

Annual Report

**Department of Health Services
2076/77 (2019/20)**



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

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Hridayesh Tripathi

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Minister for Health and Population



नेपाल सरकार

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MESSAGE

The Government of Nepal, Ministry of Health and Population is committed to deliver the highest possible quality of health care to all Nepalese. The ministry is determined to translate the aspirations of the Constitution of Nepal 2072, National Health Policy 2071 and the Nepal Health Sector Strategy 2072-2077, in achieving Universal Health Coverage together with all stakeholders including private and public sector and external development partners. I am pleased to note that several outstanding achievements have been made in the health 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 Health Services (DoHS) is bringing out the annual report of fiscal year 2076/77 (2019/20), 26th 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 and up to date information with regards to resources, services provided, analytical trends and disease patterns in the country. Data on disease conditions 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.

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.

To conclude, I congratulate all involved in the preparation and publication of this Annual Report for their technical and financial co-operation.

Hridayesh Tripathi

Minister

Jestha, 2078

नवराज रावत
Navraj Rawat

मा. राज्यमन्त्री
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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 2076/77; 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 2076/77 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.

I am very happy and 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 express my sincere appreciation and thank 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 sector for their valuable contribution to the health sector.

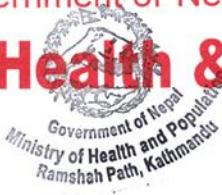
Mr. Navraj Rawat
Hon'ble State Minister
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PREFACE



It is my immeasurable pleasure to release the annual report of Department of Health Services (DoHS) for the fiscal year 2076/77. Health sector is one of the priority sectors of the Nepal government. I am very much delightful to know that major indicators of the health sector are progressing in the right direction, that is, towards the achievement of the targets of Sustainable Development Goals.

Nepal has been transformed into a federal state from a previous unitary system resulting in federal, provincial and local levels of governance. The health system has also been restructured in line with the federal structure. At this stage in the health sector there are challenges as well as opportunities for uplifting the health status of the Nepalese people. I am sure that the data presented in this annual report would role an important in planning and implementing evidence based program in the changed context.

This report would not have been possible if the lowest level of health cadres, FCHVs to the high-level policy makers had not performed their tasks with complete dedication and sincerity. I would like to thank more than 52,000 FCHVs, health professional at the local level, provincial level and federal level for their untiring efforts to bring improvements in the health status of the Nepalese people.

Strong collaboration between governmental and non-governmental sectors has played an instrumental role in achieving success in health in the past years. I hope this collaboration continues and the bond will only get stronger. The Ministry of Health and Population is committed to develop necessary policies strategies and guidelines to boost this coordination in the days to come.

To conclude, I would like to extend my sincere gratitude to all the stakeholders and development partners for their valuable contributions to the health sector. I hope this annual report will be a valuable resource for all the stakeholders to design and implement evidence based programs.

Mr. Laxman Aryal
Secretary
Ministry of Health and Population
Jestha, 2078



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FOREWORD



This is the 26th 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 fiscal years, as well as program issues that emerged during the fiscal year 2076/77. 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 2076 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 health 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 extend my appreciation to the Director of Management Division and in particular the staff of the Integrated Health Information Management Section for their meticulous effort to bring out this Annual Report.

Dr. Dipendra Raman Singh
Director General



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ACKNOWLEDGEMENT



It is my pleasure to bring forth coming of the 26th Annual Report of the Department of Health Services (DoHS) for the fiscal year 2076/77 (2019/20). 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. This imperative publication provides detailed statistical analysis of health program target verses achievement and indicators. 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.

I express my sincere gratitude to the Hon'ble Minister of Health and Population Mr. Hridayesh Tripathi for praiseworthy message. Furthermore, I would like to thank Hon'ble State Minister of Health and Population Mr. Navraj Raut for commendable messages and direction. I am also thankful to the Secretary of Ministry of Health and Population Mr. Laxman Aryal for his leadership of the overall health sector and providing a meaningful preface for the report. Similarly, I express my sincere gratitude towards Dr. Dipendra Raman Singh, Director General, DoHS for his leadership, future directions and thoughtful guidance.

I would like to thank the Mr. Anil Thapa, Director (Stat) of the Integrated Health Information Management Section (IHIMS) and his team members for their contribution in preparation and publication of this report. I also 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.

To conclude, I sincerely hope that this report will be of use in strengthening the health services in Nepal. I also hope that this report will provide valid information to all those, who work for enriching the health status of all citizens, particularly the poor and vulnerable group of the Nepali society.

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ACKNOWLEDGEMENT

It is a matter of great pleasure for me to release the Annual Report of the Department of Health Services (DoHS) for the fiscal year 2076/77 (2019/20). The report is being published regularly since the last 26 years. It is a comprehensive report covering all major activities and achievements of the DoHS along with other departments under the Ministry of Health and Population (MoHP). It also includes the contributions of external development partners, non-governmental organizations private sectors etc.

This report is the official record of the services provided and the achievements made within the last year in the health sector. This report provides information as per the federal structure of the country. The information included in this report will thus be instrumental for provincial and local level governments to understand the issues in the health sector and to plan for provision of high quality services to their constituents in the coming year. For researchers, academics and students, I hope that this report provides an opportunity to learn and innovate new approaches to improve the quality of health services in Nepal. This report can also serve as a tool to assess the areas where we were successful, so that interventions can be replicated and scaled up.

I express my sincere gratitude to the Hon'ble Minister of Health and Population Mr. Hridayesh Tripathi and Hon'ble State Minister of Health and Population Mr. Navraj Raut for commendable messages. I am also thankful to the respected Secretary of Ministry of Health and Population Mr. Laxman Aryal for providing a meaningful preface for the report. Similarly, I express my sincere gratitude towards Dr. Dipendra Raman Singh and Director General Dr. Bhim Singh Tinkari, Director of Management Division of DoHS for his leadership, future directions and thoughtful guidance for the preparation of report.

I also extend my thanks to the Directors of the different divisions, centres and section Chiefs for providing analytical reports. My colleagues working in the Integrated Health Information Management Section's Mr. Puspa Lal Shrestha, Mr Diwakar Sapkota, Mr. Bir Bahadur Rawal, Mr. Shiva Lal Sharma, Mr. Sameer Kumar Adhikari, Mr. Sushil Nepal, Mrs. Nabina Pradhananga, Mrs. Minu Adhikari Khanal, Mr. Naresh Kumar Yadav and Er. Pritesh Singh deserve special appreciation for their meticulous and hard work in bringing out this report. I feel indebted to all those who worked restlessly for recording, reporting, compiling, processing and analysing progress reports timely, without which this report publication would not have been possible.

I look forward to receive valuable suggestions for further perfection in the coming year's annual report.

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Jestha, 2078

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ABBREVIATIONS AND ACRONYMS

AEFI	Adverse event following immunization	FCHV	Female community health volunteer
AES	Acute encephalitis syndrome	FND	Foreign national doctor
APP	Acute flaccid paralysis	FSW	Female sex worker
AFS	Adolescent-friendly services	G2D	Grade 2 disability
AGE	Acute gastroenteritis	GBD	Global burden of disease
AIDS	Acquired immune-deficiency syndrome	GGBV	Geriatric and gender based violence
AMR	Antimicrobial resistance	GIS	Geographic information system
ANC	Antenatal care	GMP	Good manufacturing practice
API	Annual parasite incidence	HEOC	Health emergency operation centres
ARI	Acute respiratory infection	HFOMC	Health facility operation and management committee
ART	Antiretroviral therapy	HIB	Health insurance board
ARV	Anti rabies vaccine	HIP	Health insurance program
ARV	Anti-rabies vaccine and antiretroviral	HIV	Human immunodeficiency virus
ASBA	Advanced skilled birth attendant	HMC	Hospital management committee
ASRH	Adolescent sexual and reproductive health	HMSP	Hospital management strengthening program
ASVS	Anti snake venom serum	H-NAP	Health national adoption plan
BC	Birthing centre	HNCU	Special new-born care unit
BCC	Behaviour change communication	ICD	International classification of diseases
BMEAT	Biomedical equipment assistant training	ICT	immunochromatographic test
BMET	Biomedical equipment training	ICT	Information communication technology
bOPV	Bivalent oral polio vaccine	IDA	Iron deficiency anaemia
BTSC	Blood transfusion service centre	IDD	Iodine deficiency disorder
CBO	Community-based organisation	IEC	Information, education and communication
CCA	Critical capacity analysis	IFA	Supplementary iron folic acid
CCE	Comprehensive centres of excellence	IHIMS	Integrated health information management system
CDD	Control of diarrheal disease	IMAM	Integrated management of acute malnutrition
CEONC	Comprehensive emergency obstetric and neonatal care	IMCI	Integrated management of childhood illness programme
CHX	Chlorhexidine	IMIS	Insurance management information system
cMYPoA	Comprehensive multi-year plan of action	IMNCI	Integrated management of neonatal and childhood illness
CNR	Case notification rate	IPV	Inactivated polio vaccine
CoFP	Comprehensive family planning	IRS	Indoor residual spraying
CPA	Critical path analysis	ISMAC	Iodized salt social marketing campaign
CPR	Contraceptive prevalence rate	IUCD	Intrauterine contraceptive device
CRS	Congenital rubella syndrome	JE	Japanese encephalitis
CSD	Curative service division	LAMA	left against medical advice
CTEVT	Council for technical education and vocational training	LAPM	Long acting and permanent methods
DALYs	Disability Adjusted life years	LARC	Long acting reversible contraceptive
DAMA	Discharged against medical advice	LLIN	Long lasting insecticidal (bed) nets
DHF	Dengue haemorrhagic fever	LMIS	Logistics management Information System
DHIS	District health information system	LNOB	Leave no one behind
DOTS	Directly observed treatment short course	LTF	Lost to follow-up
DPT	Diphtheria, Pertussis, Tetanus	MA	Medical abortion
DQSA	Data quality self-assessment	MAM	Management of acute malnutrition
DSS	Dengue shock syndrome	MB	Multibacillary leprosy
EDP	External development partners	MCH	Maternal and child health
EHC	Extended hospital services	mCPR	Modern contraceptive prevalence rate
EHCS	Essential health care services	MCV	Measles-containing vaccine
EHR	Electronic hospital records	MD	Management Division
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		

MDA	Mass drug administration	PMTCT	Prevention of mother to child transmission
MDG	Millennium development goal	-PMTCT	Prevention of mother to children transmission
MDGP	Doctor of medicine in general practice	PNC	Postnatal care
MDIS	Malaria disease information system	POP	Pelvic organ prolapsed
MDR	Multi-drug resistant	PPH	Postpartum haemorrhage
MDT	Multi-drug therapy	PSBI	Possible severe bacterial infection
MDVP	Multi-dose vaccine vials	Pv	Plasmodium vivax
MIYCN	Maternal infant and young children nutrition programme	PWID	People who inject drugs
MNCH	Maternal newborn and child health	QI	Quality improvement
MNH	Maternal and newborn health	RDT	Rapid diagnostic tests
MNP	Micro-nutrient powder	RTI	Reproductive tract infection
MPDSR	Maternal and perinatal death surveillance and response	SARC	Short acting reversible contraceptive
MPDSR	Maternal prenatal death surveillance and response	SARI	Severe acute respiratory infection
MR	Measles/rubella	SBA	Skilled birth attendant/attendance
MSM	Men who have sex with men	SDNTC	Sahid Dharma Bhakta national transplant centre
MSNP	Multi-sector nutrition plan	SEIA	Social and environmental impact assessment
MSS	Minimum Service Standards	SHSDC	Social health security development committee
MVA	Manual vacuum aspiration	SRH	Sexual and reproductive health
NAHD	National adolescent health and development (strategy)	SS+	Smear positive
NAMS	National academy for medical sciences	STI	Sexually transmitted infections
NBoD	Nepal burden of disease	SUN	Scaling-up-nutrition
NCD	Non-communicable disease	SWAP	Sector wide approach
NCDR	New case detection rate	TABUCS	Transaction accounting and budget control system
NCP	Integrated management of newborn care programme	Td	Tetanus and diphtheria
NDHS	Nepal demographic and health survey	TIMS	Training information management system
NEQAS	National external quality assurance scheme	TSLC	Technical school leaving certificate
NHCP	National health communication policy	TT	Tetanus toxoid
NHSP-IP	Nepal health sector programme-implementation plan	TTI	Transfusion transmissible infection
NHSS	Nepal health sector strategy (2015-20),	UHC	Universal health coverage
NMICS	Nepal multiple indicator cluster survey	VA	Verbal autopsy and visual acuity
NML	National Medicines Laboratory	VAD	Vitamin A deficiency
NTP	National tuberculosis programme	VBDs	Vector borne diseases
OCMC	One stop crisis management centre	VBDTRC	Vector borne disease research and training centre
OPD	Outpatient	VPD	Vaccine-preventable disease
OPV	Oral polio vaccine	VSC	Voluntary surgical contraception
ORS	Oral rehydration solution	WASH	Water, sanitation and hygiene
OTTM	Operation theatre technique and management	WPV	Wild poliovirus
PAM	Physical assets management	WRA	Women of reproductive age
PB	Paucibacillary leprosy	YLDs	Years lived with disabilities
PBC	Pulmonary bacteriological confirmed	YLLs	Years of life lost
PCD	Pulmonary clinically diagnosed		
PCR	Polymerase chain reaction		
PCV	Pneumococcal conjugate vaccine		
PDR	Prenatal death review		
PEM	Protein energy malnutrition		
PEN	Package of essential non-communicable disease		
PEN	Package of essential non-communicable diseases		
Pf	<i>Plasmodium falciparum</i>		
PHC-ORC	Primary health care outreach clinics		
PLHIV	People living with HIV		

Department of Health Services
Trend of Health Service Coverage Fact Sheet
Fiscal year 2074/75 -2076/77 (2017/18 - 2019/20)

Programme Indicators	National			FY 2076/77 (2019/20) by Province						National Target	
	2074/75 (2017/18)	2075/76 (2018/19)	2076/77 (2019/20)	1	2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Paschim	2020
NUMBER OF HEALTH FACILITIES											
Public hospitals	125	125	134	20	12	34	16	22	146	14	
PHCCs	198	196	194	38	32	41	23	30	14	16	
HPs	3808	3806	3767	613	744	613	492	569	328	378	
Non-public facilities	1822	2168	2277	176	212	1450	132	182	67	58	
HEALTH FACILITIES & FCHVs REPORTING STATUS (%)											
Public facilities:											
Public hospitals	96	88	82	84	93	59	100	89	100	98	100
PHCCs	98	99	100	100	100	100	100	100	100	100	100
HPs	98	99	100	100	100	100	100	100	100	100	100
Non-public facilities:											
FCHVs	72	95	90	90	90	88	94	90	85	93	100
IMMUNIZATION PROGRAMME (%)											
BCG coverage	92	91	86	82	98	82	66	92	93	81	
DPT-HepB-Hib3 coverage	82	86	78	74	91	68	69	81	89	75	90
MR2 coverage (12-23 months)	66	73	71	72	66	61	75	80	78	75	
Fully Immunized children*	70	68	65	63	66	54	61	71	74	72	90
Dropout rate DPT-Hep B-Hib 1 vs 3 coverage	7.4	4.3	8.9	6.9	14.4	5.9	3.7	9.5	8.5	6.8	< 10 %
Pregnant women who received TD2 and TD2+	73	64	59	52	80	45	47	64	65	61	
NUTRITION PROGRAMME (%)											
Children aged 0-11 months registered for growth monitoring	84	84	77	72	74	66	84	83	106	79	100
Underweight children among new GM visits (0-11month)	3.6	3.0	2.5	1.3	4.3	1.5	0.7	2.5	4.1	2.7	
Children aged 12-23 months registered for growth monitoring	56	58	54	47	58	43	67	53	77	53	100
Underweight children among new GM visits (12-23month)	5.7	4.5	3.4	1.5	5.2	1.4	1.2	3.6	6.4	4.6	
Pregnant women who received 180 tablets of Iron	45	51	44	33	46	29	47	53	58	64	
Postpartum mothers who received vitamin A supplements	66	65	57	47	75	41	40	59	86	69	
INTEGRATED MANAGEMENT OF NEONATAL & CHILDHOOD ILLNESS (IMNCI) PROGRAMME STATUS											
Incidence of pneumonia among children U5 years (per 1000) (HF and PHC/ORC only)	54	50	43	51	31	30	27	43	99	61	
% of children U5 years with Pneumonia treated with antibiotics (HF and PHC/ORC	165	136	156	171	240	134	162	138	104	138	

Programme Indicators	National			FY 2076/77 (2019/20) by Province							National Target	
	2074/75 (2017/18)	2075/76 (2018/19)	2076/77 (2019/20)	1	2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Paschim	2020	2030
only)												
% of children U5 years with Pneumonia treated with antibiotics (Amoxicillin)	102	117	115	118	147	110	118	109	91	107	100	100
Incidence of diarrhea per 1,000 under five years children	385	375	350	329	355	220	249	350	656	553		
% of children under 5 with diarrhea treated with ORS and zinc	95	95	95	93	92	94	100	96	96	97	100	100
SAFE MOTHERHOOD PROGRAMME STATUS (%)												
Pregnant women who attended first ANC visit (any time)	103	110	107	108	122	108	87	100	130	90		
Pregnant women who attended four ANC visits as per protocol	50	56	53	57	40	49	55	61	66	56	70	90
Institutional deliveries *	54	63	66	63	54	68	47	81	78	72	70	90
Deliveries conducted by skilled birth attendant*	52	60	62	62	52	67	46	79	62.7	63	70	90
Mothers who had three PNC check-ups as per protocol*	16	16	19	15	13	17	13	22	29	34	50	90
FAMILY PLANNING PROGRAMME STATUS (%)												
Contraceptive prevalence rate (CPR-unadjusted)*	40.0	40	37	40	44	32	33	37	36	38	56	60
CPR (Spacing methods)	18	19	18	19	8	17	17	23	23	24		
FEMALE COMMUNITY HEALTH VOLUNTEERS PROGRAMME (FCHVs) STATUS												
Number of FCHVs	51420	51420	49481	8601	7521	8685	5760	8702	4244	5968	51423	51423
% of mothers' group meeting held	98	9581	81	94	81	79	78	76	73	83	100	100
COVID-19 OUTBREAK STATUS (date from 21 Magh 2076 to 31 Ashar 2077)												
Total COVID cases			17177	778	4416	839	1305	4093	1787	3959		
Total Recovered cases			11025	738	2512	364	931	3432	1463	1585		
Total Death cases			39	0	5	9	5	10	4	6		
Total RT-PCR Lab-test			298829	36947	16903	135072	18356	41526	35062	14963		
Total Isolation cases			6113	40	1899	466	369	651	320	2368		
People in Quarantine			24527									
Case Recovery Rate (CRR)			64.2	94.9	56.9	43.4	71.3	83.9	81.9	40.0		
Case Fatality Rate (CFR)			0.23	0.00	0.11	1.07	0.38	0.24	0.22	0.15		
MALARIA AND KALA-AZAR PROGRAMME												
Annual blood slide examination rate per 100	1.3	1.6	2.1	2.2	1.1	4.4	0.4	3.6	0.9	2.1	4.0	
Annual parasite incidence (API)	0.08	0.09	0.05	0.01	0.02	0.02	0.02	0.07	0.5	4.1	0.05	

Programme Indicators	National			FY 2076/77 (2019/20) by Province							National Target	
	2074/75 (2017/18)	2075/76 (2018/19)	2076/77 (2019/20)	1	2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Paschim	2020	2030
per 1,000 pop at risk												
% of PF among Malaria Positive case	7.1	5.4	9.1	26.7	15.6	32.4	8.7	6.4	5.9	6.6		
Number of new Kala-azar cases	239	216	186	23	15	16	3	45	48	36		
TUBERCULOSIS PROGRAMME												
Case notification rate (all forms of TB)/100,000 pop.	112	109	93	78	92	103	79	112	69	94	NA	NA
Treatment success rate	91	91	89	90	91	87	91	91	86	88	>90	>90
LEPROSY PROGRAMME												
New case detection rate (NCDR) per 100,000 pop	11	11	6.2	5.8	9.7	3.3	3.6	9.4	3.1	4.7	10	7
Prevalence rate (PR) per 10,000 pop	0.9	0.9	0.7	0.6	1.0	0.6	0.4	0.8	0.5	0.8	0.1	0.4
HIV/AIDS and STI PROGRAMME												
Number of new positive cases	2101	2298	2416	233	430	787	238	470	24	234		
HIV incidence rate	0.03	0.03	0.03								0.03	
Adult HIV prevalence	0.17	0.15	0.13								0.030	0.029
% of sex workers reporting Condom use by recent clients	77.3*											
% of TB patients had HIV test result	67	69									100	
CURATIVE SERVICES												
% of population utilizing outpatient (OPD) services	74	78	84	91	64	85	106	87	101	75		
% of Emergency attendances at hospitals	7.1	7.2	8.0	7.5	3.5	15.6	9.9	6.9	3.2	4.8		
% of population utilizing inpatients services at hospitals	4.3	4.5	4.5	5.8	2.5	7.5	4.6	4.8	2.4	1.0		
% of inpatients who referred in	5.7	4.8	5.6	9.4	4.1	1.5	1.0	12.5	1.9	10.7		
% of inpatients who referred out	1.5	3.9	1.3	1.2	1.1	0.8	1.7	1.6	2.8	4.7		
Bed occupancy rate	48	51	41	55	15	39	42	52	39	20		
Average length of stay at hospital	4	4	3	3	1	4	4	5	3	2		

Note: *NHSS RF and/or SDG indicators

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

Executive Summary

Introduction

The annual report of the Department of Health Services (DoHS) for fiscal year 2076/77 (2019/20) is the twenty-sixth 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 2076/77 were the 134 public hospitals including other ministries, the 2,277 non-public health facilities, the 194 primary health care centres (PHCCs) and the 3,767 health posts. Primary health care services were also provided by 11,589 Primary Health Care Outreach Clinic (PHCORG) sites. A total of 16,698 Expanded Programme of Immunization (EPI) clinics provided immunization services. These services were supported by 49,481 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:

Department of Drug Administration (DoA)

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.

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.

Department of Ayurveda and Alternative Medicine (DoAA)

The 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. Fifteen plan of government of Nepal (2019/20-2023/24) has guided planned development & expansion of Ayurveda, Naturopathy, Homeopathy & other alternative medicines.

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.

Programs under Department of Health Services:

National Immunization Program (NIP)

National Immunization Program (NIP) was started in 2034 BS and is a priority 1 program of Government of Nepal. It is one of the successful public health programs of Ministry of Health and Population, and has achieved several milestones contributing to the reduction in child morbidity and mortality associated with vaccine-preventable diseases. In July 2019 (FY 2076/77) Nepal along with Bangladesh, Bhutan, Nepal and Thailand become the first countries in WHO South-East Asia Region to achieve Hepatitis B control, with prevalence of the deadly disease dropping to less than one per cent among five-year-old children through immunization.

In FY 2076/77, Nepal became one of the few countries to complete its nation-wide vaccination campaign as well as introduce a new vaccine (Rota Virus Vaccine) in its routine immunization even during the COVID-19 pandemic. Rotavirus vaccine which is one of the major causes of child mortality was introduced in NIP on 02 July 2020 with GAVI support to combat diarrhoeal diseases due to rotavirus. This was integrated with hygiene promotion through routine immunization in NIP.

The nation-wide Measles Rubella Supplementary Immunization Activity (MRSIA vaccination campaign) for children above 9 months to under 5 years was conducted in FY 2076/77 in two phases: First phase was conducted in Province 1, Province 2 and Lumbini Province in the month of Falgun 2076 and Second phase in Province 3, Gandaki Province, Karnali Province and Sudurpashchim Province in the month of Chaitra 2076 extended till Ashad 2077 due to COVID-19 pandemic. One dose of bOPV vaccination during the MR SIA was given to under 5 years age children in selected 19 high-riskdistricts in Terai. The administrative national coverage achieved for MRSIA was 101% and for bOPV SIA, the coverage (in 19 selected districts) was 112%.

National administrative coverage of BCG is 86% which has decreased by 5 percentage points, DTP-HepB-Hib3 has decreased by 8 percentage points and OPV3 which has decreased by 7 percentage points in FY 2076/77 compared to the previous year. PCV 3 coverage is 78% which has decreased by 3 percentage points, whereas the coverage of MR1 is 80% which has decreased by 4 percentage points compared to 2075/76. MR2 coverage is 71% which has decreased by 2 percentage points compared to the previous FY 2075/76. For measles elimination, high coverage of both MR 1 and 2 are required ($\geq 95\%$). Therefore, coverage of both MR 1 and MR 2 is still not satisfactory. In FY 2076/77, the coverage of JE vaccine is 78% which has decreased by 3 percentage points compared to the previous year. The coverage of fIPV is 69% in FY 2076/77. There was sharp decline of all vaccination coverage due to COVID-19 pandemic and lockdown. Nevertheless, the program was able to bring back its monthly vaccination coverage at or above its pre-pandemic level before the end of FY 2076/77. However, the decline of vaccination coverage due to COVID-19 pandemic affected the overall annual vaccination coverage with decrease in coverage of almost all vaccine in the FY 2076/77.

For DPT-HepB-Hib3, MR1 and Td2/Td2+, Province 2 has reported the highest coverage, whereas for MR2, Lumbini Province has reported the highest coverage. Bagmati Province has reported relatively lower coverages for these four antigens and the reporting rate for immunization dataset in HMIS for Bagmati Province is the lowest (62.8%), which needs to be improved. The national dropout rates for BCG vs MR1 and DPT-HepB-Hib1 vs MR1 have decreased compared to previous year showing

improvement while DPT-HepB-Hib1 vs DPT-HepB-Hib3 has increased but all drop-out rates are within 10%.

During the FY 2076/77, Nepal was able to maintain the cardinal surveillance performance indicators for polio surveillance and measles-rubella surveillance which was above the global standards. The achieved Non-Polio Acute Flaccid Paralysis (NP AFP) rate was 3.17 and Non-Measles Non-Rubella (NMNR) rate was 3.78 for FY 2076/77.

Integrated Management of Neonatal and Childhood Illnesses

IMNCI is an integration of CB-IMCI and CB-NCP Programs as per the decision of MoHP on 2071/6/28 (October 14, 2015). 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.

In FY 2076/77, a total of 42,897 newborns cases were registered and treated at health facilities and PHC/ORC which is higher than that of previous FY by 13,788 cases. Province 1 had highest number of registered cases (7,945) with least in Gandaki province (2,787). Out of total registered cases in FY 2076/77, 9.89% cases were classified as Possible Severe Bacterial Infection (PSBI) which is slightly less than that of previous year (11.7%).

The proportion of PSBI was highest in Karnali Province (17.7 %) and least in Gandaki Province (6.9%). Among the total registered cases at the national level (HF and PHC-ORC level), 50.9 percent cases were classified as LBI, 3.4 percent as Jaundice, and 3.3 percent as Low Birth weight or Breast Feeding Problem. The proportion of LBI increases than that of previous year (from 43.7% to 50.9%) but the proportion of Jaundice and LBW decreased compared to last year. Among the total registered cases the proportion of LBI was highest in province 2 (61.4%) followed by Province 1 (57.1%) with the least in Lumbini Province (37.4%). Among total cases, 4.4% percent cases were referred and 0.26 percent were reported dead from health facilities and PHC-ORC level. 10,828 sick newborn were identified by FCHV. Among them 18.5% were treated with amoxicillin and referred. 936 newborn were identified dead by FCHV.

Total 10,13,002 cases of diarrhoea was identified by HF, ORC and FCHV in total where 3,14,909 were identified at HF and ORC whereas 6,98,093 were identified by FCHV on 2-59 months children. Likewise 20,13,891 2-59 children were estimated to have been prone to diarrhea. The incidence of diarrhoea was 350/1000 and the case fatality rate was 0.15/1000 under 5 children. 94.8 percent of diarrhoeal cases children were treated with zinc and ORS including HF, ORC and FCHV whereas 0.27 percent were given IV fluids.

Similarly, estimated 30,13,891 under 5 children were estimated to have been prone to ARI. Total 7,96,709 children were identified to have ARI in HF and ORC in FY 2076/77 which is 594/1000 under 5 years children. Among total ARI cases found in HF and ORC, 16.2 percent were identified having pneumonia whereas 0.22 have severe pneumonia. 156 percent of pneumonia cases were treated with antibiotic. 105 under five children died due to ARI in HF and ORC with case fatality rate of 0.13 per 1000. In FY 2076/77, 9,93,402 ARI cases were identified by FCHV.

The total of 92 falciparum and 439 non falciparum malaria cases, 922 measles cases, 90384 ear infection, 6,365 severe malnutrition and 3,768 anaemia cases were identified among under five children as per CBIMNCI protocol.

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 the FY 2076/77 the percentage of new-born with low birth weight (<2.5 kg) was 13 %. Nationally in these fiscal years average number of growth monitoring visit per child (0-23) months is 3.1. Sixty five percent of the children age 0-23 months were registered for growth monitoring. From these 2.8 % of the children were reported as underweight. During growth monitoring, 30% children were exclusively breastfed, 6-8 months registered for growth monitoring who receive solid, semi solid or soft foods was 30%.

Total 6567 children of 6 to 59 months with SAM admitted in outpatient therapeutic centers. Among all discharged SAM cases, 75 percent were recovered, less than 1 percent died and 24 percent were defaulter. Similarly, 1671 children were admitted in Nutrition Rehabilitation Home (NRH). Out of these children 836 were male 835 were female. Among these NRH children 1670 children were less than five years, 1 were more than or equal to five years. From these total discharge children were 1679. In context of micronutrient supplementation, the compliance of taking 180 IFA tablets throughout the pregnancy is 44 percent and post-partum women receiving IFA tablet is 31%. 56%. Average 33 percent of children aged 6 to 23 months had taken their first cycle of MNP in the programme districts. Households using adequately iodized is 95 percent. Vitamin A supplementation coverage is around 85% and deworming tablet distribution coverage is 85%. Likewise, coverage of school deworming is 15 percent for girls and 16 percent for boys.

Nutrition in emergencies (NiE)

In addition to the regular programme, Nutrition Section of Family Welfare Division (FWD) of DoHS/MoHP also provides essential and high-quality nutrition services in any types of emergencies. Nutrition cluster in Nepal is very active lead by the Nutrition Section Family Welfare Division (FWD) of Ministry of Health and Population (MoHP) co-leading with UNICEF. With the guidance of national nutrition cluster, provincial nutrition clusters are formed, capacitated and activated in 7 provinces (one in each province) led by concerned Provincial Health Directorates (PHD), and ongoing active mobilization for the management of Nutrition in emergency preparedness and response in COVID-19 context. NiE interventions focuses on the adolescent populations, pregnant and lactating women (PLWs) and children under five years of age as they are nutritionally the most vulnerable during any type of emergency. Under NiE, following five pillar 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.

(a) Nutrition in emergency preparedness for response:

In nutrition cluster have more than 30 members agencies including Government, UN, Donors, INGOs, local NGOs and professional expert organizations. After COVID-19 pandemic affected in Nepal, 29 nutrition cluster meeting held jointly with provincial nutrition clusters of 7 provinces. To strengthen the nutrition in emergency preparedness and response actions, nutrition cluster has formed, capacitated and activates 7 technical working groups (TWG) and TWG have been providing technical assistance on different aspects of nutrition in emergency preparedness and response actions:

- IYCF working group
- IMAM working group
- Micro-nutrient working group
- Information management working group
- Assessment working group
- BCC working group
- Nutrition in emergency preparedness and response planning TWG

In FY 2076/77, following preparedness actions were implemented:

Comprehensive nutrition specific interventions (CNSI) training has been ongoing throughout the country and CNSI has strong chapter for NiE which is a strong part of capacity building actions.

Formed, capacitated and activate nutrition clusters in all 7 provinces (one in each province)

Prepared/revised three nutrition in emergencies preparedness and response plan to address nutrition issues in COVID-19 context, monsoon, earthquake and cold wave situation.

Ongoing nutrition interventions tracking of each of the member agencies in each month so that status of nutrition interventions has been identified nationwide.

Updated the nutrition cluster roster and mobilizing the trained human resources in emergency.

Prepared and ongoing implementation of nutrition emergency preparedness and response plan in all 7 provinces to address nutrition issues in COVID-19 context and monsoon flood/landslides.

Prepositioned essential nutrition commodities indifferent 8 strategic locations such as Central Medical Store Pathalaiya, Bara and 7 medical stores of Provincial Health Logistic Management Center of all 7 provinces.

Nutrition cluster developed different 7 guidelines to initiate the nutrition response in COVID-19 context as; (i) Infant and Young Child Feeding (IYCF) interim guideline, (ii) Integrated Management of Acute Malnutrition (IMAM) interim guideline, (iii) Behavior change communication (BCC) guidance note, (iv) Blanket Supplementary Feeding (BSFP) interim guideline, (v) National Vitamin A campaign guideline, (vi) COVID Nutrition guideline with 8 menus targeting to COVID-19 infected people; (vii) NRH interim guideline, and (viii) guideline for nutrition information system (NiS).

(b) Nutrition in emergency response:

In the COVID-19 context, nutrition cluster mobilized to all cluster partners, health workers and FCHVs throughout the country. In this context, the following are the outcomes of nutrition cluster in 2067/077:

Treated 7,432 under five years children nationwide with severe acute malnutrition (SAM) from different 623 outpatient therapeutic centers located in different health facilities and 21 nutrition rehabilitation homes (NRH) located in different hospitals.

Provided Supercereal to 193,751 children aged 6-23 months and 283,410 pregnant and lactating women for the prevention of malnutrition.

Provided relief package of nutritious foods to 118,029 households nationwide

Reached 4,358,880 households nationwide with radio messages on nutrition and COVID-19 through 210 FM radio services nationwide.

Reached 2,845,917 households with IYCF messages through SMS services.

Reached 1,083,769 pregnant & lactating women with IYCF and maternal nutrition messages through SMS services.

Counselled 1,058,339 pregnant and lactating women on IYCF and maternal nutrition through telephone and home visits.

Safe Motherhood and Newborn Health

Family Welfare Division (FWD) has been implementing National Safe Motherhood Programme 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.

The percentage of pregnant women attending at least 4 ANC visits as per the protocol has increased from 50 percent in 2074/75 and 56 percent in 2075/76 to 56.5 percent in 2076/77. Institutional deliveries as percentage of expected live births have increased to 65.6 percent in 2076/77 from 55 and 63 percent in FY 2074/75 and FY 2075/76 respectively. The percent of institutional deliveries conducted through CS in the FY 2076/77 increased upto 20 percent as compared 18 percent in the FY2075/76. The percentage of births attended by SBA increased to 62.3 percent in FY 2076/77 from 60 percent FY 2075/76 and 52 percent from FY 2074/75. In FY 2075/2076, total 320 Municipalities of 33 districts while in FY 2076/2077, 528 Municipalities of 51 districts implemented onsite clinical coaching and mentoring program based on coaching/mentoring guideline and Tool. The proportion of mothers attending three PNC visits as per the protocol increased slightly from 16 percent in FY 2075/76 to 18.8 percent in FY 2076/77.

A total of 912 sites for MA, 604 sites for both MA and MVA and 22 sites for abortion in/after second trimester were listed to provide safe abortion services till the FY 2076/77. Similarly, a total of 1,833 ANMs for MA, 743 nurses and 1,853 doctors (MBBS) for MA/MVA and 92 OBGYN or MDGPs have been listed for in/after second trimester safe abortion services till the FY 2076 /77. The number of safe abortion service users has decreased notably in this FY in comparison to last FYS. Total 87869 women have received safe abortion services (Comprehensive Abortion Care) in FY 2076/77 while 95746 in 2075/76 and 98,640 in 2074/75 had received safe abortion service (Comprehensive abortion care). Among the total 87,869 women who had received safe abortion service, 60,338 women had received medical abortion whereas remaining 9,166 women had received surgical abortion in the FY 2076/77.

Family Planning and Reproductive Health

National family planning programme (FP) in 2076/77 experienced a downturn in uptake of family planning services both at National and Provincial. The modern contraceptive prevalence rate (adjusted mCPR) for modern FP at national level is 37%. Province 2 has the highest mCPR of 44% while Bagmati Province the lowest (32%). Nationally, current users (absolute numbers) of all modern methods have decreased by 61,229 in 2076/77 than in previous year. The number of districts with mCPR below 30% has decreased from 13 in 2075/76 to 12 in 2076/77 indicating performance improvement

among the low mCPR districts. The current users of permanent methods as percentage of MWRA are in decreasing trend while that of long acting reversible contraceptive (LARCs) is in increasing trend at National level as well in Provinces except Province 2 and Bagmati. Among the total VSC users, Female sterilization has the greatest share in Province 2, Province 1 and Lumbini. Compared to SARCs (short acting reversible contraceptives—pills and Depo), LARCs has low defaulter rate (IUCD-8%, Implant-11%). The defaulter rate of IUCD and implant is in decreasing trend.

Depo (39%) occupies the greatest part of the contraceptive method mix for all method new acceptors, followed by condom (23%), pills(21%), implant (12%), IUCD (2%), female sterilization (ML 2%) and lastly male sterilization (NSV 1%) in 2076/77. Nationally, new acceptors of all modern methods (absolute numbers) have decreased by approx. 78,000. Immediate Postpartum family planning uptake as proportion of total facility delivery in decreasing trend. Proportion of all postpartum contraceptives (IUCD, Implant, tubectomy) has decreased in 2076/77 compared to 2075/76. Contraceptive uptake among total reported abortion services is 73%, but only 15% have used 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. Nepal is one of the country in South Asia to endorse the first National Adolescent Health and Development (NAHD) Strategy in 2000 which was revised in 2018. Adolescents aged 10 to 19 constitute 24% (6.4 million) of the population in Nepal. The National ASRH program has been gradually scaled up to 74 of the 77 districts (Khotang, Chitawan, Tanahu not implemented in this three district) 1,331 health facilities till the end of current fiscal year 2076/77.

In Fiscal year 2076/76, ANC 1st checkup in women less than 20 years is highest in province 2, followed by province 1, Bagmati. Gandaki province remains the lowest in 1st antenatal checkups in age below 20 years women amongst all provinces. Likewise, the new acceptors for the modern method of family planning except condom is highest in Karnali where as Surdurbaschim remain lowest among women below 20 years of age. Among the contraceptive, depo (57.2%) remains the most preferred choice followed by pills (30.6%) among women below 20 years of age. The number of adolescents (<20 years) receiving the safe abortion services has decreased at National level and in all provinces except for Lumbini Province. Sudurpaschim Province has the lowest numbers of adolescents receiving safe abortion services in FY 2075/76 and 2076/77 compared to the other provinces.

High rates of child marriage, low contraceptive use among adolescent population and Lack of disaggregated ASRH data (by age/sex) and integration in HMIS still remains the strong challenges for the effective implementation of the ASRH program in the nation. However utilizing the minimum resources to the maximum capacity Adolescent friendly health listed health facility has been reached to 1,331 and certified sites are 104 nationwide ensuring rights of every adolescent to quality sexual and reproductive health rights through information counseling and health services with integration to the other sectors.

Primary Health Care Outreach Clinics

Based on the local needs PHC/ORCs are conducted every month at fixed locations of the VDC 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 2076/77, 2.1 million people were served from 143,761 outreach clinics. A total of 143,761 clinics were run which represents 76% of the targeted number. There has been slight decrease in

conduction of PHC-ORC Clinics and an average 16 clients were served per day per outreach clinic. This reduction in PHC-ORC conduction and clients served may be largely attributed to the effects of COVID-19 pandemic.

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”. For assessing the risk areas, program has been conducting micro-stratification on annual basis.

Total positive cases of malaria slightly decreased from 1065 in 2075/76 to 619 in 2076/77 to, where 102 cases are indigenous cases and 517 are imported. The trend of indigenous is decreasing trend however, the number of imported cases is still high. As compared to the previous year, the proportion of P. falciparum infections has increased from 5.4% in FY 2075/76 to 9.05 in 2076/77. This proportion is high which is 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 malaria cases and major indicators for malaria program;Test positivity rate (TPR), Annual Parasite Incidence Rate (API) and Annual Blood Examination Rate (ABER) are in positive trend. In addition, pf and pv malaria cases also decreasing year by year, mainly due to increased coverage of RDT, microscopic laboratory service at peripheral level, active surveillance, coverage of vector control measures (LLINs& IRS) in high and moderate areas and increased socio-economic status of community people.

Kala-azar

Kala-azar is one of the high priority public health problems of Nepal. Most of the districts have been 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 2076/77, there has been slight decrease in reported cases (187 Kala-azar cases) compared to previous year (216).

Lymphatic filariasis

Lymphatic (LF) is a public health problem in Nepal. The goal of lymphatic filariasis is the people of Nepal no longer suffer from lymphatic filariasis. As of 2076/77 MDA has been(stopped) in 50 districts. Post MDA surveillance initiated in 50 districts and morbidity management is partially in all epidemic districts. All epidemic districts completed the six rounds of MDA in 2018. The LF elimination program has also indirectly contributed to strengthening of health system through training and capacity building activities. The transmission assessment survey in 13 districts in 2019 is found that the prevalence of infection had significantly decreased. Since 2003 more than 110 million doses of lymphatic filariasis drugs have been administered to at-risk population. A total number of 9,568 Hydrocele surgeries have been performed since 2073/74 to till 2076/77.

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 hemorrhagic 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. During FY 2076/77, 10,808 dengue cases were reported from 55 districts. The majority of cases have been reported from Chitwan (2,612), Kaski (2,221)Rupandehi (1,386)and Kathmandu (1,220).

Leprosy

During the FY 2076/77 (2019/20), total number of 1853 new leprosy cases were detected and put under Multi Drug Therapy (MDT). 2044 cases were under treatment and receiving MDT at the end of the fiscal year. Registered prevalence rate of 0.69 cases per 10,000 populations at national level, 101 (5.45%) new leprosy cases of Grade 2 Disability (G2D), 141 (7.61%) new child leprosy cases and 770 (41.55%) new female leprosy cases were recorded. The low prevalence rate of leprosy might be due to COVID-19 pandemic but early and active case detection activities, verification and validation of records/reports of local health facility level/municipalities and capacity building of health workers are mandatory and need to be amplified to obtain the goal of Zero Leprosy Nepal.

Health related Rehabilitation and disability management

During the FY 2076/77(2019/20), the rehabilitation situation assessment was conducted to assess the context of rehabilitation services in Nepal. This was done following the national, provincial and local level consultations with the stakeholder of rehabilitation. Disability inclusive COVID-19 prevention related IEC materials were developed and disseminated using social media and national level media outlets. Likewise, to guide the essential rehabilitation services during the COVID-19 pandemic and to facilitate the rehabilitative management of COVID-19, two interim guidelines were developed. Aligned with the policy commitments of MoHP, a rehabilitation module for HMIS was developed in collaboration with Management Division.

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 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 zoonosis is the is the goal of zoonosis program. Around 30,000 cases in pets and more than human rabies cases occur each year with highest risk are in the terai. During the fiscal year 2076/77, 52,610 dog and other animal bites cases have been reported throughout the Nepal and cases of snake-bites cases have been reported. Among cases 4,203 were non-poisonous and 878 were poisonous

Tuberculosis

Tuberculosis (TB) remains a major public problem in Nepal. During this FY 2076/77, the total of 27,745cases of TB were notified and registered at NTP. Among these, 98% (27,232) were incident TB cases (New and Relapse). Among all form of TB cases 68 %were pulmonary TB, and out of them, 80 % were bacteriologically confirmed. Province 3 holds the highest proportion of TB cases (24%). Kathmandu district alone holds around 42% (2,772 TB cases) of the TB cases notified from the province 3 while its

contribution is around 10% in the national total. In terms of eco-terrain distribution, Terai belt reported more than half of cases (16,264, 59%) .Most cases were reported in the productive age group (highest of 47% in 15-44 year of age).The childhood TB is around 6 % Out of total registered TB cases, there were 10253 (37%) female and 17492 (63%) male.

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 117000 (416/100,000) while the number of all forms of incidence cases (newly notified cases) is estimated at 68,000 (245/100,000).

Case notification rate (CNR) of all forms of TB is 93/100,000 whereas CNR for incident TB cases (new and relapse) is 91/100,000 population. Among drugs sensitive TB cases registered in Fiscal Year 2075/76, 89% were treated successfully.

There are estimated around 1500 cases of DR TB annually. However, 350 to 450 MDR TB cases are notified annually. In Fiscal Year 2076/77, 384 RR/MDR-TB cases were registered for treatment. Among them, 78 cases (20%) were on treatment at DRTB retreatment centers of province 1, 74 cases (19%) at province 2, 67 cases (17%) at Bagmati province, 35 cases (9%) at Gandaki province, 75 cases (20%) at Lumbini Province, 4 Cases (1%) at Karnali Province and remaining 51 cases (13%) were on DR treatment at Sudurpaschim province respectively.

TB services were provided through 4,945 treatment centers. Regarding diagnostic services, there are 765 Microscopic centers and 72 GeneXpert centers throughout the country. DRTB services were provided through 21 treatment centers and 81 Treatment Sub-centers. Though the DRTB services are ambulatory, facility-based services were also provided through 2 TB treatment and referral management center5 hostels and 1 DR home

HIV/AIDS AND STI

Making up 4.2% of the total estimated people living with HIV (PLHIV) (30,301), there are about estimated 1,268 children aged up to 14 years who are living with HIV in Nepal in 2020, while the adults aged 15 years and above account for 95.8%. Almost 71.5% of total estimated infections (20,137) among population aged 15-49 years. By sex, males account for 54% of the total infections and the remaining more than one-third (46%) of infections are in females. The prevalence of HIV among 15-49 years of age group is 0.12% in 2020. Total 19,211 PLHIV are on ART treatment by the end of FY 2076/77.

Non Communicable Diseases

Non-communicable Diseases (NCDs) are emerging as the leading cause of deaths in Nepal due to changes in social determinants like unhealthy lifestyles, urbanization, demographic and economic transitions. The deaths due to NCDs (cardiovascular, 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 Multi-sectoral Action Plan for prevention and control of NCDs (2014-2020).

Mental Health

Mental health and substance abuse recognized as one of the 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 and harmful use of alcohol". Nepal has high burden of mental illness but there are limited interventions to address the epidemic of mental diseases

Surveillance and Research

Disease surveillance and research is an integral part of Epidemiology and Disease Control Division. The mission of the communicable disease 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 2075/76, an additional 36 sentinel sites were established as a EWARS sentinel sites to include 118 medical colleges and non-public hospitals. DHIS2 event captureis initiated for reporting from sentinel sites.

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.

Curative Service

Curative Service Division (CSD) is one of five divisions under Department of Health Services (DoHS).The overall purpose of this division is to look after curative health service activities throughout the country. According to the institutional framework of the DoHS and MoHP, the health post (from an institutional perspective) is the first contact point for curative services. 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.

Minimum Service Standards (MSS) health facilities are 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 hospitals to enable working environment for providers and provide resources for quality health service provision. MSS has implemented in 100 different levels of hospitals all over the country. Which include continuation of MSS follow up in 83 hospitals and program was expanded in the 17 additional hospitals .

Nursing Capacity Development

The main responsibility of this section is to facilitate in the process of development of plans, policies, strategies and programmes for strengthening various specialties of nursing and midwifery services as well as work as focal point for nursing, midwifery services and school health programme in the country.

In FY 2076/77, guideline of school health and nursing service was developed. Based on it, the programme was implemented in 13 local levels where 120 school nurses were deployed in 120 schools in province 2, Gandaki, Lumbini, Karnali and Sudurpaschim province.

A total of thirteen (13) CPD modules were developed and implemented in two central hospitals (Bheri Hospital and National Trauma Center) through which seventy five(75) nurses were updated in all thirteen (13) CPD modules.

A total of three clinical nursing protocols (Chemotherapy Preparation and Administration, Fistula Puncture and Hemodialysis and Ventilator care) were developed and distributed in all public and private hospitals. Training package on Infection Prevention and Control was developed based on blended learning approach.

In regards to the Clinical audit programme, action plan was developed and implemented in National Trauma Center in which audit was done in five major areas: patient satisfaction, waste management, Infection Prevention and Control (hand Hygiene, donning and doffing of gloves) and surgical safety respectively.

Also the policy dialogue programme was conducted at three provinces, province 1, province 2 and Gandaki Province, in order to strengthen the nursing and midwifery services at provincial levels, explore the potential areas of investment in nursing and midwifery sector from provinces and also to reflect nursing and midwifery as major intervention area in health policies of provinces.

In Fiscal Year 2076/77, rapid assessment of nurses working in safe-motherhood area was done in order to develop the bridging course to train registered nurses into professional midwives. Also the guideline for deployment of professional midwives in the hospitals was developed.

Job description of health workers (of seven groups and 21 posts) having their placement mainly in the clinical areas were developed.

Geriatric Services and Gender Based Violence Management

The main function of this section is to develop policies, strategies, directories, programmes, etc. for the easy access of quality health services to target groups like ultra-poor people; poor people; helpless people; people with disabilities; senior citizens; women, men and children, victims of gender based violence and female community health volunteers. The Ministry of Health and Population has established geriatric wards in 16 referral hospitals for providing free and comprehensive services for elderly people.

The numbers of One Stop Crisis Management Centres have been increased from seven in FY 2068/69 (2011/12) to 69 by the end of FY 2076/77 (2019/20) established in 64 districts and it has been planned to scale up the service to all 77 districts by next fiscal year. A total of eight thousand three hundred forty two (8342) were provided various services from the 64 reporting OCMCs. Women make over 90 percent of all the clients. Thirty nine percent of the cases receiving care have been victim of rape and sexual assault and thirty six percent of the clients have been victim of physical assault.

Also guideline for regulating home based health care has been developed in which older people with chronic health problems are the major service consumers.

Bipanna Nagarik Aushadhi Upachar Programme

The Impoverished Citizens Service Scheme of Social Health Security Section provides the funding for impoverished Nepalese citizens to treat serious health conditions. The provisions for free medication and treatment of severe type of diseases namely Cancer, Heart Disease, Kidney Disease, Traumatic Head Injury, Traumatic Spinal Injury, Alzheimer's diseases, Parkinson's and Sickle Cell Anemia. In FY

2076/77, fifty four thousand eight hundred and eighty six (54,886) number of patients were managed in the provision of free treatment to impoverished citizens services scheme. Top most number of patients from Cancer (34,667), followed by Kidney (7487), Heart disease (5761), Sickle Cell Anemia (3803), Traumatic Spinal Injury (1856), Traumatic Head Injury (840) and from Parkinson's diseases (364) and Alzheimer's diseases were 117 which was lowest in number under the provision of free treatment to impoverished citizens services scheme.

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 49481 FCHVs actively working all over the country. FCHVs contributed significantly in the following activities namely; 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. Even though the number of mothers participating in health mother's group meetings, FCHVs distributing Iron tablets, condoms and pills have increased from the FY 2074/75 in FY 2075/76, the number have slightly decreased in FY 2076/77 due to COVID 19 pandemic and various restriction in place. FCHVs continued the support to mothers with home deliveries by initiating skin to skin contact after birth to 64,835 women, applied chlorhexidine to 55,552 newborns and ensure the use of misoprostol in 10869 women. FCHVs also have provided various nutrition service like breast feeding initiation within one hour of birth to 67337 newborns and also distributed postpartum vitamin A to 127520 mothers in total. They have been providing IMAM services at household level by doing MUAC screening of 27, 43,870 children under the age of 5 years.

FCHVs also helped in various national campaigns like Vitamin A and deworming, the community based management and treatment of acute respiratory infections and control of diarrheal diseases, community nutrition programmes and other public health activities. They were also involved in raising awareness against transmission of COVID 19, in contract tracing and isolation and quarantine of suspects in the community.

Inpatients/OPD services

In the fiscal year 2076/77, 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 2076/77, 84% of the total population received outpatients (OPD) services. 1,212,294 patients were admitted for hospital services and 1,566,318 patients received emergency services from hospitals.

Health Training

The National Health Training Centre is the central 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 of Nepali Citizens. National health training network co-ordinates seven Provincial Health Training Centers and 49 hospital-based clinical training sites throughout the country.

Vector Borne Disease Research & Training

The objective of Vector Borne Disease Research and Training Center is 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, Zica, Westnly diseases, Lymphatic filariasis, Scrub typhus and Japanese encephalitis. In the FY 2076/77, VBDS trainings for physicians/ pediatrician, VBDs focal persons/health workers, malaria microscopic refresher trainings for lab technicians and lab assistants were conducted to enhance their level of knowledge and skills related with prevalent vector borne diseases.

In this fiscal year, study conducted by this center include VBD's landscape analysis, factors associated with transmission of Dengue Virus, susceptibility test on *Anopheles fluviatilis* with Alphacypermethrin in Dhanusha, Mahottari and Sindhuli districts, the CDC bottle bioassay on *Anopheles annularis*with Lambda-cyhalothrin in Nawalpur district and entomological surveys of dengue vector in BharatpurMeropolitan, Chitawanand Hetauda submetropolitan, Makawanpur district.

Health, Education, Information and Communication

National Health Education, Information and Communication Centre (NHEICC)is responsible for 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 under ministry of health and population.

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, mental health, birth defect, organ donation 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 logistics 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 formed a 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 an apex body that assists MoHP for preparing medical laboratory related policy, legislation and guidelines, Support and regulates laboratory services with activities i.e. licensing, supervision, monitoring and quality assurance of laboratories as well as it is also the national authority for implementing the National Blood Programme (NBP) in the country.

In the fiscal year 2076/077, major public health related activities were carried out from NPHL are 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). It has also conducting routine and specialized diagnostic services including services of referral laboratory for communicable and non-communicable diseases, decreasing outsourcing of tests. It has improved the test result qualities by implementing automated reporting system i.e. Laboratory Information System (LIS) to minimize the human errors. National External Quality Assessment Scheme (NEQAS) ran and functioned since 1997 by NPHL for proficiency test panel for biochemical, haematological tests and grams strain are prepared and dispatched to participating laboratories within the country, in addition to this NPHL also participated in international External Quality Assessment Scheme (IEQAS) for overall improvement of quality of tests result. It supports and regulates blood transfusion service as well as organized various workshops on planning, capacity building and conduction of various training etc. for overall development and management of public health laboratories with introduction of latest technology.

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.

Financial Management

The preparation of annual budgets, the timely disbursement of funds, accounting, reporting, and auditing are the main financial management functions needed to support the implementation of health programs. Finance Administration Section is the focal point for financial management for all DoHS programs. Out of total National Budget of Rs. 15,32,96,71,00,000.00 a sum of Rs. 42,67,09,00,000.00 (2.78%) was allocated for the health sector during the fiscal year 2076/77. Of the total health sector budget, Rs. 9,32,20,00,000.00 (21.84%) was allocated for the execution of programs under the Department of Health Services.

Monitoring and Evaluation

Monitoring and evaluation plays the significant role for operative and persuasive execution of plans, policies, programmes and projects. Recognizing the need for a methodical, simplified, result-driven, reliable, and effective monitoring and evaluation system, Nepal Health Sector Strategy (NHSS) 2015-2020 directed to improve access and operation of the health information with the use of Information Communication Technology (ICT). It also emphasize for better and interoperable routine health information systems, prioritizes surveys and research. Correspondingly, it endeavors for improved and integrated health sector reviews at different levels that feed into the planning and budgeting process. Towards achieving Universal Health Coverage (UHC) and Leave No One behind (LNOB), the NHSS and Sustainable Development Goals (SDGs) place an emphasis on monitoring and reducing the equity gap in the health outcomes of different population sub-groups. The details can be obtained from result framework of National Health Sector Strategy 2015-2020.

Eye care

Nepal's eye care programme is run by Nepal Netra Jyoti Sangh and is a successful example of an NGO-run eye care programme. The prevalence of blindness in Nepal has reduced at the current time. In the fiscal year 2076/77, Despite COVID-19 pandemic which created unprecedented situation, the Eye Care System of Nepal has been able to deliver the following major achievements in 2020:

Able to provide eye treatment services to 2,197,671 patients, out of which, 226,833 (10%) were foreigners. A total of 55,536 (29,128 men and 26,408 women) people services were covered through national health insurance scheme.

The subspecialty eye care services were delivered to 29,024 patients

Able to provide eye care services to 585,590 people through different community outreach programs

Able to provide surgical services 166,492 people (including 6,554 surgeries in camps). The majority of the eye surgeries comprised of cataract (101,921 -61%)

Human Organ Transplant services

Shahid Dharma Bhakta National Transplant Center (SDNTC) was established in 2012 by the Ministry of Health and Population (MoHP) to strengthen and expand organ transplantation services in the country. This center started its services merely with the OPD services, but within a few years of its establishment, it has extended its services beyond organ transplantation.

In the fiscal year 2076/77 there were total OPDs- 22691, Admitted cases 1039, total Major OTs including Lapcholecystectomy, PCNL, URSL, Nephrectomy, TURBT/TURP performed -218, Minor OTs including AV Fistula, DJ Stent performed -488, Kidney Transplant performed -49, Liver Transplant performed- 1, Coronary Angiography done- 34, Hemodialysis Services provided, Free- 18,478 & Paid- 2,042 and Total CAPD cases provided -15, lab tests done 85801, ultrasound tests and X-ray and CT were 1915, 2032 and 583 respectively. ECG did 1593. The echocardiograph were 900 followed by 290 endoscopy and colonoscopy. The total number of BCM done 137 and that of ABG were 102, Kidney Biopsy done were 82. Total Physiotherapy services provided were 470 patients.

Medico-legal Services

Constitution of Nepal 2072 in its 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 Tortureguarantees and in violation of such fundamental rights there are provisions of proper remedy or compensation. There are other articles like article 42 Right to social justice, article 44 Right of consumers which are partially or completely related with medico-legal field for their proper implementation in real life of

people. For effective application of above constitutional rights, medico-legal sector in Nepal must be addressed and prioritized.

Time has compelled to recognize medico-legal field and it is shown by other way with spontaneous appearance of more than four dozen 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.

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.

Health Insurance

The Health Insurance Program (HIP) is a social security program of the Government of Nepal that aims to enable its citizens to access 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. It is a family-based program. Family has to pay the contribution amount to enroll in the program. Currently enrollment is voluntary. The households, communities, and employees of the government organizations also can be involved in this program. This program attempts to address barriers in health service utilization and ensure equity and access to poor and disadvantaged groups as a means to achieve Universal Health Coverage.

The total coverage of the Health insurance program is approximately 11.92 Percent out of the total population of Nepal. Among the total insures about 1,120,259 people have taken health services from listed health institutions in FY 2076/77.

Development Partners Support in Health Programs

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. In the current sector programme, 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). UK Aid and GAVI are also disbursing part of their commitments against some DLRs identified and agreed with the MoHP. During the second half of the Fiscal Year 2019/2020, Development Partners reprioritized some of their programmes to support the MoHP in its response to COVID-19 impact.

National Health Policy, 2076

1) Background

The constitution of Nepal has established basic health care as a fundamental right of its citizens. As the country moves to federal governance system, it is the responsibility of the state to ensure the access to quality health services for all citizens based on contextual norms of federal system. This National Health Policy, 2019 has been formulated based on the lists of exclusive and concurrent powers and functions of federal, state and local levels as per the constitution. Also amalgamated with reference to the policies and programmes of the Government of Nepal; the international commitments made by Nepal at different times; and the problems, challenges, available resources and evidences in the health sector.

2) Review

With the establishment of *Singhadarbar Vaidyakhana* in the seventeenth century, Ayurveda treatment system was initiated in Nepal. Institutional development of modern medical system started in Nepal with the establishment of *Bir Hospital* in 1889. The planned development in the health sector began with the start of periodic planning in 1956. The first 15-year long-term health plan was introduced in 1975 and the second 20-year long-term health plan, in 1997.

After the political change in 1990, to address the aspirations of people, the National Health Policy 1991 was introduced. Under this policy, sub-health posts in all erstwhile village development committees, health posts in all areas (the then Ilakas - administrative unit) and one primary health centre in each electoral constituency were established in order to expand primary health services to the village level. The policy also promoted structural development and expansion, and involvement of private sectors to invest in the health sector. Similarly, the National Health Policy, 2014 stressed on participatory free basic health services in line with the spirit of the interim constitution of Nepal, 2007.

Begun with the International Conference on Primary Health Care Alma-Ata in 1978, the global campaign on primary health services has been reinforced by the Millennium Development Goals and the Sustainable Development Goals. These international commitments have contributed to the development and expansion of Nepal's health system. Similarly, Nepal expressed its commitment to the global campaign of expanding people's access to quality primary health care in the Global Conference on Primary Health Care that took place in Astana, Kazakhstan in October 2018 to review the achievements of Alma-Ata Conference.

3) Current Situation

Local and state governments have also started delivering social services including health services after the implementation of federalism in Nepal. Although the central government expanded a network of primary health care throughout the country so far, there are still needs to enhance the quality of services, to classify services, to distribute skilled technical human resources, to add new service centers and to improve their quality as per the expectations of people. Most of the private sector hospitals are concentrated in urban areas and there is a need of collaboration in monitoring and regulating them. Human resources required for almost all levels of health care are being produced within the country with the investment of public and private sectors. However, there is again a need of quality assessment and regulation in the production of human resources since they are the foundation of quality health services. Around 40 percent of drugs required for the county is being supplied internally. Since there is no difference between the prices of domestically produced and imported drugs, it is necessary to technically regulate and scientifically monitor the production, distribution and management of drugs. Similarly, numerous super-specialized treatment facilities relating to eye, heart, kidney, neurology, orthopedic, organ transplant, plastic surgery and cancer

have been established in Nepal. International partnership is essential for development and expansion of modern technology in diagnostic and laboratory services for those treatments.

Owing to effective continuation of public health activities, maternal and newborn tetanus, leprosy and trachoma have been eradicated. Similarly, the major health problems seen in the past such as kala ajar, filariasis, malaria, tuberculosis, HIV, measles, whooping cough, diphtheria, Japanese encephalitis, diarrhea, respiratory infections, typhoid are being controlled and the morbidity is decreasing. Public health activities need to be made more effective and sustained to improve maternal health, child and newborn health.

Several regulatory bodies (Medical Council, Nursing Council, Pharmacy Council, Health Professional Council, Ayurvedic Medical Council and National Health Research Council) have been active in ensuring quality of and regulating production of human resources, health services, and health researches. It is essential to develop such regulatory bodies and make them more effective.

With the increase in public awareness and expectations about health and treatment services, it is essential to make such services accountable to the people and develop and expand health institutions, hospitals and health science academies in a contemporary manner. For this, it is necessary to make partnerships with supporting countries, donor agencies and international organizations transparent and responsive to people.

Similarly, it is essential to collaborate and coordinate with concerned agencies to control and regulate environmental pollutions such as air pollution, sound pollution, food pollution, water pollution, which have been directly or indirectly affecting public health and causing chronic diseases like cancer. It is imperative to develop quality control methods to test, monitor and regulate the effects of agricultural produces, food grains and consumable goods on human health.

4) Problems, Challenges and Opportunities

4.1. Problems

Main problems in promoting and availing quality health services at all levels include: inability to ensure consistent access to quality health services as expected by the people; inability to develop services and human resources accountable to public health and services; no proportionate return from investment in the health services; unavailability of necessary modern equipment and specialized doctors in public health institutions; prevalence of health problems related to communicable and non-communicable diseases, malnutrition, accidents and disasters; and increase in the burden of non-communicable diseases and mental health problems generated from globalization and changes in food habits and lifestyles.

The other problems include imbalance between the production and use of human resources in health services; humanitarian health problems stemmed from increased food insecurity and natural disasters; increase in the incidences of antimicrobial resistance due to inappropriate use of antibiotics; slow pace of decrease in maternal mortality ratio; absence of adequate nutrition in more than one-third of children of 0-5 age and women of reproductive age; and absence of reasonable partnership with and effective regulation of the private sector in community level health services.

4.2. Challenges

The challenges in health sector include ensuring equal access of all citizens to all health sectors; providing free, quality basic health services through all local levels; providing health services with priority to ultra-poor and vulnerable citizens; reducing the existing high level of out of pocket expenditure for health care; ensuring the required financial resources; establishing and operating health institutions in line with the federal system; effectively implementing health insurance policy; making the health sector responsible towards human health by transforming it from profit-

orientation to service-orientation; managing skilled human resources with a blend of skills in health services and social responsibility in the health sector; becoming self-reliant on drugs production; solving health problems associated with climate change, urbanization and changes in lifestyles; managing and regulating medicines and medical products effectively; increasing the use of data in monitoring, evaluation, review, policy making and decision making processes by making the health management information system more effective, integrated and technology-friendly to address the needs of all levels; developing a system to record the causes of deaths and continually conducting researches on them; and to maintain good governance in overall health and nutrition sectors by means of conforming quality health services and regulation.

4.3. Opportunities

The existing opportunities in health sector include sharing of responsibilities in health services among the federal, state and local levels as per the constitution; implementation of health insurance through policies and laws; operation of health programmes funded by state and local governments; increase in the availability of new information technologies, drugs and equipment; development of infrastructure and continuous increase in public awareness; expansion of health network up to the community level; stress of current health policies and programmes on management and quality; use of statistics in policy making and decision making processes and prioritisation of health services by all levels of the government.

5) Relevance, Guiding Principles, Vision, Mission, Goal and Objectives

5.1. Relevance

In order to address existing problems and challenges and to ensure the constitutional rights of citizens to quality health services, it is relevant to amend existing health policy, strategies and programmes and formulate a National Health Policy in accordance with the federal context. It is indispensable to continue existing health services and to sustain their achievements as well as to guide the development and expansion of health service infrastructure as per the federal context, given mandates and responsibilities. This policy is also imperative to address the national and international commitments made by Nepal and to achieve the Sustainable Development Goals while safeguarding the achievements of Millennium Development Goals.

5.2. Guiding Principles

In order to ensure constitutional rights of citizens to health services through a federal health system and to ensure universal access to quality health services, this policy has been formulated on the basis of the following guiding principles:

- a. Universal access to, continuous availability of, transparency and comprehensiveness in quality health services;
- b. Multi-sectoral involvement, collaboration and partnership in health system in accordance with the federal structure;
- c. Special health services targeted to ultra marginalised, Dalit and indigenous communities;
- d. Good health governance and assurance of adequate financial investments;
- e. Diversification of equitable health insurance;
- f. Restructuring in the health services;
- g. Health and multi-sectoral coordination and collaboration in all policies;
- h. Professionalism, honesty and occupational ethics in health service delivery.

5.3. Vision

Healthy, alert and conscious citizens oriented to happy life.

5.4. Mission

To ensure the fundamental health rights of citizens through optimum and effective use of resources, collaboration and partnerships.

5.5. Goal

To develop and expand a health system for all citizens in the federal structure based on social justice and good governance and ensure access to and utilisation of quality health services.

5.6. Objectives

- 5.6.1. To create opportunities for all citizens to use their constitutional rights to health;
- 5.6.2. To develop, expand and improve all types of health systems as per the federal structure;
- 5.6.3. To improve the quality of health services delivered by health institutions of all levels and to ensure easy access to those services;
- 5.6.4. To strengthen social health protection system by integrating the most marginalised sections;
- 5.6.5. To promote multi-sectoral partnership and collaboration between governmental, non-governmental and private sectors and to promote community involvement; and
- 5.6.6. To transform the health sector from profit-orientation to service-orientation.

6) Policies

- 6.1. Free basic health services shall be ensured from health institutions of all levels as specified;
- 6.2. Specialised services shall be made easily accessible through health insurance;
- 6.3. Access to basic emergency health services shall be ensured for all citizens;
- 6.4. Health system shall be restructured, improved, developed and expanded at federal, state and local levels as per the federal structure;
- 6.5. In accordance with the concept of universal health coverage, promotional, preventive, curative, rehabilitative and palliative services shall be developed and expanded in an integrated manner;
- 6.6. Collaboration and partnerships among governmental, non-governmental and private sectors shall be promoted, managed and regulated in the health sector and private, internal and external investments in health education, services and researches shall be encouraged and protected;
- 6.7. Ayurveda, naturopathy, Yoga and homeopathy shall be developed and expanded in an integrated way;
- 6.8. In order to make health services accessible, effective and qualitative, skilled health human resources shall be developed and expanded according to the size of population, topography and federal structure, hence managing health services;
- 6.9. Structures of Health Professional Councils shall be developed, expanded and improved to make health services provided by individuals and institutions effective, accountable and qualitative;

- 6.10. Domestic production of quality drugs and technological health materials shall be promoted and their access and proper utilisation shall be ensured through regulation and management of efficient production, supply, storage and distribution;
- 6.11. Integrated preparedness and response measures shall be adopted to combat communicable diseases, insect-borne and animal-borne diseases, problems related with climate change, other diseases, epidemics and disasters;
- 6.12. Individuals, families, societies and concerned agencies shall be made responsible for prevention and control of non-communicable diseases and integrated health system shall be developed and expanded;
- 6.13. In order to improve nutritional situation, adulterated and harmful foods shall be discouraged and promotion, production, use and access to qualitative and healthy foods shall be expanded;
- 6.14. Health researches shall be made of international standards and the findings and facts of such reports shall be effectively used in policy formulation, planning and health system development;
- 6.15. The health management information system shall be made modern, qualitative and technology-friendly and integrated health information system shall be developed;
- 6.16. Right to information related to health and right of a beneficiary to know about the treatment shall be ensured;
- 6.17. Mental health, oral, eye, ENT (ear, nose and throat) health services shall be developed and expanded;
- 6.18. Quality of health services provided by all health institutions including hospitals shall be ensured;
- 6.19. Good governance and improvement shall be ensured in policy-related, institutional and managerial structures in the health sector through timely amendments;
- 6.20. In accordance with the concept of health across the lifecycle, health services around safe motherhood, child health, adolescence and reproductive health, adult and senior citizen shall be developed and expanded;
- 6.21. Necessary financial resources and special fund shall be arranged for sustainable development of the health sector;
- 6.22. Urbanisation, internal and external migration shall be managed and public health problems associated with such phenomena shall be resolved;
- 6.23. Demographic statistics shall be managed, researched and analysed to link them with the policy decisions and programme designing;
- 6.24. Antimicrobial resistance shall be reduced, one-door health policy shall be developed and expanded for the control and management of communicable diseases, environmental pollution such as air pollution, sound pollution and water pollution shall be scientifically regulated and controlled;
- 6.25. Necessary arrangements shall be made to reduce the risks of immigration process on public health and to provide health protection to Nepalese staying abroad.

Strategies for each policy

- 6.1. Free basic health services shall be ensured from health institutions of all levels as specified;**
- 6.1.1. Basic health services shall be provided by health institutions free of cost.
 - 6.1.2. The government of Nepal shall arrange resources and provide basic health services to people through the local levels. The state and local governments may include additional services to the specified ones as per the need. However, expenditures for such additional services shall be borne by concerned governments.
 - 6.1.3. Necessary policy, legal and institutional arrangements shall be made by state and local governments to make basic health services effective.
- 6.2. Specialised services shall be made easily accessible through health insurance;**
- 6.2.1. Treatment services that are not included in the basic health services shall be strengthened and integrated into the insurance system.
 - 6.2.2. Based on the principles of social justice, poor and prioritised target groups shall be linked with the state-subsidised health insurance system.
 - 6.2.3. Formal sectors shall be compulsorily brought into the health insurance system and ultimately, all citizens shall be covered by the health insurance system.
 - 6.2.4. The access of poor people to special health services specified by the state shall be gradually ensured.
- 6.3. Access to basic emergency health services shall be ensured for all citizens;**
- 6.3.1. Specified emergency health services shall be regularly provided through health institutions of all levels including basic health service centres and primary hospitals. Two-way referral system shall also be arranged.
 - 6.3.2. Targeting possible road accidents in the main highways, trauma service centres shall be built and made operational for immediate treatment services.
 - 6.3.3. At least one ambulance with minimum facilities shall be arranged for each local level and ambulance services with specified standards, classification and modern technologies shall be arranged.
 - 6.3.4. Air ambulance shall be arranged with specified norms to rescue people from ultra-remote areas with critical health conditions.
 - 6.3.5. Emergency treatment fund shall be arranged and mobilised as specified in the guidelines.
 - 6.3.6. In order to make the quality of emergency treatment at par with the international standards, training for doctors, nurses and other health workers shall be given compulsory life support training.
- 6.4. Health system shall be restructured, improved, developed and expanded at federal, state and local levels as per the federal structure;**
- 6.4.1. Existing structure of the health sector shall be amended as per the need and necessary structures shall be established including National Disease Control Centre for disease control, epidemic control and research.
 - 6.4.2. Necessary legal and institutional arrangements shall be made to strengthen the health system in line with the federal structure.

- 6.4.3. Hospitals and health institutions, health services and human resources at the federal, state and local levels shall be developed and expanded in accordance with the demographic distribution, geographic situation and needs. Basic health service centres shall be established under each ward of the local levels, primary hospitals under each local level, secondary hospitals and provincial hospitals under the state level and super specialized hospitals under the federal level shall be established. Similarly, at least one tertiary hospital and one health science academy in each state under the federal government shall be established.
 - 6.4.4. Two-way referral system from community level to the super specialized service providers shall be effectively implemented to make the treatment service more systematic.
 - 6.4.5. E-health shall be institutionalized and modern technologies such as mobile health, telemedicine shall be developed, expanded and regulated. Health services, health education, medical services and health systems shall be digitalized.
 - 6.4.6. Diagnostic services shall be made modern and technology-friendly and the national public health laboratory shall be strengthened to the international standards. A reference laboratory and a diagnostic centre shall be established in each state.
 - 6.4.7. In order to improve the quality of health services provided by all governmental, non-governmental, community and private health institutions, Nepal health infrastructure development standards and minimum service standards shall be implemented. Similarly, specified standards for non-governmental, community and private health institutions shall also be gradually implemented.
 - 6.4.8. Partnership, collaboration between governmental and non-governmental sectors and community participation shall be promoted and blood transfusion services shall be institutionally developed and expanded to all state and primary hospitals.
 - 6.4.9. With public-private partnership and through volunteer blood donors, availability of safe blood and blood-related items shall be ensured.
 - 6.4.10. Human organ transplant, organ donation services and organ donation of brain-dead persons shall be managed, developed and expanded.
 - 6.4.11. Medico-legal services shall be developed and expanded to all states and primary hospitals.
 - 6.4.12. Home health service, school health service and health services provided by various institutions shall be managed and regulated.
 - 6.4.13. Relevant modern technology shall be used or modernized to make health services qualitative and cost-effective
- 6.5. In accordance with the concept of universal health coverage, promotional, preventive, curative, rehabilitative and palliative services shall be developed and expanded in an integrated manner;**
- 6.5.1. People's responsibility to keep themselves healthy and healthy lifestyle shall be promoted through health awareness programmes.
 - 6.5.2. In coordination with the education sector, school health programme and health awareness campaigns shall be gradually expanded to higher secondary schools ensuring the availability of at least one health personnel in each school.
 - 6.5.3. Contemporary vaccination services shall be adopted depending on prevalence of disease and cost-effectiveness. Right of target groups to receive vaccination shall be ensured and compulsory vaccination shall be implemented.

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- 6.5.4. In order to promptly identify health hazards among various population groups, regular health check-ups shall be arranged.
 - 6.5.5. Universal and equitable access to health services shall be ensured with priority to population of various age groups, genders, classes and regions.
 - 6.5.6. Private and non-governmental organisations shall be promoted to establish rehabilitative and palliative service centres with physiotherapy services at federal, state and local levels.
 - 6.5.7. In order to address local health needs and behaviours, the production, broadcasting and dissemination of health-related messages and materials shall be made scientific, managed, effective and regulated.
 - 6.5.8. Surveillance system shall be implemented on environment, sanitation, drinking water and food items, etc. in coordination with concerned stakeholders.
 - 6.5.9. Standards, mechanisms and level-wise mandates for public health impact assessment of specified industries, professions or projects shall be determined to identify, prevent and minimize their adverse effects on public health.
 - 6.5.10. In order to address social determinants of health, multi-sectoral partnership and cooperation among various state mechanisms shall be made more effective. Inclusion of policies from other sectors in the health policies and plans shall be encouraged and advocated for.
- 6.6. *Collaboration and partnerships among governmental, non-governmental and private sectors shall be promoted, managed and regulated in the health sector and private, internal and external investments in health education, services and researches shall be encouraged and protected;***
- 6.6.1. Partnerships with private and non-governmental organisations shall be done based on specified parameters to ensure health and treatment facilities for targeted groups and areas.
 - 6.6.2. Professionalism, efficiency, entrepreneurship, technical skills and financial resources of the private sector shall be utilised for the development and expansion of health services, and social responsibility shall also be promoted.
 - 6.6.3. Parameters for approval of hospitals shall be equal and practical for governmental, non-governmental or private sectors. Similarly, private hospitals shall be encouraged to open outside the Kathmandu valley and in rural communities. Regular reports from hospitals and health institutions on their services shall be made mandatory and effective monitoring and regulation shall be put in place.
 - 6.6.4. In order to ensure access of quality health services to all, fees shall be determined depending on the classified facilities of treatment and health services provided by all levels and types of hospitals and health institutions.
 - 6.6.5. Health tourism shall be promoted by developing specialized and super-specialized health services and through partnership between the governmental, private and non-governmental sectors.
 - 6.6.6. Volunteerism in health services shall be promoted and female health volunteers shall be mobilized and managed through local levels.
- 6.7. *Ayurveda, naturopathy, Yoga and homeopathy shall be developed and expanded in an integrated way;***
- 6.7.1. In line with the federal structure, level-wise institutions related with Ayurvedic healthcare shall be systematically developed and expanded.
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- 6.7.2. Other healthcare systems, such as Yoga and naturopathy, homeopathy, Unani, acupuncture shall be developed and expanded as per the federal structure.
 - 6.7.3. Locally available medicinal herbs, minerals and animal substances shall be identified, conserved, collected and promoted. Those items shall be used in scientific researches on Ayurvedic healthcare and self-reliance shall be promoted.
 - 6.7.4. Existing and traditional healthcare systems shall be enlisted, managed and regulated as per specified parameters.
 - 6.7.5. A national Ayurveda, Yoga and Panchakarma Centre with specialized services such as Ayurveda, Panchakarma, Yoga and naturopathy shall be established to support health tourism and such initiatives shall be gradually expanded as per the federal structure.
 - 6.7.6. Ayurveda health science academy and Ayurveda university shall be established and studies, treatment and researches shall be carried out on Ayurveda science and naturopathy system.
- 6.8. In order to make health services accessible, effective and qualitative, skilled health human resources shall be developed and expanded according to the size of population, topography and federal structure, hence managing health services;**
- 6.8.1. Necessary health human resources shall be obtained, developed and utilised based on short-term and long-term plans for the federal structure.
 - 6.8.2. In collaboration with concerned agencies, integrated national curriculum shall be developed to produce necessary health human resources at all levels.
 - 6.8.3. The concept of 'one doctor/health professional - one health institution', in which a doctor or a health professional stays only in one government health institution, shall be gradually implemented in all government health institutions. In order to make it more effective and to expand access to health services, extended hospital services shall be implemented in government hospitals with financial and other incentives.
 - 6.8.4. In order to ensure availability of basic health services in all basic health centres at all wards, integrated treatment services shall be implemented which shall include primary treatment for emergencies, primary lab services and other basic services.
 - 6.8.5. An MDGP doctor and necessary posts shall be created and arranged for emergency treatment, lab, pharmacy, nursing and public health services shall be availed at the primary hospitals of all local levels.
 - 6.8.6. Clear pathways and opportunities for the professional growth of health human resources through higher education, in-service training, continuous professional training, professional development shall be put in place and professional researches shall be encouraged and promoted.
 - 6.8.7. Arrangements shall be made for the production of specialized human resources required for contemporary genres of quality health services (e.g. midwife, hospital management, medical leadership, health economics, etc.).
 - 6.8.8. An umbrella act shall be formulated and implemented for the development and expansion of health science academies. The concept of teaching district shall be implemented throughout the country.
 - 6.8.9. Information technology-friendly documentation of health institutions and human resources of all levels and types shall be maintained and updated.

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- 6.9. Structures of Health Professional Councils shall be developed, expanded and improved to make health services provided by individuals and institutions effective, accountable and qualitative;**
- 6.9.1. An integrated umbrella act for health-related professional councils shall be implemented and expanded to the state levels.
- 6.9.2. Institutional and technical capacity of health-related councils shall be increased.
- 6.9.3. Code of conduct shall be enforced to make the service providers professional and accountable to the health of beneficiaries.
- 6.9.4. Performance based pay and incentives shall be arranged to make the health professionals responsible to their work and services.
- 6.10. Domestic production of quality drugs and technological health materials shall be promoted and their access and proper utilisation shall be ensured through regulation and management of efficient production, supply, storage and distribution;**
- 6.10.1. Mechanisms shall be developed as per the federal structure to determine price and quality of drugs, equipment and technological health materials and to regulate them. Generic prescription and hospital pharmacies with skilled technicians shall be implemented.
- 6.10.2. National production of essential drugs and technological health materials shall be encouraged and self-reliance shall be increased.
- 6.10.3. Medicines and food items management divisions shall be set up at the federal Heath Ministry and the Ministry of Social Development at the state level as per the food security policy and drugs quality and price control policy. National standards for domestically produced and imported drugs and medical supplies shall be prepared to ensure their quality.
- 6.10.4. Procurement, transportation, quality storage and distribution system shall be made more effective and systematic by preparing specifications of drugs and medical supplies.
- 6.10.5. Guidelines and standards shall be developed to receive and utilise medicines, equipment, medical supplies as per the need from international, national and local government, non-government and private entities.
- 6.10.6. National medical surveillance shall be extended to all levels and made effective to manage import and export of drugs.
- 6.10.7. Surveillance and research shall be strengthened to address antimicrobial resistance and preventive and control measures shall be applied in coordination with livestock, agriculture and food sectors.
- 6.10.8. Effective regulation shall be put in place to ensure quality of Ayurvedic medicines and herbal products.
- 6.11. Integrated preparedness and response measures shall be adopted to combat communicable diseases, insect-borne and animal-borne diseases, problems related with climate change, other diseases, epidemics and disasters;**
- 6.11.1. Effective programmes shall be implemented for study, researches, surveillance, prevention, control, elimination and eradication of communicable diseases including tuberculosis, HIV/AIDS and malaria.
- 6.11.2. Notification system for classified diseases shall be developed and implemented.
- 6.11.3. Capacity and mechanisms shall be developed at federal, state and local levels to gradually prevent, eliminate and eradicate diseases as per the International Health Regulations, 2005.
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- 6.11.4. Environment and health-friendly technologies shall be encouraged; state and local levels shall be made responsible for proper management, regulation and continuous monitoring of waste and medical garbage produced by hospitals, health institutions and laboratories.
 - 6.11.5. Coordination and advocacy shall be done to promote domestic and community waste management and environment cleanliness.
 - 6.11.6. Programmes to minimize climate change-induced health problems shall be revised and developed in collaboration and coordination with stakeholders.
 - 6.11.7. Mechanisms shall be set up at all levels to immediately address disasters and epidemics; their capacity development, response plans, preparedness and mobile hospital services shall be arranged.
 - 6.11.8. Citizen and community participation and contribution in overall health services including in disaster management, risk reduction and health promotion shall be encouraged.
- 6.12. Individuals, families, societies and concerned agencies shall be made responsible for prevention and control of non-communicable diseases and integrated health system shall be developed and expanded;**
- 6.12.1. Programmes to promote healthy life style shall be developed and extended through health institutions of all levels.
 - 6.12.2. Multi-sectoral coordination with institutions related with drinking water, environmental cleanliness, food security, education and so on shall be strengthened to promote health.
 - 6.12.3. Multi-sectoral partnership shall be implemented and necessary standards shall be developed and implemented to reduce adverse effects and risks caused from enterprises and to make workplace secure and healthy.
 - 6.12.4. Proper systems shall be developed to prevent and treat hereditary diseases.
 - 6.12.5. Processed and readymade food items that are harmful to human health shall be discouraged and use of hazardous chemicals, pesticides, adulteration during the production, storage, processing and sales shall be controlled and regulated.
 - 6.12.6. Use of stimulating drugs and alcohol shall be discouraged through multi-sectoral coordination and sales, spread and use of tobacco products shall be effectively regulated.
 - 6.12.7. Promotional programmes and structural arrangements shall be implemented to prevent road accidents and other disasters (fire, lightning strike, etc.).
 - 6.12.8. Coordination and advocacy with concerned stakeholders shall be done for construction of cycle lane, public parks, etc. to promote healthy lifestyle and to reduce adverse effects of environmental pollutions and development works on public health.
- 6.13. In order to improve nutritional situation, adulterated and harmful foods shall be discouraged and promotion, production, use and access to qualitative and healthy foods shall be expanded;**
- 6.13.1. Multi-sectoral nutrition policy and programmes including food security shall be updated and implemented with priority.
 - 6.13.2. In order to improve micronutrient situation of women, children and people of different age groups, food diversification and balanced diet shall be emphasised and short-term, medium-term and long-term measures at all levels shall be adopted.
 - 6.13.3. School health programme and nutrition education programmes shall be strengthened, developed and implemented.

6.13.4. Consumption of nutritious and healthy food items shall be promoted and domestic production shall be encouraged.

6.14. Health researches shall be made of international standards and the findings and facts of such reports shall be effectively used in policy formulation, planning and health system development;

6.14.1. Institutional structure, capacity and scope of Nepal Health Research Council shall be updated, developed and expanded to federal structures and made as per international standards.

6.14.2. Capacity of all levels shall be developed in health researches; and health researchers and technical human resources shall be motivated to researches in coordination with academic and educational institutions.

6.14.3. Results of health research conducted by all sectors and entities shall be integrated and those facts, reports and conclusions shall be used in formulation of policies and plans and health system development and expansion.

6.14.4. Books, knowledge, skills on indigenous medicinal herbs, minerals, animal substances, Ayurveda and traditional healthcare shall be researched and recorded, protected and promoted as intellectual property.

6.15. The health management information system shall be made modern, qualitative and technology-friendly and integrated health information system shall be developed;

6.15.1. Health management information systems of all levels as per federal structure shall be developed and managed in an integrated manner.

6.15.2. Health management information system shall be made integrated, technology-friendly, contemporary and regular and capacity of all levels shall be enhanced to use the information.

6.15.3. The facts and information obtained from health management information system, researches, surveys and surveillance shall be used in monitoring, evaluation, policy formulation, programme development and decision making processes at various levels.

6.15.4. Security of health information shall be ensured and health information of beneficiaries shall be maintained in e-recording system.

6.15.5. Existing surveillance system in the health sector shall be strengthened and an integrated surveillance system shall be developed and implemented.

6.16. Right to information related to health and right of a beneficiary to know about the treatment shall be ensured;

6.16.1. The service providers shall be made responsible in health information flow, health institutions shall be developed as information-friendly and the rights of beneficiaries to informed consent, privacy and information shall be ensured.

6.16.2. Communication materials that may directly or indirectly have adverse effects on people's health and on society shall be discouraged and regulated.

6.17. Mental health, oral, eye, ENT (ear, nose and throat) health services shall be developed and expanded;

6.17.1. Primary treatment of eyes shall be integrated into basic health services.

- 6.17.2. Eye health services shall be developed and expanded with public-private partnership and an eye health unit shall be set up in the federal Ministry of Health for coordination, partnership and regulation.
- 6.17.3. Oral health services and control and treatment of dental diseases shall be developed and expanded at all levels including basic health centres.
- 6.17.4. Ear, nose, throat treatment services shall be developed and expanded to all levels.
- 6.17.5. People's access to mental health and psychosocial services shall be ensured through primary hospitals by promoting transfer of knowledge and skills, service-oriented skills and special training.
- 6.17.6. Other specialized health services shall be developed and expanded as per needs.

6.18. Quality of health services provided by all health institutions including hospitals shall be ensured;

- 6.18.1. In order to ensure quality of health services, a regulatory mechanism (accreditation entity) shall be established and developed at the federal level.
- 6.18.2. Minimum service standards for health institutions of all levels shall be developed and implemented after necessary amendments.
- 6.18.3. Guidelines, quality standards and standard treatment (treatment protocol) shall be developed and amended for the provision of quality health services.
- 6.18.4. Quality testing guidelines for health materials including vaccines, medicines, medical equipment, biological reagents and health products from production to distribution shall be developed, updated and implemented.
- 6.18.5. Medical and managerial audit of health institutions shall be carried out and the quality of services and institutional capacity shall be strengthened.
- 6.18.6. Necessary standards for effective management of health services that use radiation shall be prepared and implemented.

6.19. Good governance and improvement shall be ensured in policy-related, institutional and managerial structures in the health sector through timely amendments;

- 6.19.1. Health governance procedures shall be developed and implemented to make health services transparent, accountable and responsive.
- 6.19.2. Necessary mechanisms shall be developed and used to address grievances, complaints and suggestions of beneficiaries.
- 6.19.3. Provisions of existing laws shall be amended and implemented for the security of health service providing individuals and institutions.
- 6.19.4. Integrated monitoring and evaluation framework shall be developed, updated and implemented to assess the health services and management of health institutions of all levels.
- 6.19.5. Public hearing and social audits shall be arranged about the health services provided by all health institutions.
- 6.19.6. Institutional capacity shall be improved for effective management of health services at all levels.
- 6.19.7. In view of community cultures, the health services shall be made beneficiary-friendly and consumer rights shall be ensured.

6.20. In accordance with the concept of health across the lifecycle, health services around safe motherhood, child health, adolescence and reproductive health, adult and senior citizen shall be developed and expanded;

- 6.20.1. Safe motherhood and reproductive health services shall be made of good quality, affordable and accessible.
- 6.20.2. Health services targeted to vulnerable age groups such as maternal-infant health, child health, adolescent health, adult health and geriatric health shall be strengthened and professional midwifery and nursing services shall be expanded.
- 6.20.3. In view of social determinants that affect women's health, special programmes shall be implemented in coordination with concerned stakeholders.
- 6.20.4. In order to strengthen safer motherhood and reproductive health, skilled birth attendants shall be arranged in all wards.
- 6.20.5. Abortion services shall be made qualitative and effective as per the law.
- 6.20.6. Health services related with infertility shall be gradually extended to the state levels.

6.21. Necessary financial resources and special fund shall be arranged for sustainable development of the health sector;

- 6.21.1. Integrated health finance strategy shall be formulated and implemented to ensure equitable access of all to health services, to reduce out of pocket expenditure on health and to mobilise financial resources in the health sector in a cost-effective manner.
- 6.21.2. State expenditure on health shall be gradually increased and the burden of expenditure for individuals shall be reduced.
- 6.21.3. National health accounts with analytical details of overall income, expenditure, distribution and use of resources in the health sector shall be annually published and used in the preparation of policies, programmes and plans.
- 6.21.4. Maximum portion of revenue generated from tobacco and alcohol products shall be used in public health promotion programmes.
- 6.21.5. Economic support received from international development partners shall be mobilised based on results, priority and with avoidance of duplication.
- 6.21.6. Federal Ministry of Health shall arrange a special fund for remote, rural and marginalized communities. State and local governments shall add some amounts in the fund and conduct outreach clinics and integrated basic health mobile services.

6.22. Urbanisation, internal and external migration shall be managed and public health problems associated with such phenomena shall be resolved;

- 6.22.1. Demographic information shall be analysed to prepare plans for overall development, to formulate projects and to develop programmes.
- 6.22.2. A system to examine the cause of deaths shall be developed and linked with the vital registration system.
- 6.22.3. External and internal migration and urbanisation shall be effectively managed. Measures to minimise the effects of such phenomena in public health shall be adopted.
- 6.22.4. Guidelines shall be prepared and implemented to ensure health security of citizens going for foreign employment.

6.23. Demographic statistics shall be managed, researched and analysed to link them with the policy decisions and programme designing;

- 6.23.1. Actual demographic data with age distribution shall be updated through the ward level health institutions and targeted health programmes shall be designed for age-specific groups.
- 6.23.2. Based on the concept of health across the lifecycle, demographic data management, researches and analyses shall be done to link with the decision making process and programme designing.
- 6.23.3. In order to ensure access of handicapped and people with disability to health services, disability-friendly structures and mechanisms shall be ensured at all levels.
- 6.23.4. Coordination shall be made with concerned agencies to establish senior citizen care centres with public-private partnership.

6.24. Antimicrobial resistance shall be reduced, one-door health policy shall be developed and expanded for the control and management of communicable diseases, environmental pollution such as air pollution, sound pollution and water pollution shall be scientifically regulated and controlled;

- 6.24.1. Concrete scientific plans and programmes shall be developed and implemented in partnership with concerned authorities to minimise adverse effects of environmental pollution including air pollution, sound pollution, water pollution and chemical pollution on public health.
- 6.24.2. A plan of action shall be developed and implemented to regulate and control food pollution and adulteration.
- 6.24.3. In order to reduce antimicrobial resistance, necessary plan of action shall be developed and implemented to effectively regulate and control the misuse of antibiotics.

6.25. 6.25. Necessary arrangements shall be made to reduce the risks of immigration process on public health and to provide health protection to Nepalese staying abroad.

- 6.25.1. Necessary arrangements shall be made to ensure pre-departure, in-destination-country and post-return health check-up, to promote access to and use of health services.
- 6.25.2. Necessary mechanisms and procedures shall be developed and used to promote and ensure access to and use of health services for Nepalese abroad.
- 6.25.3. Health examination for foreign nationals before entering Nepal shall be made compulsory.
- 6.25.4. Migration Health Management Information System shall be developed and implemented to manage the migration health information

7. Institutional Arrangement

The following arrangements shall be made for the implementation of this national health policy.

- 7.1.** This policy shall remain as a guiding policy for the state and local governments to develop their respective policies within their mandates for operation of health activities and flow of services.
- 7.2.** For effective implementation of this policy, the present structure of health institutions in federal, state and local levels and other health-related institutions shall be reviewed, improved, revised and reformed to discharge responsibilities as defined by the constitution.
- 7.3.** Act, regulations, standards, guidelines, procedures and protocols shall be developed and implemented as envisioned by this policy.

- 7.4.** Institutional capacity shall be strengthened by creating necessary staff posts as per the federal structure.
- 7.5.** Existing theme-wise policies in the health sector shall be developed and amended as thematic comprehensive strategies, as needed.
- 7.6.** State and Local levels shall develop and expand structures in respective levels as per this National Health Policy, 2019.
- 7.7.** A detailed plan of action for this policy shall be prepared and implemented.

8. Financial Resources

Government budget allocated by federal, state and local levels, foreign loan and grant, investment from private and non-governmental sectors shall be the financial resources to implement this policy.

9. Monitoring and Evaluation

- 9.1.** Appropriate mechanism shall be managed and devised to regularly monitor and evaluate the health programmes implemented at various levels of the state.
- 9.2.** Results-based monitoring and evaluation framework developed and used by the National Planning Commission and the monitoring and evaluation system used by the Ministry of Federal Affairs and General Administration shall be taken into account while developing a monitoring and evaluation system for this policy.
- 9.3.** Health management information system shall be updated, monitoring and evaluation system shall be made easier and regular with the use of electronic system.

10. Risks

- 10.1.** Although this National Health Policy, 2019 has been formulated based on the constitution that guarantees basic health services for all citizens as a fundamental right and the policy and programmes of the Government of Nepal that envision equitable access to quality health services through the federal structure, unavailability of adequate budget may pose difficulty in the implementation of this policy and strategies.
- 10.2.** Health services may be affected due to complexities associated with the development of health infrastructure, organisational reforms and the management of health human resources.

11. Repeal and Saving

The National Health Policy, 2014 has been repealed. Existing theme-wise policies of health sector shall be repealed once concerned thematic strategies are formulated.

