8	75
4	Multi-sector advocacy meetings at national levels to secure support for Malaria elimination	No. of times	1	1	100
5	Strengthen Malaria technical working group (TWG)	No. of times	3	2	75
6	Procurement and supply of fogging machine	No. of times	1	0	0
7	VAT and other tax for GF/SCI funded capital items and activities	No of times	1	1	100
8	Procurement of Insecticide for Indoor residual spraying for malaria control in endemic districts	No. of times	1	1	100
9	Procurement of LLIN for malaria endemic districts	No. of piece	300000	300000	100
10	Procurement of medicines and medical goods for malaria diagnosis and control	No. of times	1	1	100
11	Procurement and supply of spare parts for Hudson pump repairmen	No of times	1	0	0
12	Procurement of microscopy for diagnosis of malaria		1	1	100
Kala azar control					
1	orientation on online reporting of kalaazar cases through DHIS 2	No. of person	12	0	0
2	National review meeting on kalaazar	No. of times	1	1	100
3	Orientation to medical college,private hospitals, teaching hospitals on treatment procedure and on active case detection orientation to district with kalaazar case.	No. of times	4	1	25
4	Case base surveillance and active case finding of Kala-azar in districts	No of times	3	2	75
5	Procurement and supply of medicines and medical goods for Kala-azar control	No of times	1	1	100
6	Procurement of Insecticide for Indoor residual spraying in Kala-azar affected districts	No of times	1	1	100
Natural disaster management					
1	Orient RRT on RH promotion in emergency and natural disaster for preparation of district level contingency planning	No. of times	75	75	100
Lymphatic Filariasis elimination					
1	Printing of IEC material for LF program	No. of times	1	1	100

S N	Activity	Unit	Annual Target	Achieve	%
2	Surveillance of LF	No. of times	2	2	100
3	Technical support from central level to districts regions in LF elimination programme	No. of times	3	3	100
4	preparation of documentary on LF	No of times	1	1	100
5	Annual report preparation on LF	No. of times	1	1	100
6	Technical & financial support by LSTM/DFID in LF elimination	No. of times	1	1	100
7	Financial and technical support from RTI/USAID on LF elimination	No. of times	1	1	100
8	Procurement of DEC Tablet for LF MDA	No of Piece	21800000	21800000	100
Zoonotic disease control					
1	Surveillance in districts having zoonotic disease outbreaks	No. of times	5	5	100
2	Orientation to the medical officers and paramedics on rational use of ARV and case management of dog bites and poisonous snakebites	No. of times	5	5	100
3	Training and orientation to health workers regarding snake bites	No. of times	5	5	100
4	Procurement and supply of ASVS for around 2000 persons to districts	No of item	30000	30000	100
5	Procurement of ARV (Cell culture vaccine) for approx60,000 persons.	No of item	350000	350000	100
Dengue control					
1	Orientation on Dengue and chikungunya fever and mosquito larva search and destroy campaign	No. of times	3	3	100
2	National review meeting on dengue	No. of times	1	1	100
3	Orientation to medical college,private hospitals, teaching hospitals on management of dengue case	No. of times	1	1	100
Disease Surveillance and EWARS					
1	Orientation on EWARS to doctors, health workers and medical recorders of sentinel sites	No. of times	3	3	100
2	Technical review on EWARS for medical recorders of sentinel sites	No. of times	4	4	100
3	Revision of EWARS guideline 2009	No. of times	1	1	100
4	Evaluation of different disease surveillance activities being conducted by EDCD	No. of times	3	3	100

S N	Activity	Unit	Annual Target	Achieve	%
Water quality surveillance					
1	Preparation of documentary for activities conducted according to Surveillance guideline 2070	No. of times	1	1	100
2	Workshop on water safety surveillance at five regions	No. of times	5	5	100
3	Purchase of water sample testing kit for water quality surveillance	No. of times	1	1	100

Nursing and Social Security Division of all Sections program activities:

SN	Activities	Unit	Targets	Achieved	%
1	Bi-Annual FCHV Review	District	75	75 district are geo-graphi-cally organized into 77 district	100

Management Division of all Sections program activities:

SN	Activities	Unit	Targets	Achieved	%
	Logistic management				
1	Reconstruction of Warehouse at Pathalaiya and Teku	Building	2	1	50
2	Procurement and payment of due amount of Hospital Equipment	Times	3	3	100
3	Procurement of Ambulance	Number	20	20	100
4	Procurement of Pick-Up Vehicles	Number	8	8	100
5	Procurement of Rack, Pallets	Number	100	100	100
6	Procurement of Desktop, Laptop Computers	Number	150	50	33
7	Disposal/Auctions/Destroy of Expired, breakage, wastage health commodities	Times	3	3	100
8	Quality Assurance of Drugs and Equipments	Times	70	70	100
9	Repacking, Transportation and Redistribution of Drugs, Vaccines, Equipments	Times	350	350	100
10	Preparation and Publication of Tender Documents	Number	60	60	100
11	Printing of LMIS Forms and Stock Books	Times	1	1	100
12	Repair and maintenance of Vehicles, Biomedical equipments	Number	90	90	100
13	Training on Telemedicine	Times	3	3	100
14	Training on Online Inventory Management System	Times	3	3	100
15	Workshop on Pipeline/Forecasting/Quantification	Times	10	10	100

National Tuberculosis Control Center program activities:

SN	Activities	Unit	Target	Achieve	%
1	Human resource for NTC culture/dst lab	person	5	5	100
2	Hire a lab technician and a lab boy for regional QC centers	person	13	7	53
3	PME workshop of NTP at national level	times	3	3	100
4	basic DR modular training for helathworkes of new and existing DR centers/sub centers	batch	3	2	66.66
5	Provide suppport to hospitals, medical colleges, PHCS to establish DR centers and sub centers	place	10	5	50
7	LQAS training to lab staff	batch	20	8	40
8	Basic lab modular training	batch			
9	Trimester PME workshop at regional level	time	15	15	100
10	Clinical management training to medical doctors	batch	6	6	100
11	Training of c/dst ISO safety measures	batch	1	1	100
12	scholarship for higher medical education such as MD in chest	person	5		
13	Procurement of digital x-ray machine	piece	12000	9600	80
14	Procurement of N95 Mask and other personal protecting accessories	piece	14400	1500	100
15	Procurement of cartridge for gene-xpert machine	piece	3000	17100	57
16	Procurement of consumebals and reagents for sputum microscopy	Times	1	1	100
17	Procument of first line TB drugs	times	1	1	100
18	TB drug transportation from national level to regional medical stores.	times	20	20	100
19	procurement of second line drug	times	1	1	100
20	Supervision from center to regions/districts	times	275	29	11
21	Conditional grant to DR home, Bandipur	times	1	1	100
22	Extension of warranty of gene-xpert machines with CEFEID		10		
23	Calibration of genexpert modules	module	10		
24	Procurement of LED fluroscence microscope	piece	20	20	100
25	establishment of MIGITculter in eastern region	Times	1	1	100
26	Procurement of four module gene-xpert machine	piece	20	16	80
27	Procure digital x-ray for RTCPokhara	piece	1	1	100
28	Expand LPA at those same centers as for culture and DST. (in EDR, MWR and WDR)	place	3		
20	Procurement of LCD Projector	piece	10	10	100
30	Procurement of inspisetor for BPKIHS	piece	2		
31	minus 80 degree fridger for c/dst lab of BPKIHS	piece	1		
32	C/S training for lab Person	times	1	1	100
33	Data Analysis capacity building Program	batch	1	2	200
34	Onsite data verification program (OSDV).	times	15	15	
35	Conditional grant to Kalimati Chest hospital	times	3	3	100
36	AccreditaionTets Of Cultural DST in Gauting Germany	times	1		

National AIDS and STI Control Center program activities:

SN	Activities	Unit	Targets	Achieved	%
1	National Consolidated Guidelines on SI of HIV Response in Nepal	Time	1	1	100
2	Conduct 9 Integrated Bio-Behavioral Surveillance (IBBS) Survey among 4 Key Populations [MSM and TG, FSW, PWID(Male, Female) and male labour migrants]	Compo-nents	9	9	100
3	Mapping and size estimation of key population in Nepal	Time	1	1	100
4	Expansion of ART sites	Sites	5	5	100
5	Establishment of ART Dispensing Centre	Centre	10	10	100
6	Clinical Management Training(CMT)	Person	100	100	100
7	National HIV Strategic Plan 2016-2021	Time	1	1	100
8	Strengthening HMIS system- customization of DHIS2 Tracker	Time	1	1	100
9	One day Orientation on Recording and Reporting to Private Hospitals	Event	5	1	100
10	Regional Data Review and Verification Workshop	Event	5	1	100
11	Logistic Management Training	Event	4	4	100

National Health Training Center program activities:

SN	Activities	Unit	Targets	Achieved	%
1	Pediatric Nursing Training	Person	40	43	108
2	Sr. AHW training for AHW (Regional level) 150 + 60 continuation of FY 073/074	Person	150	148	99
3	Sr. ANM training for ANM 60 + 60 continuation of FY 073/074	Person	60	59	98
4	ANM Training (SLC passed ANM designation) 20 + 60 continuation from FY 073/074	Person	70	70	100
5	AHW Training (SLC passed ANM designation) 20 + 60 continuation from 073/074	Person	70	70	100
6	ANM-P Training (Scholarship for SLC unsuccessful ANM designation) 40 + 60 continuation from 073/074	Person	20	19	95
7	AHW-P Training (SLC unsuccessful AHW designation) 40 + 60 continuation from FY 073/074	Person	20	18	90
8	Upgrading Training (6th, 7th level Supervisors) 50 + 75 continuation from 073/074	Person	50	45	90
9	X-ray User Maintenance Training	Person	10	10	100
10	Anesthesia Assistant Training (HA, SN)	Person	10	10	100
11	Palliative Care Training (Doctors, Nurses)	Person	32	36	113
12	Induction Training for newly appointed health officers	Person	200	200	100
13	Medico-legal Training (Doctors)	Person	80	43	54
14	Safe Abortion Training (Doctors 75, Nurses 75)	Person	150	157	105
15	Basic IUCD Training (Nursing Staff)	Person	100	106	106
16	Transaction Accounting and Budget Control System Training	Person	100	75	75
17	Screening of pre-cancer/lesion VIA/CRAYO for HW training	Person	75	70	93
18	Gender Based Violence Training for Health Service Providers	Person	60	50	83