Summary of Nepal Health Sector Strategy 2015-2020

Nepal Health Sector Strategy (NHSS) 2015-2020 is the principal instrument to escort the health sector over a five year period. It adopts the vision and mission set forth by the National Health Policy and carries the philosophy of constitutional provision to guarantee access to basic health services as a fundamental right of every citizen. It articulates nation's vow towards succeeding Universal Health Coverage (UHC) and offers the foundation for gathering prerequisite capitals and investments. NHSS chairs 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. Conjoint effort of Government and external development partners results for the development of NHSS. Both the government and development partners bind to align their efforts to NHSS priorities and are mutually accountable to accomplish the results. NHSS also connects multi sectoral approach to address social determinants of health. In the past two decade, Nepal has made distinguished improvement on improving the overall health outcomes of the citizens. Between the period of 1990 and 2014, Nepal remarkably reduced under-five mortality by 73% and infant mortality by 67%. Correspondingly, Nepal was able to reduce maternal mortality by 76% between the period of 1996 and 2013. Substantial efforts have been made to halt and reverse the trends of tuberculosis, HIV/AIDS and malaria. However, comparably less progress was made in dropping neo-natal mortality and malnutrition.

The NHSS focuses on achieving Universal Health Coverage (UHC) and has four strategic areas: equitable access, high-quality health services, health systems reform, and a multisector approach. These four areas are delivered through 9 outcomes and 28 outputs. In accordance with the NHSS, the Ministry of Health and Population (MOHP) has developed an Implementation Plan (IP), which provides a broad list of interventions to be implemented in the five-year period. Early in 2020, the MoHP started internal consultation to initiate the development of a sectoral strategy for the next phase. However, the increasing number of Corona virus Disease 2019 (COVID-19) cases in the country and other associated challenges demanded that priorities be shifted exclusively to management of the COVID-19 response and ensuring delivery of routine health services. Accordingly, MOHP and External Development Partners (EDPs) mutually agreed to extend the implementation period of NHSS by one year until July 2022 so that MoHP and supporting partners could prioritize COVID-19 response management as per the contextual need.

Accord with the 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.. NHSS emphasizes on strengthening research and promoting the use of evidence. It also desires to leverage fashionable technologies for health information management, increased access to health services, improved management of procurement and supply chain, and more effective and efficient construction of health facilities.

To strengthen decentralization planning and budgeting, NHSS prioritizes 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 recognizes 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 emphasizes 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 behavior; 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 Mid Term Review was done in FY 2018/19. The review assessed the relevance, effectiveness and efficiency of NHSS in relation to health sector priorities using the following tool Critical Path Analysis (CPA), Political Economy Analysis (PEA), Critical Capacity Analysis (CCA), Social and Environmental Impact assessment (SEIA) at the provincial and local levels.

The improvements in the outcomes were significant in progress such as development of Nepal Health Infrastructure Standards, Human Resource for Health Strategic Roadmap, for the outcome 1 rebuild and strengthen Health System infrastructure, Human Resource for Health, Procurement and supply change management. Improved quality of care at point of delivery is the second outcome of NHSS the major achievement in this outcome was development of National Public Health Act, Health Institution Quality Assurance authority act and National action plan for anti-microbial resistance and dug policy. Other, documents endorsed include: Multiyear Procurement Plan of Immunization Syringes; National Medical Standard (NMS) for Reproductive Health (RH), Volume 1 (2020); RH Clinical Protocol 2076 (2019) for Medical Officers, Staff Nurses, Auxiliary Nurse Midwives (ANMs) and Paramedics; Public-private Mix (PPM) Guideline; Guidelines for Tuberculosis Treatment and Referral Management; Guideline on Drug-resistant TB (DRTB) Community-based Directly Observed Treatment (DOT); National Guideline on DRTB Management (2019); and Basic Health Service Establishment and Management Programme Guide for Local Levels (2019); and Leprosy Control Programme Management Interim Standard (2077).Some are in the final drafting stage, including NMS Volume 3; STP for Basic Health Services (BHS) and Operational Guidelines; Hospital Risk Management Standard; Health Training Management Guideline and Quality Improvement (QI) tools.

For instance, Outcome 3 deal with the equitable distribution of the health services and the major accomplishment were endorsement of ten-year action plan on disability prevention and rehabilitation (2073-83), National strategy for reaching the unreached, and the improvement in service utilization of the health services. A FP Sustainability Road Map (2021-2030) is being developed; in light of the new sector strategy, 2030 agenda and the Family Planning Coasted Implementation Plan (FP CIP) 2015-2020, coming to an end. Development of Planning and Budgeting guidelines and capacity building on it was the major achievement in outcome 4 Strengthening decentralized budget and planning.

Outcome 5 of NHSS deal with the Sector Management and Governance, where the role segregation of federal, province and local level and drafting the various guidelines in federal context were the major progress. Expansion of the health insurance program, Increment in government health expenditure, and improved per capita expenditure on health signifies improvement of Health Care financing which is the sixth outcome of NHSS. Seventh outcome deals with the healthy lifestyles and environment under this roll out of the PEN (Package of essential non-communicable disease) and Health National Adaptation Plan (H-NAP) were the major headway. The Mental Health Section is established and functional at the EDCD as per the new organogram of the MoHP.

The NHSS provides a road map for improved preparedness and strengthened response to public health emergencies during humanitarian and public health crises as eighth outcome. It prioritizes revising protocols and guidelines for improved management of health sector emergencies at both central and decentralized levels and

recommends the enhancement of institutional and human capacity for effective and timely response. To address potential outbreaks and epidemics, as well as disasters, Health Emergency Operation Centres (HEOCs) have been established and are operational in all seven provinces. More than 50 guidelines, plans and policies were formulated to back off the COVID 19 pandemic. Expansion on COVID-19 laboratories in all provinces was also the key achievement. Early Warning and reporting system were operationalized in all 77 districts based on DHIS 2 platform.

Ninth outcome of NHSS deals with the Improved Availability and Use of Evidence in decision-making processes at all levels. In alignment with the NHSS and the spirit of the 15th Periodic Plan, the Integrated Health Information Management Section (IHIMS) under the MD has initiated integration of Routine Health Information Systems (RHISs), such as HMIS, LMIS and HIs. The section has prepared a National IHIMS Road Map (2020-2030) for the integration of different RHISs. The proposed e-Health architecture framework and the road map will further strengthen planning, coordination and implementation of the proposed architecture blueprint among all stakeholders, particularly government and implementing partners at all levels.

Early in 2020, the MoHP started internal consultation to initiate the development of a sectoral strategy for the next phase. However, the increasing number of Corona virus Disease 2019 (COVID-19) cases in the country and other associated challenges demanded that priorities be shifted exclusively to management of the COVID-19 response and ensuring delivery of routine health services. Accordingly, MOHP and External Development Partners (EDPs) mutually agreed to extend the implementation period of NHSS by one year until July 2022 so that MOHP and supporting partners could prioritize COVID-19 response management as per the contextual need.

INTRODUCTION

1.1 Background

Constitution of Nepal 2015 has mentioned that 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 2076/77 (2019/20). This is the 26th consecutive report of its kind and it is the fourth Annual Report after restructuring of Ministry of Health and Population (MoHP).

This report focuses on DoHS performance in 2076/77 and content of the report include following areas

Programme's policy statements, including objectives, strategies, goals, major activities and achievements.

Health programme's indicators.

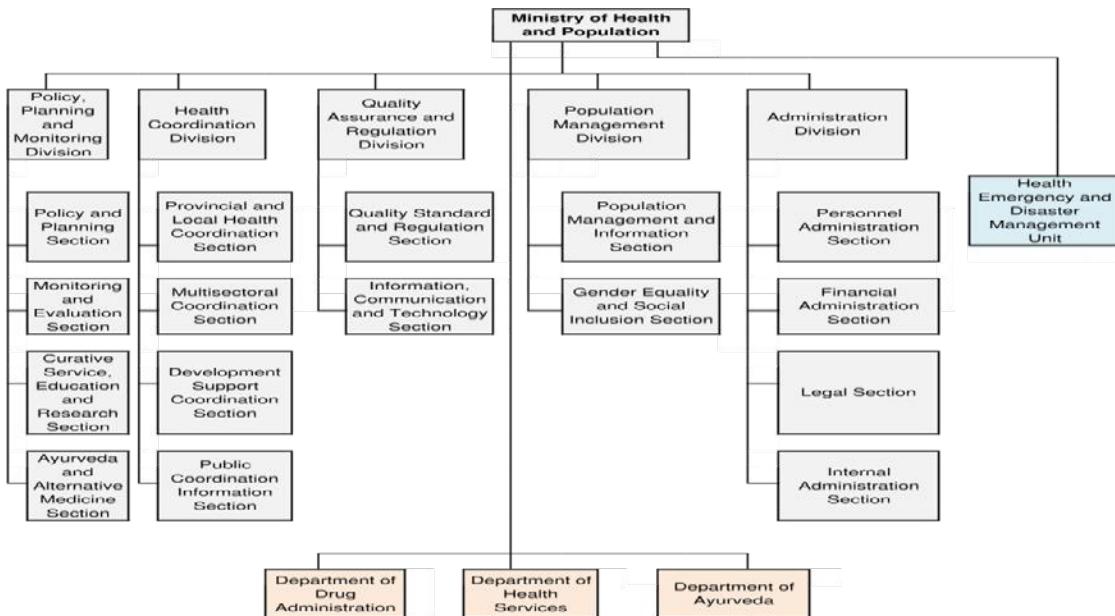
Problems, issues, constraints and recommendations on improving performance and achieving targets.

This report also provides information on the contributions of the Department of Drug Administration (DoA), Department of Ayurveda and Alternative Medicine (DoAA), 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 (HFs).

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 Standard & 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 (MoHP)



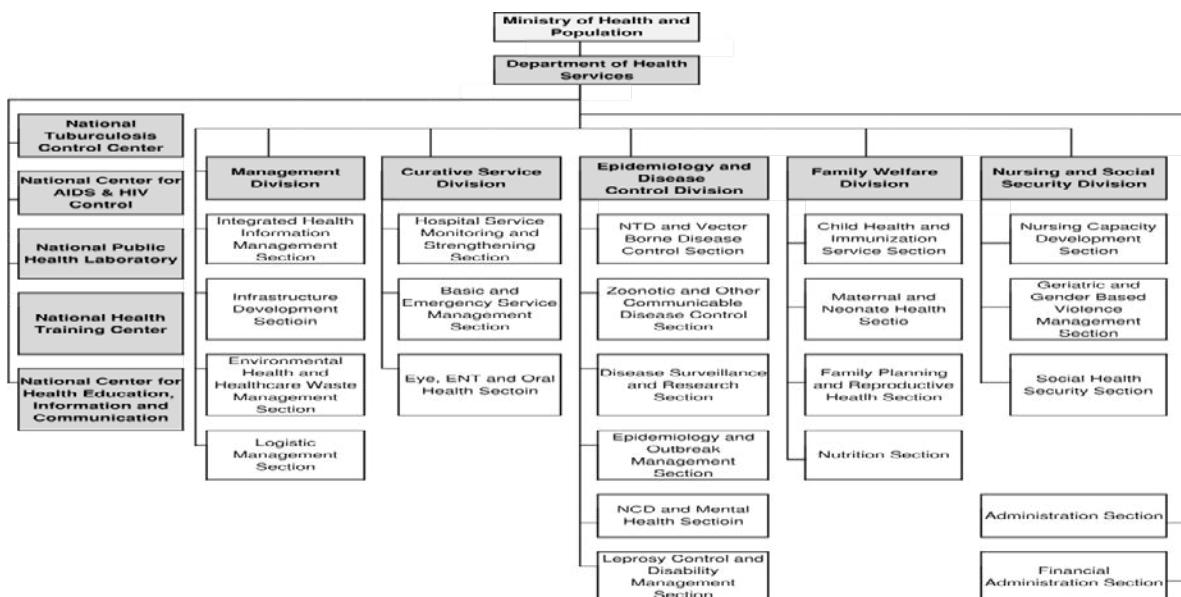
1.2 Department of Health Services (DoHS)

According to the recently restructured DoHS organogram (Figure 1.2), 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 NHEICC. 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

S.N.	Division	Areas of responsibility
1	Management Division (MD)	Integrated Health Information Management, Infrastructure Development, Environmental Health and Logistics Management and procurement.
2	Family Welfare Division (FWD)	Expanded Programme on Immunization (EPI), Nutrition and Integrated Management of Childhood Illness (IMCI) and Newborn Care, Reproductive Health Care (including Safe Motherhood and Neonatal Health) and Family Planning (FP).
3	Epidemiology and Disease Control Division (EDCD)	Outbreak Management, Control of Epidemics, Pandemic and Endemic Diseases, Neglected Tropical Diseases (NTD), 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 (WQR) activities.
4	Curative Service Division (CSD)	Hospital service monitoring and strengthening including emergency and basic health care, ENT, Eye, Oral health.
5	Nursing and Social Security Division (NSSD)	Capacity building of nursing and midwifery personnel, management of geriatric health services and gender based violence programme, OCMC, provision of treatment and management facilities for selected diseases to impoverished Nepalese citizens at listed hospitals and also for management of Female Community Health Volunteer Programme.

Figure 1.2: Organogram of the Department of Health Services (DoHS)**Figure 1.3: Organogram of the health system at province Level**

Main functions of DoHS are as follows:

- Facilitate 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 province, 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 and non-government sectors.
- Manage 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 anaemia and 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 directorate 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 new categorized into three level of hospitals; Primary, Secondary and Tertiary. There are also training centres, laboratories, TB centres 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).

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 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 in the report were downloaded through dHIS-2 system which was retrieved after the completion of national annual review workshop. Data reported not in time are excluded in the report.

Annex 1 presents the targets Vs achievement of fiscal year 2076/77 of DoHS's programmes major activities while Annex 2 gives the major programme targets for the next fiscal year 2077/78. 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 annual report users the electronic version of raw data by all 753 municipalities has been uploaded in the website of DoHS- "www.dohs.gov.np".

PROGRESS AGAINST NHSS

The Nepal Health Sector Strategy-Result Framework (NHSS RF) defines major health sector indicators and targets in accordance with the NHSS goal and outcomes. The Result Framework (RF) has 10 goal-level indicators, 29 outcome-level indicators and 56 output-level indicators. Progress against each indicator of the NHSS RF is available on the MoHP website (www.nhssrf.mohp.gov.np). This section of the report highlights major highlights on the progress in the 10 goal-level indicators and NHSS outcome wise progress.

1.1 **Outcome 1: Rebuild and Strengthen Health Systems: Infrastructure, HRH, Procurement, and Supply Chain Management**

1.1.1 **Outcome 1a Infrastructure**

Nepal Health Infrastructure Development Standards (NHIDS) 2074 (2017) and Integrated Health Infrastructure Development Programme (IHIDP) have laid out categorization, delineation and investment plans for HI development, which are being implemented through all levels of government

Health Infrastructure Information System (HIIS) has been a useful tool for evidence-based planning and is being upgraded into an online portal for HI information and to allow data to be updated. HIIS was also used for analysis and mapping of potential government-owned HF for COVID-19 response across Nepal

Repair and maintenance guidelines and action plan and land acquisition and relocation policy has been formulated.

A COVID-19 scanning, examination and emergency facility has also been planned at Tribhuvan International Airport: draft designs for the proposed facility have been developed and are in the process of agreement with the concerned airport authorities.

Type designs for a 300-bed infectious disease hospital have also been prepared; this is in the planning process, before being initiated for construction.

1.1.2 **Outcome 1.b Human Resource for Health**

The HRH strategy 2030 has been prepared and is in the process of consultation and final review. It has been refined in line with recent acts and regulations. The process of consultation has been completed with officials from federal and provincial government as well professional councils and associations.

Workload Indicators and Staffing Norms (WISN) piloting has been started in HPs and PHCCs in six districts from Provinces 3 and 4.

iHRIS software, to develop and manage an integrated HRH database, has been implemented through two professional councils (Nepal Pharmacy Council and Nepal Ayurvedic Medical Council) with the plan to extend to other remaining professional councils.

Considering the prolonged challenges faced in fulfilling the need for HRH, the MoHP has developed and endorsed procedures to hire staff on a contract basis.

Adjustment had been carried out for nearly 27,500 staff in the health sector as per the Staff Adjustment Act (2074) by October 2019.

The National Academy of Medical Sciences (NAMS) and the Kathmandu University (KU) were accredited for Bachelor level midwifery programmes in 2019 and 2020 respectively, and 15 midwives graduated in 2020.

1.1.3 **Outcome 1.c Procurement and Supply Chain Management**

Procurement management in the health sector consists of preparing, executing and monitoring the PIP, TSB, LMIS, Inventory Management System (IMS), Annual Procurement Plan (APP), Master Procurement Plan (MPP), Consolidated Annual Procurement Plan (CAPP); their effective implementation is required to ensure the timely delivery and distribution of medical goods and equipment.

The Management Division (MD) of the DoHS prepared an immediate needs-based procurement plan and initiated the procurement process under the emergency procurement provisions of the Public Procurement Act (PPA)/Public Procurement Regulations (PPR) in response to COVID 19 pandemic.

Procurement Improvement Plan: PIP 2017–21 has been prepared and endorsed by MoHP; a nine-member CAPP Monitoring Committee (CAPP-MC) has been formed under the leadership of the Director General (DG) of the DoHS and the Terms of Reference (ToR) of the CAPP-MC was endorsed in FY 2017/18. Since then, 12 consecutive trimestral monitoring meetings have been held in the period up to FY 2019/20.

e-LMIS Initiatives: LMIS software primarily based on district- level data from 77 districts. Until all local levels are live on e-LMIS, DHOs make LMIS enter data on the e-LMIS platform based on the information provided quarterly by respective HFs through the local levels. e-LMIS implementation is a major system for logistics information management and is currently live at the local level.

The Supply Chain Management Governance forum has been made functional at national and provincial level.

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

A Health Institution Quality Assurance Authority Act was drafted to establish an autonomous body for accreditation of private (including NGO) health institutions and Quality Assurance Guidelines have been prepared.

Various divisions/centres of MoHP and DoHS are developing/revising national strategies and plans for improving quality of care provided at service delivery points: the Nursing and Midwifery Strategy and Plan of Actions (2020–30): in progress with costing action plans; SBA/Skilled Health Personnel Strategy (2020– 25) and Training Strategy (2020– 25): in progress, to be implemented as transition towards replacing national workforce with professional midwives; and a National Health Care Quality Improvement Strategy.

The National Action Plan (NAP) for Antimicrobial Resistance (AMR) has been finalised and approved by the National Technical Working Committee. The plan has been prepared in Nepali and in English and will be further reviewed, to be approved by the AMR Multisectoral Steering Committee (AMRMSC). The Protocol for Laboratory-based Surveillance of AMR in Clinical Bacterial Isolates in Nepal has been developed and national AMR surveillance data has been reported in the WHO-Global Antimicrobial Resistance Surveillance System (GLASS). Various divisions of DoHS/MoHP are developing/revising national standards, new protocols and guidelines to align with the new Federal organogram. Documents endorsed include: Multiyear Procurement Plan of Immunisation Syringes; National Medical Standard (NMS) for Reproductive Health (RH), Volume 1 (2020); RH Clinical Protocol 2076 (2019) for Medical Officers, Staff Nurses, Auxiliary Nurse Midwives (ANMs) and Paramedics; Public-private Mix (PPM) Guideline; Guidelines for Tuberculosis Treatment and Referral Management; Guideline on Drug-resistant TB (DRTB) Community-based Directly Observed Treatment (DOT); National Guideline on DRTB Management (2019); and Basic Health Service Establishment and Management Programme Guide for Local Levels (2019); and Leprosy Control Programme Management Interim Standard (2077). Some are in the final drafting stage, including: NMS Volume 3; STP for Basic Health Services (BHS) and Operational

Guidelines; Hospital Risk Management Standard; Health Training Management Guideline and Quality Improvement (QI) tools.

1.3 Outcome 3: Equitable Distribution and Utilisation of Health Services

The number of service delivery sites has increased, ensuring access to essential health care services, especially for remote and rural communities. Service delivery sites include the following: 620 community health units, 613 urban health centres, BCs or BEONC sites operating at HPs/PHCCs and 92 CEONC sites in 72 districts.

In total, about 3.3 million people have enrolled in the health insurance scheme, which is being implemented in 471 local levels of 60 districts.

Based on the NMS and SMNH Road Map 2030 and various guidelines, DoHS is implementing interventions for hard-to-reach communities: full immunisation of 58 districts (December 2019); PNC home visit programme (98 Palikas); visiting service providers (36 Palikas); roving ANC (54 Palikas); Adolescent-friendly Services (AFS), provided through 1,331 AFS sites and 297 Adolescent-friendly Information Centers (AFICs) in schools.

At the time of writing, there are One-stop Crisis Management Centres (OCMCs) in 77 hospitals located in 74 districts. At the end of 2018/19, there were only 55 OCMCs in 54 districts. The MoHP intends to complete the establishment of OCMCs across the country in FY 2020/21. The functionality of OCMCs was better in general hospitals than elsewhere: 88 per cent of general hospitals provided services without interruption as compared to 78 per cent of COVID-19 hospitals.

Similarly, Social Service Units (SSUs) have been established in 44 hospitals; geriatric care is available in 24 hospitals.

The Family Welfare Division (FWD)/DoHS, with financial and technical support from UKaid has carried out a number of programme activities in various parts of the country. The overall progress of the programme is over 90 per cent.

The FWD, with the support of the United Nations Population Fund (UNFPA) is scaling up FP/Expanded Programme on Immunization (EPI) integration activities in two districts (Baitadi and Udayapur).

In response to COVID-19 pandemic, the Health Cluster, Reproductive Health Sub-cluster (RHSC), and Emergency Nutrition Cluster were active and held regular meetings at provincial and federal level. Participation from Provincial Health Directorates in central-level RHSC meetings has provided cross-learning.

Seventy-three laboratories were established for COVID-19 testing by GoN and the private sector across seven provinces.

Over 15,000 health workers were oriented on the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) Interim Guideline; orientation was led by FWD/DoHS and supported by selected supporting partners. Follow-up showed that health workers had good knowledge, except on danger signs, PPE needs per day, Safe Abortion Services (SAS) provision and improved IPC practices after COVID-19/RMNCAH Interim Guideline orientation.

1.4 Outcome 4 Strengthened Decentralised Planning and Budgeting

The Cabinet of Ministers endorsed Public Health Service Regulations in September 2020.

FY 2019/20 is the second FY after the provision of revenue distribution came into effect, which marked greater resources being available for local levels in a flexible manner. AWPBs were presented by each level of government on time.

Sources of revenue for local levels included revenue transfer and grants from federal and provincial levels as well as tax and non-tax revenue from LGs (just like federal and provincial governments). Similarly, sources of revenue for provinces include revenue transfer and

grants from the federal level as well as tax and non-tax revenue from the respective Provincial Governments.

Among the different components of the fiscal transfer from federal to sub-national level, conditional grants constitute the bulk of the resources, particularly at the local level: 46 per cent of the fiscal transfer is for programmes conditioned by the federal level. The two other major components of the fiscal transfer are revenue transfer and equalisation grants, which are unconditional by nature, and jointly comprise 62 per cent of provincial and 52 percent of local-level revenue. This implies that local levels have less flexibility, relatively, in terms of programme planning and implementation.

With the support of EDPs, MoHP has channelled technical support to provincial and local levels. MoHP continues to implement the LL approach in seven LG areas (one from each province) to closely monitor and document challenges and successes.

Following the federal restructuring, organisational reform and staff adjustment were accomplished in FY 2019/20. The amount of conditional grant provisioned from federal to provincial and local levels for health was respectively NPR 4,878.5 million and NPR 21,229.7 million; this comes to NPR 696.9 million per province and NPR 28.2 million per local level, on average.

The National Health Training Centre (NHTC), with support from NHSSP and based on implementation experience from selected local levels, has developed a framework for the assessment and strengthening of organizational capacity of the health sector, particularly at the local level. This could be used as a reference to strengthen organizational capacity to deliver high-quality BHS.

1.5 **Outcome 5: Improved Sector Management and Governance**

The Government of Nepal has endorsed national Health Policy (NHP), 2019.

The overall structure of the MoHP has been reorganised as per the federal structure under federalism. As per the new provision, there are three departments, seven centres, 22 hospitals, including academies, eight councils, and the health insurance board and hospital development committees.

To address the changed needs of the sector, the process of establishing CDC Nepal, Food and Drug Administration (FDA), and the Health Accreditation Authority has already begun. These reforms were proposed in the policy and programme for 2020/21.

The PHS Regulations, 2020 and the Safe Motherhood and Reproductive Health Rights Regulations have been enacted.

The Health Insurance Regulation has been approved and has been in implementation since 2019.

The PHS Regulations define BHS along with other regulatory provisions for management of health services across different levels.

The National Medical Education Regulation 2077 (2020) has been approved.

Guidelines on Public-private Partnership in the Health Sector, 2076 (2020) have been developed and endorsed by the GoN.

A number of formation orders '*GathanAdesh*' have been approved, particularly in relation to COVID-19 response management.

Considering COVID-19 challenges and needs, the budget and programmeto establish a temporary five-bed hospital has been sent to 649 local levels (where there is no hospital).

In addition to this, as per the GoN's policy of 'one municipality-one hospital', budget has been sent to 396 local levels to establish five-, 10- and 15-bed basic health care hospitals. Foundation stones for more than 300 of these hospitals were laid on a single day (November 30 2020).

1.6 **Outcome 6: Improved Sustainability of Healthcare Financing**

Government health expenditure as a percentage of the Gross Domestic Product (GDP) for FY 2019/20 is two per cent: this constitutes a 0.6 percentage-point increase compared to the NHSS baseline year (1.4% for FY 2014/15).

Between FY 2015/16 and FY 2019/20, per capita government spending has gradually increased from NPR 1,198 (USD 11.3) to NPR 2,601 (USD 20.2) in real terms. However, during the same period, government spending on health increased very little, from NPR 419 (USD 4) to NPR 704 (USD 6), in constant terms (base year fixed to FY 2000/1). This shows that Nepal is spending far behind the recommended amount to achieve universal access to primary care services.

The percentage of the health budget against the total government budget is in increasing trend. Compared to FY 2019/20, there is 3.1 percentage-point increase in the health sector budget for FY 2020/21. The NHSS sets the target of allocating almost nine per cent of the national budget to the health sector. This implies that health sector allocation is close to the NHSS target. In FY 2020/21, NPR. 25.4 billion has been allocated to LGs and NPR 4.6bn to PGs in the form of conditional grant for health; NPR 60.7bn remains with MoHP and rest is allocated to other line ministries. Evidence suggests that PGs and LGs have made additional allocations in health from different revenue sources. Thus, the actual health budget as a percentage of national budget is anticipated to rise

1.7 **Outcome 7: Improved Healthy Lifestyles and Environment**

The Mental Health Section is established and functional at the EDCD as per the new organogram of the MoHP.

The National Mental Health Strategy and Action Plan have been developed, and is in the process of approval.

Training modules have been developed, based on the STP for Prescribers, and central-level ToT has been conducted, scaling up in 25 districts across the seven provinces. Training modules for child and adolescent mental health have been initiated.

Trainings were conducted for PEN in collaboration with NHTC and provinces.

MoHP secured funding from the Global Environment Facility to implement a project titled ‘Building Resilience of Health Systems in Asian Least Developed Countries to Climate Change’ with support from WHO.

NagarikAarogya(Health Citizen) Programme conducted throughout the country (in all provinces and local levels), promoting active lifestyle through yoga and meditation sessions and a healthy diet.

Initiated School Yoga and Ayurveda Health Programme in various local levels.

Established open gym centres in three selected areas.

Developed and implemented Ayurveda and Alternative Medicine Guidelines of Preventive Measures and Management Protocol for COVID-19 in Nepal.

Consultation with School Health Nurses (SHNs) conducted towards developing resource materials on RH.

A training module is being developed to enhance the skills of SHNs in addressing issues of adolescents and RH.

Development of training package for Occupational Health Safety continues.

OCMC Operational Guidelines and SSU Operational Guidelines have been implemented as per the revision in FY 2018/19.

The number of functional OCMCs in the country has been increased from 54 at the end of FY 2018/19 to 77, located in 74 districts.

SSUs have been established in 44 hospitals and geriatric care services have begun in 24 hospitals.

Medico-legal Service Guidelines were approved by the Cabinet of Ministers. The GBV Clinical Protocol was revised and approved. GBV and Basic Psychosocial Counselling Training was provided to 95 OCMC staff from 68 OCMC hospitals. A much-awaited Senior Citizen Survey, commissioned in 2014, has finally come out. The GBV Referral Directory was developed and approved for OCMCs and GBV survivors.

1.8 Strengthened Management of Public Health Emergencies

To address potential outbreaks and epidemics, as well as disasters, Health Emergency Operation Centres (HEOCs) have been established and are operational in all seven provinces. Timely actions were taken to address disease outbreaks reported in FY 2019/20, which include:

- Diarrhoea outbreak in Parshuram Municipality of Dadeldhura District reported in August 2019. One case was diagnosed as cholera. Outbreak adequately managed.
- Outbreak of influenza was reported from Jugal Municipality of Sindhupalchok District in January 2020.
- Measles outbreaks were reported during the lockdown period. However, the outbreaks were managed adequately.
- Kala-azar has been reported from mountainous districts (such as Dolpa, Humla and Mugu) of Karnali Province.

Dengue is also posing a challenge to health system over the years.

Certain hospitals have been designated as COVID-19 hospitals to address the need for providing health services to people infected with COVID-19.

73 laboratories, both public and private, have been established across the country to identify COVID-19 cases.

Supplies, including equipment for ICUs, such as ventilators, were provided.

Effective support was provided in response to the outbreak of dengue.

An additional four hub hospitals (two in Province 5 and two in Sudurpashchim Province) were established, which included setting up medical logistics warehouses and finalizing contingency plans.

Emergency Medical Deployment Teams were formed in the existing six designated hub hospitals in the Kathmandu valley.

A kala-azar tracking system at treatment sites is planned for the current FY and has started in Province 1.

The EWARS system is now operational in all 77 districts and is based on the DHIS2 platform. As a part of the Post-disaster Health Services Recovery Programme, the construction of the Trishuli (Nuwakot) District Hospital has been completed, with KOICA support. The hospital is currently being used as a COVID-19 treatment hospital.

1.9 Improved Availability and Use of Evidence in Decision-making Processes at All Levels

In alignment with the NHSS and the spirit of the 15th Periodic Plan, the Integrated Health Information Management Section (IHIMS) under the MD has initiated integration of Routine Health Information Systems (RHISs), such as HMIS, LMIS and HIIS. The section has prepared a National IHIMS Road Map (2020–2030) for the integration of different RHISs.

e-LMIS has now been configured to cater for the needs of COVID-19 logistics data management and reporting. e-LMIS roll-out has been scaled up from 58 e-LMIS sites to 446 new e-LMIS sites during the period from September to November 2020.

Continuous follow-up and coordination with PHLMCs resulted in a LMIS reporting rate of 95 per cent, the highest reporting rate ever, by the end of FY 2076/77. LMIS reports from more than 4,000 SDPs are recorded on quarterly basis. All COVID-19 commodities are recorded in e-LMIS. All central data for

COVID-19 lab commodities from NPHL and regional labs are in e-LMIS. Roll-out of e-LMIS is expected to be completed in all provinces by December 2020. Likewise, the recording and reporting tools of OCMCs and SSUs are being digitised in the DHIS2 platform and linked with the HMIS.

The Health Facility Registry, a tool that keeps track of all HFs within the country, public and private, and also provides information on which services are offered, has been updated. The registry has an interface that allows other information systems to connect to it in order to keep their individual lists of HFs up to date and synchronised with the MoHP. The registry can be accessed from the MoHP website

The MoHP continues to expand the electronic reporting of service data from HFs. In FY 2020/21, 1,400 public HFs submitted HMIS monthly reports electronically. As HPs and PHCCs are now being managed by LGs, the MoHP is focusing on enhancing their capacities on health information management, including the use of the DHIS2 platform. All 753 LGs reported HF-based service statistics electronically to the national database (HMIS). This has been a milestone for the continuous flow of data from LGs to the national HMIS system. The HMIS e-learning modules for the orientation of health workers, statisticians, computer operators and programme managers have been updated and are available on the DoHS website (www.dohs.gov.np).

The web-based RDQA tool and the e-learning package have been updated, incorporating feedback from users; they are available on the MoHP website (www.rdqa.mohp.gov.np). Twenty-six HFs were reported to have completed the RDQA this year.

MoHP has established an Information Management Unit (IMU) to establish, strengthen and operationalise an integrated information management system for better informed decisions and monitoring of the health sector response to the COVID-19 pandemic.

The plan to expand the facility-based MPDSR system from 77 hospitals in FY 2018/19 to an additional 16 hospitals in FY 2019/20, and to expand the community-based MDSR system from 11 districts to an additional seven (Taplejung, Rautahat, Nuwakot, Myagdi, Palpa, Dailekh and Bajhang) in FY 2019/20, could not take place because of the COVID-19 pandemic. As the routine MPDSR system has been affected by COVID-19, the FWD has developed a system in ODK for monitoring of maternal and neonatal deaths occurring at HFs during the COVID-19 pandemic.

EWARS is a hospital-based sentinel surveillance system where the sentinel sites (hospitals) send weekly reports (including zero reports) on six epidemic-prone, vector-borne, water- and food-borne diseases in order to detect outbreaks. EWARS started in 1997 with eight sentinel sites and expanded to 24 sites in 1998, 26 sites in 2002, 28 sites in 2003, 40 sites in 2008, 82 sites in 2016 and 118 sites in 2020. EWARS sentinel sites are now reporting in the DHIS2 platform, which has contributed to building better linkages with the HMIS.

The first **NHFS** was performed in 2015; the second was planned for early 2020, with data collection from February to May 2020, but the preparatory work, such as questionnaire finalisation and selection of the implementation agency, was delayed because of the COVID-19 pandemic.

Similarly, the sixth series of the **NDHS** is planned for FY 2020/21. MoHP has initiated preliminary consultation with relevant stakeholders and the questionnaire development process is in progress. The selection of the survey implementation partner has also been completed.

The sixth series of the **NMICS, 2019**, conducted by the Central Bureau of Statistics (CBS) from May to November 2019, has been completed.

The **National TB Prevalence Survey (2018–2019)**, the first of its kind in Nepal, was completed in 2020.

For the first time in its history, MoHP is planning to conduct a maternal mortality study following the Census. The forthcoming 12th series of the Nepal Population and Housing Census (NPHC) will take place from Jestha 25 to Asar 08, 2078 (8 to 22 June 2021).

NHRC approved 805 and 500 research projects respectively in 2019 and 2020.

Progress Against NHSS

Table 2.1 Progress against the NHSS RF goal-level Indicators

Code	Indicators	Baseline			Achievement		2020
		Data	Year	Source	2020	Source	Target
G1	Maternal mortality ratio (per 100,000 live births)	190	2014	¹ WHO	239	NDHS, 2016	125
G2	Under-five mortality rate (per 1,000 live births)	38	2014	² NMICS	28	NMICS, 2019	28
G3	Neonatal mortality rate (per 1,000 live births)	23	2014	NMICS	16	NMICS, 2019	17.5
G4	Total fertility rate (births per 1,000 women aged 15–19 years)	2.3			2.0	NMICS, 2019	2.1
G5	% of children under 5 years who are stunted	37.4	2014	NMICS	31.5	NMICS, 2019	31
G6	% of women aged 15–49 years with body mass index less than 18.5	18.2	2011	NMICS	17.3	NDHS, 2016	12
G7	Lives lost due to road traffic accidents per 100,000 population	34	2013	Nepal Police	9.5	Nepal Police, 2075/76	17
G8	Suicide rate per 100,000 population	16.5	2014	Nepal Police	19	Nepal Police, 2019	14.5
G9	Disability-adjusted life years lost due to communicable, maternal and neonatal, Non-communicable Diseases (NCDs), and injuries	8,319,695	2013	NBoD, ³ IHME	9,015,320	Nepal Burden of Disease, 2017	6,738,953
G10	Incidence of impoverishment due to out-of-pocket expenditure in health	NA	2011	⁴ NLSS	NA		Reduce by 20%

¹ World Health Organization

² Nepal Multi indicator Cluster Survey 2019

³ Institute of Health Metrics and Evaluation

⁴ Nepal Living Standard Survey

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 it 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:

Drug Consultative Council and Drug Advisory Committee rules, (2037 BS).

Drug Registration Rules, (2038 BS).

Drug Standard Rules (2043 BS).

Enquiry and Inspection rules (2040 BS).

Codes on Sale and Distribution of Drugs (2071 BS).

Codes on Drug Manufacturing Practice (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 relating modern, veterinary and traditional medicines, like 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.

3.3.3 Strategies

Selection of essential medicine to promote rational use of medicines.

Establishment of offices at all provinces for effective regulatory activities.

Strengthening of National Medicines Laboratory (NML) as National reference Laboratory on medicines.

Medicine registration based on scientific facts.

Promotion of rational use of medicines.

Development of an efficient drug information system to disseminate the relevant information.

- Encouragement to promote and establish pharmaceutical industries to achieve self-reliance in the production of essential medicines.
- Effective inspection to ensure the quality of marketed medicines.
- Prevent misuse of antibiotic to combat antimicrobial resistance.

3.3.4 DIVISION AND BRANCH OFFICES OF DEPARTMENT OF DRUG ADMINISTRATION AND THEIR FUNCTIONS

Division of DDA

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 the recommendation letter for import/export of vaccines and biological.
- ❖ **Industry Section**
 - To issue recommendation letter for the 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 personnel's, 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 Pharmacovigilance 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, other department and other government and non government organization for conducting activities and submit the report to MOH.
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 and 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 Nepalganj. These offices carry out the responsibility of inspection as well as Pharmacy registration and renewal.

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.

3.1.5 ANALYSIS OF ACHIEVEMENTS BY MAJOR ACTIVITIES

Activities carried out in the FY 2076/77 (2019-2020)

Major activities

- Awareness on the rational use of medicines by different media.
- Regular publication of Drug Bulletin of Nepal (DBN).
- Audit/inspection of domestic drug industries for WHO Good Manufacturing Practice (GMP) compliance.
- Inspection of retail & wholesale pharmacies for compliance.
- Post marketing quality analysis of drugs available in market.
- Inspection of Foreign Manufacturers before registration of products.
- Conducting examination of veterinary drug sellers' training.
- Audit of domestic manufacturer laboratory for compliance of Good Laboratory Practice (GLP)
- Take legal and administrative action for violation of regulatory standards.
- Recall of medicine from market those failed to quality standard.

Target Vs Achievement, FY 2076/77

S. N	Activities	Target	Achievement	
			Number	%
1	Drug information to the public by different media	30	67	224
2	Publication of Drug Bulletin of Nepal	3	3	100
3	Inspection of domestic Pharmaceutical Industries	85	52	61
4	Inspection to drug retailers& wholesalers	2935	1842	63
5	Drug sample Analysis	100	918	91.8
6	Audit of Pharmaceutical Analytical Laboratories	30	24	80

Other activities

S. N	Activities	Achievement
1	Registration of new foreign pharmaceutical Industry	13
2	Registration of new medicine (import)	182
3	Renew of import license	2062
4	Issue of marketing license	573
5	Issue of product license	1017
6	Import license for raw material for domestic industry	1288
7	Registration of new pharmacy	717
8	Renew of pharmacy	4126
9	Renew of Vyawasayi Mananyata Pramanpatra	501
10	Deregistration of pharmacy	213
11	Filing of legal case against the violation of Drug Act 2035	24
12	Recall of medicine from market due to inferior quality	40

Financial allocation and Expenditure

Budget in thousands (000)

S N	Budget heading	Budget allocation	Budget expenditure	%
1	Capital budget	51400	7437	14.47
2	Recurrent budget	143380	84808.9	59.15
	Total	194780	92245.9	47.36

Revenue**Total revenue collection: Rs. 43330142.65****3.1.6 Challenges:**

- Old Infrastructure, old O&M since 40 yrs and functional presence of DDA at central, provincial and local level government in the changing context of federalization. New O&M and infrastructure required as per functional analysis.
- Harmonization on existing policies, laws, regulations tso is aligned with vision 2100, 15th plan, FDA, Health Policy 2076 with required amendment and new initiatives.
- Regulation and frame work of Health Technology Products (HTP).
- Policy, laws and regulations of Nutraceuticals and Cosmaceuticals.
- Revisit and amendment of new Drug Act aligned with FDA concept.
- Information Management, Transparency and lacking of dynamic and Responsive Information system.
- Illegal import of medicine due to open border and, SFs regulation and control.
- Unregistered Pharmacies in remote areas.
- Pharmacies run by other healthcare professional's e. g. AHW/CMA/ANM in pharmacy outlets especially in remote areas.
- Online Pharmacy regulation.
- Lacking of resources (human, Technology).
- Standardization of pharmacy and pharmaceutical services in different settings especially health care facilities of different levels.
- Regional harmonization and uniformity, MRH and SRA collaboration.
- Pharmacovigilance and Post marketing surveillance.
- Good governance and accountability.
- Medicine Shortages issues.
- 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 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 as have 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:

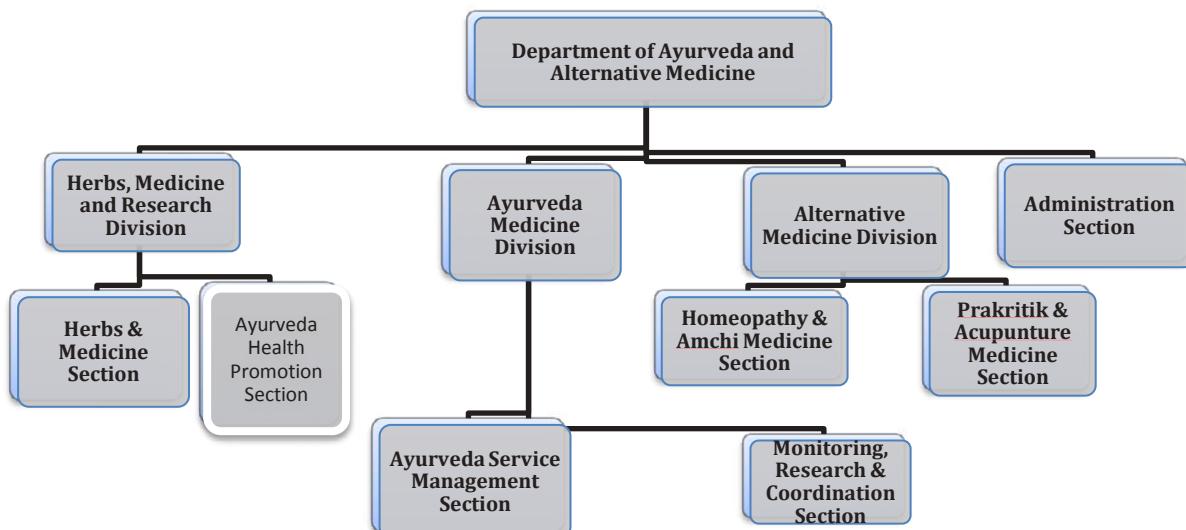
Structural development suitable for identification, prevention, collection & promotion of locally available medicinal herbs, minerals & animal origin medicines.

Management & regulation of other alternative medicines based on standards & norms.

Establishment of Ayurveda, Yoga & Naturopathy Center and utilization of Ayurveda for promotion of health tourism.

Central Level	Provincial Level	Local Level
<ul style="list-style-type: none"> •DOAA •Nardevi Hospital •National Ayurveda Research & Training center,NARTC •Singhadurvar Vaidhyakhana •National Ayurveda Medical Council,NAMC •Ayurveda and Alternative Medicine Section (MoHP) 	<ul style="list-style-type: none"> •District Ayurveda Health Centers-61 •Anchal Ayurveda Dispensaries-14 	<ul style="list-style-type: none"> •Ayurveda Dispensaries-305

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 healthy life style through Ayurveda and Yog.
- 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;

3.2.3 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

3.2.4 Major Activities FY 2076/77

Central level

- Nagarik Arogya/Lifestyle management (Non communicable disease Prevention and Control) Program.
- Celebration of National/ International Yoga Day, Dhanvantari Jayanti and Arogya Diwas.
- Guidelines, Protocol, Manual development.

- TOT on Panchakarma and Yoga etc.
- Establishment of patient recording reporting networking system software among Ayurveda institutions and capacity enhancement of employees on related field.
- Establishment & Strengthening 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.
- Quality monitoring of different Ayurveda Products available in Nepalese market.
- Monitoring of services provided by private Ayurveda & Alternative Medical Systems
- Annual review meeting in with 7 provinces.
- Revision, evaluation, monitoring and update of Ayurveda Health Policy and Development of Code of ethics.
- Evaluation and monitoring and co-ordination with province and local level.

Province and Local Level

- Yoga and Lifestyle management training program.
- Strengthening of herbal garden.
- Workshop and discussion with local traditional healers.
- Preparation of IEC materials on Ayurveda.
- School Ayurveda health program.
- Construction of compound wall of Ayurveda institutions.
- Building construction of Ayurveda institutions.
- Promotive Panchakarma/Rasayan/Yoga programme for Senior Citizens
- Awareness program on medicinal plants
- Program for lactating mother (Distribution of Galactogogue medicine).
- Procurement of essential Ayurveda Drugs & treatment equipment.

3.2.5 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)
- SwasanBikar (Respiratory diseases)
- VataVyadhi (Osteoarthritis, Rheumatoid Arthritis & other Neuromuscular diseases)
- Jwar (Pyrexia)
- BalRoga (Pediatric diseases)
- Karna, Nasa, Mukha, Danta & Kantharog (ENT, Oral, Dental diseases)
- Strirog (Gynecological diseases)
- Brana (Wound, Abscess & Other Skin diseases)
- Atisar/Grahani (Diarrheal diseases)

Table shows the number of people served province wise in 2076/77

Service Statistics of the fiscal year 2076/77

Service statistics by Province									
Province	Province No. 1	Province No. 2	Bagmati Province	Gandaki Province	Lumbini Province	Karnali Province	Sudur Paschim Province	Total	
General service	219600	84213	188603	172295	184553	47944	190448	1087656	
Covid related service	3900	2150	8392	884	9284	5749	8111	38470	
Total	223500	86363	196995	173179	193837	53693	198559	1126126	

3.2.6 Problems/Constraints

Problems/Constraints	Actions to be taken	Responsibility
Inadequate experts and qualified manpower.	Production of Qualified Ayurveda Manpower (BAMS, MD).	DoAA MoHP MOE
Inadequate financial support for district level Ayurveda institutions to conduct monitoring supervision & Publicity program.	Allocate sufficient Budget.	MoHP
Poor storage & dispensing Practices of medicines in curative aspects 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.	Allocation of adequate budget.	DoAA MoHP
Lack of Workshop, Training & Seminar, Planning on Ayurveda.	Allocate adequate budget, Develop policy & Long term, Midterm and Short term plan on	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 under Department of Ayurveda.	Scholarship for higher studies, Recruitment & Placement.	MoGA PSC
Insufficient Evidence Generation & Documentation about the successful treatment of certain diseases with Ayurveda Therapy claimed by practitioners.	Allocation of adequate budget for research and development.	DoAA MoHP/NARTC

3.2.7 Programs formulated for the fiscal year 2076/77

Miscellaneous Programs: Ayurveda Bibhagh (37003101)

Improvement of Administrative building of Department and Budhanilkantha Panchakarma center.

Construction of open gym center.

Ayurveda Health promotion program.

Skill development empowerment / program.

Quality Medicinal Herbs & Medicine Management and Research program.

Prevention, Reduction and management of NCD.

Ayurveda Health Information management program.

Study of effects of climate change on medicinal plants.

Citizen Wellbeing Nagarik Arogya program.

Grant for effectiveness study of Ayurveda Service Program.

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.

Development of Mero Swasthya Mero Jimmewari (My Health My Responsibly) application (Apps), for healthy lifestyle management.

Formulation of Ayurveda & Alternative Medicine Guidelines of Preventive Measures & Management Protocol for COVID-19 in Nepal & came in to implementation through all Provinces(Ayurveda health institutions Provided Ayurveda Health services based on above mentioned guidelines.

COVID-19 related NTV awareness program.

Provincial & Local Level 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.

School Ayurveda Health & Yoga Program.

Program for lactating mother (distribution of Galactogogue medicines.

Promotive program for senior citizens.

Outreach clinic for Non communicable diseases and NCDs.

FAMILY WELFARE

4.1 Child Health and Immunization

Child Health and Immunization Service Section is one of the four sections of Family Welfare Division, Department of Health Services, 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 National Health Education Information and Communication Center (NHEICC) develops routine and supplementary child health and immunization IEC and social mobilization materials in close coordination with Family Welfare Division. Capacity building of health staff on routine immunization is executed through National Health and Provincial Health Training Centres in close collaboration with Family Welfare Division. Immunization and IMNCI related information are 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 coordinates 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.

4.1.1 National Immunization Program

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.

National Immunization Program 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), National Immunization Program 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 12 vaccine-preventable diseases. Rotavirus vaccine was introduced in routine immunization nationwide with formal launch on 18 Ashad 2077 (02 July 2020). As per comprehensive Multi-year Plan for Immunization (cMYP) 2017 - 2021, several other vaccines, including Human Papilloma Virus Vaccine (HPV) and Typhoid Conjugated Vaccine (TCV) 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.

National Immunization Program 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.

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 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.

Since FY 2069/70 (2012/2013), 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 2076/77, 58 out of 77 districts have been declared ‘fully immunized’. Gandaki Province has had declared their province as fully immunized province.

National Immunization Program has a very good track record of meeting the targets for control, elimination and eradication of vaccine preventable diseases. Smallpox 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 Terai 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. In July 2019, Nepal was certified of having achieved hepatitis B control among children through immunization as the prevalence of the disease (sero-prevalence of HBsAg) dropped to less than < 1% (0.13% only) among 5-6-year-old children. With this, Nepal became one of the first four countries (along with Bangladesh, Bhutan, and Thailand) in the WHO South-East Asia Region to control hepatitis B among children. 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. Though measles burden has been reduced by > 95% compared to 2003, the national target of achieving measles elimination by 2019 has not been met. In September 2019, member countries of WHO South-East Asia Region, including Nepal, have resolved to eliminate both measles and rubella by 2023 to prevent deaths and disabilities caused by these highly infectious childhood killer diseases. Measles, which is one of the most infectious diseases, will require very high coverages (> 95%) with both the first and second routine immunization doses of measles-rubella (MR) vaccine in every community, municipality, district, province, and nationally. To quickly close the immunity gap to measles (and rubella), MoHP conducted nation-wide MR campaign in the month of Falgun and Chaitra 2076 extended till Ashad 2077 in two phases, including polio campaign (with bOPV) in 19 selected districts of Terai. Even during the COVID-19 pandemic situation in the second half of FY 2076/77, Nepal was able to complete its nation-wide vaccination campaign, as well as introduce a new vaccine in the National Immunization Program.

National Immunization Program produces evidences on burden of vaccine preventable diseases and impact of vaccine introduction. The Immunization Preventable Disease programme (WHO-IPD) of the World Health Organization, Nepal provides technical assistance to Ministry of Health and Population for nation-wide surveillance systems for acute flaccid paralysis (for polio), measles and rubella, neonatal tetanus, and acute encephalitis syndrome (for Japanese encephalitis). Further, with support of WHO-IPD, sentinel surveillance of selected vaccine preventable diseases (invasive bacterial diseases, rotavirus, and congenital rubella syndrome) is conducted in collaboration with academia and research institutes.

National Immunization Program with the support of WHO-IPD 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 National Immunization Committee, Inter-Agency Coordination Committee on Immunization, National Immunization Advisory Committee, National AEFI Investigation Committee, 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. Since 2018, concurrent immunization supervision and monitoring has been conducted through program staff, partners, SMO network, independent monitors, and immunization and VPD committee members at sub-national levels including assessment at communities producing real-time data for real-time action.

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, and periodic recommendations from SEAR-ITAG (South-East Asia Region Immunization Technical Advisory Group) and polio and measles rubella certification committees.

4.1. 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.

4.1.1. Vision

Nepal: a country free of vaccine-preventable diseases.

4.1.2. 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.

4.1.3. Goal

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

4.1.4. 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

4.1.5. TARGET POPULATION

National Immunization Program currently provides routine vaccination up to 23 months of age. National Immunization Advisory Committee (NIAC) of Nepal recommended to lift the ceiling for vaccination from 23 months to 5 years for childhood vaccines, with life-course approach. It is necessary to complete immunization within the recommended schedule as provided by the National Immunization Program. However, some children may miss vaccination at the recommended schedule. Therefore, NIAC recommended that if child misses any vaccine dose in the recommended schedule, then opportunity should be provided so that those missed vaccine or vaccine dose(s) can be provided up to 5 years of age if not contraindicated. This is also critical to improve MR2 coverage on path towards Measles-Rubella elimination. So, this policy will be implemented from next FY 2077/78 with orientation at all levels.

Table 4.1.1. Target Population for FY 2076/77

Particulars	Population (Source: HMIS)
Under 1-year children (surviving infants)	620,739
12-23 months population	604,189
0-59 months population	3,013,891
Expected pregnancy	753,866

4.1.6. NATIONAL IMMUNIZATION SCHEDULE

Table 4.1.2. 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	Rotavirus Vaccine*	2	6 and 10 weeks of age
5	fIPV	1	6 and 14 weeks of age
6	PCV	3	6, 10 weeks and 9 months of age
7	Measles-Rubella	2	First dose at 9 months and second dose at 15 months of age
8	JE	1	12 months of age
9	Td	2	Pregnant women: 2 doses of Td one month apart in first pregnancy, and 1 dose in each subsequent pregnancy

* Rotavirus vaccine launched nationwide from 18 Ashad 2077 (02 July 2020). The coverage of rotavirus vaccine is applicable only from FY 2077/78 onwards.

4.1.7. MAJOR ACTIVITIES CONDUCTED IN FY 2076/77

5.1. Routine Activities

- Development of Guidelines for Measles Outbreak Response Immunization Guideline, Response and management of Diphtheria case(s) and contacts in communication, Hygiene Promotion through Routine Immunization guideline, Full Immunization Declaration guideline (3rd Edition), Health worker facilitator guideline, Health worker reference book, Health worker (vaccinator) training package, Microplanning template and training package
- Rotavirus Vaccination guideline and Hygiene Promotion through Routine Immunization guideline
- Conducted ToT and orientation on Rotavirus Vaccine introduction and hygiene promotion
- Launched Rotavirus vaccine in National Immunization Program from 18 Ashad 2077 (02 July 2020) throughout the country
- Hygiene promotion integrated in National Immunization Program

- Initiated multi-year contract for vaccine and syringes through government procurement process
- Recommended for implementation of universal vitamin K prophylaxis at birth to prevent vitamin K deficiency bleeding in newborns and young infants. This recommendation was endorsed by MoHP for implementation
- Orientation to health workers/vaccinators working at urban settings for identification of hard to reach and drop-out children for strengthening routine immunization
- Conducted new vaccinator trainings at provincial level
- Schedule for missed vaccination for children under 5 years of age recommended by National Immunization Advisory Committee and endorsed by MoHP
- Immunization review meeting, RI strengthening orientation and microplanning formulation at subnational level
- Conducted independent RI monitoring in all provinces
- Immunization data verification, validation and monitoring for sustainability of municipality for Full Immunization Declaration program
- AEFI orientation to vaccinators, pediatricians, medical officers, public health professionals and journalists
- Continued AEFI surveillance at all levels
- Continued VPD surveillance through SMO network
- Outbreak response Immunization conducted for MR outbreaks at four outbreak sites

1.1.8. Additional Activities

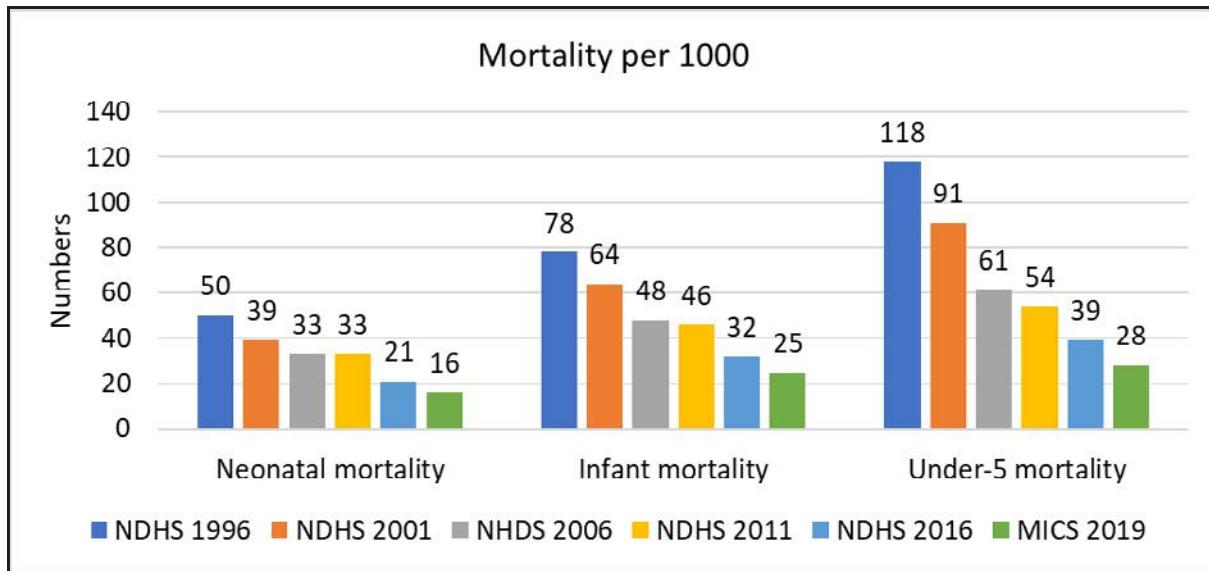
- Development of Measles Rubella Supplementary Immunization Activity (MR SIA) guideline, training package, IEC materials, microplanning format, SIA cards, etc.
- Development of guidelines for Immunization guidance during COVID-19 pandemic including IPC measures
- Conducted ToT, advocacy and orientation on MR SIA and AEFI at all levels
- First phase of MR campaign (along with bOPV in selected 17 districts) conducted in all districts of 3 provinces - Province 1, Province 2 and Lumbini Province from 1st Falgun to 30th Falgun 2076
- Second phase of MR campaign (along with bOPV in selected 2 districts) conducted in all districts of remaining 4 provinces - Bagmati Province, Gandaki Province, Karnali Province and Sudurpashchim Province from 1st Chaitra 2076 extended till Ashad due to COVID-19 pandemic
- Adapted post MR campaign SIA-RI linkage strategy for missed children in routine immunization
- Catchup vaccination strategy for children missed during COVID-19 pandemic for RI strengthening
- SIA-RI linkage activities and catchup strategy for RI missed children found during SIA
- Conducted post MR SIA rapid convenience monitoring
- 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
- Development and distribution of flipchart and stickers- BCC materials for prevention of COVID-19 at EPI clinics

4.1.9. VACCINATION TARGET vs. ACHIEVEMENT, FY 2076/77

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. 2.1.1). The National Immunization Programme has contributed significantly in reduction of child mortality by preventing vaccine preventable diseases.

Figure 4.1.1. Trends in early childhood mortality



Source: Nepal Demographic and Health Survey. For 2019, Multiple Indicator Cluster Survey data is used.

4.1.10. National vaccination coverage

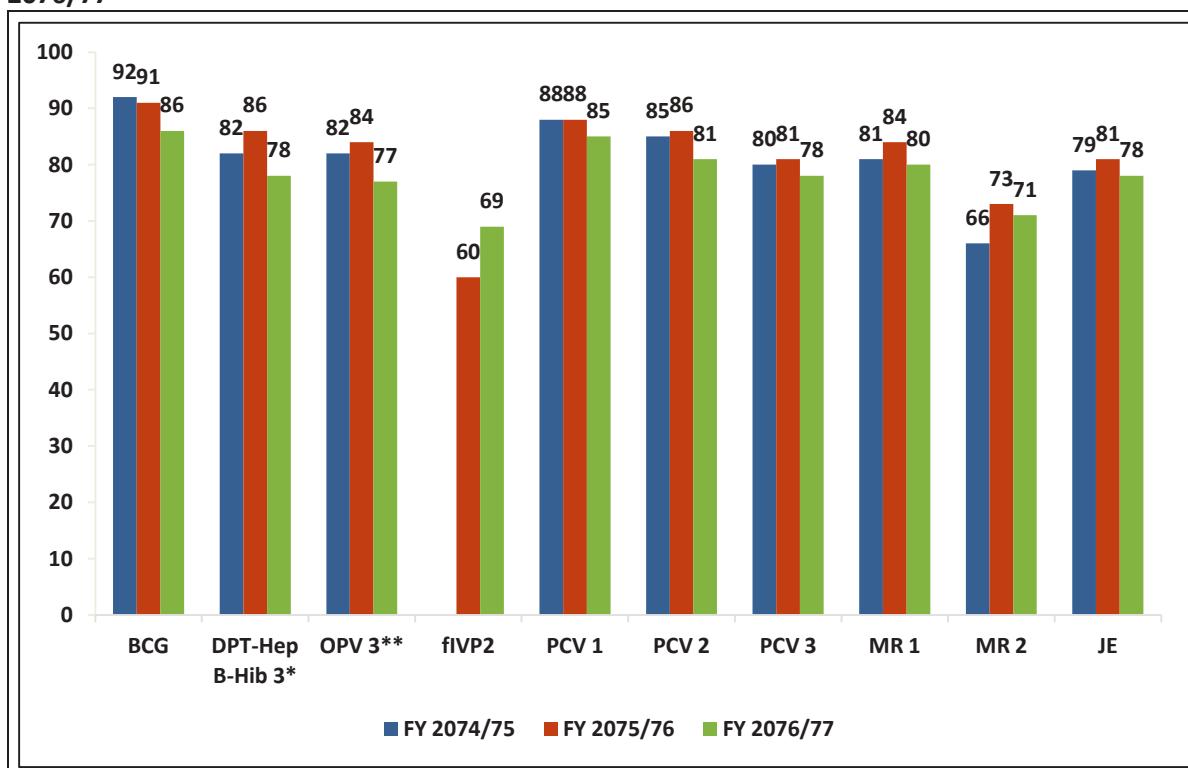
The tables and maps presented below show the routine immunization vaccination coverage and achievement status in FY 2076/77.

Table 4.1.3. National vaccination coverage by vaccine, FY 2076/77

S.N.	Antigens	Target population	Targets	Achievement	% Achieved
1	BCG	under 1 year	620,739	533,648	86
2	DPT-Hep B-Hib1	under 1 year	620,739	530,691	85
3	DPT-Hep B-Hib2	under 1 year	620,739	508,110	82
4	DPT-Hep B-Hib3	under 1 year	620,739	483,323	78
5	DPT-Hep B-Hib3 including delayed dose given after 1 year of age	under 1 year	620,739	499,577	80
6	OPV1	under 1 year	620,739	523,238	84
7	OPV2	under 1 year	620,739	502,321	81
8	OPV3	under 1 year	620,739	477,277	77
9	OPV3 including delayed dose given after 1 year of age	under 1 year	620,739	499,577	80
10	fIPV1	under 1 year	620,739	492,202	79
11	fIPV2	under 1 year	620,739	430,387	69
12	PCV1	under 1 year	620,739	526,764	85
13	PCV2	under 1 year	620,739	503,582	81
14	PCV3	under 1 year	620,739	484,947	78
15	MR1	under 1 year	620,739	493,877	80
16	MR2	15 Months	604,189	426,791	71
17	JE	12 Months	604,189	471,996	78
18	TD2 & TD2+	Pregnant Women	753,866	447,469	59

Source: HMIS/MD, DoHS

Figure 4.1.2. National Routine Immunization Administrative Coverage (%), Nepal, FY 2074/75 to 2076/77



Data source: HMIS/MD, DoHS

*DPT-HepB-Hib3 coverage including delayed doses given after 1 year of age is:

FY 2074/75: 86.3%

FY 2075/76: 90.4%

FY 2076/77: 80.5%

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

FY 2074/75: 86.8%

FY 2075/76: 87.5%

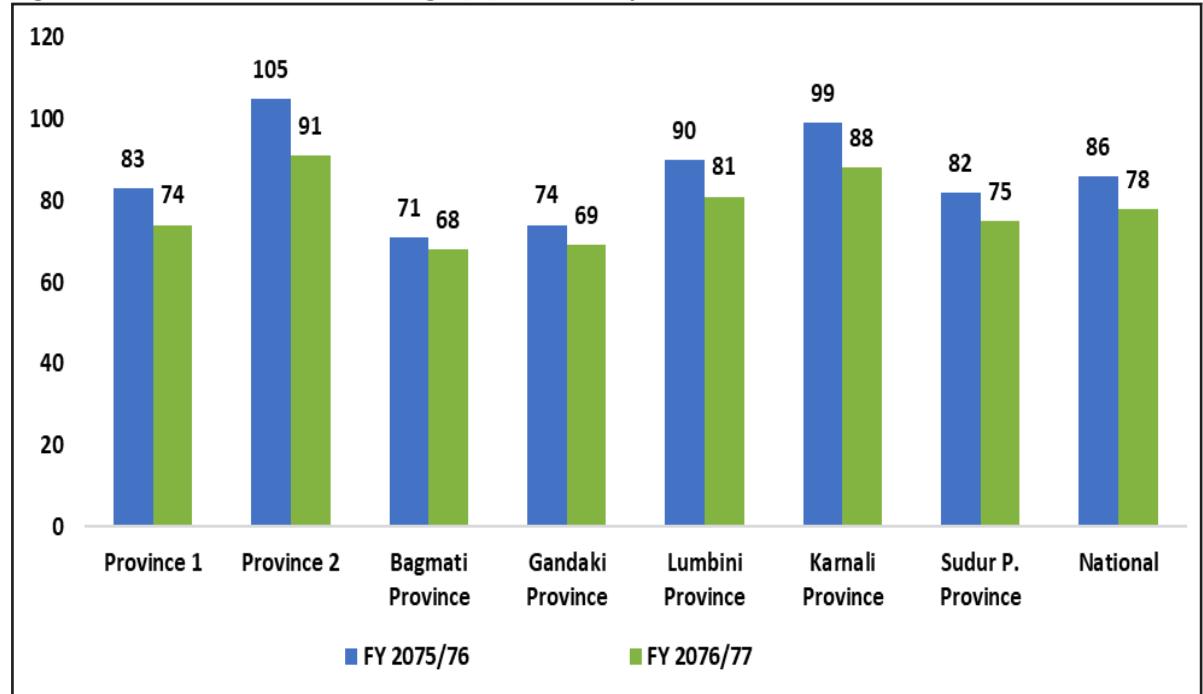
FY 2076/77: 79.5%

No IPV vaccine in FY 2074/75. In FY 2075/76, fIPV was started, and the given coverage is against 9.5 months target since fIPV was launched after around 2.5 months into the FY.

Figure 4.1.2. shows national administrative coverage for selected antigens for three years, from FY 2074/75 to FY 2076/77. BCG coverage has decreased by 5% whereas the coverage of DTP-HepB-Hib3 and OPV3 has decreased by 8% and 7% respectively in FY 2076/77. For FY 2076/77, fIPV2 coverage is shown which is 69%. PCV1 coverage has decreased to 85% whereas coverage of PCV2 and PCV3 has decreased to 81% and 78% respectively. MR1 and MR2 coverage has decreased to 80% and 71%. For measles elimination, high coverages of both MR1 and MR2 is required (> 95%). Therefore, coverages of both MR1 and MR2 is still not satisfactory. The coverage of JE vaccine has also decreased slightly by 3% point. The overall decrease in coverage of all the antigens is attributed to ongoing COVID-19 pandemic resulting in lockdowns for several months, followed by restricted movement and transportation. The reporting rate for immunization dataset in HMIS for FY 2076/77 is 86.1% which is higher than 80% in FY 2075/76. Following the lifting of lock-downs due to COVID-19, the National Immunization Program was able to quickly bring the monthly vaccination coverages at or above pre-lock down levels before the end of the fiscal year (Fig 2.1.9 and 2.1.10).

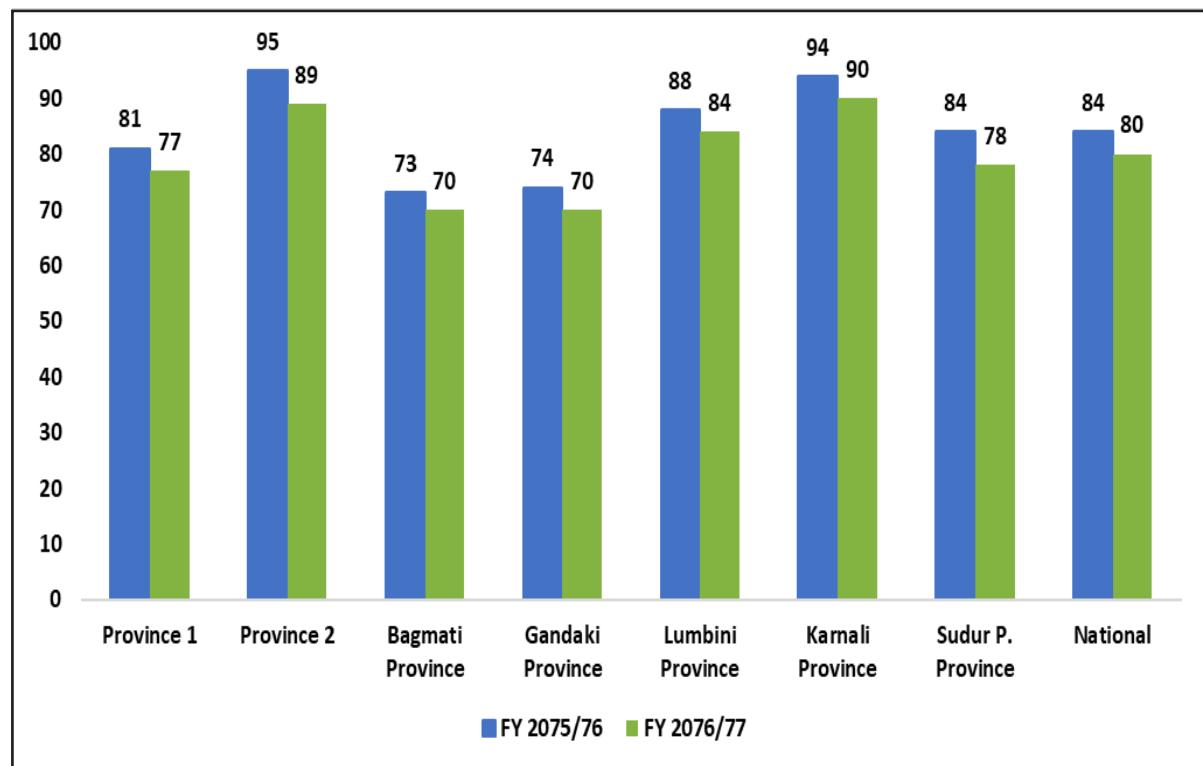
4.1.11. Vaccination coverage by province

Figure 4.1.3. Province wise coverage (%) of DPT-HepB-Hib3, FY 2075/76 to FY 2076/77



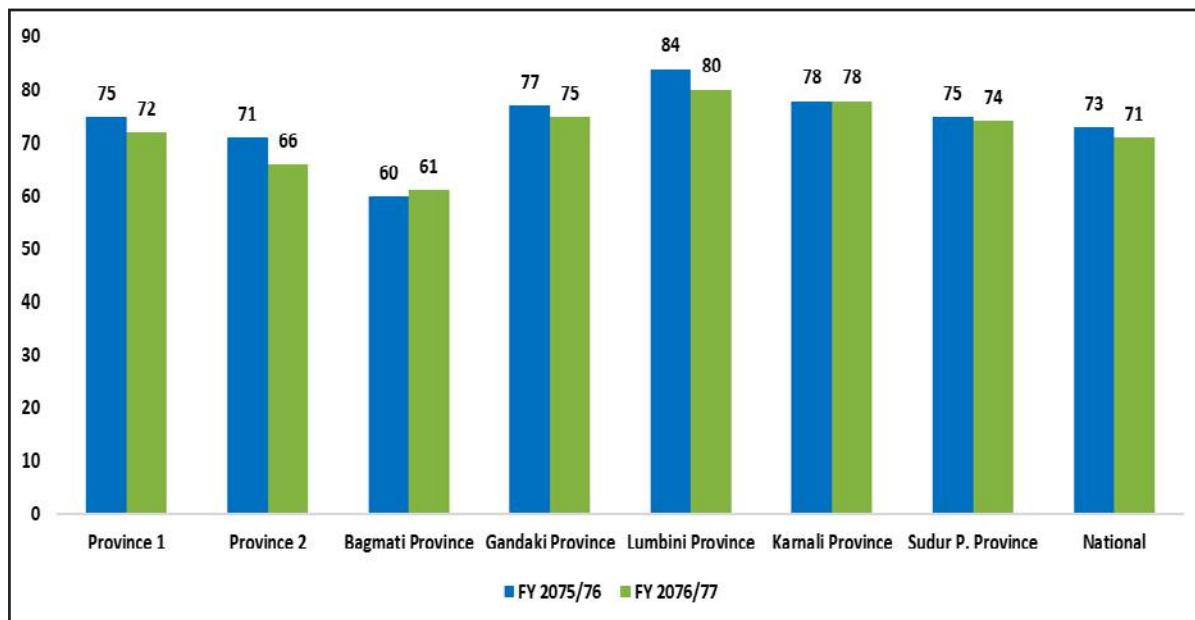
Data source: HMIS/MD, DoHS

Figure 4.1.4. Province wise coverage (%) of measles-rubella first dose, FY 2075/76 to FY 2076/77



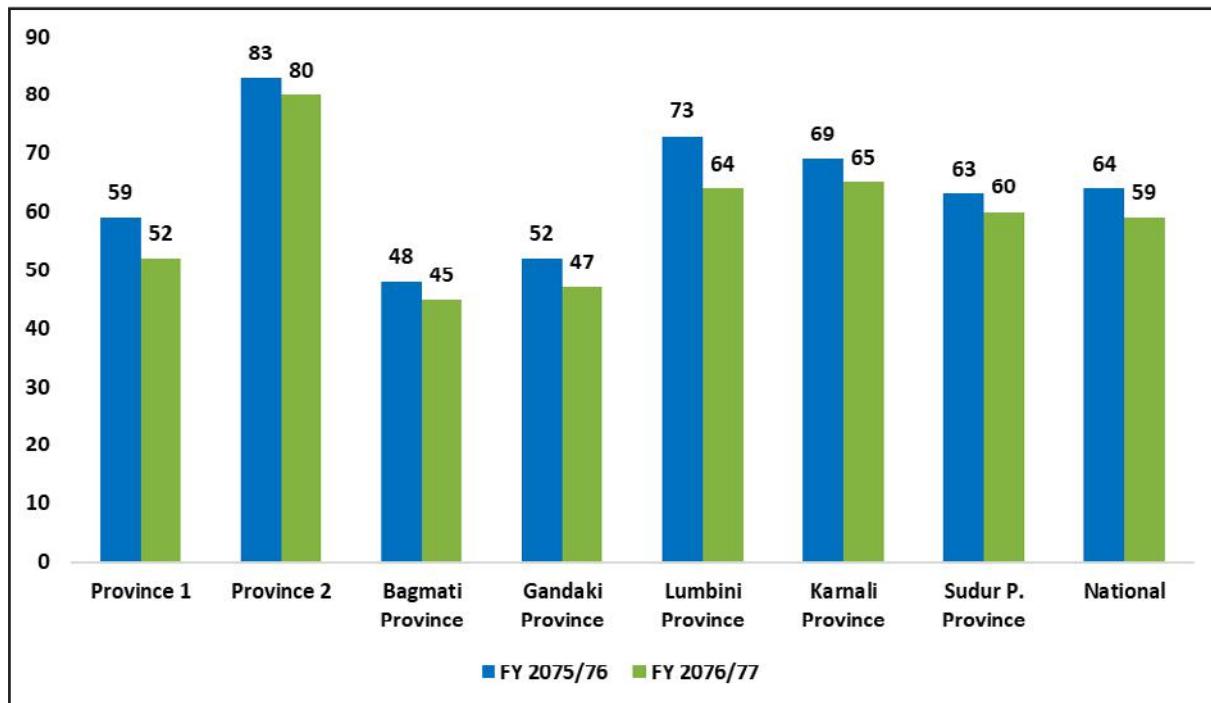
Data source: HMIS/MD, DoHS

Figure 4.1.5. Province wise coverage (%) of measles-rubella second dose, FY 2075/76 to FY 2076/77



Data source: HMIS/MD, DoHS

Figure 4.1.6. Province wise coverage (%) of Td2 and Td 2+, FY 2075/76 to FY 2076/77

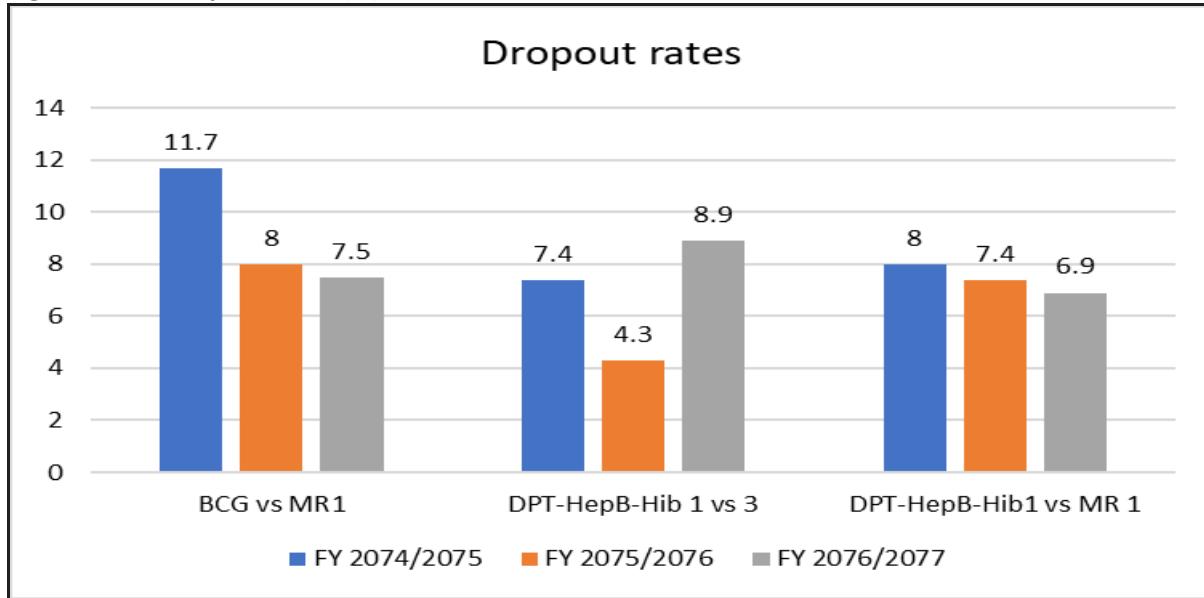


Data source: HMIS/MD, DoHS

Figure 4.1.3 to 4.1.6 show province wise coverage for DPT-HepB-Hib3, MR1, MR2, and Td2/Td2+ respectively. In general, vaccination coverage in all provinces have decreased compared to previous year. For DPT-HepB-Hib3, MR1 and Td2/Td2+, Province 2 has reported the highest coverage, whereas for MR2, Lumbini Province has reported the highest coverage. Bagmati Province has reported relatively lower coverages for these four antigens and the reporting rate for immunization dataset in HMIS for Bagmati Province is the lowest (62.8%), which needs to be improved.

4.1.12. Dropout rates of vaccination

Figure 4.1.7. Dropout rates (%) of different vaccinations, FY 2074/75 to FY 2076/77

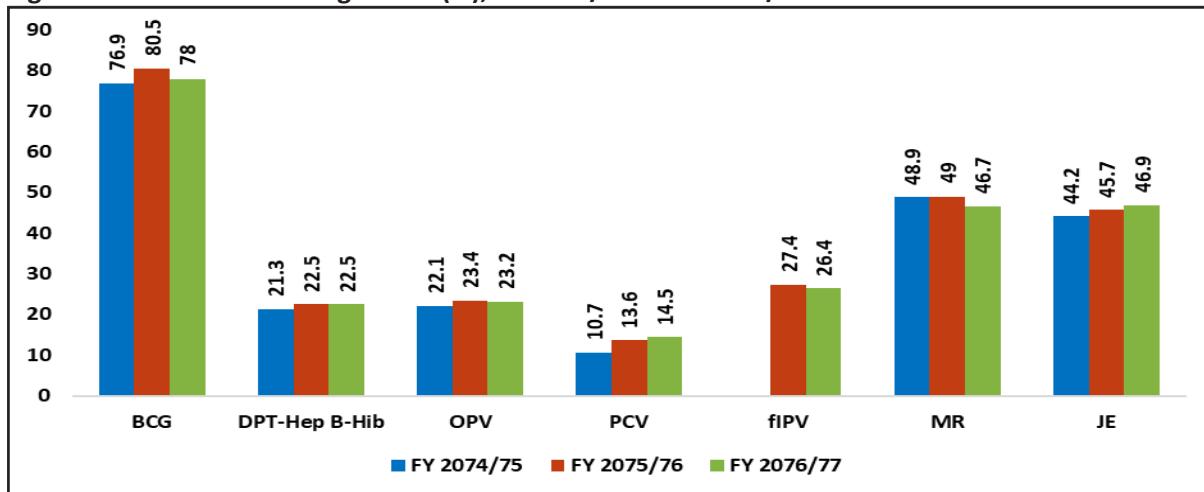


Data source: HMIS/MD, DoHS

Figure 4.1.7 shows that national dropout rates for BCG vs MR1 and DPT-HepB-Hib1 vs MR1 have decreased compared to previous year showing improvement while DPT-HepB-Hib1 vs DPT-HepB-Hib3 has increased but all drop-out rates are within 10%.

4.1.13. Vaccine wastage rates

Figure 4.1.8. Vaccine wastage rates (%), FY 2074/75 to FY 2076/77



Data source: HMIS/MD, DoHS; fIPV in FY 2075/76

The above figures combine open and closed vial wastage rates. 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, opened vial wastage rates are expected to be higher. Further, in Nepal, for BCG, fIPV, 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 opened vial wastage rates so that no child is missed. Because of these reasons, the wastage rates for BCG and JE are higher than the indicative wastage rates of 50% and 10% respectively.

However, the wastage rate of MR has improved and is sustained in FY 2076/77, and is below the indicative wastage rate of 50%. This is probably because after introduction of MR2, number of children receiving MR vaccine in a session is higher leading to less wastage. For DPT-HepB-Hib and OPV, the national wastage rates are below the indicative wastage rate of 25% for both vaccines. For PCV vaccines, the national wastage rate is 14.5% which is above the indicative wastage rate of 10%. The wastage rate of fIPV is 26.4 which should be lower than 20%.. .

Figure 4.1.9. Number of children vaccinated with BCG, FY 2075/76 and FY 2076/77

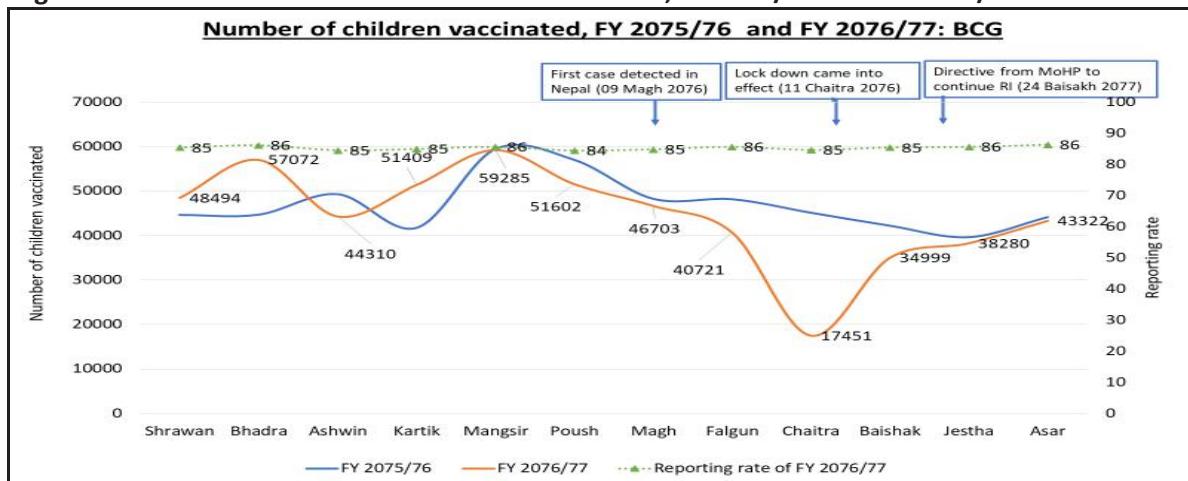


Figure 4.1.10. Number of children vaccinated with MR2, FY 2075/76 and FY 2076/77

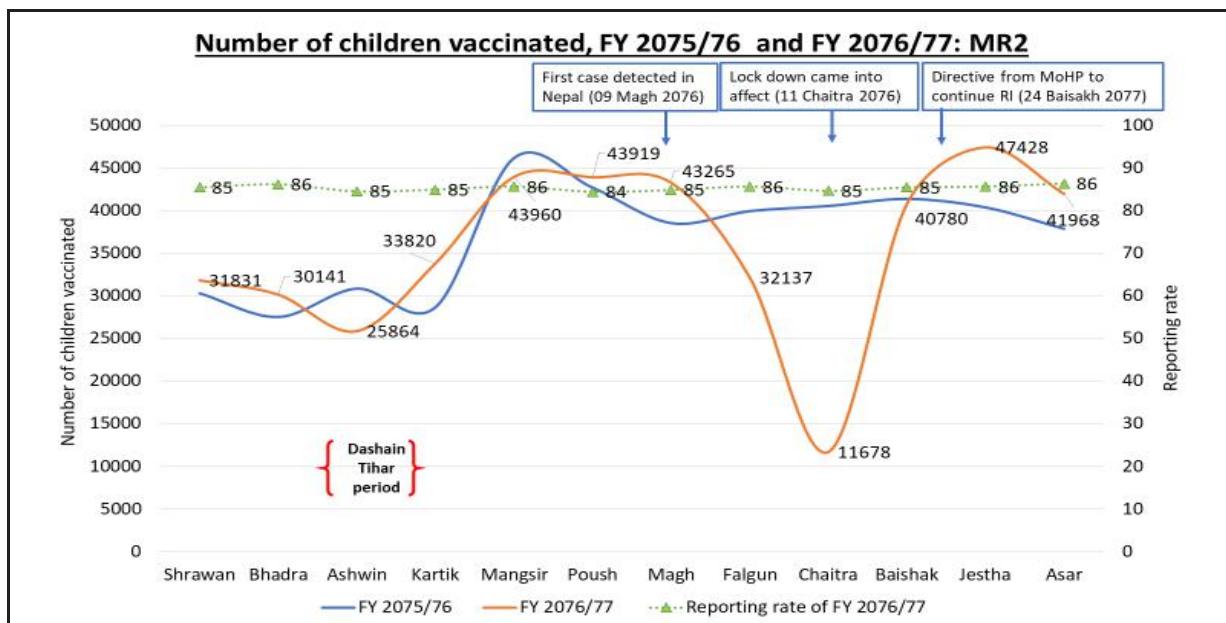
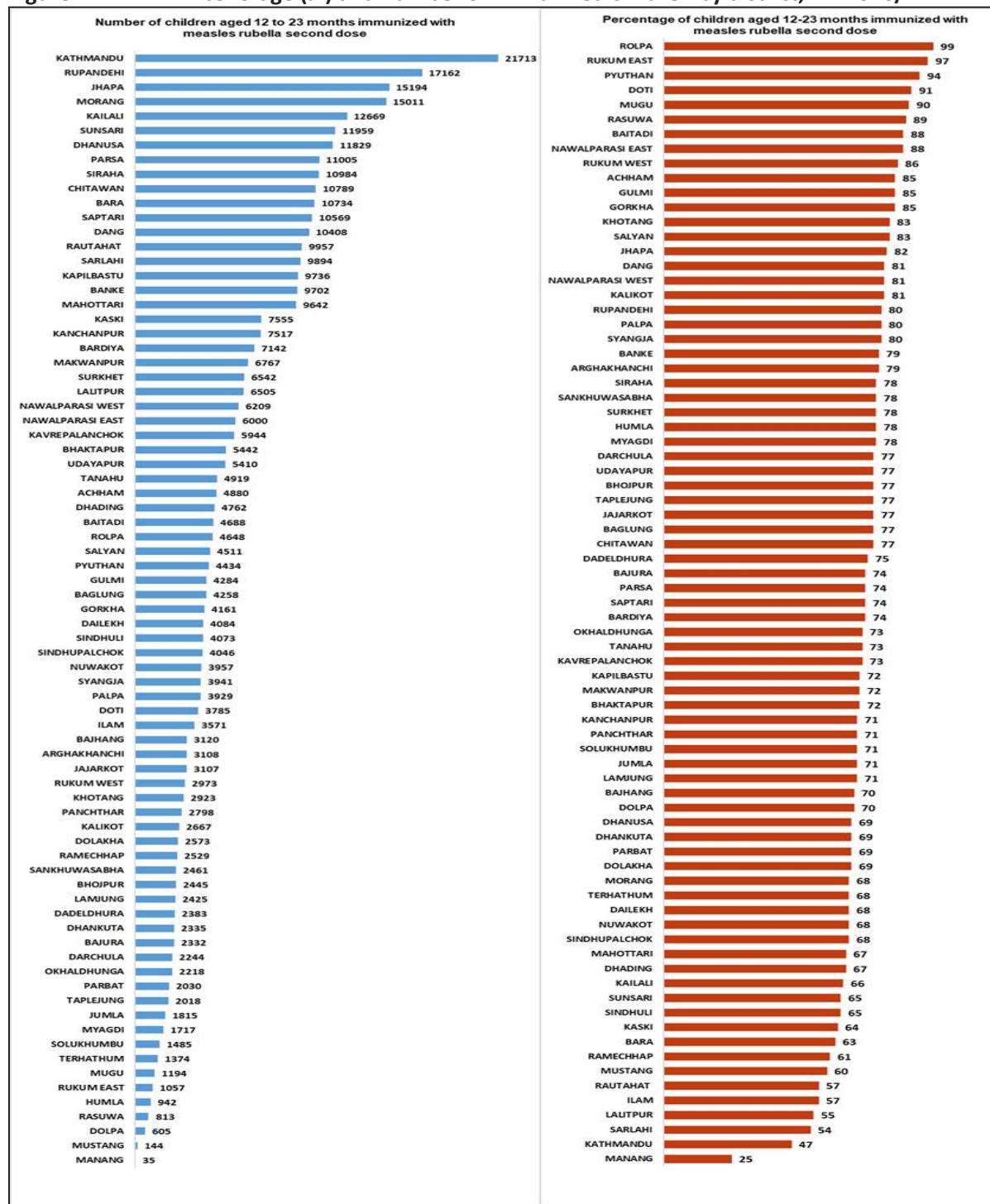


Figure 4.1.9. and Figure 4.1.10. shows the comparison of vaccinated number of children with BCG and MR2 in two fiscal years. After COVID-19 pandemic started, nationwide lockdown was imposed on 11 Chaitra 2076 (24 March 2020) and there was sharp fall in the routine immunization coverage. After the directive from MoHP to continue RI services, health facilities re-initiated RI services through their routine immunization centres following necessary defined IPC measures. This resulted in sharp increase in RI services and coverage as reflected in the figure. For this, Child Health and Immunization service section circulated the instructions and guidance to strengthen routine immunization services at all level even at the time of nationwide lockdown during COVID-19 pandemic.

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

Figure 4.1.11. MR2 coverage (%) and number of immunized children by district, FY 2076/77



Data source: HMIS/MD, DoHS

Figure 4.1.11 shows the coverage of MR2 by district, and number of children vaccinated with MR2 by district. Only 5 districts (Mugu, Doti, Pyuthan, Rukum East and Rolpa) have achieved MR2 coverage 90% and above, whereas 16 districts have MR2 coverage between 80-89%, 54 districts have MR2 coverage between 50-79%, and 2 districts have coverage below 50%. The national coverage of MR2 is 71%.

4.1.15. Measle Rubella Supplementary Immunization Activity, 2076/77

Nepal has made significant progress towards measles elimination. Measles burden has reduced in 2018 by more than 95% compared to 2003 levels. However, for measles elimination, the number of measles cases need to be reduced to zero and sustained for at least three years. Due to measles being highly infectious, elimination is only possible when the coverage of both MR first and second doses is achieved and maintained at around 95% at both national and sub-national level. The NIP of Nepal has been able to achieve 91% (WUENIC, 2018; administrative coverage is 81%) of MR first dose at national level. However, in 2018, only 12 out of 77 districts had MR first dose coverage \geq 95%. Further, the administrative coverage of MR second dose was only 66% with only 1 district achieving \geq 95% coverage. Because of this immunity gap with low coverage of MR second dose, Nepal has witnessed increase in outbreaks in recent years. To progress towards achievement of both measles and rubella elimination, the Ministry of Health and Population scheduled nation-wide measles rubella campaign in the FY 2076/77 (2020).

The main objective of MR SIA 2076/77 was:

1. Nationwide vaccination of children aged 9 months to under 5 years
2. Ensure $>95\%$ coverage to achieve high level of population immunity against measles-rubella
3. Strengthening of routine immunization through MR SIA to improve vaccine utilization rate

During MR SIA, identification of missed routine MR vaccination (first, second or both) in 9 to 23 months children and record in SIA vaccination card

After completion of MR SIA, analysis of SIA vaccination cards and complete missed routine measles-rubella and other vaccination in children under two years of age

4. Provide OPV to children 5 years during MR SIA in 19 selected terai districts

Strategies for conduction of MR SIA:

1. Conduct MR SIA in two phases and achieve $>95\%$ coverage
2. Coordination and collaboration between federal, province and local levels
3. Ensure logistic management and capacity building of health staffs
4. Effective information, education, communication and social mobilization activities
5. Ensure effective monitoring and supervision at all levels
6. Conduct post SIA coverage survey
7. Strengthening of routine immunization through SIA

The MR SIA was conducted in two phase: First phase was conducted in Province 1, Province 2 and Lumbini Province in the month of Falgun 2076 and Second phase in Province 3, Gandaki Province, Karnali Province and Sudurpashchim Province in the month of Chaitra 2076 extended till Ashad 2077.

One dose of bOPV vaccination during the MR SIA was given to under 5 years age children mainly focusing on selected 19 high-risk terai districts.

The first phase of the MR SIA was conducted smoothly and within the schedule with a high coverage of 114% but the second phase of the MR SIA which started from 14 March 2020 was partially interrupted following the nationwide lockdown from 11 Chaitra 2076 (24 March 2020) due to COVID-19 pandemic situation in the country with coverage of 84%.

Family Welfare

Following decision from Council of Ministers on 24 Baisakh 2077 (06 May 2020) to continue all immunization services including on 14 May 2020 official letters from MoHP and DoHS for continuation of MR SIA was circulated to provinces and districts. The district and municipalities then formally continued MR SIA. The last municipality to complete MR SIA was Kathmandu Metropolitan City of Kathmandu District which completed SIA on 07 July 2020. The overall national coverage was as high as 101%.

Figure 4.1.12. MRSIA: MR coverage and number of children vaccinated with MR (9-59m) by District, FY 2076/77

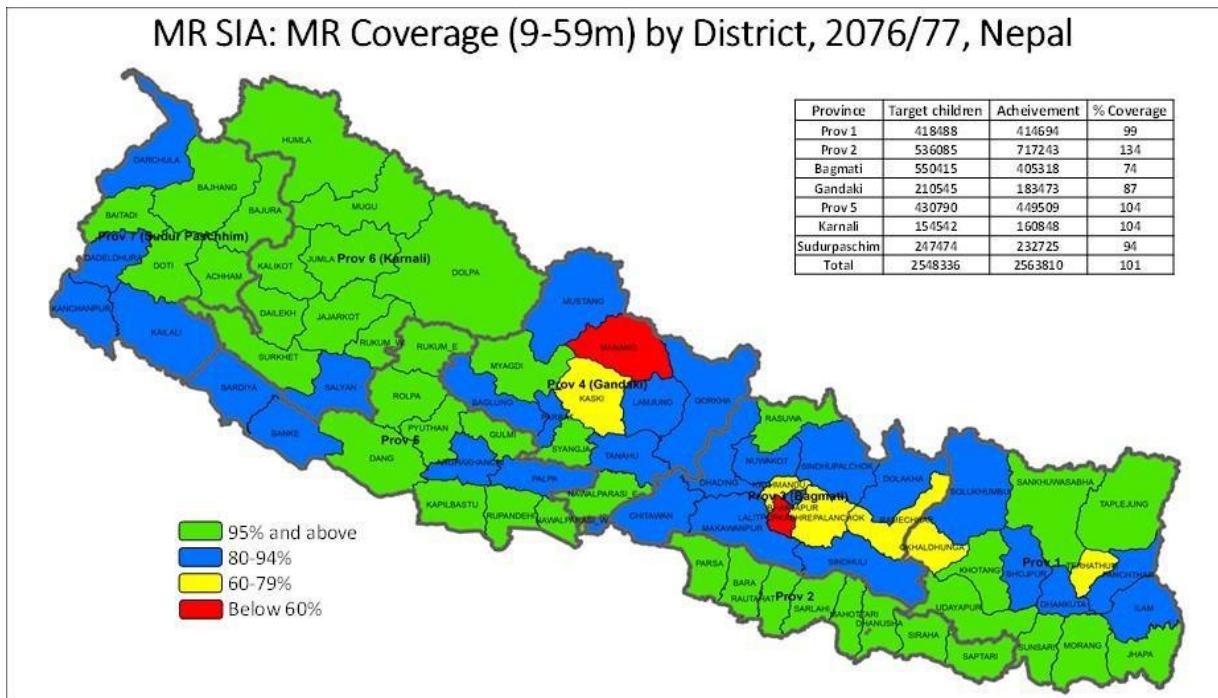


Figure 4.1.13. MR SIA: MR coverage (9-59m) by Province, FY 2076/77

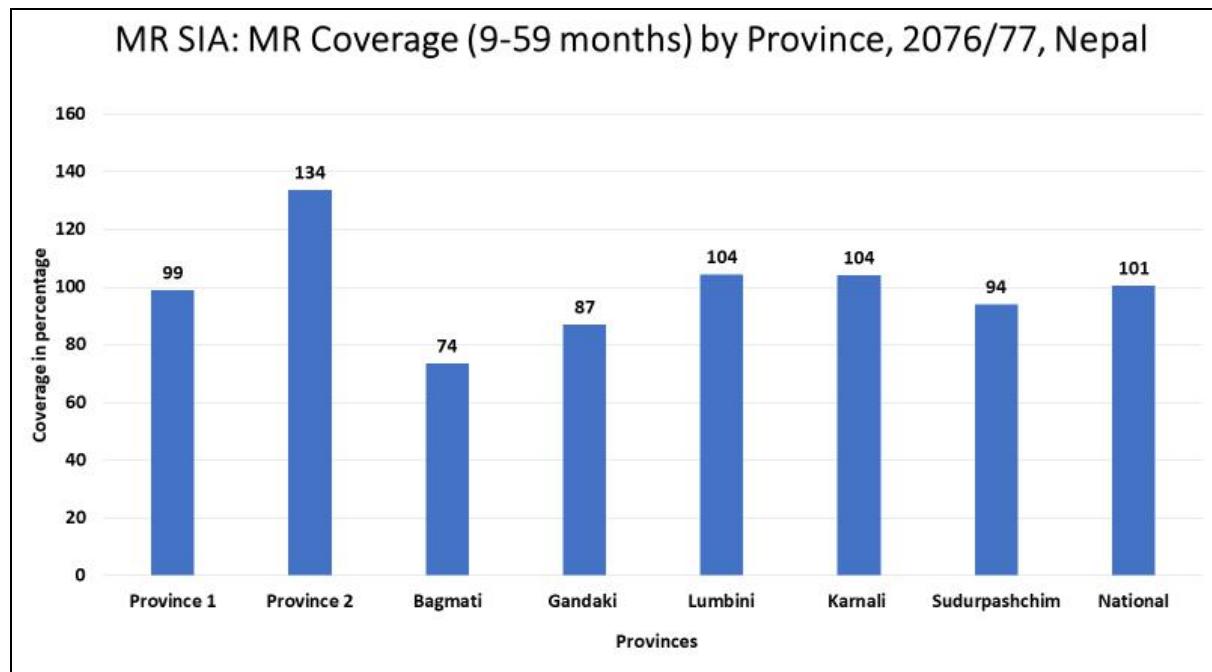
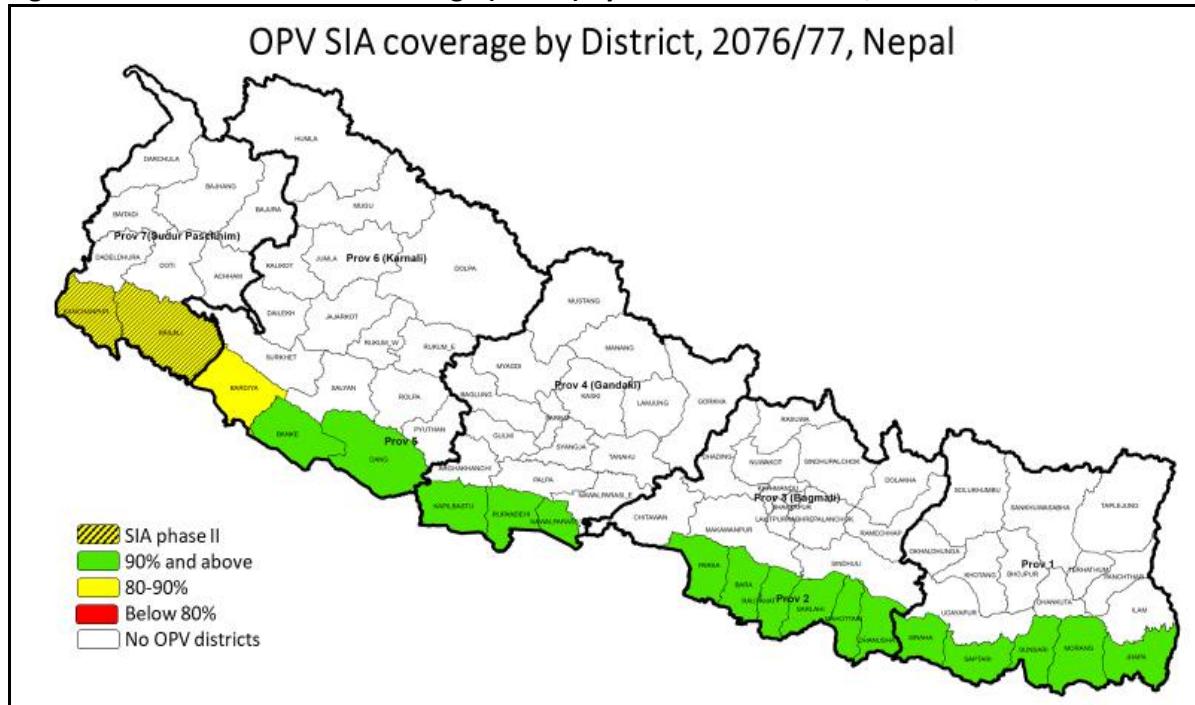
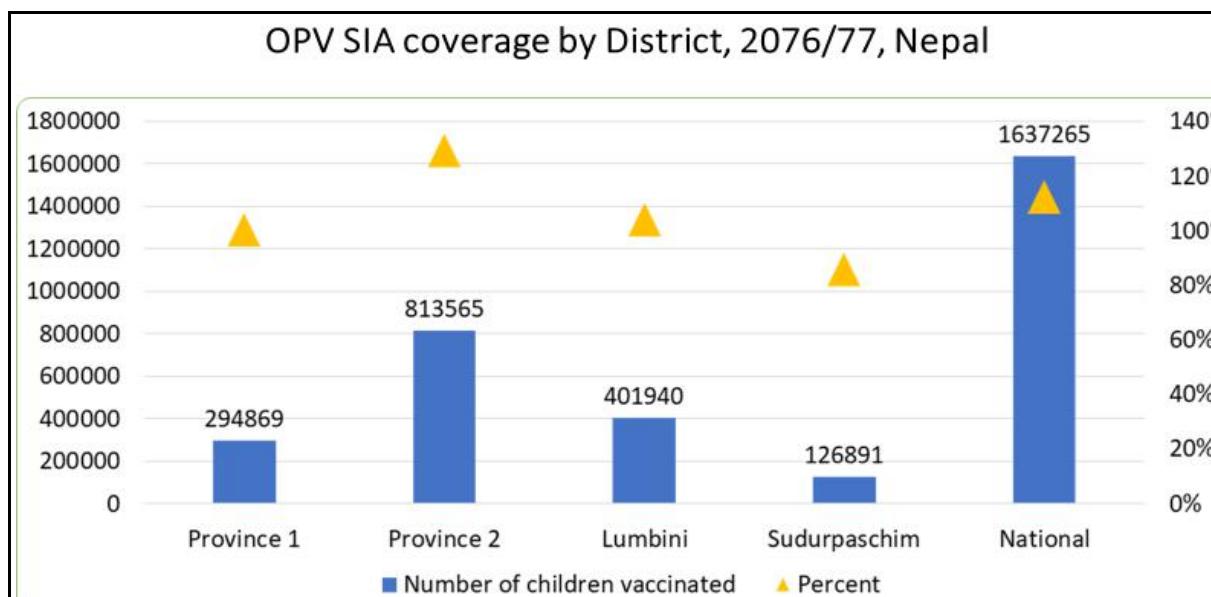


Figure 4.1.14. OPV SIA: bOPV coverage (0-59m) by 19 selected districts, FY 2076/77**Figure 4.1.15. OPV SIA: bOPV coverage (0-59m) by Province in 19 selected districts, 2076/77**

4.1.16 Access and utilization of immunization services:

National Immunization Program evaluates status of the districts by accessibility and utilization of immunization services. Districts are categorized in category 1 to 4 on basis of DPT-HepB-Hib1 coverage and dropout rate of DPT-HepB-Hib1 vs DPT-HepB-Hib3 to know the accessibility and utilization of immunization services respectively.

Table 4.1.4. District categorization based on access (DPT-HepB-Hib1 coverage) and utilization (DPT-HepB-Hib1 vs. DPT-HepB-Hib3 drop-out), FY 2076/77

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%)
Khotang Jhapa Morang Saptari Siraha Rasuwa Bhaktapur Makwanpur Nawalparasi East Rukum East Rolpa Pyuthan Nawalparasi West Dang Bardiya Dolpa Jumla Dailekh Rukum West Salyan Surkhet Bajhang Baitadi Doti Achham 25 districts	Sunsari Dhanusa Mahottari Sarlahi Rautahat Bara Parsa Kavrepalanchok Sindhuli Rupandehi Kapilbastu Banke Mugu Humla Kalikot Jajarkot Bajura 17 districts	Taplejung Sankhuwasabha Solukhumbu Okhaldhunga Bhojpur Dhankuta Terhathum Panchthar Ilam Dolakha Sindhupalchok Dhading Nuwakot Kathmandu Lalitpur Ramechhap Chitawan Gorkha Manang Mustang Myagdi Kaski Lamjung Tanahu Syangja Parbat Baglung Gulmi Arghakhanchi Palpa Darchula Dadeldhura Kailali Kanchanpur 34 districts	Udayapur 1 district

Data source: HMIS/MD, DoHS

Note: The given DPT-HepB-Hib3 coverages used in the table above does not include delayed vaccines given after 1 year of age

Table 4.1.4 shows that 25 districts are in category 1 (good access, good utilization). This is a decrement from 50 districts in this category in the previous fiscal year, showing reduction in immunization access and utilization at sub-national level. 17 districts are in category 2 (good access, poor utilization), whereas 34 districts are in category 3 (poor access, good utilization), and 1 district is in category 4 (poor access, poor utilization).

4.1.17 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.

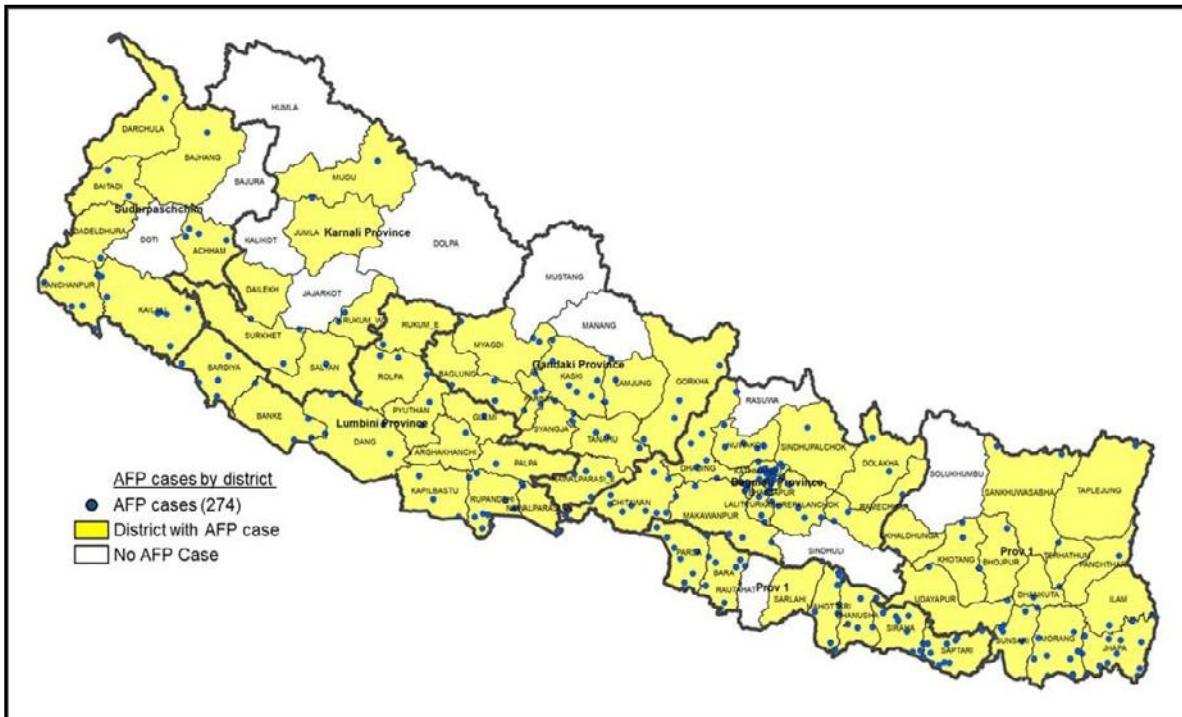
To support polio eradication activities, surveillance of acute flaccid paralysis for polio was started in Nepal in 1998. In 2003, measles (and rubella) and neonatal tetanus surveillance was integrated in the AFP/polio surveillance network. In 2004, surveillance of acute encephalitis syndrome for Japanese encephalitis was integrated in the AFP/polio surveillance network. Supported by WHO-IPD, surveillance for these diseases are conducted throughout the country through 699 routine weekly zero reporting sites, 560 case-based measles surveillance sites and 785 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) 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 Nepalganj Medical College. Further, sentinel surveillance of CRS (congenital rubella syndrome) is conducted through four sentinel sites in Kathmandu Valley- Kanti children Hospital, Tribhuvan University Teaching Hospital- Pediatric department, Patan Academy of Health Sciences and Tilganga Eye Hospital.

(Surveillance data given below have been calculated from mid-July 2019 to mid-July 2020 to align with the government fiscal year 2076/77)

4.1.18. Acute flaccid paralysis surveillance, FY 2076/2077

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 (SEAR standard) under 15 years population, and 2) adequate stool collection rate which should be 80% or more.

Figure 4.1.16. Reported acute flaccid paralysis (AFP) cases by district, FY 2076/2077

Source: FWD and WHO-IPD, Nepal

Figure 4.1.16 shows total reported AFP cases by district for FY 2076/2077. The total number of AFP cases reported were 274 cases from 65 districts. The remaining 12 districts (Humla, Bajura, Doti, Kalikot, Jajarkot, Dolpa, Mustang, Manang, Rasuwa, Rautahat, Sindhuli, Solukhumbhu) did not report any AFP case. Majority 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.

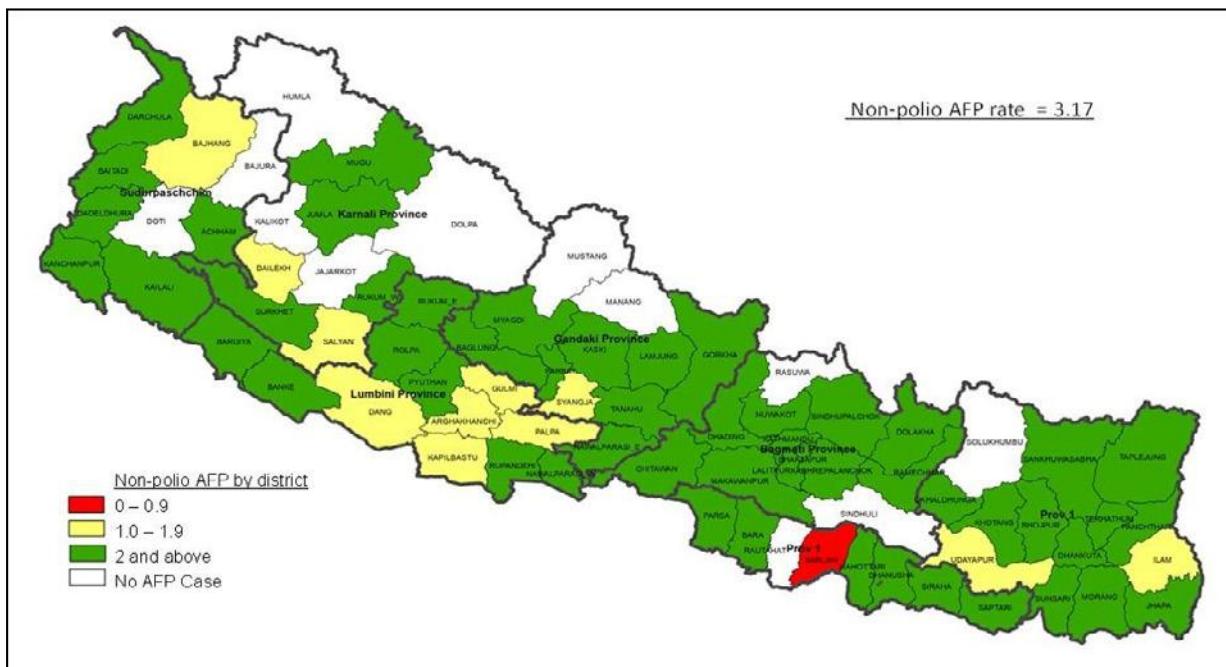
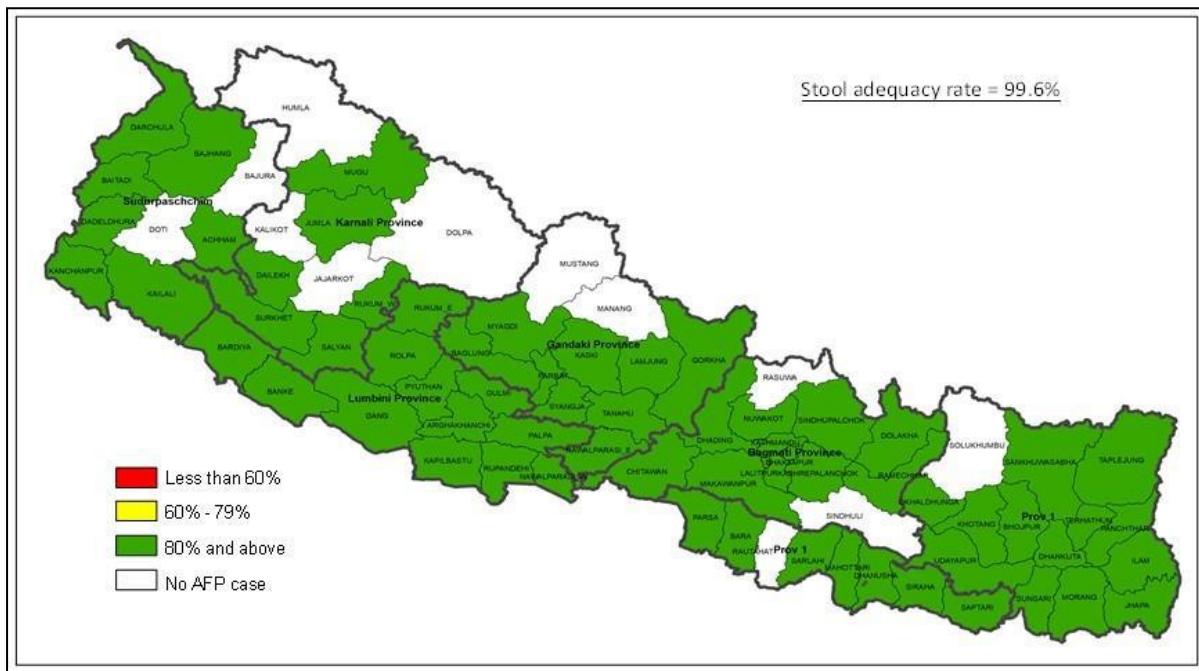
Figure 4.1.17. Non-polio Acute Flaccid Paralysis (NP AFP) rate by district, FY 2076/2077

Figure 4.1.18. Adequate stool collection rate of AFP cases by district, FY 2076/2077

Source: FWD and WHO-IPD, Nepal

Figure 4.1.18 shows adequate stool collection rate from reported AFP cases. The national AFP stool collection rate is 99.6%, which is above the target of 80% or more for this indicator. All 65 districts which have reported AFP cases have achieved adequate stool collection rate of at or above 80%.

Table 4.1.5. Non-polio AFP rate and stool collection adequacy rate by province, FY 2076/2077

Province	Non-Polio AFP cases	Non-Polio AFP rate	Stool Adequacy
Province 1	48	3.37	100%
Province 2	53	2.93	100%
Bagmati	66	3.55	100%
Gandaki	36	4.96	100%
Lumbini	39	2.66	100%
Karnali	9	1.72	100%
Sudurpaschim	23	2.73	96%
Total	274	3.17	99.6%

Source: FWD and WHO-IPD, Nepal

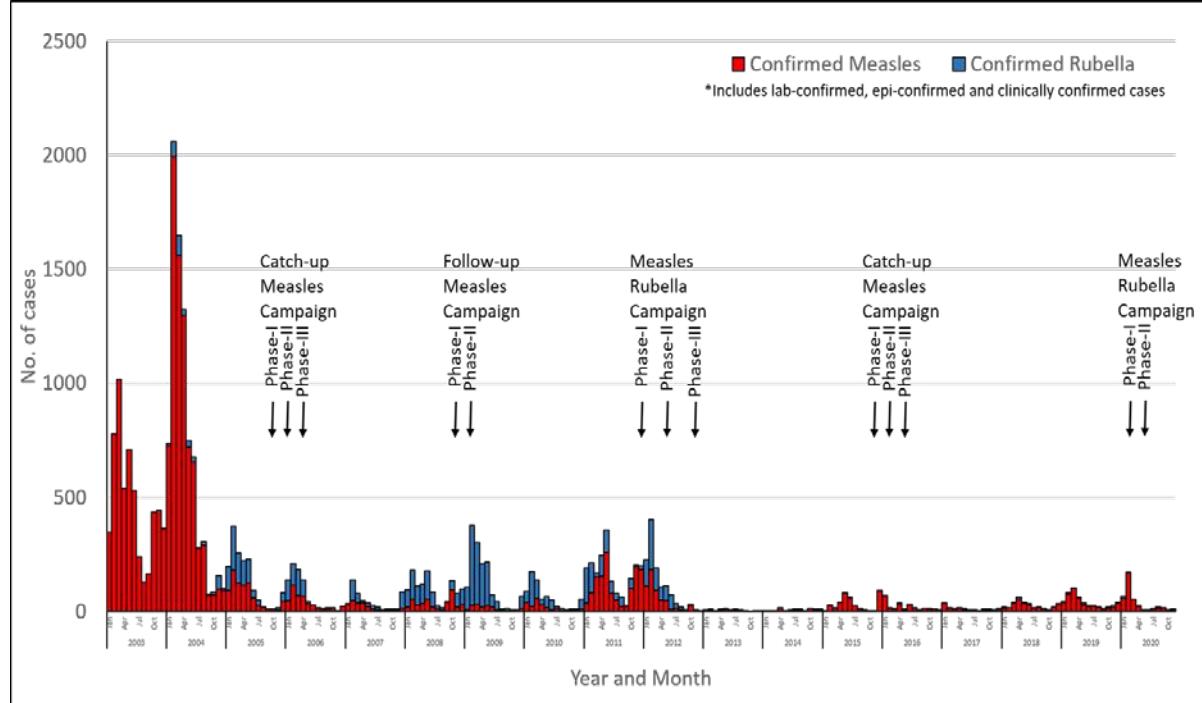
The Table 4.1.5 shows non-polio AFP cases and rate, and adequate stool collection rate by province. Except Karnali Province, all provinces have achieved non-polio AFP rate above 2 per 100,000 under 15 years population, and adequate stool collection rate above 80%. Karnali Province has Non-Polio AFP rate of 1.72 and Sudurpaschim province has stool adequacy of 96%.

4.1.19 Measles-rubella surveillance, FY 2076/2077

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 in rubella cases in 2017 (22) as compared to 2008 (786). However, even though reduction in number of measles cases has been 98% in 2017 (99) compared to 2003 (5419), measles cases have not been

reduced to zero which is required for measles elimination. Figure 2.1.19 shows that there has been drastic reduction in measles and rubella cases in Nepal. Supplementary immunization activities (campaigns), 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 ($\geq 95\%$) at all levels. The coverage of measles-rubella second dose is still not satisfactory. It is only 73% in FY 2075/2076. To progress towards measles and rubella elimination by 2023 as per the resolution, nation-wide measles vaccination campaign is being conducted in FY 2076/2077 including strengthening of routine immunization.

Figure 4.1.19. Confirmed measles and rubella cases, Nepal, 2003- 2020

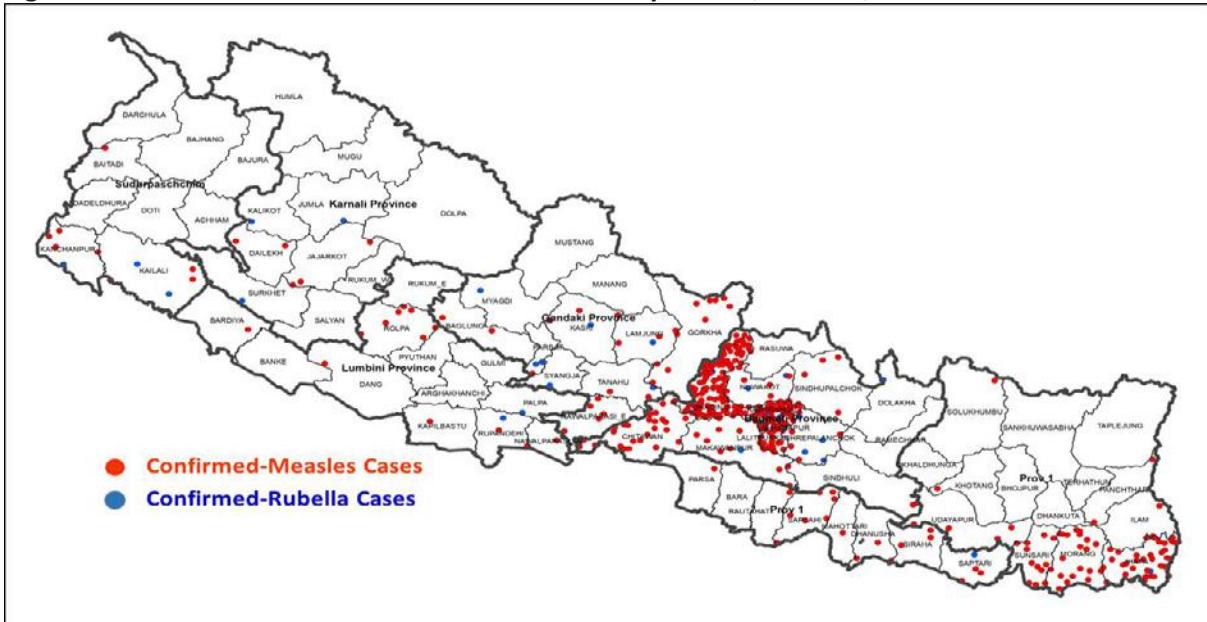


Source: FWD and WHO-IPD, Nepal

**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 4.1.20 and Table 4.1.6 shows laboratory confirmed measles and rubella cases by district and province respectively in FY 2076/2077. There was a total of 429 confirmed measles and 36 confirmed rubella cases identified through suspected measles surveillance. Among total confirmed measles cases in FY 2076/2077, the majority is from Bagmati Province 279 (65%), followed by Province-1, 78 (18.2%) and Gandaki Province 26 (6.1%).

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 have achieved NMNR rate above 2. The national NMNR rate is 3.78 per 100,000 population.

Figure 4.1.20. Confirmed measles and rubella cases by district, FY 2076/2077

Source: FWD and WHO-IPD, Nepal

Table 4.1.6. NMNR rate and confirmed measles and rubella cases by province, FY 2076/2077

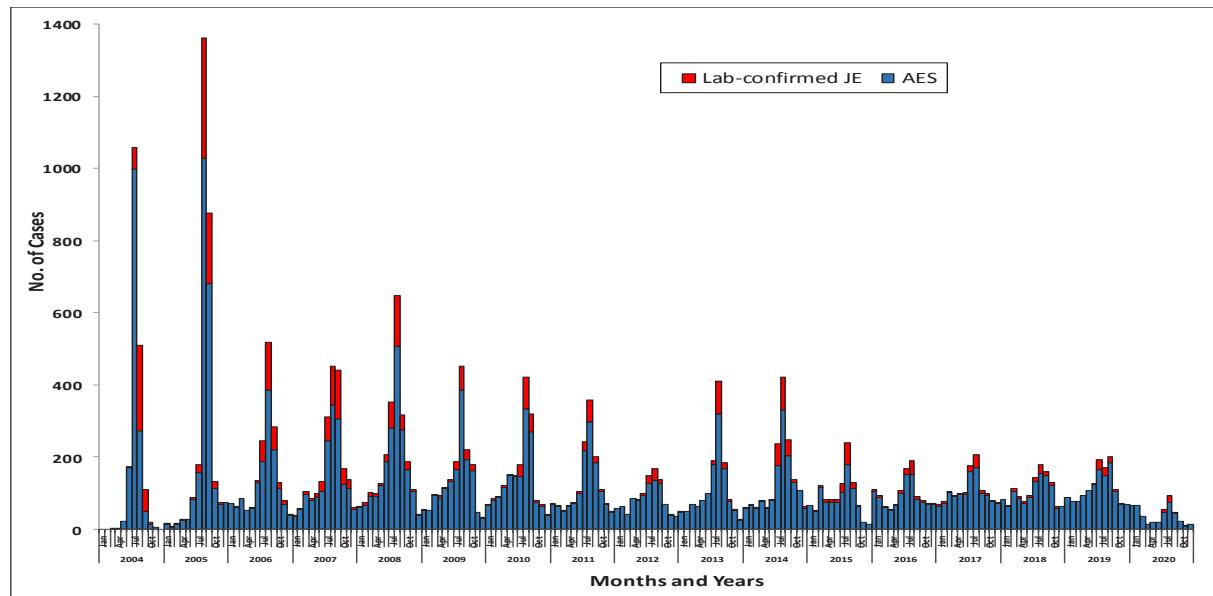
Province	NMNR cases	NMNR rate	Confirmed Measles	Confirmed Rubella
Province 1	149	3.03	78 (18.2%)	1 (2.8%)
Province 2	126	2.03	20 (4.7%)	1 (2.8%)
Bagmati	364	5.70	279 (65.0%)	19 (52.8%)
Gandaki	137	5.46	26 (6.1%)	7 (19.4%)
Lumbini	139	2.74	13 (3.0%)	2 (5.6%)
Karnali	123	6.85	5 (1.2%)	3 (8.3%)
Sudurpashchim	90	3.09	8 (1.9%)	3 (8.3%)
Total	1128	3.78	429 (100%)	36 (100%)

Source: FWD and WHO-IPD, Nepal

NMNR: non-measles non-rubella

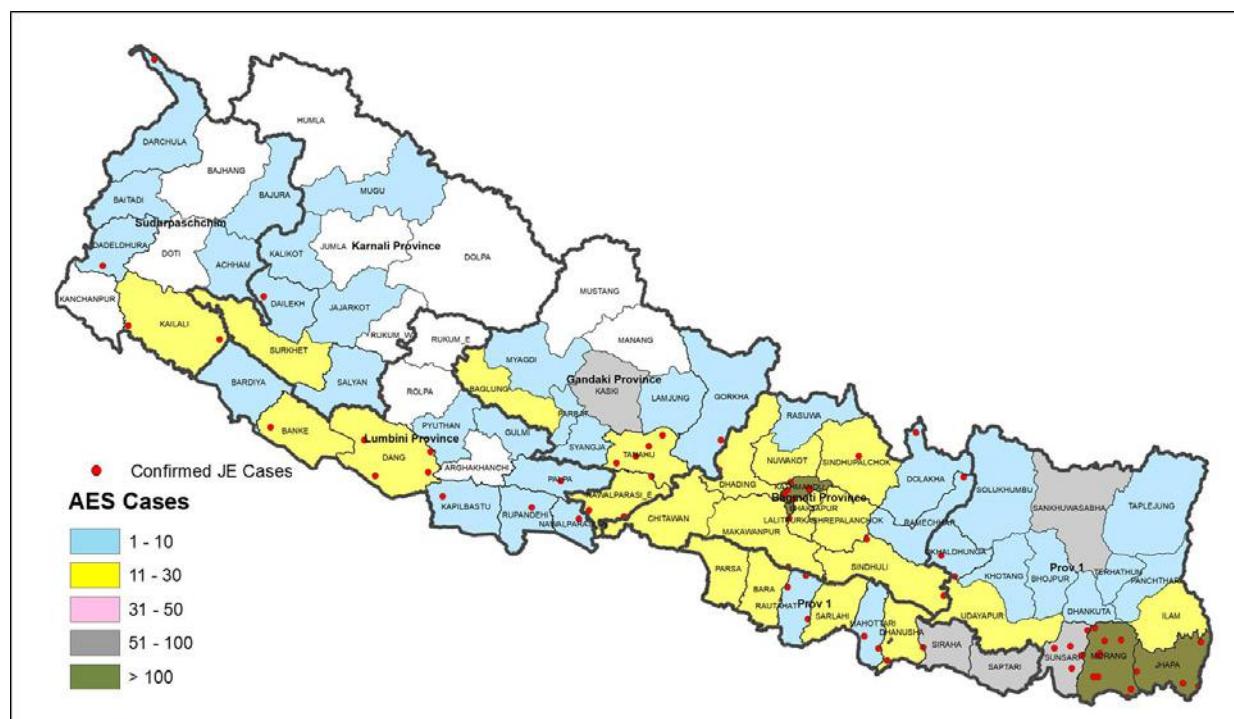
4.1.20 Acute encephalitis syndrome (AES) surveillance, FY 2076/2077

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 2.1.21, JE burden in Nepal has reduced significantly in 2019 compared to the initial years when surveillance was started.

Figure 4.1.21. Reported AES and lab confirmed Japanese encephalitis cases, Nepal, 2004 – 2020

Source: FWD and WHO-IPD, Nepal

Figure 4.1.22 shows that 65 districts have reported AES cases in FY 2076/2077. Out of these 65 districts, five districts (Kaski, Siraha, Saptari, Sunsari, Sankhuwasabha) have reported higher number of AES cases (between 51-100), and three districts (Morang, Sunsari, Kathmandu) have reported the highest (> 100). In total, 917 AES cases were reported (Table 4.1.7). Among the total reported AES cases, only 65 (7.08%) 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 (21 out of 65; 32.30%) were reported from Province-1.

Figure 4.1.22. Reported AES and laboratory confirmed Japanese encephalitis cases by district, FY 2076/2077

Source: FWD and WHO-IPD, Nepal

Table 4.1.7. Reported AES cases and confirmed JE cases by province, FY 2076/2077

Province	AES cases	JE cases
Province 1	290	21
Province 2	145	8
Bagmati	257	13
Gandaki	111	8
Lumbini	71	9
Karnali	22	2
Sudurpashchim	21	4
Total	917	65

Source: FWD and WHO-IPD, Nepal

4.1.21 Neonatal tetanus surveillance, FY 2076/2077

In Nepal, neonatal tetanus (NNT) elimination was achieved in 2005. This status has been maintained since then. In FY 2076/77, one NNT case was reported from Surkhet district (Fig 2.1.23). The national incidence rate of NNT is 0.1 per 1000 live births.

Figure 4.1.23. Neonatal tetanus cases, FY 2076/2077

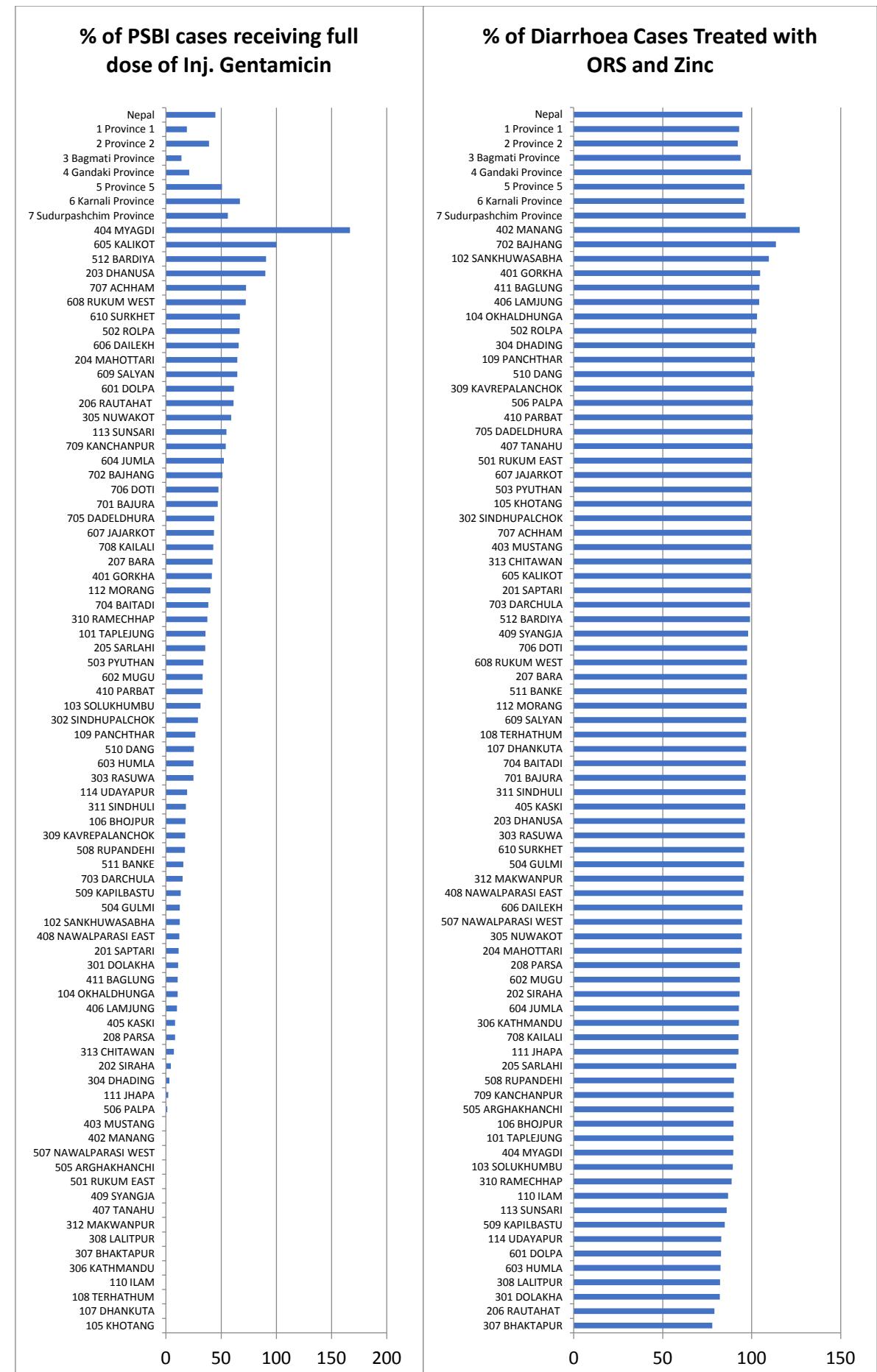
Source: FWD and WHO-IPD, Nepal

4.1.22 PROBLEMS/CONSTRAINTS AND ACTIONS TO BE TAKEN

Regional performance review meeting in 2076/77 identified the following problems and constraints and recommended action to be taken at different levels of immunization delivery system.

Family Welfare

Problems/Constraints	Action to be taken	Responsibility
Decrease in immunization coverage following COVID-19 pandemic	<ul style="list-style-type: none"> -Catchup vaccination programme at all level to reinforce RI -Engagement of community volunteers to search missed children -Monitor routine immunization at community level and address the identified gaps 	MoHP/DoHS/HO, Local Government
Inadequate HRH especially in Metro/Sub - Metropolitan, MCH / Institutional clinics and ill-defined JD of AHW and ANM (for vaccinations)	<ul style="list-style-type: none"> -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 immunization sessions 	MoHP/DoHS/HO, Local Government
Poor quality immunization data: Under and over reporting. Reporting rate for immunization dataset in DHIS-2 is only 86.1%.	<ul style="list-style-type: none"> -Only 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 RHDS and districts 	HF/HO/Province/ FWD/HMIS
Poor Inventory keeping and distribution system	<ul style="list-style-type: none"> -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 	PMS/District Vaccine Store
Unplanned immunization month celebration	<ul style="list-style-type: none"> -Utilize immunization month as an opportunity to intensify routine immunization activities especially to ensure full immunization -Give more emphasis to reach the unreached based on prioritization. -Increase the access and utilization in Cat 2 and 3 District and reduce the dropout rate in Cat 2 Districts. -Report the immunization month's achievement separately to see the additionally of immunization performance of immunization month 	Districts/Municipality
Low achievement of FID according to national target	<ul style="list-style-type: none"> -Orientation, capacity building and empowerment of local government -Accelerate of Full Immunization declaration at all levels -Coordination with intersectoral stakeholders 	MoHP, MoFALD, DoHS/FWD, Province, municipal
Poor cold chain and vaccine management	<ul style="list-style-type: none"> -Effective implementation of EVM training at all level -Supportive supervision and onsite coaching at all levels -Strengthen bundling 	MD/FWD/NHTC/ HO
Inadequate CC Equipment and inadequate repair, maintenance and replacement, lack of technician	<ul style="list-style-type: none"> -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 	DoHS/ MD/FWD
Inadequate vaccine store capacity especially central level	<ul style="list-style-type: none"> -Strengthen the vaccine stores with new buildings in central store -Establishment of new vaccine store at Karnali Province and Province 2. 	MoHP, DoHS, MD, FWD



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) as it targeted same population and involved same health personnel. 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-Based New 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 be very sluggish because the country had no targeted interventions for new-borns especially at community level. State of world report, WHO showed that major causes of mortality in neonates were infection, asphyxia, low birth weight and hypothermia. The Government of Nepal formulated the National Neonatal Health Strategy 2004. Based on this 'Community-Based Newborn 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 decade. 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 a high contribution to the reduction of post-neonatal child mortality are bi-annual supplementation of Vitamin A program and expanded program on immunization. On the other hand, essential newborn care practices were improved in CB-NCP implemented districts.

In both 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. Additionally, 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 in promotion of healthy behaviours, they have poor performance in service delivery. Moreover, they are overburdened with workload and massive resources were used in a fragmented manner for the same purpose. Also, inequity in quality service delivery and utilization were the major challenges in newborn and child health programs. Health governance issue was also affecting better functioning of the health system. Considering these issues, MoHP decided to integrate CB-NCP and IMCI into a new package that is named as CB-IMNCI.

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

CB-IMNCI is an integration of CB-IMCI and CB-NCP Program as per the decision of MoHP on 2071/6/28 (October 14, 2015). 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 and counseling for 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 carry out health promotional activities for maternal, new-born and child health and dispensing of essential commodities like distribution of iron, zinc, ORS, chlorhexidine which do not require assessment and diagnostic skills, and immediate referral in case of any danger signs that appear among sick new-borns and children. Health workers will counsel and provide health services like management of non-breathing cases, low birth weight babies, common childhood illnesses, and management of neonatal sepsis. Also, the program has provisioned for the post-natal visits by trained health workers through primary health care outreach clinic.

The program has envisioned for CHD to act as the quality assurance and monitoring entity for the CB-IMNCI program. Clinical training sites and PHTC are the lead agency for training in the 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 all 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 new-born care, cough, diarrhoea, fever, malnutrition and anemia. It aims to capacitate team of health workers at district hospital with required knowledge and skills to manage complicated under-five and neonatal cases and to ensure timely and effective management of referral cases. This training package is delivered to paramedics and nursing staffs (3 days) and doctors (6 days) at district, zonal, sub-regional and regional hospitals.

Comprehensive New-Born 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 new-born deaths,

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"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 strengthen 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 new-born. This package covers counselling, infection prevention, care of normal new-born, 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.

National Health Training Centre has developed Comprehensive New-born Care Training (Level II) package in 2017 and has been conducting training for Nurses in coordination with Family Welfare Division.

Free New-Born 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. Aim of this program is to prevent any sort 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 offer Neonatal Intensive Care Unit (NICU) services for Package 'C'. The government has made provisions of required budget and issued directives to implement the free newborn care packages throughout Nepal. The goal of the Free Newborn Care Service Package is to achieve the sustainable development goal to reduce newborn mortality through increasing access of the newborn care services. The program makes the provision of disbursing **Cost of Care** to respective health institutions required for providing free care to inpatient sick newborns.

Nepal Every Newborn Action Plan (NENAP)

With the vision of a country where 'there is no preventable deaths of newborns or stillbirths, where every pregnancy is wanted, every birth celebrated and women, babies and children survive, thrive and reach their full potential MoHP has initiated NENAP through four strategic directions which are equitable utilization of health services, quality for all, multi-sectoral approach and reform, particularly for poor and vulnerable populations. NENAP aims to achieve NMR of less than 11 deaths per 1000 live births and a stillbirth rate of less than 13 stillbirths per 1000 total births by the year 2035.

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

Goal

- Improve newborn child survival and ensure healthy growth and development.

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

Targets of NENAP

- Reduction of Neonatal mortality rate (per 1000 live births) to 11 by 2035
- Reduction of stillbirths (per 1000 total births) to 13 by 2035

Objectives

- To reduce neonatal morbidity and mortality by promoting essential newborncare services
- To reduce neonatal morbidity and mortality by managing major causes of illness
- 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 newborn 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 Specific Interventions

- Promotion of birth preparedness plan
- Promotion of essential newborn care practices and postnatal care to mothers and newborns
- Identification and management of non-breathing babies at birth
- Identification and management of preterm and low birth weight babies
- Management of sepsis among young infants(0-59days) including diarrhoea

Child Specific Interventions

- Case management of children aged between 2-59 months for 5 major childhood killer diseases (Pneumonia, Diarrhoea, Malnutrition, Measles and Malaria)

Cross-Cutting Interventions

- Behavioural change communications for healthy pregnancy, safe delivery and promotion of 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

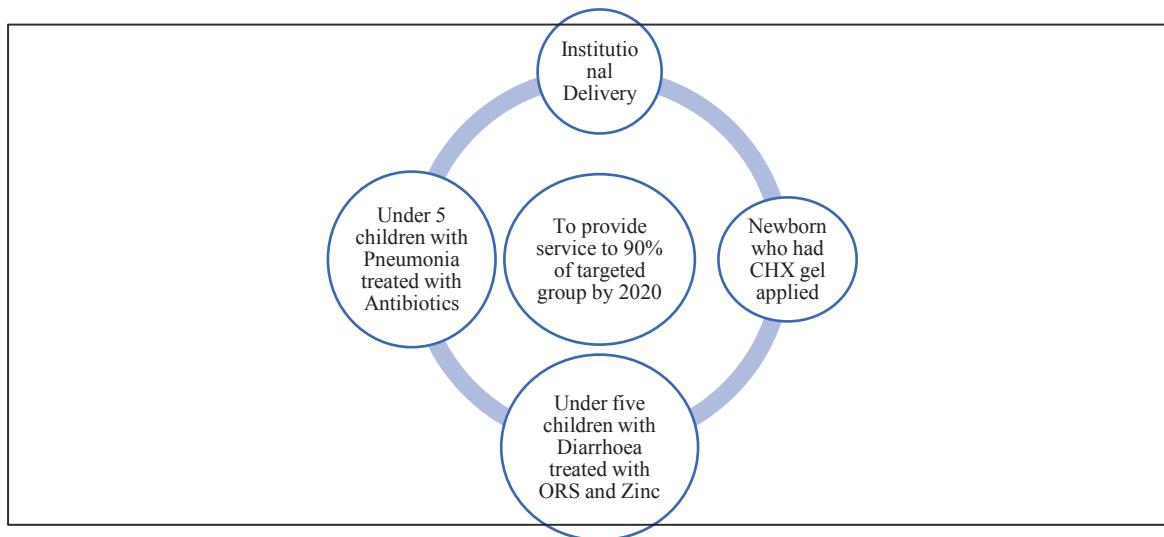


Figure 4.2.1 CB IMNCI Program Vision

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

4.2.4 Major activities

Major activities carried out under the IMNCI programme in FY 2076/77 were as shown in table below:

Capacity Building
Comprehensive Newborn Care (Level II) Training for Medical Officer
FB IMNCI Training for Medical Officer
FB IMNCI training for nursing staffs and paramedics
CBIMNCI onsite coaching for health workers
Newborn Care Onsite Coaching (Training of Trainer)
Orientation of equity and assess guideline
Training on Routine Data Quality Assessment (RDQA)
Equipment and supplies
Various equipment and Medicines for IMNCI programs (ORS, Zinc, Amoxicillin, Gentamycin, Chlorohexidine gel) procured at provincial level.
Chlorhexidine (NaviMalham) procured and distributed from federal level.
Finalization of specification for SNCU/NICU and KMC unit equipment
Preparation/ Revision of Guidelines
Newborn Care Services Mentoring Guideline updated
Revision of Comprehensive Newborn Care (Level II) Training package
Revision of FB-IMNCI training package
Revision of CBIMNCI Coaching guideline and Equity and Access Guideline
Establishing/strengthening SNCU
Total NICU established till date: 8 hospitals
Total SNCU established till date: 30 hospitals
Printing of training materials
Printing of FB-IMNCI training manuals, Comprehensive New born Care (Level II) Training Materials (Guidelines, Handbook, Chart, Flex, etc.)
Implementation of Newborn services and other programs
Provision of budget for Free Newborn Care Services in 110 hospitals at federal, provincial, district and local level hospitals.
POCQI program implemented

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
- % 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 is 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 in reducing the neonatal mortality. Status of CB-IMNCI programme monitoring indicators is summarized below in as follows (Table 4.2.1).

Table 4.2.1: Status of CB-IMNCI program monitoring indicators by province (FY 2076/77)

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	63.4	70.7	18.71	171.3	93
Province 2	53.6	73.9	39.33	240.1	92.1
Bagmati	67.8	74.2	13.61	133.9	93.8
Gandaki	46.5	89.8	20.67	161.9	99.9
Lumbini	81.4	78.2	51.45	138.2	96
Karnali	77.5	95.3	66.95	104.1	95.8
SudurPachchim	71.1	95	55.85	138.4	96.7
National	65.6	79.0	44.65	155.9	94.8

Source: HMIS, 2076/77

The national average for institutional deliveries in 2076/77 was 65.6 percent, with lowest in Gandaki Province (46.5%) and highest in Lumbini Province (81.4%).

Chlorhexidine was applied in 79 percent of newborn's umbilical cord (HF+ FCHV) among total reported live births. Province wise variation was observed in CHX use with highest use in Karnali (95.3%) and lowest in Province 1 (70.7%). Similarly, compliance of inj. Gentamicin at national level for PSBI cases among under two months child was only 44.65%. Three provinces have used complete dose of Gentamicin in more than 50% of PSBI cases and four provinces have used it in less than 30% of cases with lowest 13.61 % use in Bagmati province.

Use of antibiotics for pneumonia treatment (excluding FCHVs) was more than 100 percent in all seven provinces, with national average of 155.9%, highest use was observed in Province 2 (240%) and lowest in Karnali (104%). Pneumonia cases reported by FCHV were used to be included till 2073/74. But, from the 2074/75, 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 a 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 94.8%, which was highest in Gandaki (99.9%) and lowest in Province 2 (92.1 %).

4.2.6 Key Achievements in the management of 0-28 days 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 aggregate 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

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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 2076/77)

Indicators	Year	Province 1	Province 2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Pachhim	National	
									No.	% among total cases
Total cases (HF+ORC)	2074/75	3,902	3,055	2,839	2,156	6,425	3,608	3,693	25,678	NA
	2075/76	5,233	3,935	3,270	2,479	6,536	3,133	4,520	29,106	NA
	2076/77	7,945	6,650	5,451	2,787	8,349	4,672	7,043	42,897	NA
Possible severe bacterial infections (PSBI) (HF+ORC)	2074/75	414	270	265	142	1,096	727	666	3,580	13.9
	2075/76	487	278	258	125	1,024	595	635	3,402	11.7
	2076/77	569	478	405	174	959	829	829	4,243	9.89
Local bacterial infections (HF+ORC)	2074/75	2,206	1,820	1,239	786	1,942	1,220	1,954	11,167	43.5
	2075/76	2595	2249	1400	821	2075	1235	2351	12,726	43.7
	2076/77	4,539	4,086	2,705	1,225	3,122	2,244	3,914	21,835	50.9
Jaundice (HF+ORC)	2074/75	255	149	252	324	280	144	121	1,525	5.9
	2075/76	301	136	267	314	297	106	114	1,535	5.3
	2076/77	276	244	220	230	290	124	74	1,458	3.4
% of Low weight or feeding problem (HF only)	2074/75	5.9	3.8	6.9	6.0	6.1	14.4	6.8	1,838	7.2
	2075/76	4.7	4.9	6.7	4.5	4.2	9.5	6.9	1,656	5.7
	2076/77	2.5	2.4	2.8	3.0	3.4	5.1	4.5	1,409	3.3
Referred (HF+ORC)	2074/75	215	258	214	98	259	288	186	1,518	5.9
	2075/76	268	207	195	88	282	167	202	1,409	4.8
	2076/77	448	293	223	145	354	183	230	1,876	4.4
Deaths (HF+ORC)	2074/75	14	1	16	5	35	19	16	106	0.4
	2075/76	27	2	12	6	20	9	26	102	0.4
	2076/77	16	15	14	21	15	4	30	115	0.26
FCHV										
Sick baby	2074/75	2671	2285	1862	653	2469	1535	1782	13257	NA
	2075/76	2576	2982	1567	2649	1965	1087	1495	14321	NA
	2076/77	2234	2180	1736	562	1774	560	1782	10828	NA
Treated with Amoxicillin and referred	2074/75	1266	1007	314	95	1005	672	527	4886	36.9
	2075/76	1077	1002	228	119	687	459	436	4008	28
	2076/77	371	520	145	122	322	298	227	2005	18.5
Death	2074/75	310	163	177	73	324	117	219	1383	NA
	2075/76	524	93	139	63	151	68	216	1254	NA
	2076/77	226	63	165	54	144	118	166	936	NA

Source: HMIS, 2076/77

A total of 42,897 new-born cases were registered and treated both in health facility and PHC/ORC clinic in FY 2076/77. The trend shows that the treatment of new-borns in HF and PHC/ORC clinic has increased by 13,791 compared to last year. The highest of 8,349 new-born cases in Lumbini Province and lowest of 2,787 in Gandaki Province were treated. In total 4,243 (9.89%) cases were classified as Possible Severe Bacterial Infection (PSBI) at national level which is 2% less than that of previous year (11.7%). The proportion of PSBI was highest in Lumbini Province (22%) and lowest in Gandaki Province (4.1%).

Likewise, 50.9% of total cases were classified as LBI, 3.39% as Jaundice, 3.26% as Low Birth Weight or Breast-Feeding Problem. Data shows there is not any remarkable change in classification and treatment of LBI and Jaundice however, there is slightly decreased in treatment of Low Birth Weight or Breast-Feeding Problem from 5.6 to 3.26 compared to last year. The proportion of LBI is highest in Province 1 (20.78%) and lowest in Gandaki province (5.6%) among national total.

FCHV had identified 10828 cases of sick newborn. Among them, 18.5 percent were treated with amoxicillin and referred by FCHV. 936 deaths have been reported by FCHV in the FY 2076/77.

4.2.7 Key achievement for Management of 2-59 months children

Diarrhoea

Classification of diarrhoeal cases by province 2076/77

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 4.2.3: Classification of Diarrheal cases by province (FY 2076/77) (2-59 months children)

Indicators	Fiscal Year	Province 1	Province 2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Pachchim	National
Total diarrhoeal cases (HF+ORC+FCHV)	2074/75	180,260	208,779	166,644	73,526	203,879	127,271	187,879	1,148,238
		15.70%	18.18%	14.51%	6.40%	17.76%	11.08%	16.36%	100%
	2075/76	174,099	216,837	154,300	67,857	205,759	123,696	182,325	11,24,873
		15.48%	19.28%	13.72%	6.03%	18.29%	11.00%	16.21%	100%
	2076/77	158,134	207,882	139,378	61,502	173,743	114,258	158105	1013,002
		15.61%	20.52%	13.76%	6.07%	17.15%	11.28%	15.61%	15.61%
HF + ORC diarrhoeal cases	Total	51,792	94,447	43,143	22,088	67,989	42,918	54,183	376,560
		49,678	97,157	41,446	20,249	71,262	45,227	56,183	381,206
		40,204	80,990	35,454	17,919	55,141	41,661	43,534	314,909
	No dehydration	41,201	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%
		41,225	77,587	36,937	18,438	62,322	36,578	49,288	322,375
		82.98%	79.86%	89.12%	91.06%	87.45%	80.88%	87.72%	84.57%
		33,399	66,365	31,329	16,198	49,741	34,072	37,768	268,872
	2076/77	83.1%	81.9%	88.4%	90.4%	90.2%	81.8%	86.8%	85.38%
		10,397	19,858	5,690	2,475	8,696	8,801	6,891	62,808

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	dehydration		20.1%	21.0%	13.2%	11.2%	12.8%	20.5%	12.7%	16.7%
		2075/76	8,257	19,209	4,409	1,744	8,579	8,423	6,746	57,367
			16.62%	19.77%	10.64%	8.61%	12.04%	18.62%	12.01%	15.05%
		2076/77	6,618	14,322	4,041	1,701	5,246	7,421	5,672	45,021
			16.5%	17.7%	11.4%	9.5%	9.5%	17.8%	13%	14.3%
	Severe dehydration	2074/75	194	387	87	43	502	401	132	1,746
			0.37%	0.41%	0.20%	0.19%	0.74%	0.93%	0.24%	0.46%
		2075/76	196	361	100	67	361	226	153	1,464
			0.39%	0.37%	0.24%	0.33%	0.51%	0.50%	0.27%	0.38%
		2076/77	187	309	84	20	154	168	94	1,016
	FCHV (diarrhoea cases)	2074/75	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%
		2075/76	124,421	119,680	112,854	47,608	134,497	78,469	126,138	743,667
			11.06%	10.64%	10.03%	4.23%	11.96%	6.98%	11.21%	66.11%
		2076/77	117,930	126,886	103,924	43,583	118,602	72,597	114,571	698,093
			11.19%	12.04%	9.87%	4.13%	11.25%	6.89%	10.87%	66.27%

Source: HMIS, 2076/77

In FY 2076/77, a total of 10,53,339 (population proportion of that age group is 35%) diarrhoeal cases were reported out of which more than one third (34%) were reported from health facilities and ORC and rest two third (66%) by FCHVs which showed similar trend like that of previous year. While there were decreasing trend in diarrhoeal cases among six provinces, those of Province 2 increased in comparison to FY 2075/76. Among registered cases in Health Facilities and PHC/ORC, more than three fourth (85%) were classified as having no dehydration, about one fifth (14.3%) some dehydration. Severe dehydration remained below 1% across all provinces and at national level as well.

Classification of diarrhoea disease incidence

Table 4.2.4: Incidence and case fatality of Diarrhea among children under 5 years of age by province (FY 2076/77)

Indicators	Fiscal Year	Province 1	Province 2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Pachhim	National
Estimated <5 years population that are prone to diarrhoea	2074/75	495,671	619384	636,059	253,948	505,950	179,486	289,739	2,980,237
	2075/76	492,953	620489	637,580	251,331	505,366	179,694	289,841	2,977,254
	2076/77	496,934	629,490	647,368	252,307	511,668	182,248	293,876	3,013,891
Incidence of diarrhoea/1,000 <5 years population	2074/75	364	337	262	290	403	709	648	385
	2075/76	351	347	240	268	404	683	624	375
	2075/76	329	355	220	249	350	656	553	350
Diarrhoeal deaths (HF+ORC)	2074/75	8	14	6	0	12	3	4	47
	2075/76	8	11	18	14	1	4	7	63
	2076/77	50	10	5	3	1	5	0	74
Diarrhoea Case fatality rate per 1000 (HF+ORC)	2074/75	0.16	0.15	0.14	0.00	0.18	0.07	0.07	0.13
	2075/76	0.16	0.11	0.43	0.69	0.01	0.09	0.12	0.17
	2076/77	0.16	0.12	0.14	0.16	0.01	0.08	0	0.15

Source: HMIS, 2076/77

As shown in table 4.2.4, incidence of diarrhoea per thousand under 5 years children was 350 per 1,000 in FY 2076/77, being highest at Karnali (656) followed by SudurPaschim (553). Similar trend was seen in the previous fiscal year. Moreover, the lowest incidence was in Province 3 (220). Total diarrhoeal death in health facility and PHC/ORC was 74 which increased by 15% than the last fiscal year. Case fatality rate across all the provinces was below 1 per thousand this age group.

Treatment of diarrhoea

Table 4.2.5: Treatment of diarrhoea cases by province (FY 2076/77)

Indicators	Fiscal Year	Province 1	Province 2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Paschim	National
Total cases (HF+ORC+FCHV)	2074/75	180,260	208,779	166,644	73,526	203,879	127,271	187,879	1,148,238
	2075/76	174,099	216,837	154,300	67,857	205,759	123,696	182,325	1,124,873
	2076/77	158,134	207,882	139,378	61,502	173,743	114,258	158105	1013,002
Diarrhoeal cases treated with ORS and zinc (HF+ORC+FCHV)	2074/75	161,794	202,520	155,749	72,597	193,976	122,678	183,792	1,093,106
		89.76%	97.00%	93.46%	98.74%	95.74%	96.39%	98.82%	95.20%
	2075/76	155,819	221,745	142,884	66,056	194,330	121,983	171,281	1,074,098
		89.5%	102.3%	92.60%	97.35%	94.45%	98.62%	93.94%	95.49%
	2076/77	147,065	191,468	130,758	61,458	166,713	109,502	152,880	959,844
		93.0%	92.1%	93.8%	99.9%	96.0%	95.8%	96.7%	94.8%
Intravenous (IV) fluid (HF)	2074/75	633	1,458	351	148	1,369	727	1,029	5,715
		0.35%	0.70%	0.21%	0.20%	0.67%	0.57%	0.55%	0.50%
	2075/76	368	715	233	177	747	380	259	2,879
		0.21%	0.33%	0.15%	0.26%	0.36%	0.31%	0.14%	0.26%
	2076/77	243	523	227	70	399	292	143	1,897
		0.21%	0.41%	0.22%	0.16%	0.34%	0.4%	0.12%	0.27%

Source: HMIS, 2076/77

In FY 2076/77, the proportion of diarrhoeal cases treated with ORS and Zinc as per IMNCI national protocol at national level was 95% which was almost similar to the previous year trend. There was slight difference among provinces treating with ORS & Zinc but maintaining more than 90% in all provinces. Likewise, less than 1% severe diarrhoeal cases were treated with intravenous (IV) fluid at health facilities level in all provinces.

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)

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Table 4.2.5: Acute respiratory infection (ARI) and pneumonia cases by provinces (FY 2076/77)

Indicators	Year	Province 1	Province 2	Bagmati	Gandaki	Lumbini	Karnali	Sudur Pachhim	National
Target population (<5 years that are prone to ARI)	2074/75	495671	619384	636059	253948	505950	179486	289739	2980237
	2074/75	495671	619384	636059	253948	505950	179486	289739	2980237
	2076/77	496934	629490	647368	252307	511668	182248	293876	3013891
Total ARI cases (HF+ORC)	2074/75	144819	130874	98396	57014	117675	74970	101678	725426
	2075/76	156682	153700	105247	62907	129872	79432	101937	789777
	2076/77	147621	156829	104459	55347	139927	89985	102541	796709
ARI incidence per 1,000<5 year child	2074/75	666	448	427	571	564	960	971	592
	2075/76	693	498	431	610	579	941	930	608
	2076/77	655	480	428	563	578	993	904	594
Total Pneumonia cases (HF+ORC)	2074/75	33938	25259	25149	10430	25379	18985	20673	159813
	2075/76	33009	23990	23899	9194	23634	17503	19658	150887
	2076/77	25491	19380	19351	6729	22037	18031	18004	129023
Incidence of pneumonia per 1,000 <5 children	2074/75	118	66	60	52	80	171	130	87
	2075/76	116	65	55	58	76	159	110	83
	2076/77	51	31	30	27	43	99	61	43
% of pneumonia among ARI cases (HF+ORC)	2074/75	22.0	23.4	19.3	25.6	18.3	21.6	25.3	20.3
	2075/76	21.1	15.6	22.7	14.6	18.2	22.0	19.3	19.1
	2076/77	17.3	12.4	18.5	12.2	15.7	20	17.6	16.2
% of severe pneumonia among new cases	2074/75	0.24	0.27	0.16	0.20	0.19	0.58	0.23	0.25
	2075/76	0.27	0.34	0.20	0.19	0.19	0.52	0.24	0.27
	2076/77	0.25	0.26	0.16	0.07	0.18	0.37	0.19	0.22
% of Pneumonia Treated with antibiotic (HF&ORC)	2074/75	172.7	296.5	147.8	218.6	193.0	173.8	160.2	193.1
	2075/76	170.4	285.5	141.7	198.2	162.4	131.8	147.7	177.2
	2076/77	171.3	240.1	133.9	161.9	138.2	104.1	138.4	155.9
Deaths due to ARI at HF+ORC	2074/75	46	6	23	12	22	19	11	139
	2075/76	60	41	31	18	15	2	11	178
	2076/77	23	3	31	10	3	5	30	105
ARI Case fatality rate per 1000 at HF	2074/75	0.09	0.01	0.04	0.05	0.04	0.11	0.04	0.05
	2075/76	0.12	0.07	0.05	0.07	0.03	0.01	0.04	0.06
	2076/77	0.16	0.02	0.30	0.18	0.02	0.06	0.29	0.13
FCHV									
Total ARI	2074/75	184329	143759	170454	88645	165463	95301	177291	1025242
	2075/76	187145	157630	171395	91537	164822	91001	169529	1033059
	2076/77	177883	145722	173126	86772	155650	91031	163218	993402

Source: HMIS, 2076/77

In FY 2076/77, a total of 7,96,648 ARI cases were registered in HF and ORC, out of which 16.2 % were categorized as pneumonia cases and 0.22 % were severe pneumonia cases. The incidence of

pneumonia (both pneumonia and severe pneumonia at HF and PHC/ORC) at national level was 43 per 1000 under five children. The incidence of pneumonia among under five children has decreased slightly compared to that of last FY. Likewise, highest ARI incidence was seen at Karnali Province (993/1000 U5 children) followed by Sudur Paschhim (904/1000 U5 children) and least at Bagmati (428/1000 U5 children). Similarly, Bagmati and Karnali Province had the highest percentage of pneumonia cases among ARI cases (18.5 % and 20%) and Gandaki Province has the lowest (12.2 %). (Table 4.2.5)

The total ARI-related deaths at health facilities were reported to be 105 which is lower compared to previous FY 2075/76 which was 178. The ARI case fatality rate per thousand at health facility increased to 0.013 per 1000 in FY 2076/77 compared to last fiscal year FY 2075/76 (0.06). ARI case fatality rate shows a wide variation in between the provinces ranging from the lowest 0.02 per 1000 in province 2 and Lumbini Province to the highest 0.29 per 1000 in Sudurpaschim Province.

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 by Immunization 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 4.2.6: Classification of cases as per CB-IMNCI protocol by province (FY 2076/77)

Province	Malaria		Very severe febrile disease	Measles	Ear infection	Severe malnutrition	Anaemia
	Falciparum	Non-falciparum					
Province 1	26	40	55	83	13423	607	394
Province 2	6	172	123	333	26130	1882	1131
Bagmati	1	5	66	260	9847	519	550
Gandaki	8	21	19	30	5817	307	227
Lumbini	13	146	330	92	16629	1226	848
Karnali	3	19	66	62	9282	764	268
Sudur Pachim	35	36	22	62	9256	1060	350
National	92	439	681	922	90384	6365	3768

Source: HMIS, 2076/77

Under the CB-IMNCI programme, health workers identified 92 falciparum malaria cases, 439 non-falciparum malaria cases, 922 measles cases, 90,384 ear infection cases, 6,365 severe malnutrition cases and 3,768 anaemia cases in children under five years of age in 2076/77. There were 681 reported cases of very severe febrile disease in this fiscal year.

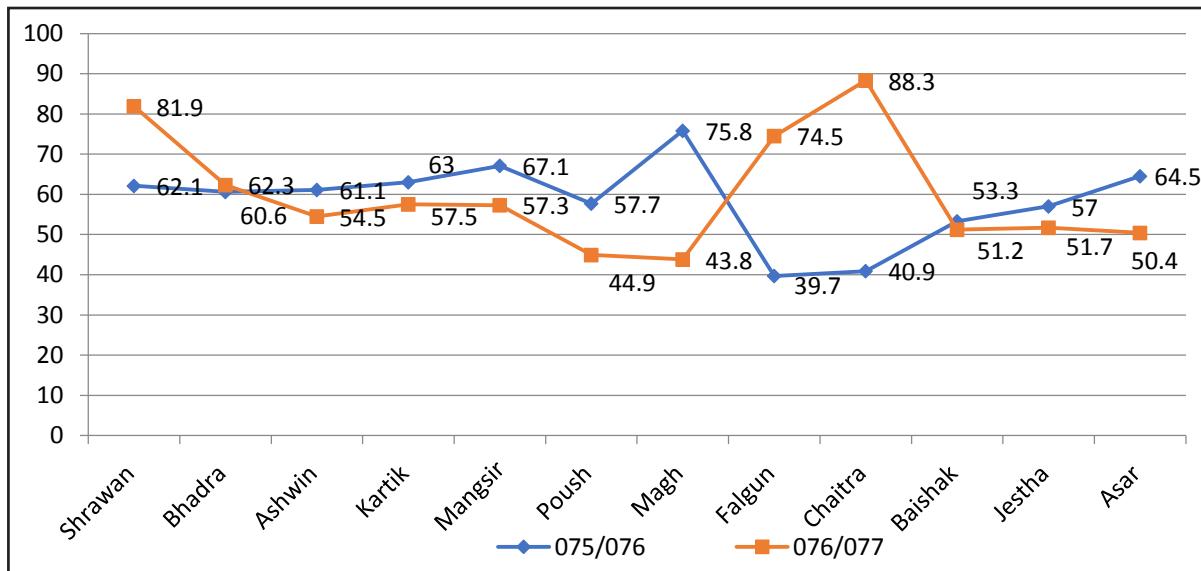
Effects of lockdown on Newborn and Child Health

The scale of the COVID-19 outbreak has brought in an unprecedented change in the global and national landscape on daily wellbeing. National lockdown happened very early in Nepal, on Chaitra 11, 2076 (March 21, 2020) well before any community spread of COVID-19. The lockdown took the form of severe restrictions on transport and closure of outpatient departments of many hospitals. Even after the easing of the national lockdown on June 14, 2020, only intra district travel has been

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permitted. Hospitals were restricted in their capacity to provide routine health services while instituting COVID-19 preparedness. The impact on key newborn and child health services during lockdown period (Chaitra, Baisakh, Jestha and Asar) was compared with that of same months of last year.

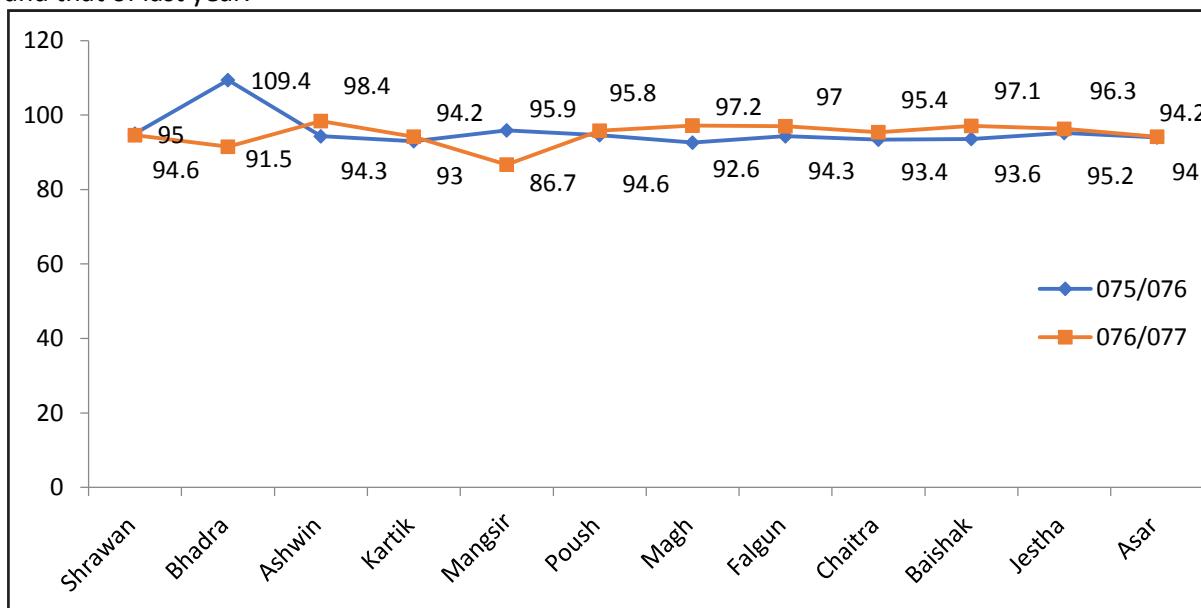
% of PSBI Cases treated with first dose of gentamycin



Comparing the percentage of PSBI cases treated with first dose of Gentamycin that of Chaitra, Baisakh, Jestha and Asar of last FY 2075/76 and 2076/77, the trend of treating PSBI has been increased in Chaitra than that of last FY .But the service utilization has then sharply decline since Baisakh. This could be due to felt severity by the parents in the initials of Chaitra due to covid situation. Later than, the assess to the health facility might be difficult due to lockdown.

Percentage of children under five years with diarrhea treated with zinc and ORS

Almost similar pattern was seen in treatment of diarrhoea with Zn and ORS during lockdown period and that of last year.



4.2.8 Problem, constraints and actions to be taken and responsibility

Table 4.2.7: Problem, constraints and actions to be taken

Problem/Constraints	Action to be taken	Responsibility
Not create post of of CB-IMNCI responsible focal persons at provincial and municipality levelsUn-clarity in roles and responsibility of staffs in the new federal context.	Needed to allocate sanctioned position in Policy level decision, 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 clarity in its implementation modality	Hospitals, Palikas, HO, FWD
Lack of Human Resource in Hospital to implement SNCU/NICU	HR to be deployed by Contract Training to MO, nursing and related staff about NICU.	MOHP,FWD, Province, NHTC
Inadequate IEC and BCC activities as compared to the approved program implementation guideline, so as to improve the demand of CH services	Should be given More priority to the IEC/BCC interventions so as to improve the demand for CH services by all concerned stakeholders	NHEICC, FWD, HO, Palikas, HF
Frequently stock outs of essential commodities in districts and communities level.	Timely supply of commodities based on the LMIS Reports.	FWD, MD
Lack of equipment to deliver newborn & child health services at service delivery points	Timely procurement in first quarter of fiscal year and supply of equipment intimely.	MD, FWD
Poor service data quality and inconsistency of data.	Carry out routine data quality assessments Strengthen regular feedback mechanisms and supervision and monitoring.	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	Province, HO
Limited engagement of private sectors	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

4.3 Nutrition

4.3.1 Background

Nutrition Section of Family Welfare Division (FWD), Department of Health Services (DoHS), Ministry of Health and Population (MoHP) is responsible for national nutrition specific interventions to improve the nutritional status of children, pregnant and lactating women and adolescents. The goal of national nutrition programme “to achieve 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 high quality and essential investments for attaining many of the Sustainable Development Goals. Without adequate and sustained investments in nutrition, the SDGs will not be realised. The ambition to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture” is captured in SDG 2, however, at least 12 of the 17 SDGs contained indicators are highly relevant to nutrition. In alignment with internationally and nationally declared SDG roadmap (2015-2030), National Nutrition Strategy 2077, the approach paper of Fifteen Periodic Plan (2019/20-2023/24), National Multi-sector Nutrition Plan (MSNP)-II, National Health Policies and Nepal Health Sector Strategy Plan (NHSSP) – III and National Agriculture Development Strategy (ADS), the Government of Nepal (GoN) is committed and ensures that its citizens have access to the adequate nutritious food, health and other social services those impact nutrition outcomes. 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 physical, 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. In 2012 the World Health Assembly Resolution 65.6 endorsed a Comprehensive implementation plan on maternal, infant and young child nutrition (1), which specified a set of six global nutrition targets (2) that by 2025 aim to:

1. achieve a 40% reduction in the number of children under-5 who are stunted;
2. achieve a 40% reduction in the number of children under-5 who are stunted;
3. achieve a 50% reduction of anaemia in women of reproductive age;
4. achieve a 30% reduction in low birth weight; ensure that there is no increase in childhood overweight;
5. increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%;
6. reduce and maintain childhood wasting to less than 5%.

The Scaling-Up-Nutrition (SUN) initiative calls for multi-sect oral actions for improved nutrition during the first 1,000 days of life where the Road Map for Scaling-Up-Nutrition (SUN) was released in September 2010. “Nepal was the fifth country to join the SUN Movement on 5 May 2011 as an early riser, adopted the Multi-sector Nutrition Plan (MSNP) in 2012 with 10 years vision (2013-2022) and five-year plan (2013-2018) to reduce chronic under nutrition focusing to first 1000 days age groups. Similarly, The United Nations General Assembly on April 2016 agreed on a resolution proclaiming the UN Decade of Action on Nutrition from 2016 to 2025 with the aim “to provide a clearly-defined time-bound operational framework that works within existing structures and available resources to implement the commitments made at Second International Conference on Nutrition (ICN2) and the 2030 Agenda for Sustainable Development”.

Policy initiatives — The National Nutrition Strategy was officially 2077 and to address all forms of malnutrition by implementing nutrition specific and sensitive interventions through the health sector that provides the strategic and programmatic directions for nutrition interventions in Nepal through health sector. Similarly, Multi-sector Nutrition Plan (MSNP) -II(2018-2022) which is a

broader national policy framework for nutrition within and beyond the health sector coordinated by the National Planning Commission(NPC)provides national policy guidance for nutrition specific and nutrition sensitive interventions as well as creating enabling environment for nutrition specific and sensitive interventions throughout the country. The National Health Policy, 2071 highlights to fight against malnutrition and improve nutrition through effective promotion of quality nutritious foods generated locally. A Multisectoral Nutrition Technical Committee (NUTEC) lead by the Director of Family Welfare Division (formally Child Health Division) was established in 2011 with the composition of technical experts from relevant government's Ministries and Departments, UN agencies and Development Partners that provides technical guidance for nutrition specific and sensitive interventions through multisector coordination and decision-making process.

Aligning with the SDG road map, MSNP-II, National Health Policy, National Health Sector Strategy Plan and current global initiatives, Nutrition Section of Family Welfare Division (FWD) has developed national nutrition strategies and plans for improving the maternal, infant and young child nutrition assisted by experts agencies and persons of Nutrition Technical Committee. Moreover, as recommended by the Nepal Nutrition Assessment and Gap Analysis (NAGA) 2009/010 and guided by MSNP, in 2012–2013 MoHP conducted an Organization and Management Survey towards establishing a National Nutrition Centre as an expert Nutrition Centres under Ministry of Health and Population for nutrition specific interventions

4.3.2 Malnutrition in Nepal

Nepal has made significant progress in reducing stunting in under five years' children. Stunting decreased from 57 per cent in 2001 to 35.8 per cent in 2016 and with the recent Multiple Indicator Cluster Survey (MICS, 2019) survey stunting has been decreased to 32 per cent. Similarly, the level of wasting was 11 per cent in 2001, 10 per cent in 2016 with NDHS data and with MICS data wasting shows 12%. Anaemia among under five children still is 51 per cent (NDHS 2016). Due to the Nepal's strong effort in micronutrient interventions, National Vitamin A Programme has been globally recognized as a successful programme. However, anaemia among women, adolescents and children remains high-level public health concern. In Nepal, forty-one percent of women of reproductive age and 46 percent of pregnant women are anaemic. Similarly, 68 percent (NDHS 2016) of children aged 6-23 months are anaemic while the prevalence of anaemia among adolescent women (15-19) has been increased from 38.5 percent in 2011 to 43.6 percent in 2016 (NDHS).Likewise, 17 per-cent of mothers suffering from chronic energy deficiency alongside the increasing trend of overweight (22 %, NDHS, 2016).

4.3.3 Efforts to address under-nutrition

Ministry of Health and Population has been implementing several activities within nutrition specific interventions to address maternal, adolescent and child malnutrition in Nepal. This began with growth monitoring of young children with promotion, protection and support for early initiation, exclusive and extension of breastfeeding and appropriate complementary feeding followed by community-based micronutrient supplementation. Most recent years, Family Welfare Division of DoHS/MoHP has been implementing following programme interventions as mentioned in Box 4.3.1.1.

Box 4.3.3.1: Nutrition programmes implemented by FWD Nutrition Section (1993–2018)

Nationwide programmes:

1. MIYCN
2. Growth Monitoring and Promotion
3. Prevention and control of Iron Deficiency Anemia (IDA)
4. Prevention, Control and Treatment of Vitamin A deficiency (VAD)

Scale-up programmes:

- Integrated Management of Acute Malnutrition (IMAM): 56 Districts
- Integrated IYCF and Baal-vita community Promotion Program (IYCF-MNP): 45 Districts
- Maternal and Child Health Nutrition (MCHN) Program–6 districts

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- | | |
|--|----------------|
| 5. Prevention of Iodine Deficiency Disorders (IDD) | CNSI packages: |
| 6. Control of Parasitic Infestation by deworming | |
| 7. Flour fortification via larger roller mills | |
| 8. Adolescent IFA | |

At piloting phase

- | | |
|--|-----------------------------|
| 1. MAM management program: 2 districts | 2. Family MUAC: 8 districts |
|--|-----------------------------|

4.3.4 Objectives of National Nutrition Programme for health sector:

The overall objective of the national nutrition programme from the health sector is "to enhance nutritional well-being, contribute to reduce child and maternal mortality and equitable human development".

According to the National Nutrition Strategy 2004, the specific objectives of national nutrition programme are as follows:

- To reduce protein-energy malnutrition in children under 5 years of age and reproductive aged women
- To reduce the prevalence IDA of anaemia among women and children
- To eliminate iodine deficiency disorders and sustain the elimination
- To eliminate vitamin A deficiency and sustain the 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 utilization of food needed for 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 the incidence of life-style related diseases (coronary artery disease, hypertension, tobacco and smoke related diseases, cancer, diabetes, dyslipidaemia, etc)
- To improve health and nutritional status of school children
- To reduce the critical risk of malnutrition and life during exceptionally difficult circumstances
- To strengthen the system for analysing, monitoring and evaluating the nutrition situation

4.3.5 Targets

4.3.5.1 Current Global Nutrition Targets and Nepal's Status

a. Sustainable Development Goal

Nepal has developed Sustainable Goal Road Map and set the targets. Without adequate and sustained investments in good nutrition, the SDGs will not be realised. The ambition to 'End hunger, achieve food security and improved nutrition and promote sustainable agriculture' is captured in SDG 2, however, at least 12 of the 17 Goals contain indicators that are highly relevant to nutrition. Similarly, in 2012, the World Health Assembly Resolution 65.6 endorsed a Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition, which specified six global nutrition targets for 2025. Based on the SDG and nutrition targets set from Global Health Assembly for nutrition, Nepal has developed its nutrition targets to achieve by 2030 as follows:

Table 4.3.5.1.1: Nepal's nutrition targets and status against WHA and SDG targets

SN	Indicators	Situation in Nepal			SDGs Target (2030) for Nepal
		NDHS (2011)	NDHS (2016)	MICS (2019)	
1	Reduction in the number of children under - 5 who are stunted	40.5%	35.8%	32%	15.0%
2	(a) Reduction of anemia among WRA	35.0%	40.8%	-	10.0%
	(b) Reduction of anemia among Children >5	46.2%	52.7%	-	10.0%
3	Reduction in low birth weight	12.1%	12.3%	-	<5%
4	Ensure that there is no increase in childhood overweight	1.4%	1.2%		<1%
5	Increase rate of exclusive breastfeeding in the first 6 months	69.6%	66.1%	62.1%	>90%
6	Reduce and maintain childhood wasting	10.9%	9.7%	12%	<5.0%

4.3.5.2 National Nutritional Status and Targets

National Planning as the lead and coordinating agency for both nutrition specific and sensitive interventions of Nepal, collects, compiles and interprets the progress of the interventions against nutrition specific, sensitive interventions and enabling environment. MSNP-II has set the targets from 2018 to 2022 and making its links with WHA targets 2025 and SDG targets 2030. Therefore, the current nutrition status as per the set targets for MSNP II, the status of nutrition in Nepal is as follows:

Table 4.3.5.2.1: 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

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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			38.5	43.6	-	-	<15

4.3.6 Programme strategies

The overall strategies for improving nutrition in Nepal 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 4.3.6.1: Specific strategies to improve nutrition in Nepal

Control of protein energy malnutrition (PEM)	Household food security
<ul style="list-style-type: none"> 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 knowledge and skills of health workers on growth monitoring and promotion and nutrition counselling Strengthen the system of growth monitoring and its supervision and monitoring. Promote to use of appropriate locally available complementary foods. 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. 	<ul style="list-style-type: none"> Promote kitchen garden and agricultural skills. Promote raising of poultry, fish and livestock for household consumption. Inform community people how to store and preserve family food. Improve technical knowledge of food processing and preservation. Promote women's group for income generating activities.
	<p>Improved dietary practices</p> <ul style="list-style-type: none"> 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.
	<p>Infectious disease prevention and control</p> <ul style="list-style-type: none"> 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.

<p>Improve maternal and adolescent nutrition and low birth weight through improved maternal nutrition.</p> <p>Create awareness of the importance of additional dietary intake during pregnancy and lactation.</p> <p>Strengthen nutrition education and counselling mechanism.</p> <p>Control of iron deficiency anaemia (IDA)</p> <ul style="list-style-type: none"> 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. Intermittent iron folic acid supplementation for adolescent girls. 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. <p>Control of iodine deficiency disorders</p> <ul style="list-style-type: none"> 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. <p>Control of vitamin A deficiency</p> <ul style="list-style-type: none"> The biannual supplementation of high dose vitamin A capsules to 6-59-month olds. Post-partum vitamin A supplementation for mothers within 	<p>School Health and Nutrition Programme</p> <ul style="list-style-type: none"> 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 in June every year to raise awareness on importance nutrition at the community level through school children and health workers. Distribute first aid kits to public schools. Introduce child-to-child and child-to-parent approaches. <p>Integrated management of acute malnutrition</p> <ul style="list-style-type: none"> Build capacity of health workers for the management of acute malnutrition and FCHVs on screening of under five years children, refer the children with severe acute malnutrition to appropriate facility for therapeutic treatment and care and counselling services for the prevention of acute malnutrition. Establish and implement the key parts of the IMAM programme: community mobilization, in patient therapeutic care, outpatient therapeutic care, management of complications of severe acute malnutrition and management of MAM. Implement the IMAM programme following four key principles such as; maximum coverage & access, timeliness of service provision, appropriate medical and therapeutic 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-
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<p>42 days of delivery.</p> <p>Strengthen implementation of vitamin A treatment protocol for severe malnutrition, persistent diarrhoea, measles and xerophthalmia.</p> <p>Nutrition education to promote dietary diversification and consumption of vitamin A rich foods.</p> <p>Ensuring the availability of vitamin A capsules at health facilities.</p> <p>Increase awareness of importance of vitamin A supplementation.</p> <p>The biannual distribution of vitamin A capsules to 6 to 59-month olds through FCHVs.</p> <p>Advocate for increased home production, consumption and preservation of vitamin A rich foods.</p> <p>Strengthen the use of the vitamin A Treatment protocol.</p> <p>Promote the consumption of vitamin A rich foods and a balanced diet through nutrition education.</p> <p>Provide vitamin A capsules (200,000 IU) to postpartum mothers through healthcare facilities and community volunteers.</p> <p>Low birth weight</p> <p>Reduce maternal malnutrition by preventing PEM, VAD, IDD and IDA.</p> <p>Reduce the workloads of pregnant women.</p> <p>Increase awareness of the risks of smoking and alcohol to pregnant women.</p> <p>Increase awareness of risks of early pregnancy to infant and maternal health.</p> <p>Promote activities for nutrition monitoring and counselling at antenatal clinics.</p>	<p>based management of acute malnutrition.</p> <p>Strengthen the coordination and capacity of nutrition rehabilitation homes.</p> <p>Nutrition in emergencies</p> <p>Establish and strengthen effective leadership for nutrition cluster interagency coordination, with links to other clusters coordination mechanisms on critical intersectoral issues.</p> <p>Initiate nutritional assessment and surveillance systems and/or reinforced for humanitarian assessment and information management.</p> <p>Build adequate capacity of nutrition cluster members, partners, health workers, FCHVs and relevant stakeholders for nutrition in emergency preparedness and response and recovery actions</p> <p>Support for appropriate maternal, infant and young child feeding (IYCF) and care to be accessed by affected women and children.</p> <p>Ensure access to appropriate management and care services for the children and women with acute malnutrition.</p> <p>Ensure access to micronutrients from fortified foods, supplements or multiple micronutrient for children and women.</p> <p>Ensure access to relevant information about nutrition programme activities for Children and women.</p> <p>Lifestyle related diseases</p> <p>Create awareness among adults about the importance of maintaining good dietary habits.</p> <p>Develop the capacity for nutritional counselling at health facilities.</p> <p>Create awareness among adolescents and adults about the importance of controlling smoking and body weight.</p> <p>Create awareness to increase physical activity and improve stress management.</p>
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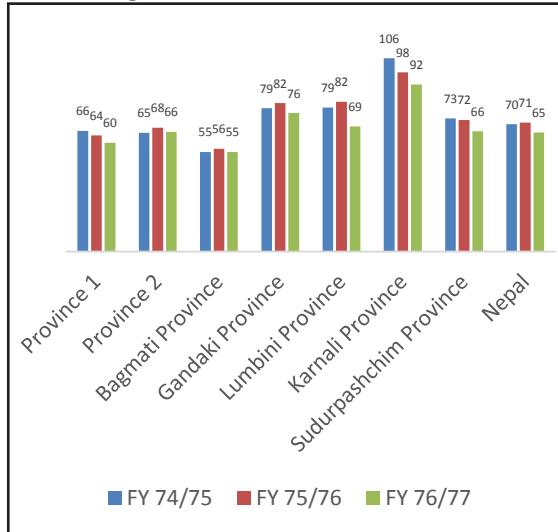
4.3.7 Major achievements

4.3.7.1 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.

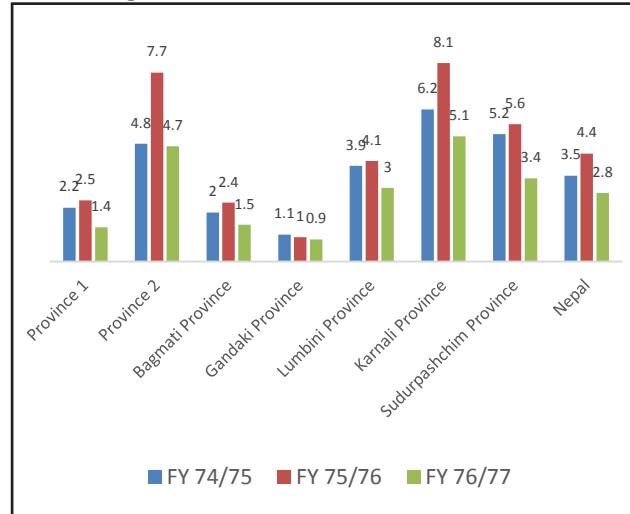
Growth Monitoring Status, From FY 2074/75 to FY 2076/77

Figure 4.3.7.1.1: Percentage of children aged 0-23 months registered for growth monitoring



Source: HMIS/MD/DoHS

Fig 4.3.7.1.2: Percentage of children 0-23 months registered for growth monitoring who were underweight



Source: HMIS/MD/DoHS

In FY 2076/77, the percentage of children age 0-23 months registered for growth monitoring is 65 percent with decreased in 6 percent from last fiscal year. In FY 76/77, the highest coverage on growth monitoring is in Karnali province i.e. 92 percent and lowest coverage is in Bagmati Province i.e. 55 percent. In these FY 76/77, out of total children who attended for growth monitoring session, 2.8 percent were suffering from underweight.

In FY 2076/77, among 65 percent, 2.8 percent of 0-23 month's children were reported as underweight at national level. According to the information, the highest proportion (5.1%) of underweight children are in Karnali province followed by province 2 (4.7%) while the least is in Gandaki Province (0.9%) (Figure 4.3.7.1.1 and 4.3.7.1.2).

Figure 4.3.7.1.3: Percentage of new-borns with low birth weight (<2.5 kg) among total delivery by health workers

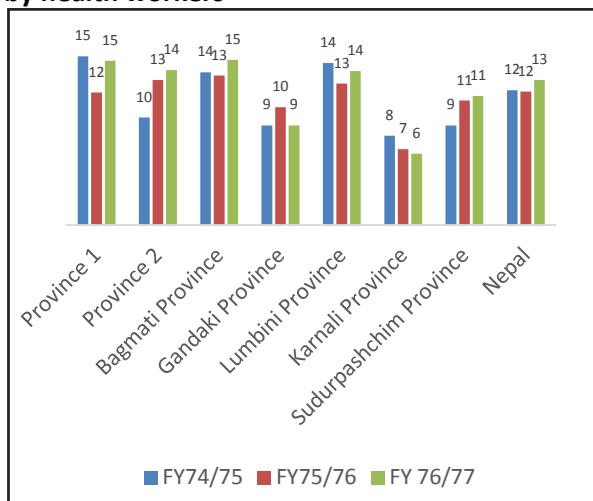
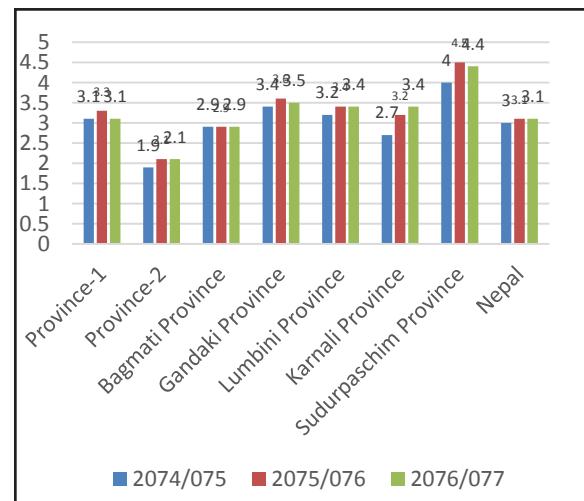


Figure 4.3.7.1.4: Average no. of growth monitoring visits per child (0-23 months)



Nationally the percentage of new-born with low birth weight (< 2.5 kg) is 13 in these FY 2076/2077 while in last fiscal year also it was FY 74/75 is around 12. As far as provinces was concerned in these fiscal year Bagmati province and Province 1 has the highest percentage of new-born with low birth

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weight i.e.15 percent and Karnali Province has the lowest i.e.6 percent of new-born with low birth weight.