SN	Activities	Unit	Targets	Achieved	%
19	Lab users maintenance Training	Person	10	10	100
20	Cold chain users maintenance training	Person	10	10	100
21	ICU training (nurses)	Person	20	18	90
22	CME (piloting in 3 district hospitals, 1 zonal hospital, 1 regional hospital)	Person	2	3	150
23	Hospital strengthening training (for hospital representative/ staffs)	Person	2	2	100
24	Training need identification of divisions/ centers and Coordination meeting different training matters	Person	3	1	33
25	Medical abortion training for nursing staffs	Person	30	30	100
26	Meeting of training experts (TWG/sub TWG)	Person	6	2	33
27	MLP training for health workers	Person	150	105	70
28	TOT for Infection prevention and control (central and regional)	Person	40	45	113
29	CTS Training	Person	48	48	100
30	OTTM training (nurse)	Person	40	40	100
31	Diploma Training in Biomedical 24 and continuation of 2073/74 (24)	Person	48	48	100
32	Rural Ultrasound training (SN)	Person	10	10	100
33	SBA (Doctors, nurses, ANM) (GoN)	Person	300	319	106
34	OT Training (Nurses)	Person	40	40	100
35	NICU management training (MO, SN) level 2	Person	100	41	41
36	ASBA Training	Person	16	16	100
37	ICU training (nurse)	Times	20	18	90
38	PPIUCD Training (Nursing staff)	Person	20	30	150
39	NSV Self Paced Learning Approach	Person	20	105	525
40	Vasectomy Training (MO, Group wise) 12+5 days	Person	50	34	68
41	Minilab Training (MO/SN) 12 / 5 days	Person	44	45	102
42	Implant Training (Nursing staff / paramedics)	Person	300	300	100
43	CoFP (FP service provider)	Person	300	295	98
44	ASRH Training	Person	175	181	104
45	Printing training materials of different training	Times	5	3	60
46	Transportation of training materials of different training (Region, District, and Training sites)	District	3	3	100
47	Follow up Enhancement Program and Survey (3 districts)	Times	7	4	57
48	ICU,CME guideline, training materials and curriculum development and revision	Times	5	7	140
49	Research and meetings for including various training programs in pre-service curriculum of CTEVT/University	Times	1	1	100
50	MISP Training	Person	75	75	100
51	To Ton NCDs (PEN Package) for MO/HW	Person	70	104	149

National Public Health Laboratory program activities:

SN	Activities	Unit	Targets	Achieved	%
1.	Procurement of equipments for establishment of 10 bacteriology sites	Site	10	10	50.66
2.	Procurement of fully automated biochemistry analyzer and required spare parts for zonal hospital based laboratories	Site	3	3	120.5
3.	Procurement of equipments such as CLIA and fully automated biochemistry analyzer for regional hospital based laboratory	Site	1	1	128.11
4.	Procurement of cell counter machine and electrolyte machine and spare parts for them for district hospital based laboratories	Site	15	15	95.43
5.	Procurement of component seperation machine for the expansion of service of district blood transfusion service centre	Site	1	1	85.75
6.	Procurement of semiautomatic biochemistry machine for nonfunctional PHC based laboratories and for improvisation of district hospital	sites	50	50	97.99
7.	Procurement of equipments for the establishment of molicular lab	site	1	1	82.66
8.	Training on bacteriology service for lab technicians to provide bacteriology service in district hospital	person	20	20	100
9.	Distribution of biochemistry analyzer, electrolyte and cell counter machine after application training for district hospital based laboratories	person	30	30	100
10.	Quality control management for all laboratories and BTSCs in Nepal.	number	3	3	82.52
11.	Procurement of equipments and kits chemicals for National Influenza Centre	time	3	3	100
12.	Barcode management for laboratory service reliability and security	number	3	3	86.15
13.	Transportation of equipments, tools, medicines, etc. to health post, district, zonal, regional and subregional hospitals	number	3	3	98.29
14.	Procurement of reagents for flowcytometry and cancer diagnosis	time	3	3	99.94
15.	Providing diagnostic services during epidemic outbreak	time	3	3	100
16.	Operational expenses for National Bureau for Blood Transfusion Services to improve the blood transfusion service quality in Nepal	time	3	3	100
17.	Procurement and distribution of single blood bag to Central and regional blood transfusion services centres	time	50000	50000	95.42
18.	To operate research based programs in NPHL	time	3	3	98.31
19.	Procurement of reagents and kits for special discount groups such as disabled, elders, kidney dialysis patients, etc.	time	6000	6000	100
20.	Procurement of kits for sickle cell anemia disease test	time	3	3	100
21.	Supervision and monitoring of government laboratories, private laboratories and blood transfusion centres	time	600	600	99.10

National Health Education Information and Communication Center program activities:

SN	Activities	Unit	Targets	Achieved	%
1	Development of programme guidelines, directives and strategy and supplies to RHD, RHTCs, DHOs and DPHOs.	times	4	3	75
2	Development, production and broadcasting of health messages through radio, television, and newspapers (printed and electronic).	times	3	3	100
3	Printing and distribution of ASRH, RH related booklet	times	10000	10000	100
4	Golden 1000 days promotion communication campaign	times	210553	210553	100
5	Mero barsha for health promotion; “ma swastha, mero desh swastha” promotion programme	times	9835189	5322804	54.12
6	Health promotion, reproductive and child health, free health, communicable and non communicable disease prevention related calendar, booklet etc printing and distribution	times	76080	76080	100
7	Sickle cell anemia related mass communication and promotion programme.	times	155764	137764	88.44
8	Publication of health related messages and notices through different newspaper	times	100	100	100
9	Supervision, monitoring and evaluation of health promotion, education and communication programmes.	times	100	100	100
10	Broadcasting of health messages through radio and television in packages including jeevanchakra, janaswasthya radio, janaswasthya bahas, golden 1000 days communication campaign, mero barsa campaign.	times	4319.67	4319.67	100
11	Online dissemination of health messages	times	30,000,049	15500049	51.67
12	Pen-package promotion regarding the Control of non-communicable diseases.	times	500000	500000	100
13	Communication Programmes on sickle cell anaemia.	times	155764	137764	88.44
14	Communication programme on IMNCI, immunization, nutrition.	times	50000	50000	100
15	Immunization promotion communication programme	times	50000	50000	100
16	Family planning, Safe motherhood and neonate related pamphlet production, printing and communication programme.	times	700000	610000	87.14
17	School and adolescent friendly service centre, safe motherhood, delay marriage and family planning related inter-personal, social mobilization and mass communication programme	times	1290641	1000900	77.55
18	Safe motherhood, neonate, family planning and adolescent related social mobilization, interpersonal communication, electronic and print media communication programme.	times	306016	306016	100
19	Talk show program about FP day celebration through TV	times	2	2	100
20	Safe motherhood, neonate and family planning related mount board production	times	3955	3955	100