Nationally, there was an average of 3 visits per child in FY 2074/75, 3.1 visits per child in FY 2075/76 and in FY 2076/77, the average visit is 3.1. As far as provinces are concerned in these FY 2076/77, the Province number 2 has the lowest average growth monitoring visits which is 2.1 and highest in Sudurpaschim province which is 4.4. (Figure 4.3.7.1.3 and 4.3.7.1.4).

4.3.7.2 Infant and young child feeding

Appropriate feeding and care practices for infant and young children is essential to enhance child survival, growth and development. The infant and young child feeding (IYCF) and practices include early initiation of breast feeding within an hour of childbirth, exclusive breastfeeding for six months and providing nutritionally adequate and appropriate complementary feeding starting from six months with continued breastfeeding up to two years of age or beyond. Improving care practices related to IYCF is a priority strategy of MoHP. The IYCF programme has been ongoing to all 77 districts from FY 2072/73.

IYCF is also linked with the distribution of micro-nutrient powder (Baal Vita) to 6-23 months children in 46 districts and child cash grants (CCG) in 14 districts. In addition, from this year 2076/77 CCG program is scaled up in more 11 districts. With the CNSI scale up all the nutrition specific interventions is in the process of scaling up in most of the districts. However, more effective IYCF counselling and monitoring mechanisms are needed for these programmes.

Figure 4.3.7.2.1: Percentage of children aged 0–6 months olds registered for growth monitoring who were exclusively breastfed for their first six months

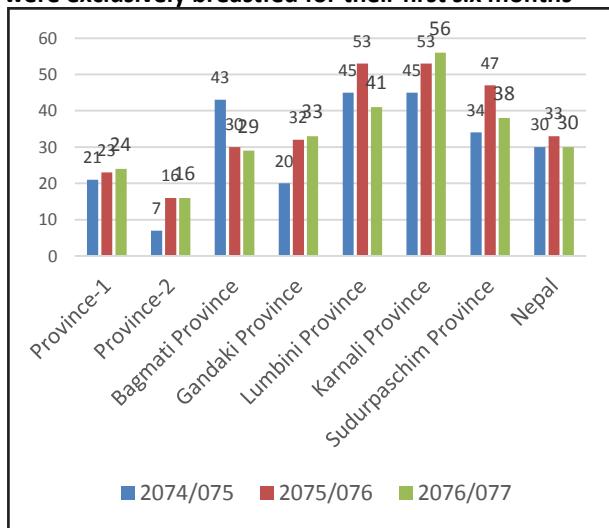
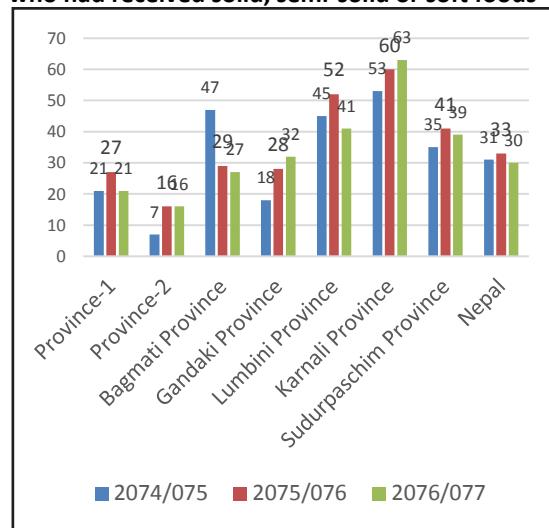


Figure 4.3.7.2.2: Percentage of children aged 6–8 months old registered for growth monitoring who had received solid, semi-solid or soft foods



There is a large provincial difference in the children aged 0-6 months who registered for growth monitoring and were exclusively breastfed in their first six months age. In FY 2075/76, 33 percent of these children nationwide were exclusively breastfed which had increased in comparison to last two years but this year it has been decreased by 3 percent i.e. 30 percent. 56 percent of 0-6-month old children were registered for growth monitoring were exclusively breastfed for their first six month of Karnali Province whereas only 16 percent the similar age group were exclusively breastfed in province 2 (Figure 4.3.7.2.1). The national average is 30 percent, which is much lesser than the 2016 Nepal Demographic and Health Survey (NDHS) figure i.e. 66 percent and recent MICS, 2019 which shows 62.1 percent.

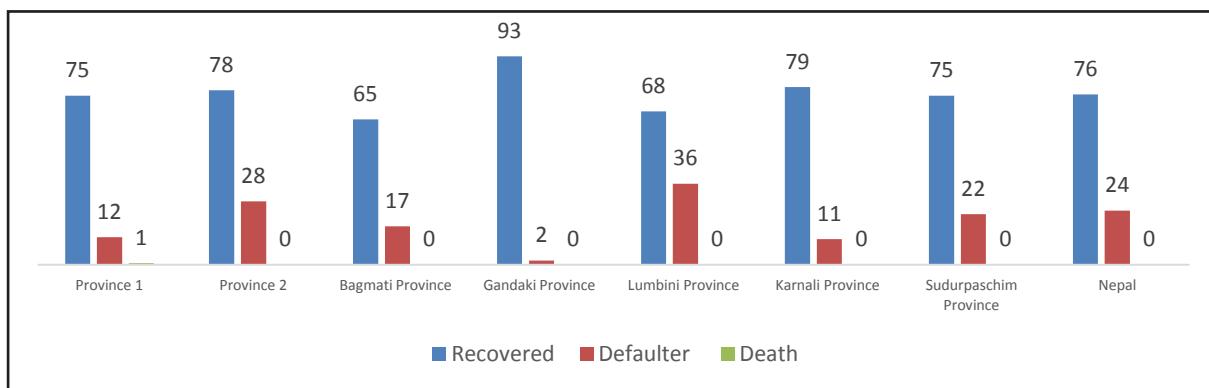
The proportion of 6-8 months old children registered for growth monitoring who received complementary foods varied in FY 2076/77. About 16 percent of these children in the province 2

were registered for growth monitoring who received complementary feeding whereas 27 percent of same age group in the Bagmati province (Figure 4.3.7.2.2). Nationally, only 30 percent of these children received complementary food which is much lower than the MICS, 2019 which is 86 percent which states that percent of infant age 6-8 months who received solid, semi-solid or soft food during the previous day. 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.

4.3.7.3 Integrated management of acute malnutrition

The Integrated Management of Acute Malnutrition (IMAM) Programme (previously known as Community based Management of Acute Malnutrition [CMAM] programme) provides the treatment of the children with Severe Acute Malnutrition (SAM) aged 0-59 months through inpatient and outpatient treatment services at facility and community levels. This programme was piloted in 2009/10 in five districts namely Achham, Kanchanpur, Mugu, Bardiya and Jajarkot. After pilot evaluation in 2011/12, this programme was shifted from CMAM to IMAM programme and gradually scaled up throughout the country covering many more districts. In the first phase, IMAM was scaled up to 11 districts in 2013 from 6 districts namely Achham, Kanchanpur, Bardiya, Jajarkot, Jumla, Mugu, Kapilvastu, Sarlahi, Dhanusa, Saptari and Okhaldhunga and in 2015, it was further scaled up to 14 earthquake affected districts such as; Bhaktapur, Dhading, Dolakha, Gorkha, Kathmandu, Kavre, Lalitpur, Makwanpur, Nuwakot, okhaldunga, Ramechhap, Rasuwa, Sindhuli, Sindhupalanchowk). In 2016, to address the nutrition impacts of droughts emergencies, the programme was further scaled up to 7 additional districts namely; Kalikot, Humla, Dolpa, Bajhang, Bajura, Baitadi, Dadeldhura, Parsa. Likewise, in 2017, the programme was scaled up to Doti, Rukum east and West, Nawalparasi east and west, Mahottari, Khotang and Panchthar districts. Due to massive flood in Terai in 2017, it was again scaled up to Jhapa, Morang, Sunsari, Siraha, Rautahat, Bara, Kailali, Dang and Banke districts. In the meantime, the program was also implemented in Myagdi, Sankhuwasabha, Rupandehi, Khotang, Udaypur, Chitwan etc. In Chitwan, the program was implemented in only few places to address the issues of SAM children in the Chepang communities. In running fiscal years, the program has been scaled up in Darchula district. With the Comprehensive Nutrition Specific Interventions (CNSI) training the IMAM program will be scaled up with many other districts. 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 4.3.7.3.1: Province wise IMAM performance, FY 2076/77



Source HMIS/MD/DoHS

In FY 2076/77, total 6,567 children of 0 months to 5 years with SAM admitted in outpatient and inpatient therapeutic centres. Among them, 8497 were discharged. Among all discharged SAM cases, 75 percent were recovered, less than 1 percent died and 24 percent were defaulter. The sphere

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standard for IMAM program is (recovery rate >75 percent, defaulter rate <15 percent and death rate <10 percent). Figure 4.3.7 explains about overall performance of IMAM programme of Nepal.

4.3.7.4 Nutrition rehabilitation homes

Nutrition Rehabilitation Homes (NRH) are the facility based managed of severe acute malnutrition integrating with hospital services. In Nepal, these NRH are associated with primary, secondary and tertiary level hospitals. The first Nutrition Rehabilitation Home (NRH) was established in 1998 in Kathmandu aiming for the reduction of child mortality caused by malnutrition through inpatient rehabilitation of severe acute malnutrition among the children under five years of age. Since then, NRH has been scaled-up in different places across Nepal. The NRH not only treat and manage severe acute malnutrition with inpatient service, but also provide nutrition education and counselling to the guardians/parents for the management of moderate acute malnutrition as well as good nutrition and health care of their children. In FY 2075/76, total 2,226 children under five years with severe acute malnutrition (SAM) were admitted in the 18 NRH and among them 2,193 children were recovered discharged. In last FY 2076/2077 total 1671 children with severe acute malnutrition were admitted in the 21 NRH and among them 1,679 were recovered discharged. The discharge rate was high because of additional children of last Fiscal Year which were admitted and not discharge within that Fiscal Year. Along with the treatment of children, 5738 mothers who came to the NRH were counseled in the NRH and in the hospital OPD. In the NRH, mothers are educated and counselled on the dietary management for young children and maintain the enhanced nutrition status of SAM children at home. In FY 2076/77, following table shows the performance of Nutrition Rehabilitation Homes in Nepal.

Table 4.3.7.4.1: Admission and discharge status of nutrition rehabilitation homes, 2076/77 province wise

NRH Name	Total admission	Male	Female	Less than five years	More than or equal to five years	Total Discharge	Counseling to mother (in house and Hospital OPD)
Province 1	138	58	80	138	0	151	151
Province 2	423	217	206	423	0	414	644
Bagmati Province	367	211	156	367	0	374	1011
Gandaki Province	181	89	92	180	1	167	1123
Lumbini province	185	94	91	185	0	198	623
Karnali Province	143	54	89	143	0	129	143
Sudurpaschim Province	234	113	121	234	0	246	2043
Total	1671	836	835	1670	1	1679	5738

Source: Respective NRH

Table 4.3.7.4.2: Admission and discharge status of nutrition rehabilitation homes, 2076/77 District Wise

S.No.	NRH Name	Total admission	Male	Female	Less than five years	More than or equal to five years	Total Discharge	Counseling to mother (in house and Hosp. OPD)
1	Mechi	93	37	56	93	0	99	99
2	Koshi	45	21	24	45	0	52	52
3	Okhaldhunga	0	0	0	0	0	0	0
4	Birgunj	142	75	67	142	0	144	354
5	Janakpur	139	72	67	139	0	136	136
6	Rajbiraj	142	70	72	142	0	134	154

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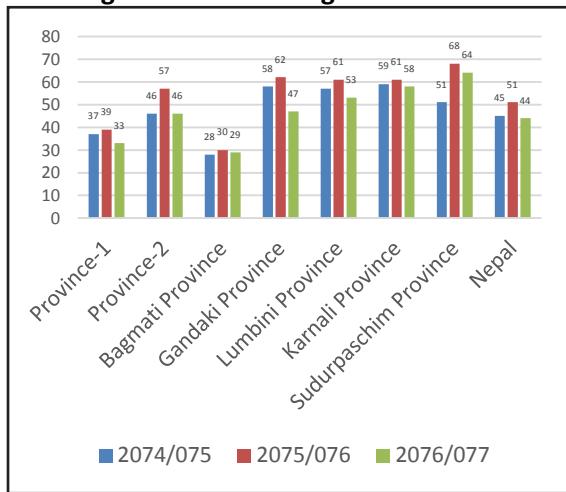
7	Bharatpur	90	49	41	90	0	97	137
8	Hetauda	11	6	5	11	0	8	8
9	Kanti Hospital	74	53	21	74	0	63	640
10	Sunakoti	172	94	78	172	0	184	226
11	Sindhupalchowk	20	9	11	20	0	22	0
12	Pokhara	72	32	40	72	0	81	488
13	Baglung	69	37	32	68	1	43	260
14	Parbat	40	20	20	40	0	43	375
15	Butwal	72	33	39	72	0	75	436
16	Nepalgunj	113	61	52	113	0	123	187
17	Dailekh	49	16	33	49	0	35	49
18	Surkhet	94	38	56	94	0	94	94
19	Dadeldhura	58	29	29	58	0	58	58
20	Dhangadi	97	41	56	97	0	99	1089
21	Kanchanpur	79	43	36	79	0	89	896
Total		1671	836	835	1670	1	1679	5738

Source: Respective NRH

4.3.7.5 Prevention and control of iron deficiency anaemia

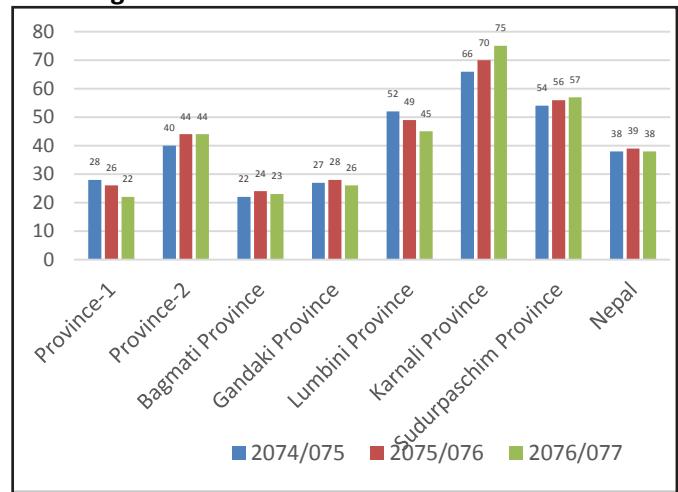
MoHP has been providing iron folic acid (IFA) supplement to pregnant and post-partum women since 1998 to reduce maternal anaemia. The protocol is to provide 60 mg elemental iron and 400 microgram folic acid to pregnant women for 225 days from their second trimester. To improve access and utilization of IFA supplements, the Intensification of Maternal and Neonatal Micronutrient Programme (IMNMP) started IFA supplementation through Female Community Health Volunteers (FCHVs) in 2003. This programme covered all 75 districts since 2014 and now 77 districts. The intensification programme improved coverage, although compliance with taking 180 tablets during pregnancy and 45 tablets post-partum remains an issue.

Figure 4.3.7.5.1: Percentage of Pregnant and Lactating Women receiving 180 IFA tablets



Source HMIS/MD/DoHS

Figure 4.3.7.5.2: Percentage of Post-Partum Women Receiving 45 IFA tablets



Source HMIS/MD/DoHS

In FY 2076/2077, Percentage of pregnant and lactating women receiving 180 IFA tablets is 44 percent which seems to decrease in comparison to last FY i.e. 51 percent. In terms of province the highest coverage is in Sudurpaschim Province which is 64 percent whereas the lowest is in Bagmati Province which is 30 Percent. Whereas in the Fiscal years 75/76, percentage of post-partum women receiving 45 IFA tablets is 40 percent only which also seem high difference between the pregnant women receiving 180 iron folic acid tablets and post-partum women receiving IFA tablets. In terms

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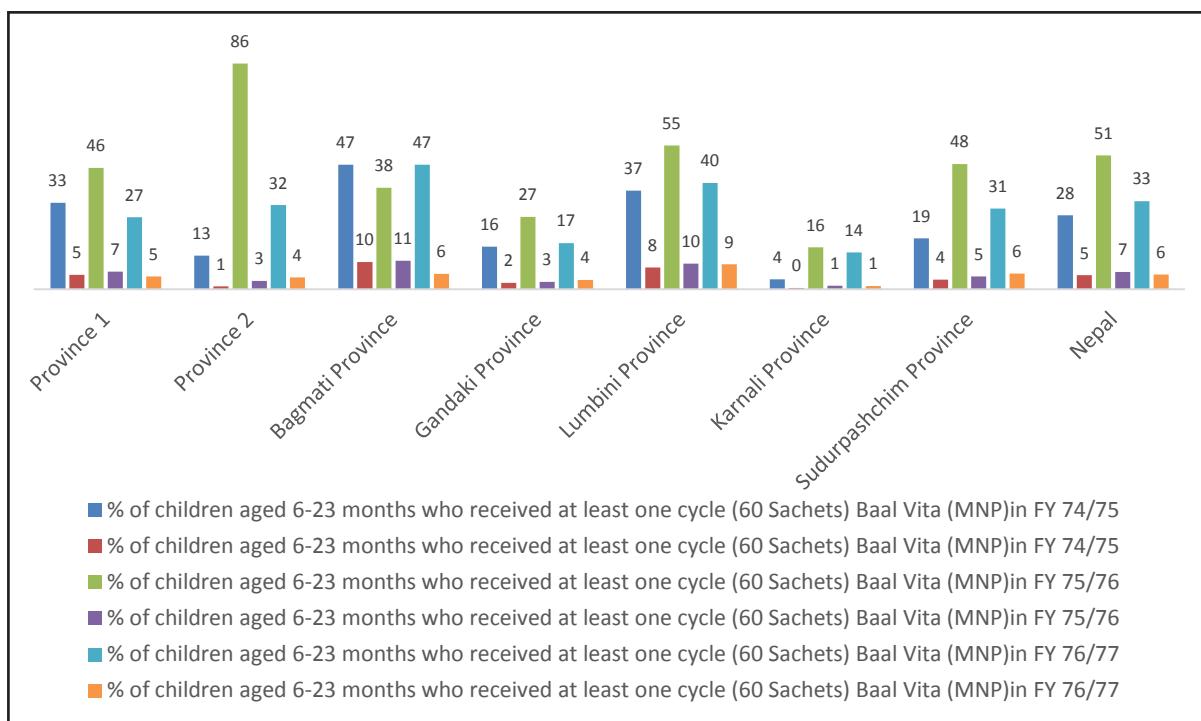
of province also there is a huge difference regarding pregnant women and post-partum women receiving iron folic acid tablets.

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

The NDHS 2016 found that 52 percent of 6-23 months old children were anaemic, it is assumed that most of them are due to poor IYCF practices. MoHP subsequently endorsed a Plan of Action of micro-nutrient sprinkles as the key interventions to address anaemia in young children integrating with IYCF practices. In 2007, the National Nutrition Priority Workshop endorsed a strategy to pilot multiple micro-nutrient sprinkles supplementation as a preventive measure against different micro-nutrient deficiency disorders among the children aged 6-23 months old. In June 2009, MoHP piloted the home fortification of complementary food with MNPs for 6-23 months olds in six districts namely Gorkha, Rasuwa, Makwanpur, Parsa, Sunsari and Morang integrating with the Community IYCF Programme. The successful pilot programme led to MoHP expanding it to an additional nine districts in 2012.

The promotion and supplementation of MNPs is linked with improving complementary feeding practices. Mothers and caregivers are counselled to introduce complementary foods at six months of age focusing on age-appropriate feeding frequency, improving dietary quality of complementary foods by making them nutrient and calorie dense, as well as hand washing with soap before handling the food and feeding the child. Mothers and caregivers are trained to prepare “poshilojaulo” (pulse, 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 2009 found strong community acceptance with a very high coverage and compliance on the use of MNP in the pilot districts. Integrating 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 (NDHS 2011). However, it still need for continuous effort as the coverage of the program is not very promising.

Table 4.3.7.6.1: Micronutrient powder (Baal Vita) distribution status, 2074/75, 2075/76 and 2076/2077



Source: HMIS/DoHS

S.N.	Districts	% 6-23 months children taking 1st cycle of MNP	% 6-23 months children taking 3rd cycle of MNP
1	SANKHUWASABHA	39	6
2	OKHALDHUNGA	55	12
3	KHOTANG	49	12
4	PANCHTHAR	37	2
5	MORANG	55	9
6	SUNSARI	49	10
7	SAPTARI	54	9
8	DHANUSA	35	4
9	MAHOTTARI	27	1
10	SARLAHI	13	2
11	RAUTAHAT	26	4
12	BARA	35	6
13	PARSA	70	10
14	DOLAKHA	31	5
15	SINDHUPALCHOK	52	17
16	RASUWA	26	2
17	DHADING	28	6
18	NUWAKOT	7	2
19	KATHMANDU	28	3
20	BHAKTAPUR	19	9
21	LALITPUR	270	10
22	KAVREPALANCHOK	46	17
23	RAMECHHAP	9	4
24	SINDHULI	7	2
25	MAKWANPUR	49	8
26	GORKHA	58	16
27	NAWALPARASI EAST	53	13
28	SYANGJA	4	0
29	BAGLUNG	36	1
30	RUKUM EAST	26	5
31	ROLPA	35	1
32	PALPA	61	17
33	NAWALPARASI WEST	63	20
34	RUPANDEHI	57	17
35	KAPILBASTU	54	10
36	DANG	54	7
37	BARDIYA	53	13
38	DAILEKH	24	1
39	JAJARKOT	42	2
40	RUKUM WEST	52	9
41	BAJURA	30	6
42	BAJHANG	87	5
43	DARCHULA	74	0
44	BAITADI	74	22
45	DAEDELHURA	37	12
46	DOTI	53	7
47	ACHHAM	61	21
	Nepal	33	6

In FY 2076/77, 33 percent of children aged 6 to 23 months had taken their first dose of multiple micronutrient power (MNP-Baal Vita) and only 6 percent of the children aged 6 to 23 months had received three cycles of baalvita in 46 programme districts. Compared to the first cycle of MNP intake, the third cycle of intake indicating the compliance is drastically low at 6 percent. Therefore, it

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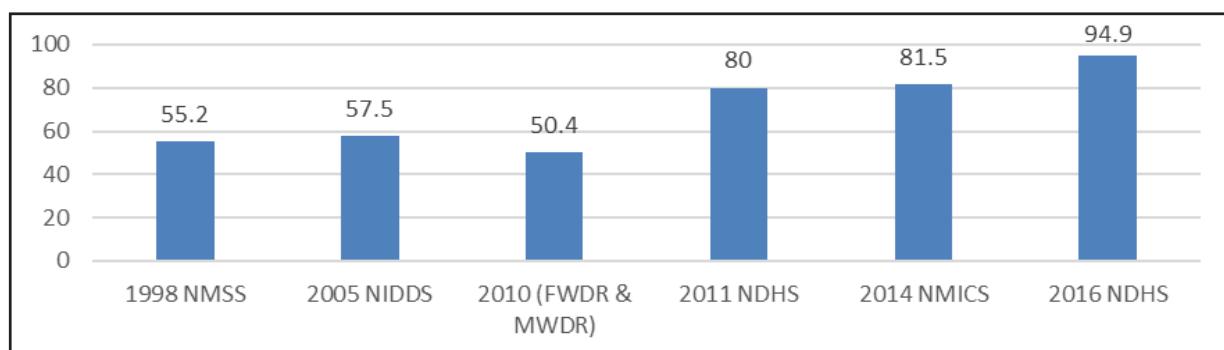
is important to mention that the coverage of first cycle intake is calculated based on the target population of 6-23 months, while that of third cycle is calculated among the children aged 6-23 months who have ever taken MNP. Overall, effective nutrition education, counselling, follow up and supply to the mothers/caretakers is essential to improve coverage as well as compliance with the recommended doses of MNPs.

4.3.7.7 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 Ministry of Health and Population (MoHP) is responsible for policy drive and promoting iodized salt to increase consumption. As per the policy, Government of Nepal uses the Two-Child-Logo packed salt to certify adequately iodized salt and DoHS has been mobilizing the system for social marketing to improve awareness of its use at the household level. National survey reports at different times show an increase in the number of households using adequately iodized salt from 55 percent in 1998 to 95 percent in 2016 (Figure 1.2.6.7.1).



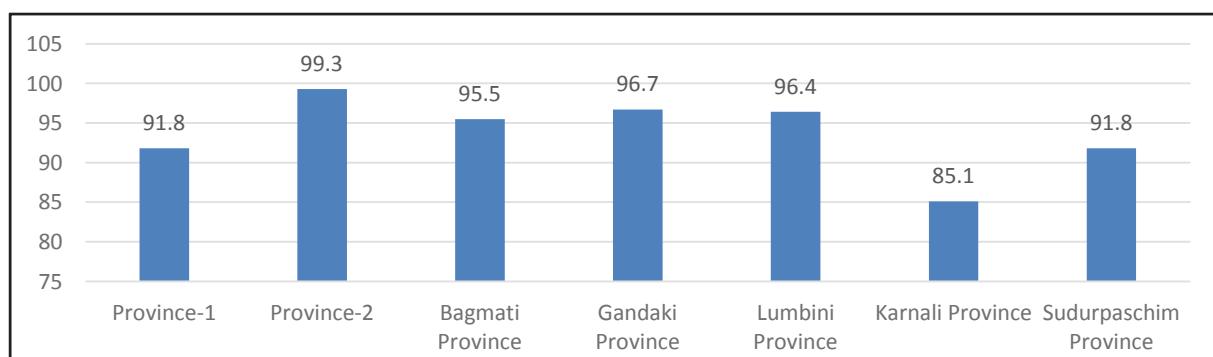
Figure 4.3.7.1: Percentage of households using iodized salt



Source: FWD/ Nutrition Section

There are, disparities in the use of iodized salt. The NDHS 2016 found that the Province number 2 have the highest coverage (99.3 percent), while the Province 6 had the lowest (85.1 percent). It seems, there is a need to cover all houses in the low coverage provinces to make it <90 per cent household utilization of adequately iodised salt. To promote utilization of adequately iodised salt at household level, MOHP celebrated iodine month in February 2019 in all 77 districts. The celebration of iodine months raised awareness on the use of two-child-logo salt for optimum iodine intake to combat iodine deficiency disorders. (Figure 1.2.6.7.2).

Figure 4.3.7.2: Percentage of households using adequately iodized salt

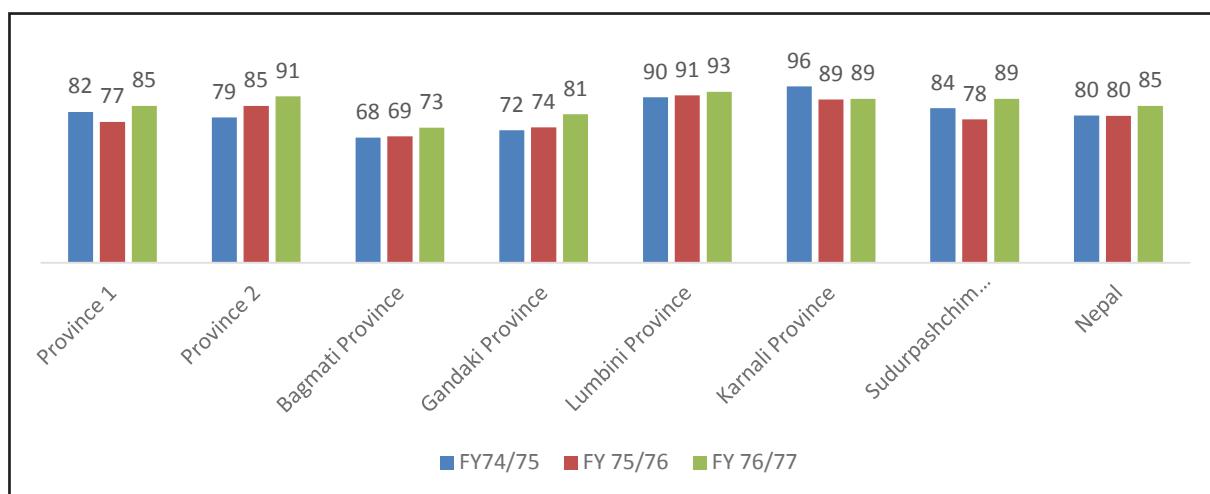


Source: NDHS, 2016

4.3.7.8 Control of vitamin A deficiency disorders

The government initiated the National Vitamin A Programme in 1993 to prevent and control of vitamin A deficiency disorders of the children aged 6-59 months and reduce child mortality associated with vitamin A deficiency disorders. Vitamin A supplementation in Nepal has been ongoing as bi-annual supplementation targeting to all 6-59 months children and coverage of supplementation is more than 80 per cent every time for last five plus years. Therefore, this programme is recognized as a global public health success story. The programme initially covered 8 districts and was scaled up to cover nationwide to all 77 districts since 2002. FCHVs distribute the capsules of vitamin A to the targeted children twice a year through a campaign-as vitamin A campaign in Kartik (October) and Baisakh (April) every year. But last Fiscal Year 76/77 due to COVID-19 the campaign of Baisakh (April) round was postponed and happened on Asadh, 2077 (June/July 2020)

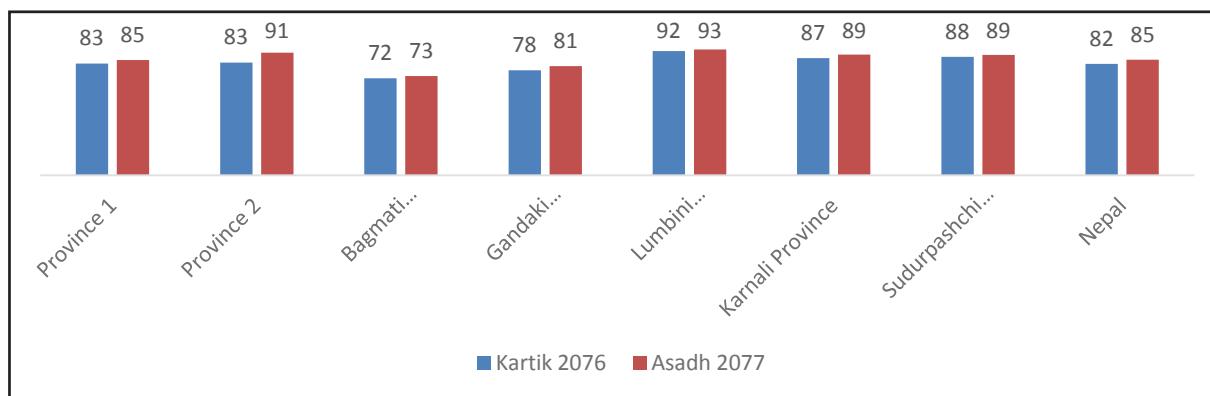
Figure 4.3.7.8.1: Trend & coverage of vitamin A supplementation to children aged 6-59 months



Source: HMIS/MD/DoHS

The overall national coverage of vitamin A supplementation is around 85 percent in Fiscal year 76/77 among the children aged 6-59 months. When we see the coverage by provinces varies with Lumbini province with higher proportion of children receiving vitamin A supplementation while Bagmati Province has the lowest coverage of 69 percentage.

Figure 4.3.7.8.2: Coverage of vitamin A supplementation to children aged 6-59 months by Distribution Round



Source: HMIS/MD/DoHS

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The overall national achievement is about 85 percent among the children aged 6-59 months with 82 percent in Kartik and 85 percent in Asadh. The Baisakh round i.e. is 2nd round of vitamin-A campaign of 76 postponed to Asadh because of COVID-19. Furthermore, the coverage by provinces varies with Lumbini province has higher proportion of children receiving vitamin A supplementation and lower proportions of children receiving it in Bagmati Province.

Figure 4.3.7.8.3: Coverage of vitamin A supplementation by age groups for Kartik 2076

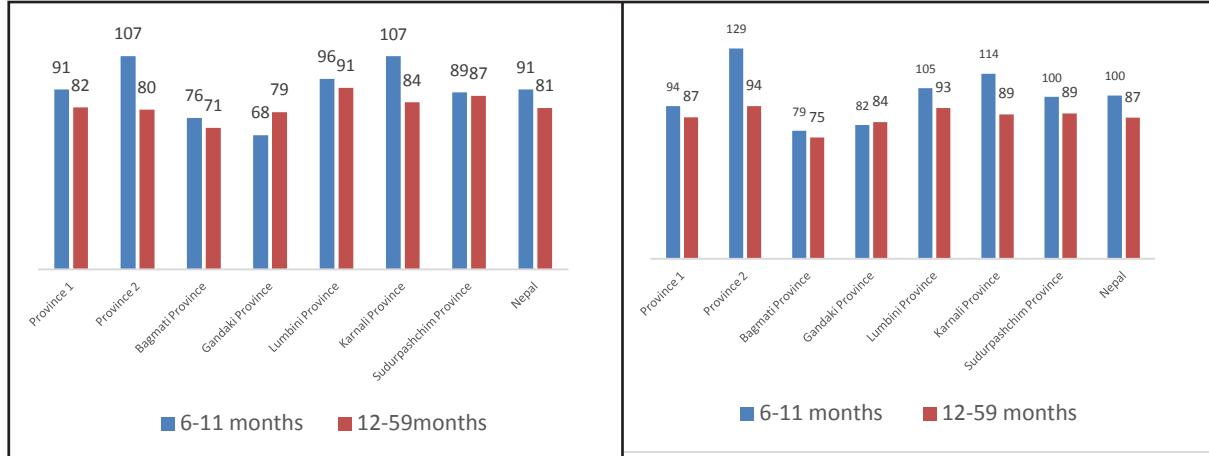
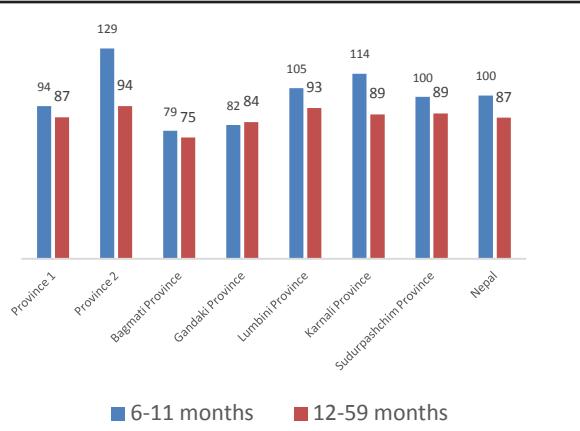


Figure 4.3.7.8.4: Coverage of vitamin A supplementation by age groups for Asadh 2077

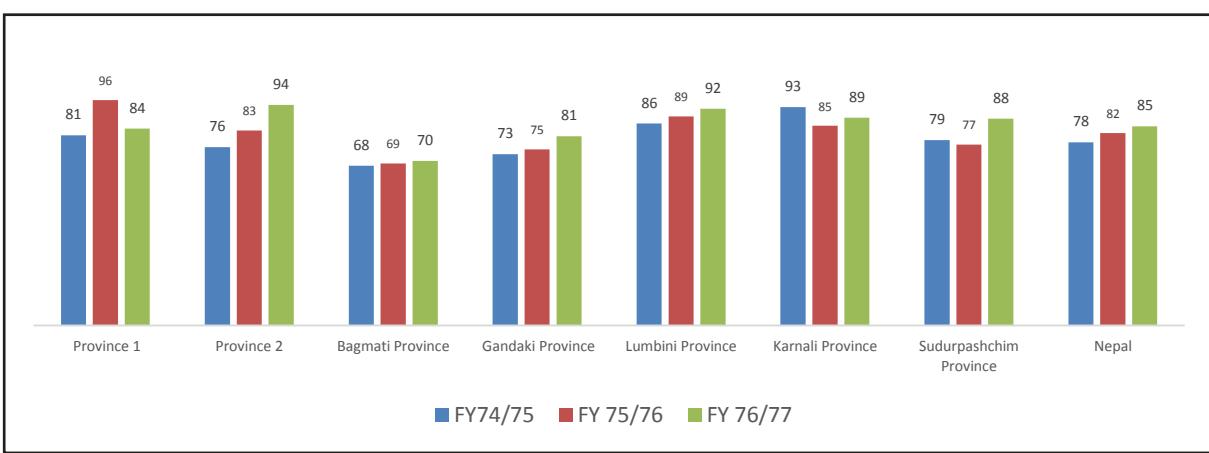


Source: HMIS/MD/DoHS

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

Family Welfare Division is implementing biannual deworming tablets distribution to the children aged 12-59 months aiming to reduce childhood anaemia with control of 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 integrating with Vitamin -A as Vitamin -A campaign.

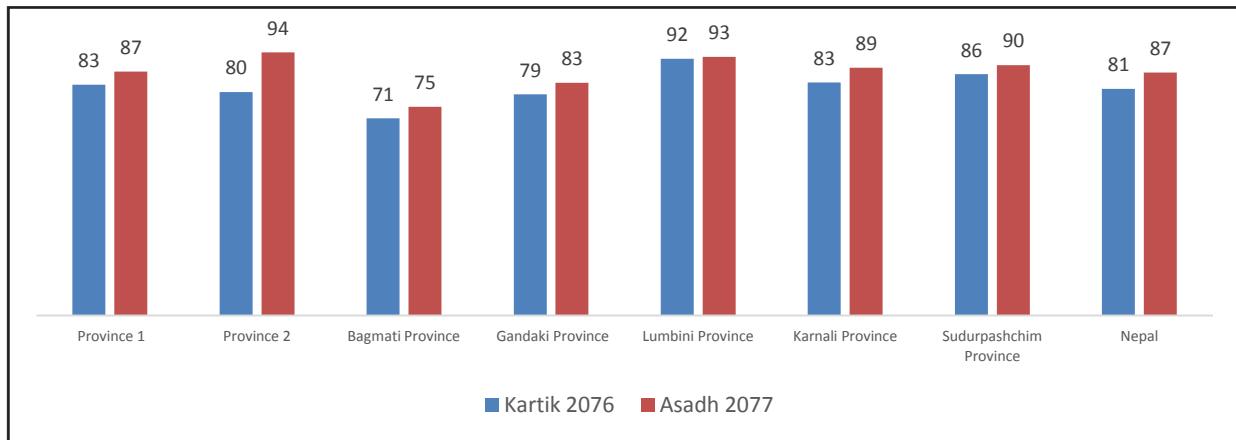
Figure 4.3.7.9.1: Coverage of Deworming Tablets distribution to the Children aged 12-59 month



Source: HMIS/MD/DoHS

As shown in figure 4.3.6.9.1, the national coverage of deworming tablet distribution is 85 percent which is increasing trends for last two fiscal years. For all the provinces, the coverage is higher than 80 percent. All the provinces had improved deworming tablets distribution in the children 12-59 months in comparison with last fiscal years.

Figure 4.3.7.9.2: Round wise coverage of Deworming Tablets distribution to the Children aged 12-59 months



Source: HMIS/MD/DoHS

The overall national achievement is about 85 percent among the children aged 12-59 months with 81 percent in Kartik and 87 percent in Asadh. The Baisakh round i.e. is 2nd round of vitamin-A campaign of 76 postponed to Asadh because of COVID-19. Furthermore, the coverage by provinces varies with Lumbini province has higher proportion of children receiving deworming tablet and lower proportions of children receiving it in Bagmati Province.

4.3.7.10 School Health and Nutrition Programme

The School Health and Nutrition Strategy (SHNS) was developed jointly in 2006 by Ministry of Health and Population (MoHP) and Ministry of Education (MoE) 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 programme in primary schools based on the Joint Action Plan in Sindhupalchowk and Syangja districts. This pilot programme 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 since FY 2073/074. The current Joint Action Plan (2071/072 to 2075/76) calls for:

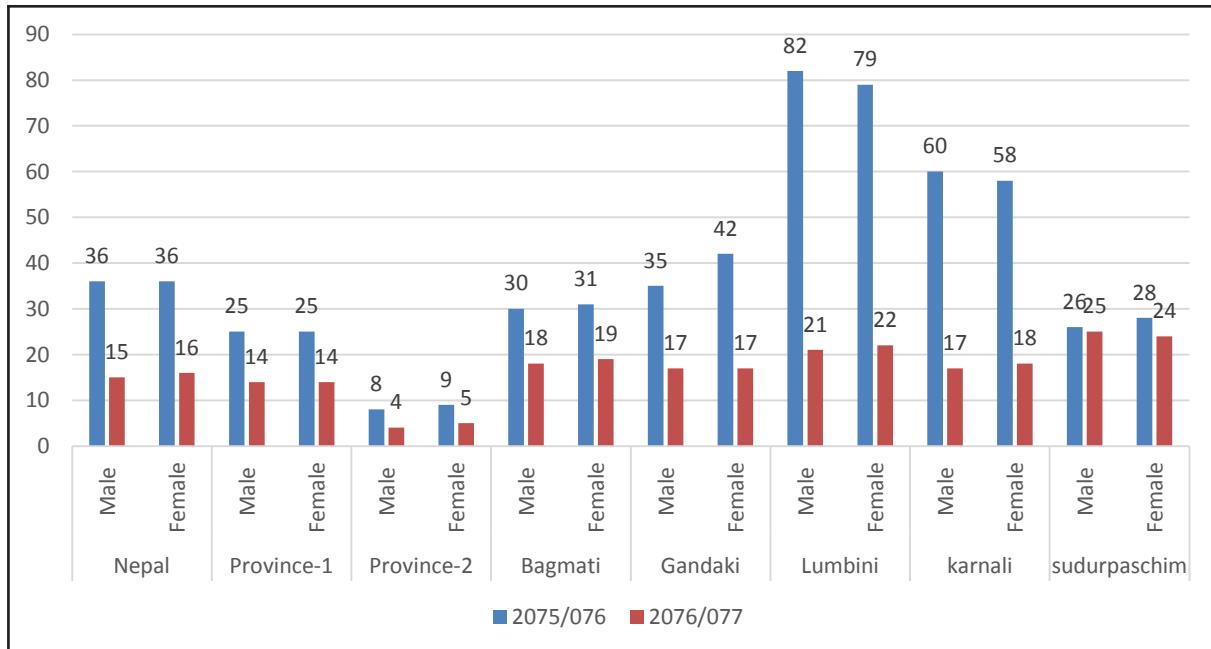
- Annual health screening
- Biannual deworming of Grade 1–10 school children
- A first aid kit box with refilling mechanism in all primary schools
- Hand washing facilities with soap in all schools
- Toilets in all schools
- The use of the new attendance registers in all schools
- Orient school management 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 School-aged-children (SAC) that is conducted in first week of Jestha and Mangsir every year. Until FY2072/073, 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 for FY 2075/076 is

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percent for boys and 36 percent for girls whereas in FY 76/77 is 15 percent for boys and 16 percent for girls.

Figure 4.3.7.10.1 Coverage of School Deworming Tablet Distribution



Source: HMIS/DoHS

4.3.7.11 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, Pyuthan and Kapilvastu in FY 2072/073.

In FY 2073/74, the programme was scaled up to 17 districts namely; Bajura, Bajhang, Doti, Bhaktapur, Rupandehi, Manang, Surkhet, Mahottari, and Bara. Family Welfare Division of DoHS/MoHP has completed the Training to the concerned officials from all these districts. However, the program was implemented in few districts due to the various reason.

In FY 2074/075, further scaling up of the program was done in additional 24 districts namely; Jajarkot, Rukum East, Rukum West, Dairekh, Bardiya, Nawalparasi East, Nawalparasi West, Baitadi, Achham, Dadeldhura, Rolpa, Dang, Kanchanpur, Dhanusha, Sarlahi, Rautahat, Parsa, Udaypur, Kalikot, Dolpa, Jumla, Mugu and Humla. Likewise, from FY 76/77 Family Welfare Division of DoHS/MoHP has been scale up school health and nutrition program in all 77 districts i.e 753 palikas.

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

4.3.7.12 Nutrition in emergencies (NIE)

In addition to the regular programme, Family Welfare Division (FWD) of DoHS/MoHP also provides essential and high-quality nutrition services in any types of emergencies. Nutrition cluster in Nepal is very active lead by the Nutrition Section Family Welfare Division (FWD) of Ministry of Health and

Population (MoHP) co-leading with UNICEF. With the guidance of national nutrition cluster, provincial nutrition clusters are formed, capacitated and activated in 7 provinces (one in each province) led by concerned Provincial Health Directorates (PHD), and ongoing active mobilization for the management of Nutrition in emergency preparedness and response in COVID-19 context. NiE interventions focuses on the adolescent populations, pregnant and lactating women (PLWs) and children under five years of age as they are nutritionally the most vulnerable during any type of emergency. Under NiE, following five pillar 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.

(a) Nutrition in emergency preparedness for response:

In nutrition cluster have more than 30 member's agencies including Government, UN, Donors, INGOs, local NGOs and professional expert organizations. After COVID-19 pandemic affected in Nepal, 29 nutrition cluster meeting held jointly with provincial nutrition clusters of 7 provinces. To strengthen the nutrition in emergency preparedness and response actions, nutrition cluster has formed, capacitated and activates 7 technical working groups (TWG) and TWG have been providing technical assistance on different aspects of nutrition in emergency preparedness and response actions:

1. IYCF working group
2. IMAM working group
3. Micro-nutrient working group
4. Information management working group
5. Assessment working group
6. BCC working group
7. Nutrition in emergency preparedness and response planning TWG

In FY 2076/077, following preparedness actions were implemented:

Comprehensive nutrition specific interventions (CNSI) training has been ongoing throughout the country and CNSI has strong chapter for NiE which is a strong part of capacity building actions.

Formed, capacitated and activate nutrition clusters in all 7 provinces (one in each province)

Prepared/revised three nutrition in emergencies preparedness and response plan to address nutrition issues in COVID-19 context, monsoon, earthquake and cold wave situation.

Ongoing nutrition interventions tracking of each of the member agencies in each month so that status of nutrition interventions has been identified nationwide.

Updated the nutrition cluster roster and mobilizing the trained human resources in emergency.

Prepared and ongoing implementation of nutrition emergency preparedness and response plan in all 7 provinces to address nutrition issues in COVID-19 context and monsoon flood/landslides.

Prepositioned essential nutrition commodities in different 8 strategic locations such as; Central Medical Store Pathalaiya, Bara and 7 medical stores of Provincial Health Logistic Management Center of all 7 provinces.

Nutrition cluster developed different 7 guidelines to initiate the nutrition response in COVID-19 context as; (i) Infant and Young Child Feeding (IYCF) interim guideline, (ii) Integrated Management of Acute Malnutrition (IMAM) interim guideline, (iii) Behaviour change communication (BCC) guidance note, (iv) Blanket Supplementary Feeding (BSFP) interim guideline, (v) National Vitamin A campaign guideline, (vi) COVID Nutrition guideline with 8 menus targeting to COVID-19 infected people; (vii) NRH interim guideline, and (viii) guideline for nutrition information system (NiS).

(b) Nutrition in emergency response:

In the COVID-19 context, nutrition cluster mobilized to all cluster partners, health workers and FCHVs throughout the country. In this context, the following are the outcomes of nutrition cluster in 2067/077:

Treated 7,432 under five years children nationwide with severe acute malnutrition (SAM) from different 623 outpatient therapeutic centres located in different health facilities and 21 nutrition rehabilitation homes (NRH) located in different hospitals

Provided Super cereal to 193,751 children aged 6-23 months and 283,410 pregnant and lactating women for the prevention of malnutrition.

Provided relief package of nutritious foods to 118,029 households nationwide

Reached 4,358,880 households nationwide with radio messages on nutrition and COVID-19 through 210 FM radio services nationwide.

Reached 2,845,917 households with IYCF messages through SMS services.

Reached 1,083,769 pregnant & lactating women with IYCF and maternal nutrition messages through SMS services.

Counselled 1,058,339 pregnant and lactating women on IYCF and maternal nutrition through telephone and home visits.

With nutrition cluster's advocacy and mobilization, Nepal achieved 85.20 per cent coverage of Vitamin 'A' capsule among children age 6-59 months (out of total 2.7 million children) nationwide during Biannual Vitamin 'A' distribution rounds of 2020 (6-7 July and 26-27 November of 2020). Similarly, 83 percent children aged 12-59 months received albendazole tablets nationwide during the rounds.

(c) Challenges faced for nutrition interventions during emergencies:

Campaign like Vitamin 'A' capsule distribution was possible due to the commitments of all health workers, FCHVs, nutrition cluster partners and the specific commitment of the local government to support FCHVs with all infection prevention and control measures during a COVID-19 pandemic situation.

FCHVs feel overburden for the IYCF counselling and diet quality improvement with home fortification if the available floor to counsel the parents/caretakers remain only biannual vitamin 'A' distribution.

Resource gaps to manage blanket supplementary feeding programme (BSFP) to cover the children age 6-59 months and pregnant and lactating women in the most emergency affected and vulnerable locations.

It is difficult to screen, identify and refer the children aged 6-59 months who are severely and moderately wasted for treatment due to lack of protective materials (such as masks, gloves, and

sanitizers) to female community health volunteers as well as fear of COVID-19 to visit to health facilities.

Limited national capacity (human/finance) for preparedness and response to the nutrition issues in emergencies at provincial and local levels.

(d) Way forward/next steps for NiE preparedness for response:

Revise nutrition in emergency response plan (COVID and Monsoon) for next one year by April 2021.

Initiate SMART nutrition survey to identify pre-monsoon nutrition situation in the most monsoon flood prone districts.

Initiate family MUAC approach in four districts (Pachthar, Saptari, Kavre and Jumla) with MoHP/UNICEF collaboration.

Revisit and revise nutrition cluster technical working groups (TWG) for efficient and effective management of technical aspects of nutrition cluster.

Preposition essential nutrition commodities in different strategic locations (government's warehouses) of all 7 provinces.

Organize NiE training to the provincial cluster members.

4.3.8: Issues and challenges:

Adjustment of Health Workers at local government levels not yet completed fully. Therefore, the trained health workers on nutrition programme in many health facilities are not available to implement activities.

Fiscal procurement of nutrition commodities under offshore procurement still challenging due to difficulty faced in localization of procurement cost estimation and then initiating bidding process.

Transportation of nutrition commodities and logistic is challenging given that responsibilities are divided into the Federal, Provincial and local Government level. The coordination mechanism in commodity transport has yet to be established

Despite of high coverage interventions, the quality of the Programme implementation is not satisfactory level.

Quality improvement (QI) modules on nutrition services is not available to identify critical gaps in the programme and to take corrective action.

Inter-Ministerial Coordination Mechanism is not functioning well in joint nutrition programme like Adolescent Nutrition Programme.

4.3.8: Lesson learned:

- Initiated nutrition friendly local government mechanism that has developed commitment of local government to eliminate adolescent, maternal and child malnutrition in Nepal within SDG Era.
- Establishment of breastfeeding rooms/corners to promote, support and protect breast feeding has developed awareness on breast feeding among general public, office workers and programme managers; and it is in increasing trends.
- **Global SUN GG 2019 provided lesson on;** (i) urgent need to work on sustainable food system to face the challenge of high sugary, high fat and savory foods that inviting triple burden of

malnutrition. Health sector in coordination with agriculture and food security sector need to lead the food system for nutrition, (ii) despite of high political commitment at all levels, the National Vision sought by MSNP-II is facing challenge on local implementation due to lack of evidence base performance monitoring and reward & penalty system, (iii) financial tracking and expenditure analysis in nutrition is still challenging because the cost of investment in human resource and infrastructure is difficult to estimate in Nepal.

- The indicators profile of HMIS is very heavy in terms of data collection and analysis. Those indicators that are qualitative type requires to have separate mechanism to collect it and then analyse.

4.3.8: Key Priorities for Next Fiscal Year (2078/79):

Promote MBFHI in all health facilities of 753 municipalities, secondary and tertiary level health care centres.

Roll out of Comprehensive Nutrition Specific Programme (CNSI) package to all 753 municipalities.

Develop Quality Improvement (QI) module for key interventions in nutrition Programme: e.g. MNP/IYCF, IMAM, Adolescent Nutrition and IFA tablet distribution to pregnant women.

Promote and apply sustainable food system integrating with infant and young child feeding, adolescent and women nutrition.

Promote Nutrition Friendly Villages using the framework of Nutrition Friendly Local Governance System.

Scale up IMAM programme nationwide as a routine health service for the treatment of SAM.

Endorse for RUTF, F100, F75 and ReSoMal to be a part of national essential drug list of Government of Nepal.

Scale up MNP/ IYCF programme from 46 districts to 77 districts by December 2022.

Strengthen Adolescent Nutrition Programme in all 77 districts i.e. 753 palikas.

Maintain and sustain National Vitamin 'A' programme until Nepal meets the condition to scale back preschool Vitamin 'A' programme.

Integrate DRR and Climate, Energy and Environment (CEE) within MSNP framework nationwide.

Improving the capacity consistency and effectiveness of nutrition education in schools.

Prepare and train teachers and other education staff to help them provide effective nutrition education;

Work with medical universities and CTEVT in the development of courses in nutrition as part of academic certification and in updating methods courses on how to integrate nutrition in subject-matter areas in the classroom and in materials;

Establish a framework for future collaborative efforts and partnerships to improve nutrition programme.

Orient to federal and provincial parliamentarians to make nutrition a big agenda for national development plan.

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 Aama Suraksha Programme promotes continuum of care from ANC to PNC.

The expansion of 24-hour emergency obstetric care services (basic and comprehensive) at selected health facilities in all districts.

The Safe Motherhood Programme, initiated 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 3.2.1.

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 2076/77

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 *Matri SurakshaChakki* (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 *Matri Suraksha Chakki (MSC)* tablets through FCHVs to prevent PPH during home deliveries. For home deliveries, three Misoprostol tablets (600 mcg) are handed over to pregnant women by FCHV at 8th month of pregnancy which are advised to be taken orally immediately after the delivery of baby and before the expulsion of placenta, through proper counselling. Fifty districts were implementing the programme till the FY 2075/76. Further eight districts, Gorkha, Dolakha, Solukhumbu, Parsa, Panchthar, Gulmi, Lamjung and Mustang, started implementing the program in the fiscal year 2076/77. NDHS (2016) shows that only 13 percent of women who gave childbirth without skilled assistance took MSC tablets, these calls for strengthening the existing programme, as women who delivered at home are likely to be at 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 previa are referred to a CEONC site for the needed services. This programme is being implemented in the remote districts.

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 provided funds to hospital/CEONC sites to recruit the human resource mix needed to provide surgical management for obstetric complications at district hospitals (CEONC sites) before federal system. In FY 2076/2077, FWD provided funds to all Provinces to fulfil HR shortage at hospitals (CEONC sites). Total 90,000,000 rupees to recruit CEONC team.

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 IUD), CAC and antenatal ultrasonography. In 2075/76, 668 SBA, 26 ASBA were trained by NHTC and NAMS. By the end of 2076/77 a total of 10,388 SBAs and 234 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 2076/77 CEONC services were established in 72 districts among which 71 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 2076/77.

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 MOHP is developing master plan for these hospitals to overcome this problem.

Onsite clinical coaching and mentoring

Nepal has taken the lead for improving quality services at the point of service delivery as focus theme mentioned in the NHSS and its implementation plan 2016-2021. WHO also given the emphasis and mentioned, the 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). Onsite clinical coaching and mentoring process is evidence based effective program as per outcome (improvement in knowledge, skills, and practices of MNH service providers) found in Dolakha and Ramechhap during transition and recovery plan implemented after 2072 earthquake in 2072/2073 supported by NHSSP and 7 districts' onsite coaching and mentoring process supported by GIZ. Therefore, FWD had started to implement on-site clinical coaching /mentoring programme since 2073/2074 from 16 districts¹ 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 gradually. In FY 2075/2076, total 320 Municipalities of 33 districts and in FY 2076/2077 528 Municipalities of 51 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 clinical mentors through mentor training since FY 2073/2074. Till the end of FY 2076/2077 total 210 district SBA clinical mentors were trained from 67 districts including partner's support (20 in FY 2073/074, 80 in 2074/075, 18 in 2075/076 and 92 in 2076/077). They are the key skill persons who visit each BC/BEONC sites and conduct onsite coaching/mentoring along with MNH readiness quality improvement 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 supporting partners provide these models (Skill Lab Material) to SBA clinical mentors to 53 districts. By end of FY 2076/77, total 3121 MNH service providers received on-site clinical mentoring from SBA mentors (194 in FY 2073/074, 553 in 2074/075, 1008 in 2075/076 and 1366 in 2076/077) from total 804 health facilities (52 in FY 2073/074, 166 in 2074/075, 350 in 2075/076 and 236 in 2076/077).

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 2075/2076, FWD expanded MNH readiness hospital quality improvement process (HQIP) gradually. Till the end of FY 2076/77 the HQIP programme expanded in 60 hospitals and PHCC with CEONC services in 58 districts. The cumulative number of CEONC sites with HQIP service expansion are 7 in 2072/73, 12 in 2073/74, 35 in 2074/75, 45 in 2075/76 and 60 in 2076/77. Since FY 2076/77, HQIP process was integrated with onsite coaching and mentoring process at hospitals. The process of quality improvement is also being implemented in birthing centers in integration with onsite coaching/mentoring process. Till FY 2076/77, total QI reported BC/BEONC sites were 572 (44 in FY 2073/74, 110 in FY 2074/75 and 267 in FY 2075/76 and 139 in 2076/77).

PNC home visit (micro planning 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 16.4 percent in 2075(HMIS). This programme had been initiated from FY 2074/75 through allocating annual budget to 30 Municipalities from 15 districts and it has been expanding gradually. Till FY 2076/77, It has been expanded in to 229 Municipalities from 40 districts (cumulative: 30 Municipalities from 15 districts in FY 2074/75, 51 Municipalities from 27 districts in FY 2075/76, 229 Municipalities from 40 districts in FY 2076/77) to strengthen PNC services by mobilizing MNH service providers from health facilities to provide PNC at women's home. Based on HMIS data, PNC per protocol (3 visits) in these 51 Palikas was 76% among institutional delivery in FY 2076/77, an increased from 68% in FY 2075/76.

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 six provinces (1, Bagmati, Gandaki province, 5, Karnali and Sudurpaschim Province) for air lifting of women in need of immediate transfer to higher centres. A total of 7,500,000 Rupees was allocated to six Provinces to support women when needed. Additional 12,000,000 Rupees was allocated for the hospitals in the districts through 7 provinces to support transport fares women who could not afford referral to high facility (nearby CEONC facilities). 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.

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 77 district hospitals and majority of PHCCs. A total of 912 sites for MA, 604 sites for both MA and MVA and 22 sites for abortion in/after second trimester were listed to provide safe abortion services till the FY 2076/77. Similarly, a total of 1833 ANMs for MA, 743 nurses and 1853 doctors (MBBS) for MA/MVA and 92 OBGYN or MDGPs have been listed for in/after second trimester safe abortion services till the FY 2076 /77.

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, trainers were trained on this subject in districts.

Aama Surakshya Program and Free New born Programme

The government has introduced demand-side interventions to encourage women for institutional delivery. The Maternity Incentive Scheme, 2005 provided transport incentives to women to deliver in health facilities. In 2006, user fees were removed from all types of delivery care in 25 low HDI districts and expanded to nationwide under the Aama Programme in 2009. In 2012, the separate 4 ANC incentives programme was merged with the Aama Programme. In 2073/74, the Free Newborn Care Programme (introduced in FY 2072/73) was merged with the Aama Programme which was again separated in FY 2074/75 as two different programmes with the provisions listed in Box 4.2.2.

Box 4.4.2: Provisions of the Aama Programme and New born 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 facility 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 (ante partum 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.***

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 new born care and family planning.

Information on danger signs during pregnancy, childbirth and in the postpartum period, and timely referral to appropriate health facilities.

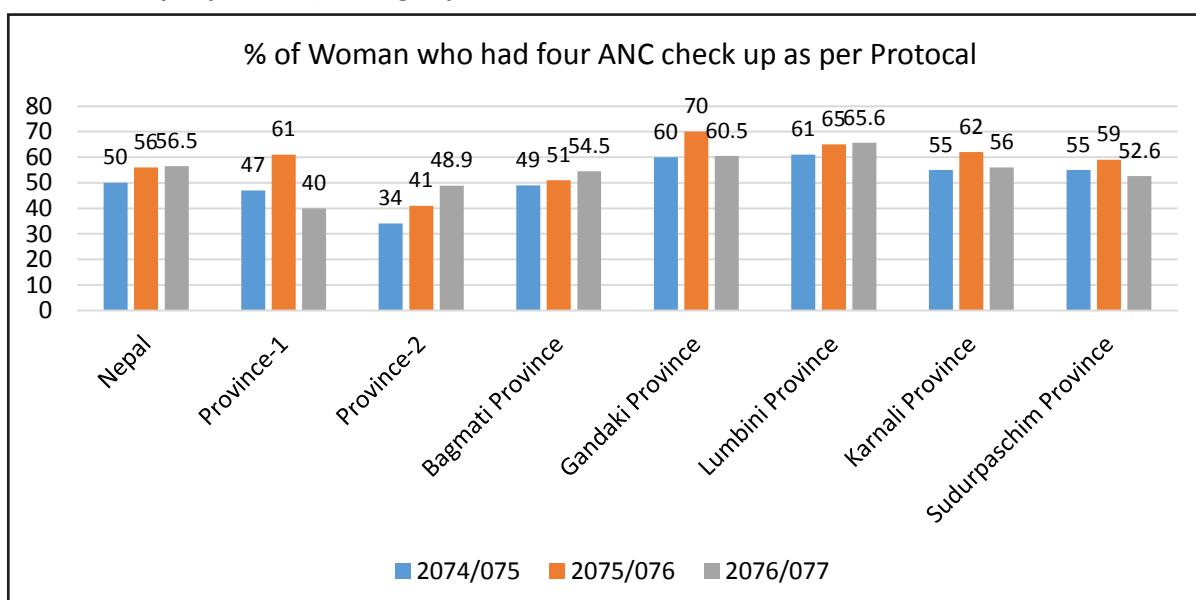
Early detection and management of complications during pregnancy.

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.

Percentage of four ANC checkups decreased drastically in Province 1, from 61 percent in FY 2075/76 to 40 percent in the FY 2076/77 and same trend was observed in Gandaki Province and Sudurpaschim Province.

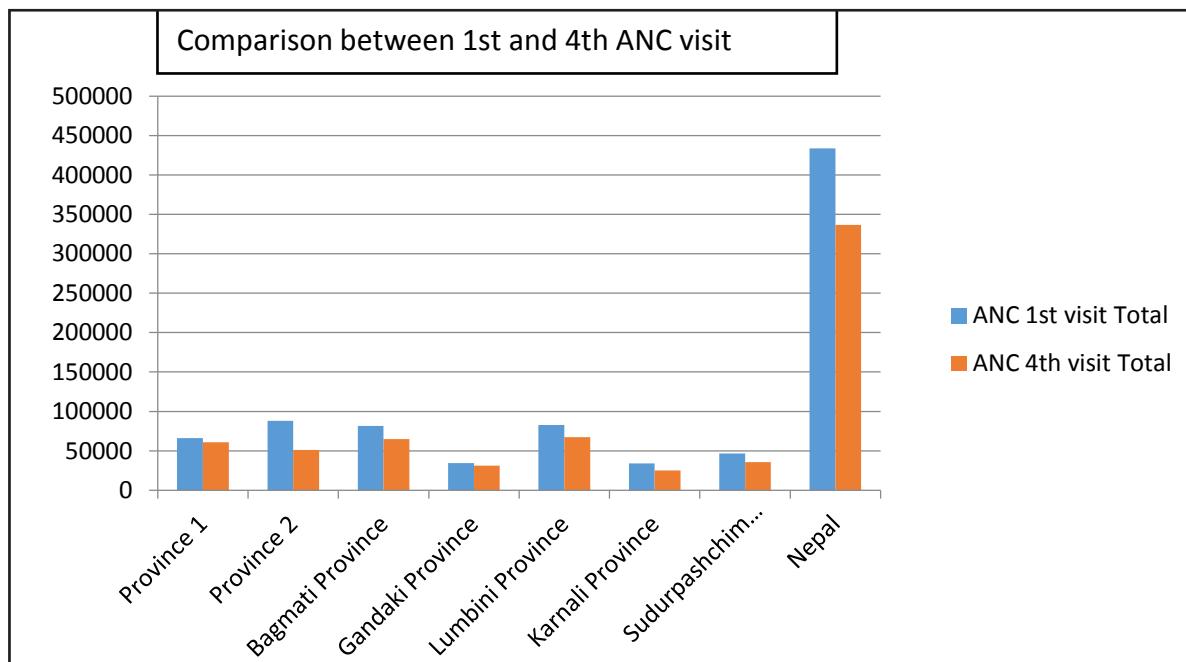
Figure 4.2.1: Provincial and national trends of percentage pregnant women with four ANC visits (as per protocol) among expected live births



The percentage of women going for complete ANC check-ups as per protocol increased marginally from 56 percent in FY 2075/76 to 56.5 percent in the FY 2076/77. Lumbini Province with 65.6 percent recorded the highest percentage while Province 1 recorded the lowest rate (40%) of four

ANC check-ups as per protocol. The Percentage of four ANC check-ups decreased drastically in Province 1, from 61 percent in FY 2075/76 to 40 percent in the FY 2076/77 and same trend was observed in Gandaki Province and Sudurpaschim Province.

While comparing the total percentage of first and fourth visit, ANC first visit as per protocol is high compared to the fourth visit in Nepal. Even when the individual trends in all provinces are observed, it can be found that in each and every province the percentage of women going for first ANC visit is drastically high compared to the women going for the fourth ANC visit.



Delivery care

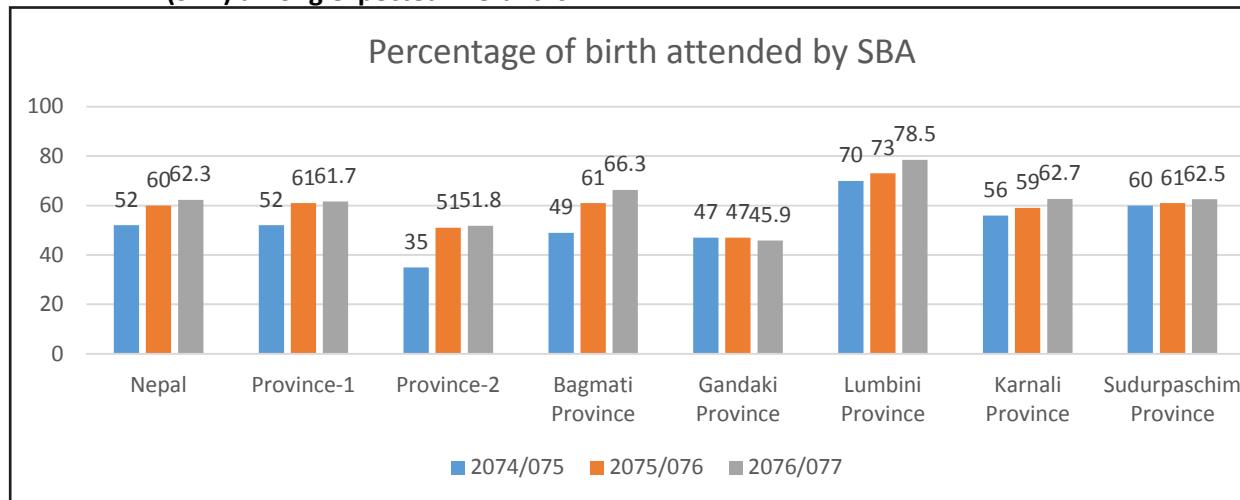
Delivery care services include:

- 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 delivery using 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) to achieve the SDG target of 90 percent in 2030. At the national level, percentage of births attended by SBA increased to 62.3 percent in FY 2076/77 from 60 percent FY2075/76. Similarly, Sudurpaschim province also remained at 60 percent for both years. Province five achieved the highest with 78.5 percent deliveries attended by SBA. Gandaki province has the lowest percentage of delivery attended SBA at 45.9 percent which further decreased from 47 percent from the FY 075/76 (Figure 4.2.5).

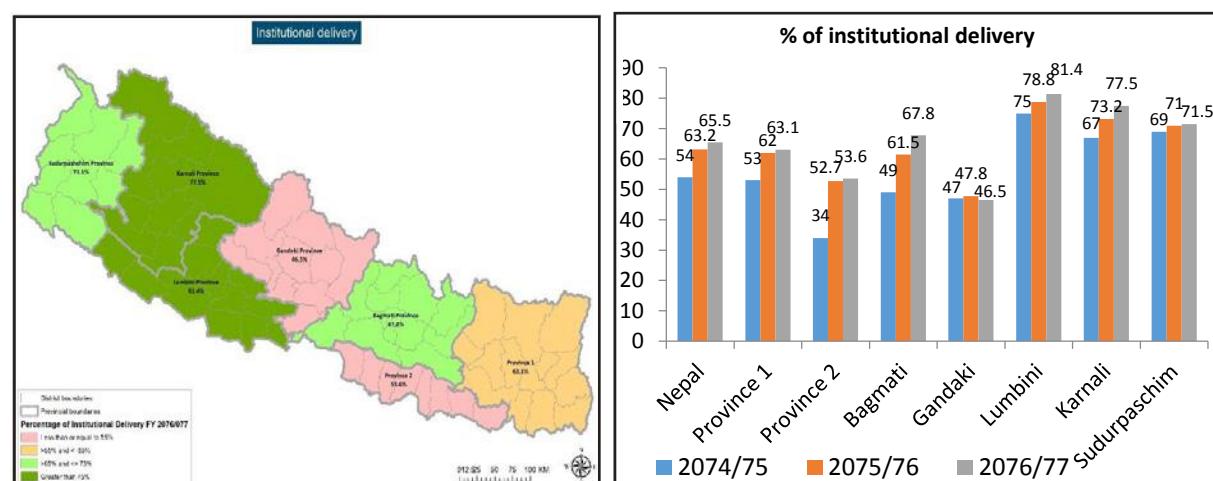
Figure 4.2.5: Provincial and national trends of percentage births attended a skilled birth attendant (SBA) among expected live births



Institutional delivery:

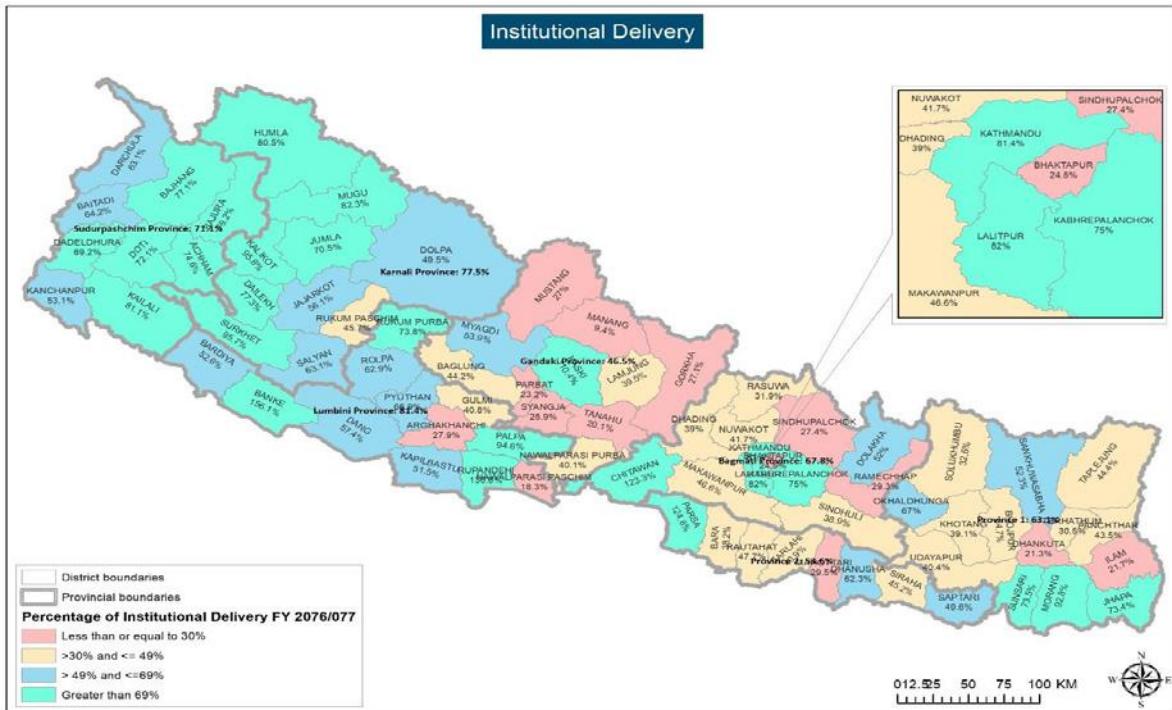
Institutional deliveries as percentage of expected live births have increased from 63 percent (FY 075/76) to 65.6 percent (FY 076/77) (Figure 4.2.6).

Figure 4.2.6: Percentage institutional deliveries among expected live births



As compared to 2075/76, percentage of institutional deliveries increased in all Provinces. Province 5 with 81.5 percent achieved the highest percentage of institutional delivery while Karnali province achieved the lowest with 46.5 percent.

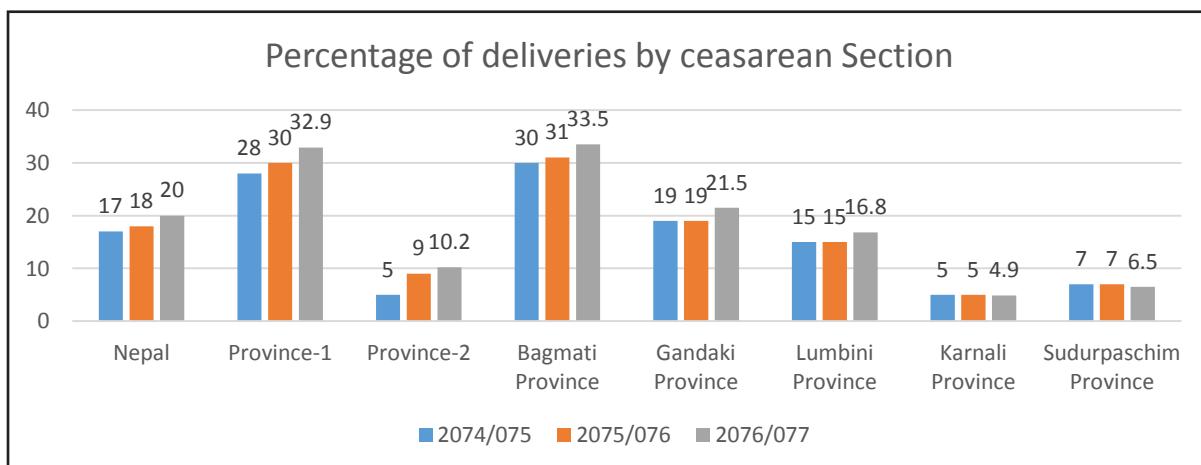
Percentage of Institutional Delivery by district in FY 2076/77



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 FY2076/77, 20 percent of institutional deliveries were conducted by CS. Compared to last fiscal year CS delivery increased by two percentage point. CS delivery was observed highest in Bagmati Province (33.5%), Province 1 (32.5%) and Gandaki Province (21.5%) (Figure 4.2.10).

Figure 4.2.10: Percentage of deliveries by caesarean section, by province



The met need for Emergency Obstetric Care in the FY 2076/77 was 11.6 percent while in the FY 2076/77 has further decreased up to 11.1 percent. The reporting mechanism further needs to be

Family Welfare

strengthened for receiving proper results on this heading. Total number of females receiving treatment for Emergency Obstetric Complications in the FY 2075/76 was 45903, while in the FY 2076/77 was found to be 46239.

Number of Women treated for Obstetric complications:

Pregnancy Related complications	Province 1	Province 2	Bagmati Province	Gandaki Province	Lumbini Province	Karnali Province	Sudurpashchim Province	Nepal
Elampsia	231	261	222	77	426	26	54	1297
Pre-eclampsia	147	271	603	75	337	39	43	1515
Puerperal Sepsis	109	58	185	163	92	35	46	688
Haemorrhage	901	992	2561	592	1347	342	554	7289
Prolonged/ obstructed labor	984	1295	1485	822	4841	1488	613	11528
Retained Placenta	681	487	502	241	513	379	292	3095
Ruptured uterus	71	28	28	8	28	8	25	196

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.

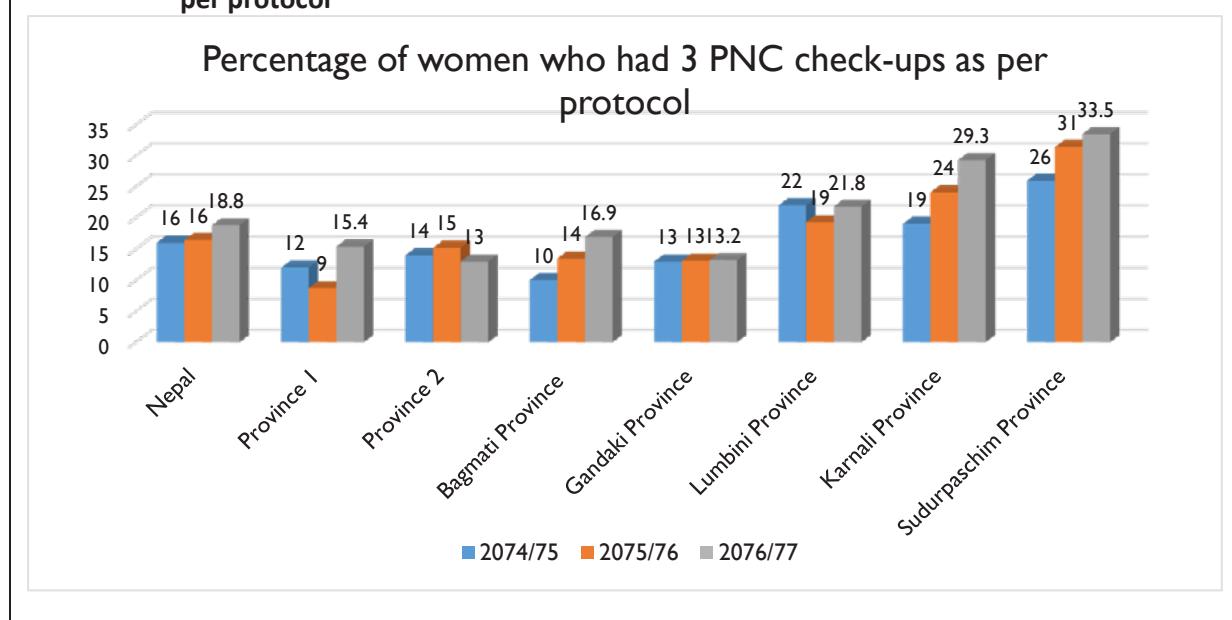
The immunization of newborns.

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 visit according to a protocol since 2071/72.

The proportion of mothers attending three PNC visits as per the protocol increased from 16 percent in FY 2074/75 to 18.8 percent in FY 2076/77(Figure 4.2.11).The service utilization was found highest in Sudurpashim (33.5%) (followed by Karnali Province (29.3%) . 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 also be significant.There is a need for culturally sensitive interventions to promote accessibility and the use of postnatal services, especially in geographically challenging areas.

Figure 4.2.11: Provincial and national trends of percentage of women who had 3 PNC check-up as per protocol



Safe abortions

A total of 912 sites for MA, 604 sites for both MA and MVA and 22 sites for abortion in/after second trimester were listed to provide safe abortion services till the FY 2076/77. Similarly, a total of 1833 ANMs for MA, 743 nurses and 1853 doctors (MBBS) for MA/MVA and 92 OBGYN or MDGPs have been listed for in/after second trimester safe abortion services till the FY 2076 /77.

Table 1 Number of Listed SAS sites and Service providers

Listed SAS Sites	FY 2076/77	Total
MA sites	73	912
MA/MVA sites	11	604
In/After Second trimester Sites	2	22
Listed Service Providers	FY 2076/77	Total
ANM	200	1833
Nurses	39	743
MBBS	126	1853
OBGYN/MDGP	8	92

The number of safe abortion service users have decreased notably in this FY in comparison to last FYS. Total 87869 women have received safe abortion services (Comprehensive Abortion Care) in FY 2076/77 while 95746 in 2075/76 and 98,640 in 2074/75 had received safe abortion service(Comprehensive abortion care). Among the total 87869 women who had received safe abortion service, 60,338 women had received medical abortion whereas remaining 9,166 women had received surgical abortion in the FY 2076/77. While reviewing the data of the last FYS, it showed that the use of medical abortion among the total safe abortion user is in increasing trend. Around 69% of the women had medical abortion in FY 2076/77 while 66% and 62% of the women had medical

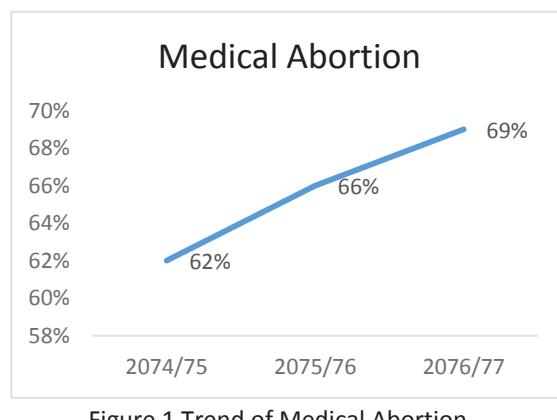
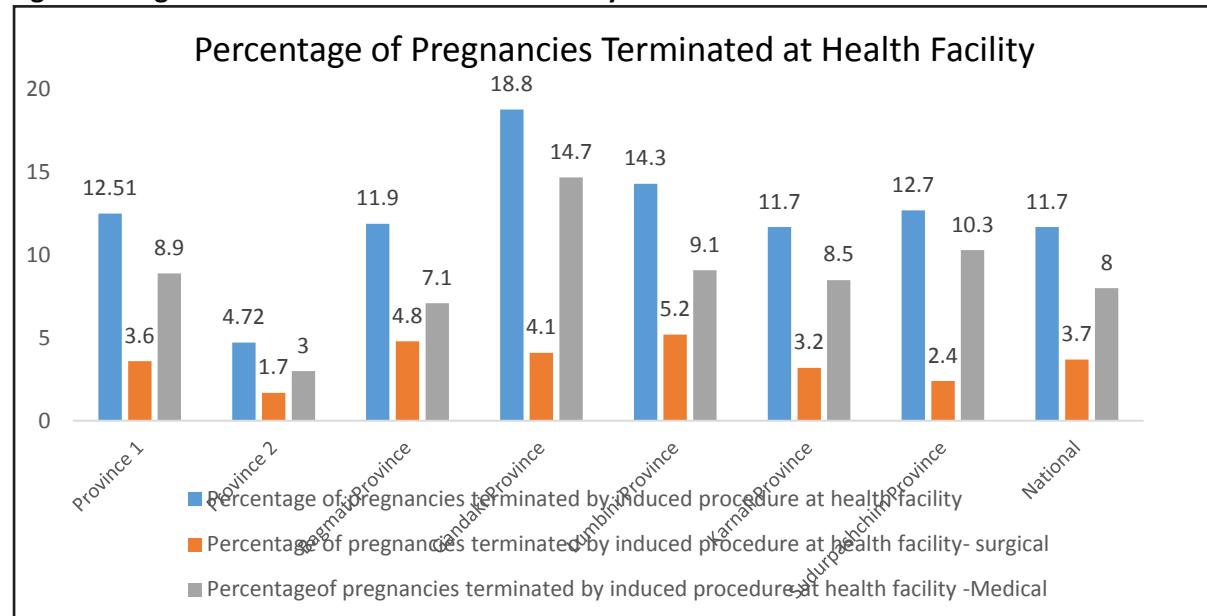


Figure 1 Trend of Medical Abortion

abortion in FY 2075/76 and FY 2074/75 respectively (Figure 1).

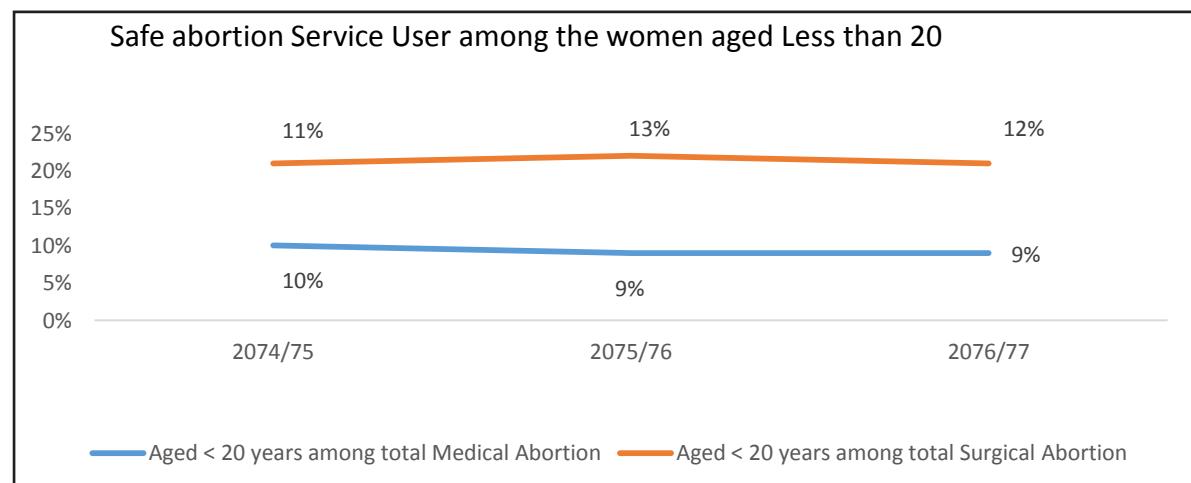
Among the total pregnancies, 11.7 % of the pregnancies were terminated by induced procedure at the health facilities while 8% were terminated using medical method and 3.7% terminated using the surgical method. The data showed that the 18.8% of the pregnancies were terminated in health facility in Gandaki Province which is highest among all provinces whereas only 4.72% of the pregnancies were terminated at Province 2, lowest among all provinces. The data showed that the surgical abortion is highest at Lumbini Provinces whereas medical abortion is highest at Gandaki province with 5.2%. Likewise, both surgical (3%) and medical(1.7%) abortion is lowest at province 2 (Figure 2)

Figure 2 Pregnancies Terminated at Health Facility



While reviewing safe abortion service users by the age of the women, among the total safe abortion users, 10% of the women were aged below 20 years. The highest number women aged less than 20 years were from Bagmati province while lowest number of safe abortion user from that aged group were from Sudurpaschim province. Likewise, among the total women receiving medical abortion, around 9% were the women aged less than 20 years and among the total women receiving surgical

Figure 3 SAS among the women aged less than 20



abortion, around 12% were women aged less than 20 years. Likewise, among the total pregnancies

among the women aged 20 or more, 10.5% had terminated their pregnancy at health facility. Gandaki province has the highest proportion of women aged 20 and more who terminated the pregnancy whereas only 4% of those women terminated at Province 2 which is lowest among the entire province.

Post Abortion Contraception

The data showed that the use of the post abortion contraception has decreased to 72.7% in this FY 2076/77 from 76% in last FY 2075/76 and 75% in FY 2074/75(Figure 4). Interestingly, Province 2 has the highest post abortion contraceptive users with the lowest safe abortion service user (Figure 4) .

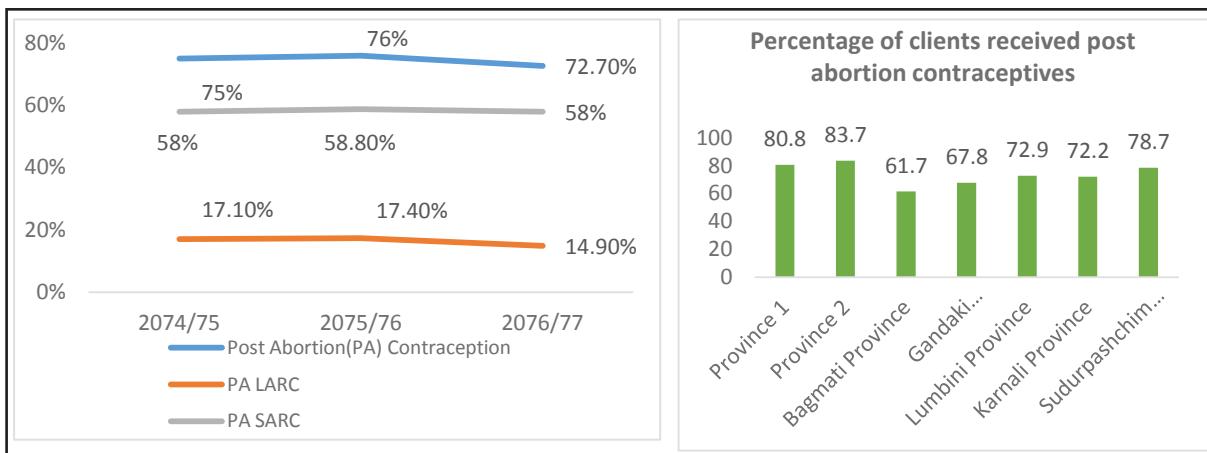


Figure 4 Post abortion Contraception- Province

Figure 5 Post Abortion Contraception

The acceptance of post abortion contraception among medical abortion service users was high compared to surgical abortion users in the FY 2076/77 which is similar to the previous fiscal years (medical abortion 76% versus surgical abortion 65%).The acceptance of Short acting Reversible Contraceptive is higher in comparison to the long acting reversible method(Figure 6). The use of LARC as Post abortion contraception has also notably decreased from 17.4% in FY 2075/76 and 17.1% in 2074/75 to 14.9% in the FY 2076/77 whereas the use of SARC as post abortion contraceptive method is stagnant since last three FY(Figure 5). Post-abortion LARC use is higher among women who had surgical abortion (18%) than among medical abortion (13 percent)(Figure 6).

Figure 6 Post abortion Contraception- Method of



Total 87869 have received CAC service while 11460 women had received PAC services and 6052 women were treated for the abortion complications. While reviewing the provincial level, it showed

that highest number of the women receiving CAC and PAC services were from Lumbini Province (18785 and 2788) and Bagmati Province(18532 and 2428). Total 1431 women had post abortion complication while 628 had some complication after receiving medical abortion and remaining 803 had complication after receiving surgical abortion. However, it is alarming that 6052 women have been treated for abortion complication when only 1431 had post abortion complication after receiving the abortion service at the health facilities. Similarly, highest number of the women treated for abortion complication were also from the Bagmati Province (2634) followed by Lumbini Province (1326).

Table 2 Number of CAC, PAC and Post Abortion Complication and Women Treated for Abortion

Province/National	Total CAC Services	Total PAC services	Number of Post abortion Complication - Medical Abortion	Number of Post abortion Complication - Surgical Abortion	Number of women treated for abortion complications
National	87869	11460	628	803	6052
Province 1	15957	1829	190	180	463
Province 2	7134	909	38	9	414
Bagmati Province	18532	2428	113	214	2634
Gandaki Province	12684	963	58	35	313
Lumbini Province	18785	2788	42	236	1326
Karnali Province	5235	1213	103	65	680
Sudurpashchim Province	9542	1330	84	64	222

1. 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 with the objective 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 process of identification, notification, quantification and determination of causes and to avoid all maternal and perinatal deaths, as well as the use of this information to respond with actions to prevent future deaths. GoN prioritized and implemented MPDSR in FY 2073/74 with further strengthening and expansion.

FWD conducted ToT on hospital MPDSR to hospitals and hospital and community MDSR to Health Directorates, Health Offices and Provinces.

As of FY 2076/77, MPDSR is being implemented at 12 Districts and 77 Hospitals, with a plan to scale up to 21 districts and 93 hospitals. Some hospitals and districts have already initiated partial implementation which will be completed in the fiscal year 2077/78.

with partial implementation in some districts and for better recording and reporting, MPDSR tools and guidelines are being revised and will be endorsed in the fiscal year 2077/78.

Community-based MDSR: At present, community based MDSR program is being implemented at 12 districts. In the community-based MDSR program, only maternal deaths are reviewed and responses are planned.

Hospital-based MPDSR: At present, 77 hospitals are implementing MPDSR program. In the hospitals, every maternal death is reviewed individually and perinatal deaths are reviewed on a monthly basis and responses are planned.

Formation of MPDSR Committees at different levels

As per MPDSR guidelines, the National MPDSR Committee is chaired by the Director General, Department of Health Services and MPDSR Technical Working Group (TWG) is chaired by Director, Family Welfare Division. In addition, there are MPDSR committees at health facility level and Local level with separate Verbal Autopsy and cause of death assignment teams for community MDSR

program. For each hospital implementing MPDSR, there is MPDSR committee formed as per the level of the hospital.

MPDSR On-site coaching program

Family Welfare Division conducted on-site coaching program to support the hospitals and local level for implementing MPDSR program. During this program, available data, forms and documents were reviewed including facilitation and support for online reporting. Additionally, discussion on formulation, implementation and follow up of action plan were conducted.

Review of MPDSR:

A review of MPDSR program was conducted in the fiscal year 2076/77 with an objective to review the progress on MPDSR at the implementing hospitals. Review was conducted at provincial level covering all implementing hospitals in Nepal.

4.2.4 Issues, constraints and recommendations

Table 4.2.7: 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
Availability of quality maternity care services at hospitals and birthing centres: 24/7 availability of services skills and knowledge of staff	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	MoH, DoHS FHD (quality of care) FHD

Issues and constraints	Recommendations	Responsibilities
enabling environment and motivation overcrowding at referral hospitals.	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	FHD, DHOs, DPHOs FHD, DoHS
Plateauing of 4 ANC 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

4.5 Family Planning and Reproductive Health

4.5.1 Background

Modern Family planning (FP) refers to female sterilization, male sterilization, intrauterine contraceptive device (IUCD), implants, injectables, pills, condoms (male condom), lactational amenorrhea method (LAM), and emergency contraceptive (EC) and standard days' method (SDM).

The aim of National FP program is to ensure individuals and couples fulfil their reproductive needs and rights by using quality FP methods voluntarily based on informed choices. Government of Nepal (GoN) is committed to equitable and right based access to voluntary, quality FP services based for all individuals with special focus on hard to reach communities such as adolescents, migrants, slum dwellers, sexual minorities and other vulnerable groups ensuring no one is left behind. To achieve this, GoN is committed and striving to strengthen policies and strategies related FP within the new federal context, mobilize resources, improve enabling environment to engage effectively with supporting partners, promote public-private partnerships, and involve non-health sectors. FP has been enshrined as a fundamental right in the constitution, and included in the basic health service package under the Public Health Act 2018, thus paving a way towards universal health coverage. In addition, the safe motherhood and Reproductive Health Act 2018, safe motherhood and Reproductive Health Act 2018, 15th National Plan (2018/19-2022/23) as well as Safe Motherhood Roadmap (2020-2030) emphasizes the availability and accessibility of rights-based FP services.

From program perspective, GoN through its subsidiary (FWD, PHD, Health section MoSD, and municipalities) are trying to ensure access to and utilization of client-centred quality FP services through improved contraceptive use with special focus to underserved populations, broaden the access to range of modern contraceptives method mix including long acting reversible contraceptives (LARC) such as IUCD and implant from service delivery points, reduce contraceptive discontinuation, sustain and scale up successful innovations, evidence generation and linking with FP service delivery and demand generation interventions.

Service arrangement: FP information, education and services are provided through the government, social marketing, NGOs and the private sector (including commercial sectors). In public health system, short acting reversible contraceptive methods (SARCs: male condoms, oral pills and injectable) are provided through PHCCs, health posts, Urban Health Units (UHC), Community Health Units (CHU), PHC-ORCs. FCHVs provide information and education to women and couple at community and distribute male condoms and resupply OCPs. Access to LARC services in remote area is provided through satellite clinics, extended visiting service providers and mobile camps. A sterilization service is provided at static sites or through scheduled seasonal and mobile outreach services. FP services are also provided through private and commercial outlets such as NGO run clinic/centre, private clinics, pharmacies, hospitals including academic hospitals. FP services and commodities are made available by some social marketing (and limited social franchising) agencies.

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 utilizing client-centred quality 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 4.4.1.

Target of Family Planning

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

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

Table 4.5.1: SDG targets and indicators

Target and Indicators	2020 (Status)	Source	2022	2025	2030
1. Proportion of women of reproductive age (aged 15-49 years) who have their need for family planning satisfied with modern methods	1.9	NMICS, 2019	74	76	80
Contraceptive prevalence rate (CPR) (modern methods) (%)	44.2	NMICS, 2019	53	56	60
Total Fertility Rate (TFR) (births per women aged 15-49 years)	2.0	NMICS, 2019	2.1	2.1	2.1
Adolescent birth rate (aged 10-14 years; aged 15-19 years) per 1,000 women in that age group	63	NMICS, 2019	51	43	30

4.5.3 Major activities in 2076/77

FP program are implemented at various level (federal, province and local level). Key activities carried out in 2076/77 are as follows:

- Provision of regular comprehensive FP service including post-partum and post abortion FP services
- Provision of long acting reversible services (LARCs-IUCD and Implant)
- Permanent FP Methods or Voluntary Surgical Contraception (VSC)
- 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 hard to reach s and underserved communities
- Provision of RANM and VSP service to increase FP service use
- Integration of FP and immunization service
- Satellite clinic services for long acting reversible contraceptives
- Contraceptive update for Obstetrician/Gynecologist, nurses & concerned key players
- Interaction program on FP and RH including ASRH with pharmacist and marginalized communities
- Community interaction with satisfied clients for promoting permanent method and IUCD

Glimpses of FP program response during COVID -19

Following the COVID- 19 pandemic and nationwide lockdown, difference initiatives were taken to continue essential non-COVID essential health services that includes family planning services. MoHP issue a circular for the delivery of COVID and non-COVID essential health services. Reproductive health – sub cluster was activated immediately and weekly discussion held to foster the coordination among RH communities to ensure continuity of RH services, identify need and fill gaps in service delivery, prevent duplication in programming, strengthen advocacy, accountability. Then after, Interim Guideline for Reproductive, Maternal, Neonatal, Child and Adolescent Health services in the context of COVID-19 developed and endorsed. The guidance for continuation of essential RH services includes guidance for program managers as well guidance for specific RH services. The orientation of the guideline was provided to the program managers, service providers with support of different partners working in RH sector.

Communication materials such as Flyers, Radio/TV PSAs, Frequently Asked Questions (FAQs) developed and adapted in context of RH and COVID 19. Hotline services initiated/teleconsultation services started Family planning related information and commodities were provided to returnee population at the quarantine. Regular monitoring of availability and utilization of essential RH services, commodities at the health facilities were conducted and issues were urgently addressed. RMNCAH service readiness and functionality assessment was carried.

4.5.4 Achievements

Current users

Female sterilization (41%) occupies the greatest part of the contraceptive method mix among all current user, followed by Implant (15%), Depo (14%), male sterilization (12%), condom (7%), pills (6%) and lastly IUCD (5%) in 2076/77 (Figure 4.5.1).

Province no 2 has the greatest share (23%) to the national total users, followed by province no 1 (18%), Bagmati (18%), Lumbini (17%), while Karnali province has the lowest share (6%) in 2076/77 (Figure 4.5.2). Compared the previous year, share of Province no. 1, Bagmati and karnali is in the increasing trend.

Figure 4.5.1: Proportion of FP current user—method mix, 2076/77

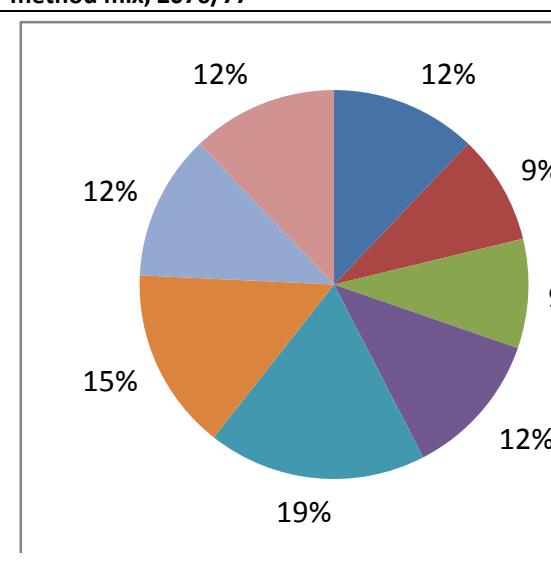
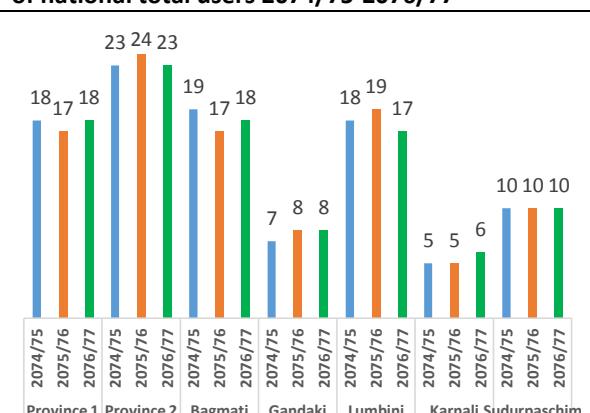
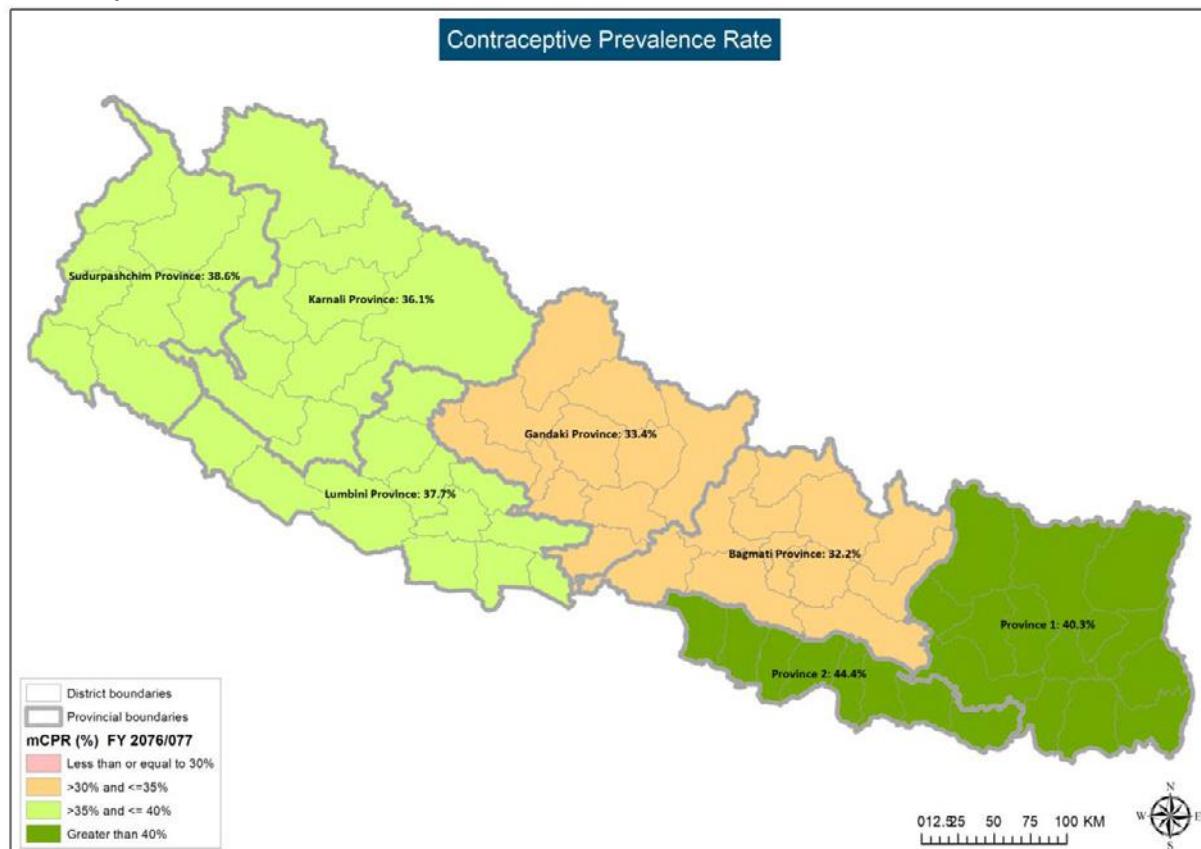


Figure 4.5.2: FP current users, share of total method as % of national total users 2074/75-2076/77



Nationally, current users (absolute numbers) of all modern methods are in decreasing trend over the years. Province no. 1, Karnali province, Sudurpaschim shows an increasing trend compared to the previous year. (Table 4.5.3).

Contraceptive Prevalence Rate in 2076/77

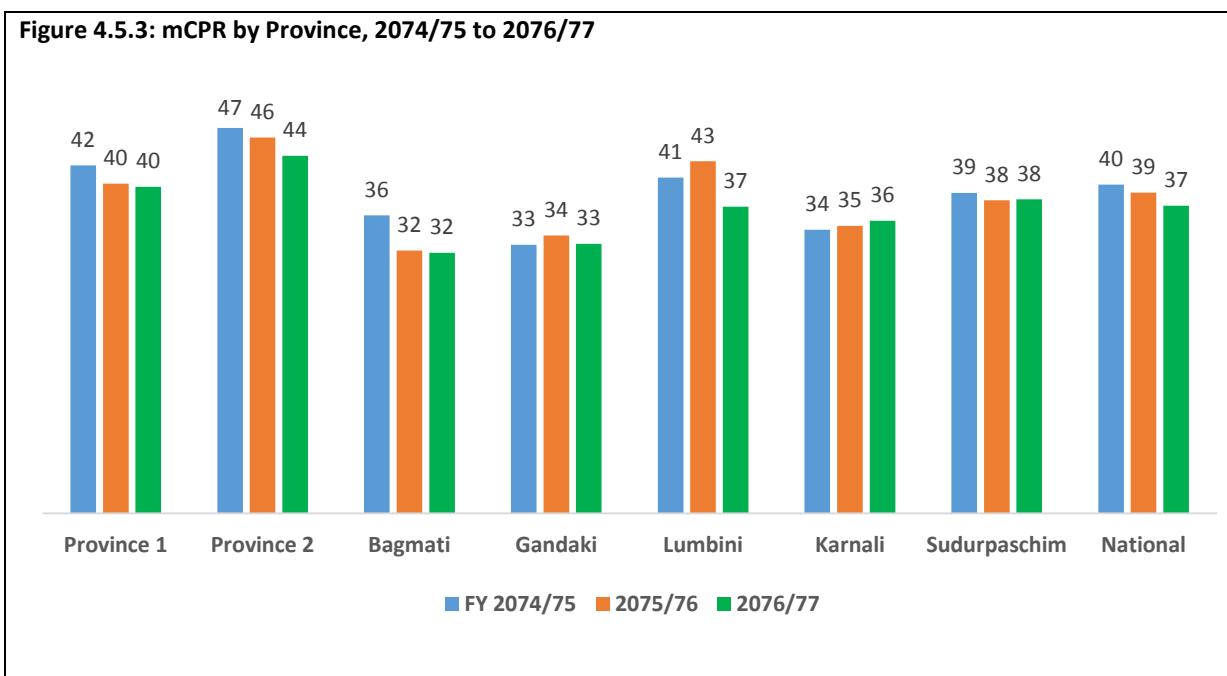


Total number of permanent current users exceeds that of spacing method at national level and in Province 1 and 2 (Table 4.5.3). In province no. 2, the total number of permanent users is more than four times (>4X) the current users of temporary methods.

Table 4.5.3: FP current users (modern methods) by Province, 2074/75 to 2076/77 (in 000)

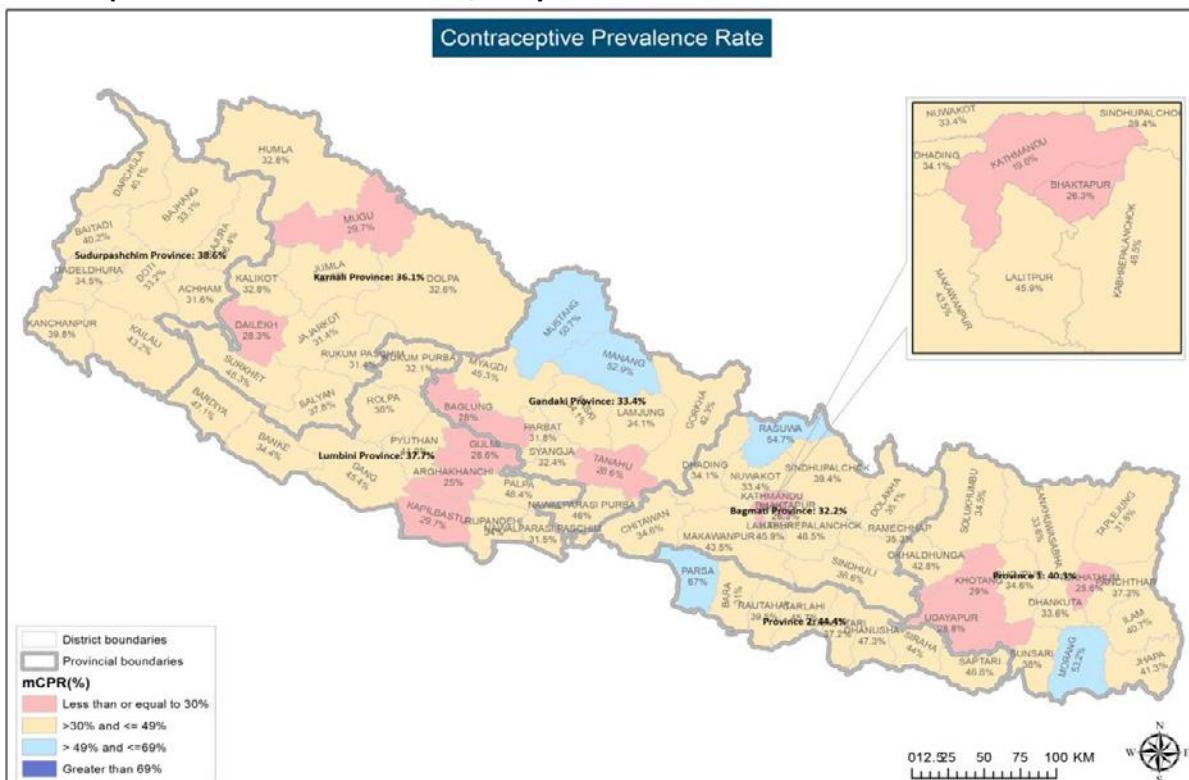
Method	Prov 1		Prov 2		Bagmati		Gandaki		Lumbini		Karnali Prov		Sudur Pashchim		National total users		
Year	74/75	75/76	76/77	74/75	75/76	76/77	74/75	75/76	76/77	74/75	75/76	76/77	74/75	75/76	76/77		
Spacing methods	217	207	211	255	220	229	86	100	100	310	257	257	145	149	149	217	207
Permanent methods	237	230	227	248	206	200	101	97	97	169	101	101	95	95	95	237	230
Total users	454	437	438	592	590	571	465	483	483	473	426	429	192	196	196	454	437

The modern contraceptive prevalence rate (mCPR) at national level as well as at provinces (except Karnali and Sudurpaschim) is in decreasing trend. The national mCPR stands at 37% in 2076/77 which was 39% in 2075/76 and 40% in 2074/75 (Figure 4.5.3). Province 2 has the highest mCPR of 44% while Bagmati has the lowest (32%). Three Provinces (Bagmati, Gandaki and Karnali) have mCPR less than national average (39%) (Figure 4.5.3).

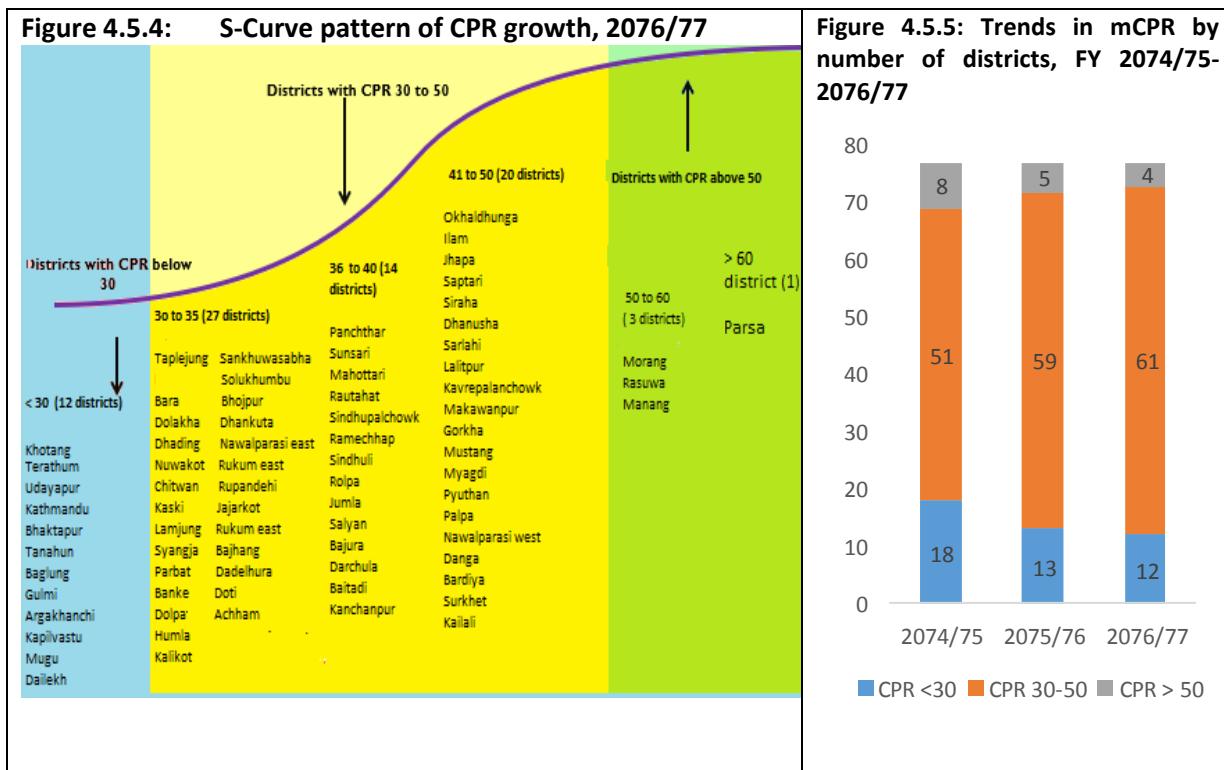
Figure 4.5.3: mCPR by Province, 2074/75 to 2076/77

District-wise HMIS data indicates that in 2076/77, four districts had mCPR greater than or equal to 50%, 61 districts had mCPR between 30-50% and 12 districts had mCPR less than 30% (Figure 4.5.4, fig 4.5.5). Like the previous years, Parsa had the highest mCPR (65%) while Kathmandu the lowest (19%) (fig 4.5.6).

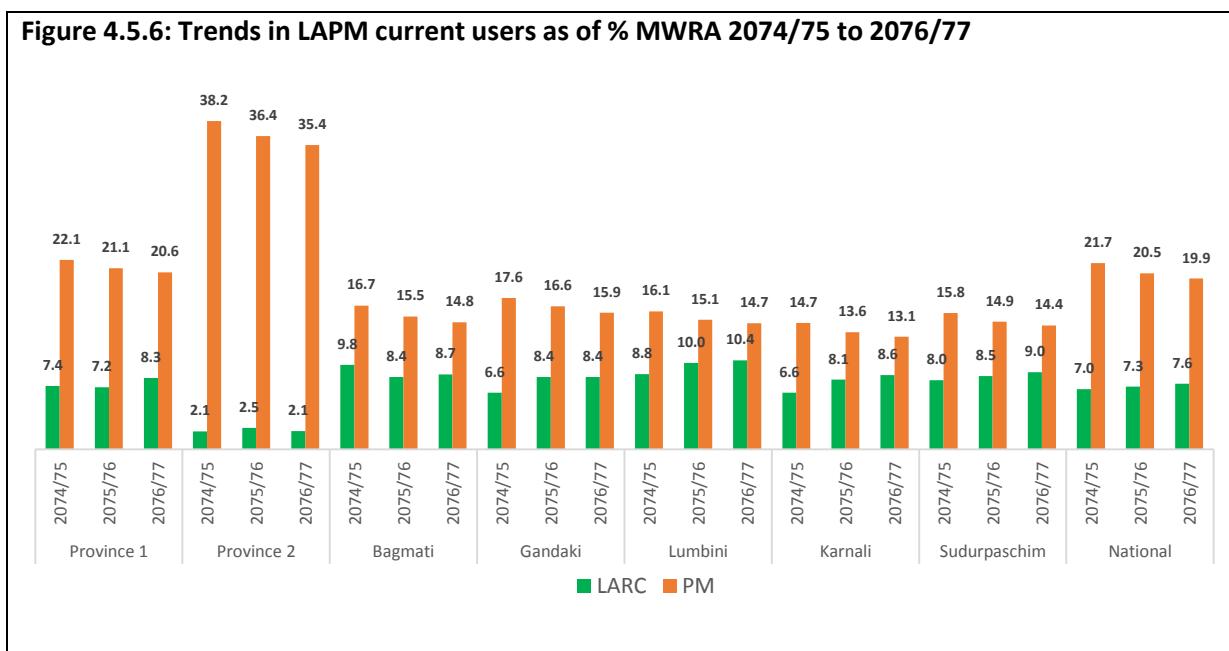
Contraceptive Prevalence Rate in 2076/77 by districts



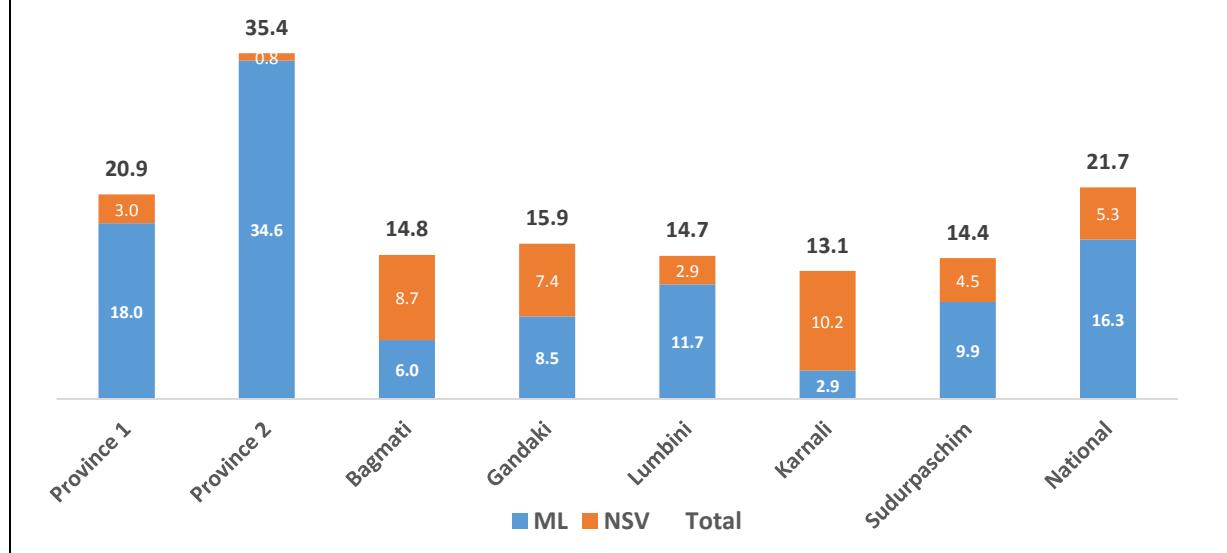
The number of districts with mCPR below 30 and above 50 percent decreased between 2075/76 and 2076/77.



Permanent method (PM-male and female sterilization) occupies the majority of share of current users among LAPM (LARCs and permanent method) across all provinces (Figure 4.5.6). The share of permanent method is highest in province no. 2. More than one-third (37.5%) MWRA used LAPM in province no. 2 and this is in decreasing trend.



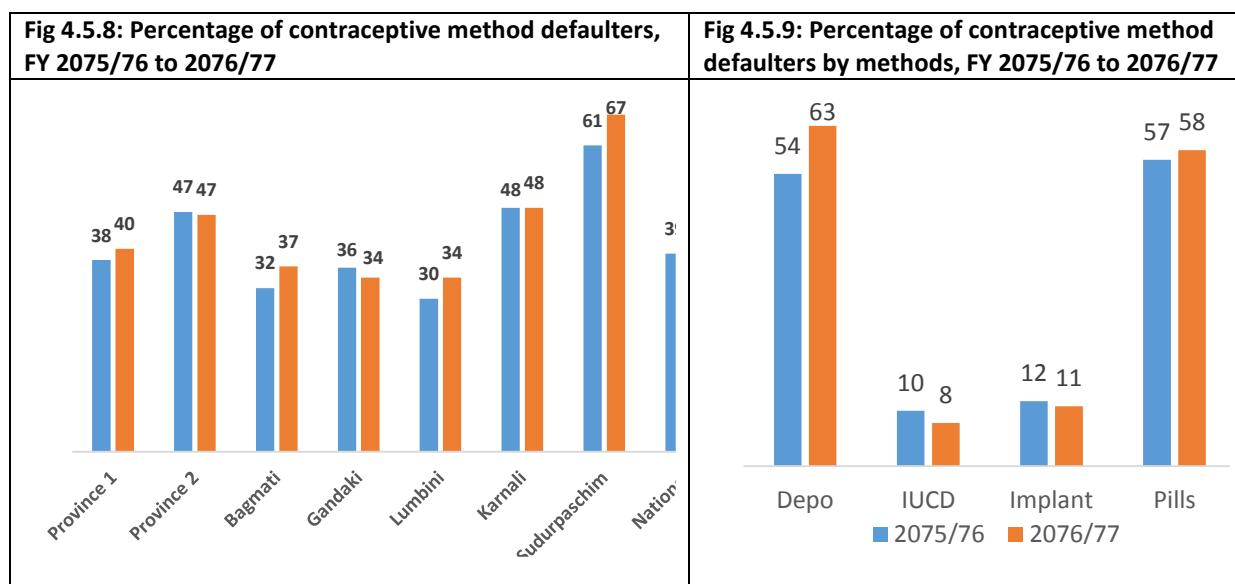
Among total MWRA, Female sterilization (ML/LA) contributes about 35% in contraceptive method mix in Province 2 (Figure 4.5.7). It is evident that female sterilization (minilap under local anaesthesia--ML/LA) is popular in Terai which have contributed also in national average. Male sterilization (NSV) on the other hand is more popular in Mountain and Hill than Terai.

Figure 4.5.7: Sterilization current users as % of MWRA, 2076/77

Contraceptive defaulters

Contraceptive defaulters (for all temporary methods excluding condom), a proxy indicator for contraceptive discontinuation is high in Nepal. Discontinuation is more problematic if women may switch to less effective methods or may not use any method leading to risk of unintended pregnancy and its consequences. About 42% of contraceptive users have discontinued using the method in 2076/77 which has increased from 39% in 2075/76 (Figure 4.5.8). Sudurpaschim has the highest defaulter rate (67%) while that Lumbini and Gandaki has the lowest defaulter rate at 34%.

According to the methods, Depo and pills have the higher defaulter rate compared to IUCD and Implant (Figure 4.5.9). LARCs are the most effective as well as most cost-effective contraceptives. Trends of discontinuation of LARC methods have decreased in 2076/77 compared to 2075/76. The high discontinuation of SARCs and low uptake of LARCs is concern for FP programming in Nepal. The increase in Depo defaulters might also have been resulted during COVSD-19 as the clients preferred non-provider dependent methods (such as pills and condom) due to fear of infection.



New acceptors

Depo (39%) occupies the greatest part of the contraceptive method mix for all method among new acceptors, followed by condom (23%), pills (21%), implant (12%), IUCD (2%), female sterilization (-2%) and lastly male sterilization (NSV-1%) in 2076/77 (Figure 4.5.10). FP new acceptors (all method) as % of MWRA has decreased at national level and all other provinces except Karnali and Sudurpaschim (Figure 4.5.11)

Figure 4.5.10: Share of FP method mix among all new acceptor, 2076/77

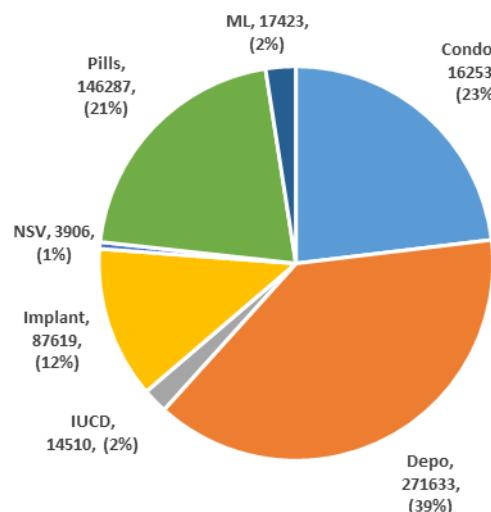
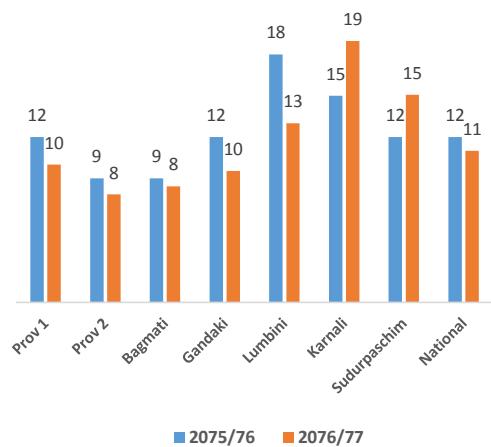


Figure 4.5.11: Trend of FP new acceptors as (all method) % of MWRA, 2075/76 to 2076/77



New acceptors VSCs

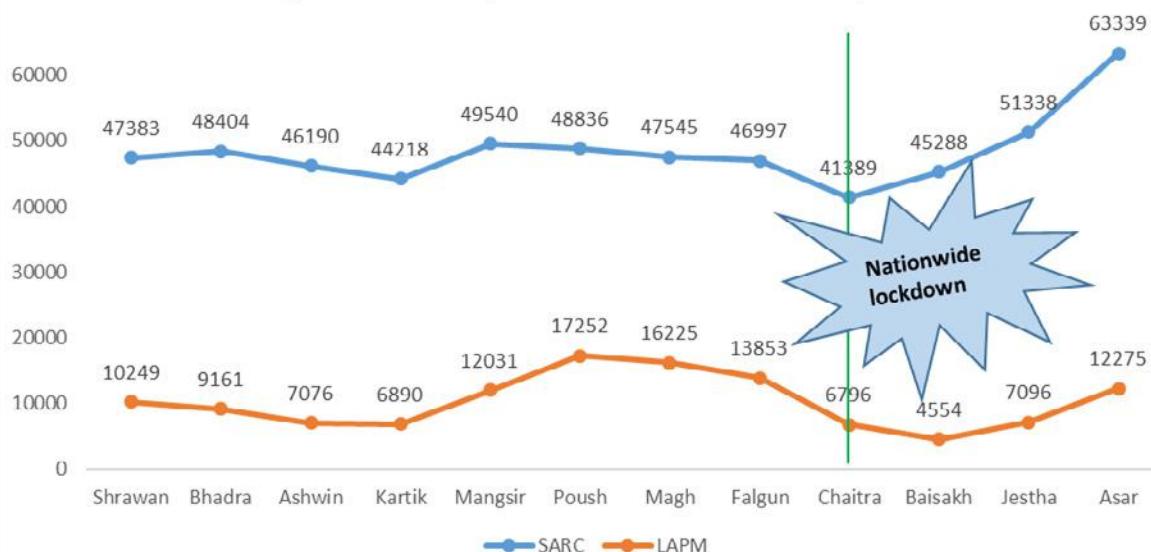
Similar to the previous year, Province 2 recorded the highest number of VSCs/permanent methods (8,248) while Karnali Province the lowest (845) (Table 4.5.4). However, the number of new acceptors decreased in 2075/76 compared to previous year in all Provinces (Table 4.5.4). Nationally, number of new acceptors of all modern methods have decreased by 77,015 in 2076/76 than in previous year.

Table 4.5.4: New acceptors (all modern method) by Province, 2074/75 to 2076/77 (in 000)

Table 1.5.1: New acceptors (in modern methods, by Province, 2014/15 to 2016/17) (in 000)												
	Province 1		Province 2		Bagmati		Gandaki		Lumbini		Sudur Paschim	National total users
Year	SARCs		LARCs									
	115	3	25	86	74/75	75/76	76/77	76/77	75/76	75/76		
Permanent methods	125	6	23	96	74/75	75/76	76/77	76/77	75/76	75/76		
Total new acceptors	110	4	19	87	74/75	75/76	76/77	76/77	75/76	75/76		
	102	8	14	79	74/75	75/76	76/77	76/77	75/76	75/76		
	112	13	15	84	75/75	76/76	77/77	77/77	76/76	76/76		
	102	8	11	83	76/77	77/77	78/78	78/78	77/77	77/77		
	135	3	32	100	74/75	75/75	76/76	76/76	75/75	75/75		
	115	2	25	88	75/76	76/77	77/77	77/77	76/76	76/76		
	114	1	22	90	76/77	77/77	78/78	78/78	77/77	77/77		
	61	1	11	47	74/75	75/75	76/76	76/76	75/75	75/75		
	58	2	10	46	75/76	76/76	77/77	77/77	76/76	76/76		
	55	1	8	46	76/77	77/77	78/78	78/78	77/77	77/77		
	177	4	27	146	74/75	75/75	76/76	76/76	75/75	75/75		
	207	3	29	175	75/76	76/76	77/77	77/77	76/76	76/76		
	148	3	21	124	76/77	77/77	78/78	78/78	77/77	77/77		
	66	1	7	57	74/75	75/75	76/76	76/76	75/75	75/75		
	67	1	9	59	75/76	76/76	77/77	77/77	76/76	76/76		
	73	1	7	65	76/77	77/77	78/78	78/78	77/77	77/77		
	97	2	14	81	74/75	75/75	76/76	76/76	75/75	75/75		
	95	2	13	80	75/76	76/76	77/77	77/77	76/76	76/76		
	98	1	12	84	76/77	77/77	78/78	78/78	77/77	77/77		
	756	25	132	598	74/75	75/75	76/76	76/76	75/75	75/75		
	781	27	125	628	75/76	76/76	77/77	77/77	76/76	76/76		
	703	21	102	580	76/77	77/77	78/78	78/78	77/77	77/77		

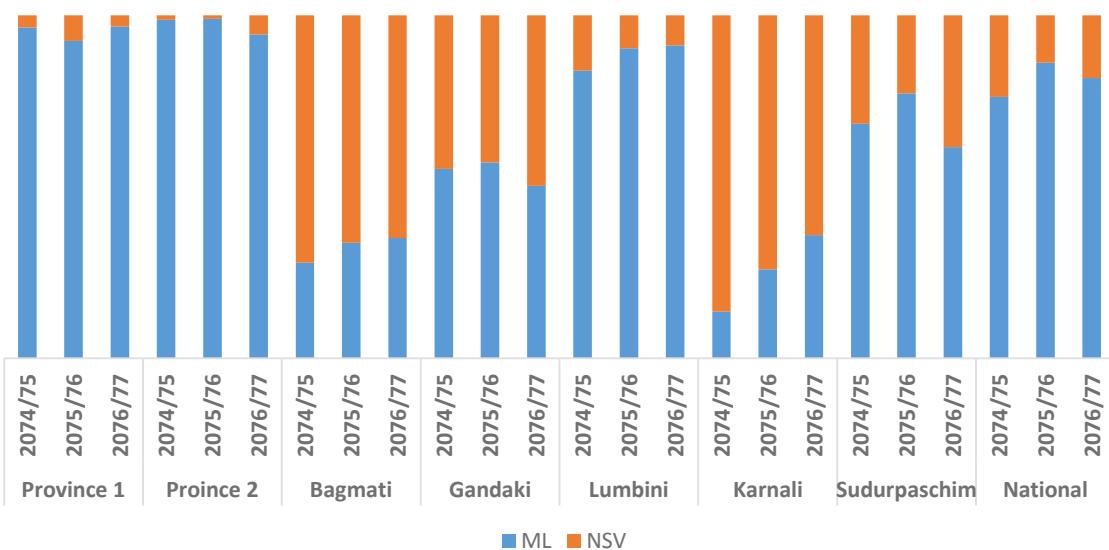
The figure below 4.5.12 presents the monthly trend of new acceptors of contraceptive method. The figure below shows the sharp decline in utilization of LAPM (LARC and permanent methods) and decrease in SARC acceptance after Falgun and continue till Jesta. This decrease may be largely attributed to the nationwide lockdown due to COVID-19.

Fig 4.5.12: Monthly trend of new user of contraception



Among the total new sterilization services, majority of the services is utilized by female (82%) at national level. Share of miniliap (ML) is highest in province no. 2 (94%) and is lowest in the karnali province (36%) (Figure 4.5.13). However, compared to the previous year, share of NSV increased at National level, Province no. 2, Gandaki, sudurpaschim provinces which shows that male participation in sterilization services is increasing. Share of ML is increasing trend in province 1, Bagmati, Lumbini and Karnali provinces.

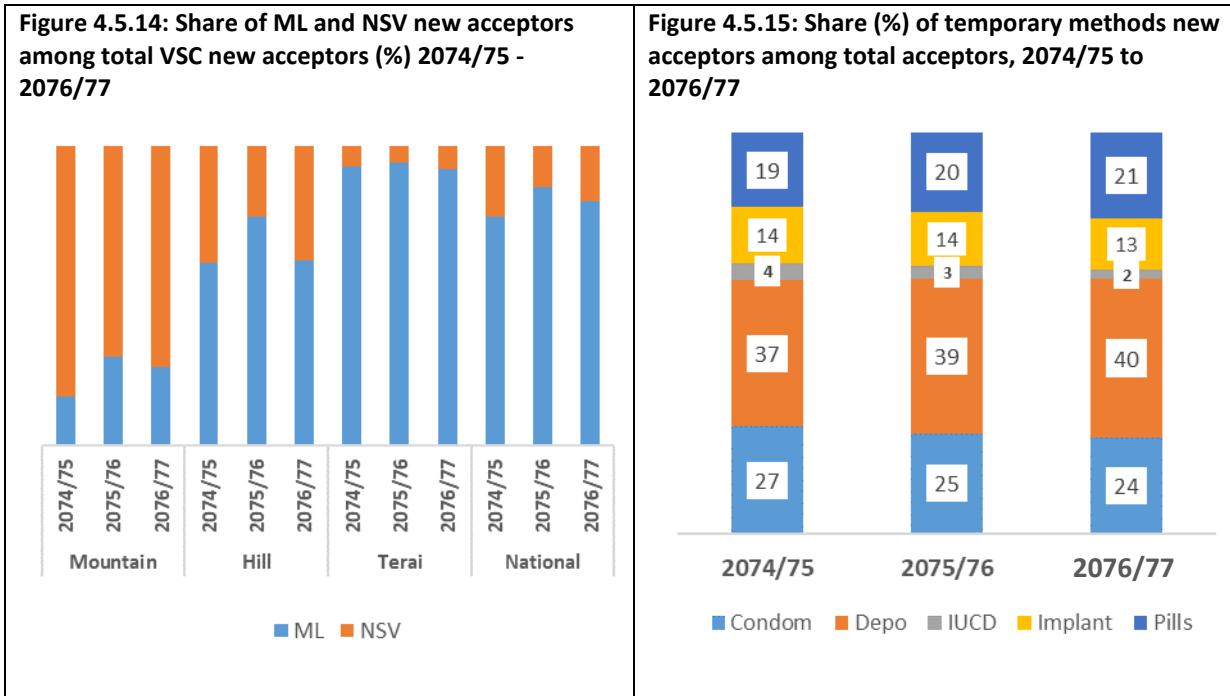
Figure 4.5.13: Share of ML and NSV new acceptors among total sterilization new acceptors, 2074/75 to 2076/77



Ecological wise, Female VSC new acceptors (ML) were highest in Terai ecological region followed by Hill (Figure 4.5.14). However the share of Male VSC acceptors (NSV) is increasing in Terai and decreasing in Hill. This shows that NSV is make its road in Terai and indicates the increasing male participation in VSC services. Among the temporary methods new acccetors, depo constitutes the highest share (40%) and this is in increasing trend in last three years, followed by Condom (24%),

Family Welfare

Pills (21%). Although different initiative has been taken to promote the use of LARC, the share of Implant and IUD is in decreasing trend (Figure 4.5.15).



Achievement of minilap and vasectomy new acceptors against the projection for 2076/77 is 61%. The projection versus achievement for sterilization services is in decreasing trend compared to the previous years at national level, Province no.2, Bagmati, Gandaki). Bagmati Province achieve the lowest (30 %) while Province 1 has the highest (81%) (Table 4.5.5).

4.5.5: Trend of VSC new acceptors against projection by Province, 2074/75 to 2076/77

Variables	Province 1		Province 2		Bagmati		Gandaki		Lumbini		Karnali		Sudur pashchim		National total users	
	Projected	Achievement	Projected	Achievement	Projected	Achievement	Projected	Achievement	Projected	Achievement	Projected	Achievement	Projected	Achievement	Projected	Achievement
Projected	3450	3930	74/75	72%	5175	5197	76/77	81%	16400	12562	75/76	77%	13000	8248	76/77	46%
Achievement	7950	6118	75/76	77%	4197	4135	76/77	96%	4500	3020	75/76	64%	4250	1965	76/77	30%
% Achievement	72%	72%	74/75	74/75	75/76	75/76	76/77	76/77	76/77	76/77	76/77	76/77	76/77	76/77	76/77	76/77

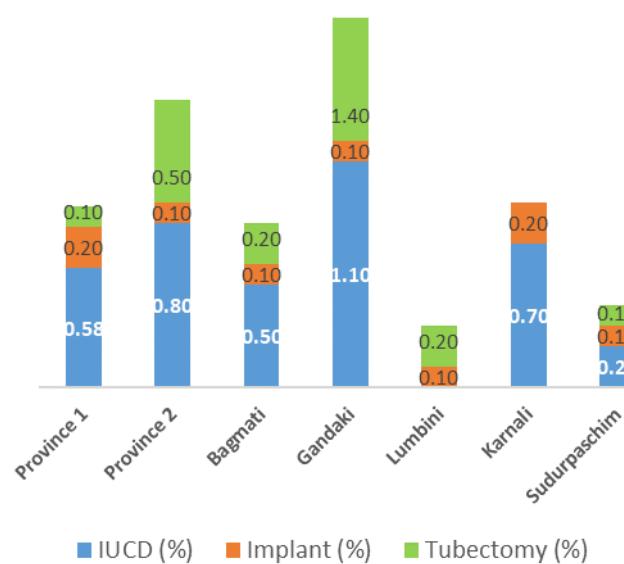
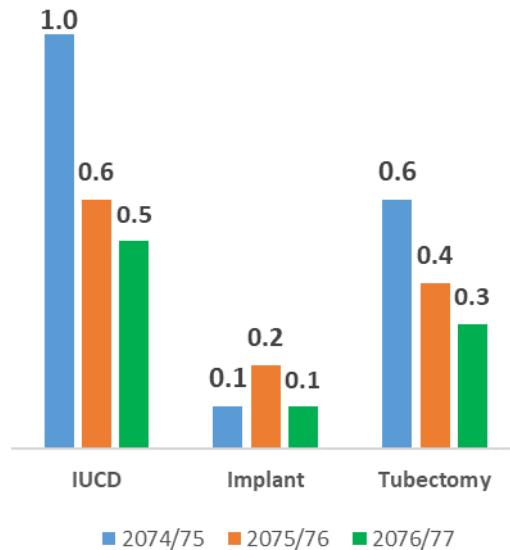
New acceptors of spacing methods

Nationally, new acceptors of all temporary methods have decreased in 2076/77 compared to previous year. Highest numbers of new acceptors for spacing (temporary) methods in 2076/77 are reported in lumbini province and lowest in Bagmati province (Table 4.5.6).

Table 4.5.6: New acceptors (all temporary methods) by Province, 2074/75 to 2076/77 (in 000)

Variables	Prov 1		Prov 2		Bagmati	Gandaki		Lumbini		Karnali		Sudur Pashchim		National total users
	74/75	75/76	74/75	75/76		74/75	75/76	74/75	75/76	74/75	75/76	74/75	75/76	
IUCD														
Implant	111.3	226	21.7	41.7	21.6	3.7	74/75							
Depo	119.6	23.2	21.8	51.3	20.9	2.4	75/76							
Pills	106.1	20.2	23.6	43.1	16.2	2.8	76/77							
Condom	93.2	22.7	18.8	37.5	8.8	5.4	74/75							
Total new temp. methods acceptors	99.5	20.9	22.3	41.1	11.8	3.4	75/76							
	94.7	19.3	24.3	39.3	9.5	2.1	76/77							
	132.6	24.7	23.5	52.3	22.9	9.2	74/75							
	113.5	23.5	19.9	44.7	20.	5.4	75/76							
	112.8	20.4	20.4	49.6	19.2	3.0	76/77							
	59.3	19.1	10.9	17.6	9	2.7	74/75							
	56.2	18.	11.2	17.1	7.3	2.6	75/76							
	54.4	16.0	11.8	18.1	6.7	1.5	76/77							
	173.5	57	33.7	55.5	20.6	6.7	74/75							
	203.6	56	44.3	74.2	23.2	5.9	75/76							
	144.9	39.7	33.8	50.3	18.1	2.8	76/77							
	64.3	15.4	12.7	29.1	6.5	0.6	74/75							
	68.1	14.4	14.6	30.	8.2	0.9	75/76							
	73.1	14.0	16.4	34.8	7.0	0.6	76/77							
	95.1	33	14.8	33.2	11	3.1	74/75							
	92.7	31.8	14.3	33.5	11.2	1.9	75/76							
	96.4	32.7	15.6	36.1	10.6	1.3	76/77							
	730.7	194.8	136.4	267.1	100.8	31.6	74/75							
	753.8	187.9	148.4	292.1	102.8	22.6	75/76							
	682.5	162.5	146.2	271.6	87.6	14.5	76/77							

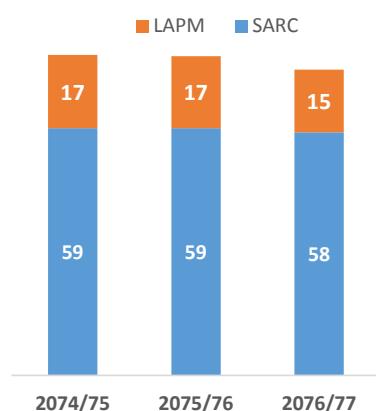
The postpartum uptake as proportion of the total facility delivery is highest in Gandaki province (2.6), followed by Province 2 (1.4). The lowest proportion is in Lumbini province (0.3) (Figure 4.5.16). Compared to the FY 2075/76, post-partum uptake of all three methods has decreased in 2076/77 (Figure 4.5.17).

Figure 4.5.16: PPFP uptake as proportion of total facility delivery by province, 2076/77**Figure 4.5.17: PPFP uptake as proportion of total facility delivery, 2074/75 to 2076/77**

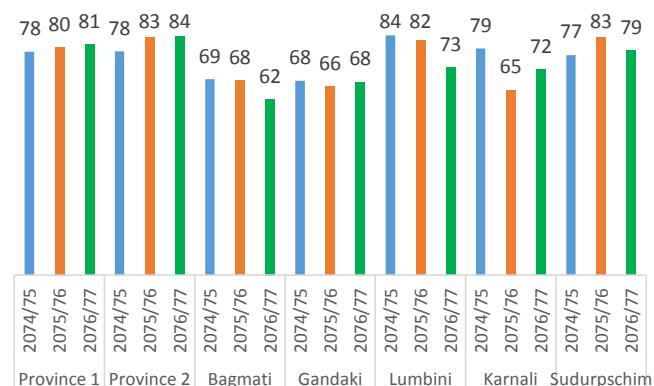
Almost three out of four women (73%) who have received abortion service accepted contraceptives (Figure 4.5.18). At the national level, post abortion contraceptive decreased from 76% in 2075/76 to 73% in 2076/77. Both the acceptance of SARC as well as LAPM methods has decreased in 2076/77. Although different research have shown that majority of women seeking abortion service have desire to limit the fertility, but more than half (58%) have accepted less effective method (e.g SARC) following abortion services indicating the mismatch between fertility intention and post abortion contraceptive uptake.

At the provincial level, post abortion contraceptive is in increasing in Province 1, Province 2 and Karnali province in 2076/77 compared to 2075/76. Karnali Province shows the lowest post abortion contraceptive uptake (65%) (Figure 4.5.19).

Figure 4.5.18: Proportion of post abortion FP method uptake by method type, 2074/75 to 2076/77



4.5.19: Trend of post abortion FP uptake, 2074/75 to 2076/77



4.5.5 Issues, constraints and recommendations

Table 4.57: Issues and constraints — family planning

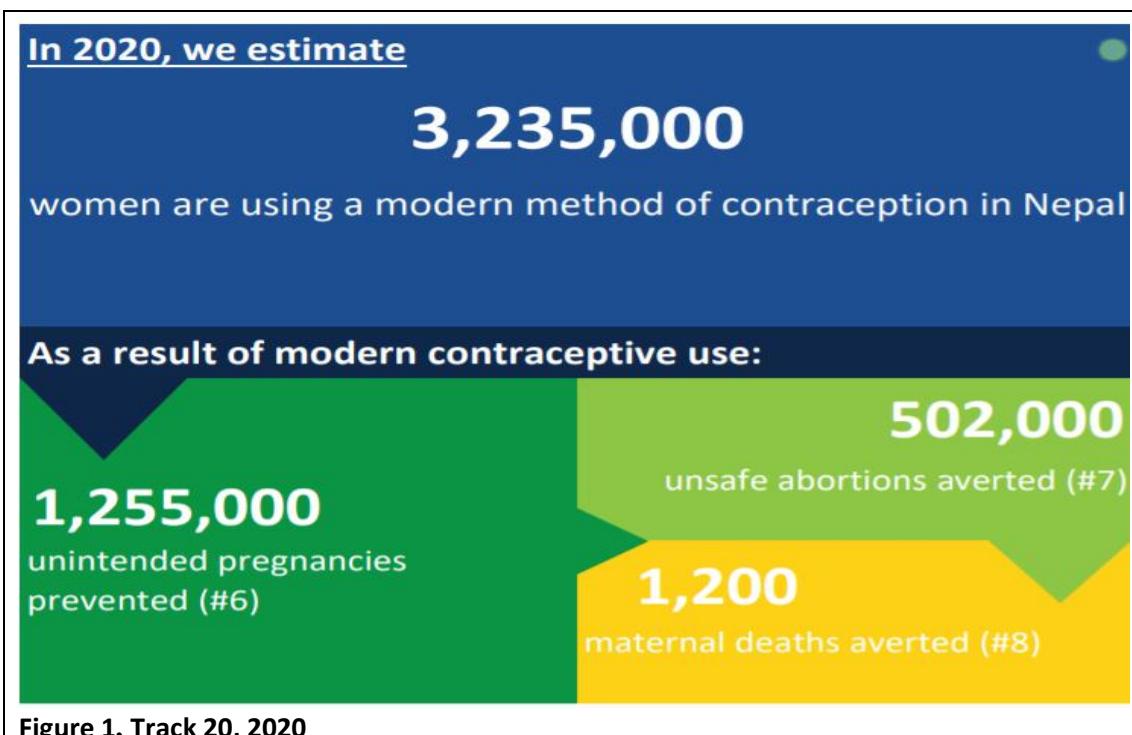
Issues and constraints	Recommendations	Responsibility
Suboptimum access to and use of FP services by hard to reach communities and underserved populations Limited health facilities providing five contraceptive methods High contraceptive discontinuation Underutilized LARCs Inadequate trained human resources on LAPM Functionality of IFPSCs	Implement FP micro-planning in low contraceptive prevalence wards/municipalities Conduct targeted mobile outreach and satellite clinics focusing on LARCs Mobilize VSPs (for LARC services) and RANMs	FWD, PHD, MoSD, municipalities
	Ensure availability of LARCs commodities Improve quality of FP services delivery	LS/MD, FWD, PHD, MoSD, PHS, 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 Explore LARCs coach-mentorship initiative	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
	Establish the role and responsibility of IFPSC in the federal context to ensure FP service delivery	MoHP, MoSD, PHD, municipality

FAMILY PLANNING 2020 (FP2020)

Family Planning 2020 (FP2020) is a global partnership to empower women and girls by investing in rights-based family planning (FP). FP2020 works with governments, civil society, multilateral organizations, donors, and the private sector to enable 120 million more women and girls to use modern contraceptives by 2020. Achieving the FP2020 goal is a critical milestone to ensure universal access to sexual and reproductive health (SRH) and reproductive rights by 2030 as laid out in Sustainable Development Goals 3 and 5.

The Government of Nepal (GoN) joined the FP2020 movement in 2015 with commitments to ensure equitable access to voluntary family planning services based on informed choice for all individuals and couples, in particular, those who are most excluded and vulnerable. The commitment made by GoN pertains to three overarching themes - Policy and political environment; FP financing; and FP programme and service delivery. These commitments were further revitalized during the London Summit in 2017 where GoN reiterated its commitment to increase the government budget for Family Planning by 7% each year up to 2020; accelerate progress in increasing the number of additional users of modern contraceptive methods by an estimated 1 million by 2020, and increasing the proportion of FP demand satisfied (FPDS) to 71% by 2020. Moreover, with a special focus on meeting the FP needs of adolescents and youth, Nepal committed that it will strive to expand the contraceptive method mix to also reflect their preferences.

Nepal is well on track towards achieving its FP2020 commitments bolstered by a progressive and favorable policy environment on FP. In terms of coverage, modelled estimates show Nepal is well within range of achieving its target of 49% modern contraceptive prevalence (MW) by 2020, an important achievement that implies delivering services to over 3.2 million women in 2019. As a result of this level of use, 1.3 million unintended pregnancies were averted over 500,000 unsafe abortions and 1,200 maternal deaths were averted (Fig 1).



The Government of Nepal has consistently increased the budget for Family Planning over the period of last five years. Over last five years, the government budget for family planning has increased by

two-third (NPR 296,107,000 in Nepali fiscal year 2072/73 (2015/16) vs. NPR 496,687,000 in 2076/77 (2019/20). GoN has been successful in engaging and leveraging support from external development partners in the areas of service delivery and provision of FP commodities

To increase the range of contraceptives, Ministry of Health and Population has prioritized capacitating health institutions and service providers through training as well as accreditation of training sites on LAPM (Long Acting and Permanent Method). In the new federalized context, there are seven Provincial Health Logistics Management Centers to ensure forecasting, quantification and supply of FP commodities. Moreover, various interventions are being undertaken nationally to broaden method choice and availability namely the provision of client-centered, voluntary, quality FP services through dedicated mobile/outreach FP service providers to the most excluded and vulnerable groups; tailored demand generation activities to increase the uptake of FP methods among special groups with high unmet need such as religious and ethnic minorities, poor women and women from remote locations; focus on post-partum and post-abortion FP in selected health facilities; feasibility and acceptance operational research on Sayana Press® in two districts (with expectation of national scale up); Municipal level hot spots mapping of adolescents fertility for all 753 municipalities to identify the priority areas for need based interventions and developing partnership with the civil society organisations led by various groups such as people living with disabilities, youths advancing 'leaving no one behind'.

4.6 Adolescent Sexual and Reproductive Health

4.6.1. Background

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. The target of SDG is to reduce the adolescent fertility rate to 30 per 1000.

National Adolescent Sexual and Reproductive Health (ASRH) is one of the priority programs of Family welfare Division (FWD). Nepal is one of the country in South Asia to develop and endorse 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.

Vision, Mission, Goal, objectives, target, strategic principles and direction

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

Strategic Principles and Direction

- a) Participation and leaderships of adolescent
- b) Equality and equity
- c) Right with responsibility
- d) Strategies partnerships
- e) Role of central, province, and local government

Glimpses of responses to continue ASRH services during COVID-19 challenges

Inclusion of SRH service as part of the Country Preparedness and Response Plan for COVID 19, RH sub cluster activation and weekly meeting, endorsement of interim RMNCAH guideline, establishment of hotline and teleconsultation services were part of the RH sector response to continue SRH services during COVID-19 and special consideration was made to ensure the access of adolescents in these service

4.6.2. Achievements in FY 2076-77 (FY 2019/2020)

1.1 Scale-up of Adolescent Friendly Service:

The National ASRH program has been gradually scaled up to 1331 health facilities of 73 of the 77 districts (except Khotang, Chitawan, Tanahu and Nawalpur (East Susta) till the end of current fiscal year 2076/77.

1.2 Certification of Adolescents friendly sites

Till the end of current fiscal year, 2076/77, 104 health facilities has been certified as adolescent friendly site. Quality improvement and certification tools for Adolescent friendly SRH services 2072 has been developed to guide the certification process.

Fig 4.6.1: Yearly trend of number of certified AFS sites, 2015 – 2020	Table 4.6.1: Distribution of certified AFS sites according to provinces																																
<table border="1"> <thead> <tr> <th>Fiscal Year</th> <th>Number of Certified AFS Sites</th> </tr> </thead> <tbody> <tr> <td>FY 2015</td> <td>9</td> </tr> <tr> <td>FY 2016</td> <td>28</td> </tr> <tr> <td>FY 2017</td> <td>22</td> </tr> <tr> <td>FY 2018</td> <td>26</td> </tr> <tr> <td>FY 2019</td> <td>13</td> </tr> <tr> <td>FY 2020</td> <td>6</td> </tr> </tbody> </table>	Fiscal Year	Number of Certified AFS Sites	FY 2015	9	FY 2016	28	FY 2017	22	FY 2018	26	FY 2019	13	FY 2020	6	<table border="1"> <thead> <tr> <th>Province</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Province no. 1</td> <td>12</td> </tr> <tr> <td>Province no. 2</td> <td>28</td> </tr> <tr> <td>Bagmati</td> <td>6</td> </tr> <tr> <td>Gandaki</td> <td>1</td> </tr> <tr> <td>Lumbini</td> <td>31</td> </tr> <tr> <td>Karnali</td> <td>2</td> </tr> <tr> <td>Sudurpaschim</td> <td>24</td> </tr> <tr> <td>National</td> <td>104</td> </tr> </tbody> </table>	Province	Number	Province no. 1	12	Province no. 2	28	Bagmati	6	Gandaki	1	Lumbini	31	Karnali	2	Sudurpaschim	24	National	104
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2. Demand generation interventions on ASRH Program:

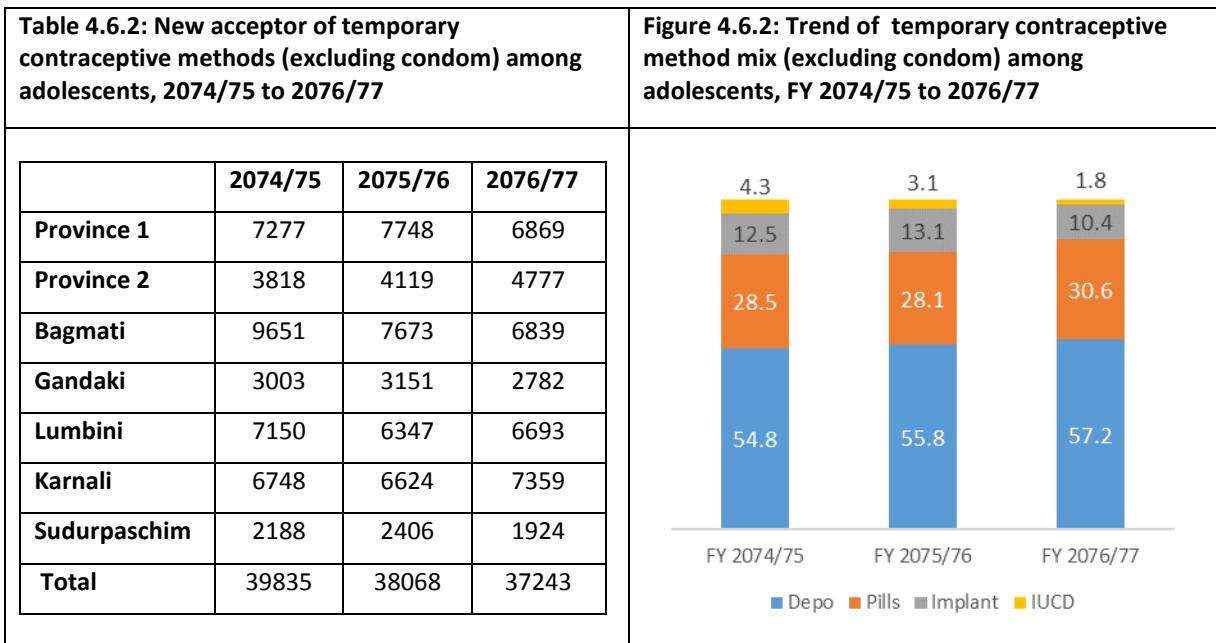
Different awareness raising activities on ASRH was carried out under leadership of National Health Education Information and Communication Center (NHEICC) and FWD. In FY 2075/76, Government of Nepal has initiated “One Nurse in each School” with aim to create awareness and sensitize regarding nutrition, healthy life, mental health, hygiene, MHM and adolescent’s sexual and reproductive health amongst other. The program is being gradually scaled up.

3.1 Establishment of AFICs in schools: Adolescent Friendly Information Corner (AFICs) are established to facilitate the linkage between health facilities and schools. AFICs are equipped with ASRH related IEC/BCC materials such as 8 sets of ASRH booklet, adolescent health and development flip chart; comic book on ASRH, brochure on delay marriage, danger signs during pregnancy. In FY 2076/77, a total of 642 teachers, 26,803 students and Peer Educator (PE) 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.

Family Planning services

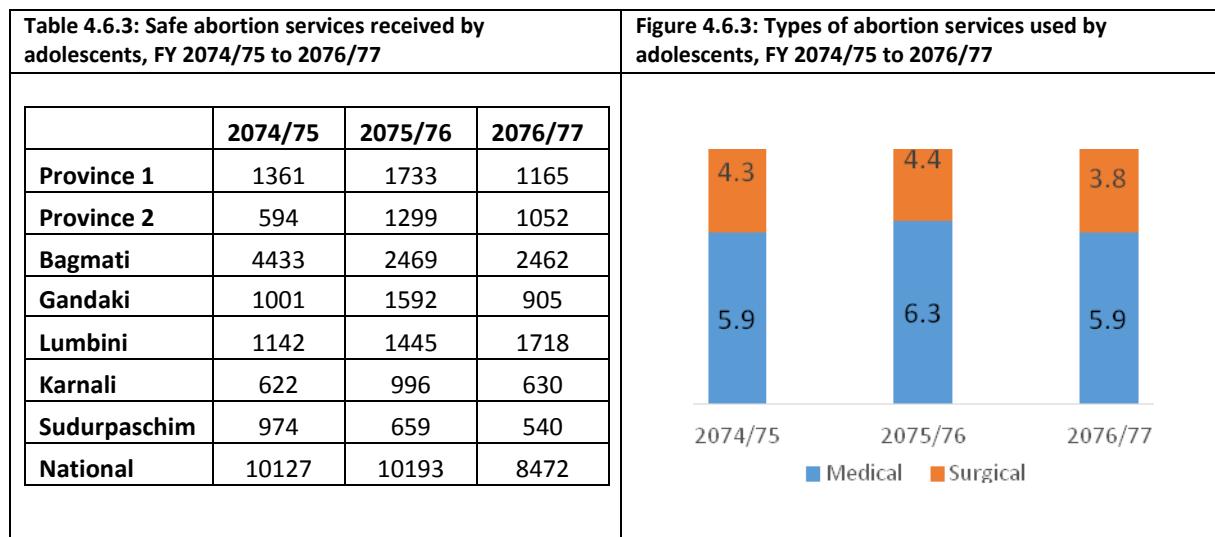
Adolescent faces the highest unmet need of contraceptives in Nepal. Although government has adopted different strategies to improve their contraceptives access, the contraceptive uptake is still low. The table 4.6.1 presents the decreasing trend of new users of temporary contraceptive methods (excluding condom) among the adolescents at National level. The new acceptor of contraceptives decreased in Province 1, Bagmati, Gandaki, Sudurpaschim in FY 2076/77 compared to FY 2075/76.

Depo Provera is the most preferred method contraceptive among the adolescents and share 57% of temporary contraceptive method mix in FY 2076/77. Pills is second preferred method. However, the trend of three year shows the use of LARC is decreasing among the adolescents.



Safe abortion services

Approximately one in ten abortion service users are adolescents. The number of adolescent who received abortion decreased at national level and across all provinces (except Lumbini province) in FY 2076/77 compared to the previous years. There was 16 % decrease in safe abortion service among adolescents in FY 2076/77 as compared to FY 2075/76.



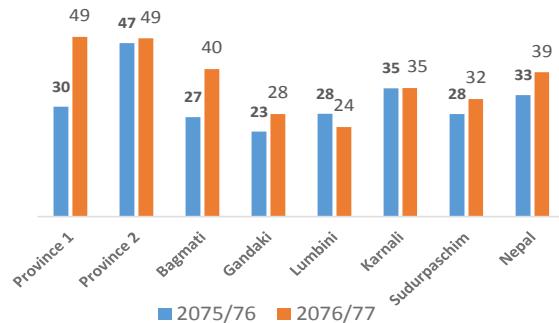
Safe motherhood services

The table below (table 4.6.3) reports the number of adolescents who received safe motherhood (SM) services. Province 2 has the highest number of adolescents who received SM services whereas Sudurpaschim has the lowest number of adolescents. At national level, the dropout rate between ANC 1st and ANC 4th visit is around 40% in FY 2076/77 which is higher than previous year. Government has encouraged at least 4 ANC visit and introduced financing schemes, but the gap (1st and 4th ANC visit) is increasing at national and provincial level except Lumbini and Karnali province.

Table 4.6.4: Number of adolescents who received safe motherhood services, FY 2076/77

	1 st ANC (any time)	1 st ANC (as per protocol)	4 th ANC (as per protocol)
Province 1	17957	12108	6190
Province 2	32369	17620	9072
Bagmati	16668	10669	6385
Gandaki	7566	5425	3912
Lumbini	13694	10245	7748
Karnali	12530	8193	5328
Sudurpaschim	6976	5405	3678
National	107760	69665	42313

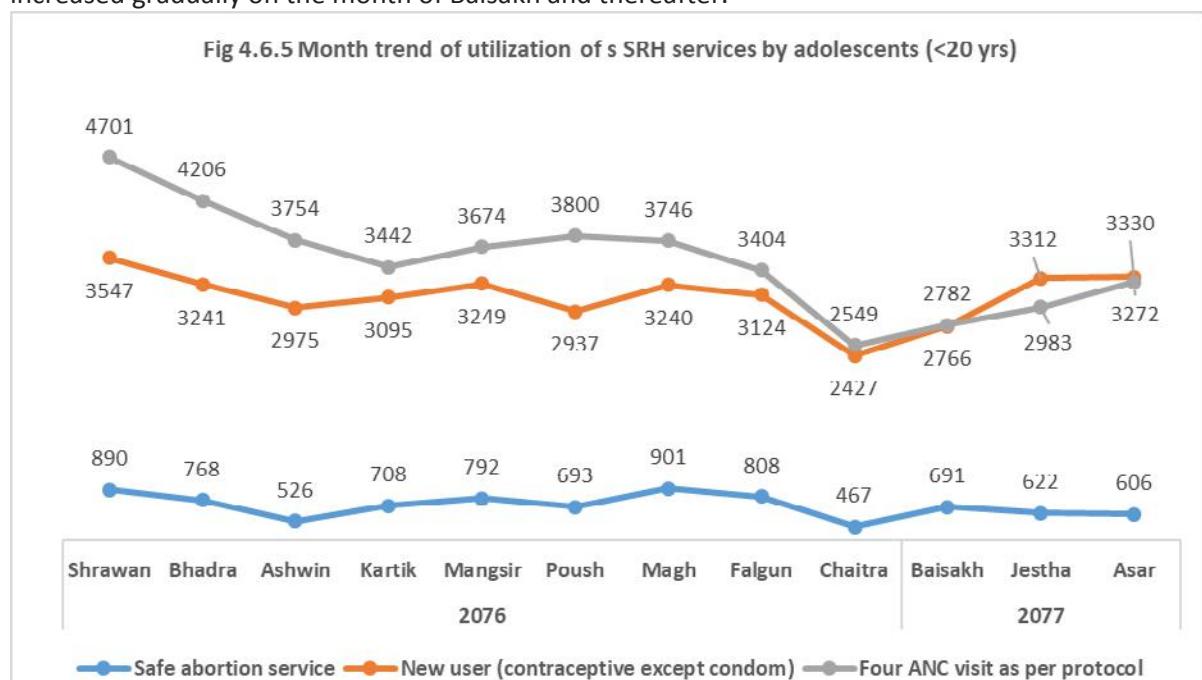
Figure 4.6.4: Dropout rate (ANC 1st visit vs ANC 4th visit as per protocol) among adolescents, FY 2075/76 vs 2076/77



Monthly trend of service utilization by adolescents

The graph below present the monthly utilization of selected RH services by adolescents in 2076/77. Four ANC visit as per protocol was in decreasing trend between shrawan and kartik, but sharp decline was observed on the month of Chaitra. Likewise, the sharp decline on new user of temporary contraceptive (except condom) and utilization of safe abortion services was also observed on the month of Chaitra. This decline may be largely attributed to the COVID-19 pandemic and nationwide lockdown imposed on the month of Chaitra.

However, the services were resumed soon and different efforts were carried out for the continuation of all these services as part of essential non COVID-19 services and the service users increased gradually on the month of Baisakh and thereafter.



Adolescent Fertility Mapping

Nepal has made great progress in family planning (FP), and its national total fertility rate (TFR)¹ has gone down considerably. However, data from the 2011 and 2016 Demographic Health Surveys show that adolescent fertility rates (AFR) have been slow to decline, with important variation across different parts of the country. There are, however, no direct estimates of adolescent fertility (AF) available at the local administrative level to examine the factors underlying this situation or to help local planners address the gaps. The objectives of the [PACE²](#) project's work in Nepal are four-fold: 1) to estimate AFR for the 753 municipalities in 2011 and 2016; 2) to examine the changes in AFRs at municipal level; 3) to facilitate interpretation and increase the accessibility of the results by producing interactive maps of municipal-level AFR results and; 4) to facilitate consultation meetings with decision makers to share data and stimulate discussion of what investments can help to address persistently high AFR, and where these investments can have the most impact.

WHY ADOLESCENT FERTILITY IS IMPORTANT

When adolescent girls delay childbearing, they can stay in school for more years, become better prepared, take advantage of better employment opportunities and be more productive. A more educated, productive generation of young women can lead to social and economic improvements at the household and community levels, and eventually have a positive impact on the national economy (the demographic dividend).

Adolescent Fertility Results

Overall, AF remains stagnant across Nepal, and there are particular areas where it is still high and is increasing or stagnant. PACE Nepal generated indirect municipal-level estimates of AF³ and identified **106**

priority municipalities⁴ where it is: 1) high, *and* stagnant or increasing, and 2) where adolescent mothers had an estimated 1,000 or more births from 2011 to 2016. This information can help identify geographic subgroups who may benefit from targeted interventions. Decisionmakers can use this information to determine where to invest limited resources.

Implications and Recommendations

By targeting these 106 priority municipalities², the Government of Nepal can reach the municipalities that account for over 20% of all births to girls 15 to 19 in the country. Targeted interventions could include:

Investing in programs to create and reinforce positive social norms and encourage healthy behaviour among adolescents, and facilitative attitudes among parents, teachers, and others.

Supporting programs to help newly married adolescent girls stay in school through secondary level, even if they are married or have children.

Encouraging newly married couples to delay their first pregnancy by using FP after marriage.

Encouraging adolescent mothers to space their next pregnancy through correct and consistent use of voluntary FP.

Providing adolescent-friendly, confidential FP services to all adolescent girls who want contraception, regardless of marital status.

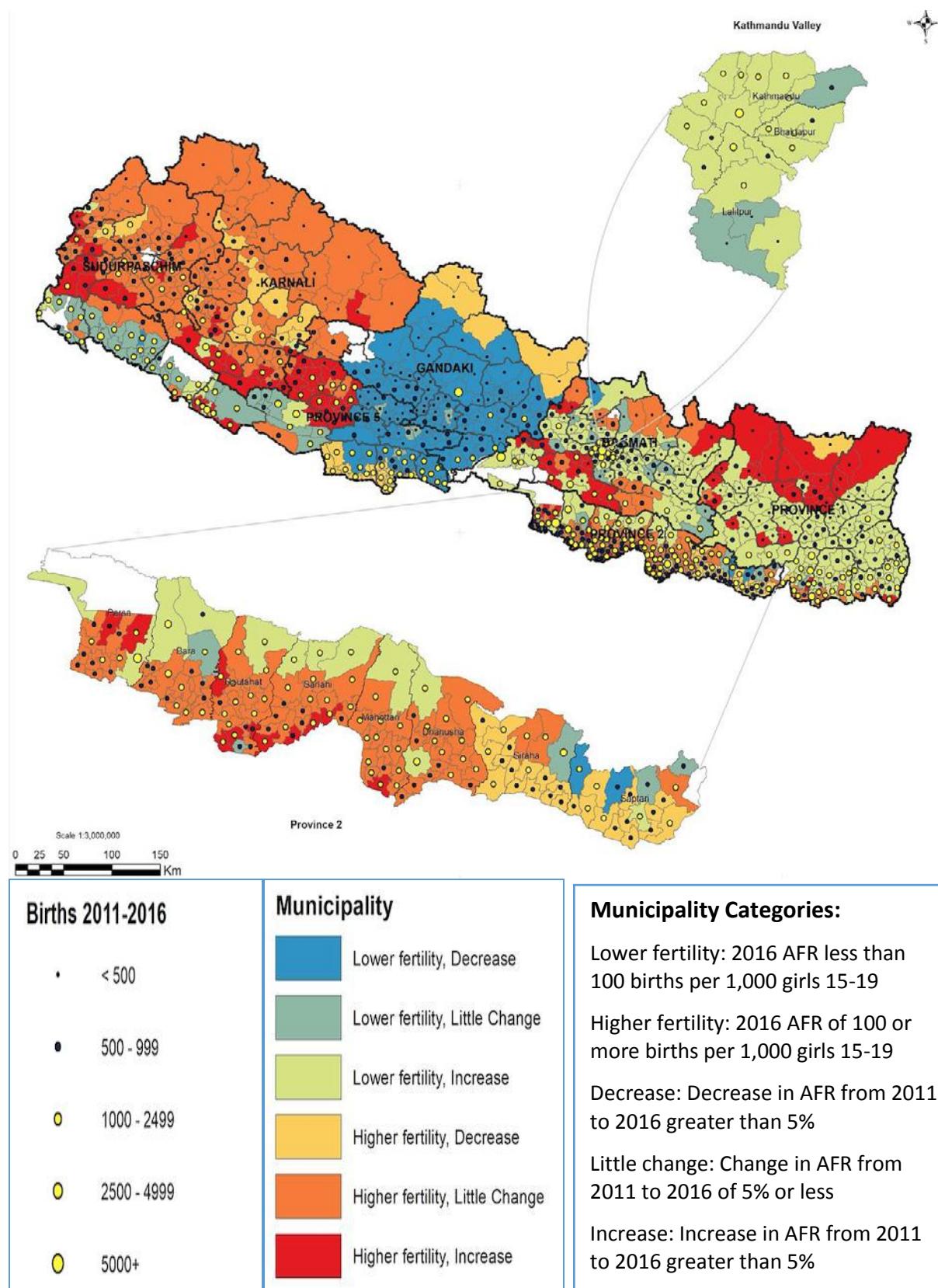
Reducing rates of child marriage and increasing the average age at marriage by enforcing laws on minimum age at marriage.

¹ Average number of children a woman would have throughout her life given current birth rates.

²

³

⁴

Map of level of and change in adolescent fertility, 2011 to 2016

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 3.6.6.

Issues	Recommendations	Responsibility
High prevalence of early marriage and teenage pregnancy	Intensify community awareness activities and effectively implement the law	NHEICC, FWD, MoHP, line ministries province, local level 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, MoHP, province, local level
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 province, local level and ASRH partners
Inadequate IEC/BCC materials	Ensure the supply of ASRH related IEC/BCC materials to health facilities	FWD, NHEICC, HOs province, local level and ASRH partners

Prevention and Management of Reproductive Health Morbidities

Background

Reproductive Health (RH) encompasses a wide range of health issues related to reproductive organs and functions. World Health Organization (WHO) technical group report has defined reproductive morbidity as any condition or dysfunction of the reproductive tract, or any morbidity which is a consequence of reproductive behavior including pregnancy, abortion, childbirth, or sexual behavior.

Reproductive health right is enshrined in the constitution of Nepal. As per the constitutional mandate, access to screening, counseling and treatment of reproductive health morbidities is included in the safe motherhood and reproductive health right act, 2075 and its subsequent regulation endorsed in 2077. At the policy sphere, National Reproductive Health Strategy, 1998 has included the provision of education, diagnosis and treatment of RH morbidities such as uterine, cervical and breast cancer. National guideline for cervical cancer screening and prevention in Nepal 2010, Pelvic Organ Prolapse Surgical Management Guideline, 2077 guides the RH morbidities program in Nepal.

World Health Organization (WHO) has launched global strategy to accelerate the elimination of cervical cancer as a public health problem. The strategy adopts the 90-70-90 strategy that aims 90% of girls fully vaccinated with HPV vaccine by age 15 years, 70% women are screened with high performance test by 35 years and again by 45 years of age and 90% of women identified with cervical disease received treatment.

Situation of RH morbidities in Nepal

According to the study on selected RH morbidities among women attending RH camps in Nepal in 2016, under the aegis of Family Health Division and assistance of UNFPA and CMDN, among the total women screened, 1.6 % has cervical pre-cancerous lesions, 5.4% had HPV 16 and/or 18, 6.4 % had pelvic organ prolapse (1st degree- 3.7 %, 2nd degree- 1.4 %, 3rd degree- 0.8 % and 4th degree- 0.3 %).

As per 2018 estimate, incidence rate of cancer in Nepal is estimated to be 21.6 per 100,000.

Major activities conducted in 2076/77

Federal level

Develop program guideline of cervical cancer screening, obstetric fistula, pelvic organ prolapse
Uterine prolapse surgery at federal hospital
Vaccines against cervical cancer (vaccines)

Provincial level

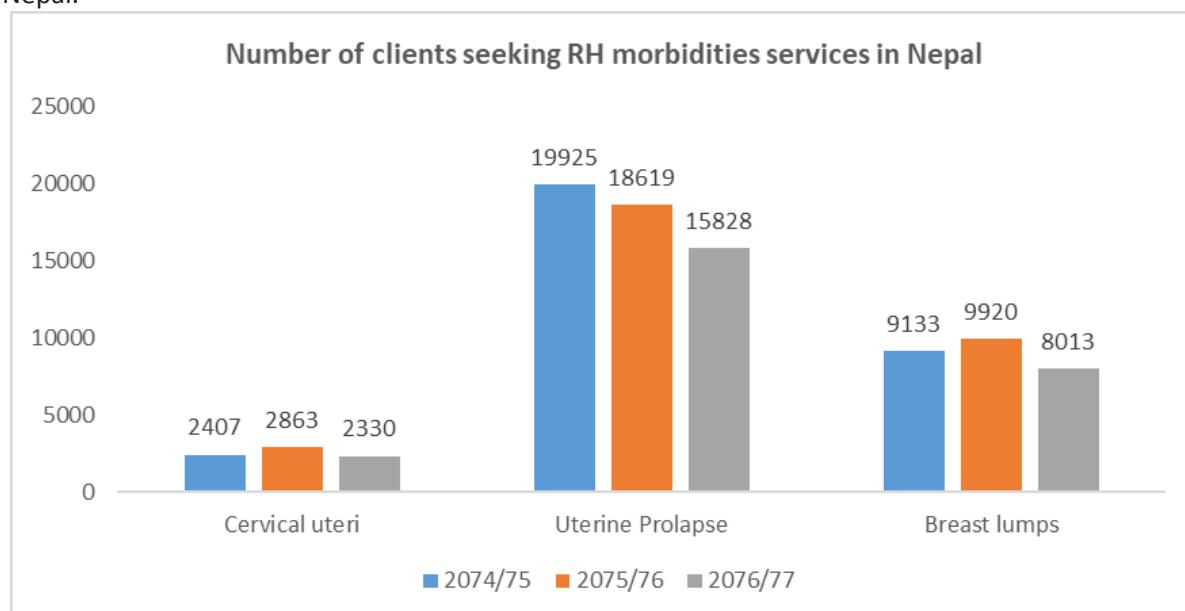
Free screening for cervical cancer, breast cancer and fistula at provincial hospitals
Surgery of Vault prolapse, fistula surgery at provincial hospitals
Surgical treatment of uterine prolapse at provincial hospitals
Training of Trainers (ToT) on conservative management of uterine prolapse

Local level

Conduct awareness program about RH morbidities at the community level
Screening and conservative management (ring pessary) of uterine prolapse

Achievements

The graph below shows the trend of clients seeking OPD services for selected RH morbidities in Nepal.



4.7 Primary Health Care Outreach

4.7.1 Background

Primary health care outreach clinics (PHC-ORC) was initiated in 1994 (2051 BS) to bring health services closer to the 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 PHCs 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.

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.

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.

First aid:

- Minor treatment and referral of complicated cases.

4.7.2 Achievements

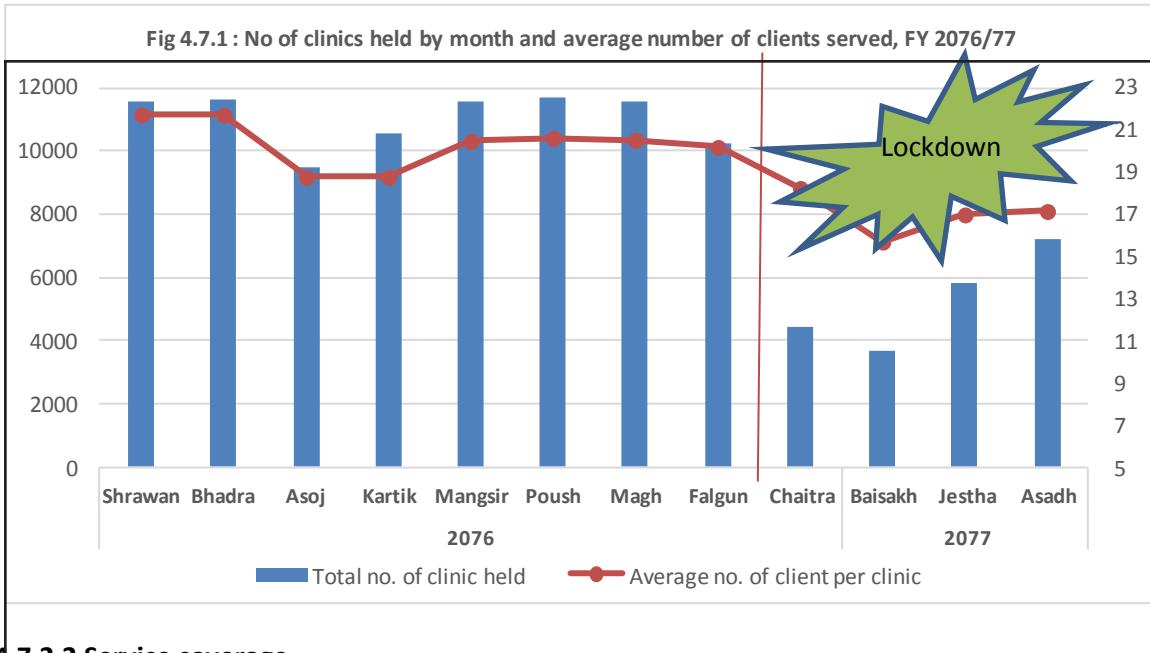
4.7.2.1 Conduction of PHCORC

Planned vs conduction of outreach clinic (PHC ORC) by provinces for last three fiscal years is shown in table 4.7.1. A total of 109,264 outreach clinics were conducted out of planned number (143761) in 2076/77. This represents 76% of total planned outreach clinics (Figure 4.7.1). The figure below shows that only 70-80% outreach clinics were conducted across the provinces. Province 1, Gandaki and Sudurpaschim conducted 80% of planned outreach clinics while that Province 2 conducted 70% of the planned outreach clinics. Compared to FY 2074/75, the functionality of outreach clinics was improved by 3 point percent, but in the FY 2076/77 it has reduced by 17 point percent. Low conduction of outreach clinics against planned number in 2076/77 may be attributed to the COVID-19 pandemic and nation-wide lockdown.

Table 4.7.1: Trend of PHC ORC Planned vs conducted, FY 2074/75 to 2076/77

Province	FY 2074/75			2075/76			2076/77		
	Planned	Conducted	%	Planned	Conducted	%	Planned	Conducted	%
Province no. 1	26614	24732	93	27086	25642	95	25647	20398	80
Province no.2	28109	23243	83	29765	25872	87	28638	20164	70
Bagmati	22671	20324	90	22524	20938	93	21993	17119	78
Gandaki	16232	15547	96	16627	15965	96	15799	12637	80
Lumbini	22521	21203	94	23292	22008	94	22369	16576	74
Karnali	12218	10293	84	12422	11034	89	12417	8773	71
Sudurpaschim	17387	16040	92	17306	16662	96	16898	13597	80
National	14572	131382	90	149022	138121	93	143761	109264	76

The figure below shows the average number of clinics held by month and average number of clients served per clinic. In the last FY, until Falgun more than 10,000 clinics were being held per month (except for Asoj) and average number of clients serviced ranges from 19-22 per clinic. Except for the festival months (Asoj and Kartik), until Falgun, there was no fluctuation in the number of clinics held and average number of clients served. However, after Falgun, as a result of Covid-19 pandemic and lockdown imposed in Nepal, the number of clinics decreased significantly. Similarly the average number of clients served also decreased to 16 clients per clinics.



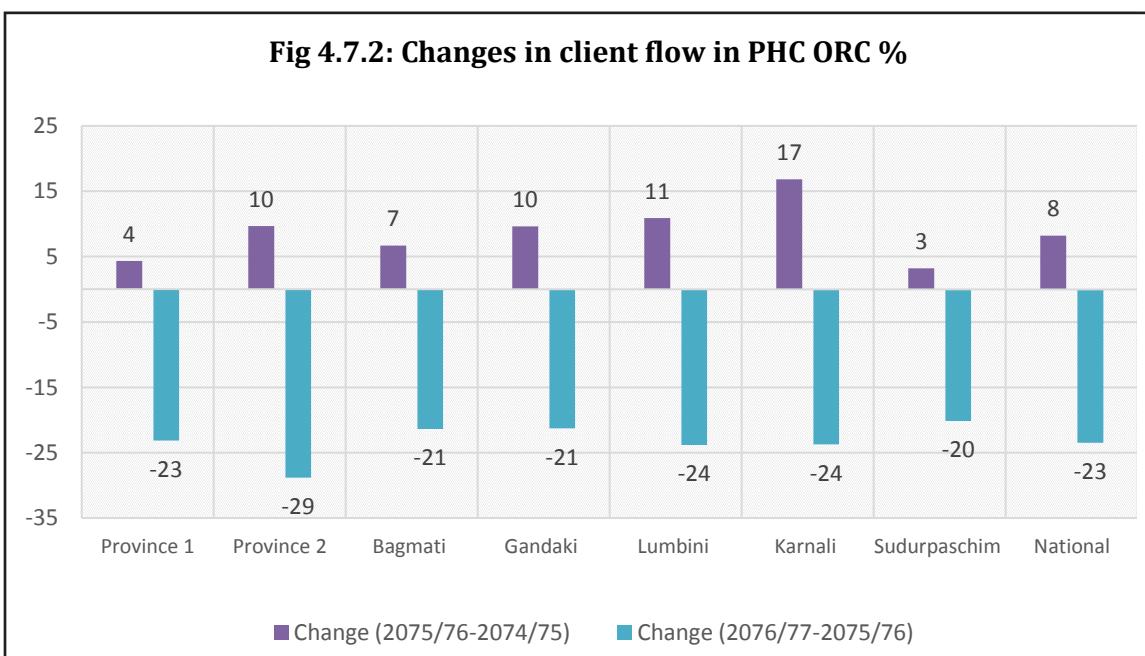
4.7.2.2 Service coverage

In FY 2076/77, 2.1 million clients were served from outreach (PHCORC) clinics (Table 4.7.2). The total number of clients served decreased in FY 2076/77 by 662,360 (absolute number) than previous year. The number of clients served decreased in all provinces in the FY 2076/77 compared to the previous year.

Table 4.7.2: Trend of clients served by PHC ORC

Province	FY 2074/75	FY 2075/76	FY 2076/77
Province no. 1	439984	459038	352729
Province no. 2	455360	499384	355421
Bagmati	356260	380100	298818
Gandaki	274550	301013	236936
Lumbini	477063	529097	402992
Karnali	216813	253274	193174
Sudurpaschim	386814	399273	318749
National	2606844	2821179	2158819

The figure below (fig 4.7.2) shows the national and province wise changes in the client flow in FY 2075/76 compared to FY 2074/75 and 2076/77 compared to FY 2075/76. Compare to FY 2074/75, number of clients served increased by 8% at national level in 2075/76. Whereas compared to FY 2075/76, number of clients served was decreased by 23% at national level in 2076/77. The highest reduction in the number of clients served in 2076/77 was in Province no. 2 (29%) and least reduction was in Sudurpaschim (20%).



4.7.3 Services provision

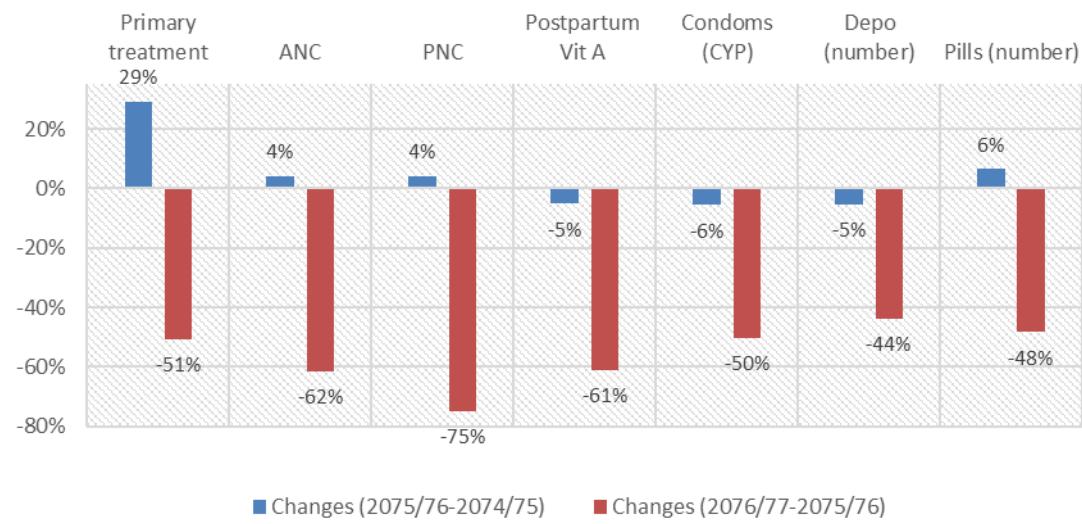
The table below presents the trend of services provided by PHC ORC in last three fiscal year. The table below shows that number of clients who received primary treatment, ANC and PNC services increased in FY 2075/76 compared to the previous year.

Table 4.7.3: Trend of services provided by PHC-ORCs

Service Types	2074/75	2075/76	2076/77
Primary treatment	894,377	1,263,499	838,388
ANC	236,238	246,402	152,538
PNC	37,707	39,330	22,510
Postpartum Vitamin A	41350	39317	24398
Depo (number)	175,555	166,655	115,833
Condom (number)	2415152	2287831	1522958
Pills (number)	85094	90913	61299

Source: HMIS

The figure 4.7.3 below shows that the distribution of postpartum Vitamin A, and number of condom and depo provided through outreach clinic was in decreasing trend since FY 2074/75. The Covid -19 and nationwide lock down resulted in further sharp decline in the services in FY 2076/77. The greatest decline in the client served was observed in PNC service (75 %), followed by ANC (62%), postpartum Vitamin A distribution (61%).

Fig 4.7.3 : Changes in client served according to service type in PHC ORC

4.7.4 Issues, constraints and recommendations

Table 4.7.5: 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. Reactivate and orient the local government officials for regular conduction of outreach clinics.	FWD, Province, HO and Local Level
Quality of services provided from PHC-ORC	Strengthen and orient service providers to provide quality service. Ensure the necessary supplies are available round the year	FWD, Province, HO and Local Level
Inadequate supportive supervision and monitoring at all level	Revise the PHC ORC strategy and redefine the role of each level in supportive supervision and monitoring as per the changes structure and function	FWD, Province, HO and Local Level

EPIDEMOIOLOGY 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 2076/77 (2020) 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 2017-15th July 2020) 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.

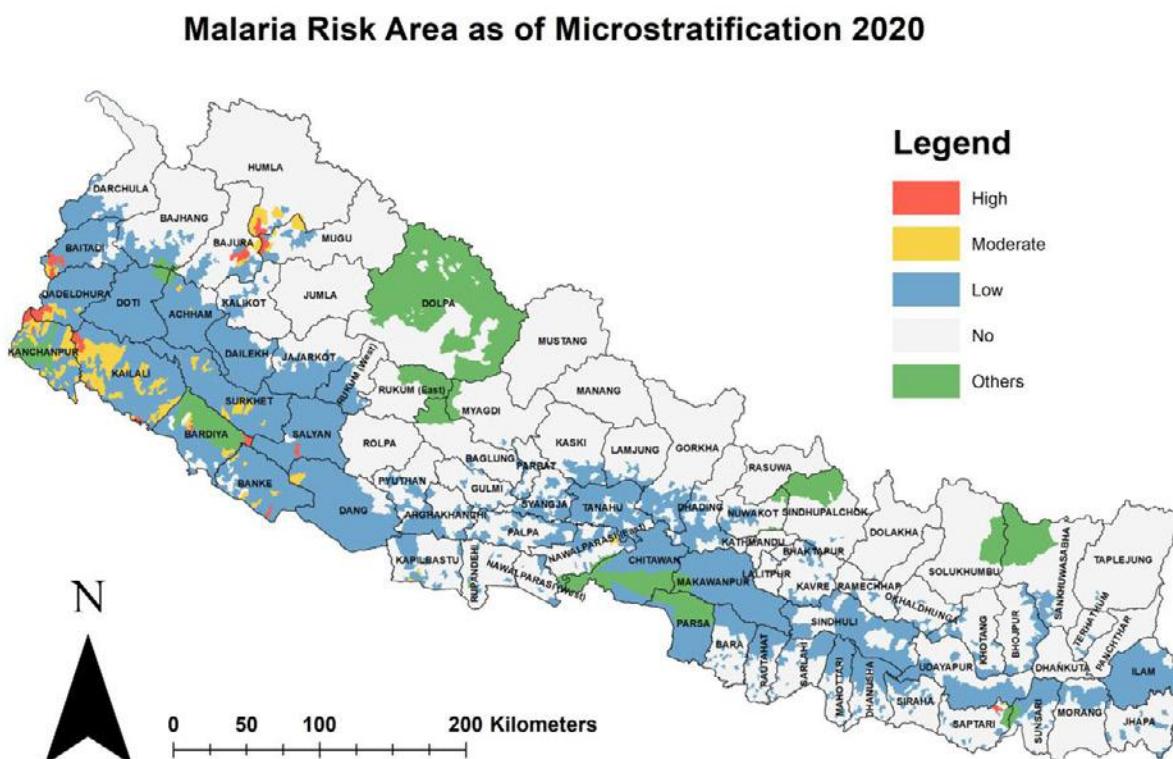
Based on this method, micro stratification 2020 was updated and the wards were designated as high, moderate, low and no risk wards. High risk wards were identified in 25 wards scattered across 11 districts. Out of these high-risk wards, 1 ward in Province 2, 3 wards in Province 5, 6 wards in

Epidemiology and Disease Control

Karnali Province and 18 wards in Sudurpashchim Province while no high-risk ward was detected in Province 1 , Bagmati and Gandaki Provinces. Furthermore, moderate risk wards were identified in 125 wards in 15 districts (5 additional districts to the 10 districts that contained high risk wards) of these moderate risk wards, 1 ward in Province 2, 1 ward in Gandaki Province, 12 wards in Province 5, 18 wards in Karnali Province and 93 wards in Sudurpashchim Province while no even moderate risk ward was in Province 1 and Bagmati Province.