SN	Activities	Unit	Targets	Achieved	%
21	Interaction and awareness programme on Safe motherhood, neonate and family planning.	times	15	15	100
22	Communication program on zoonotic diseases and poisonous food	times	3	2	66.67
23	Communication program for occupational health, environmental health and sanitation	times	70000	70000	100
24	Broadcasting of FP, SM and Navimalam related messages through TVs	times	750	750	100
25	Communication program and daily monitoring of newspaper about epidemic disease control and prevention	times	2000	2000	100
26	Communication program for communicable disease control	times	200000	200000	100
27	Communication program for Health promotion activities on Life style, Free services, Ayurved, GBV	times	100000	100000	100
28	Establishment and implementation of Health news desks	times	3	3	100
29	Production of CDs on different communication programs	piece	1000	500	50
30	communication programme on risk factors of non communicable diseases through social mobilization, interpersonal communication, electronic and print media	times	400000	400000	100

Annex 2: Program Targets for FY 2075/76

Family Welfare Division:(1) Child Health and Immunization section program activities:

SN	Activities	Unit	Target
1	Training about Importance Child health Card/Immunization card and its retention	times	4
2	Advocacy meeting about sustainable Immunization Programmed with the members of the parliament, Policy makers, private sectors and civil society	times	1
3	Provincial Level TOT about National Immunization Program and micro planning to focal person	times	7
4	Workshop to review and update injection safety policy, Multi-dose Vial vaccine policy, school td, Rota Vaccine Usage guideline, vaccine disposal policy and cod chain policy, DQSA Guideline	times	1
5	Briefing programed about Rota vaccine implementation to high level official,MOH,NIC and stack holders	times	1
6	Training about “Khop Kit Bag “and its guideline to immunization focal person of province and palika level.	Batch	2
7	Provincial level workshop on CBIMNCI program Orientation and planning	batch	7
8	Workshop for revision of IMNCI guidelines and msterials	Times	1
9	SNCU level 2 training for Medical officer and paramedics/nursing	batch	8
10	FBIMNCI training to Nursing / paramedics and Medical officer	batch	7
11	Work shop about Early Childhood Development	times	1
12	Expansion of SNCU sites	Numbers	10
13	Workshop with TU/CTEVT/PU/ curriculum committee about inclusion and revised CBIMNCI/FBIMNCI content in respected curriculum.	times	1

Family Welfare Division: (2) Maternal and Newborn Health section program activities:

SN	Activities	Unit	Target
1	Selection of coordinator for continuation of community MPDSR program	person	11
2	Onsite coaching ,review, revision of guideline, database standardization and integration of MPDSR and DHIS2.	Times	1
3	Rapid assessment of Aama program	Times	1

Family Welfare Division: (3) Family Planning and Reproductive Health section program activities:

SN	Activities	Unit	Targets
1	Sterilization for family planning	persons	43200
2	Development of CIP for ASRH and TRP package for FP	Times	1
3	PPP interaction for strengthening FP services	districts	19
4	FP micro planning and strengthening FP service through DMT/MEC	Times	2

Family Welfare Division: (4) Nutrition Section program activities:

SN	Activities	Unit	Targets
1	Central level BMS Monitoring Training to stakeholders and BMS Monitors	Times	1
2	Masters in Training of Trainers on Comprehensive Nutrition Specific Intervention Package	Times	4
3	Capacity Building of Stakeholders on DRR	Times	1
4	Nutrition Advocacy Events	Times	3
5	Development and Dissemination of Nepal National Micronutrient Status Survey Report 2016	Times	1
6	Develop, print and Dissemination of Comprehensive capacity building package for nutrition and Nutrition BCC Materials, Guidelines and Manuals	Times	1
7	Revise Disaster Risk Management plan and cluster coordination and information management for DRR	Times	1
8	Revision and update of existing Nutrition policies, strategies as per NNMSS 2016	Times	1

Curative Service Division: (1) Hospital Services Monitoring and Strengthening program activities:

SN	**Activities**	**Unit**	**Targets**
1	Continuous supervision and monitoring of the hospitals for optimum quality service	number	110
2	Minimum Service Standards (MSS) implementation and follow-up in hospitals	number	94
3	Formulate standard treatment protocol (STP) of diseases	number	1
4	institutionalization of the telemedicine service system	number	10
5	registration, renewal and regulation of the specialized and tretiary level hospitals	number	90
6	Pharmacy Service strengthening in federal hospitals	number	10
7	Digitalization of MSS recording and reporting system	Times	10

Curative Service Division: (2) Basic & Emergency Management Section program activities:

SN	Activities	Unit	Targets
1	Modification and extension of basic health care services based on the emergence of diseases, availability of financial resources and local needs	Time	1
2	Supervision, monitoring and evaluation of the quality of basic health services	Time	1
3	Facilitate for formation of Public Health Regulation	Time	1
4	Develop and implementation of Basic Health Service Package	Time	1
5	Develop and implementation Emergency Service Package	Time	1

Curative Services Division: (3) IENT and Oral Health Section program activities:

SN	Activities	Unit	Targets
1	Establishment of Eye OPD in federal hospitals	number	10
2	MTOT to Dental surgens about oral health	times	5
3	Training on Oral health and facial injuries to dentist working infederal hospitals	times	5

Epidemiology and Disease Control

S N	Activity	Unit	Annual Target
Epidemic disease control			
1	Construction of cold room for storage of medicines required in emergencies and maintenance of EDCD toilet	No. of building	1
2	HR and travel costs for Health team of 4 including 2 doctors at Tribhuwan International Airport	No. of times	1
3	Hiring of staff for official work on agreement	No. of times	1
4	Cost for RRT mobilization and intra sect oral coordination for outbreak control and disaster management	No. of times	3
5	Supervision and monitoring for prep Preparedness of disaster management activities	No of times	3
7	Monitoring of food quality of restaurants located in highway	No. of times	3
9	Planning meeting at regional level on vector borne disease control, disaster and epidemic and surveillance activities.	No of times	
12	Emergency preparedness plan meeting for hospital	No. of times	3
13	Orientation to health workers on scrub typhus, malaria, kalaazar including other vector borne diseases	No of times	5
14	Interaction program and health message promotion regarding cold and its effects in Terai areas	No. of times	1
15	Interaction program with related stakeholders on effect and management of radio nuclear and biochemical disaster	No. of times	1
16	Purchase of RRT deployment kits	No. of times	1
17	purchase and deployment of medicine and necessary equipment for epidemic and disaster management in related district	No of times	1
19	Purchase of diphtheria antitoxin, ARV and other vaccine	No. of times	1
20	Activities to manage sickle cell anemia in affected districts	No. of times	1
21	1 day regional level interaction program to RHD, chiefs of Medical Colleges, chiefs of Regional/Sub-Regional/Zonal Hospitals, NPHL, directors of various divisions of DoHS on sickle cell anemia and thalassemia	No. of times	1
22	Baseline survey to find the burden of Hepatitis E in Nepal as suggested by the first National Symposium on Hepatitis E	No of times	1

S N	Activity	Unit	Annual Target
23	Various activities to strengthen the implementation of IHR	No of times	3
24	Form Highway RRT to rescue the casualties in accidents in major highways, orient the highway RRT and prepare Highway RRT mobilization guidelines	No of times	1
Malaria control			
25	Evaluation of surveillance conducted by EDCD	No. of times	1
26	Conduct annual national review meetings	No. of times	1
27	Capacity Building orientation for medical recorders of new and existing sentinel sites and people from EDCD to strengthening the reporting system	No. of times	1
28	Quality control of 5000 pcs of malaria slides at central level & monitoring of the blood slide samples examined at districts for quality assurance	No of times	12
29	Multi-sector advocacy meetings at national levels to secure support for Malaria elimination	No. of times	1
30	Strengthen Malaria technical working group (TWG)	No. of times	3
31	Procurement and supply of fogging machine	No. of times	1
32	VAT and other tax for GF/SCI funded capital items and activities	No of times	3
33	Procurement of Insecticide for Indoor residual spraying for malaria control in endemic districts	No. of times	1
34	Procurement of LLIN for malaria endemic districts	No. of piece	1
35	Procurement of medicines and medical goods for malaria diagnosis and control	No. of times	1
36	Procurement and supply of spare parts for Hudson pump repairmen	No of times	1
37	Procurement of microscopy for diagnosis of malaria		1
Kala azar control			
39	National review meeting on kalaazar	No. of times	1
40	Orientation to medical college,private hospitals, teaching hospitals on treatment procedure and on active case detection orientation to district with kalaazar case.	No. of times	1
41	Case base surveillance and active case finding of Kala-azar in districts	No of times	1
42	Procurement and supply of medicines and medical goods for Kala-azar control	No of times	1
43	Procurement of Insecticide for Indoor residual spraying in Kala-azar affected districts	No of times	1
Natural disaster management			
44	Orient RRT on RH promotion in emergency and natural disaster for preparation of district level contingency planning	No. of times	75
Lymphatic filariasis elimination			
45	Printing of IEC material for LF program	No. of times	1
46	Surveillance of LF	No. of times	1

S N	Activity	Unit	Annual Target
47	Technical support from central level to districts regions in LF elimination programme	No. of times	1
48	preparation of documentary on LF	No of times	1
49	Annual report preparation on LF	No. of times	1
50	Technical & financial support by LSTM/DFID in LF elimination	No. of times	1
51	Financial and technical support from RTI/USAID on LF elimination	No. of times	1
52	Procurement of DEC Tablet for LF MDA	No of Piece	1
Zoonotic Disease			
53	Surveillance in districts having zoonotic disease outbreaks	No. of times	5
54	Orientation to the medical officers and paramedics on rational use of ARV and case management of dog bites and poisonous snakebites	No. of times	5
55	Training and orientation to health workers regarding snake bites	No. of times	5
56	Procurement and supply of ASVS for around 2000 persons to districts	No of item	1
57	Procurement of ARV (Cell culture vaccine) for approx 50,000 persons.	No of item	1
Dengue Control			
58	Orientation on Dengue and chikungunya fever and mosquito larva search and destroy campaign	No. of times	3
59	National review meeting on dengue	No. of times	1
60	Orientation to medical college,private hospitals, teaching hospitals on management of dengue case	No. of times	1
61	Procurement of RDT including G6PD for diagnosis of vector borne diseases	No of times	1
Disease Surveillance and EWARS			
1	Orientation on EWARS to doctors, health workers and medical recorders of sentinel sites	No. of times	3
2	Technical review on EWARS for medical recorders of sentinel sites	No. of times	2
3	Revision of EWARS guideline 2009	No. of times	1
4	Evaluation of different disease surveillance activities being conducted by EDCD	No of times	3
Water quality surveillance			
1	Preparation of documentary for activities conducted according to Surveillance guideline 2070	No of times	2
2	Workshop on water safety surveillance atregional level	No of times	5
3	Purchase of water sample testing kit for water quality surveillance	No of items	1