Malaria transmission is concentrated in the Sudurpashchim and Karnali Province with these two provinces accounting for approx. 86% high risk burden and around 88% 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 2020)



Source: Malaria micro stratification report 2020

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 updated)

National Malaria Strategic Plan (NMSP 2014 – 2025) was updated since it was developed in 2013 and targeted Pre-elimination and is as a result out of step with the latest normative guidance on malaria elimination from the World Health Organization (WHO) (“Global Technical Strategy 2016 – 2030” and ‘A framework for malaria elimination, 2017’), current country structure, disease epidemiology, 2017 midterm malaria program review. This plan has inherent Government of Nepal’s commitment and

seeks appraisal of external development partners, including the Global Fund, external funding and technical assistance. The aim of NMSP is to attain “**Malaria Elimination in Nepal by 2025**”.

National Malaria Strategic Plan (2014 – 2025, Revised):

Vision: Malaria Elimination in Nepal by 2025.

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

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

Objectives:

To ensure proportional and equitable access to quality assured diagnosis and treatment in health facilities as per federal structure and implement effective preventive measures to achieve malaria elimination.

The updated NMSP (2014-2025) will attain the elimination goals through the implementation of following five strategies:

Strengthen surveillance and information system on malaria for effective decision making.

Ensure effective coverage of vector control interventions in malaria risk areas to reduce transmission.

Ensure universal access to quality assured diagnosis and effective treatment for malaria.

Ensure government committed leadership and engage community for malaria elimination.

Strengthen technical and managerial capacities towards malaria elimination.

Current Achievement

By 2076/77, National Malaria Program had achieved 85% reduction in indigenous malaria cases compared to 2071/72. Case and Foci investigation are getting momentum; around 97% cases gone through the case-based investigation. In addition, ABER is increasing (2.1%) trend and positivity rate is decreasing (0.25%) trend.

In 2076/77, altogether 61 suspected foci were investigated. Out of that only 38 foci were active where local transmission was ongoing. In this year, a total 241 foci were residual non-active and 150 foci were cleared.

Rationale for amending the NMSP

Nepal is primarily a low malaria endemic country with around 90% 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.

5.1.1.2 Major activities in 2076/77

68,528 LLIN was distributed as mass distribution and 89,189 LLINs were distributed through continuous distribution to people leaving in active foci, malaria risk groups, army police, pregnant women at their first ANC visits.

Conducted the ward-level micro-stratification of malaria cases in 77 districts.

Continuation of case-based surveillance system as key intervention, including web-based recording and reporting system for districts. The MDIS is now fully operational.

Orientated district and peripheral level health workers on case-based surveillance and response.

Conducted private sector engagement activities; health worker orientation on malaria diagnosis and treatment, recording and reporting to DHIS2 on correctly and timely manner.

Approved private sector engagement and Lab plan

Carried out detailed foci investigation at 61 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 sites of thought-out the country.

Conducted supportive supervision to SDPs.

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 (wards). 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. For few years, malaria program has been conducting micro stratification annually. As per 2076/77 (2020) microstratification report a total 28 wards are in high risk, 125 wards are in moderate risk, 2488 wards are in low risk and 4075 wards are in no risk. The result was published in EDCD website.

The trends of the malaria epidemiological situation for 2073/74 and 2074/75 show a slightly increasing trend, but from last fiscal year the trend is decreasing (Table 5.1.1.1):

Confirmed malaria cases decreased from 1187, 1065 and 619 in 2074/75, 2075/76 and 2076/77 respectively. The proportion of P. falciparum infections is slightly increased and accounted for 9 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 0.08 in 2074/75, however due to the decreased number of risk people, in 2075/76, the API is 0.09 in 2075/76. This year, the API is 0.05 the lowest level ever recorded 0.05 (calculated based on denominator set after micro-stratification, 2020/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 336 probable/clinical suspected malaria cases treated by chloroquine through OPD were reported in 2076/77.

There was a decrease in the number of indigenous P. falciparum as well as indigenous P.vivax cases. But cases being identified in new areas, especially in mountain, 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 2074/75–2076/77)

Indicators	2074/75	2075/76	2076/77
Total population at Risk	15,177,434	12,224,703	12,175,815
Total slide examined	207581	199927	251138
Total positive cases	1187	1065	619
Total indigenous cases	557	440	102
Total imported cases	630	625	517
Total P. falciparum (Pf) cases	82	58	56
% of Pf of total cases	6.91	5.45	9.05
Total indigenous Pf cases	10	7	5
% indigenous Pf cases	12	12	9
Total imported Pf cases	72	51	51
% imported Pf cases	88	88	91
Total P. vivax (Pv)cases	1105	1007	563
Total indigenous Pv cases	547	433	97
% indigenous Pv cases	49.5	43.0	17

Epidemiology and Disease Control

Total imported Pv cases	558.0	574.0	466
% imported Pv cases	50.5	57.0	82.8
Annual blood examination rate	1.4	1.63	2.06
Annual parasite incidence	0.08	0.09	0.05
Annual Pf incidence	0.005	0.005	0.005
Slide positivity rate	0.57	0.53	0.25
Slide Pf positivity rate	0.04	0.03	0.02
Parasitological test of Suspected malaria cases= negative but treated by Anti-malarial Drugs)	3282	695	336

Source: EDCD/DoHS

Though, there were focal outbreak in Bhimputta municipality of Kanchanpur and Parsuram Municipality of Dadeldhura districts, the overall 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, Sindhupalchok, Morang over the last four years suggests a paradigm shift. The highest number of confirmed cases were reported from Kanchanpur district (113) followed by Kailali district (109), Banke (56), Achham (34), Dadeldhura (24), Kapilbastu (22). The number is including private sector as well, which shows substantial progress towards elimination targets, however, it requires continuous attention for further improvement.

Table 5.1.1.2: Province wise Malaria epidemiological information of 2074/75 to 2076/77

Province	Annual Blood Examination rate (ABER) of malaria at risk population			Malaria annual parasite incidence per 1000 population			Percentage of Plasmodium falciparum cases among the total malaria cases			Percentage of imported cases among positive cases of malaria			Slide positivity rate of malaria		
	2074/75	2075/76	2076/77	2074/75	2075/76	2076/77	2074/75	2075/76	2076/77	2074/75	2075/76	2076/77	2074/75	2075/76	2076/77
Province 1	0.56	2.64	2.23	0.01	0.01	0.01	20.83	21.05	26.7	45.83	78.95	93.3	0.15	0.06	0.06
Province 2	0.49	1.57	1.07	0.02	0.03	0.02	6.06	17.74	15.6	68.18	85.48	96.9	0.39	0.2	0.15
Bagmati	0.55	1.17	4.35	0.02	0.02	0.02	38.46	37.04	32.4	92.31	85.19	86.5	0.27	0.13	0.05
Gandaki	0.63	0.56	0.44	0.03	0.03	0.02	25	21.88	8.7	66.67	96.88	100	0.54	0.48	0.44
Lumbini	1.68	2.59	3.61	0.07	0.1	0.07	12.13	4.95	6.4	68.62	80.18	88.7	0.41	0.39	0.21
Karnali	1.19	0.78	0.86	0.35	0.18	0.04	0.48	0.42	5.9	21.9	17.23	72.5	2.9	2.35	0.46
Sudhurpa chim	4.64	1.61	2.10	0.29	0.18	0.16	4.1	3.01	6.6	53.92	61.08	79.7	0.63	1.11	0.78

Source: EDCD/DoHS

Due to the strong surveillance, prompt diagnosis and effective treatment, LLINs distribution and IRS in risk areas, the number of malaria cases is decreasing trend except in 2074/75. The number of endemic districts as well as the number of active foci are also shrinking.

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 0.158 million LLINs in FY 2076/77 in endemic areas (Mass and continuations).

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. The program report and HMIS/DHIS2 data are matching, this is due to the rigorous on-site coaching and support by the central EDCD team (comprising government and Save the Children working at the programme management unit).

Recommendations from Provincial and national reviews and actions taken in 2075/76

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 bite of female sand fly *Phlebotomus argentipes*. The disease is characterized by fever of more than two weeks with splenomegaly, 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 is slated for elimination as a public health problem in the South-East Asia Region. Elimination of Kala-azar is defined as achieving annual incidence of less than 1 case of kala-azar in 10,000 population at the implementation unit i.e. district level in Nepal, sub-district (block) in India and (upazilla) in Bangladesh. The government of Nepal is committed to the WHO regional strategy to eliminate Kala-azar and signatory to the memorandum of understanding (MoU) on strengthening collaboration in the regional elimination efforts along with Bangladesh and India that was formalized during the side meeting on the occasion of World Health Assembly held in May 2005. This MoU was renewed in 2014 with inclusion of Bhutan and Thailand. In 2005, EDCD formulated a National Plan for Elimination of Kala-azar in Nepal. The National Plan was revised in 2010 as a National Strategic Guideline on Kala-azar Elimination in Nepal which recommended rK39 as a rapid diagnostic test kit and Miltefosine as the first line treatment of Kala-azar in most situations. The 2010 guideline was updated in 2014 to introduce liposomal amphotericin B and combination therapy in the national treatment guideline. The 2014 national guideline updated in 2019 which recommended single dose liposomal amphotericin B as the first line treatment for primary kala-azar.

5.1.2.2 Goal, objectives and strategies

Box: 5.1.2.2

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 unreach 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 and implementation research

Over the last decade, there has 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 up to PHCC level in affected districts. Likewise, drugs for kala-azar such as liposomal amphotericin B, miltefosine and paromomycin are made available to all the kala-azar treatment centres. Kala-azar diagnostics and drugs are provided free of costs to the patients by EDCD.

5.1.2.3 Major activities in 2076/77

Case detection and treatment: Early case detection and complete and timely treatment is the mainstay of eliminating kala-azar. Kala-azar related diagnostic are provided up to PHCC level and diagnostics/treatment services are provided at district and above levels of health facilities while awareness, health education, identification and referral of suspected cases are also offered at health posts.

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. rK39 (RDT) was made 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.

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. The revised national kala-azar guideline, 2019 has recommended single dose liposomal amphotericin B as the first line therapy for primary kala-azar.

Indoor residual spraying in priority affected areas: In 2076/77 two rounds of selective indoor residual spraying (IRS) 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.

Orientation and trainings: Medical officers, laboratory staffs and other paramedics were trained on the revised national Kala-azar guidelines and treatment protocols including the updated surveillance system in FY 2076/77.

National Kala-azar Technical Working Group Meeting: National Kala-azar Technical Working Group Meeting was conducted in Kathmandu where various issues regarding Kala-azar were discussed.

Disease surveillance: Improved disease surveillance is one of the very important area to accelerate the elimination efforts of the national kala-azar elimination program. Various activities were

conducted this fiscal year to strengthen the diseases surveillance which includes virtual training to EWARS sentinel sites as well as improved data monitoring and evaluation. During FY 2076/77, active case detection through index case based approach were also carried out in endemic and endemic doubtful districts. Index case based house to house searches were carried out by provincial, district, palika, 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) by laboratory persons and other health workers. rK39 positive cases were referred to district, provincial hospitals and federal hospitals for further confirmation and management.

5.1.2.4 Current status and trend of Kala-azar cases

The number of kala-azar cases has been decreasing significantly in recent years, however geographical expansion of the cases have been observed in recent years.

FY 2074/75: A total of 239 Kala-azar cases were reported from various parts of the country which is a slight increase as compared to the previous year. Of the 239 native cases, 122 cases (51 %) were from kala-azar program districts and 117 cases from 33 non program kala-azar districts. No cases were reported from Parsa in FY 74/75 although being a program district.

FY 2075/76: There has been a decrease in the number of reported cases as compared to the previous year. A total of 216 Kala-azar cases were reported out of which 3 cases were foreign cases of the 213 native cases, 83 (38.9%) were from the kala-azar program district and 130 (61.1%) from 38 non program kala-azar districts. Out of all 83 cases reported from 15 kala-azar program districts, highest number of cases were reported from Surkhet (16), Jhapa (10), Morang (10) and Siraha (8) while the programme districts Bara, Parsa and Rautahat reported no cases this year.

FY 2076/77: In the FY 2076/77, as per the National Guidelines for Kala-azar Elimination in Nepal, 2019 the districts have been categorised as endemic (23 districts), endemic doubtful (46 districts) and non-endemic (8 districts) for kala-azar. There has been a decrease in the number of reported cases as compared to the previous year in this fiscal year. A total of 186 kala-azar cases were reported out of which 1 case was foreign case of the 185 native cases, 110 (59.5%) were from the kala-azar endemic district and remaining 75 (40.5%) were from the kala-azar endemic doubtful districts.

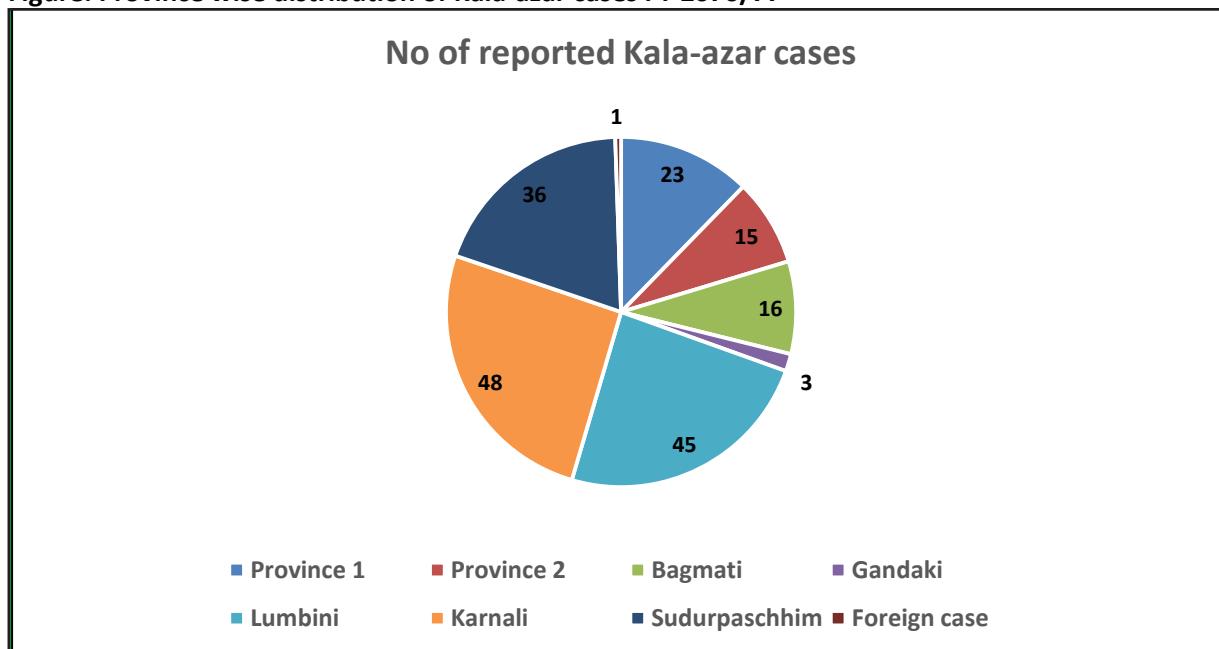
Out of 110 cases reported from kala-azar endemic districts, highest number of cases were reported from Kalikot (23), Palpa (12), Bajura (9) and Okhaldhunga (9). Kalikot district crossed the elimination threshold of less than one case per 10,000 populations this fiscal year. Likewise, of the 75 cases reported from kala-azar endemic doubtful districts, highest number of cases were reported from Dadeldhura (10), Bardiya (7), Humla (5) and Kanchanpur (5).

Similarly, in FY 76/77, 3 cases of Post Kala-azar Leishmaniasis (PKDL) has been reported from Sarlahi, Palpa and Morang districts. Likewise, 22 cases of Cutaneous Leishmaniasis (CL) has been reported from different districts in the year 2076/77.

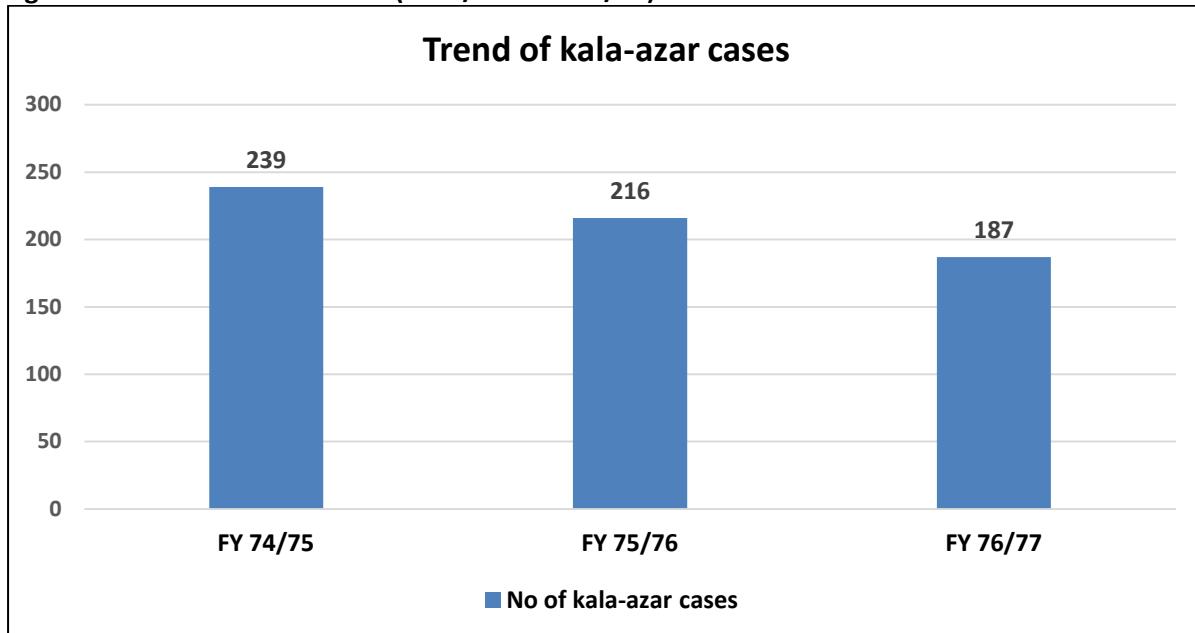
Table: Kala-azar cases of FY 2076/77 by districts:

Districts	Number of Kala-azar cases	Annual incidence rate per 10,00 population
Jhapa	2	0.02
Morang	3	0.03
Sunsari	4	0.04
Bhojpur	0	0.00
Okhaldhunga	9	0.59

Udayapur	1	0.03
Saptari	4	0.06
Siraha	2	0.03
Dhanusha	5	0.06
Mahottari	2	0.03
Sarlahi	2	0.02
Rautahat	0	0.00
Bara	0	0.00
Parsa	0	0.00
Makwanpur	5	0.11
Palpa	12	0.48
Pyuthan	5	0.21
Dang	3	0.05
Surkhet	8	0.19
Dailekh	7	0.24
Kalikot	23	1.45
Bajura	9	0.58
Kailali	5	0.05
Total (23) endemic districts	110	-
Total endemic doubtful districts	76	-
Foreign cases	1	-
Grand Total	187	-

Figure: Province wise distribution of Kala-azar cases FY 2076/77

Source: EDCD/DoHS

Figure: Trend of Kala-azar cases (2074/75 to 2076/77)

5.1.2.5 Strengths, issues/challenges and recommendations of National Kala-azar Elimination Program

Strengths

- Availability of free of costs drugs and diagnostics for early case detection and timely treatment of kala-azar cases.
- Availability of recently revised standard national guidelines for kala-azar elimination program in Nepal including regular trainings to health professionals on kala-azar prevention, diagnosis and management
- Use of multi-disciplinary approach to overcome the challenges for elimination of Kala-azar.
- Implementation of Health Management Information System (HMIS) and Early Warning and Reporting System (EWARS) for surveillance of Kala-azar.
- Implementation of active case detection of kala-azar through index case-based approach.
- Effective partnerships and collaboration with academics, researchers and other stakeholders.

Issues/Challenges

- Lack of effective implementation of indoor residual spraying specially in endemic doubtful districts.
- Increasing number of other forms of leishmaniasis such as cutaneous leishmaniasis which needs further evaluation.
- Inadequate awareness about disease among the communities.

Recommendations

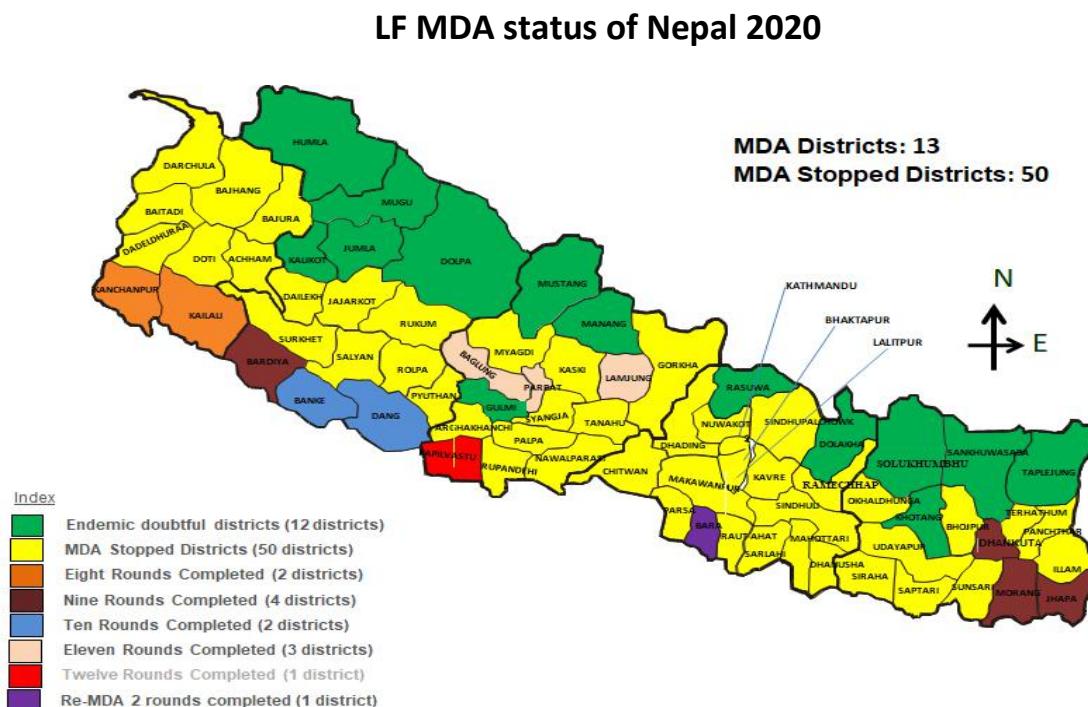
- Verification of endemicity status of kala-azar in endemic doubtful districts consistently reporting new cases of kala-azar.
- Improve the disease and vector surveillance.
- Dissemination of educational message to public, public health professionals and policy makers related to kala-azar.
- Improving active case detection and investigation and management of outbreaks.
- Increase clinical and implementational research.

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 2001 using ICT (immune-chromatography test card) revealed 13 percent average prevalence of lymphatic filariasis infection in Nepal's districts, ranging from <1 to 39 percent. Based on the ICT survey, morbidity reporting and geo-ecological comparability, 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 burden. The disease is more prevalent in rural areas, predominantly affecting poorer people. *Wuchereria bancrofti* is the only recorded parasite in Nepal. The mosquito *Culex quinquefasciatus*, 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) from Parsa district in 2003, which was scaled up to all endemic districts by 2069/70 (2013). As of 2076/77, MDA has been stopped (phased out) in 50 districts, post-MDA surveillance initiated in 50 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 50 districts till 2019 found that the prevalence of infection had significantly reduced. Since 2003 more than 111 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 filariasis 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 (microfilaremia rate) in endemic districts after six years of MDA by 2018.

5.1.3.3 Major activities in FY 2076/77

Mass drug administration

MDA was continued in 13 districts in 2076/77. 2 districts completed eight, 4 districts completed nine, 2 districts completed ten, 3 districts completed eleven and 1 district completed twelve rounds and 1 district completed second rounds of re-MDA in this year. A total of 54,65,283 (73.25%) of the targeted 74,61,294 people in 13 districts were treated this year. The campaign was conducted in February 2020. The campaign mobilized around 6,000 health workers and 8,500 trained female community health 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 6,900 adverse events (mostly mild headaches, dizziness and pain abdomen) were reported after MDA. Health workers and FCHV mobilized for the campaign reported nearly 3,100 cases of morbidity or suspected 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
2019	15	78,49,070	52,28,247	66.61	MDA stopped in more 9 districts
2020	13	74,61,294	54,65,283	73.25	MDA stopped in more 2 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, monitoring and super vision; procurement and supply of Drugs and IEC/BCC materials.

Provincial level activities — Coordination with local level, logistic supply and monitoring and supervision.

Implementation unit and local level activities — District level planning meetings, training of health workers, advocacy, social mobilization, IEC/BCC, monitoring and supervision, interactions with the media, interactions with multi-sector stakeholders including elected local leaders, adverse event management and logistics supply.

Community level activities — Volunteers orientations, advocacy, social mobilization, IEC/BCC, implementation of MDA activities, preparation of adverse event and monitoring and supervision.

Social mobilization activities — The production of revised IEC materials, checklists, recording, reporting, and guidelines for MDA campaign; media mobilization and advertisement of MDA; coordination and collaboration with stakeholders and school health awareness program.

Morbidity management and disability prevention

Morbidity management and disability prevention is the second strategy adopted by the national elimination programme to reduce suffering for 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 2076/77:

811 hydrocele surgeries have been performed in year 2076/077. This surgery is included in the Red Book and is regularly done in hospitals in endemic districts.

Morbidity mapping activities done in Ilam, Sunsari, Mahottari, Rupandehi and Surkhet districts. All health workers and FCHVs in Ilam, Sunsari, Mahottari, Rupandehi and Surkhet districts were trained on LF patient self-care.

Challenges and ways forward

The major challenges 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.

5.1.4 Dengue

5.1.4.1 Background

Dengue is a mosquito-borne disease that is transmitted by mosquitoes (*Aedes aegypti* and *Aedes albopictus*) and occurs in most of the districts of Nepal. WHO (2009) classified dengue i) Dengue without warning signs, ii) Dengue with warning signs, iii) Severe Dengue. The first dengue case was reported from Chitwan district in a foreigner. The earliest cases were detected in 2005. Since 2010, dengue epidemics have continued to affect lowland districts as well as mid-hill areas. This trend of increased magnitude has since continued with number of outbreaks reported each year in many districts- Chitwan, Jhapa, Parsa (2012-2013), Jhapa, Chitwan (2016-2016), Rupandehi, Jhapa, Mahottari(2017), Kaski (2018) and Sunsari, Kaski, Chitwan (2019).

The mostly 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 Teraiplains 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. In 2019, we experienced the outbreak at Sunsari (Dharan), Chitwan(Bharatpur) and Kaski (Pokhara) and since then the number of cases are increasing till 2020.

Aedes aegypti (the mosquito-vector) was identified in five peri-urban areas of the Terai (Kailali, Dang, Chitwan, Parsa and Jhapa) during entomological surveillance by EDCD during 2006–2010, indicating the local transmission of dengue. However, recent study carried out by VBDRTC has shown that both the mosquitoes have found to be transmitting the disease in Nepal.

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 viruses (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
- Regular monitoring of dengue fever surveillance through the EWARS
- Mosquito vector surveillance in municipalities
- The integrated vector control approach where a combination of several approaches are directed towards containment and source reduction

5.1.4.3: Major activities in 2076/77

- Trained physicians, nurses, paramedics and laboratory technicians on dengue case detection, diagnosis, management and reporting.
- Orientated municipality stakeholders in 38 districts.
- Supplied rapid diagnostic test kits (IgM).
- Dengue case monitoring and vector surveillance.

- Search and destruction of dengue vector larvae in 38 districts in different local levels.
- Developed IEC materials and disseminated health education messages engaging various stakeholders including the media and youth.
- Distribution of nets.

Achievements

- Development of national guidelines on prevention, management and control of dengue in Nepal
- Conducted ToT by international experts on dengue and created a pool of master trainers in all the provinces
- Developed the IEC materials and disseminated the awareness messages through media and other relevant means of communications.

New Dengue cases of 2074/075 to 2076/077

Districts	2074/75	2075/76	2076/77	Districts	2074/75	2075/76	2076/77
Jhapa	5	29	321	Gorkha	2	0	63
Morang	2	81	73	Syangja	4	1	101
Sunsari	8	3025	357	Kaski	553	21	2221
Bhojpur	0	4	10	Baglung	4	1	36
Udayapur	0	1	34	Tanahu	1	1	184
Dhankuta	2	5	16	Parbat	2	2	41
Illam	1	2	18	Mustang	1	0	2
Taplejung	1	2	4	Myagdi	1	0	38
Shankhuwashbha	0	1	8	Gandaki Province	568	26	2686
Panchthar	0	2	10	Arghakhanchi	4	5	50
Province -1	19	3152	851	Palpa	7	7	63
Saptari	2	4	22	Nawalparasi West	15	11	81
Siraha	1	1	12	Rupandehi	61	55	1386
Dhanusa	0	0	1	Kapilbastu	8	6	129
Mahottari	3	3	6	Pyuthan	3	2	17
Sarlahi	2	0	42	Rolpa	0	0	6
Bara	1	0	32	Rukum East	0	0	1
Parsa	2	4	31	Dang	2	2	86
Rautahat	1	0	23	Banke	6	5	40
Province -2	12	12	169	Gulmi	10	0	43
Lalitpur	1	2	498	Province- 5	120	96	1902
Bhaktapur	0	3	273	Surkhet	0	0	30
Kathmandu	16	6	1220	Dailekh	0	0	6
Dhading	7	5	131	Salyan	1	1	7
Makwanpur	9	83	246	Karnali Province	1	1	43
Chitwan	28	23	2612	Kailali	2	3	40
Nuwakot	0	1	36	Kanchanpur	14	2	22
Sindhuli	0	1	25	Dadeldhura	2	2	11
Dolkha	2	0	21	Achham	0	1	7
Bagmati Province	64	125	5062	Darchula	9	4	15
				Sudurpashim Province	12	95	
				Grand Total	811	3,424	10,808

Source: EDCD/DoHS

The number of reported dengue cases has significantly increased from 3424 in FY 2075/76 to 10808 in F/Y 2076/77. The major cause of increasing the reported case is the impact of dengue outbreak in Nepal. The majority of cases have been reported from Chitwan, Kathmandu, Rupandehi and Kaski.

Note that Dengue cases reported from Hospitals, HOs and PHCCs via. Early warning and Reporting System (EWARS), 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 Hospitals 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 preventive 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	Developed and endorsed 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) developed and endorsed. Revised leprosy guide line in line with national leprosy strategy and global leprosy strategy.
2019	In-depth Review of National Leprosy Programme and Envisioning Roadmap to Zero Leprosy

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

Targets

1. Reduce leprosy prevalence rate to less than 1 per 10,000 population in all districts
2. Achieve zero G2D among new pediatric leprosy cases
3. Reduction of new leprosy cases with G2D to less than one case per million population

5.1.5.3 Activities and achievements in 2076/77

MDT service delivery — In 2076/077, 1853 new leprosy cases were detected and put under multi-drug therapy and 2044 cases were under treatment at the end of the fiscal year. During the year, 2817 patients completed the MDT regime and were released from treatment. Secondary and tertiary care services were provided to leprosy-affected patients through the existing network of referral centres with partner support. MDT drugs (provided by Novartis Foundation through WHO) and anti-reaction drugs were freely available. The supply of drugs to all province and local level were managed smoothly throughout the year.

Capacity building — following capacity building activities have been conducted in 2076/077

- 2 days Orientation on Leprosy Post-Exposure Prophylaxis (LPEP) to health workers for 22 participants of Kailali and Kanchanpur in Dhangadi of Sudur Paschim Province and 40 participants from Jhapa, Morang and Sunsari (20 participants in each batch) at Biratnagar of Province 1

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, treatment and availability of free leprosy services in Maithili language were printed and distributed for display at health facilities in high endemic districts of Province- 2 for raising public awareness. Pamphlets and posters were also developed. Leprosy awareness raising messages were broadcasted through Nepal TV during the time of World Leprosy Day.

World Leprosy Day—World Leprosy Day is celebrated on the last Sunday in the month of January worldwide. In Nepal, the 67th World Leprosy Day was commemorated on 12th Magh 2076 (26th January 2020) by conducting various activities at national, province and district levels. A media interaction programme was arranged at DoHS in presence of the Director General, Directors of various divisions, WHO, partner organizations, media person, leprosy affected peoples' organization to highlight the situation of leprosy cases in Nepal and issues and stigma related to programme. The day received the enormous media coverage.

Enhanced Contact Examination of Leprosy Cases in High Endemic District-Contact examination was done for family members and neighbors in houses surrounding the index cases in Nawalparasi-West district in November 2019 (Mangsir 2076).

A total of 132 leprosy index cases were identified for the contacts survey out of total population of 2,11,877. 63 search teams were formed and mobilized to carry out the activity in 19 different health facilities. The targeted, screened and suspected family, neighbour and social contacts under the survey were as follows:

Number of HFs	Total Population	Index Cases	No. Of Search Team	Target Population Contacts			Screened Population			Suspected Case Found		
				Family	Neighbor	Social	Family	Neighbor	Social	Family	Neighbor	Social
19	211877	132	63	677	3244	9	543	3022	2	18	71	2

From this survey, out of total targeted 3,930 contacts of family, neighbor and social periphery, 3,567 members were screened out of which 91 cases were suspected of leprosy and referred to respective health facilities.

The team of supervisors and consultant dermatologists confirmed and validated 17 new cases of leprosy from the contact examination. The classification 17 new cases are as follows:

Family contacts						Neighbor Contacts						Social Contacts						Grand Total	
Adult		Child		Total		Adult		Child		Total		Adult		Child		Total			
M	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P	M	P
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
1	2	0	1	1	3	1	5	0	3	1	8	1	3	0	0	1	3	3	14

4 cases were detected from family contacts, 9 from neighbor and 4 from social contacts. Altogether, 3 MB and 14 PB new cases were detected and put under MDT. The new cases consist of 6 female PB cases, 4 Child PB cases and 1 case of G2D. No cases of G2D in child were detected which a good sign is indicating that leprosy pediatric cases are treated on time.

Transport support to released-from-treatment cases — The programme provided grants of NPT 1,000 to 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, leprosy case validation, supervision and monitoring — Recording, reporting, update and case validation was carried out in Kapilvastu, Rupandehi, Chitwan, Bara, Rautahat and Kailali districts 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.

Coordination with partners — LCDMS organized coordination meetings among the partners working in the leprosy control and disability management sectors. Three meetings were held in this year. The meetings were attended by representatives from WHO-Nepal, Leprosy Mission Nepal (LMN), Nepal Leprosy Trust (NLT), International Nepal Fellowship (INF), NLR, Damien Foundation, FAIRMED Foundation, Partnership for New Life (PNL), Nepal Leprosy Fellowship (NLF), Nepal Leprosy Relief Association (NELRA), Sewa Kendra, READ Nepal, and IDEA Nepal to share regular updates on activities, to have common approach to celebrate World Leprosy Day and to develop programme guidelines. Similarly, coordination meetings with partners working on Disability Management and Rehabilitation sectors were also held simultaneously.

Development of Guidelines — Following the nationwide lockdown in March 2020, all activities related to field activities were halted. Taking this opportunity, following guidelines were developed:

- i) Programme implementation guideline of Leprosy Post-Exposure Prophylaxis (LPEP)
- ii) Interim Guideline for management of Leprosy Programme/Service during COVID-19 Pandemic

Grant to leprosy affected persons — A grant was provided to support leprosy affected residents in the Khokana and Pokhara Aarogya ashrams through the Nepal Leprosy Relief Association (NELRA). The grant of about three million has been provided for leprosy affected people to provide fuel, blanket, food and

incentives to approximately 158 leprosy affected people. Similarly, in the current year, a grant was provided to READ-Nepal to support 7 leprosy affected people taking shelter at its organization.

Annual Report and Bulletin -Annual report of Leprosy Control and Disability Management Programme 2075/76 (2018/19) was published highlighting the activities conducted in the same fiscal year including the activities conducted by partners to support leprosy control programme. A bulletin called Hamro Sawal was also published with information and frequently asked questions regarding leprosy and contact details of focal persons of leprosy control programme working in 77 districts.

Seminar of Consultant Dermatologists – 1 day orientation programme was organized during the seminar of Consultant Dermatologists in Kartik 2076 at Pokhara, Gandaki Province.

Develop Orientation Materials - Materials related to 5 days Orientation of Leprosy, Skin Disease, Disability, Injury and Rehabilitation was developed with technical assistance from partners and stakeholders.

ACTIVITIES SUPPORTED BY PARTNERS

In 2076/77, WHO supported the supply of MDT drugs, provided technical support for the leprosy control and disability management programme, assisted in supervision and monitoring, and supported capacity building, active case detection and the community awareness programme.

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

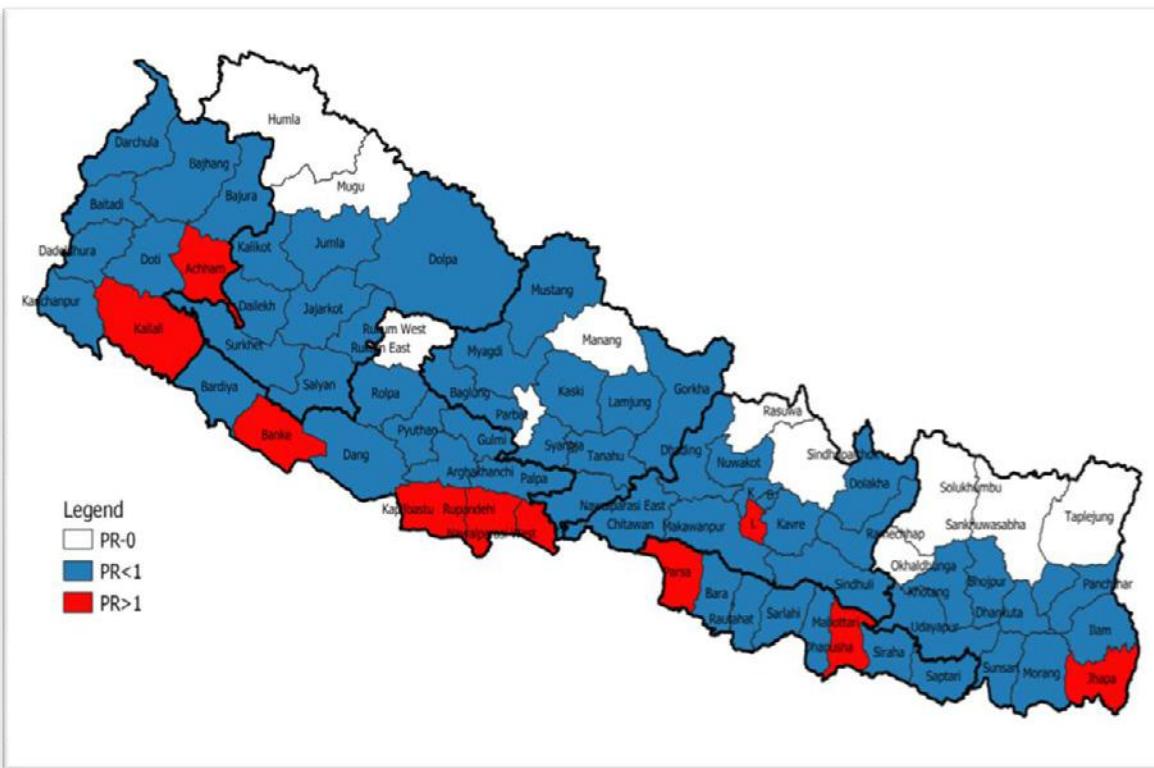
- Community awareness and participation programme
- Orientation of community members
- Provision of primary, secondary and tertiary care at referral centres
- Capacity building activities for government health workers
- Technical support through joint supervision and monitoring
- Prevention of disability 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

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

Prevalence

Overall prevalence

At the end of FY 2076/77 (2019/20), 2044 leprosy cases were receiving MDT in Nepal, which makes a registered prevalence rate of 0.69 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 also shows that Nepal's elimination status from 2009 is being sustained. The prevalence rate decreased drastically because of the COVID-19 pandemic which has decreased the new case detection as well . Out of 77 districts, 11 districts reported zero prevalence, 56 districts had a prevalence rate <1 and 10 districts had a rate of more than 1.

Figure 5.1.5.1 : Leprosy prevalence in Nepal, 2076/77 (2019/20)

Source : LCDMS/EDCD/DoHS/DHIS-2/PHD

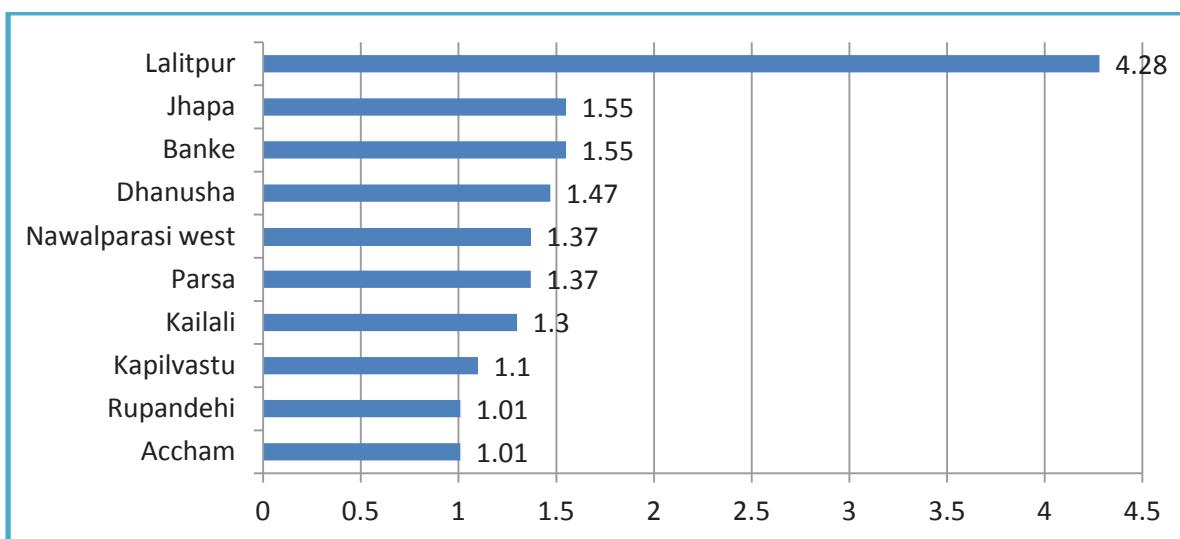
The highest number of leprosy cases under treatment was reported from Province-2 (554 cases, 27% of total) and lowest by Karnali Province (84 cases, 4% of total). The registered prevalence rate was the highest in Province-2 (0.89 case per 10,000 population) followed by Lumbini Province and lowest prevalence was reported at Gandaki Province (0.40 case per 10,000 population).

Table : 5.1.5.3 Distribution of registered cases and prevalence rate in 2076/77 (2019/20)

Provinces	No. of prevalence (under treatment) cases at the end of the year		
	Total cases	Percentage	Reg. prevalence rate/ 10,000 population
Province-1	291	14%	0.59
Province-2	554	27%	0.89
Bagmati Province	367	18%	0.57
Gandaki Province	100	5%	0.40
Lumbini Province	420	21%	0.83
Karnali Province	84	4%	0.47
Sudur Paschim Province	228	11%	0.78
National	2044	100%	0.69

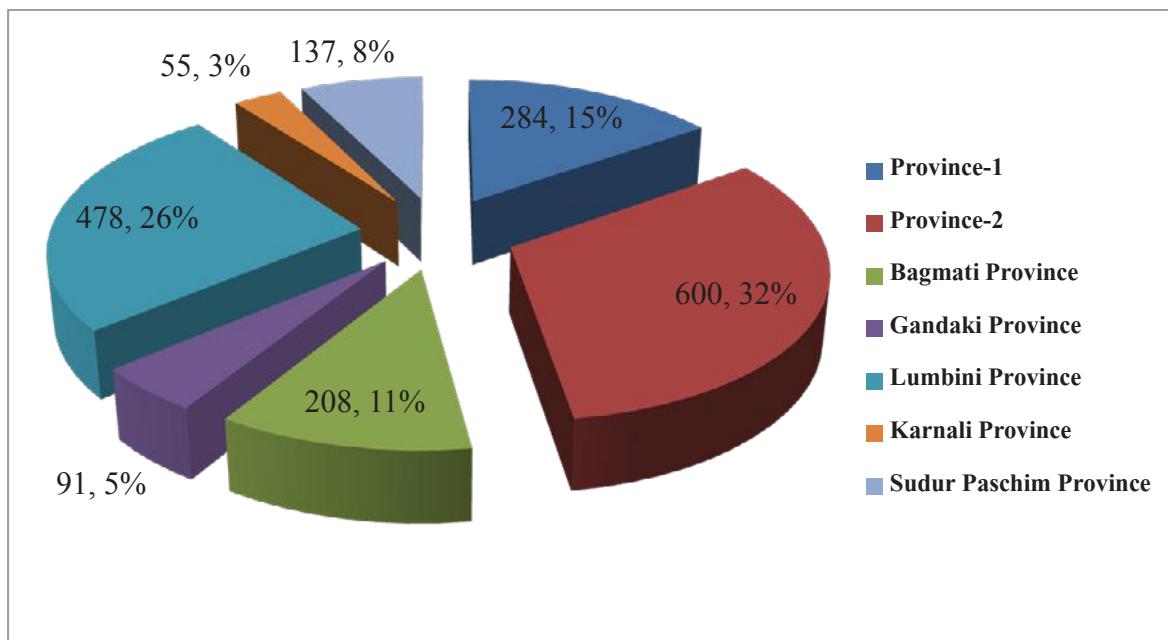
Source : LCDMS/EDCD/DoHS/DHIS-2/PHD

The number of districts reporting a prevalence rate of more than 1 case per 10,000 populations decreased to 10 districts from 17 in the previous year (Figure). Lalitpur district reported the highest prevalence rate of 4.28 cases per 10,000 population among all 10 districts with PR>1. The cases which are being treated at Anandaban hospital from all around the country were also included in Lalitpur district reporting which had resulted in the high PR of the district.

Figure: 5.1.5.2 Districts with leprosy prevalence rate above 1 per 10,000 population**NEW CASE DETECTION**

The detection of new cases signifies ongoing transmission with the rate measured per 100,000 populations. A total of 1853 new leprosy cases were detected in 2076/77 with 600 of new cases in Province-2 (32% of total cases). Meanwhile, Karnali Province has the lowest new case detection with 55 cases (as shown in the figure). The new case detection rate (NCDR) per 100,000 populations for FY 2076/77 was 6.22 nationally.

Eleven districts (Khotang, Panchthar, Sankhuwasabha, Solukhumbu, Taplejung, Bhaktapur, Rasuwa, Sindhupalchok, Parbat, Manang, Rukum-East, Dolpa, Mugu and Dadeldhura) reported no new cases this year.

Figure 5.1.5.3: Province-wise new leprosy cases, 2076/77 (2019/20)

69 percent of new cases were Multi bacillary (MB) and the rest were Pauci bacillary (PB). This proportion has remained around fifty percent for the last few years but proportion of MB cases has increased this year. More than one third i.e. 41.55% of the new cases were 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 2076/77 (2019/20)

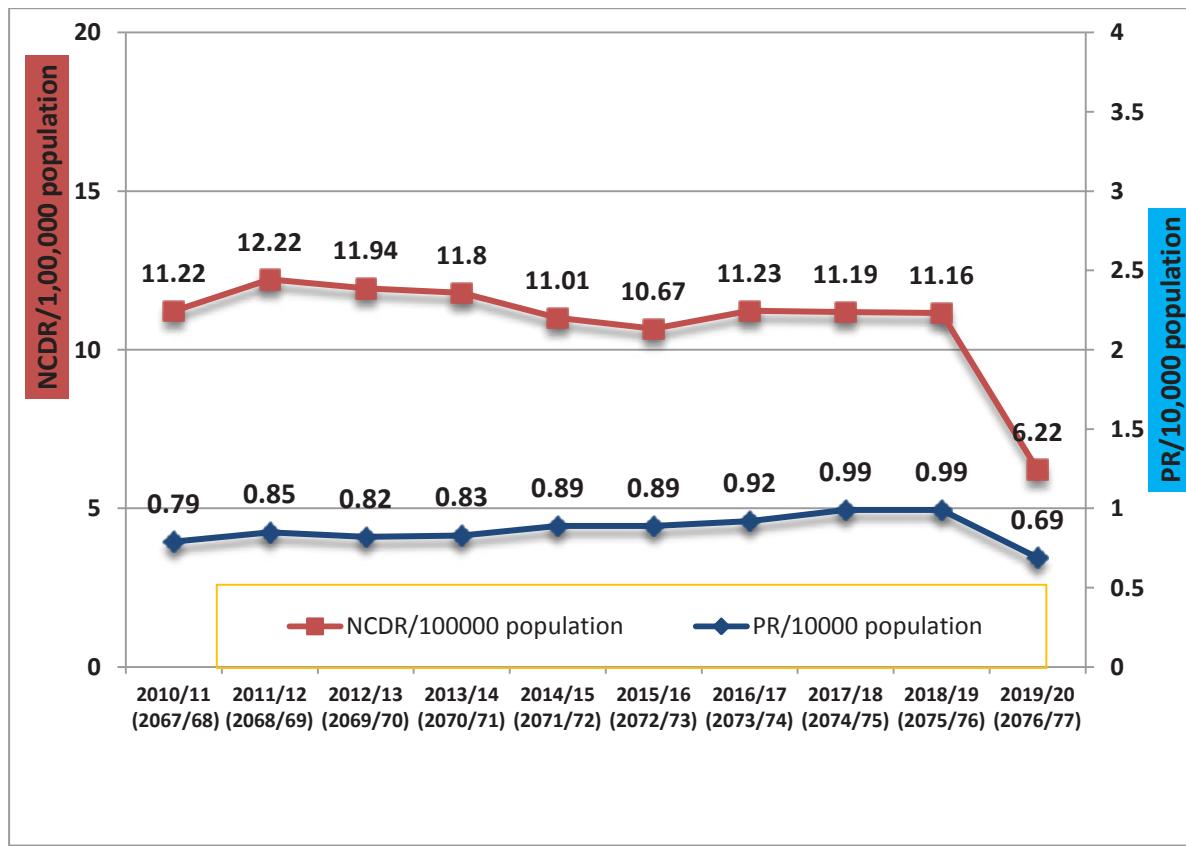
Provinces	Total New Cases	NCDR
Province-1	284	5.77
Province-2	600	9.66
Bagmati Province	208	3.26
Gandaki Province	91	3.62
Lumbini Province	478	9.43
Karnali Province	55	3.06
Sudur Paschim Province	137	4.71
National	1853	6.22

Source: LCDMS, EDCD/DoHS/DHIS-2/ PHD

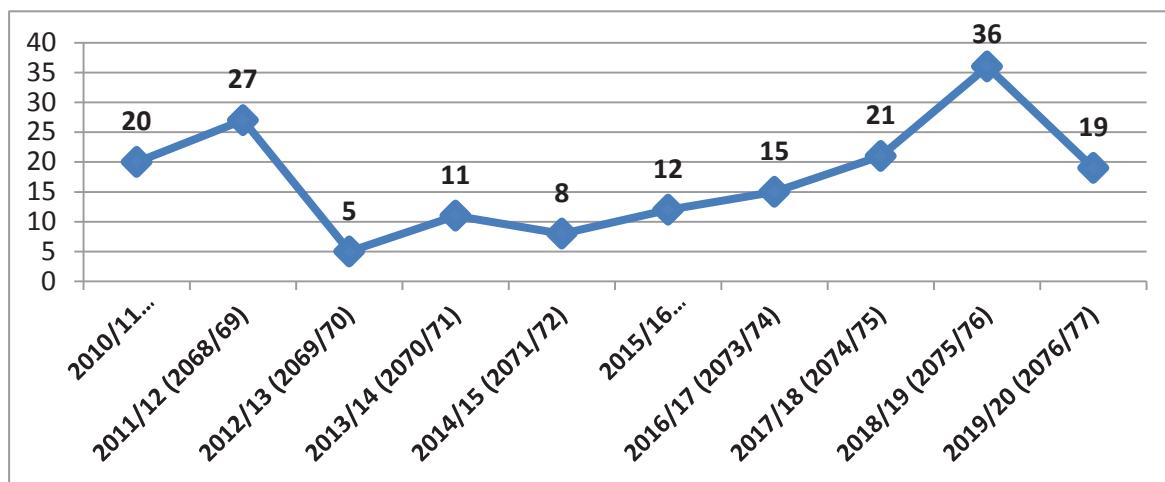
TREND IN PREVALENCE, CASE DETECTION AND RELAPSE CASES

The trend of new case detection and the number of registered cases in the last nine years had remained stagnant. The prevalence rate and new case detection rate had decreased this year to 0.69 and 6.22 respectively which might be due to the lockdown imposed during COVID-19 pandemic. 19 relapse cases were recorded in the year 2076/77 (2019/20).

Figure 5.1.5.5: Trend in new leprosy case detection rate and prevalence rate from 2067/68-2075/76(2010/11-2018/19)



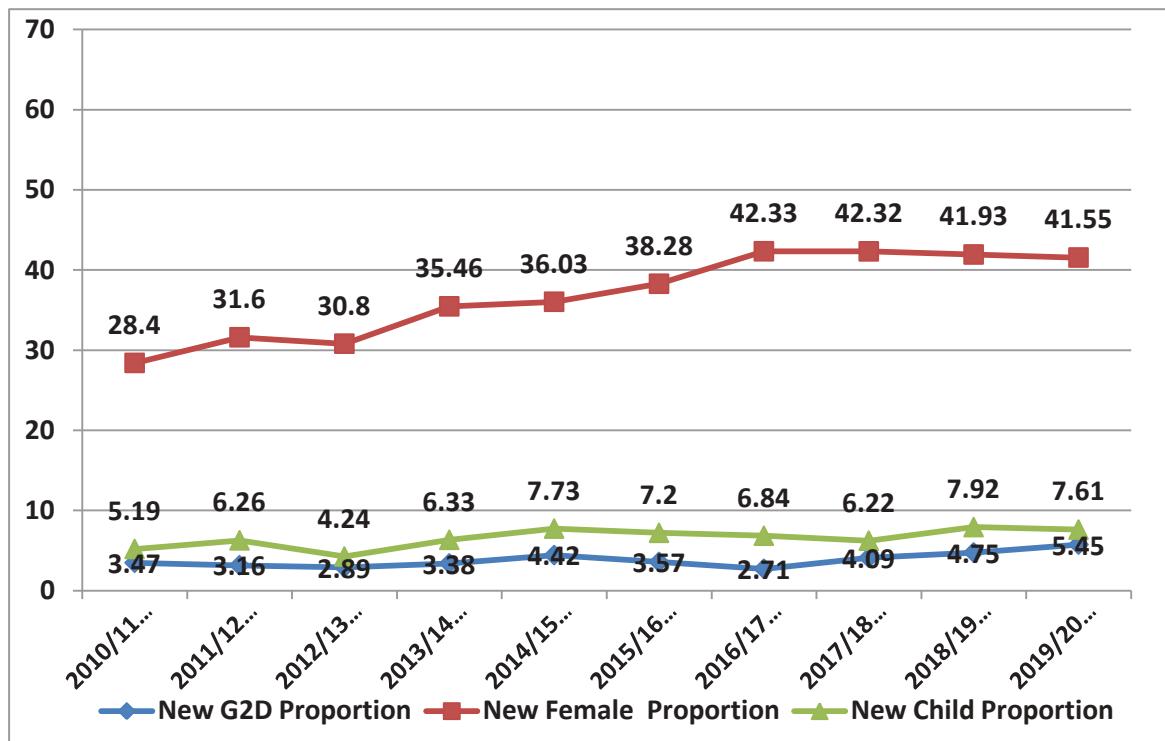
Source: LCDMS, EDCD/DoHS

Figure 5.1.5.6: Trend in relapse cases from 2067/68 - 2076/77 (2010/2011-2019/20)

Source: LCDMS, EDCD/DoHS

DISABILITY, CHILD AND FEMALE CASES

Leprosy cases that are not detected early on may result in disabilities. Early detection, timely and complete treatment of leprosy are crucial factors 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 2076/77 (2019/20), 101 cases of visible disability (G2D) were recorded with a proportion among new cases of 5.45% nationally.

Figure 5.1.5.7: Trend in Proportion of New Grade 2 Disability, Child and Females cases from 2067/068 to 2075/076 (2010/11-2018/2019)

Source: LCDMS, EDCD/DoHS

A total of 141 new child cases were diagnosed in 2076/77 (2019/20) resulting to 7.61% of new cases. This was a decrease from the previous year although the trend is fluctuating. Similarly, 770 female cases were detected in this fiscal comprising 41.55 proportion of new female cases. One of the targets of National

Leprosy Strategy 2016-2020 is achieving zero G2D among new pediatric leprosy cases, in order to achieve this target new G2D pediatric leprosy cases had been recorded since last 3 years. This year 6 cases are recorded with 0.32 proportion of G2D among new pediatric leprosy cases.

Conclusions

The elimination status was maintained at the national level as the prevalence rate remained below 1 case per 10,000 population this year although this rate was still high in 10 districts. The proportion of female and child cases remained intact. Due to lockdown imposed against the spread of COVID-19 pandemic in this year resulted in noticeable declined in prevalence rate and new case detection rate.

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 - 2066/67–2076/77 (2009/10 – 2018/19)

Indicators	2067/68 (2010/11)	2068/69 (2011/12)	2069/70 (2012/13)	2070/71 (2013/14)	2071/72 (2014/15)	2072/73 (2015/16)	2073/74 (2016/17)	2074/75 (2017/18)	2075/76 (2018/19)	2076/77 (2019/20)
New cases	3,142	3,481	3,253	3,223	3,053	3,054	3215	3249	3282	2044
New case detection rate	11.2	12.2	11.9	11.18	11.01	10.67	11.23	11.19	11.16	6.22
Under Treatment cases at the end	2,210	2,430	2,228	2,271	2,461	2,559	2626	2882	2921	1853
PR/10,000 population	0.79	0.85	0.82	0.83	0.89	0.89	0.92	0.99	0.99	0.69
No. new child cases	163	218	136	204	236	220	220	202	260	141
Proportion child cases	5.19	6.26	4.24	6.33	7.73	7.20	6.84	6.22	7.92	7.61
New G2D cases	109	110	94	109	135	109	87	133	156	101
Proportion G2D cases	3.47	3.16	2.89	3.38	4.42	3.57	2.71	4.09	4.75	5.45
G2D rate/100,0000	3.9	3.9	3.5	4.0	4.9	3.8	3.3	4.1	5.30	3.39
New G2D Child cases	N/A	2	2	6						
Proportion G2D Child cases	N/A	0.06	0.06	0.32						
New female cases	892	1,100	1,004	1,143	1,100	1,169	1361	1375	1376	770
Proportion female cases	28.4	31.6	30.8	35.46	36.03	38.28	42.33	42.32	41.93	41.55
Released from treatment	2,979	3,190	3,374	3187	2,800	2,902	3040	2852	3221	2817
No. Defaulters	31	24	43	24	38	44	57	93	142	153
No. relapse cases	20	25	14	11	8	12	15	21	36	19

Source : LCDMS/EDCD/DoHS/DHIS-2/PHD

Table 5.1.5.6: Strengths, weakness and challenges for the leprosy control programme

Strengths	Weaknesses	Challenges
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	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	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

Strengths	Weaknesses	Challenges
<p>leprosy affected people in national programme</p> <p>Steering, coordination and technical committees formed and conducting meeting in regular basis</p> <p>Contact examination/ surveillance of patient, family members and neighbours</p> <p>Implementation of Leprosy Post-Exposure Prophylaxis in all endemic district</p>	<p>Problem for reaction and complication management at periphery level</p> <p>Poor result-based output, recording and reporting of contact examination activities</p> <p>Poor coverage and monitoring of LPEP in implementing districts.</p> <p>Under and over reporting of leprosy data in IHIMS.</p>	<p>Insufficient activities in low endemic districts for reducing the disease burden</p> <p>To maintain access and quality service at HF level</p> <p>Strengthening of index case & contact surveillance, recording and reporting system</p> <p>Leprosy Data Reporting in DHIS-II</p>

Future course of action and opportunities

Development of national strategy 2021-2030 and roadmap for achieving zero leprosy in line Global Leprosy Strategy

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 municipality level elimination

Promote community participation in the National Leprosy Elimination Programme.

Improve the access of unreachd, 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.

Implement Chemoprophylaxis in full fledged to protect contacts and stop 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 services

Adequate and complete reporting of leprosy data in DHIS-II

5.1.6. Health related Rehabilitation and Disability Management

5.1.6.1. Background

Rehabilitation service is a health service to promote functioning and reduce disability. Rehabilitation service is required for all the population including the people with the disabilities. Leprosy Control and Disability Management Section (LCDMS) of Epidemiology and Disease Control Division (EDCD) is the focal entity of MoHP for the disability management and rehabilitation services.

National Health Policy 2019 and Public Health Service Act 2018 have identified rehabilitation as an essential component of the health services. Likewise, Nepal Health Sector Implementation Plan (2016-2021) has set the 5 years benchmark for rehabilitations in health system. Furthermore, the Policy, Strategy and 10 Years Action Plan on Disability Management (2073-2082 B.S) enacted in 2017 has drawn the comprehensive road map for disability management and rehabilitation in Nepal.

5.1.6.2 Activities and achievements in 2076/2077

A situation assessment of rehabilitation system in Nepal

With an intention to develop a National Rehabilitation Strategic Plan, an assessment of rehabilitation systems in Nepal was conducted from 2nd-13th Mangsir 2076 (18th-29th November 2019). This assessment was conducted in coordination with rehabilitation service providers, service users, rehabilitation experts and universities, provincial, local government, WHO and Handicap International. It was done as a part of Rehabilitation 2030 – A Call for Action, WHO global initiative using WHO tools. The assessment has captured the current status of rehabilitation systems in Nepal for each of the six building blocks.

Development of Rehabilitation Module in Health Information Management System

A rehabilitation module for HMIS, consisting of rehabilitation service card, recording form and reporting form has been developed. In addition, the rehabilitation recording form was also created and integrated in DHIS-2 software. This module will allow the routine facility level data collection for the rehabilitation services provided in Nepal. This activity was conducted in support with the USAID's physical rehabilitation activities managed by Handicap International and WHO-Nepal.

The data generated by this module will result in following indicators with options to have disaggregated information based on gender, age, address, ethnicity, disability, diagnosis, functioning, types of service received, number of sessions and rehabilitation time-line:

- Number of rehabilitation service users
- Number of assistive product users
- Number of referral in and out

EDCD will conduct training to the rehabilitation professionals and medical recorders to improve the quality of data. The data generated through this module will guide the evidence informed rehabilitation services expansion in Nepal.

Disability Management and COVID-19

Disability inclusive COVID-19 information, education and communication (IEC) materials were developed in collaboration with National Health Education, Information and Communication Center, USAID's physical rehabilitation activities, WHO Nepal and National Federation of Disabled Nepal. It consisted of 3 disability inclusive leaflets and 2 visuals with messages on health precaution to support people with disabilities and rehabilitation services users. The IEC materials were disseminated via the social media handles of the MoHP, EDCD, NHEICC, UN and disability and rehabilitation partners.

Moreover, Interim guideline to facilitate the disability inclusive health and essential rehabilitation in the COVID-19 pandemic context was developed to ease the flow of these essential services. Likewise, Interim Guidance for the Health related Rehabilitation and Physiotherapy of Person with COVID-19 in Acute Care Settings was also developed to support the rehabilitation of the severely infected COVID-19 patients. Both of these interim guidelines were developed in coordination with rehabilitation service users group, professionals associations, rehabilitation experts and service providers.

Future course of action and opportunities

- Implementation of rehabilitation module in HMIS
- Development of rehabilitation clinical protocols, standard operating procedures and standard on the assistive technology
- Strengthen the existing rehabilitation units and promote the establishment of new units in government hospitals
- Focus on the multidisciplinary approach of rehabilitation
- Support the assistive product service provision through rehabilitation centers/hospital
- Integrate the basic rehabilitation service into the primary health care
- Promote the continuing professional development of rehabilitation professionals
- Develop the national rehabilitation strategic plan
- Conduct the operational research in rehabilitation

5.2 Eye Care

5.2.1 Background

Vision impairment is a global public health problem that needs urgent attention. Recently the Vision Loss Expert Group (VLEG) has come up with the estimates on the magnitude and projections of vision loss and its key messages i.e 1.1 billion have vision loss primarily because they do not have access to eye care services. Likewise, over 90% of those with vision loss live in low- and middle-income countries. 73% of people with vision loss are over 50 years old and 55% of people with vision loss are women. The number of people with vision loss will rise from 1.1 billion to 1.7 billion people, mainly due to population growth and population ageing. An additional 1 billion people live with eye health conditions that need on-going access to services to optimize their vision and maintain their ability to function in society. By 2050 more than half the global population is going to need ongoing, regular access to eye care services to maintain their eye health. These numbers are projected to increase in the next couple of decades as population age.

Commitment to VISION 2020 in Nepal was demonstrated by the establishment of Apex Body for Eye Health Committee at the Ministry of Health and Population for formulating partnership of eye care organisations together with WHO to develop and implement national eye care policy, act as the directing, facilitating and coordinating authority and encourage the technical cooperation. National Plan of Action was prepared under the leadership of Apex Body for Eye Health to achieve the goal of VISION 2020 in Nepal. Several achievements can be credited to VISION 2020 and efforts of eye health stakeholders of Nepal, both direct and indirect, during the last two decades in terms of infrastructure development, human resources development, disease control (Reduction in the prevalence of blindness from 0.84% to 0.35%, significant decline in blinding xerophthalmia, elimination of trachoma as a public health problem) and advocacy. Some added newer initiatives while others helped in either enhancing or sustaining ongoing programmes.

However the number of blind people (120,000 in 2010) was about the same as in 1980-81 (117,623), and still, about 275,000 people had severe visual impairment (inability to count fingers at 6 meters) indicating that severe visual impairment for economic emancipation remains a serious public health problem. Women continue to carry two-thirds of blindness. People living beyond district headquarters, Dalits and low-income people everywhere have limited access to eye care services. Close to one million children have either disabling visually impairment or are unable to use their visual potential optimally because of lack of a simple pair of glasses. Nepal will be getting fresh data on the prevalence of blindness and visual impairment soon as Provincial Rapid Assessment of Avoidable Blindness survey has been completed except in Sudurpaschhim Pradesh. Preliminary findings of completed provinces shows that the prevalence of blindness has not been reduced significantly compared to data of the 2010 survey. However, the cataract surgical coverage at visual acuity 3/60 level and visual outcome of the cataract surgery has been significantly improved in recent years. The prevalence of blindness ranges from 0.7% in Bagmati Province to 1.7% in Lumbini Province of Nepal. The main causes of blindness are untreated cataract and posterior segment eye diseases. Proportion of untreated cataract remains highest in Province 2 (88.5%) while it accounts least in Gandaki Province (42.6%). Posterior segment diseases account for 44.7% of all causes of blindness in Gandaki Province while they account only 4.9% in Province 2. Prevalence of refractive error is 15.7% - 25.9% in people aged 50 years and above. The unmet need for refractive error is maximum in Karnali Province (70.1%) and minimum in Bagmati Province (29.3%). Prevalence of functional low vision (FLV) among 50 years and above ages is 0.5% - 1.3%. The main barriers to uptake cataract surgical services were Affordability, Accessibility, lack of felt need, Fear of surgery.

Recently WHO launched World Report on Vision which provides a strategic path to achieve sustainable eye health systems and universal eye health coverage (UHC). Its first recommendation is the inclusion of eye care as an integral part of UHC.

The United Nations Political Declaration on UHC has also stated that UHC cannot be achieved without eye care. It recognizes that one of the key criticisms of VISION 2020 (and indeed, many other 'vertical' health programmes) has been its isolation and targeted focus on eye health alone. Its key recommendation is the implementation of integrated people-centred eye care. Also, the impact of vision loss cuts across many of the Sustainable Development Goals. Improving eye health helps to reduce poverty (Goal 1) and helps to deliver on quality inclusive education, gender equality and decent work and economic growth (Goals 4, 5 and 8).

The Government of Nepal has also issued a new National Health Policy in line with the right to health guaranteed by the constitution, list of functions to be carried out by all three levels of government, relevant policies, challenges in health sector and achievements made so far in relation to providing health services to citizens.

The policy aims to develop and expand oral, eye, ENT and specialized health services to all levels. In order to achieve this, government has planned to integrate the primary eye care into the basic government healthcare system and eye care services will be further developed and expanded as per the public private partnership policy. Eye health unit will be established at Federal Ministry of Health to coordinate, cooperate and regulate the present eye care program in the country.

Despite COVID-19 pandemic which created unprecedented situation, the Eye Care System of Nepal has been able to deliver the following major achievements in 2020:

Able to provide eye treatment services to 2,197,671 patients, out of which, 226833 (10%) were foreigners. A total of 55536 (29128 men, 26408 women) people services were covered through national health insurance scheme.

The subspeciality eye care services were delivered to 29024 patients

Able to provide eye care services to 585590 people through different community outreach programs

Able to provide surgical services 166492 people (including 6554 surgeries in camps). The majority of the eye surgeries comprised of cataract (101921 -61%)

5.3 Zoonotic disease

5.3.1 Background

The Epidemiology and Disease Control Division (EDCD) is responsible for responding to different zoonotic diseases of public health concern. Our public health activities are focused to poisonous snake bites and dog bites. This division has been working in co-ordination, collaboration and consultation with governmental livestock, wildlife, agriculture, environment sectors, 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:

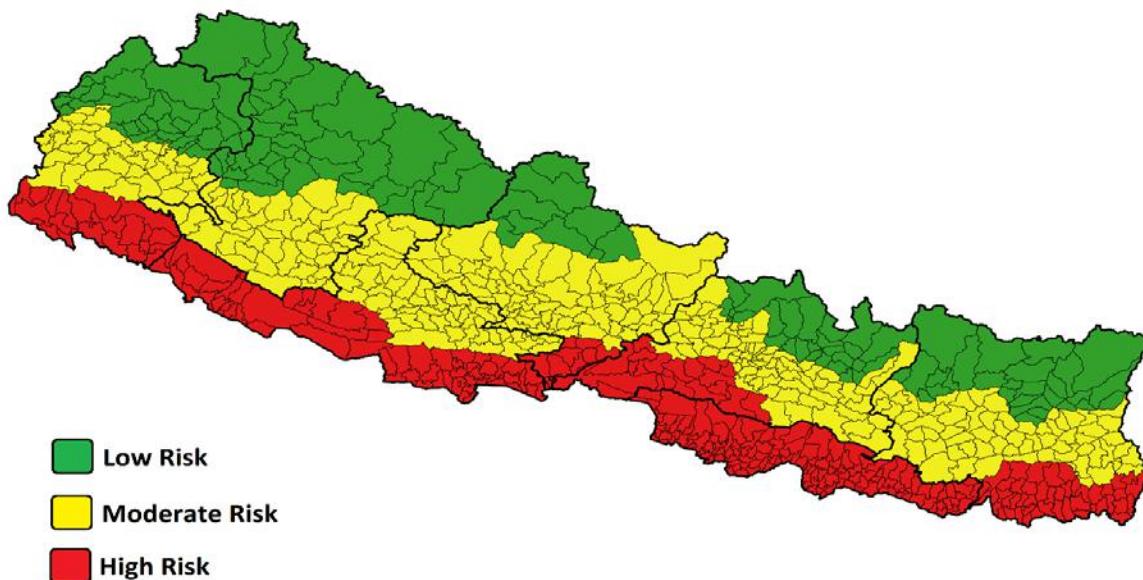
- No people dies of rabies or poisonous snake bites due to the unavailability of anti-rabies vaccine (ARV) or anti-snake venom serum or timely health care services.
- To prevent, control and manage outbreaks and epidemics of zoonosis.

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 Terai. 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 break 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 2076/77 in Rabies control Programme

The following activities were carried out in 2075/76 for the control of rabies cases:

- Awareness programs about Rabies for school students and general public.
- Celebration of World Rabies day on 28th September and co-ordination with province and local level health officials for its effective implementations.
- Epidemiological study on the active dog bite cases.
- Surveillance about Rabies on outbreak area.
- Orientation program about the benefit of Intradermal (ID) delivery of Anti Rabies Vaccine (ARV) for health workers.
- Procurement of cell culture ARV vaccine and immunoglobulin.

In 2076/77, 52,610 cases of 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 times 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 of ARV 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
2075/76	32,882	2,368	35,250	236,022	18
2076/77	52,610	4,009	56,619	-	-

Source: EDCD/DoHS

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 Terai 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 manage. The following activities were carried out in 2076/77 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.

Standard guideline for snackbite treatment center is in process of development.

In 2076/77, altogether 5,081 snake bite cases were reported at national level. A total of 878 cases were poisonous. Table 5.3.2 summarises progress against previous years' data.

Table 5.3.2: Snake bite cases and deaths, Nepal (2070/71–2075/76)

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
2075/76	4,567	3,871	696			
2076/77	5,081	4,203	878			

Source: EDCD/DoHS

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 importance of co-ordination 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



Table 5.3.3: Province wise Animal Bite cases in Nepal 2076/77

S/N	Animal Bite cases	Province No. 1	Province No.2	Bagmati Province	Gandaki Province	Province No.5	Karnali Province	Sudurpashchim Province
1	Dog Bite	6,229	9,815	1,106	6,746	9,641	2,211	6,962
2	Other rabies susceptible animal Bite	657	438	668	661	820	127	638
3	Snake bite- Non Poisonous	581	938	567	1,044	822	123	128
4	Snake bite Poisonous	124	141	83	71	359	20	40
5	Insects/Wasp Bite	5,548	5,763	7,833	3,982	7,113	2,950	3,853

5.4 Tuberculosis

5.4.1 Background

Tuberculosis (TB) is a communicable disease that is a major cause of ill health, one of the top 10 causes of death worldwide and in Nepal, and the leading cause of death from a single infectious agent (ranking above HIV/AIDS). TB is caused by the bacillus *Mycobacterium tuberculosis*, which is spread when people who are sick with TB expel bacteria into the air; for example, by coughing. The disease typically affects the lungs (pulmonary TB) but can also affect other sites (extrapulmonary TB). About a quarter of the world's population is infected with *M. tuberculosis* which is similar for Nepal.

TB can affect anyone anywhere, but most people who develop the disease are adults, there are nearly twice as more cases among men than women, and 30 high TB burden countries account for almost 90% of those who fall sick with TB each year. TB is a disease of poverty, and economic distress, vulnerability, marginalization, stigma and discrimination are often faced by people affected by TB.

TB is curable with medicine (nearly 90% cure rates) and preventable. With access still falling short of universal health coverage (UHC) for all forms of TB, many still have also missed out (nearly 54% in Nepal) on diagnosis and care. Preventive treatment is scaling up among contact

This report is to provide a comprehensive and up-to-date assessment of the status of the TB epidemic, and of progress in the response to the epidemic at country levels in terms of global and end TB commitments. The report is based primarily on data gathered by NTCC through HMIS, NTP MIS, WHO country profile, National TB prevalence survey 2018-19 report and other surveillance data. In recognition of the enormous impacts of the COVID-19 pandemic, the report includes a provisional assessment of how the pandemic affected the TB epidemic in Nepal.

Global and country commitments and strategy to end TB

In 2014 and 2015, all Member States of WHO and the UN committed to ending the TB epidemic, through their adoption of WHO's End TB Strategy and the UN Sustainable Development Goals (SDGs). The strategy and SDGs include milestones and targets for large reductions in TB incidence, TB deaths and costs faced by TB patients and their households. This was followed by the Moscow Declaration to End TB and then by the UN General Assembly held its first-ever high-level meeting on TB in 2018. The outcome was a political declaration in which commitments to the SDGs and End TB Strategy were reaffirmed and new ones added¹(Multisectoral accountability framework and meaningful engagement of civil society). Nepal also committed to these declarations and developed strategies in line with these commitments.

Status of TB epidemic in Nepal

Globally, an estimated 10.0 million people fell ill with TB in 2019. There were an estimated 1.2 million TB deaths. Men (aged ≥15 years) accounted for 56% and children (aged <15 years) for 12%. 8.2% were people living with HIV.

In Nepal, an estimated 68,000 fell ill with TB during FY 2076/77. National Tuberculosis Programme (NTP) registered 27,745 (nearly 54% missing vs the projection) all forms of TB cases (37% female and 63% male).Out of 27,745 all forms of TB cases, 27,232 cases were incident TB cases². Out of 27,232 incident TB cases; 14840 (54%) were pulmonary bacteriologically confirmed (PBC) cases, 3766 (14%)

¹<https://www.who.int/news-room/events/un-general-assembly-high-level-meeting-on-ending-tb>

²All new and relapse TB cases

were pulmonary clinically diagnosed (PCD) cases and 8626 (32%) were extra pulmonary TB cases. Geographically, most people who reported TB were from terai region (58.7%). At provincial level, Bagmati Province (24%), Province 2 (21%) and Lumbini province (20%).

Drug-resistant TB continues to be a public health threat. Worldwide in 2019, close to half a million people developed rifampicin-resistant TB (RR-TB),⁸ of which 78% had multidrug-resistant TB (MDR-TB). In Nepal nearly 2,200 people were estimated to have developed DR TB, but only 517 were detected (i.e. 76.6% were missed) and out of those diagnosed, NTCC was able to put 384 on DR TB treatment. (i.e. 25.8% were lost to follow up). Preventive therapy was also provided to 89% of childhood TB contacts through contact tracing.

Progress towards the 2020 milestones of the End TB Strategy and revised burden estimates

Globally, the TB incidence rate and TB deaths are falling, but not fast enough to reach the 2020 milestone of 20% and 35% respectively.

Based on the National TB prevalence survey report and revised burden estimates, there was been a 3% decline in annual incidence rates in TB in Nepal but the TB burden in Nepal is still higher than previously estimated. For 2018, the prevalence rate was 416.35 per 100,000 population, and the incidence rate was 245.1 per 100,000 population, which was 1.8 times and 1.6 times higher respectively than previously estimated (*National TB Prevalence Survey Report, 2018-19*). Mortality rates were also re-estimated to be 17,000 which was 3.3 times higher than previously estimated. (*Country profile-Nepal, Global TB Report, WHO 2020*). However, TB death among registered TB patients was 1,019 (3%) among 30,464 registered TB cases in FY 2076/77.

The COVID-19 pandemic and TB – impact and implications

Globally it is estimated that COVID has pushed back TB progress made to date by 8 years. An early rapid assessment³ done in June 2020 showed that there was 67.3%, 45.5%, and 41.7% decline in the mean number of sputum courier, enrolment, and follow-up of TB patients during the COVID-19 lockdown with partial disruption of reporting TB data. However, TB drug stock and supply were maintained. Patients took TB drugs at home (as per interim guidelines⁴) and few developed minimal side effects that were locally managed.

TB diagnosis, treatment, and prevention

TB services were mostly provided through the integration of decentralised health service delivery system through 4955DOTS centers and 765 microscopic centers. Specialized services were provided from 22 DR TB treatment centers, 81 DR TB treatment sub-centers, 6 DR TB hostels and 1 DR TB home. Diagnosis services were further provided through 72 Genexpert sites, 2 Culture labs with DST and LPA services. Isoniazid-resistant TB treatment regimen, shorter regimen for MDR/RR TB and regimen with newer drugs like Bedaquiline were also introduced during the period. As a part of **Universal health coverage, social determinants and multisectoral action** DS TB services are part of UHC and provided as essential health care services throughout the country. **TB preventive therapy** was scaled up to 39 districts and provided to nearly 666 child contacts.

5.4.2 Introduction

Tuberculosis (TB) is a communicable disease that is a major cause of ill health, one of the top 10 causes of death worldwide and the leading cause of death from a single infectious agent (ranking above HIV/AIDS). In 2019, about 10 million people developed TB and 1.4 million died. TB is caused by

³<https://nepalntp.gov.np/wp-content/uploads/2021/02/Rapid-Assessment-Report-Feb2021.pdf>

⁴<http://nepalntp.gov.np/wp-content/uploads/2020/03/Interim-guidance-for-management-of-essential-TB-services-during-COVID-19-pandemic.pdf>

Epidemiology and Disease Control

the bacillus *Mycobacterium tuberculosis*, which is spread when people who are sick with TB expel bacteria into the air; for example, by coughing. The disease typically affects the lungs (pulmonary TB) but can also affect other sites (extrapulmonary TB). TB can affect anyone but most people who develop the disease (about 90%) are adults; there are more cases among men than women. TB is a disease of poverty, and economic distress, vulnerability, marginalization, stigma and discrimination are often faced by people affected by TB. About a quarter of the world's population is infected with *M. tuberculosis*. TB is curable and preventable. Most people (about 85%) who develop TB disease can be successfully treated with a 6-month drug regimen; treatment has the additional benefit of curtailing onward transmission of infection.

History of TB in Nepal and progress towards global and national TB targets

Within the organizational structure of the Ministry of Health and Population, National Tuberculosis Control Centre (NTCC) is the focal point of the NTP and responsible for formulating policies, strategy, planning, monitoring, and quality assurance. The NTP program dates to 1937 when a sanitorium at Tokha was first established to care for TB patients. 1951 saw the establishment of the first central chest clinic followed by TB program in 1965. Later in 1989 the clinic and the program were merged and NTCC was established as an apex body to oversee TB program in the country. Starting with DOTS strategy that was adopted in 1996 Nepal was a pioneer in effective TB programs at the global level. With the adoption of the Stop TB Strategy in 2006 and the End TB Strategy in 2015, NTP is inline with other global and strategic commitments to reach END TB targets.

There were various commitments made by the government at different points of time regarding global declarations to ending TB.



Figure 5.4.1: Global declarations and commitments for TB program

All the commitments and calls for action were to reach SDG and end TB targets as mentioned below.

SDG Target 3.3	By 2030, end the epidemics of AIDS, TB, malaria and neglected tropical diseases, and combat hepatitis, water-borne diseases and other communicable diseases
WHO End TB Strategy	80% reduction in the TB incidence rate(new and relapse cases per 100000 population per year) by 2030, compared with 2015 2020 milestone: 20% reduction; 2025 milestone: 50% reduction
	90% reduction in the annual number of TB deaths by 2030, compared with 2015 2020 milestone: 35% reduction; 2025 milestone: 75% reduction
	No households affected by TB face catastrophic costs by 2020

Based on the following commitments with aim to reach the set targets, NTC developed its **National Strategic plan 2016-21**⁵ with **VISION** of TB Free Nepal by 2050: “Ending TB” defined as less than 1 TB patient per 1,000,000 population. The **goals** were to decrease the TB Incidence Rate by 20%, from 2015 to 2021 i.e. to identify additional 20,000 new TB cases by the next 5 years. There were 9 key **objectives** of the NSP as mentioned below.

Objective 1: To 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: To maintain the treatment success rate of 90% for all forms of TB (except drug resistant TB) by 2021

Objective 3: To provide DR TB diagnosis services to 50% of the presumptive MDR TB patients by 2018 and 100% by 2021 and to successfully treat at least 75% of those diagnosed.

Objective 4: To expand case finding by engaging providers for TB care from the public sector (beyond MoH), medical colleges, NGO sector, and private sector through results-based financing (PPM) schemes, with formal engagements (signed MoUs) to notify TB cases

Objective 5: To gradually scale up the Community System Strengthening Program (CSS) at 60% of the local administrative units by 2018 and to 100% of the administrative units by 2021. It will help in creating a patient-friendly ambiance in the health facilities, advocacy for TB patients regarding their rights which will, in turn, contribute to the diagnosis and management of TB cases

Objective 6: To contribute to health system strengthening through HR management and capacity development, financial management, infrastructure, procurement, and supply management in TB

Objective 7: To develop comprehensive Monitoring and Evaluation system

Objective 8: To develop plans so that NTP can function even at times of crises like natural disasters or public health emergencies.

⁵<https://nepalntp.gov.np/wp-content/uploads/2018/01/NSP-report-english-revised.pdf>

5.4.3 Progress, epidemiology and disease burden of TB

Institutional coverage

Nepal adopted the DOTS strategy in 1996 and achieved nationwide coverage in 2001. All DOTS centers are integrated into public health services or run through NTP partner organizations in the public and private sectors. In 2076/77, 4955 institutions were offering TB diagnosis and treatment DOTS-based TB control services. To increase access to treatment services, NTP has developed partnerships with different organizations including private nursing homes, polyclinics, I/NGO health clinics, prisons, refugee camps, police hospitals, medical colleges, and municipalities.

Table 5.4.1: TB service delivery outlets

Program Indicators	National Level				FY 2076/77 by Province						
	2073/74	2074/75	2075/76	2076/77	1	2	Bagmati	Gandaki	Lumbini	Karnali	Sudurpaschim
Number of Service Sites^{2,3}											
DOTS Center	4221	4323	4382	4955	818	848	951	582	923	361	472
MDR Treatment Centers	18	21	21	22	4	3	2	3	3	2	5
MDR Treatment Sub-Centers	81	86	81	81	12	18	24	10	13	2	2
DR Homes	1	1	1	1	-	-	-	1	-	-	-
DR Hostel	6	6	6	6	1	1	1	-	2	-	1
Microscopy Centers	604	624	604	765	102	114	142	88	151	36	132
GeneXpert Facility	27	55	56	72	11	13	17	6	14	4	7
Culture Labs and DST	2	2	2	2	-	-	2	-	-	-	-
Line Probe Assay (LPA)	2	2	2	2	-	-	2	-	-	-	-

Source: NTP Fact Sheet 2076/77⁶

Estimation of TB burden following 1st National TB prevalence survey 2018-19

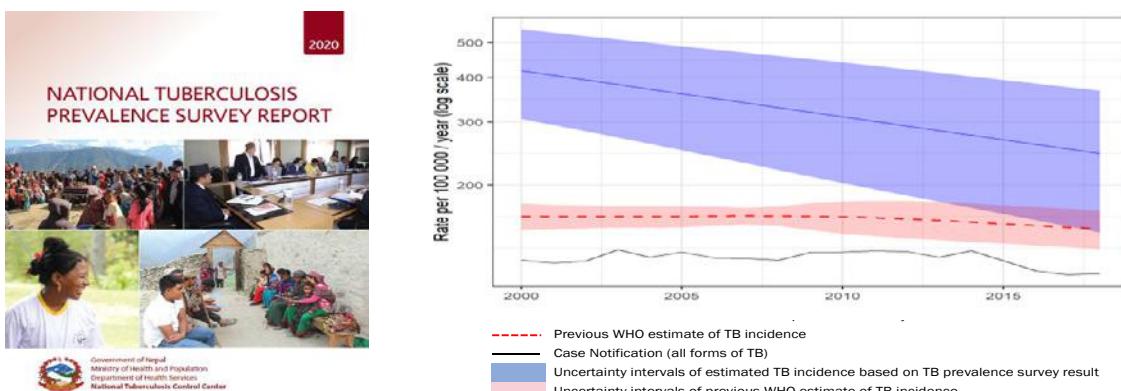
The burden of TB can be measured in terms of incidence (defined as the number of new and relapse cases), prevalence, and mortality. Based on the **National TB prevalence survey report 2018-19**, the revised burden estimated shows higher incidence (1.6 times), higher prevalence (1.8 times), and higher mortality rates (3.1 times) than previously estimated as detailed out in Table 5.4.2

Table 5.4.2: Comparison between the previous and revised burden of TB

Year	Incidence (all forms)	Prevalence (all forms)	Mortality (HIV -ve& +ve)
2018 New estimates	69,000 (245 per 100k)	1,17,000 (416 per 100k)	17,003 (9,000-26,000)
2018 Prior estimates	42,000 (151 per 100k)	60,000 (215 per 100k)	5,500 (3,900 - 7,400)
Revised burden, higher by:	1.6	1.8	3.1

Though the incidence is higher than the previous estimate but is declining by around 3% annually. An assumption of a 3% rate of decline in incidence over the period 2000-2018 was used, supported by a steep gradient in prevalence rates over groups of increasing age, suggesting a decline in transmission, and an average 8%/year growth in GNI/capita(National TB Prevalence Survey 2018/19) Figure 5.4.2

⁶https://nepalntp.gov.np/wp-content/uploads/2021/04/Factsheet_Final.pdf

Figure 5.4.2: Results of prevalence survey and key summary

7

Summary of key results from the survey are:

- TB burden significantly higher, despite better program performance (3% annual incidence decline)
- The burden of TB higher in all-terrain and not limited to high notification areas unlike previously estimated
- Burden significantly higher among men and in elderly population
- Need to scale up the use of better screening (eg. X-ray) and diagnosis (eg. Genexpert and mWRDs)
- Need to improve health-seeking behavior of general community
- TB service services should be strengthened both inthe private and public sectors including cross-border collaboration.

Case notification

The reported case notification rate (CNR) of all forms of TB is 93/100,000 whereas CNR for incident TB cases (new and relapse) is 91/100000 population. In Fiscal Year 2076/77, a total of 27745 cases of TB was notified and registered at NTP. There were 98.15% incident TB cases registered (New and Relapse) among all TB cases. Among the notified TB cases, 68 % of all TB cases were pulmonary cases and out of notified pulmonary TB cases, 80% were bacteriologically confirmed. Among those bacteriologically confirmed and notified, 56.6 % (8593) were confirmed using Xpert MTB/RIF testing.

Table 5.4.3: TB case notification FY 2076/77

TB case notifications, 2076/77²	
Total new and relapse	27232
▪ % tested with rapid diagnostics at time of diagnosis	57%
▪ % with known HIV status	51%
▪ % pulmonary	68%
▪ % bacteriologically confirmed	54%
▪ % children aged 0-14 years	6.0%
▪ % women	37%
▪ % men	63%
Total cases notified	27745

Source: NTP Fact Sheet 2076/77⁸

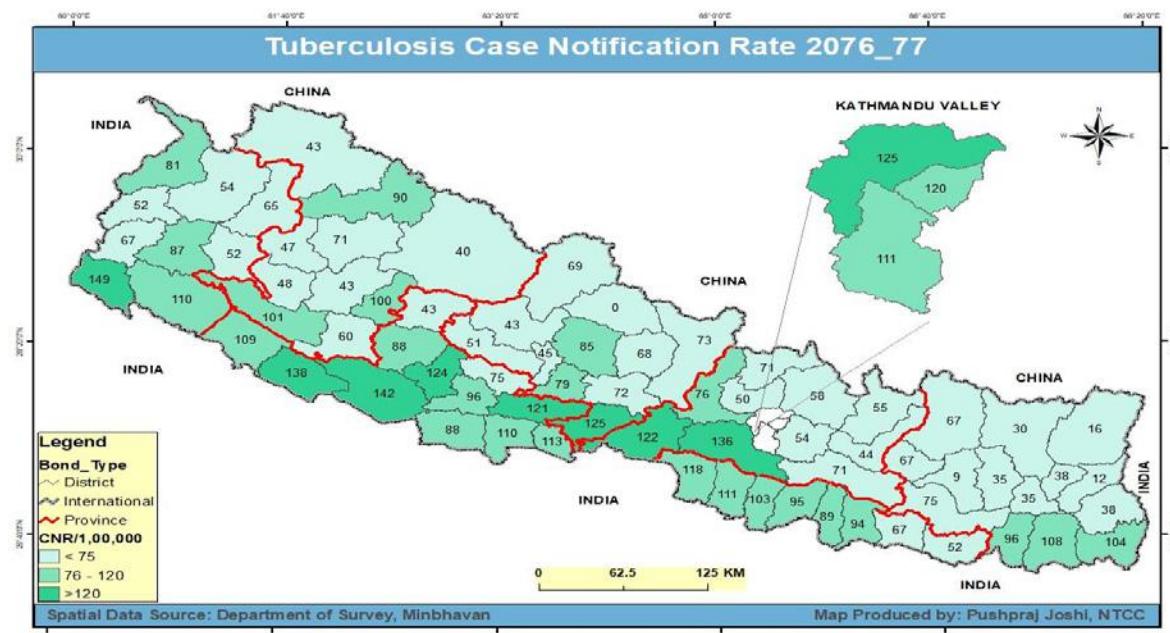
⁷National TB Prevalence survey 2018-19, Nepal <https://nepalntp.gov.np/wp-content/uploads/2021/03/NTPS-Report-Bodypages.pdf>)

⁸https://nepalntp.gov.np/wp-content/uploads/2021/04/Factsheet_Final.pdf

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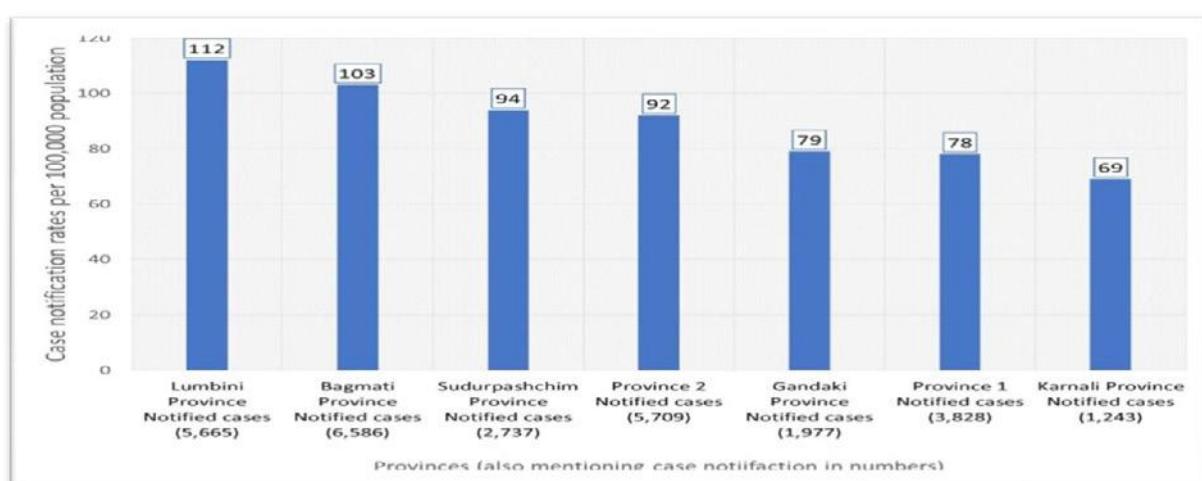
More than half of all TB cases (15202, 54.79%) were reported from Province 2, Bagmati Province and Lumbini Province. Around 24% of the TB cases were reported from Bagmati Province. Kathmandu district alone holds around 42% (2772 TB cases) of the TB cases notified from the Bagmati Province while its contribution is around 10% in the national total. (Figure 5.4.4) Whereas in terms of eco-terrain distribution, the Terai belt reported more than half of the cases (16274, 59%). Most cases were reported in the middle age group with the highest of 47 % in 15-44 years of age. Childhood TB is around 6.0% while men were nearly 2 times more than women among the reported TB case.

Figure 5.4.3: Tuberculosis case notification rate, 2076/77



The National Case Notification Rate (All forms) is 93/100,000 population. Based on the CNR, there are 9 districts with CNR of more than 120, while 28 districts had CNR between 75-120 and the remaining 40 districts had below 75 CNR. Among 9 high burden districts, 5 districts are from the Terai belt while the remaining 4 are from the Hilly region. Further, more than half of TB cases (54.79%) of the cases were reported from Province 2, Bagmati and Lumbini province respectively whereas in terms of eco-terrain distribution, Terai belt held more than half of TB cases (59%) in the reporting year.

Figure 5.4.4: Notified TB cases (All forms) in rates and numbers by provinces for FY 2076/77



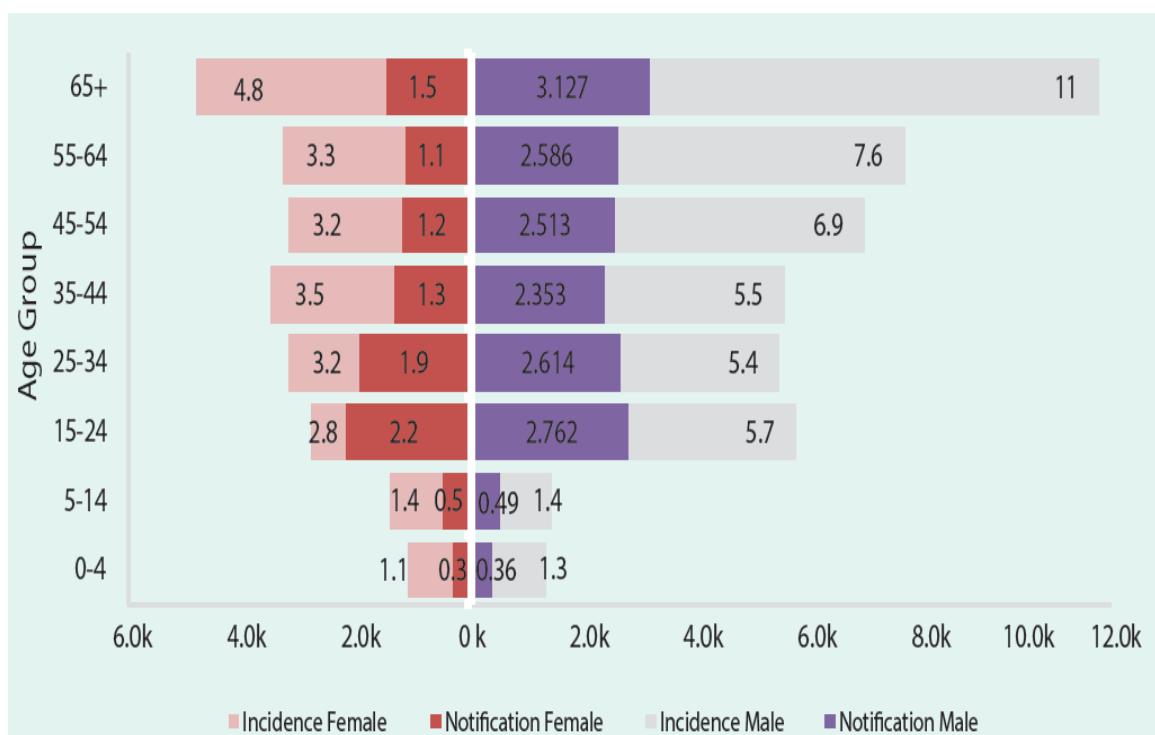
Source: HMIS/DOHS

Figure 5.4.4 shows the province-wise case notification rate. Lumbini province had the highest CNR (112 per 100,000 population) followed by Bagmati Province, Sudurpaschim Province, and Province 2 (103, 94, and 92 per 100,000 population) respectively. CNR was low at Karnali Province (69 per 100,000 population).

Distribution by age and sex

In FY 2076/77, around 6% of cases were registered as child TB cases while the remaining 94% were registered as adult TB. Among them, male TB cases were reported nearly 2 times more than female. Among the child TB cases, most of them (60%) were between (5-14) years of age group. In Nepal, the incidence notification gap is higher, with missing cases projected to be around 54% and especially higher among the elderly population where access to health services is still a big challenge. The estimated TB in children should not be less than 10-15%, hence NTP requires focusing on increasing the current (6%) 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.

Figure 5.4.5: Notified TB cases by age-group compared to the estimated incidence



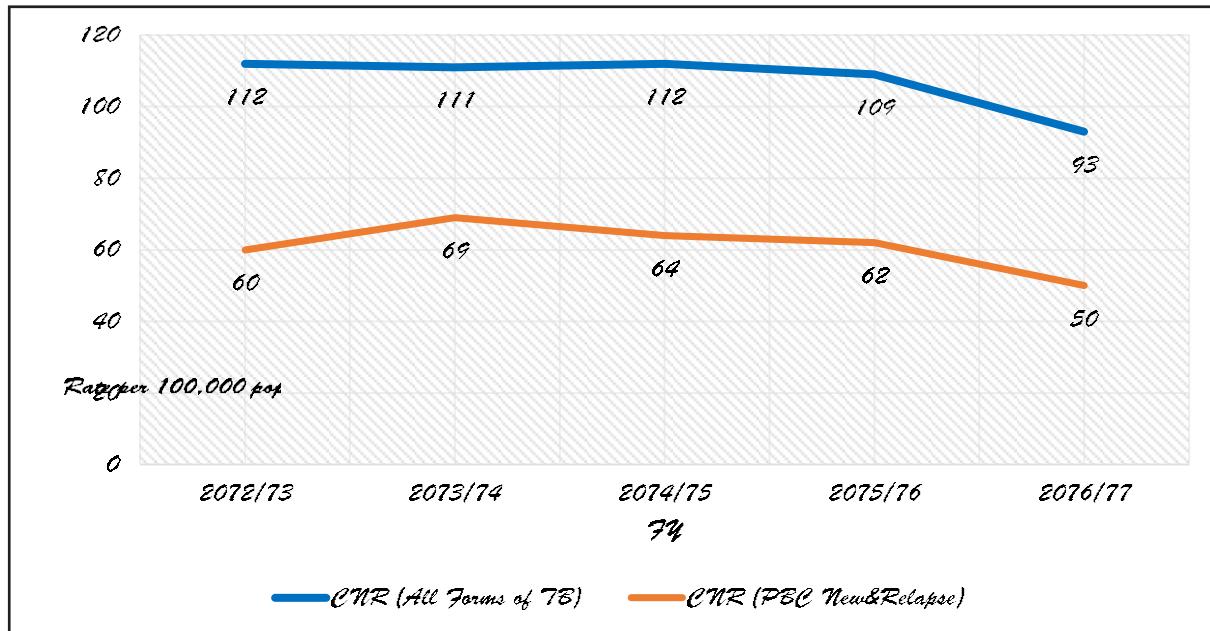
Source: NTP Factsheet 2076/77⁹

⁹https://nepalntp.gov.np/wp-content/uploads/2021/04/Factsheet_Final.pdf

Annual trends

Figure 5.4.6 shows the trend of TB cases notification from 2072/73 to 2076/77. It has decreased gradually from 112 per 100,000 population in 2072/73 to 93 per 100,000 population in 2076/77.

Figure 5.4.6: TB case notification rate (2072/73–2076/77)

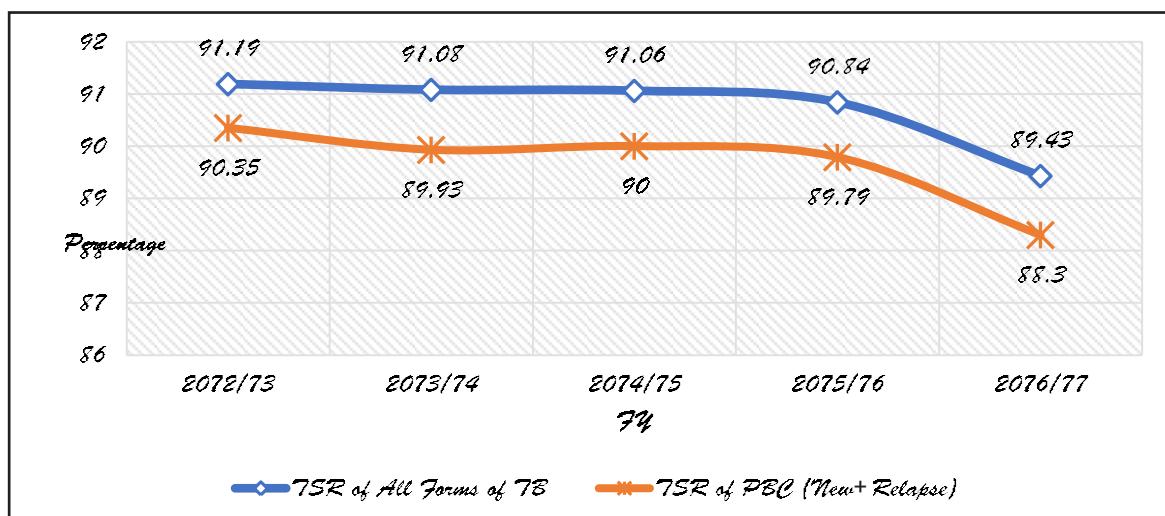


Source: HMIS/DOHS

Treatment outcomes

The trend of TB treatment success rates TB has been consistently above 90% since the last few years. But there is a decrease in the Treatment success rate (89%) in respect to previous years. The annual trend of TB treatment success rates at the national level for newer cases (New and Relapse) is also lower 88%, for this FY 2076/77 with respect to the previous year. However, the trend of success rates among the retreatment cases (Success, Failure, Loss to Follow-up and other previously treated) had been constantly lesser (in comparison to treatment success among newer cases).Figure 5.4.7

Figure 5.4.7: TB Treatment Success Rate (TSR) trend (FY 2072/73– FY 2076/77)



Source: HMIS/DOHS

Table 5.4.4 shows the treatment outcomes of the TB patients across different provinces. Among the 7 provinces, Province-2, Gandaki Province, and Lumbini Province have achieved the highest treatment success rate (i.e. 91%). The treatment failure rate was constant across all the provinces. Meanwhile, around 4% of registered TB patients died in Lumbini Province, Sudurpaschim province, and Karnali Province during TB treatment. Similarly, Sudurpaschim and Province-2 experienced a high loss to follow-up (around 4%) in comparison to other provinces.

Table 5.4.4: Province wise TB treatment outcomes (2076/77)

Province	Success %	Failure %	Died %	LFU %	Not Evaluated %
Province 1	90%	0.7%	2.7%	3.4%	3.3%
Province 2	91%	0.5%	3.2%	3.6%	1.7%
Bagmati Province	87%	1.0%	2.1%	3.0%	5.5%
Gandaki Province	91%	0.8%	3.4%	2.5%	2.5%
Lumbini province	91%	0.7%	4.8%	2.5%	1.3%
Karnali Province	86%	0.4%	3.8%	2.2%	7.9%
Sudurpaschim Province	88%	1.0%	4.5%	3.5%	2.6%
National Total	89%	0.7%	3.3%	3.1%	3.2%

Source: HMIS/DOHS

Impact of COVID-19 in TB case notification

As for other diseases, the COVID-19 pandemic had a significant impact on the TB program in the country. Immediately following the pandemic and the lockdown, NTP immediately formed a rapid response committee, intensified efforts to coordinate at all levels to make sure that TB drugs were stocks were maintained at all health facilities, and through the issue of intermediate guidelines made efforts for the continuation of TB treatment. Immediately following this, NTP conducted a rapid assessment of the TB program in May 2020, which showed that COVID did have an early impact on TB diagnosis, sputum courier, and follow up of those on treatment where it was also shown that prior effort did help in maintaining drug stocks and continuity to treatment. The details report on the rapid assessment can be accessed through <https://nepalntp.gov.np/wp-content/uploads/2021/02/Rapid-Assessment-Report-Feb2021.pdf>

The impact also is appreciated while comparing the case notification rate trend of previous years. Comparing just the 3rd trimester (April- July, which was when COVID had the most impact), there was a 33% decline to the case notification program previous year 2076/77.

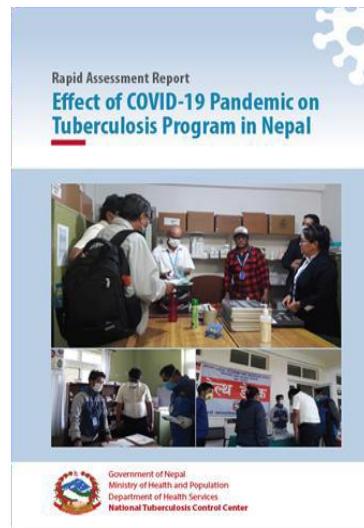


Figure 5.4.8: Impact of COVID-19 on TB case notification, FY 2076-



Source: HMIS/DOHS

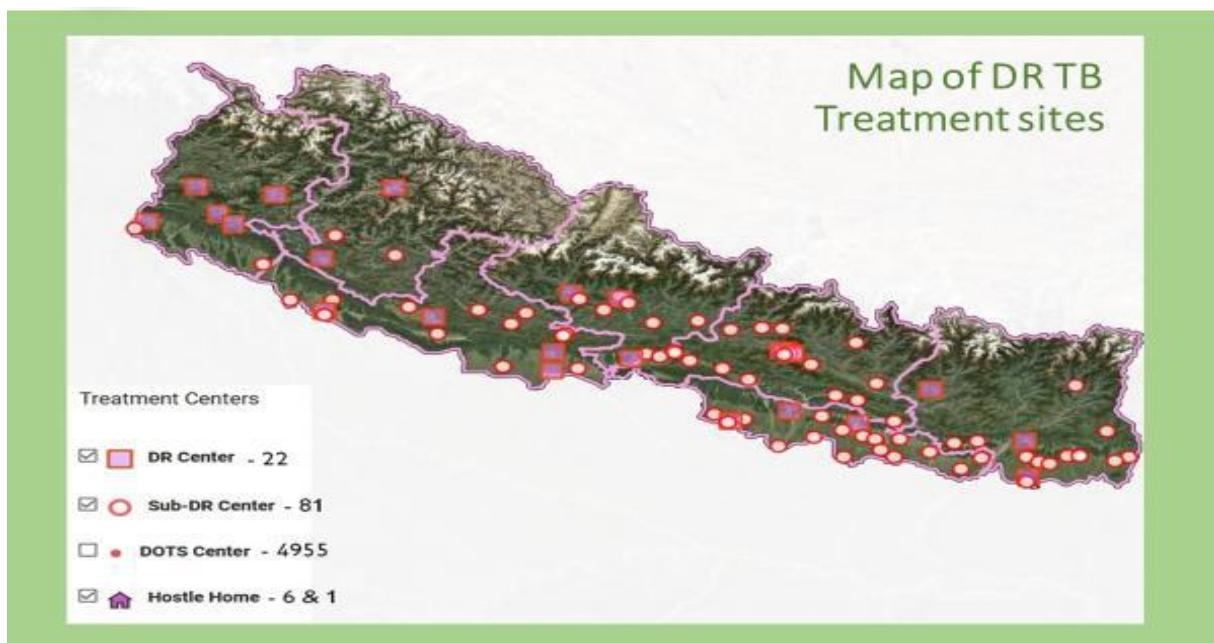
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As a component of health system strengthening and COVID response, in July 2020 in coordination with NPHL and under the guideline of DoHS and MoHP, NTCC also initiated and facilitate the testing of COVID samples using its genexpert platforms (from 7 different Genexpert sites throughout the country) using SARS COV-2 Xpert Xpress cartridges. The details (Figure 5.4.9) of the operation guidelines accessible at <http://nepalntp.gov.np/wp-content/uploads/2020/08/Operational-plan-for-Xpert-Xpress-SARSCOV-2.pdf>

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 resistanceTB nationally to detect and enroll more patients on multi-drug resistant (MDR) TB treatment, and to improve outcomes. The DR TB services are provided through different sites as shown in Figure 5.4.10

Figure 5.4.10: DR TB Treatment Sites



Burden of MDR-TB

A total of 384 RR/MDR-TB cases were registered for treatment in FY 2076/77. Among them, 78 cases (20%) were on treatment at DR centers of province 1, 74 cases (19%) at province 2, 67 cases (17%) at Bagmati province, 35 cases (9%) at Gandaki province, 75 cases (20%) at Lumbini Province, 4 Cases (1%) at Karnali Province and remaining 51 cases (13%) were on DR treatment at Sudurpaschim province respectively.

Figure 5.4.9: Operational guidelines on use of Xpert for COVID

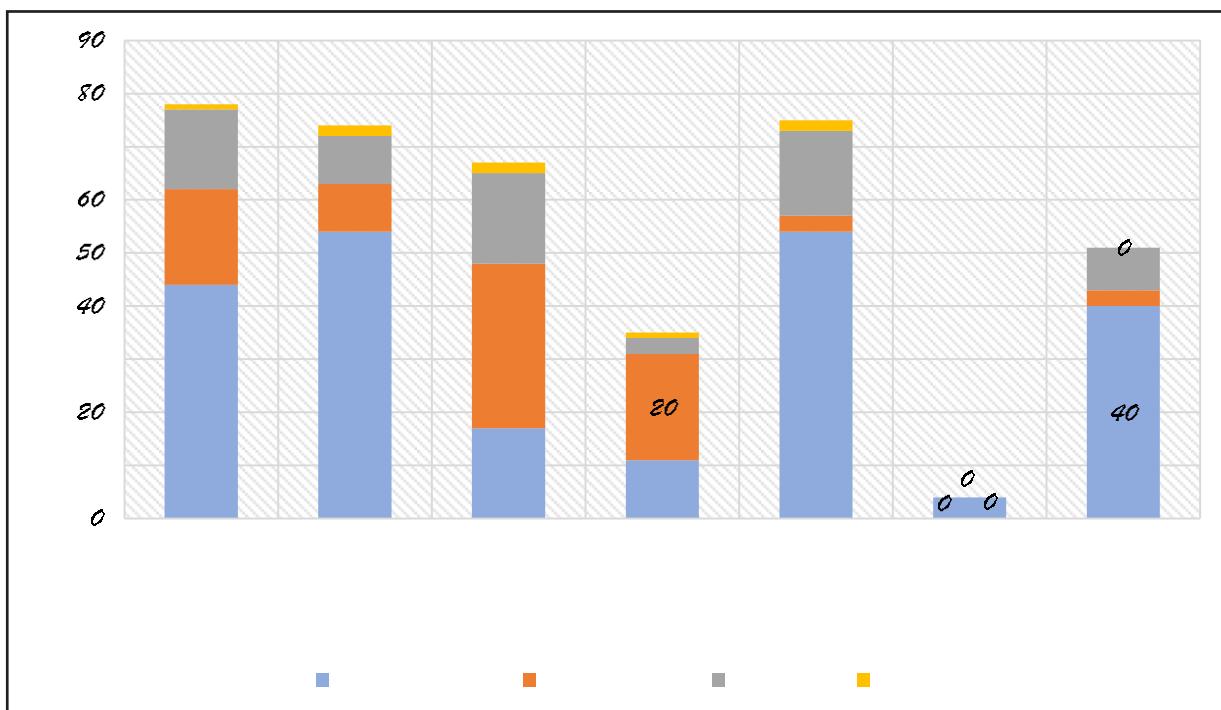


Case finding

The National DR TB Treatment Guideline defines three types of MDR-TB (RR TB, Pre-XDR TB, and XDR TB). Drug resistant forms of TB are detected through GeneXpert, Culture/DST, and LPA methods in Nepal. In this reporting period, 384 MDR TB cases were reported to have enrolled in the DR treatment. Where among the total MDR cases reported, 224 were registered under MDR (SSTR), 84 cases under MDR (LTR), 68 cases under Pre-XDR, and 8 cases were registered under XDR.

Figure 5.4.11 shows the burden of MDR TB across the different provinces in this fiscal year 2076/77. In terms of the number of RR/MDR TB patients notified, province 2 and Lumbini Province were found to have equal burden followed by Sudurpaschim province, Bagmati Province, province 1, and Karnali Province respectively. Similarly, the burden of Pre-XDR and XDR TB patients was found more at Bagmati Province followed by Lumbini Province, Province 1, province 2, Gandaki province, and Sudurpaschim province respectively.

Figure 5.4.11: MDR-TB cases notified by provinces

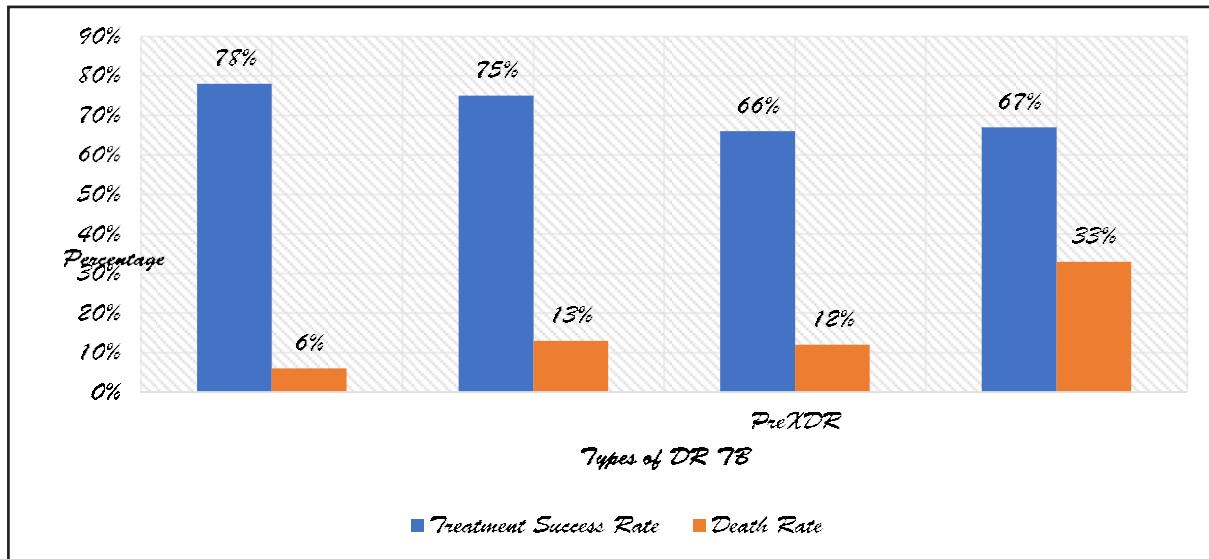


Source: NTPMIS

Treatment outcome

Figure 5.4.12 shows the treatment outcome of the DRTB case registered in NTP. The Treatment success rate of MDR TB has slightly increased to 75% in this reporting period from that of the previous year. But there was a fluctuation in the treatment success rate of MDR TB. The fluctuation in treatment success rate is mainly affected by the proportion of death as well as the holding of the MDR patients at treatment.

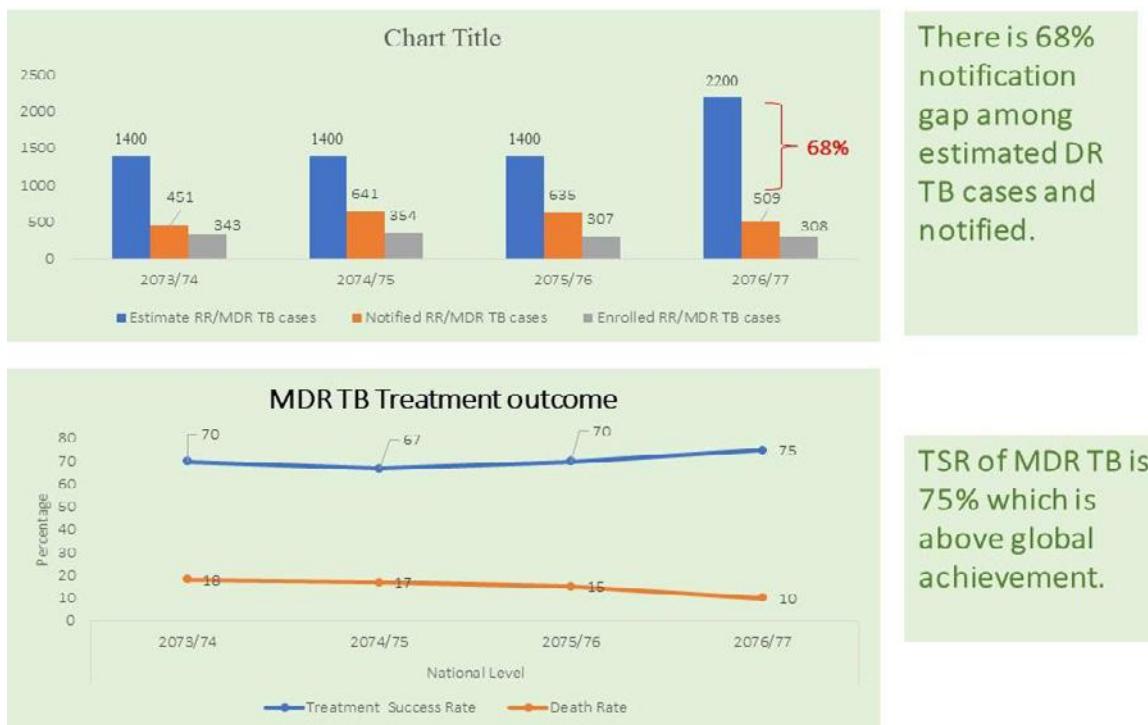
Figure 5.4.12: Percentages of Treatment outcomes of MDR TB cases



Source: NTPMIS

Based on revised burden estimates following the National TB prevalence survey 2018-19 and other current epidemiological and related data, the burden estimates for RR/MDR TB were also revised by WHO and published in the Global TB report for 2020. From previous yearly estimates of around 1400-5000 cases, the revised estimates were projected to be around 2200 annual incident DR TB cases. With this projection, the missing cases for RR/MDR TB are now estimated to be around 68% in FY 2076/77. Figure 5.4.13 Similarly, NTP has been successful in maintaining the higher treatment success rates for RR/MDR TB above 75%.

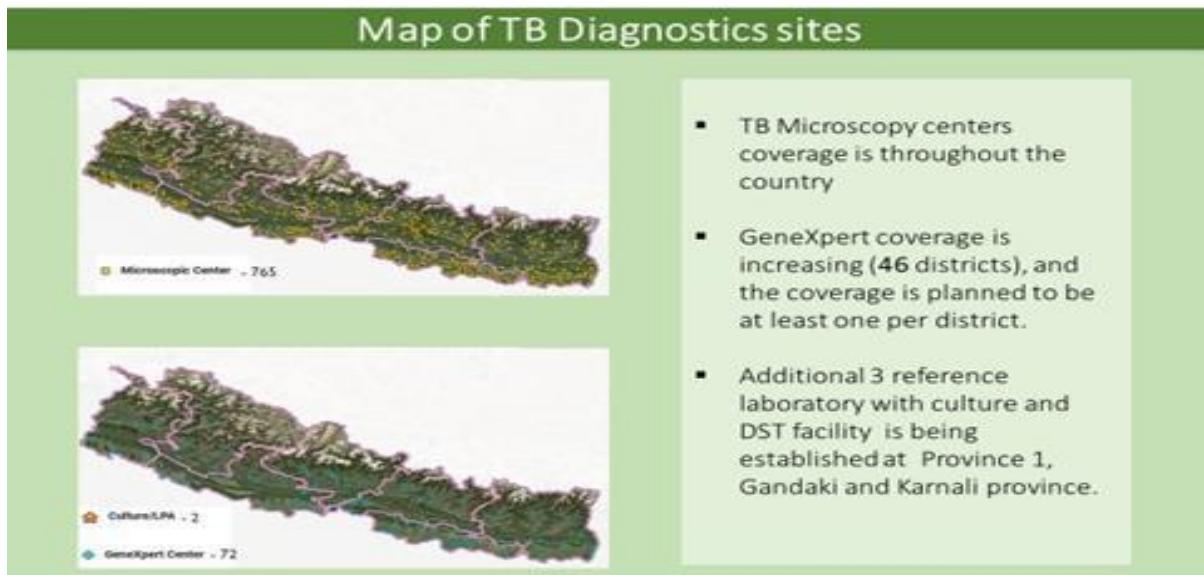
Figure 5.4.13: DR TB annual case finding and outcome trend



Source: NTPMIS

NTP'slaboratory network

Figure 5.4.14: Distribution of TB Diagnostic sites



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 government health facilities while a few are operated by NGOs and private institutions (Table 5.4.5 and Figure 5.4.14). There are well-established networks between the microscopy centres (MCs) at PHCCs, DHOs and DPHO, the five regional TB quality control centres (RTQCCs), and 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 the provincial structure for the external quality assurance of smear microscopy slides. The external quality assurance (EQA) for sputum microscopy is carried out by provincial health directorates (previously regional health directorates) at seven provinces and the National TB centre in Kathmandu.

Table 5.4.5: NTP laboratory network (no. of institutions) by province

Center	Province 1	Province 2	Bagmati	Gandaki	Lumbini province	Karnali	Sudurpaschim	Total
MC	102	114	142	88	151	36	132	765
GX sites	11	13	17	6	14	4	7	72

Source: NTPMIS

A lot of 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.

TB/HIV co-infection

In FY 2076/77, 51% (14104 out of 27232) of notified TB cases had documented HIV test results. Out of those with known HIV status, 0.9% (123 out of 14104) were HIV positive, and out of those positive, 92% (113 out of 123) were on ART. Table 5.4.6

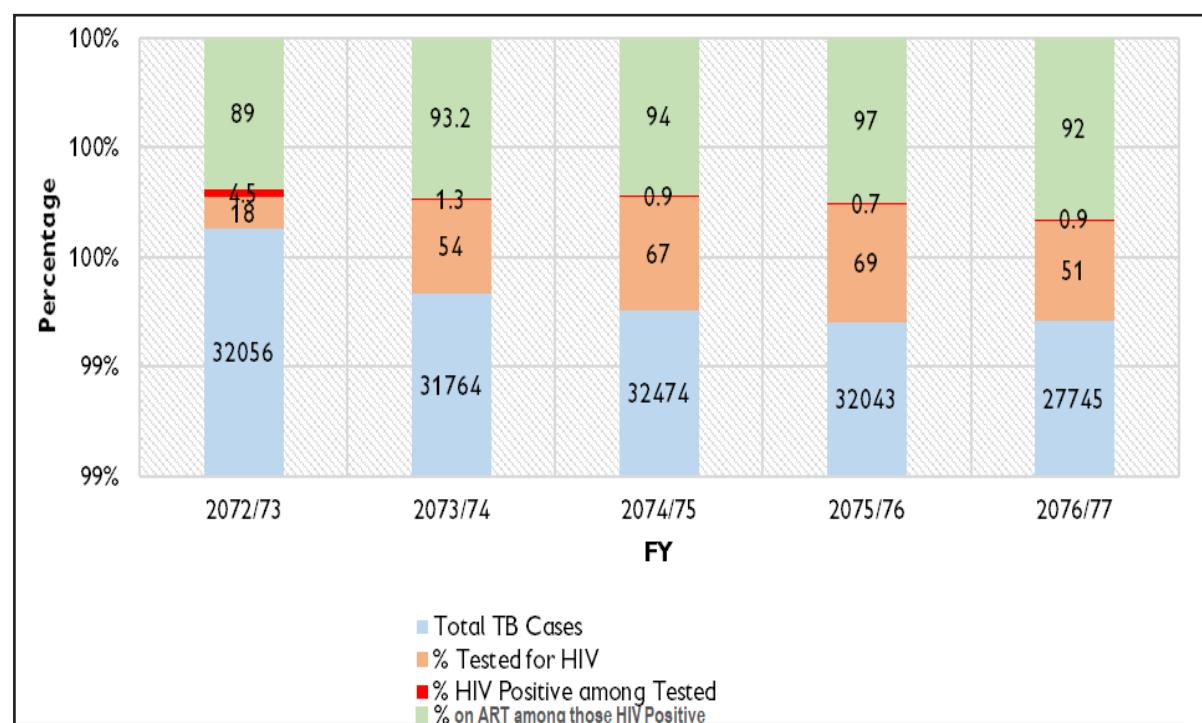
Table 5.4.6: TB-HIV burden

Estimates of TB burden, 2075/76 ¹	Number	Rate (per 100000 Population)
HIV positive TB incidence	490	1.7(1-2.6)
HIV negative TB mortality	17000	58 (32-92)
HIV positive TB mortality	220	0.77(0.45-1.2)
TB case notifications, 2076/77²		
Total new and relapse	27232	
% with known HIV status	51%	
TB/HIV care in new and relapse TB patients, 2076/77²		
Patients with known HIV-status who are HIV-positive	123	0.9%
on antiretroviral therapy	113	92%

¹ Global TB Report 2020, ² HMIS report

The testing proportion for HIV among TB patients has been increasing for the last few years but showed a significant decline for this FY to 51% while % on ART has also declined to just over 90% among those who tested positive for HIV. Figure 5.4.15

Figure 5.4.15: TB/HIV Co-infection screening and treatment status.



Source: HMIS/DOHS

The testing proportion for HIV among TB patients has been increasing for the last few years but showed a significant decline for this FY to 51% while % on ART has also declined to just over 90% among those who tested positive for HIV. Figure 5.4.15

Figure 5.4.15 shows the TB /HIV co-infection status. Out of the total screened for TB, 0.9% were diagnosed to have HIV. In those diagnosed with TB-HIV co-infection, 92% were enrolled in ART.

TB preventive therapy

Initiation of TBPT among children under 5 years old has been highlighted in the National Strategic Plan of TB, 2016-21, and NTP has been implementing TBPT among children under 5 years old, in 39 high burden districts of Nepal where contact tracing is being done. A total of 666 children aged under 5 years were reported to have been initiated in preventive treatment in this fiscal year.

Planning, Monitoring & Evaluation

National Tuberculosis Centre is responsible for formulating long and short terms strategies and plans to fight against Tuberculosis throughout the country Planning and implementation of the 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.

Data source for TB program review

The key data source for NTP is HMIS data. But, as a direction set in NSP to develop a e-case based data, NTP has invested to develop a NTP MIS database, which records individual case based data for each patients. The page can be accessed at <https://ntpmis.gov.np/>



Figure 5.4.16: NTPMIS Home Page

The NTP MIS system is an online platform, compatible with DHIS2 platform, which has the following components to it and their current status as detailed in Table 5.4.7

Table 5.4.7: Different components of NTP MIS and updates

No.	Components of NTP MIS	Description	Status in FY 2076/77
1	eTB register	Master eTB register is a web-based application being used for reporting TB patient registration, follow-up and outcome in central online database from existing paper-based tuberculosis register. This patient tracker software is developed to collect, manage and analyses transactional case-based data records. Master eTB has advanced features for data analytics, feedback mechanism, reporting, SMS integration and dashboard which lets user explore and bring meaning to raw data.	Orientation/training packages developed, and training has been initiated at national and provincial levels. Expected to start reporting form coming FY
2	eTB Register for Private Practitioners	eTB Register Module for Private Practitioners is a separate module developed for reporting TB patients from private sector and can be used to collect, manage and analyses data from these private sectors.	Reporting initiated
3	eTB PPM	It is an online web-based R&R tool to record/report presumptive TB patients at pharmacies who are then referred to designated doctors and hospitals for screening for TB. Similarly, this system is also able to capture the referral from communities to designated doctors/hospitals. This system not only tracks the referral and diagnosis of TB but also tracks the enrollment in TB treatment in DOTS Center. Hence, this R&R system tracks the presumptive TB referred from pharmacies and communities to diagnosis and enrollment in TB treatment.	The system is introduced in major six cities; Kathmandu, Lalitpur, Chitwan, Nepalganj, Biratnagar and Birgunj. Around 250 pharmacies were using the system during the period.
4	DRTB Patient Tracking and TB Laboratory System	DRTB Patient Tracking and TB Laboratory System is a Web-Based Management Information System developed using DHIS2 platform for effective management and monitoring of DR TB patients by taking their treatment stage and generate reports for MDR TB management program. This system also features the complete laboratory information system, including Microscopy, Culture/DST, GeneXpert, and LPA and provides SMS notifications to the	All DR TB sites and nearly 50 out of 72 GeneXpert sites have been using and reporting details through this mechanism.

		patients/DR Focal person of their test results and notification. As both DRTB Patient Tracking and TB Laboratory System are incorporated within the same system, a patient can be tracked with a single system ID within both systems.	
5	GX-MIS	Web-based real-time geneXoert machine functionality monitoring system that provides information regarding the functionality of genexpert machine and modules, so maintenance procedures can be carried out on time.	Functional and nearly 53 sites out of 72 sites linked to the system by FY 76/77

Supervision and monitoring

The supervision and monitoring of TB health care services are carried out by regular visits to all levels of the program (Figure 18). Also, the quarterly reporting of activities is carried out at trimester planning, monitoring, and evaluation (PME) workshops at all levels of the program.

The NTP regularly monitors case notification, smear conversion, treatment outcomes, and program management reports from all levels of the program. Data is initially analyzed 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 workshops take place every four months at the Local level province and national level.

Figure 5.4.17: NTP line supervision

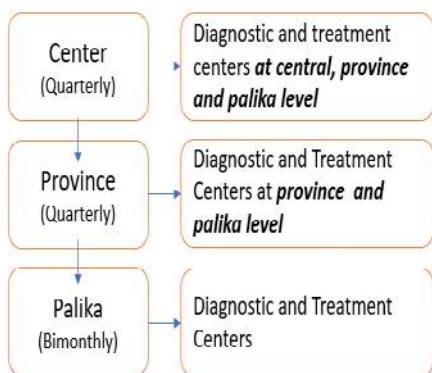


Figure 18: NTP review system



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. Prior to the procurement of Anti TB Drugs, forecasting and quantification are done considering all available data. NTC follows rules and regulations of PPMO to procure drugs from the 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 NTCC Store and stored by adopting proper storage methods. Drugs are supplied every 4 months to District Medical Store via Provincial Logistic

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Management Centere (PLMC) after receiving the order as a result of workshops in each Region. In the case of First-Line Drugs buffer of 4 months is added in the order while supplying but no such buffer quantity is given in the case of DR Drugs. Supply of DR drugs is done directly to DR Centers and to some DR Sub Centers.

Physical and Financial Progress status

In the Fiscal year 2076/77, The budget allocated for NTCC was 684.5 million NPR, among which NTCC made 66 % physical progress and 71% financial progress with a total of 487.33 million NPR used. Besides NTCC, the overall NTP budget including Local level and partner's support was nearly 1850 million NPR, with government funding was nearly 47%. Global Fund supports financial support to NTP.

Table 5.4.8: TB financing

TB financing, 2076/77	Funding Source	(NPR Million)
National TB budget	Nepal GoV:	869.71
	Global Fund	972.47
	WHO and other Partners	7.27

Source: NTP Fact Sheet 2076/77¹⁰

Partner of TB program

NTP has had collaborations and support from many different organizations. WHO had been a key technical partner to NTP, whereas Save the Children as a principal recipient of Global Fund Grant has been the key financial partner. There are partners like Damien Foundation, NATA who support in DR TB program to NTP and there are sub-recipient partners who support for Global Fund program implementation at the field level. The detail is provided in Table 5.4.9: Different partners of NTP

Table 5.4.9: Different partners of NTP

WHO	Key technical partners
The Global Fund (GF) with Save the Children (SCI)	Key financial partner including technical support
NATA, BNMT, BWSN, HERD, JANTRA, KIDS, NAPN, SS IOM	Key national partner to increase TB case notification
Damien Foundation, NATA/Genetup, TB Nepal	Key partners for diagnosis and management of DR TB

5.4.4 Progress, challenges, and way-forward

Key progress and major activities are undertaken in FY 2076/77

Revised and developed key guidelines based on the latest WHO recommendations.

- o National Tuberculosis Management Guidelines

https://nepalntp.gov.np/wp-content/uploads/2019/10/National-Tuberculosis-Management-Guidelines-2019_Nepal.pdf

¹⁰https://nepalntp.gov.np/wp-content/uploads/2021/04/Factsheet_Final.pdf

- Drug Resistant Tuberculosis Management
https://nepalntp.gov.np/wp-content/uploads/2019/10/DR-TB-Guidelines-2019_Nepal.pdf
- National PPM Guidelines
<https://nepalntp.gov.np/wp-content/uploads/2019/07/PPM-GUIDELINE-NEPALI-VERSION-FINAL-30-07-2019.pdf>
National TB-Sub recipient implementation guidelines
<https://nepalntp.gov.np/wp-content/uploads/2019/04/TB-SR-Implementation-Guideline-3rd-Edition-2075-76.pdf>

Carried out field implementation of National TB prevalence survey 2018-19 and disseminated key summary report.

http://nepalntp.gov.np/wp-content/uploads/2020/03/TBPS-Summary-Report_English_Final_21-March-2020_compressed.pdf

Continued uninterrupted support of quality TB drugs based on latest revised guidelines and with expansion of DOT center (573 more added in this FY, 4955 total) and DR TB centers (1 more DR TB Txcenters added, 22 total)

- Scaling up and strengthening of TB preventive therapy
- Introduction of TB isoniazid resistance TB (HrTB) treatment
- Introduction of SSTR for MDR/RR and newer drugs (Bedaquiline and Delamanid) for treatment of DR TB with the longer regimen.

Continued and scaled up quality diagnosis by:

- Expansion of Microscopy sites by 152 more sites than the previous year (i.e 756 MC in total)
- Expansion of Genexpert sites by 16 more sites than the previous year (i.e 72 Gx Sites in total)

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.

Development of NTP MIS e-case based online reporting software for data management including the rollout of DR TB Tracking and Laboratory System at all the DR and GX sites.

Continued TB services through a response plan and intermediate guidelines during COVID-19.

Strengthened cooperation between NGOs, bilateral aid agencies, and donors involved in the NTP.

Preparation initiated for the development of

- National Strategic Plan to END TB 2021/22-25/26 as a strategic direction for TB program in coming years.
- Global Fund Grant write-up for 2021-23, which is major donor support for TB program.

Coordinate and collaborate NTP activities with and HIV /AIDS programs.

Linkage of DOTS centres to Microscopic centre through courier.

Provided training to health personnel, Training medical doctors for childhood TB diagnosis.

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 program. Following are the key challenges and constraints faced by the NTP to reach the intended goals and targets of the program in the last fiscal year.

Challenges:

Accountability, prioritization, engagement, and investment in TB at all levels has been a key challenge.

Proper identification of community and private sectors and their meaningful engagement in the TB program is another challenge for the program.

Expansion, maintenance, and utilization of rapid diagnostic have been a key diagnostic challenge.

Nationwide scale-up of e-case based digitized case base surveillance.

Investment and incorporating effective infection control measures at all levels has been a challenge and so was the effective implementation of ACF.

Effective and functional collaboration with other health and non-health program is another key challenge.

Defaulter tracing and providing patient-friendly services including side effect management for DR TB is a key challenge.

aDSM management and scale-up

Recently, the continuation of TB services in the context of COVID has been another key challenge.

Way Forward

For immediate challenges for next FY are:

- Timely development/revision of key strategic guidelines (National Strategic Plan 21/22-25/26), securing increased domestic funding and partner's support (e.g. finalization of Global Fund grant 21-23), lab networking plan
- Data validation, report analysis, and report publication of National TB prevalence survey
- Capacity building and engagement of new management and health focal points at different levels for TB

For the long term, to achieve the end TB goals and targets envisioned by NTP

- Secure enough resources (Human resource and budget) for TB at all level
- Initiate and drive TB Free Initiatives
- All TB including Drug-resistance TB to be under UHC
- Make TB mandatorily notifiable
- Scale-up TB preventive treatment
- Identify, strengthen and support community organizations engagement in TB care and support including advocacy for human rights
- Include all TB patients and family in the Health insurance scheme
- Advocate to include TB in social protection and poverty alleviation support schemes.

Summary factsheet of National TB data

Table 5.4.10: Factsheet of annual TB data 2076/77

Estimates of TB burden, 2075/76 ¹		Number	Rate (per 100000 Population)	Drug-resistant TB care, 2076/77 ³	
Total TB incidence		68000	238 (141-359)	% of bacteriologically confirmed TB cases tested for rifampicin resistance	59%
HIV positive TB incidence		490	1.71 (1.2-2.6)	New cases	67%
MDR/RR-TB incidence		2200	7.6 (3.1-14)	Previously treated cases	MDR/RR-TB: 509, XDR-TB: 8
HIV negative TB mortality		17000	58 (32-92)	Laboratory-confirmed cases	MDR/RR-TB:376, XDR-TB: 8
HIV positive TB mortality		220	0.77 (0.45-1.2)	Patients started on treatment	315
Estimated proportion of TB cases with MDR/RR-TB, 2076/77 ¹				MDR/RR-TB cases tested for resistance to second-line drugs	
New cases			2.2% (1.1-3.6)	Treatment success rate and cohort size ²	
Previously treated cases			15% (9.6-22)	New and relapse cases registered in 2075/76	Success
TB case notifications, 2076/77 ²				89%	Cohort
Total new and relapse			27232	New and relapse cases registered in 2075/76	30,464
% tested with rapid diagnostics at time of diagnosis			57%	Previously treated cases, excluding relapse, registered in 2075/76	1,128
% with known HIV status			51%	MDR/RR-TB cases started on second-line treatment in 2074/75	328
% pulmonary			68%	XDR-TB cases started on second-line treatment in 2074/75	6
% bacteriologically confirmed			54%	75%	67%
% children aged 0-14 years			6.0%	TB preventive treatment, 2076/77 ³	
% women			37%	% of children (aged <5) household contacts of bacteriologically-confirmed TB cases on preventive treatment	89%
% men			63%	TB financing, 2076/77	
Total cases notified			27745	National TB budget	Funding Source (NPR Million)
Universal health coverage and social protection ¹				National TB budget	Nepal Gov: 869.71
TB treatment coverage (notified/estimated Incidence), 2075/76			46% (31-78)	Global Fund	972.47
TB patients facing catastrophic total costs				WHO and other Partners	7.27
TB Case fatality ratio (estimated mortality/estimated Incidence), 2075/76			26% (11-45)		
TB/HIV care in new and relapse TB patients, 2076/77 ²		Number	(%)		
Patients with known HIV-status who are HIV-positive		123	0.9%		
on antiretroviral therapy		113	92%		

Details and province-specific data can be assessed at http://nepalntp.gov.np/wp-content/uploads/2021/04/Factsheet_Final.pdf

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 Immunodeficiency 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 updated version: National Policy on Human Immunodeficiency Virus (HIV) and Sexually Transmitted Infections (STIs) in 2011. National HIV Strategic Plan 2016-2021 is launched to achieve ambitious global goals of 90-90-90. By July 2021, 90% of all people living with HIV (PLHIV) will know their HIV status, 90% of all people with diagnosed HIV infection will receive sustained antiretroviral therapy (ART), and 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. The trend of new infections is taking a descending trajectory, reaching its peak during 2002-2003. The epidemic that peaked in 2000 with almost 4,370 new cases in a calendar year has declined to 754 in 2020 (83% decrease). This decline is further accompanied by the decreasing trend of prevalence of HIV in Nepal, as shown in the figures below.

Figure 1.1: Trend of HIV prevalence among adult population (15-49 Year) 1985-2020

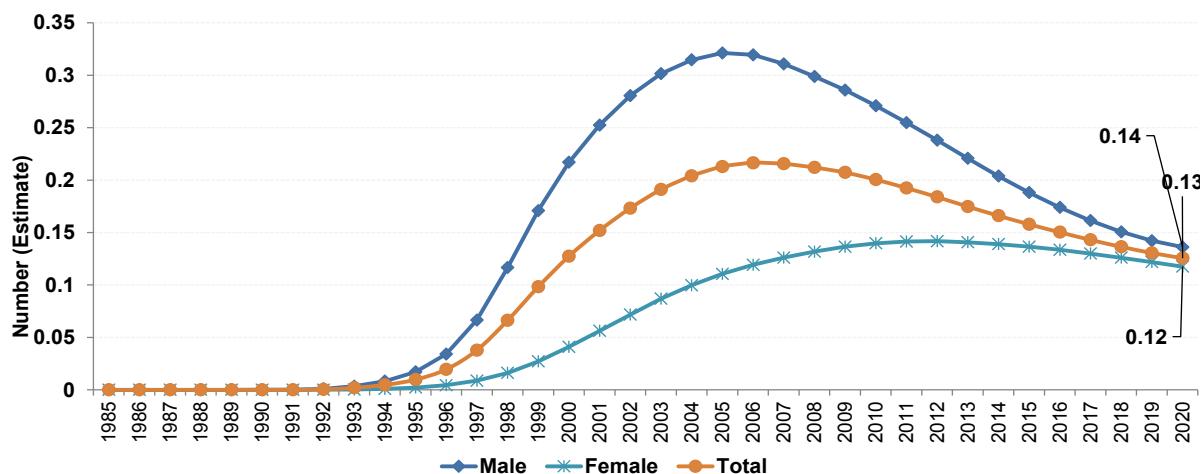
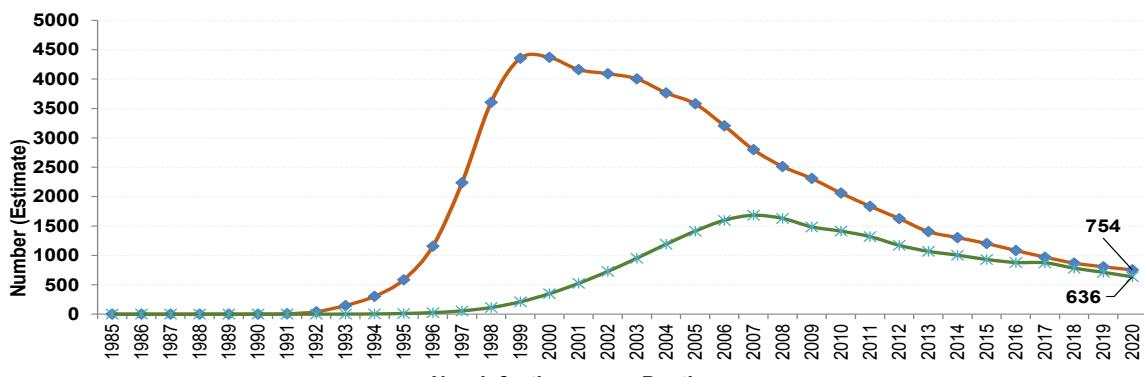
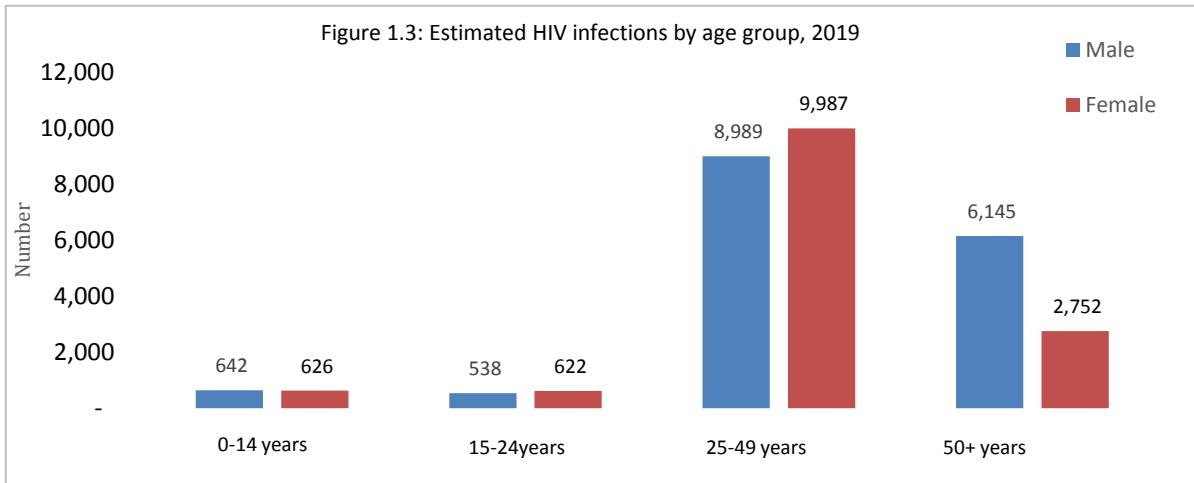


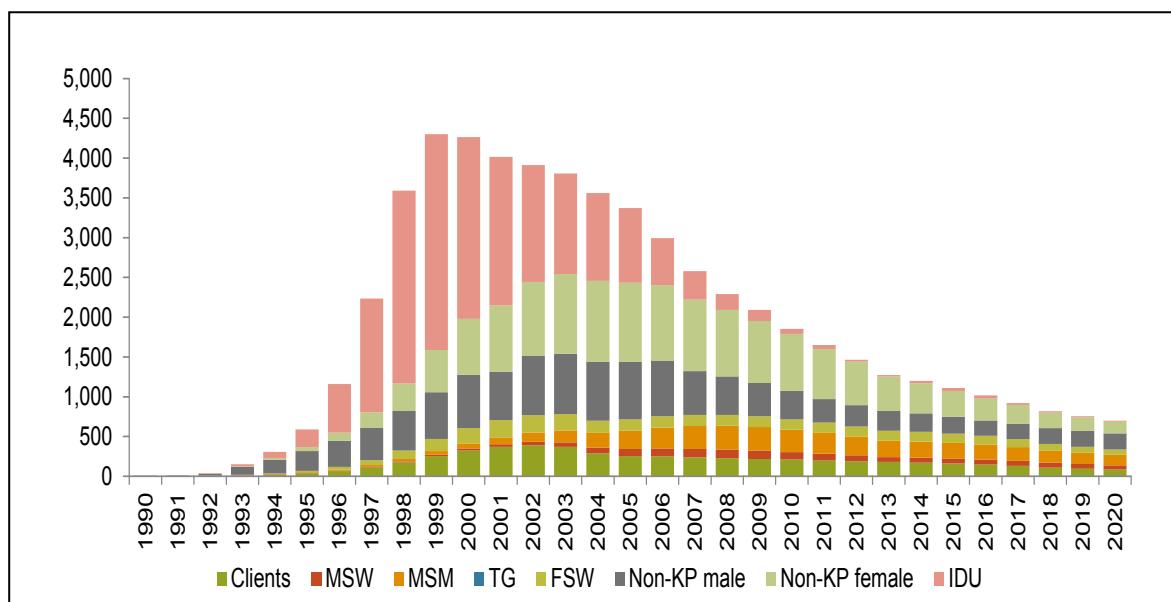
Figure 1.2: Trend of new HIV infections and deaths 2020 (1985-2020)





The adult HIV prevalence has dropped from 0.22% (highest level projected between 2005 and 2007) to 0.13% in 2020.

Figure 1.4: Annual HIV infections among adults (15+) by route of transmission: 1990-2020



Overall, the epidemic is primarily driven by a sexual transmission in Nepal. Making up 4.2% of the total estimated PLHIV (30,301), there are about 1,268 children aged up to 14 years who are living with HIV in Nepal in 2020, while the adults aged 15 years and above account for 95.8%. With an epidemic that has existed for more than two decades, there are 8,897 infections estimated among the population aged 50 years and above among the total estimated PLHIV. By sex, males account for two-thirds (53.8%) of the infections and 46.2% of total infections are in females.

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 contribution from IDU drastically declined over time.

Similarly, sub national HIV estimates of Nepal according to key population is reflected in table below.

Table 1.1 People living with HIV by key populations and Province, 2019.

Province	PWID	MSW	MSM	FSW	Migrants	Clients
Province I	184	65	154	74	609	401
Province 2	76	134	674	44	1063	386
Bagmati	335	254	908	201	998	917
Gandaki	76	75	117	25	846	127
Lumbini	227	155	535	134	1083	548
Karnali	5	4	16	3	219	12
Sudurpashchim	27	46	243	52	1868	137

PWID: People who Inject Drugs; MSW: Male Sex Workers; MSM: Men who have Sex with Men; FSW: Female Sex Workers

Civil societies have also played pivotal roles in the national response. Civil societies, through the empowerment of KPs, have been playing instrumental roles in prevention, treatment, care and support services as well as bringing about changes in legal and policy environment through advocacy.

External Development Partners (EDPs) 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), President's Emergency Plan for AIDS Relief (PEPFAR), United States Agency for International Development (USAID),The United Nations Children's Fund (UNICEF),World Health Organization (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

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 (by July 2021 for National HIV Strategic Plan) 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 July 2021. 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 the 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 Spectrum/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 federal, provincial and local 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 public-private partnerships be maintained, and 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 for ending the AIDS epidemic as a public health threat by 2030.

2.2 Policy related activities/highlights from FY 2076/77

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, 2020", National Consolidated Guidelines on Strategic Information of HIV Response, 2017, 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 and OST.

5.5.3 HIV Testing Services and STI Management

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 were merged as a comprehensive guideline on treating and preventing HIV in 2014. The Community-Based Testing (CBT) approach has also been initiated in key population and as suggested by National HIV Testing and Treatment Guidelines, 2020 Nepal is also moving forward to implement the Community-Led Testing (CLT) 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 are implemented in 60 districts. Similarly, targeted intervention program among MSM and TG, PWID and FSW are in 26, 27 and 19 districts respectively.

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 KPs on the basis of the National STI Case Management guideline which was developed in 1995 and revised in 2009 and 2014.

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 transmission 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 infections (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 HTS and STI services has been one of the key actions in the context of the concentrated epidemic of Nepal.

3.3 Progress and Achievement

HIV Testing Services

There are 185 HIV Testing and Counseling sites in Nepal that include 40 non-government sites and 145 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 four years is showed in Table 3.1.

Table 3.1: Service Statistics HIV Testing and Counseling for the period of BS 2073/074-2076/077

Indicators	2073/074	2074/075	2075/076	2076/077
Total tested for HIV	210,525	330,460	237,496	147,968
Total HIV Positive reported	1,854	2,152	2,298	2,416
Cumulative HIV reported cases	30,612	32,764	35,062	37,596

Source: HMIS and NCASC routine programme data.

The HIV testing is highest in Province Bagmati (42,227), and lowest in Karnali province (1,890) whereas the percentage of positivity yield is highest in Gandaki Province followed by Sudurpaschim Province. The province-wise detail is also shown in Table 3.2.

Table 3.2: Province wise Service Statistics HIV Testing and Counseling in 2076/77

Provinces	Tested for HIV	Positive reported	% of positivity yield
Province 1	19,094	229	1.2%
Province 2	22,872	432	1.9%
Bagmati	42,227	789	1.9%
Gandaki	9,678	238	2.5%
Lumbini	32,238	470	1.5%
Karnali	1,890	24	1.3%
Sudurpaschim	19,969	234	1.2%
Total	147,968	2,416	1.6%

Source: NCASC routine programme data/ HMIS

3.3 Key challenges/Issues and recommendations

Issues	Recommendations
Huge data gap is found in the HIV program especially the report from many sites (major private hospitals and NGOs) are yet to be covered in the electronic iHMIS system.	Training programs focusing on major non-reporting private hospitals and NGOs should be done by NCASC and iHMIS in order to ensure reporting to iHMIS. In addition to this, workshops to strengthen the capacity of data entry users of iHMIS at all levels is necessary for the updated, consistent and valid data reporting in iHMIS.
The Community-Based/Led HIV testing service among key population is mainly run through NGOs and iHMIS database system does not fully cover NGO setting. The reporting from the working NGO yet to be covered in the electronic HMIS system.	All the working NGOs must be enlisted in the iHMIS system. So that, the total testing numbers could be incorporated, into national system and national figure of testing can be generated from the iHMIS system.
Low HIV testing coverage among key populations (KPs) has been along-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 in Communities (TCC) approach with active monitoring should be in place. Provide testing facilities at transit points as well as destinations of migrant population.
Gap in HIV positivity coverage along with HIV testing coverage as per 90-90-90 target.	The number of HIV testing sites should be expanded in order to achieve 90-90-90 targets. Additionally, in response to loss to follow-up of HIV positive cases, referral linkage of HIV positive cases between Community Based Testing sites and HIV Testing Services should be strengthened to achieve the target for first 90.

5.5.4: Prevention of Mother to Child Transmission of HIV for elimination of vertical transmission (eVT)

4.1 Introduction

Nepal started its Prevention of Mother to Child Transmission (PMTCT) program in February 2005 with setting up three sites at 1) B. P. Koirala Institute of Health Science (BPKIHS), Dharan; 2) Maternity Hospital, Kathmandu and; 3) Bheri Hospital, Banke. In early 2007, the NCASC and UNICEF undertook an operational Review of the pilot PMTCT programme. The review made following recommendation: integration of PMTCT activities with community-based maternal and neonatal health services; increase the involvement of Female Community Health Volunteers (FCHVs) and other community-based health workers in “Prong 1: Prevent HIV infection in women of reproductive age” and “Prong 2 : Prevent unintended pregnancy in HIV-positive women” activities, and referral for “Prong 3: Prevent mother-to-child transmission of HIV” and “Prong 4: Provide care, treatment and support to HIV-infected parents, infants and families” services; involve local implementing partners and civil society organisations in managing and supporting PMTCT services, and strengthen the role of the NCASC in overall programme management and governance. Community-based PMTCT programs were initiated in several districts in Nepal beginning in 2009, based on recommendations from the 2007 PMTCT National Review and the knowledge that current facility-only based PMTCT models were not reaching the majority of pregnant HIV infected women in the county and made several important recommendations notably, train and utilize female community health volunteers (FCHV) and other community-level workers to raise awareness on HIV and PMTCT and educated pregnant mothers on the need to test for HIV in pregnancy; decentralize HIV testing of ANC mothers to lower-level health facilities; Make some antiretroviral (ARVs) available at lower-level health facilities for decentralization of PMTCT services and enable women to “take-home” ARVs for themselves and their babies to use at the time of labour and delivery, in the circumstances where they are unable to reach a PMTCT site for delivery.

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, 2020. Human resources, especially from maternal and child health care, have been trained in alignment with PMTCT services. 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.

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 July 2021. In the cognizance of existing testing coverage (51.2%) against total annual estimated pregnancies in 2076/077 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 Welfare Division (FWD). The National Strategy has structured the PMTCT programme around the following comprehensive and integrated four-prong approach:

- i. Primary prevention of HIV transmission
- ii. Prevention of unintended pregnancies among women living with HIV
- iii. Prevention of HIV transmission from women living with HIV to their children, and
- iv. 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 birth and within 6 weeks and
 Referrals to comprehensive treatment, care and social support for mothers and families with HIV infection.

The PMTCT service in Nepal has been integrated into maternal and neonatal health services since 2009 in the districts with CB-PMTCT services and the program has been expanded in all 77 districts of Nepal where HIV screening and counseling is done among women during ANC visit at the health facilities. With the collaboration of the health 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. 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 key populations targeted intervention, Family Planning, sexual and reproductive health and counseling services.

4.3 Progress and Achievement

Pursuant to its commitment to eliminate vertical transmission of HIV among children by 2021, Nepal has scaled up its 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 (51.2%) against the estimated pregnancies. The four-year trend of service statistics is shown in Table 4.1.

Table 4.1: Service Statistics on PMTCT in Nepal for the period of BS 2073/74-2076/77

Indicators	2073/74	2074/75	2075/76	2076/77
Tested for HIV (ANC &Labour)	382,887	439,225	440,709	386,215
HIV Positive Pregnant women	128	70	79	57
Total Deliveries by HIV +ve mothers	126	127	129	110
Mothers received ART	175	158	133	104
Babies received prophylaxis	112	123	130	108

Source: HMIS and NCASC routine programme data.

The HIV testing among pregnant women is higher in Province Bagmati (103,422) and Province Lumbini (74,396) whereas the percentage of positivity yield among pregnant women is higher in Province Gandaki, than national average. The province-wise detail is also shown in Table 4.2.

Table 4.2: Province wise Service Statistics on PMTCT in Nepal 2076/77

Provinces	Pregnant women tested for HIV	Positive pregnant women identified	Positivity Yield (%)
Province 1	39,213	5	0.01275
Province 2	60,656	4	0.00659
Bagmati	103,422	21	0.02031
Gandaki	41,857	9	0.02150
Lumbini	74,396	16	0.02016
Karnali	23,225	1	0.00431
Sudurpaschim	43,446	1	0.00230
Total	386,215	57	0.01476

Source: HMIS and NCASC routine programme data.

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.

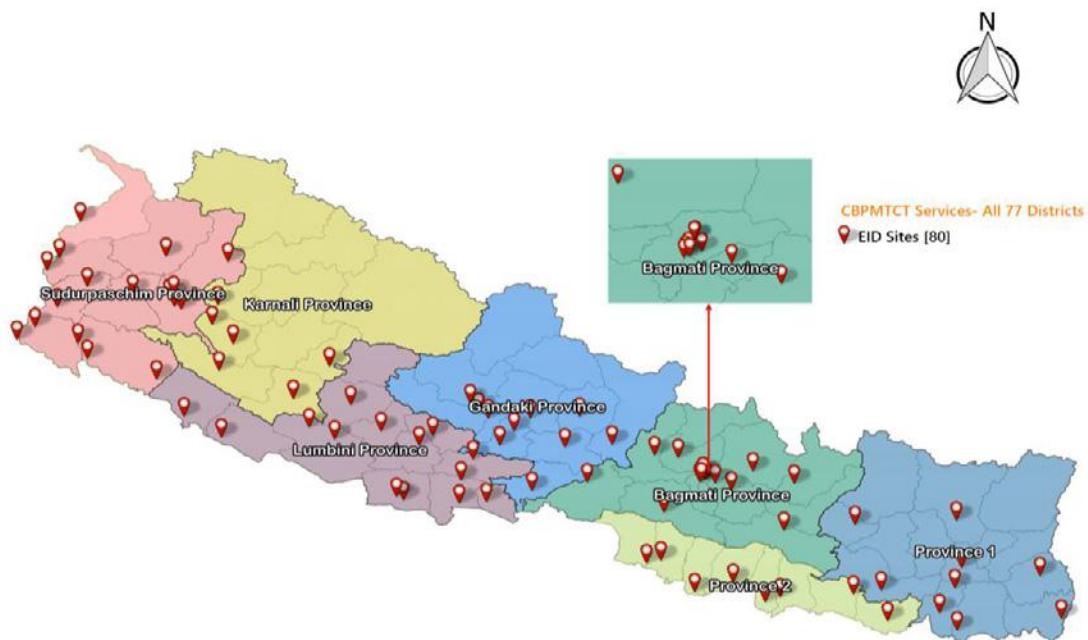
Early Infant Diagnosis (EID)

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 increased within two months of birth (6.4% in 2014 to 76% in 2019 July) in last five 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 2020, and implementation of EID testing at birth, by the end of 2017 the EID testing within 2 months of age increased. However, still, 24 % of EID cases are being reached after 2 months of age due to home delivery, diagnosis of HIV mother during the post-natal period and breastfeeding with the support of trained lab personnel at the site.

Table 4.3. EID Service Statistics in Nepal

Indicators	2073/74	2074/75	2075/76	2076/77
Tested (within 2 months)	99	204	243	182
HIV Positive (Within 2 months)	5	12	12	6
Tested (within 2-18 months)	56	106	64	57
HIV Positive (Within 2-18 months)	9	16	12	11

Figure 4.1: CB PMTCT districts and EID Sites



4.4 Key challenges/Issues and recommendations

Issues	Recommendations
Tracking of HIV-positive mothers and exposed baby for EID.	Tracking of HIV positive mothers and baby started using HIV Care and ART Tracking (DHIS2 Tracker, m Health and Biometric) system. All the ART sites are recording their status in DHIS2 Tracker.
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 Province and centre.	Frequent monitoring visit should be performed to intensify the services at birthing centre and beyond birthing centre.

5.5.5 HIV Treatment, Care and Support Services

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).

The National Centre for AIDS and STD Control (NCASC) has adopted the WHO “Treat All” policy since the revision of the national HIV testing and treatment guidelines in 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.

5.2 Progress and Achievement

By the end of 2020, out of 25,214 PLHIV, only 19,827 of them were on ART. Among the total tested individuals (10,657) almost 90.8% (9,680) of PLHIV were with their viral load suppressed. Over the years, there have been gradual increases in the number of people enrolling themselves on ART as well as receiving ARVs.

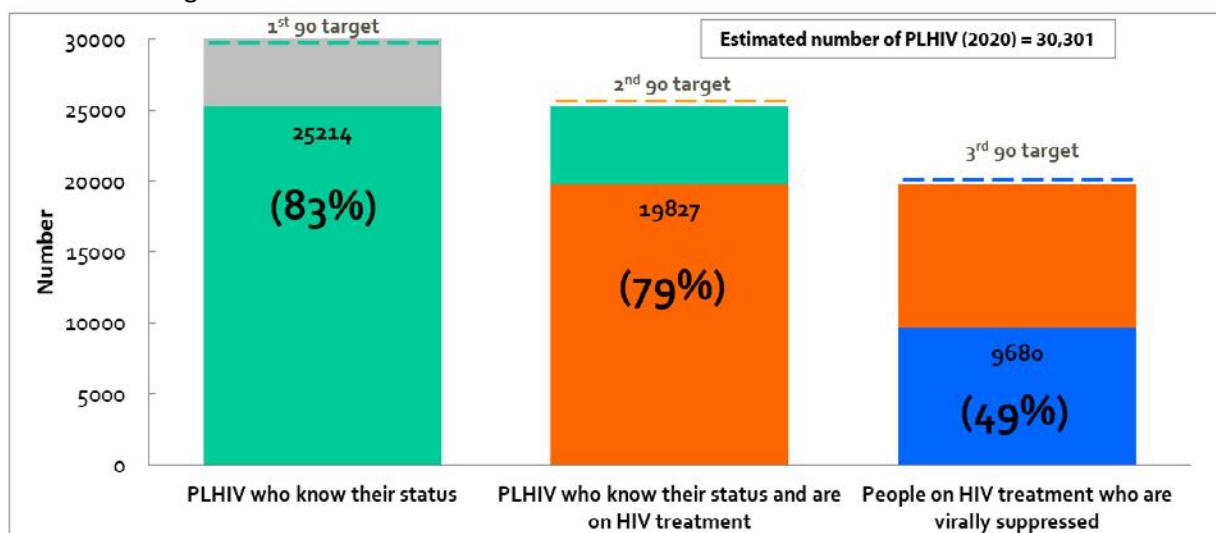
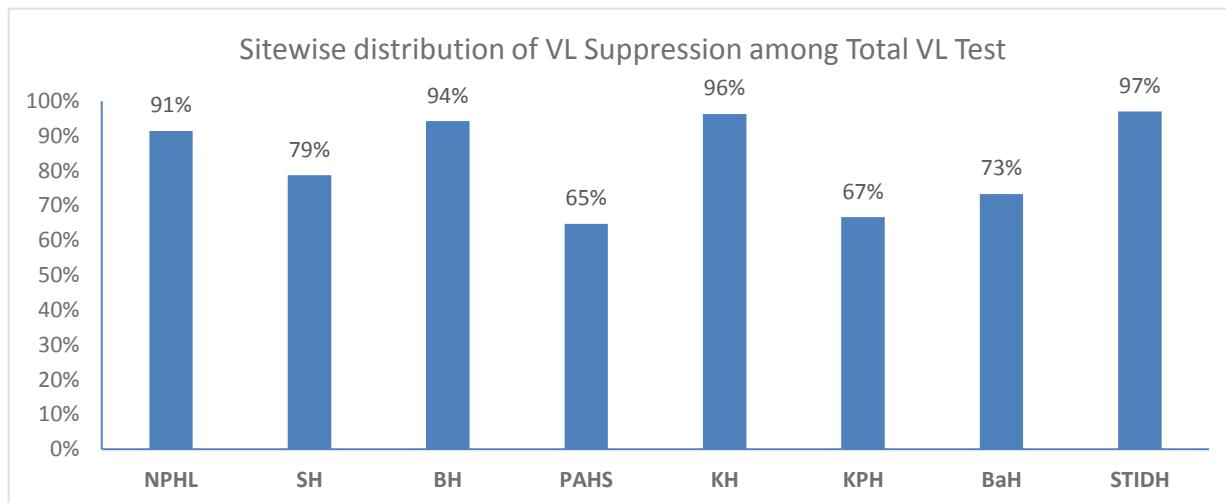


Figure 5.1 HIV Treatment Cascade in Nepal, 2020

The total cumulative number of PLHIV receiving ART by the end of the fiscal year 2076/77 has reached the figure of 19,211 (FY 2076/077).

Out of those who are currently on ART, 93.5% are adults and remaining 6.5% are children, while male population makes 51.4%, female population 47.7%, and remaining 0.9% are of the third gender.

Figure 5.2 Proportion of Viral Load (VL) Suppression among Total VL Tests according to test sites.

Note: NPHL: National Public Health Laboratory, SH: Seti Hospital, BH: Bir Hospital, PAHS: Pokhara Academy of Health Sciences, KH: Koshi Hospital, KPH: Karnali Provincial Hospital, BaH: Bayalpata Hospital, STIDH: Sukraraj Tropical and Infectious Disease Hospital.

Among total 13,961 individual's VL tests conducted in 2019, NPHL conducted 9404 tests with 8599 (91%) suppressed results, Seti Hospital Conducted 2969 with 2337 (79%) suppressed results, Bir Hospital conducted 312 with 294 (94%) suppressed results, PAHS conducted 315 with 204 (65%) suppressed results, Koshi Hospital conducted 54 with 52 (96%) suppressed results, Karnali Provincial Hospital conducted 6 with 4 (67%) suppressed results, Bayalpata Hospital conducted 30 with 22 (73%) suppressed results and STIDH conducted 871 with 845 (97%) suppressed results. (Figure 5.2).

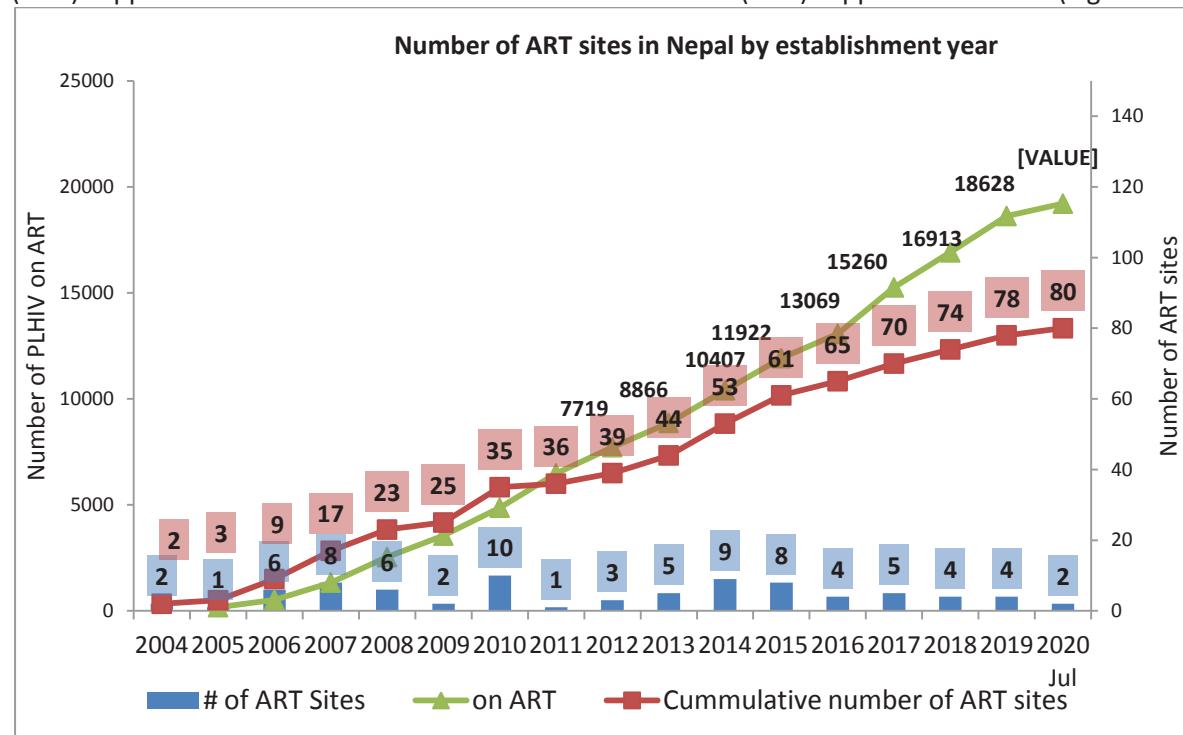


Figure 5.3 Trend of PLHIV on ART and number of ART sites.

The above figure shows the trend of PLHIV on ART and establishment of new ART sites per year.

Table 5.1: ART Profile of the period of FY2073/74-FY 2076/77*

Indicators	2073/74	2074/75	2075/76	2076/77
People living with HIV ever enrolled on ART (cumulative)	19,388	22,048	24,423	26,563
People with advanced HIV infection receiving ARVs (cumulative)	14,544	16,428	17,987	19,211
People lost to follow up (cumulative)	2,049	2,388	2,679	3,337
People stopped treatment	25	22	25	17
Total deaths (cumulative)	2,770	3,201	3,617	3,998

Source: HMIS and routine programme data NCASC. *Excluding transfer out numbers.

The number of people on ART is higher in Bagmati Province (5,167) and Lumbini Province(3,618).

The province wise tails are also shown in Table 5.2

Table 5.2: Province wise people on ART FY 2076/77

Province	People on ART
Province 1	1,680
Province 2	2,529
Bagmati	5,167
Gandaki	2,340
Lumbini	3,618
Karnali	601
Sudurpaschim	3,276
Total	19,211

Source: HMIS and routine programme data NCASC.

There are total 80 ART sites across 61 districts till the end of the fiscal year 2076/77 and it shows that 15% of those ever enrolled on ART died and 13% have been lost to follow-up, while 72% are alive and on treatment.

With the aim of supplementing the ART management program, CD4 counts testing service are available on 33 different sites in 27 districts. 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 Kathmandu, Seti Hospital Kailali, Sukraraj Tropical and Infectious Disease Hospital Kathmandu, Bir Hospital Kathmandu, Pokhara Academy of Health Sciences Pokhara, Koshi Hospital Morang and two sites; Karnali Provincial Hospital Surkhet and Bayalpata Hospital Achham using GeneXpert Machine offer viral load test service to the people on ART treatment.

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 2076/77, total 10,816 has received CHBC services from 57 covering districts (Table 8). In the same context 56 districts have CCCs across the country which has been delivering their services to PLHIV (Table 5.3).

Table 5.3: Service Statistics on CHBC Services in Nepal, as of the end of FY 2076/77

Indicators	Numbers
Number of PLHIV (new and old) received CHBC services	10,816
Number of PLHIV (new) received CHBC services	1,924

Source: Different Partner Routine Programme Data.

Table 5.4: Service Statistics on CCC Services in Nepal as of the end of FY 2076/77

Indicators	Numbers
Number of new PLHIV receiving services from CCC	2,103
Number of PLHIV receiving Follow-up services from CCC	7,223
Number of PLHIV admitted to CCC to start ART	2,807
Number of PLHIV received counselling service	7,223

Source: Different Partner Routine Programme Data.

5.5 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.
Financial support for treating other comorbidities	The PLHIVs face financial problems to treat other comorbidities. All the implementing agencies working for national HIV programme should also prioritize investment to support such clients (support to pay for medical care and treatment). Government also prioritized such PLHIV by enrolling them in insurance free of cost.
Expansion of ART dispensing sites	Capacitating and strengthening of ART dispensing centres (ADC) sites to ART is necessary for additional support to increase PLHIV treatment coverage (Second 90).
Not all sites are reporting HIV prevention, CCC, CHBC data to national IHIMS.	NCASC in close coordination with iHIMS of Management Division has already started integration of HIV prevention, care and support services to national IHIMS.

5.5.6 Strengthening Strategic Information of National HIV Programme

To overcome the challenges of the aggregated data reported to national system, National Center for AIDS & STD Control (NCASC) has developed and rolled out HIV Care and ART Tracking System (also known as DHIS2 Tracker) to generate real-time data for an informed HIV response in the country. The existing recording and reporting (R&R) system was exclusively based on paper-based system, which did not provide the individual-level data at National level. HIV Care and ART Tracking System has three interlinked systems: namely DHIS2 Tracker, mHealth and Biometrics. Since 2017, DHIS2 Tracker has undergone series of development; from piloting to full-phase National Implementation at all ART sites through-out the country to record the HIV testing and treatment details of the clients. There have been many learnings and findings from the implementation of DHIS2 Tracker categorized as follows:

DHIS2 Tracker: DHIS2 Tracker keeps records of all personal information of clients for HIV testing and counselling services, medical History of client, Anti-Retroviral Therapy (ART) and Follow-ups, Prevention of Mother to Child Transmission (PMTCT), Early Infant Diagnosis (EID), and

Discontinuation of Follow-up to services from 81 ART sites operational in 61 districts of Nepal. Once the client is registered in the system, all the related information is entered during their treatment process, and it can be retrieved from the system at any time. The primary purpose of this system is to record all the information of clients in real time so that the information can be accessed whenever required for their treatment and effective implementation of the HIV related programs. Additionally, this system also ensures easy transfer of client information and facilitates referral of clients to other sites. This system is inter-linked with Biometric System for scanning the fingerprint of clients, which makes it easier to trigger the duplication and makes transferring of clients easier. Till date, 32294 PLHIV ever enrolled in treatment and 20709 PLHIV on ART data available from the system. However, few sites are experiencing problem related to internet speed to ensure full functionality of DHIS2 Tracker system. NCASC has developed a YouTube channel to make sure that users can (<https://www.youtube.com/channel/UCO3Dq5vnPPSYxGb9qEhq2hA>) understand and use the information system (HIV Care and ART Tracking system) more effectively in a situation where in-person training is not possible due to COVID-19.

As a priority of NCASC and IHIMS section of Management Division, sites can generate monthly ART report from HIV Care and ART Tracking System and upload it into the aggregated DHIS2 system of national IHMIS. As the platform of DHIS2 Tracker System and National Reporting System are same; the individual-level data of clients can be generated as a monthly ART report in National IHMIS reporting formats. The report generated from this system can be imported directly into IHMIS; which will help in the reduction of typos in data entry and will also help in timely reporting from ART sites.

mHealth (Mobile Health): mHealth aims to support HIV treatment and improve retention in treatment. Till date, 5873 PLHIV are enrolled and benefited with mHealth services through all 81 sites of the country. mHealth system consists of automated and manual push SMS methods to send frequent and timely messages to the clients for appointment reminder and general awareness messages. In an essence, various routine and scheduled service and awareness related messages, as well as messages targeted to mother and their babies have contributed to the increased adherence of clients to the services and sites, hence conclusively increasing their retention on the HIV Care and Treatment services. However, health workers frequently need to update the mobile number of PLHIV into the system as certain group of PLHIV frequently change their mobile number.

Biometrics: Currently, biometric system is used if the clients are confirmed to be HIV positive or enrolled in HIV care. This system registers new clients in HIV Care and ART Tracking System with a unique identification code (alphanumeric code). It identifies whether the client is registered in another ART center of Nepal. In other words, it ultimately helped to solve the issue of client duplication. With the use of a unique identification code, it facilitated the user to search and view old records of clients and helped to facilitate treatment plan. The system also made easier to assess the clients who are transferred out between sites and districts. Currently, the biometric info of 11989 PLHIV recorded in the system and still system need to record biometric info of remaining PLHIV who are enrolled in ART.

The lesson learnt from this system is also used by different partners to integrate the recording and reporting of individual level data of HIV prevention, care and support component into the national HIV programme. NCASC also prioritizing the integration of components managed by different implementing agencies or partners (INGOs, NGOs) such as HIV prevention, testing, care and support services into existing information system of NCASC with an aim to ensure real time generation of data throughout the HIV Care Cascade.

5.5.7 Integrated Biological and Behavioral Surveillance (IBBS) Survey

Nepal has been conducting HIV and STI surveillance particularly among key populations, namely: people who inject drugs, FSW and their clients, MSM and TG, and Male Labor Migrants for more than a decade mainly to track changes in HIV and STI prevalence along with behavioral components such as condom use etc. Hepatitis-B and C screening among PWID have been started in the IBBS surveys from 2015. From this year, national-level surveillance survey is planned among people who inject drugs and male labor migrants. The table below depicts HIV prevalence according to the survey population (Table 6.1).

Table 6.1 HIV prevalence according to survey population.

Survey Population	HIV Prevalence	Survey Location
Female Sex Workers	0.7	22 Highway Districts 2018
Male Labor Migrants	0.3	Eastern Districts 2018
MSM and TG	8.2	Terai Highway 2018
Wives of Migrants	0.5	Far-West Districts 2018

Source: Integrated Bio-Behavioural Surveillance (IBBS) Survey, 2018.

6.1 HIV Co-infection

Because of the shared modes of transmission of Hepatitis B virus (HBV), Hepatitis C virus (HCV) and HIV, people at risk for HIV infection are also at risk for HBV and HCV infection. HIV-positive persons who become infected with HBV or HCV are at increased risk for developing chronic hepatitis. In addition, persons who are co-infected with HIV and hepatitis can have serious medical complications, including an increased risk for liver-related morbidity and mortality.

TB is the most common illness among people living with HIV. Fatal if undetected or untreated, TB is the leading cause of death among people with HIV, responsible for nearly 1 in 3 HIV-associated deaths. Early detection of TB and prompt linkage to TB treatment and ART can prevent these deaths. TB screening offered routinely at ART sites, and routine HIV testing is also offered to all patients with presumptive and diagnosed TB. TB preventive therapy should be offered to all people living with HIV who do not have active TB in Nepal. In 2018, the total proportion of PLHIV having TB among newly enrolled in HIV care in Nepal accounts for 12.8%.

Table 6.2 Hepatitis Prevalence and HIV, HBV, HCV co-infection among People who Inject Drugs in 2017

Survey Location	Hep B	Hep C	Coinfection (Hep C & HIV)
PWID-Male			
Eastern Terai	0.8	38.0	2.5
Western to Far Western Terai	2.7	24.0	3.7
Pokhara	2.6	22.0	3.8
Kathmandu Valley	1.0	21.0	7.4
PWID-Female			
Pokhara	1.3	3.0	0.6

5.5.8 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 7.1) 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 (Figure 7.1).

Figure 7.1: HIV epidemic zones in Nepal

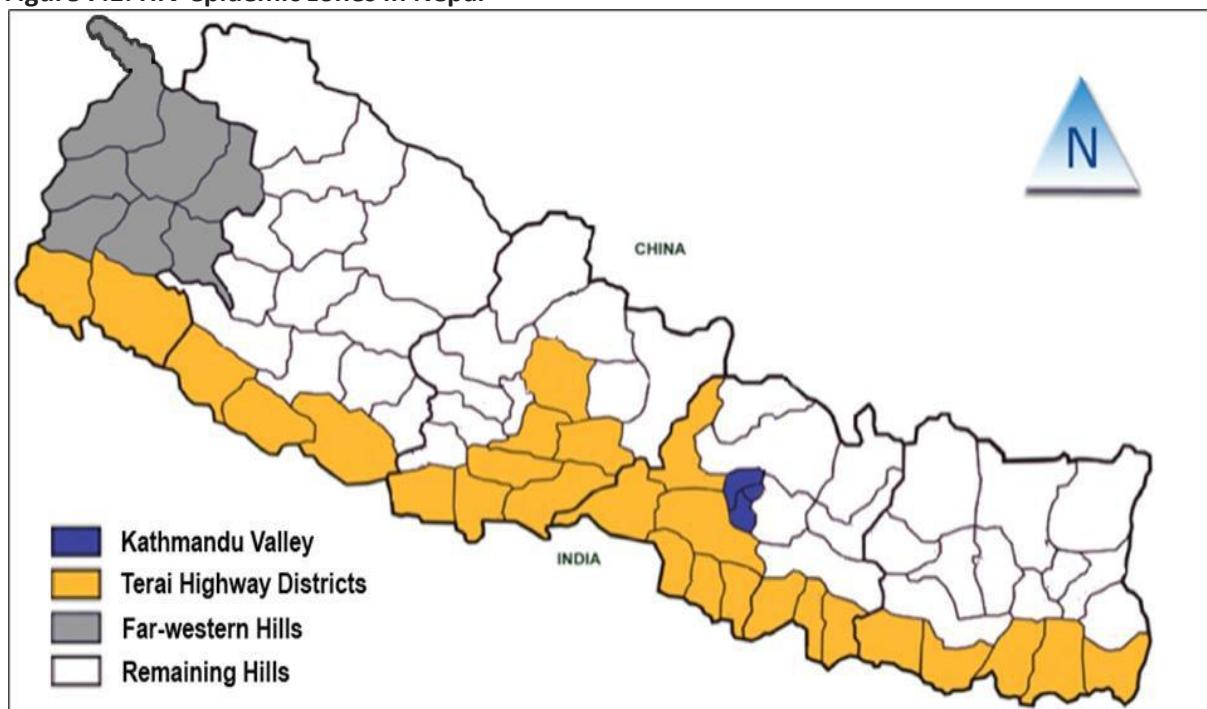


Table 7.1 Province-wise distribution of HIV services in Nepal

Organization unit/Data	Number of HTS Sites	Number of ART Sites	Dispensing Sites	CBPM/TCT Districts	Number of OST Sites	Number of CD4 Testing Sites	Number of VL Testing Sites	Treatment and Care Services	CLT Implemented	HIV Self Testing Implemented	Index Testing Implemented
Province - 1	24	9	6		2	3	1	6	4	3	7
TAPILEJUNG	1	0	1	Available							3
SANKHUWASABHA	1	1	0	Available							Yes
SOLUKHUMBU	1	0	1	Available							
OKHALDHUNGA	1	1	0	Available							
KHOTANG	1	0	1	Available							
BHOJPUR	1	0	1	Available							
DHANKUTA	1	1	0	Available							Yes
TERHATHUM	1	0	1	Available							
PANCHTHAR	1	0	1	Available							
ILAM	2	1	0	Available							
JHAPA	5	1	0	Available	1	1					Yes
MORANG	3	1	0	Available	1	1	1				Yes
SUNSARI	4	2	0	Available		1					Yes
UDAYAPUR	1	1	0	Available							Yes
Province - 2	15	8	0		1	3	0	7	8	7	8
SAFTARI	2	1	0	Available		1					Yes
SIRAHABA	1	1	0	Available							Yes
DHANUSA	5	1	0	Available	1						Yes
MAHOTTARI	2	1	0	Available							Yes
SARLAHI	2	1	0	Available							Yes
RAUTAHAT	1	1	0	Available							Yes
BARA	1	1	0	Available							Yes
PARSA	1	1	0	Available	1	1					Yes
Bagmati Province	46	16	2		6	6	4	9	10	8	10
DOLAKHA	1	1	0	Available							
SINDHUPALCHOK	3	1	0	Available							Yes
RASUWA	1	0	1	Available							
DHADING	1	1	0	Available							Yes

NUWAKOT	4	1	0	Available	1	CCC	CHBC	CLHIV	Yes	Yes
KATHMANDU	14	6	0	Available	2	4	4	CLHIV	Yes	Yes
BHAKTAPUR	3	1	0	Available	1	CCC	CHBC	CLHIV	Yes	Yes
LALITPUR	3	1	0	Available	2	CCC	CHBC	CLHIV	Yes	Yes
KAVREPALANCHOK	3	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
RAMECHHAP	1	0	1	Available						
SINDHULI	1	1	0	Available						
MAKHWANPUR	4	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
CHITAWAN	7	1	0	Available	1	1	CCC	CHBC	CLHIV	Yes
Gandaki Province	26	10	4	Available	11	1	5	1	8	7
GORKHA	4	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
MANANG	1	0	1	Available						
MUSTANG	1	0	1	Available						
MYAGDI	2	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
KASKI	6	1	1	Available	1	1	1	CLHIV	Yes	Yes
LAMJUNG	2	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
TANAHU	2	1	0	Available	1	CCC	CHBC	CLHIV	Yes	Yes
NAWALPARASI EAST	2	1	0	Available			CHBC			
SYANGJA	2	2	0	Available	2	CCC	CHBC	CLHIV	Yes	Yes
PARBAT	1	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
BAGLUNG	3	1	1	Available	1	CCC	CHBC	CLHIV	Yes	Yes
Lumbini Province	34	14	1	Available	2	6	0	12	11	11
RUKUM EAST	1	0	0	Available		CCC	CHBC	CLHIV	Yes	Yes
ROLPA	1	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
PYUTHAN	1	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
GULMI	1	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
ARGHAKHANCHI	2	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
PALPA	4	1	0	Available	1	CCC	CHBC	CLHIV	Yes	Yes
NAWALPARASI WEST	4	1	0	Available		CCC	CHBC	CLHIV	Yes	Yes
RUPANDEHI	4	2	0	Available	1	1	CCC	CHBC	CLHIV	Yes
KAPILVASTU	5	2	1	Available	1	CCC	CHBC	CLHIV	Yes	Yes
DANG	7	2	0	Available	1	CCC	CHBC	CLHIV	Yes	Yes
Banke	3	1	0	Available	1	CCC	CHBC	CLHIV	Yes	Yes
BARDIYA	1	1	0	Available	1	CCC	CHBC	CLHIV	Yes	Yes

Karnali Province	18	6	6	0	2	1	3	4	2	5	5	0	5
DOLPA	1	0	1	Available									
MUGU	1	0	1	Available									
HUMLA	1	0	1	Available									
JUMLA	1	0	1	Available									
KALIKOT	1	1	0	Available						CHBC		Yes	
DAILEKH	5	2	1	Available					1	CCC	CHBC	CLHIV	Yes
JAJARKOT	1	0	1	Available									
RUKUM WEST	1	1	0	Available						CCC	CHBC	Yes	Yes
SALYAN	1	1	0	Available						CCC	CHBC	Yes	Yes
SURKHET	5	1	0	Available					1	1	CCC	CLHIV	Yes
Sudurpaschim Province	24	17	1		0	8	2	8	9	9	8	9	3
BAURA	2	1	0	Available						CCC	CHBC	CLHIV	Yes
BAHANG	1	1	0	Available						CCC	CHBC	CLHIV	Yes
DARCHULA	1	1	0	Available						CCC	CHBC	CLHIV	Yes
BATADI	3	2	0	Available					1	CCC	CHBC	CLHIV	Yes
DADELDHURA	1	2	0	Available					1	CCC	CHBC	CLHIV	Yes
DOTI	3	1	1	Available					1	CCC	CHBC	CLHIV	Yes
ACHHAM	4	4	0	Available					2	1	CCC	CHBC	CLHIV
KAILALI	5	3	0	Available					2	1	CCC	CHBC	CLHIV
KANCHANPUR	4	2	0	Available					1	CCC	CHBC	CLHIV	Yes

Note: HTS: HIV Testing Services; CCC: Community Care Centre; CHBC: Community Home-based Care; CLT: Community Led Testing.