Epidemiology & Disease Control Division: (6) Leprosy Control and Disability Management Section program activities:

S N	Activity	Unit	Target
1.	Purchase of dermatoscope and camera	Set	2
2.	Renovation of JamariyadeviKustharogaashram	Times	1
3.	Contract of driver and office Assistant	Persons	2
4.	Cooperation with Ayurveda & other medical system for leprosy control program	Times	1
5.	Coordination meeting of Steering, Technical and coordination committees with leprosy and disability related partners	Times	3
6.	Celebration of World Leprosy Day	Times	1
7.	Printing of annual report, program implementation guideline and bulletins	Times	4
8.	Technical monitoring and case validation	Times	10
9.	Trimester review meeting	Times	2
10.	Strengthening & monitoring of Prevention of Impairment and Disability (POID)	Times	7
11.	Surveillance for leprosy and disability prevention	Times	2
12.	In depth review of national leprosy program	Times	1
13.	Leprosy orientation for health workers of mini leprosy elimination campaign and skin camp.	Times	24
14.	Conduct reconstructive surgery camp in coordination with supporting partners.	Times	5
15.	Transportation for the distribution/management of MDT	Times	3
16.	Grant to National Disable Fund (Purchase and distribution of assistive devices)	Times	1
17.	Cooperative grant for national seminar of dermatologists	Times	1
18.	Grant for leprosy affected of KhokanaArogya Ashram	Times	3

Nursing and Social Security Division: (program activities:

S N	Activity	Unit	Target
1	Provincial level Health Orientation for Cooperative representatives and it's members	Times	7
2	Provision of free treatment to impoverished citizens as "Bipanna Nagrik Aaushadi Programme", release of budget as per quarterly	Times	3
3	Provision of free treatment to "Jaan Andolan Gaite" citizens, release of budget as per quarterly	Times	3

Management Division: (1) Integrated Health Information Management Section program activities:

S N	Activity	Unit	Target
1	Study on proper use and utilization of HMIS tools	Time	1
2	Web Site Update, Upgrade and Internet service	TIme	3
3	Basic/Refresher training on ICD-10 for medical recorders	TIme	1
4	HMIS RR tools printing and publication of DoHS Annual Report	Time	3
5	Training on Server Management, DHIS2, HMIS and Public Health Analytics	Time	3
6	Central Support/co-ordination visit for Provincial and Local Level review	Time	3

Management Division: (2) Infrastructure Development Section program activities:

S N	Activity	Unit	Target
1	Installation of CC TV in Management Division	Time	1
2	Maintenance of Physical Infrastructures of DoHS	Time	8
3	Management of non listed Spare parts for the maintenance of medical equipments	Time	3
4	Maintenance of Medical and Cold-chain equipments	Time	3
5	HR management (Biomedical Engineer & PHO) for PAM unit	Person	10
6	Monitoring Visits for the maintenance of Medical equipments from PAM Unit	Time	3
7	Integrated Supervision of Health Service programs	Time	200

Management Division: (3) Environment Health and Health Care Waste Management Section program activities:

S N	Activity	Unit	Target
1	Conduction of Activities related to Provincial and Local Level Government (LLG) through PPP Model	Time	3

Management Division: (4) Logistic Management Section program activities:

S N	Activity	Unit	Target
1	Reconstruction of Warehouse at Teku and Pathalaiya	Building	2
2	Construction of Vaccine Store at Teku	Building	1
3	Procurement and payment of due amount of Hospital Equipment	Times	3
4	Procurement of Cold Chain Equipments and Spare Parts	Times	3
5	Procurement of Single Cab Pick-Up Vehicles for Province	Number	7
6	Procurement of Rack, Pallets	Number	400
7	Procurement of Desktop, Laptop Computers	Number	50
8	Disposal/Auctions/Destroy of Expired, breakage, wastage health commodities	Times	3
9	Quality Assurance of Drugs and Equipments	Number	70
10	Repacking, Transportation and Redistribution of Drugs, Vaccines, Equipments	Times	600

S N	Activity	Unit	Target
11	Preparation and Publication of Tender Documents	Times	3
12	Printing of LMIS Forms and Stock Books	Times	1
13	Repair and maintenance of Vehicles, Biomedical equipments	Number	200
14	Capacity Building on Forecasting/Quantification and Warehousing for Province and Local Level Staffs	Times	1

National Tuberculosis Control Center program activities:

SN	Activities	Unit	Target
1	Procuremet of equipments for Cultrue DST lab expansion	Pieces	3
2	Procuremnet of GeneXpert machine	Pieces	18
3	Construction of Chest Hospital	person	60
4	Procuremnet of LPA machine	Pieces	2
5	PME workshop of NTP at national level	Times	3
7	Basic ZN MicroscpoyTraininng	Times	4
8	Procurement of N95 Mask and personelproctectionutilitise	Pieces	11044
9	Nutritional support to MDR patients	person	60
10	Cultrue DST lab Training	Times	1
11	Supply ofTB Drug to Medical Store and District	Times	3
12	Broadcasting of TB Related message by National level Television	Times	200
13	Revision of Guideline and Recording and Reporting form	Times	2
14	Active Case Finding Program	Times	3
15	Conditional grant to Kalimati Chest hospital	Times	3
16	Procurement of Consumable and Chemical and Regent for sputum Microscopy	Times	1
17	Procurement of Second Line Drug	Times	1
18	Procurement of Falcon Tube	Times	1
19	Extension of Warranty of GeneXpert Machine	Times	10
20	GeneXpert Management Training	Times	9
21	Income Generation Training to DRTB Patient	Times	1
22	Procurement of Digital Xray Film	Pieces	1200
23	Internet Installation to DR/GeneXpert Center	Institut	60
24	Procurement of First Line Drug TB	Times	1
25	Establishment of Quality Control Center in Province 2 and Province 5	Place	2
26	LQS Training to Lab Personnel	Times	4
27	Clinical Management Trainig to Medical Officer	Times	5
28	Procurement of Cartidge for GeneXpert Machine	Pieces	47000
29	Transportation ofTB Drug to Medical store and District Store	Times	20
30	Courier service for Culture /DST test	Times	5000
31	Supervision to TB Teatmet Center	Times	90
32	National PME workshop on TB Program	Times	2
33	Intraction with Stakeholder on TB Program	Times	10
34	DR TB Basic Training	Times	4

National AIDS and STI Control Center program activities:

SN	Activities	Unit	Target
1	Procurement of viral load machine, reagents and accessories	event	1
2	IBBS study among male labor migrants throughout the country	event	3
3	DHIS -2 tracker training to ART counselor	lot	2
4	Early warning indicator workshop for capacity building to ART counselor	lot	2
5	Procurement of HIV test kits	event	1
6	Procurement of the ART drugs	event	1
7	Procurement of STI/OIs drugs	event	1
8	Procurement of nutrition pitho	event	1
9	Procurement of the CD4 reagents	event	1
10	Capacity building training on HIV recording and reporting to ART counselor	lot	1
11	HIV guideline update and print	event	1
12	AIDS conference	event	1
13	PMTCT guideline update and print	event	1
14	STI syndromic case management training	lot	4
15	Training to medical officer on Hepatitis c	lot	1
16	CMT training manual print	event	1
17	DHIS-2 strengthening training	lot	1
18	AIDS day celebration	event	1
19	CMT training to MO, and ART counselor	lot	3
20	Meta analysis on MSM/TG	event	1
21	Meta analysis on PWIDs	event	1
22	Logistic data review	lot	1
23	PMTCT TOT	lot	3
24	Monitoring and supervision for HIV program	event	12

National Health Training Center program activities:

SN	Activities	Unit	Target
1	Anesthesia Assistant Training(HA,SN)	Person	10
2	Medico-legal training (Doctors)	Person	90
3	Induction Training for newly appointed health officers	Person	180
4	Palliative Care Training (Doctors, Nurses)	Person	64
5	X-ray user maintenance training	Person	10
6	Cold chain user maintenance	Person	10
7	ICU training (Nurse)	Person	30
8	CTS training	Person	32
9	Lab user maintenance training	Person	10
10	Review and refresher meeting of trainers of different trainings	Times	5
11	Skill development of trainers of clinical training and preparation of trainer's pool	Times	5

SN	Activities	Unit	Target
12	Training on online recording/reporting and TABUS for account staff	Person	100
13	Rural ultrasound training (SN)	Times	3
14	Pediatric nursing training (Nursing staff)	Person	70
15	Diploma training in Biomedical for 24 persons and continuation of FY 2071/072 for 24 persons	Person	48
16	Training on NCDs (PEN Package) for HW	Person	100
17	Gender Based Violence Training for Health Service Providers	Person	100
18	NICU management training	Person	50
19	Training Need Analysis	Times	7
20	Follow up Enhancement Program of SBA/FP/MLP	Times	7
21	ToT on mental health for MO/health service provider	Person	30
22	ToT Infection Prevention and control (HA/SN or high level clinical staff)	Person	30
23	Safe abortion care training (SN/ MO)	Person	40
24	Screening of pre- cancer/lesion VIA/CRAYO for HW training	Person	70
25	SBA training (Doctor/Nurse/ANM)	Person	100
26	OT Training (Nurse)	Person	40
27	ASBA Training for doctors	Person	16
28	ASRH Training	Person	90
29	Package Revision and Development	Times	6
30	Basic IUCD training (Nursing staff)	Person	32
31	Vasectomy Training (MO) 12+5 days	Person	50
32	Minilap Training (MO/SN) 12+5 days	Person	60
33	Implant Training (Nursing staff/Paramedics)	Person	100
34	CoFP and Counseling Training (FP service provider)	Person	48
35	NSV Self Placed Learning Approach	Person	10
36	PPIUCD Training (Nursing Staff)	Person	20

National Public Health Laboratory program activities:

SN	Activities	Unit	Target
1.	Procurement of realtime PCR machine for non communicable disease	number	1
2.	Building waiting room for patients and maintenance of building	time	1
3.	Procurement of server for blood transfusion centre and laboratory data storage use	number	1
4.	Procurement of fully automated biochemistry and haematology analyzer machine	number	2
5.	Procurement of machines for bacteriology molecular lab establishment	number	1
6.	Distribution of procured machines from FY 74/75 after application training	person	30
7.	Training on bacteriology service for lab technicians to provide bacteriology service in district hospital	person	20
8.	For quality control management in all laboratories and BTSCs in Nepal.	number	3
9.	Procurement of reagents for flowcytometry and cancer diagnosis	time	3
10.	Development of laboratory supervision and licensing software	time	1

SN	Activities	Unit	Target
11.	Laboratory Accreditation	time	1
12.	Barcode management for laboratory service reliability and security	number	3
13.	Transportation of equipments, tools, medicines, etc. to health post, district, zonal, regional and subregional hospitals	number	3
14.	Program for NPHL staff on Accreditation, biosafety and biosecurity	time	3
15.	One-week TOT training on specialization for province based laboratory staffs	person	14
16.	Providing diagnostic services during epidemic outbreak	time	3
17.	Operational expenses for National Bureau for Blood Transfusion Services to improve the blood transfusion service quality in Nepal	time	3
18.	To do research based activity and program on non-communicable diseases such as cancer, heart diseases, renal diseases, etc.	time	3
19.	To participate in international quality control program	time	3
20.	Procurement of reagents and kits for special discount groups such as disabled, elders, kidney dialysis patients, etc.	time	6000
21.	Procurement of kits for sickle cell anemia disease test	time	3
22.	Sickle cell surveillance management	time	3
23.	Supervision and monitoring of government laboratories, private laboratories and blood transfusion centres	time	600
24.	For Hepatitis B and C viral load testing	time	3

National Health Education Information and Communication Center program activities:

SN	Activities	Unit	Targets
1	Communication program for Control of risk factors of NCDs including tobacco control	times	12578
2	Health promotion program's national commitment message dissemination on Merobarsha pratibaddhata; swasthya prati jimmewar: samriddhiko aadhar	times	2250
3	Communication program and daily monitoring of newspaper about epidemic disease control and prevention.	times	4500
4	Broadcasting of Jeevan chakra and public health debate through NTV.	times	820
5	Airing of health messages and public health radio program through Radio Nepal	times	2032
6	Continuation and implementation of Health news desks	times	1
7	Conduction of health literacy campaign program	times	10
8	Dissemination of messages and information through popular online media	times	30
9	Publication of health related messages and notices through national newspapers	times	25
10	SMS, Apps and IVR services through information technology center	times	13800000
11	IEC/BCC material development technical assistance, coordination, supervision and template development and distribution in provincial and local level	times	1000

SN	Activities	Unit	Targets
12	Awareness communication program for FP, SM and neonatal health	times	50000
13	Awareness and orientation package development on anti-microbial resistance	times	7000
14	Communication programme on child health nutrition promotion	times	5000
15	Dissemination of public health messages through nepal television and radio nepal during epidemic outbreak and disaster.	times	865
16	Risk communication program during epidemic outbreak and disaster.	times	1000
17	Production and dissemination of maternal service communication program	times	100000
18	Health promotion brain death, kidney and organ donation related communication program with the coordination of organ transplant centre.	times	6000
19	Health awareness and communication program on mental health and birth defect	times	3000
20	Broadcasting of health messages and information through national private televisions	times	2300
21	Hiring of communication officer, secretariat assistant and driver for golden 1000 days promotion program.	times	3
22	Communication program for golden 1000 days promotion.	times	5000
23	Supervision and facilitation of health promotion program in provincial and local level	times	139


NEPAL
Administrative Division
CHINA
INDIA
KATHMANDU VALLEY
KATHMANDU
BHAKTAPUR
LALITPUR
HUMLA
DARCHULA
BAJHANG
BAITADI
BAJURA
DADELDHURA
DOTI
ACHHAM
KALIKOT
JUMLA
MUGU
DOLPA
MUSTANG
KANCHANPUR
KAILALI
DAILEKH
JAJARKOT
RUKUM_W
RUKUM_E
MANANG
SURKHET
SALYAN
MYAGDI
KASKI
GORKHA
BARDIYA
ROLPA
BAGLUNG
PARBAT
LAMJUNG
BANKE
PYUTHAN
GULMI
SYANGJA
TANAHU
DANG
ARGHAKHANCHI
PALPA
KAPILBASTU
RUPANDEHI
NAWALPARASI_E
CHITAWAN
NAWALPARASI_W
RASUWA
NUWAKOT
SINDHUPALCHOK
DOLAKHA
DHADING
KABHREPALANCHOK
RAMECHHAP
MAKAWANPUR
PARSA
SINDHULI
RAUTAHAT
BARA
SARLAHI
DHANUSHA
MAHOTTARI
SIRAHA
UDAYAPUR
SAPTARI
SUNSARI
MORANG
SANKHUWASABHA
TAPLEJUNG
SOLUKHUMBU
OKHALDHUNGA
BHOJPUR
KHOTANG
TERHATHUM
PANCHTHAR
DHANKUTA
ILAM
JHAPA
Legend
Boundary
International
Provincial
District
Province
Province - 1
Province - 2
Province - 3
Gandaki
Province - 5
Karnali
Sudur Pachhim
0
50
100 KM
80°0'0"E
81°40'0"E
83°20'0"E
85°0'0"E
86°40'0"E
88°20'0"E
30°0'0"N
28°20'0"N
26°40'0"N
N
S
E
W
Spatial Data Source: Department of Survey, Minbhavan
Map Produced by: IHIMS/MD, Department of Health Services,Teku