7.1 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 incidence- Number and percentage of new HIV infections
- b) HIV prevalence among key population
- c) HCV and HBV prevalence among people who inject drugs
- d) HIV prevalence in young people
- e) Mother to child transmission of HIV (MTCT): Estimated percentage of children newly infected with HIV from MTCT

Outcome level indicators

- a) Percentage of sex workers reporting condom use with most recent client
- b) Percentage of people who inject drugs reporting having used a condom the last time they had a sexual intercourse
- c) Percentage of men reporting the use of condom the last time they had anal sex with a male partner
- d) 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

- a) Needle and syringe distributed per person who injects drugs
- b) Percentage of individuals receiving Opioid Substitution Therapy who received treatment for at least six months
- c) Number and percentage of key population who had an HIV test in the past 12 months and know their results
- d) Percentage of key population reached by HIV prevention programmes - (BCC intervention, condom and lube distribution)
- e) Number of key population screened for HIV by trained layperson
- f) Percentage of pregnant women with known HIV status
- g) Percentage of pregnant women living with HIV who received antiretroviral therapy to eliminate vertical HIV transmission
- h) Percentage of reported congenital syphilis cases (live births and stillbirths)
- i) Number and percentage of people living with HIV who are receiving HIV care (Including ART)
- j) 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
- k) Percentage of people living with HIV who are retained on ART after 12, 24 and 36 months after initiation of antiretroviral therapy
- l) Percentage of health facilities dispensing antiretroviral therapy that experienced a stock-out of at least one required antiretroviral drug in the last 12 months
- m) Number (and percentage) of adults and children living with HIV currently receiving care and support services from outside facilities
- n) Percentage of HIV-positive patients who were screened for TB in HIV care or treatment settings
- o) Percentage of TB patients who had an HIV test result recorded in the TB register

Annex I: Total clients on ART by district 2076/77

Total clients on ART treatment by district 2076/77			
District	Total	Adult	Child
Achham	639	593	46
Arghakhachi	100	100	0
Baglung	157	140	17
Baitadi	111	105	6
Bajhang	60	59	1
Bajura	54	50	4
Banke	483	456	27
Bara	61	56	5
Bardiya	90	82	8
Bhaktapur	57	53	4
Chitwan	950	902	48
Dadeldhura	96	88	8
Dailekh	192	173	19
Dang	299	279	20
Darchula	38	35	3
Dhading	92	83	9
Dhankuta	15	15	0
Dhanusha	529	500	29
Doti	503	453	50
Gorkha	193	184	9
Gulmi	168	148	20
Ilam	47	46	1
Jhapa	447	419	28
Kailali	1446	1365	81
Kalikot	37	36	1
Kanchanpur	329	311	18
Kapilvastu	446	408	38
Kaski	1213	1154	59
Kathmandu	3194	2971	223
Kavre	55	54	1
Lalitpur	380	369	11
Lamjung	108	96	12
Mahottari	266	247	19
Makwanpur	221	212	9
Morang	399	380	19
Myagdi	76	72	4
Nawalparasi West	223	200	23
Nawalpur	47	43	4
Nuwakot	134	128	6
Okhaldhunga	11	9	2

Epidemiology and Disease Control

Palpa	273	261	12
Parbat	62	56	6
Parsa	849	796	53
Pyuthan	83	80	3
Rautahat	185	171	14
Rolpa	36	33	3
Rukum West	48	46	2
Rupandehi	1417	1322	95
Salyan	19	18	1
Sankhuwasabha	41	39	2
Saptari	117	108	9
Sarlahi	286	268	18
Sindhuli	37	35	2
Sindhupalchowk	47	42	5
Siraha	236	218	18
Sunsari	682	636	46
Surkhet	305	273	32
Syangja	275	263	12
Tanahun	209	195	14
Udayapur	38	35	3
Total	19211	17969	1242

5.6 Non-Communicable Diseases and Mental Health

5.6.1 Introduction

In Nepal Non-communicable disease is posing an additional burden on a resource-limited health system. As there has been national disease burden paradigm shifting toward NCDs as the major cause of illness/disease, disability and death. NCDs also have significant macroeconomic and poverty impact. Most NCDs are chronic, requiring repeated interactions with the health system, with recurring and continuous medical expenditures which may become catastrophic and lead to impoverishment. Loss of productivity as a result of NCDs is significant.

The deaths due to NCDs (Cardio-Vascular Disease, diabetes, cancer and respiratory disease) have increased from 60% of all deaths in 2014 to 66% in 2018 (WHO Nepal Country profile 2018). These NCDs impose substantial costs on health services leading to poverty and hunger, which may have a direct impact on the achievement of the internationally-agreed Sustainable Development Goals 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".

Better health outcomes from NCDs can be achieved much more readily by work across different sectors and levels of government influencing public policies in sectors like agriculture, communication, education, employment, energy, environment, finance, industry, labor, sports, trade, transport, urban planning, and social and economic development than by making changes in health policy alone.

Thus, PEN Implementation Plan (2016–2020) has been developed in line with the Multi-Sectoral Action Plan (MSAP) for prevention and control of NCDs (2014-2020).The MSAP- II (2021-2025) is under process of development

Multi-Sectoral Action Plan (MSAP) for the Prevention and Control of NCD (2014-2020 AD)

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

Raise the priority accorded to the prevention and control of non-communicable diseases in the national agendas and policies

Strengthen national capacity, leadership, governance, multispectral action and partnership to accelerate country response for the prevention and control of NCDs

Reduce modifiable risk factors for NCDs and underlying social determinants through creation of health-promoting environment

Strengthen and orient health systems to address the prevention and control of NCDs and underlying social determinants through people centered PHC and UHC

Promote and support national capacity for high quality research and development for the prevention and control of NCDs and mental health

Monitor the trends and determinants of NCDs and evaluate progress in their prevention and control

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)

- 25% relative reduction in overall mortality from CVD, cancers, diabetes, or COPD
- 10% relative reduction in the harmful use of alcohol
- 30% relative reduction in prevalence of current tobacco use in persons aged over 15 years
- 50% relative reduction in the proportion of households using solid fuels as the primary source of cooking
- 30% relative reduction in mean population intake of salt/sodium
- 25% reduction in prevalence of raised blood pressure
- Halt the rise in obesity and diabetes
- 10% relative reduction in prevalence of insufficient physical activity
- 50% of eligible people receive drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes
- 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

The WHO PEN Protocol was developed on risk-based approach.

- Those people who are under high risk with high symptoms will get medicine but
- Those people who are under low risk even symptoms present will go through life style modification and follow up.

This PEN program is feasible for low cost and resource setting and is public health (mass) based approach of NCD treatment and management.

The PEN Intervention has Four protocols:

- Protocol I:** Prevention of heart attack, stroke and kidney disease through integrated management of diabetes and hypertension.
- Protocol II:** Health education and Counseling on Healthy Behavior (For All)
- Protocol III:** Management of chronic obstructive pulmonary disease (COPD) and Asthma
- Protocol IV:** Assessment and referral of women with suspected cancer (Breast & Cervix)

5.6.2 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

5.6.3 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).

The Nepal PEN protocol I, II 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 III and IV was endorsed and the program was scaled-up in the 8 districts (Palpa, Myagdi, Baglung, Achham, Bardiya, Surkhet, Makwanpur and Rautahat) for Fiscal Year 2073/74.

For the Fiscal Year 2074/75 PEN program was scaled up in additional 6 districts (Chitwan, Jumla, Jajarkot, Dhading, Nuwakot, and Gorkha). For Fiscal Year 2075/76 PEN program was scaled up in additional 14 districts (Jhapa, Solakhumbu, Mohattari, Parsa, Sindhuli, Bhaktapur, Kaski, Tanahun, Kapilbastu, Rolpa, Dolpa, Humla, Baitadi, Bajura).

For the Fiscal Year 2076/77 PEN Program is being scaled up in 21 districts (Morang, Terathum, Udaypur, Sarlahi, Saptari, Dhanusha, Rasuwa, Sindhupalchowk, Dolka, Syangja, Parbat, Nawalparasi (East), Dang, Pyuthan, Arghakhanchi, Salyan, Dailekh, Surkhet, Bajhang, Darchula, Dadeldhura). Due to ongoing global COVID-19 pandemic, the expected scale up and implementation could not be achieved.

By the end of Fiscal Year 2077/78 PEN Program will be scaled up throughout Nepal.

Also, A similar exercise will be carried out for core individual services. These services are focused on early detection, proactive disease management and secondary prevention for cardiovascular disease, diabetes, and selected interventions for cancer. Effective delivery of most of these services requires people-centred primary healthcare with well-organized links to population outreach activities, acute and chronic care settings.

5.6.4 Major activities, achievement and target

Key Achievements (FY 2073/74)	Key Achievements (FY 2074/75)	Key Achievements (FY 2075/76)	Key Achievements (FY 2076/77)	Target (FY 2077/78)
Concept note on PEN developed and PEN Protocol endorsed Implementation of NepalPEN Program in 10 districts Initial Steps in Management of NCDs at PHC level taken	Implementation of NepalPEN Program in additional 6 districts Update in recording and reporting tools Protocol revision after consultation from the experts HEARTS Tool kit also endorsed Drugs related to PEN Program enlisted in Essential Drug List	Development of NCD & Mental Health Section in EDCD under DoHS Expansion of PEN Program in additional 14 Districts Revision/update of PEN trainers guide and Trainees manual Allocation of budget to each provinces and governance level for proper management of NCDs Provincial based tot for increasing trainers at provincial level	Expansion of PEN Program in additional 21 Districts Development of Community Intervention Framework to tackle NCDs Allocation of budget to each provinces and governance level for proper management of NCDs	Expansion & Implementation of PEN Program throughout Nepal in all 77 districts Developing 3 "Namuna Palika" for NCD care model Implementing People Centred Care Model Implementing Community Intervention Framework Throughout Nepal Increase the amount of budget for NCDs Work up to integrate PEN Program Recording & Reporting Tools in HMIS & DHIS Strengthening Telemedicine and Teleconsultation services Developing Skill Laboratory at Medical Institutions.

Trend of some NCDs.

Disease	Period	Province 1	Province 2	Bagmati Province	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	14652	21663	210171
	2074/75	24901	14248	83231	35503	32304	16963	24535	231685
	2075/76	33234	18805	78350	32039	38705	19833	24802	245768
	2076/77	34858	21647	78659	30995	48356	23373	28387	266275
Hypertension	2072/73	48047	28182	87045	56569	41449	5469	9125	275886
	2073/74	58495	29356	123897	57937	40000	7919	11739	329343
	2074/75	65126	37045	160036	64587	54161	8828	14162	403945
	2075/76	94148	47848	162187	75214	86376	14840	18827	499440
	2076/77	133161	167627	171862	97385	127657	17612	25846	74150
Diabetes Mellitus (DM)	2072/73	18700	5310	43906	26860	17599	977	2764	116116
	2073/74	25847	10637	74541	28128	17236	1098	3862	161349
	2074/75	32127	9436	95781	32287	22851	1972	4659	199113
	2075/76	55461	15520	90419	38903	38922	5859	6512	251596
	2076/77	80201	21562	92812	38841	53665	5995	8259	301339
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
	2075/76	9	54	1547	357	40	5	21	2033
	2076/77	77	22	1142	407	57	8	6	1719
Cervical Cancer	2072/73	2	4	362	710	188	1	32	1299
	2073/74	82	2	924	267	138	5	3	1421
	2074/75	362	0	1767	204	44	2	28	2407
	2075/76	391	3	2148	237	80	0	4	2863
	2076/77	437	0	1694	175	22	0	3	2331

Source: EDCD/DoHS

5.6.5 Strength, weakness and challenges

Strength	Weakness	Challenges
Accessible at community level (PHCC and HP) Dedicated and functional National NCDs & Mental Health Unit Comprehensive health insurance & universal health coverage including for NCDs prevention and treatment services Framework & multi-sectoral approach	Only focused on HF level Mostly focused on treatment approach Focused on TIP ICEBERG of risk people (Those people who visited in HF with high risk population with suspected of disease) Inadequate recording, reporting and monitoring system Low level of community awareness Complex RR tools & referral chain Several policies to modify NCD Risk Factors are in different draft stages. No dedicated budget for NCDs, for promotion, prevention, and research	Unhealthy lifestyle seeking behavior and lower value of health among the public Shortage of medical equipment, and supplies needed for diagnostic or therapeutic care of patients with NCDs Shortage of health workers in public health facilities Low proportional budget allocation towards NCDs Poor awareness and misconceptions about the burden and consequences of NCDs, among the policy makers, health professionals and the general public

5.6.7 Mental Health

Mental health and substance abuse is recognized as one of health priorities and also addressed on 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. 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).

In FY 2075/76, the mental health program was scaled up in 14 districts as 2 districts per province (Morang, Terathum, Parsa, Sarlahi, Sindhupalchowk, Makawanpur, Syanja, Parbat, Arghakhanchi, Gulmi, Jumla, Kalikot, Doti and Darchula).

In FY 2076/77, the mental health program was scaled up in 21 districts as 3 districts per province (Khotang, Taplejung, Sunsari, Saptari, Dhanusha, Siraha, Dhading, Sindhuli, Lalitpur, Mustang, Baglung, Nawalparai – East, Pyuthan, Palpa, Dang, Salyan, Jajarkot, Dailekh, Dadeldhura, Bajhang and Baitadi). Due to ongoing global COVID-19 pandemic, scale up and implementation could not be achieved as expected.

For FY 2077/78 no budget was allocated for scale up nor for strengthening of previously scaled-up districts.

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.

5.6.7.1 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.

5.6.7.2 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:

- To define the mental health and psychosocial support service packages at different layers of primary health care system
- To define the minimum standard of the MHPSS services at different layers of primary health Care system
- To set the standard of the training packages and manuals for training and supervision of health workers and community volunteer like FCHV.

5.6.7.3 Strength, weakness and challenges

Strength	Weakness	Challenges
Community Mental HealthCare Package, Nepal, 2074developed Community mental healthprogram at six districtsDrugs procurement andsupply. Started web-portal for HWs for their psychosocial support	Program coverage couldn'tbe achieved as targeted Training was not toppedwith availability ofmedicine	Recording and reporting Clinical supervision andmentoring Availability of psychotropicmedicine around thecalendar Limited budget allocationto cover the programdistrict Turnover of trained health professional No digital record Delivery of Drugs and logistics at program districts on time

5.7 Epidemiology and Disease Outbreak Management

5.7.1 Introduction

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.

5.7.2 Major Responsibilities of Epidemiology and Outbreak Management:

Provide support to Ministry of Health and Population (MoHP) for drafting national laws, policies, and strategies related to epidemiology and outbreak management.

Provide support to Ministry of Health and Population (MoHP) 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 multisectoral 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.

5.7.3 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. Interim RRT guideline 2075 was introduced to address the new structure in federal system of Nepal

Roles and responsibilities of RRTs are as follows:

Preparedness plan for disease outbreaks.

Investigation of disease outbreaks.

Responding to disease outbreaks through awareness and IEC activities, case management, community mobilization and the coordination of stakeholders.

The monitoring of potential diseases outbreak (malaria, kala-azar, dengue, scrub typhus, acute gastroenteritis, cholera, severe acute respiratory infections, influenza, etc.) at sentinel sites.

The active surveillance of diseases outbreak situation.

Risk communication, dynamic listening and rumours management.

Coordinate with the province and local authorities for diseases outbreak management. Along with back up with human resources and logistics as per need.

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.

5.7.4 Major activities carried out in fiscal year 2076/77:

Stock piling of emergency drugs and health logistics at strategic locations (Centre, Provinces districts, and local levels).

Established Health desk at major Point of Entries (PoE) i.e. Tribhuvan International Airport (TIA) and at ground level PoE was strengthened by allocating budget.

Multisectoral interaction programme on food security conducted at different districts (Kaski, Banke, Manag, Morang) for preparedness of outbreaks, epidemics and unwanted health events.

Risk communication training was conducted for province 1, Bagmati province, Gandaki province and province 5.

IHR orientation to health health worker and stakeholder was held in Karnali and Sudurpachchim province.

Four batch EPPER Training was held for public health and community health professionals of all seven province.

Four batch IMAI (Integrated Management of Adolescent Illness)Training was conducted (Biratnagar, Lalitpur, Pokhara, Butawal) for in-charge of emergency department of different hospitals from four province

Water quality surveillance workshop was conducted at Sindhuli and Kathmandu for National Association of rural municipality.

National Food quality surveillance workshop was conducted at Kathmandu for multi sectoral stakeholders

Various guidelines, protocol, SOPs regarding COVID-19 were made in the leadership of the epidemiology section.

Collaboration with partners for COVID-19 related activities

Risk communication materials were printed and disseminated with support of external development partners (EDPs)

Case Investigation and Contact Tracing team was built and oriented.

5.7.5 Major Outbreaks in fiscal year 2076/77

Acute Gastro-Enteritis (AGE)/Cholera:

Outbreak of diarrhoeal diseases occurs throughout the country mostly in the monsoon season but most of them with low case morbidity is under reported. In fiscal year 2076/77, one event of AGE outbreaks were reported to EDCD from Dadeldhura districts affecting 81 people in total with zero mortality.

Table 5.7.5.1: Status of AGE/Cholera outbreak in fiscal year 2076/77

S.N.	District	Location	Total Cases	Deaths
1	Dadeldhura	Parshuram Municipality-8	81	0

Source: EDCD/DoHS

Influenza like Illness (ILI):

ILI cases are commonly seen in winter and during seasonal changes. The high risk group for severe disease includes pregnant women, children under 5 years, elderly people, immune-compromised people and those with medical morbidity eg. Heart disease, cardiovascular disease and COPD.

A total of 2 outbreaks of ILI were reported in FY 2076/77 with 3,386 cases throughout the country including 8 deaths. Circulating strains of Influenza have been found to be Influenza A(H1N1) pdm09,

Table 5.7.5.2: Status of ILI outbreak in fiscal year 2076/77

S.N.	District	Location	Total cases	Deaths
1	Sindhupalchok	Jugal rural municipality-3 Gumba	324	0
2	Humla	Chakheli RM, sarkegad RM	600	8

Source: EDCD/DoHS

5.7.6 Issues actions taken & recommendations:

Issues	Actions taken	Recommendations
Capacity building on Investigation of outbreaks	EPPER Training was conducted with the technical and financial help of WHO	Expansion of EPPER Training in province level.
Strengthening capacity of point of entry	Budgeting for prefab building, equipment and furniture for 13 POE.	Close monitoring and capacity building for health worker working in POE.
Strengthening of IHR core capacities	Orientation was conducted at provincial level.	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	RRT final guideline should be made as soon as possible.

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 DoHS. This section has two main activities, disease surveillance (through Early Warning and Reporting System- EWARS) and water quality surveillance.

Major responsibilities of the section are:

- Assist MoHP for 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 provinces

5.8.1 Early Warning and Reporting System (EWARS)

EWARS is a hospital-based sentinel surveillance system where the selected hospitals send immediate and weekly reports (including zero reports) on six priority diseases and outbreaks of any diseases. It is designed to provide timely report of selected epidemic prone, vector-borne, water and food borne diseases for the early detection of outbreaks.

It was established in 1997 first in 8 sentinel sites and expanded to 24 sites in 1998, 26 sites in 2002, 28 sites in 2003, 40 sites in 2008 and 82 sites in 2016. In May 2019, additional 36 sites (private hospitals and medical colleges across Nepal) were declared as sentinel sites by the DoHS. Thus, the total number of current sentinel sites is 118. Sentinel sites include all the central, provincial, district hospitals, medical colleges including selected private hospitals.

The main objective of EWARS is to strengthen the flow of information on outbreak prone infectious diseases and vector borne diseases from the districts and to facilitate prompt outbreak response to be carried out by rapid response teams (RRTs) at federal, provincial and local level. It is designed to provide timely report for the early detection of selected vector-borne, water and food borne diseases with outbreak potential.

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)

Information flow mechanism and control room responsibilities:

- Sentinel sites report weekly/immediately through the DHIS2 Event capture system
- If necessary, EDCD/Health directorate confirm the cases from NPHL/reference laboratory test
- EDCD/Health directorate initiates for control and prevention of disease with coordination of RRTs at various levels
- Mobilization of RRT at different levels for control and prevention of disease
- If any error is found in reporting from the sentinel sites, EDCD and health directorate 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 electronic EWARS weekly bulletin and disseminate on Sunday to all key personnel of MoHP, DoHS, provincial health authorities, all sentinel sites and other relevant stakeholders. The bulletin is also uploaded to the EDCD's website.

‘A guide to Early Warning and Reporting System’ was updated and disseminated in 2019 which can be accessed at EDCD website.

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.

Epidemiology and Disease Control

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 responsibilities of 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 sites operation	Vacant post of medical recorder should be fulfilled Create posts for medical recorder in hospitals with no/lack of sanctioned posts Allocation of necessary budget for EWARS orientation, 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 be done
3	Limited feedback/support to sentinels sites	Regular and immediate feedback/support to sentinel sites from EDCD as well as Health Directorate Regular onsite coaching to sites
4	Retrospectives data analysis	Including retrospective data analysis and publish/disseminate its major findings
5	Inconsistency of data	Data from EWARS may not match with HMIS data

5.9 Health sector response to COVID-19 Pandemic

This section highlights the epidemiological analysis of and the health sector response to COVID-19 in Nepal since the report of the first confirmed case of Corona Virus Disease 2019 (COVID-19) till the end of the fiscal year, i.e., 15th July 2020. The novel coronavirus outbreak was first reported by Chinese authorities to the World Health Organization (WHO) on 31st December 2019. Following the wide spread of COVID-19 caused by a novel pathogen (SARS-CoV-2) around the world, on 30 January 2020, the World Health Organization (WHO) declared Public Health Emergency of International Concern (PHEIC); and on 11 March 2020, a global pandemic.

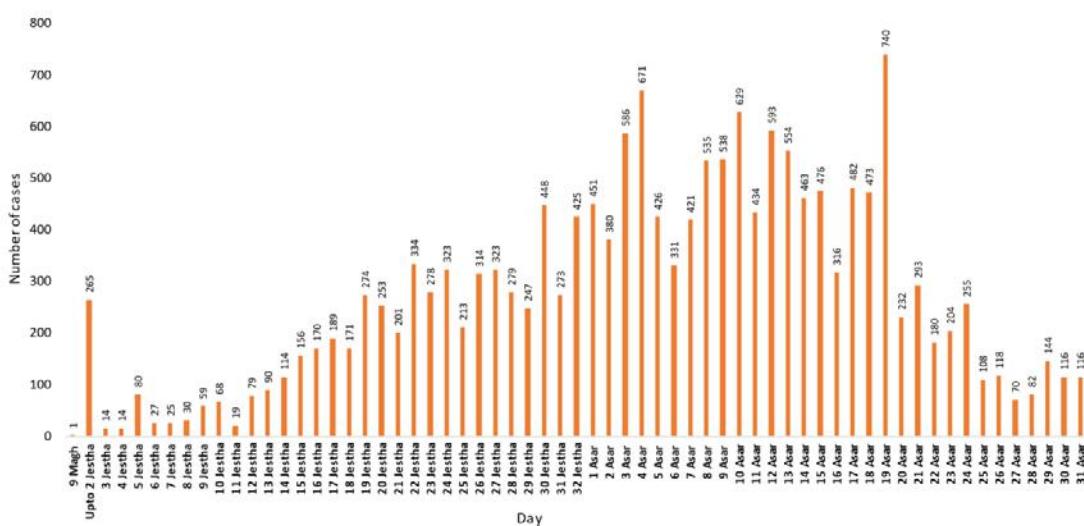
Epidemiology of the Disease

The first COVID-19 case in Nepal was detected on 23 January 2020. There were very few cases of laboratory confirmed COVID-19 cases till mid-April 2020, i.e., the beginning of the Nepali New Year 2077. The second COVID-19 positive case for the country was reported after two months of detection of the first case. On 23 March 2020, a 19-year-old Nepali student who had returned to Nepal from France on March 17, tested positive for COVID-19. Towards the end of March, there were five positive cases across Nepal in individuals who had arrived from China, Europe, and the UAE. By 4 April 2020, a 34-year-old woman from Kailali district who had no travel history tested positive for SARS-CoV-2. This marked Nepal to be at the second stage of infection transmission. By

The first COVID-19 case in Nepal

On January 5, a 31-year-old man studying in Wuhan, China returned to Kathmandu. He visited Shukraraj Tropical and Infectious Disease Hospital, Teku hospital for respiratory problems and was admitted on January 13 and discharged from the hospital on January 17 on improvement in his health condition. However, his sample was sent to WHO accredited laboratory in Hongkong for testing of COVID-19. On January 23, he was confirmed Nepal's first COVID-19 patient.

Figure 1: COVID-19 New Cases (as of 31st Asar 2077)



end of the fiscal year, i.e., by middle of July 2020 the cases peaked with 740 new cases reported on 19th Asar and declined to 116 on 31st Asar 2077 making the first wave of the pandemic within the first six months. A total of 298,829 RT-PCR tests were done with confirmation of 17,171 COVID-19 cases by 31st Asar 2077 (Figure 1).

Figure 2 shows the age and sex distribution of the COVID 19 cases. Eighty-six percentage of the total cases were male. Age group 21-30 years accounted 40.6% of the total cases and 1.6% of the total cases were reported from the age group 61 and above.

Figure 2: COVID-19 Cases by Age Group (as of 31 Asar 2077)

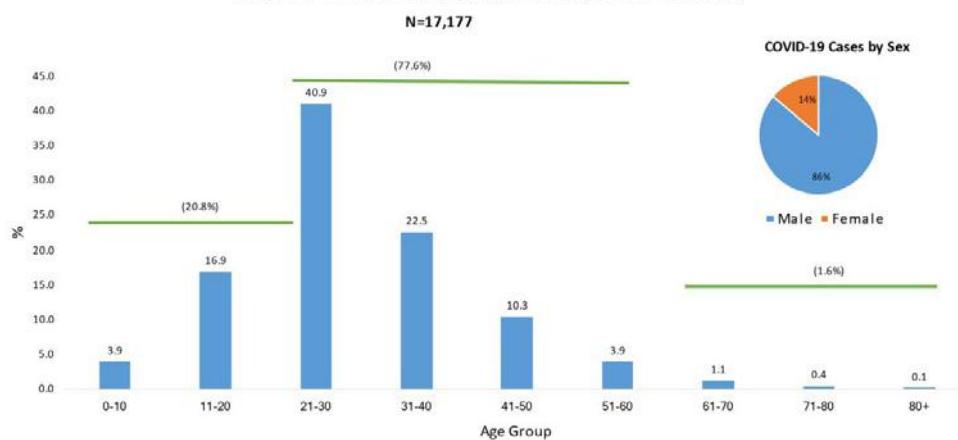


Table 1: COVID-19 Cases by Province (as of 31 Asar 2077)				
Province	Total	Recovered	Death	Active
Province 1	778	738	0	40
Province 2	4416	2512	5	1899
Bagmati	839	364	9	466
Gandaki	1305	931	5	369
Lumbini	4093	3432	10	651
Karnali	1787	1463	4	320
Sudurpaschim	3959	1585	6	2368
Total	17177	11025	39	6113

Table 1 shows province wise cumulative total cases, recovered and death as of 15 July 2020 (31 Asar 2077). The highest number of the cases were reported from Province 2 (n=4416), followed by Lumbini Province (n=4093), Sudurpaschim (n=3959), Province 6 (n=1787), Gandaki (n=1305), Bagmati (n=839) and Province 1 (n=778). The district specific status is presented in Annex. The first COVID-19 death in Nepal was reported on 2nd Jestha 2077¹. The deceased was 29 years old female from Sindhupalchowk district. She died at Dhulikhel hospital on 10th day after giving birth to her child. She was detected COVID-19 with RT-PCR after her death. The second death reported on 4th Jestha was of 25 years male who was staying in Quarantine in Narainapur, Banke district on his return from India. The death toll reached 19 by end of Jestha and 39 by end of Asar 2077. The country's case-fatality ratio (CFR) as of Asar 2077 was 0.35%. The highest CFR was recorded in Gandaki province (0.53%). No deaths were reported in Province 1 (Table 1). Higher CFR was reported among the higher age group compared to the lower age group. Highest CFR was reported in the age group 80 years and above (Table 2).

Response to COVID-19 pandemic

Following detection of the first COVID-19 case in Nepal on 23 January 2020, immediate actions were taken to strengthen the country's response to the spread of the virus. Health desks at Tribhuvan International Airport and gradually at other airports and the ground crossing Points of Entry (PoE) at the Nepal-China border and the Nepal-India border were strengthened. On 15 February, 175 Nepali

¹ A COVID-19 death is defined for surveillance purposes as a death resulting from a clinically compatible illness in a probable or confirmed COVID-19 case, unless there is a clear alternative cause of death that cannot be related to COVID-19 disease (e.g., trauma), with no period of complete recovery between the illness and death.

citizens were repatriated from Wuhan, the site of the pandemic outbreak in China. They were quarantined and allowed to go back to their families after testing negative for COVID-19.

On March 2, the High-Level Coordination Committee, led by Deputy Prime Minister and Minister for Defense, took a series of crucial decisions aimed at limiting the spread of COVID-19 in Nepal. On March 29 the government formed the COVID-19 Crisis Management Centre, led by the Deputy Prime Minister, as the implementing agency under the High-Level Coordination Committee.

On March 11, people arriving from countries where community transmission had manifested were mandated to stay in self-quarantine. Health screening mechanisms were instituted at all 43-border connecting areas of the country. Then, on March 14, all entry visas were suspended and the ground crossing points of entry were shut down and the health desks at the POEs strengthened before reopening later.

With detection of the second COVID-19 case on March 23, 2020, the government announced a complete lockdown across the country with restrictions on incoming passengers, including Nepali citizens, from more than 50 countries in Europe, the UK, the Gulf and West Asia; the shutdown of all non-essential services; and a ban on all long-haul travel across the country. In addition, the nationwide Secondary Education Examinations were postponed until further notice; all gyms, health clubs, cinema halls, and dance bars were closed; and all gatherings of more than 25 people were forbidden.

Ministry of Health and Population activated the Incident Command System (IMS) under the leadership of the Secretary and coordination of Chief, Policy Planning and Monitoring Division. On April 9, 2020, the Health Cluster for COVID-19 was activated under the leadership of the IMS coordinator.

The government activated the Infectious Disease Act 2020 (1964) to fight the pandemic. This enabled the government to take 'necessary actions' and 'issue necessary orders applicable to the public or a group of any persons' to 'root out or prevent' the development or spread of an infectious disease. This provided the legal base to the local, provincial, and federal government to take all necessary measures for the prevention and control of the disease. The local governments took the lead in several initiatives like prohibiting public gatherings, establishing information centers, setting up hand-washing systems, allocating isolation beds, and instituting quarantine and isolation procedures.

Table 3: Plans, Guidelines, SoPS, Directives formulated for prevention and management of the pandemic		
SN	Document	Date
1	Quarantine protocol for repatriation of Nepali citizens from China	3 February 2020
2	Protocol for influenza like illness (ILI) clinics (COVID-19 Screening Fever Clinics)	27 March 2020
3	Criteria for the operation and management of COVID-19 quarantine center	29 March 2020
4	Interim Clinical Guidelines for Care of Patients with COVID-19 in Healthcare Settings	5 April 2020
5	Guidelines for dead body management	7 April 2020
6	Working procedure for the operation of COVID-19 clinics	26 April 2020
7	Directive to manage risk allowance to human resources involved in the treatment of COVID-19	March/April
8	Directive to provide grants to hospitals involved in COVID-19 treatment	6 May 2020
9	Health Sector Emergency Response Plan	6 May 2020
10	Directive on the Mobilization of the Case Investigation and Contact Tracing Team	11 May 2020
11	COVID-19 Emergency Medical Deployment Teams Mobilization guideline	28 May 2020

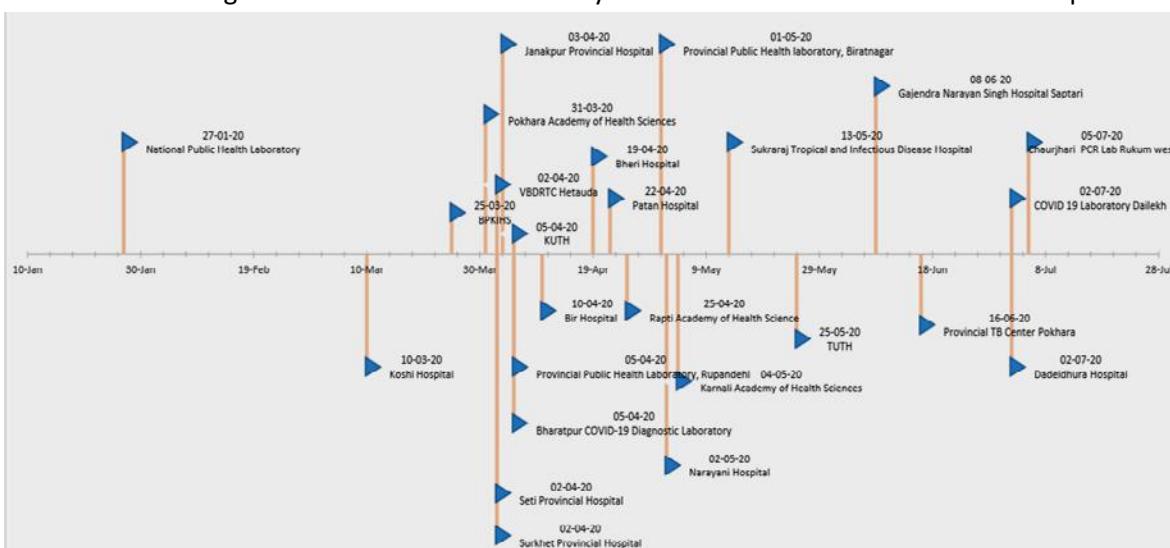
12	COVID-19 Isolation Management Guideline	2 June 2020
13	Directive to grant permission for molecular (PCR) testing of COVID-19 at private laboratories	22 June 2020
14	Criteria for home quarantine	17 July 2020
15	COVID-19 Patient Transport Team Guideline	
16	Guideline on Environmental Cleaning and Disinfection	

The government also formulated multiple guidelines and directives for prevention, control, and treatment of COVID-19 in the country. In May, a COVID-19 emergency response plan was developed. Considering the capacity of the country's health system to manage active cases, the plan envisioned the four situations to guide the response to COVID-19. The plan estimated the need for equipment, human resources, medicines, and other logistics depending upon the level of the pandemic. It also developed a plan for mass screening, contact tracing, preparation, and mobilization of rapid response teams, human resource management, and capacity building. In addition, the plan envisioned collaborations between the public, non-governmental, and private sectors, as well as development partners, academia, and professional societies, to fight the pandemic at the domestic and international levels. Several other guidelines, standards and protocols were developed for effective prevention and management of the pandemic. Table 3 provides the list of some of these key documents.

Initially Go Data platform was used to manage the information related to COVID-19 cases. In April, when cases began to surge, MoHP developed COVID-19 Information Management Unit (IMU) under the ICS for effective management of information in coordination with the stakeholders. The development of the IMU application and its maturity going forward will improve the information management.

From the beginning the Nepal Army has been managing the bodies of those who had died of COVID-19, or were suspected to have died due to the coronavirus. The army verifies the COVID-19 positive report and death certificate to deal with the dead body, so it has a complete list of the people died of COVID-19.

When the first case was reported in Nepal on 23 January 2020, Nepal had no means to test for the novel coronavirus. So, the sample was sent to Hong Kong for the test, which confirmed the first COVID-19 case in Nepal. Realizing the urgent need of establishing a well-equipped RT-PCR testing laboratory in the country, the National Public Health Laboratory was immediately strengthened to start RT-PCR testing services at the lab. Gradually a total of 25 laboratories were set up with the



facility of RT-PCR testing by mid-July 2020 (Figure 3).

Figure 3: Milestone on expansion of RT-PCR Laboratory

Annex1: District Wise Details of COVED 19

Province	S.N	District	Total	Recovered	Death	Active
Province 1	1	Illam	20	14	0	6
	2	Udayapur	81	76	0	5
	3	Okhaldhunga	7	2	0	5
	4	Khotang	14	11	0	3
	5	Jhapa	303	299	0	4
	6	Taplejung	12	7	0	5
	7	Terhathum	7	5	0	2
	8	Dhankuta	12	11	0	1
	9	Panchthar	7	7	0	0
	10	Bhojpur	6	6	0	0
	11	Morang	194	190	0	4
	12	Sankhuwasabha	6	5	0	1
	13	Sunsari	106	103	0	3
	14	Solukhumbu	3	2	0	1
Sub -total			778	738	0	40
Province 2	15	Dhanusha	535	377	0	158
	16	Parsa	204	169	1	34
	17	Bara	129	116	2	11
	18	Mahottari	782	270	0	512
	19	Rautahat	1483	656	2	825
	20	Saptari	336	211	0	125
	21	Sarlahi	706	592	0	114
	22	Siraha	241	121	0	120
	Sub-total			4416	2512	5
	Sub-total			4416	2512	5
Bagmati	23	Kathmandu	243	64	3	176
	24	Kavrepalanchowk	20	10	0	10
	25	Chitawan	116	53	2	61
	26	Dolakha	10	4	1	5
	27	Dhading	139	115	0	24
	28	Nuwakot	29	16	0	13
	29	Bhaktapur	45	11	0	34
	30	Makwanpur	31	14	0	17
	31	Rasuwa	11	10	0	1
	32	Ramechhap	35	18	0	17
	33	Lalitpur	75	8	1	66
	34	Sindhupalchowk	65	31	2	32
	35	Sindhuli	20	10	0	10
	Sub-total			839	364	9
	Sub-total			839	364	9
Gandaki	36	Kaski	90	84	0	6
	37	Gorkha	118	84	1	33
	38	Tanahu	166	125	0	41
	39	Nawalparasi East	294	157	0	137
	40	Parbat	95	71	0	24
	41	Manang	1	1	0	0
	42	Mustang	1	1	0	0
	43	Myagdi	37	21	1	15
	44	Lamjung	71	44	0	27

Epidemiology and Disease Control

Province	S.N	District	Total	Recovered	Death	Active
	45	Baglung	223	183	1	39
	46	Syangja	209	160	2	47
	Sub -total		1305	931	5	369
Lumbini	47	Arghakhanchi	342	243	1	98
	48	Kapilbastu	765	734	1	30
	49	Gulmi	360	319	3	38
	50	Dang	655	468	1	186
	51	Nawalparasi East	116	123	0	49
	52	Palpa	561	361	1	199
	53	Pyuthan	331	294	0	37
	54	Bardiya	190	166	0	24
	55	Banke	394	383	2	9
	56	Rukum East	5	4	0	1
	57	Rupandehi	321	293	1	27
	58	Rolpa	53	44	0	9
	Sub-total		4093	3432	10	651
Karnali	59	Kalikot	61	41	0	20
	60	Jajarkot	17	11	0	6
	61	Jumla	70	60	0	10
	62	Dolpa	5	0	1	4
	63	Dailekh	803	747	1	55
	64	Mugu	7	3	0	4
	65	Rukum West	33	22	0	11
	66	Salyan	248	184	0	64
	67	Surkhet	541	393	2	146
	68	Humla	2	2	0	0
Sub-total		1787	1463	4	320	
Sudurpaschim	69	Achham	641	314	1	326
	70	Kanchanpur	448	375	0	73
	71	Kailai	927	118	4	805
	72	Dadeldhura	284	267	0	17
	73	Doti	578	157	0	421
	74	Darchula	20	13	0	7
	75	Bajhang	169	87	0	82
	76	Bajura	616	2	1	613
	77	Baitadi	276	252	0	24
Sub-total		3959	1585	6	2368	
Grand Total		17177	11025	39	6113	

Source: Provisional Data Reported at Health Emergency Operation Center Nepal as of 31 Asar 2077

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 nurses and midwives , including planning, coordination, supervision, monitoring and facilitation for various aspect of nursing (school health and community nursing services) and midwifery; 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 volunteer's policy, strategy, standard, protocol and guideline.

Organizational Structure

The Nursing and Social Security Division has three sections, (Box 6.1). The specific functions of three sections are given subsequently in their sub-heading:

Box 6.1: Sections under the Nursing and Social Security Division

Nursing Capacity Development Section
Geriatric and Gender Based Violence Management Section
Social Health Security Section

6. 1 Nursing Capacity Development

6.1.1 Background

The main responsibility of this section is to facilitate in the process of development of plans, policies, strategies and programmes for strengthening various specialities of nursing and midwifery services. This section is also a focal point for national nursing and midwifery service and school health programme. The specific functions of this 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 services;
- 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 education and services;
- Co-ordinate and facilitate in the various study, research aimed for the enhancement of quality of community and midwifery education and 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, occupational health nurse;
- Co-ordinate and facilitate the concerned agencies for the development and promotion of community nursing services;
- Co-ordinate and facilitate the concerned agencies for the development and promotion of midwifery education and services;
- Collaborate and coordinate with the concerned agencies in developing nursing and midwifery human resource planning, capacity building, development and management;
- Develop the protocol of public health nursing and midwifery services

6.1.2 Major Activities and Achievements in the Fiscal Year 2076/77

A. School Health Programme

In Fiscal Year 2076/77, as per the essence of National Health Policy, 2076, 15th Five Year Plan, Public Health Service Act 2075 and National Education Policy 2076, guideline of school health and nursing service has been developed. Based on this guideline, the programme was implemented in thirteen (13) local levels where one hundred twenty (120) school nurses were deployed in respective number of school i.e. one hundred twenty (120) schools in five provinces (province 2, Gandaki, Lumbini, Karnali and Sudur Paschim province). Details are given in the table 6.1.1 below.

Table 6.1.1 Number of schools covered in this programme:

S.N.	Province	Number of School Covered
1	Province 2	17
2	Gandaki	10
3	Lumbini	16
4	Karnali	60
5	Sudurpaschim	17
Total		120

B. Development of Continuous Professional Development (CPD) Educational Module

In Fiscal Year 2076/77, as part of capacity building of nurses, a total of thirteen (13) CPD modules¹ were developed and implemented in two central hospitals (Bheri Hospital and National Trauma Center). A total of seventy five (75) nurses were trained in all the modules.

C. Development of Clinical Nursing Protocol

In Fiscal Year 2076/77, total three clinical nursing protocols were developed and distributed in all the public and private hospitals. Protocols were developed in three common procedures done in hospitals: 1) Chemotherapy Preparation and Administration, 2) Fistula Puncture and Hemodialysis and 3) Ventilator care.

D. Revision and Update of Job Description of Health Workers

In the changed context of federalism, the terms of reference of many health institutions have also been changed. Therefore, it was necessary to develop, update and revise the job description of various cadres of health workers working in various health institutions. However, as per the jurisdiction of central government, it was decided to develop the Job description of health workers having posts in central hospitals only. So job description for twenty one (21) posts of seven (7) groups of health services were revised and updated. The job description was developed for all the levels of health cadres for following groups of health services: General Nursing, Public Health Nursing, School Nurse, Midwives, Anesthesiology, Psychiatry, Radiography, Physiotherapy and Medical recorder.

E. Development of training Package on Infection Prevention and Control based on blended learning approach

Infection Prevention and Control has been proved as a practical and evidence based approach to prevent the patients and health workers from harms caused by increasing healthcare associated Infections (HCAIs) and the results of antimicrobial resistance. In order to expedite and monitor the Infection Prevention and Control activities in hospitals and health institutions, the training package for Infection Prevention and Control was developed with the aim of preparing certified Infection Control Nurses. The training is of three months duration with six weeks of self-paced online modules and six weeks of clinical posting on group based training.

F. Implementation of clinical Audit Programme

Action Plan for Clinical audit programme was developed and implemented in National Trauma Center in FY 2076/77. Audit was mainly done in five major areas: patient satisfaction, waste management, hand hygiene, infection prevention and control (hand hygiene, donning and doffing of gloves) and surgical safety.

G. Midwifery Services

In Fiscal Year 2076/77, Rapid assessment of nurses working in safe-motherhood areas was done in order to develop the bridging course to train registered nurses into professional midwives. Also the guideline for deployment of professional midwives in the hospitals was developed for facilitating recruitment and placement of professional midwives in hospitals.

H. Nursing and Midwifery Policy dialogue programme

In Fiscal Year 2076/77, policy dialogue programme was conducted at three provinces, province 1, province 2 and Gandaki Province, in order to strengthen the nursing and midwifery services at provincial levels, explore the potential areas of investment in nursing and midwifery sector from provinces and also to reflect nursing and midwifery as major intervention area in health policies of provinces.

Issues and challenges

Issues and Challenges	Recommendations
➤ Inadequate human resources.	➤ Recruitment of permanent staffs/human resources in vacant post from PSC.

¹Peri-operative nursing care, Care of unconscious patient, Blood transfusion, Aerosol therapy, Basic life support, Problem caused by immobility and its prevention, Ethical and Legal aspects of nursing, Central Venous Pressure monitoring and care of central lines, Pain management, Suctioning, Oxygen therapy, Infection prevention and control and care of patient with chest-tube.

6.2 Geriatric and Gender Based Violence

6.2.1 Background

The main function of this section is to develop policies, strategies, criteria, directories, programmes, etc. for the easy access of quality health services to targeted groups ultra-poor people; poor people; helpless people; people with disabilities; senior citizens; women, men and children, victims of gender based violence and female community health volunteers. The specific functions of this section are as follows:

- Co-ordinate, collaborate and facilitate the concerned agencies for the development of policy, strategy, standard, protocol and guideline of home based nursing and other 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 survivors of gender based violence;
- Monitor and facilitate while needed to establish One Stop Crisis Management Centres (OCMCs);
- Coordinate with all concerned agencies, stakeholder organizations that work in the field of geriatrics and gender based violence;
- Develop protocol, IEC materials for the delivery of quality health services with emphasis on geriatric friendly services from public, private, profit and on profit health institutions; and
- Provide technical support and guidance for promoting capacity of health care workers in geriatric health care and management of gender based violence.

A. Geriatric Services

The constitution of Nepal has ensured the right of public to free Basic Health Care Service and emergency services. It also has ensured that the old people will be entitled to special protection from nation and are entitled to right to social security. Therefore to ensure the accessibility and utilisation of health services by older people, the Ministry of Health and Population is extending the geriatric health care services to hospitals with more than 100 beds in every fiscal year. The Ministry of Health and Population has started the concept of separate geriatric ward from FY 2070/71 to provide comprehensive health services and free medical treatment to elderly persons and extended the services in the hospitals with more than 100-bed capacity. Now the service has been extended to sixteen (16) hospitals¹ across the country in this fiscal year.

Major Activities and Achievements in the Fiscal Year 2076/77

The geriatric services along with establishment of separate geriatric ward have been expanded to eight new hospitals in this fiscal year.

Guideline for home based health care has been developed in which older people with the many chronic health problems are the major service consumers. This guideline regulates the home care service provided by many organisations.

¹BP Koirala Institute of Health and Science (Dharan), Koshi Hospital (Biratnagar) , Mechi Hospital (Bhadrapur), Narayani Hospital (Birgunj), Janakpur Hospital (janakpur), Patan hospital, Patan Academy of Health and Science (patan), Aayurveda Teaching hospital (Kirtipur), Bharatpur hospital (Chitwan), Bir Hospital, NAMS (Kathmandu), Hetauda Hospital (Hetauda), Western Regional hospital, Pokhara Academy of Health and Science (Pokhara), Bheri hospital (Nepalgunj), Rapti Academy of Health Science(Dang), Lumbini hospital (Butwal), Karnali Provincial Hospital (Surkhet), and Seti hospital (Dhangadhi).

Issues and challenges:

Issues and Challenges	Recommendations
➤ Limited Resources (limited bed capacity, limited space availability to adjust supportive geriatric equipment)	➤ Expansion of geriatric services to other wards/department in hospitals including mandatory geriatric services in private and teaching hospitals.
➤ High demand of geriatric services	➤ Revision of age criteria for geriatric services should be considered.
➤ Lack of specialized health care providers	➤ Development of specialised or trained human resources: geriatric medicine/nursing; training by NHTC and specialised training by university

B. Gender Based Violence Management (OCMC Program)

Gender-based Violence (GBV) is a grave human rights violation issue and public health concern which impacts the physical and mental health of the individual survivor and his/her children, and carries social and economic cost to society. It is inextricably linked to the gender norms and unequal power relations between genders in society. Violence against Women and Girls (VAWG) is one of the manifestations of this gender inequality.

GBV cuts across caste-ethnicity, religion and socio-economic status and is prevalent in all geographical settings, though in different forms and magnitude, making prevention and response crucial nationwide². The Nepal Demographic and Health Survey (NDHS, 2016) found that twenty two (22) percent of women aged 15–49 years had experienced physical violence at some point since age 15 years, while seven percent had experienced sexual violence. The main perpetrator of physical or sexual violence was their husband or intimate partner. Reporting violence or seeking help is not common as survivors are reluctant to report incidents to the authorities for fear of stigmatisation and further incidences of violence and lack of social support. Two-thirds of women who have experienced any physical or sexual violence have not informed anyone or sought help.

The Government of Nepal (GoN) has taken significant steps in reforming laws and policies to combat GBV in the country. However, a deeply established social norm that excuses Violence against Women and Girls (VAWG) persists. The Ministry of Health and Population (MoHP) was tasked with Clause 3 of the National Action Plan against GBV (2010), to provide integrated services to survivors of GBV by establishing hospital based One-stop Crisis Management Centres (OCMCs). So MoHP initiated the establishment of OCMCs in 2011. By the end of 2076/77, 69 OCMCs had been established in 64 districts. MoHP has planned to scale-up the OCMCs to 77 districts across the country in 2077/78.

OCMCs are mandated to provide seven services to GBV survivors (see Box below).

According to the Operational Guideline of OCMC, 2067 following seven kinds of services are provided from OCMC through multi-faceted coordination with other agencies:

1. Health services – Immediate and free 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.
2. Medico-legal examination and reporting.

²Ministry of Health, Nepal; New ERA; and ICF. 2017. Nepal Demographic and Health Survey 2016. Kathmandu, Nepal: Ministry of Health, Nepal.

3. Psycho-social counselling to survivors and perpetrators.
4. Legal service- counselling and support to survivors through district attorneys and legal counsellors.
5. Safe homes — by directing survivors to safe shelter homes.
6. Security – by working with the police and district administration offices to provide security to survivors in hospitals, safe houses, and in their communities.
7. Rehabilitation – by providing further counselling, education, vocational skills training and other livelihoods support.

Major Achievements in fiscal year 2076/77

1. OCMC service utilisation

The numbers of OCMCs have increased from 7 in 2011/12 to 69 by the end of FY 2076/77 (2019/20). The numbers of clients receiving health service from the OCMC site have also been increased from 187 to 8342 from 64 hospitals regularly reporting the data. (See table 6.2.1)

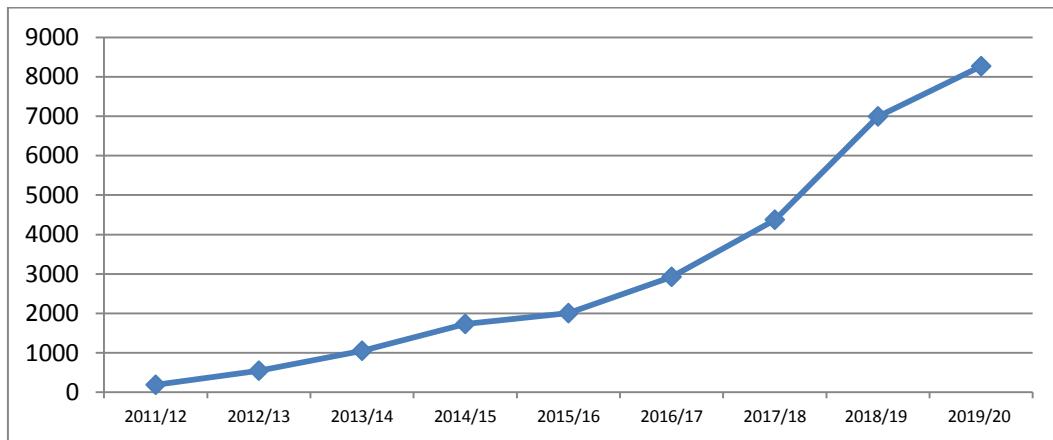
Table 6.2.1 Clients by year and number of reporting hospitals

Year	Total no of clients served by OCMCs	Number of hospitals reporting data
2011/12	187	7
2012/13	545	12
2013/14	1,049	14
2014/15	1,730	15
2015/16	2,004	17
2016/17	2,924	22
2017/18	4,372	37
2018/19	6,992	45
2019/20	8342	64

Source: GESI/MoHP

Women make up the overwhelming majority of OCMC clients, representing over 90 percent of clients. The average number of clients served per OCMC has increased over time (see figure 6.2.1). This reflects increasing capacity of OCMCs with the introduction of the GBV Clinical Protocol in 2015, revision of the OCMC Operational Manual in 2016 and the introduction of psychosocial counselling training in 2012/13 and medico-legal training in FY 2018/19.

Figure 6.2.1: Total number of clients served by OCMCs from fiscal year 2011/12 to 2019/20



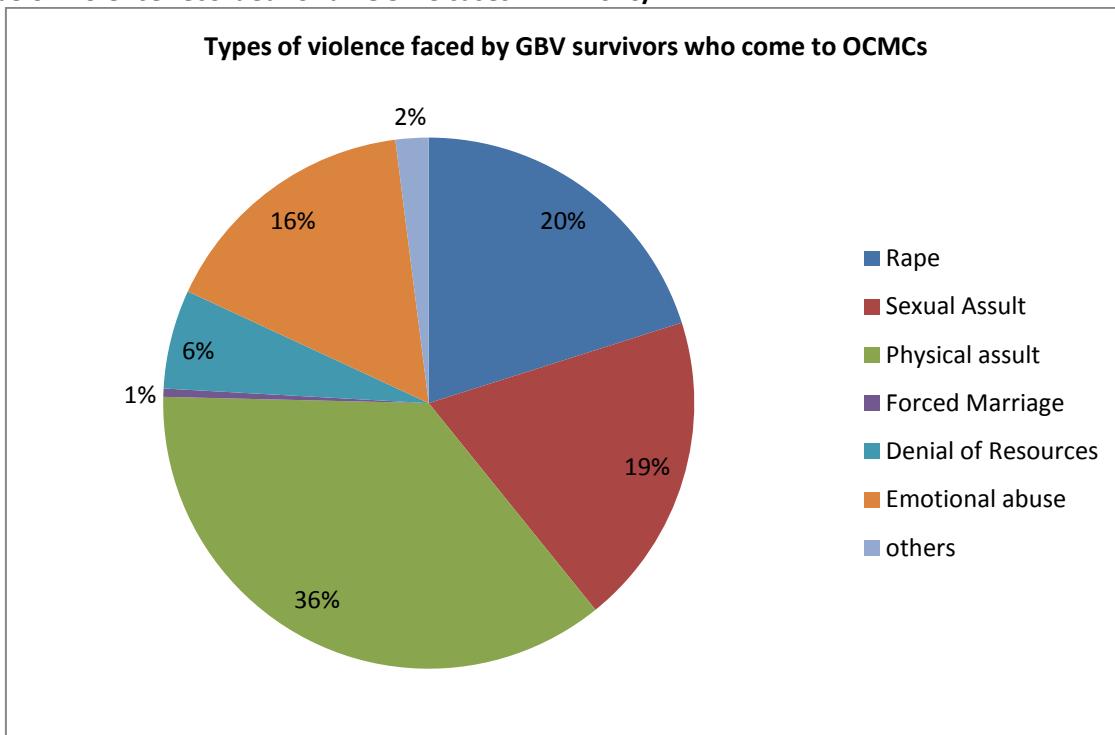
Source: GESI/MoHP

Using the number of OCMC clients in one year as a percentage of the estimated number of women seeking help using census data and estimates of physical and sexual violence from the Nepal Demographic and Health Survey (NDHS, 2016) it is seen that OCMCs served between 3–4 percent of women who sought help for physical or sexual violence in 2075/76 (2018/19)

2. Type of violence

In FY 2076/77 (2019/20) it is seen that physical assault, sexual assault and rape make up 76 percent of all cases. Rape and sexual assault together are 39 percent of all cases, and physical assault is 36 percent.

Type of violence recorded for all OCMC cases in FY 2076/77



Source: GESI/MoHP Figure 6.2.2.

3. Enabling Factors

The performance of different OCMCs has been varied. Experiences show that the following good practices enable the successful operation of OCMCs:

Hospital leadership commitment to OCMCs is a key enabling factor for their success. Supportive leaders provide resources to OCMCs, generate commitment to GBV across the hospital, motivate staff and improve the quality of care.

Coordination — Good coordination between police administration and hospital centres 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 hours service; the maintenance of client confidentiality and security.

Awareness raising — running of sensitisation campaigns against GBV in local communities, widespread dissemination of information about OCMC services and GBV issues through FM radio, brochures and other media.

4. Issues and Constraints

Issues and Constraints	Way Forward
➤ Leadership and Governance	➤ Mechanism is required to enable all local governments within the scope of OCMCs to participate in governance functions.
➤ Decreased Funding of safe homes and rehabilitation service	➤ Increase the funding and support from central, provincial level and local levels and also the relevant stakeholders through widespread advocacy meetings.
➤ Availability of trained human resource	➤ Organise the orientation programme on clinical protocols, and training on medico legal and psychosocial counselling for medical officers and nursing staffs working in OCMCs.
➤ Lack of dedicated space for OCMCs	➤ As per the OCMC establishment and operation guideline, health centres must mandatory arrange for the separate room for medico legal examination and counselling room for survivors of GBV.

C. Social Service Unit (SSU)

Social Service Unit was established in fiscal year 2065/66 in central, regional, sub-regional and zonal hospitals. The objective of the SSU is to effectively facilitate and coordinate with hospital staff to provide free and partially free health care services to the target group on a daily basis, and to manage their access to such services. Till FY 2076/77, Social Service Units have been established in 37 public hospitals.

Issues and challenges

Issues and Challenges	Recommendations
➤ Limited Resources	➤ Provision of availability of resources from the central and provincial level for effective functioning of SSUs.
➤ Poor Recording and Reporting	➤ Formal and database based recording and reporting mechanism need to be established
➤ Poor supervision and monitoring	➤ Integrated supervision and monitoring of SSU with proper use of standard checklists in regular basis

6.3 Social Health Security Section

6.3.1 Background

The Social Health Security Section was established in 2075 B.S and is responsible for free treatment and management facilities for eight selected diseases (Cancer, Kidney Disease, Heart Disease, Traumatic Head Injury, Traumatic Spinal Injury, Alzheimer's diseases, Parkinson's and Sickle Cell Anemia) to impoverished Nepalese citizens at listed hospitals under this scheme. The section is also accountable for development and revision of FCHVs and other health related volunteer's policy, strategy, standard, protocol and guideline.

The specific functions of this section (Box 6.3.1) are given below

Box 6.3.1: 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 Nagarik Aaushadi Upachar Programme", treatment of serious health conditions of citizens; and
Develop, revise and update the policy, strategy, standard, protocol and guideline for FCHVs and other health related volunteers.

6.3.1 Bipanna Nagarik Aaushadhi Upachar Programme

6.3.1.1 Background

The goal and objective of this programme (Box 6.3.1.1) are given below:

Box 6.3.1.1: Goal and objectives of the programme

Goal — Manage the provision of free treatment to impoverished citizens.

Objectives —

- i) List the different types of hospitals for free medication and treatment of impoverished Nepalese citizen under “Bipanna Nagarik Aaushadhi Upachar Programme”.
- ii) Develop, revise and update the policy, standard, guideline and protocol for “Bipanna Nagarik Aaushadhi Upachar Programme”.

6.3.1.2 Major ongoing activities

The Impoverished Citizens Service Scheme of Social Health Security Section provides the following funding for impoverished Nepalese citizens to treat serious health conditions:

Free treatment up to NPR 100,000 per patient via listed hospitals for severe diseases including Cancer, Heart Disease, Traumatic Head Injuries, Traumatic Spinal Injuries, Alzheimer’s disease, Parkinson’s and Sickle Cell Anaemia disease once in life time.

Pre transplant (HLA & cross match) test support up to NPR 50,000;

Renal transplantation costs up to NPR 400,000 per patient;

Medication costs up to NPR 100,000 for post-renal transplant cases;

Free haemodialysis and peritoneal dialysis services; and

Free medical treatment for Acute Kidney Injury (Nephrotic Syndrome, Glomerulo nephritis, dialysis service, etc.) up to NPR 100,000.

The following activities were conducted on a regular or ad-hoc basis in FY 2076/77 alongside the above-mentioned regular functions:-

Fifty four thousand eight hundred and eighty six (54886) number of patients were managed in the provision of free treatment to impoverished citizens services scheme. Top most number of patients from Cancer (34667), followed by Kidney (7487), Heart disease (5761), Sickle Cell Anaemia (3803), Traumatic Spinal Injury (1856), Traumatic Head Injury (840) and from Parkinson’s disease (364) whereas number of patients from Alzheimer diseases were 117 which was lowest in number under the provision of free treatment to impoverished citizens services scheme. Details are given in (Table 6.3.1.1).

In the Fiscal Year 2076/77 a total of one hundred seven (107) patients received support for kidney transplant. A total of one hundred sixteen (116) people received support for post kidney transplant medication.

Table 6.3.1.1: Total number of impoverished patients (both new and old) provided with treatment support for serious diseases, 2076/77

S.N	Name of Hospitals/particular	Kidney		CAPD	Medicine	Kidney Transplant	Cancer	Heart	Head Injury	Traumatic Spinal Injury	Parkinson's	Alzheimer's	Sickle Cell Anemia	Total
		Kidney Hemodialysis	Seropositive Dialysis											
1	National Academy of Health Sciences, Bir Hospital, Kathmandu	113	3	0	46	8	2276	5	3	10	11	1	0	2476

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2	Tribhuwan University Teaching Hospital Maharajgunj	150	0	10	29	975	632	0	22	258	18	5	0	2099
3	B.P.Koirala Institute of Health Science, Dharan	238	0	10	4	0	405	539	0	139	112	55	0	1502
4	Patan Academy of Health Science, Patan Hospital	141	0	0	166	0	1835	166	1	73	29	56	0	2467
5	Nobel Medical College Teaching Hospital,Biratnagar	248	0	14	0	0	0	671	351	77	170	0	0	1531
6	Paropakar Maternity Womens Hospital, Thapathali	0	0	0	0	0	9	0	0	0	0	0	0	9
7	Sahid Gangalal N. Heart Centre, Bansbari	0	0	0	0	0	0	2238	0	0	0	0	0	2238
8	Civil Service Hospital, Minbhawan	0	0	0	0	0	1847	0	0	0	0	0	40	1887
9	Manmohan Cardio Thoracic , Vascular &Transplant Center	0	0	0	0	0	0	699	0	0	0	0	0	699
10	B.P. Koirala Memorial Cancer Hospital, Bharatpur	0	0	0	0	0	13430	0	0	0	0	0	0	13430
11	Sahid Dhama Bhakta Human Organ Transplant Centre, Bhaktapur	194	14	0	1	48	0	0	0	0	0	0	0	257
12	Pokhara Academy of Health Science, Pokhara	161	0	0	0	0	0	0	0	0	0	0	0	161
13	Narayani Hospital, Birgunj	45	0	0	0	0	0	0	0	0	0	0	0	45
14	Rapti Academy of Health Science, Dang	34	0	0	0	0	0	0	0	0	0	0	0	34
15	Mechi Hospital, Bhadrapur, Jhapa	39	0	0	0	0	0	0	0	0	0	0	0	39
16	Koshi Hospital, Morang	75	0	0	0	0	232	0	0	0	0	0	0	307
17	Janakpur Hospital, Janakpur	68	0	0	0	0	0	0	0	0	0	0	0	68
18	Bheri Hospital, Banke	13	0	0	0	0	0	47	0	6	0	0	1244	1310
19	Seti Zonal Hospital, Kailali	115	0	0	0	0	0	0	0	0	0	0	1586	1701
20	Nepal Medical College Jorpati	154	0	20	0	0	0	0	0	0	0	0	0	174
21	Gandaki Medical College, Pokhara	73	0	0	0	0	168	0	6	7	0	0	0	254
22	Universal College of Medical Sciences, Bhairahawa	121	0	0	0	0	0	0	0	0	0	0	0	121
23	Chitwan Medical College Teaching Hospital, Chitwan	100	0	0	0	0	39	319	33	30	2	0	0	523
24	College of Medical Sciences, Chitwan	125	0	0	0	0	0	43	47	32	22	0	0	269
25	Nepalgunj Medical College, Banke	163	32	0	0	0	0	0	0	0	0	0	0	195
26	Manipal Medical College, Teaching Hospital Pokhara	39	0	26	0	0	257	160	12	27	0	0	0	521
27	Bhaktapur Cancer Hospital, Bhaktapur	0	0	0	0	0	7198	0	0	0	0	0	0	7198
28	National Kidney Centre, Banasthali	749	0	3	0	0	0	0	0	0	0	0	0	752
29	Golden Hospital Pvt.Ltd, Biratnagar	91	0	0	0	0	0	0	34	0	0	0	0	125

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30	B&B Hospital, Gwarko	28	0	0	0	0	157	0	0	0	0	0	0	0	185
31	Aarogya Health Pratisthan, Pulchowk	377	0	84	0	0	0	0	0	0	0	0	0	0	461
32	Manmohan Memorial Medical College And Teaching Hospital, Swoyambhu, Kathmandu	29	0	0	0	0	0	0	0	0	0	0	0	0	29
33	Cancer Care Nepal, Jawalakhel	0	0	0	0	0	521	0	0	0	0	0	0	0	521
34	Siddhartha City Hospital Pvt, Butwal	68	0	0	0	0	0	0	0	0	0	0	0	0	68
35	Alka Hospital Pvt, Jawalakhel	62	0	0	0	0	0	0	0	0	0	0	0	0	62
36	Gautam Buddha Samudayik Heart Hospital, Butwal, Rupandehi	484	0	0	0	0	0	725	0	0	0	0	0	0	1209
37	Charak Memorial Hospital Pvt, Kaski Pokhara	60	0	24	0	0	0	0	0	0	0	0	0	0	84
38	Himal Hospital Pvt Ltd., Gyaneswar, Kathmandu	45	0	0	0	0	0	0	0	0	0	0	0	0	45
39	Vayoda Hospital Pvt. Ltd., Balkhu	36	0	0	0	0	0	7	0	0	0	0	0	0	43
40	Kathmandu Cancer Center, Tathali, Bhaktapur	0	0	0	0	0	726	0	0	0	0	0	0	0	726
41	Venus Hospital Pvt.Ltd, Baneshwor, Kathmandu	42	0	0	0	0	0	0	0	0	0	0	0	0	42
42	National Trauma Center, Mahabuddha, Ktm	0	0	0	0	0	70	0	227	566	0	0	0	0	863
43	Nepal Cancer Hospital & Rearch Center, Lalitpur	0	0	0	0	0	2825	0	0	0	0	0	0	0	2825
44	Grande International Hospital Pvt, Dhapasi	50	0	0	0	0	0	0	0	0	0	0	0	0	50
45	Crimson Hospital, Manigram Rupandehi	59	0	0	0	0	0	65	0	0	0	0	0	0	124
46	Greencity Hospital Pvt. Ltd, Dhapasi, Kathmandu	61	0	0	0	0	0	0	0	0	0	0	0	0	61
47	OM hospital and Research Center	65	0	0	0	0	38	0	0	0	0	0	0	0	103
48	Neuro Cardio Multispecialty Hospital, Biratnagar	0	0	0	0	0	0	52	92	2	0	0	0	0	146
49	Purna Tung Birtacity Hospital, Jhapa	42	0	0	0	0	0	0	0	0	0	0	0	0	42
50	Janaki Health Care and Research Center Pvt. Ltd.	62	0	0	0	0	0	0	0	0	0	0	0	0	62
51	Dhulikhel Hospital, Kavre	13	0	0	0	0	143	3	6	47	0	0	0	0	212
52	Om Sai Pathivara Hospital, Jhapa	80	0	0	0	0	0	0	0	0	0	0	0	0	80
53	Kist Medical College, Teaching Hospital, Lalitpur	82	0	0	0	0	0	0	0	0	0	0	0	0	82
54	Lake city and critical care Hospital, Pokhara	57	0	0	0	0	0	0	0	0	0	0	0	0	57
55	Spinal Injury Rehabilitation Centre	0	0	0	0	0	0	0	0	500	0	0	0	0	500
56	Bharatpur Hospital, Bharatpur	98	0	0	0	0	0	0	0	72	0	0	0	0	170

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57	Blue Cross Hospital Pvt. Ltd.	32	0	0	0	0	0	0	0	0	0	0	0	0	32
58	Shree Birendra Military Hospital, Chhauni, Ktm	145	0	0	0	0	0	0	0	0	0	0	0	0	145
59	National City Hospital Pvt.Ltd., Bharatpur	0	0	0	0	0	120	0	0	0	0	0	0	0	120
60	Nepal Police Hospital, Kathmandu	42	0	0	0	0	0	0	0	0	0	0	0	0	42
61	Ghodagodhi Hospital Pvt. Ltd.	0	0	0	0	0	0	0	0	0	0	0	0	911	911
62	Kanti Children Hospital, Ktm	0	0	0	66	0	1314	0	0	0	0	0	0	0	1380
63	Sumeru Community Hospital Pvt. Ltd.	27	0	0	238	0	0	0	0	0	0	0	0	0	265
64	Rapti Hospital, Tulsipur	20	0	0	0	0	0	0	0	0	0	0	0	0	20
65	Dhaulagiri Hospital, Baglung	19	0	0	0	0	0	0	0	0	0	0	0	0	19
66	Surkhet Provincial Hospital, Surkhet	38	0	0	0	0	0	0	0	0	0	0	0	0	38
67	National Medical College, Birgunj	152	0	0	0	0	0	0	0	0	0	0	0	0	152
68	SushilKoirala Cancer Hospital, Banke	0	0	0	0	0	425	0	0	0	0	0	0	0	425
69	Gajendra Narayan Singh Hospital, Rajbiraj	17	0	0	0	0	0	0	0	0	0	0	0	0	17
70	Birgunj Health Care Hospital, Birgunj, Parsa	0	0	0	0	0	0	22	6	10	0	0	0	0	38
71	Lumbini Provincial Hospital, Butwal	16	0	0	0	0	0	0	0	0	0	0	0	0	16
72	Bardiya Hospital, Gulariya	0	0	0	0	0	0	0	0	0	0	0	0	21	21
73	Mahakali Hospital, Mahendranagar	0	0	0	0	0	0	0	0	0	0	0	1	1	
Total		5657	49	191	550	1031*	34667	5761	840	1856	364	117	3803	54886	

Source: NSSD/DoHS

*:Out of 1031 kidney transplant patients, 924 patients are those who came for follow up and 107 are the new patients having kidney transplan

6.3.1.4 Issues and challenges

Issues and challenges		Recommendations
➤ Insufficient budget/fund for impoverished Nepalese citizens to treat serious health conditions.		➤ Provide adequate funds or incorporate this programme with health insurance.
➤ The monitoring of public and private health facilities.		➤ Establish a task force that supervise regularly to the public and private health facilities.
➤ Over the time period increase in the number of non-communicable major diseases.		➤ Government should plan more fund and programme on prevention of non-communicable diseases. ➤ Increase awareness on prevention and early detection of non-communicable diseases to the community
➤ Lack of trained health manpower in relation to increasing number of patients		➤ Organize training to strengthen and upgrade professional knowledge and skills.
➤ Lack of indicators to determine impoverished citizen		➤ Government should identify impoverished citizen and provide identity card.

6.3.2 FCHV Programme

6.3.2.1 Background

The government initiated the Female Community Health Volunteer (FCHV) Programme in 2045/46 (1988/89) in 27 districts and expanded it to all 77 districts thereafter. Initially one FCHV was appointed per ward and followed by a population-based approach that was introduced in 28 districts in 2050 B.S. (1993/94). Out of the total of 51423 FCHVs recruited a total of 49481 (as reported in HMIS) FCHVs are actively working in Nepal. The goal and objectives of the programme are listed in Box 6.3.2.1

Box 6.3.2.1: Goal and objectives of the FCHV Programme

Goal — Improve the health of local community people by promoting public health measures of health promotion and disease prevention. 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 demand of health care services among community people.

FCHVs are selected by health mothers' groups. FCHVs are provided with 9 days basic training and 9 days refresher 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 Oral Rehydration Solution (ORS) are supplied to them through health facilities.

The major role of FCHVs is to advocate healthy behaviour among mothers and community people to promote safe motherhood, child health, family planning and other community based health issues and service delivery. FCHVs distribute condoms and pills, ORS packets and vitamin A capsules, identify pneumonia cases, refer serious cases to health institution and motivate and educate local people on healthy behaviour related activities. 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 and updated accordingly to strengthen the programme. The FCHV programme strategy was developed in 2067 and first revision done in 2076, to promote a strengthened national programme. In fiscal year 2064/65 MoHP 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. Every year FCHV day is celebrated on 5th December.

Facilities for FCHVs

A total of Rs.10,000/- is provided to each FCHV as dress allowance every year. A travel allowance of Rs. 3000/- is provided to each FCHV as transportation cost every year. Since 2071/72 the government has allocated budget of Rs. 20,000/- to each FCHVs as an appreciation for their contribution during the farewell to FCHVs over 60 years of age as recommended by health mothers' groups. Government of Nepal bears the 50 % of premium of health insurance for individual FCHVs and also they are one of the target groups to receive service through Social Service Unit of health facilities.

6.3.2. 2 Major activities in FY 2076/77

A modular orientation package was developed to update the knowledge of FCHV on relevant health issues. Revision of FCHV strategy was done. Basic and refresher training for old and new FCHVs was done respectively, Orientation and mobilization of FCHVs for national health programmes was conducted as per the programmes. Biannual FCHV review meeting was held at the local level and FCHV Day celebrated on 5th December by every local levels. Dress allowance, appreciation amount during farewell and travel allowance was distributed as in previous years.

6.3.2.3 Major Achievements in FY 2076/77

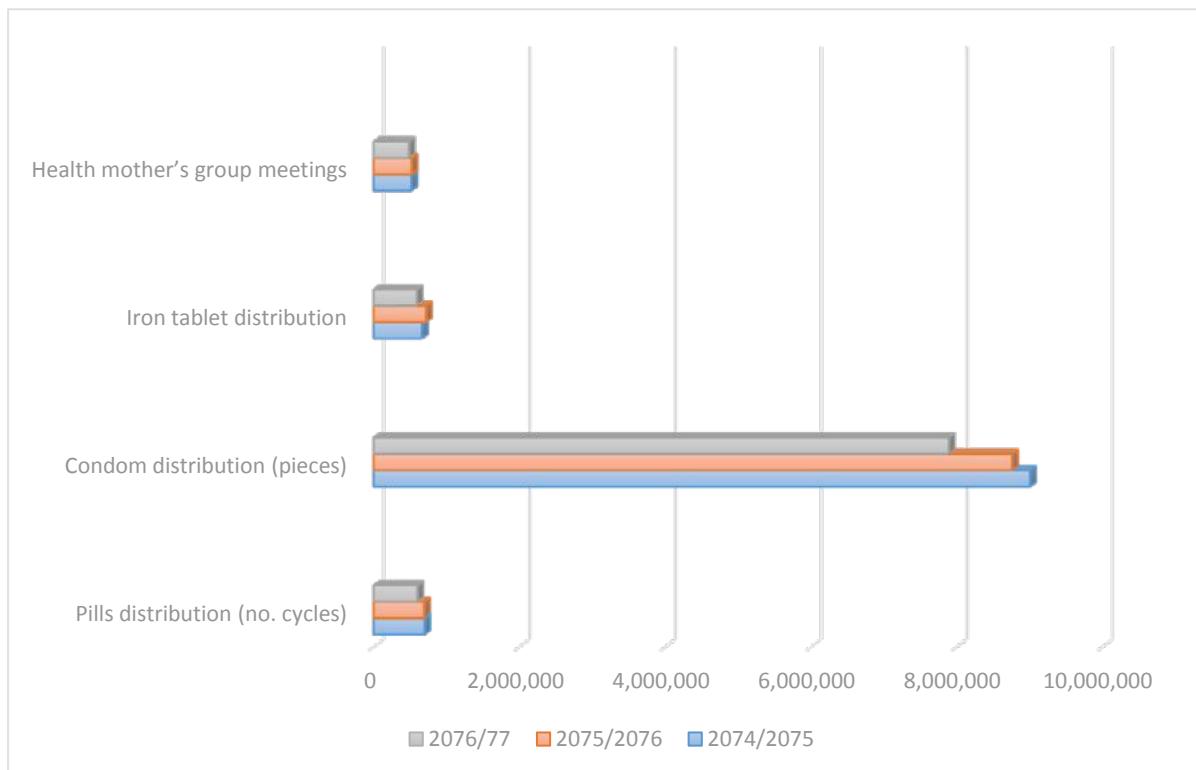
1. Trend of services provided by FCHVs

In fiscal year 2076/77, the number of mothers participating in health mother's group meetings were decreased as well as FCHVs distributed fewer pills, condoms and iron tabletin comparisons tofiscal year 2075/76. (Table 6.3.2.1 and Figure 6.3.2.1) It may be due to the COVID 19 pandemic and various restrictions in place as a part of public health interventions for decreasing transmission of COVID 19 infection.

Table 6.3.2.1: Trend of services provided by FCHVs

Services	2074/2075	2075/2076	2076/77
Pills distribution (no. cycles)	697,852	692,010	600,509
Condom distribution (pieces)	9,006,248	8,759,624	7,890,131
Iron tablet distribution to pregnant women (tablets)	664,162	718,285	593,080
Health mother's group meetings	517,285	520,101	483,192

Source: -HMIS/DoHS

Figure 6.3.2.1: FCHV contribution on selected health services from FY 2074/75 to 2076/77

Source: -HMIS/DoHS

6.3.2.4. Support provided by FCHVs for home deliveries

Even though government of Nepal has the policy of mandatory institutional deliveries because of various reasons women cannot reach up to health centres for delivery. So in case of any home deliveries in their locality FCHVs provide support and care to the postpartum women and new born. In 2076/77 FCHVs helped in initiating baby to mother skin-to-skin contact immediate after delivery in 64,835 cases, applied chlorhexidine to the umbilicus after delivery for 55,552 cases and ensured the taking of misoprostol for prevention of post-partum haemorrhage in 10,869 cases (Table 6.3.2.2).

Table 6.3.2.2: Support provided by FCHVs for home deliveries, 2076/77

Province	Initiating skin-to-skin contact after birth	Chlorhexidine applied on umbilicus	Ensured misoprostol tablets taken
Province 1	11,044	11,545	3,032
Province 2	33,094	25,465	3,295
Bagmati Province	5,422	4,160	1,234
Gandaki Province	1,881	1,810	320
Lumbini Province	5,761	5,409	1,148
Karnali Province	4,959	4,768	1,375
Sudurpashchim Province	2,674	2,395	465
National	64,835	55,552	10,869

Source: -HMIS/DoHS

6.3.2.5 Post Natal visits and support to postpartum mothers

Apart from providing care and support during home deliveries, FCHVs provide care and health teaching in postpartum mothers and encourage them for postpartum visits to institution as per the national protocol. In FY 2076/77(Table 6.3.2.3), FCHVs visit to support 57014 newborn and postpartum mothers within 24 hours of Birth, to 64504 new born and postpartum mothers on 3rd day of Birth and to 60836 newborn and postpartum mothers on 7th day of birth. During their visit they provide counselling on breast feeding, danger signs of mother and newborn, care of newborn and mother.

Table 6.3.2.3: FCHVs support for home deliveries

Province	Home Delivery-visit-newborn& PP Mothers- ≤24 hours of Birth	Home Delivery-visit-newborn& PP Mothers- 3rd day of Birth	Home Delivery-visit-newborn& PP Mothers-7th day of Birth
Province 1	9,080	10,177	9,951
Province 2	28,954	30,624	27,928
Bagmati Province	4,383	4,780	4,437
Gandaki Province	1,824	2,099	2,650
Lumbini Province	5,304	8,518	8,083
Karnali Province	4,726	4,389	3,815
Sudurpashchim Province	2,743	3,917	3,972
National	57,014	64,504	60,836

Source: HMIS/DoHS

6.3.2.5 Nutrition services provided by FCHVs at the Household level

FCHVs also play major role in decreasing malnutrition among children and women of reproductive age groups. They help in initiating breast feeding within 1 hour of birth and immediately provide Vitamin A capsule to postpartum mothers as well. Nutrition services provided by FCHVs in 2076/77 are as mentioned in table no. 6.3.2.4. Along with these services, FCHVs also assess the children under 5 years of age for acute malnutrition and then refer for further management as per their severity by measuring the Mid-Upper Arm Circumference (MUAC) of the children. FCHVs provided the screening service of acute malnutrition for 27,43,870 children and the details of the findings are as seen in table no 6.3.2.5.

Table 6.3.2.4: Nutrition service provided by FCHVs at the Household level

Province	Breast Feeding<1 hour of Birth	Distribution of Postpartum Vitamin A
Province 1	11,659	27,387
Province 2	33,563	45,149
Bagmati Province	5,866	18,931
Gandaki Province	2,069	7,614
Lumbini Province	6,089	15,934
Karnali Province	5,150	6,363
Sudurpashchim Province	2,941	6,142
Nepal	67,337	127,520

Source:-HMIS/DoH

Table 6.3.2.5: IMAM Service provided by FCHVs at the Household level

Province	MUAC-Screening-Red-SAM	MUAC-Screening-Yellow-MAM	MUAC-Screening-Oedema	MUAC-Screening-Green-Normal
Province 1	596	4,396	43	219,063
Province 2	1,500	16,347	93	500,326
Bagmati Province	1,068	4,504	150	716,634
Gandaki Province	311	1,650	2	175,867
Lumbini Province	1,157	11,253	11	372,023
Karnali Province	484	5,383	242	111,845
Sudurpashchim Province	1,379	19,237	29	578,277
Nepal	6,495	62,770	570	2,674,035

Source:-HMIS/DoHS

6.3.2.6. Issues and constraints

Issues and constraints	Recommendations
➤ Low utilization of FCHV Fund	➤ Strictly implementing guidelines and audit FCHV fund every year
➤ FCHV are not interested in farewell programmes	➤ Rethink the farewell package ➤ Implement revised FCHV strategy (1 st amendment 2076)
➤ Decreasing work performance of FCHV	➤ Motivate FCHV through FCHV Review meeting and orientation for FCHVs on related program

Curative Service

7 Curative services

7.1 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 within ministry, It has developed Terms of Reference (ToR) of different Institution to facilitate the process. In this context since the beginning of fiscal year 2075/76 Curative Service Division was established within Department of Health Services. Previously, Curative Service Division was under Ministry, but now in the changing 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, provincial 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 Service activities through its three different sections, namely

1. Hospital Services Monitoring and Strengthening Section
2. Basic Health and Emergency Management Section and
3. 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.

7.2 Section under Curative Service Division and their key functions

7.2.1. Hospital Service Monitoring and Strengthening Section

To assist MoHP by law, policy, guidance, quality standard, protocol formulation regarding hospital strengthen,

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 tertiary 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, protocols,
To co-ordinate for development and management of national level study, research and training centre,
Formulate standard treatment protocol (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 levels.

7.2.2. Basic Health and Emergency Management Section

Define and effective management of Basic Health Services according to 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 extension 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, protocols and guidelines to make emergency health care service effective,
To facilitate for formation of laws, policy, rules, criteria, protocols and guidelines regarding referral system and
To assist MoHP for the implementation, monitoring and regulation of emergency service and referral service.

7.2.3. Eye, ENT and Oral Health Section

To facilitate for formulation of national policy, rules, standard, protocols and guidelines related to Eye health,
To facilitate for formulation of national policy, rules, standard, protocols and guidelines related to ENT services,
To facilitate for formulation of national policy, rules, standard, protocols 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-ordination 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.

7.2.3 Minimum Service Standards for Hospitals and Health Facilities

Minimum Service Standards (MSS) Health Facilities 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 provided 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,

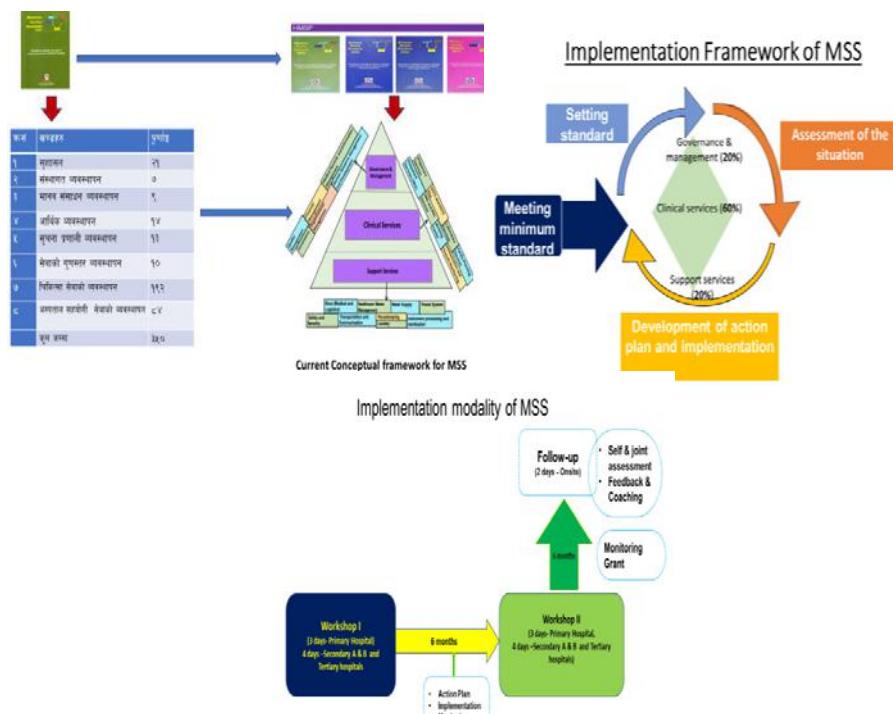
furniture, human resource required for carrying out service but not detail out the standards operating procedures of any service.

- Initially Ministry of Health and population (MoHP) in collaboration with, Nick Simons Institute (NSI), started Hospital Management Strengthening Program (HMSP) in district and district level hospitals (DH) of Nepal since FY 2071/72 (2014). It began as piloting of Hospital Management Training (HMT) in 4-hospitals in 2013, partnership between National Health Training Center (NHTC) with Nick Simons Institute (NSI) to support district hospital. Considering its modality and coverage the HMT training has converted into HMSP program in 2014.

This program is basically designed to identify existing gaps on readiness towards the quality improvement of hospital services through self and joint assessment using Minimum service standards (MSS) tool and develop action plan scientifically, in addition to hospital strengthening grant by MoHP/ DoHS and NSI. This program was designed in phase wise expansion in all district level hospitals (15 to 50 bedded). District level MSS has covered all 83 hospitals by FY 2075-76.

After implementation of DH MSS for 4 years and its exiting achievements during this period, the District hospital MSS tool has revised with the named as MSS for Primary hospital and new MSS tools for all level of hospital and health facility has developed. Which include 4 categories of hospitals Primary, Secondary A, Secondary B and Tertiary level Hospitals and Health Post as well. The eight section of DH-MSS has framed as the three broad areas are:

1. Management and Governance,
2. Clinical Services and
3. Hospital Support Services.



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 equipment's 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 3-4 years (completion of cycle of MSS in all targeted government hospitals) to incorporate the learning and adapt the documents to the emerging context.

There are all together 5 sets of MSS Tools including Health Post MSS (Basic Health Care Centre), Primary Hospital MSS (5,10,15 Beds Hospital), Secondary A Level (25-50 Bed General Hospital), Secondary B Level(100-300 Bed General Hospital) and Tertiary Level (Specialized Hospital). Each MSS tool has three major sections: Governance and Management, Clinical Service Management and Hospital Support Service Management. The total standards and Score that is used to measure the Service Standard varies according to the respective tools.

Tools	Old Format District Hospitals	Primary Hospitals (Revised)	Secondary A	Secondary B	Tertiary	Health Post MSS
	No. of standards	647	721	1073	1165	333
Total Score	350	761	939	1356	1497	383
Governance	74	109	110	110	111	74
Clinical service Hospital	192	520	662	1168	1228	172
Hospital	94	422	447	447	457	97

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 Health Facilities 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 and health facilities were previously lead by Curative Service Division, Ministry of Health and Population. Now in changing context, as per

ToR this Program is lead by Quality Standard and Regulation Division, Ministry of Health and Population and the implementation is done by Curative Service Division, DoHS.

Nationwide coverage of MSS implementation program in different level of Hospitals.

MSS has implemented in 100 different level of hospitals all over the country. Which include continuation of MSS Follow up in 83 hospitals and program was expanded in 17 additional hospitals

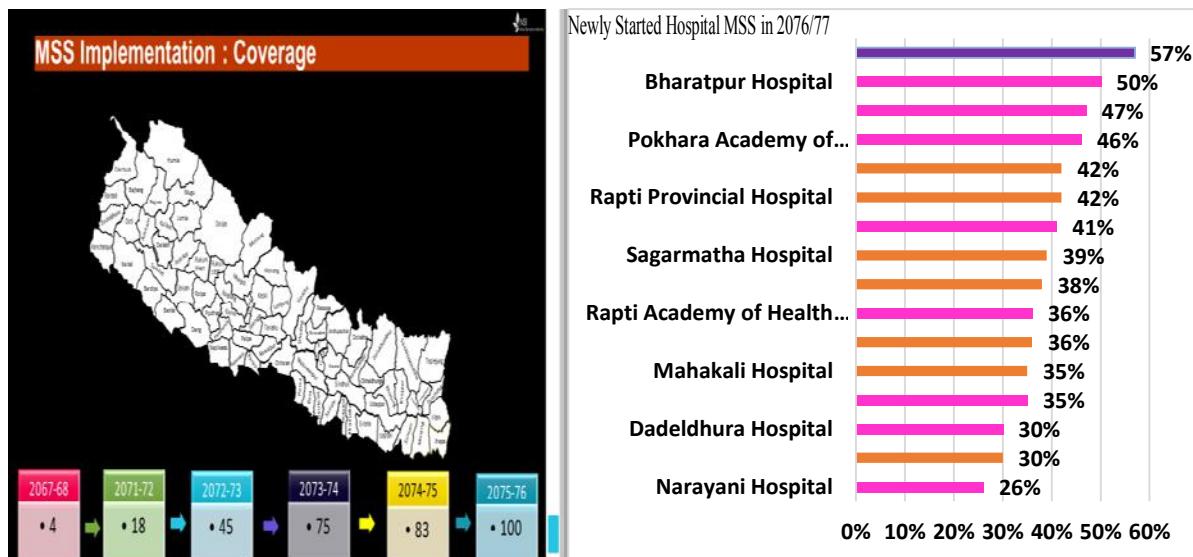


Figure 1

As a part of MSS implementation in all level of hospitals, MSS has implemented in 17 additional new (1- Primary + Secondary A-4, Secondary B-3 and 9 tertiary) hospitals. Among them 4 secondary A level was (previous Zonal) hospitals, 3 Secondary B were previous Zonal hospitals and 9 tertiary level hospitals (previous Zonal, Regional, sub regional and central). Among ¼ MSS implemented Secondary B hospitals Seti hospital Dhangadi being a highest score of 42% and Janakpur lowest score of 30%. Likewise, 9 Tertiary level hospitals Bharatpur became highest scorer of 50% and Narayani lowest score of 26%.

Among 83 Primary and Secondary A hospitals where district level MSS was implemented since beginning, the first follow up MSS Score with revised MSS (Primary and Secondary A), Only one hospital has scored > 80% and above. Likewise, 6 (7%) hospitals have 70-80% MSS score, 23(28%) hospitals secured MSS score between 60%-70%, 20 (24%) has secured their latest MSS Score of 50-60%. And 17(20%) has scored 40-50%. Still 16 (19%) hospitals are less than 40% MSS scores. Although the overall lowest MSS score being 18 % of Gaur (Secondary A) among 83 hospitals, but among primary hospitals lowest 27% of Bardibash hospital, and highest being 81% of Dhading Hospital.

Program impact in Hospital level:

Governance and management- Hospital service quality is in high priority of Federal, Provincial and Local government, allocating budget linked with MSS gaps. HMC is taking ownership in overall service improvement and expansion of hospital services. Most of the HMC chairperson and Me Su considered MSS as a guiding document for quality health services.

Clinical Service Management: Considerable improvement in Diagnostic services- like Digital X-ray service, Improvement in laboratory services with Auto and semi auto analysers and expansion of its range of test up to culture, T3, T4, TSH, HbA1c and others. Some hospitals have started surgeries with new setup of operation theatre and few has upgraded its range of major surgeries.

Hospital Support Service Management: Establishment and upgrading of separate laundry, CSSD, housekeeping services, autoclaving of contaminated waste, are the novel achievements of primary and secondary A level hospitals.

Besides the routine services advocated by MSS, hospitals are motivated to establish additional services as reported by the managers of hospitals during assessments. Remarkable milestones have been reached with regards to additional services like, ICU with ventilator, special new-born care unit (SNCU), crisis management centres, extended hospital services (EHS) with specialized Doctors, EHR (Electronic Health Record) services at some of these hospitals.

Following is the progress data regarding Minimum Service Standards (MSS) score of hospitals of F/Y 2076/77.

Province 1	Name of Hospital	MSS Score on District level MSS										Revised & New MSS (FY 2076-77)	
		WS 1	WS 2	WS 3	FU 1	FU 2	FU 3	FU 4	FU 5	FU 6	FU 7	New MSS-1 Assessment	New MSS-2 Assessment
1	Ilam District Hospital	60%	72%	75%	55%	59%	61%	73%	72%	85%	88%	64%	
2	Panchthar District Hospital	47%	62%	72%	57%	59%	60%	68%	79%	75%	64%	51%	
3	Taplejung District Hospital	36%	53%	69%	51%	75%	75%	75%	72%	63%	83%	75%	
4	Bhojpur District Hospital	48%	55%	84%	60%	63%	66%	68%				66%	
5	Sankhuwasabha District Hospital	52%	65%	78%	68%	70%	81%	77%				63%	
6	Terhathum District Hospital	42%	61%	61%	77%	72%	74%	75%				66%	
7	Gaighat Hospital, Udayapur	57%	72%	85%	65%	62%	76%	67%				45%	
8	Katari Hospital (Udayapur)	40%	60%	67%	53%	73%	73%	86%				61%	
9	Khotang District Hospital	40%	75%	87%	60%	63%	70%	75%				56%	
10	Phaplu Hospital, Solukhumbu	60%	66%	82%	75%	72%						45%	
11	Rumjatar Hospital, Okhaldhunga	48%	64%	75%	80%	78%						42%	
12	Dhankuta District Hospital	76%	89%	94%	90%	84%						62%	
13	Inaruwa Hospital, Sunsari	40%	59%	69%	51%	45%						39%	
14	Rangeli Hospital, Morang	40%	76%	82%	61%	55%						47%	
15	Damak Hospital, Jhapa	48%	60%	66%								67%	
16	Mangalbare Hospital, Morang	49%	67%	67%								55%	
17	Mechi Hospital Jhapa												
18	Koshi Hospital, Morang											47%	

Province-2	Name of Hospital	WS 1	WS 2	WS 3	FU 1	FU 2	FU 3	FU 4	FU 5	FU 6	FU 7	New MSS-1 Assessment	New MSS-2 Assessment
1	Gaur Hospital (Rautahat)	27%	34%	47%	46%	51%	45%	44%	48%	45%		18%	
2	Jaleshwor District Hospital (Mahottari)	28%	42%	45%	35%	62%	39%	47%	68%	75%		48%	
3	Kalaiya Hospital (Bara)	27%	53%	63%	65%	67%	77%	62%	64%	64%	65%	38%	
4	Malangwa Hospital (Sarlahi)	29%	27%	43%	26%	32%	30%	51%	51%	40%		34%	
5	Bardibas Hospital, Mahottari	34%	59%	71%	52%	47%	45%	38%				27%	
6	Chandranigapur Hospital (Rautahat)	31%	61%	77%	41%	67%	65%					37%	
7	Pokhariya Hospital (Parsa)	47%	40%	62%	62%	48%	55%	57%	78%			55%	
8	Bhardaha Hospital (Saptari)	42%	60%	69%	57%	58%						37%	
9	Lahan District Hospital (Siraha)	59%	69%	81%	68%	65%						41%	
10	Siraha District Hospital (Siraha)	41%	76%	81%	51%	69%						41%	
11	Janakpur Provincial Hospital, Dhanusha											30%	
12	Narayani Hospital											26%	
13	Sagarmatha Hospital											39%	
Bagmati Province	Name of Hospital	WS 1	WS 2	WS 3	FU 1	FU 2	FU 3	FU 4	FU 5	FU 6	FU 7	New MSS-1 Assessment	New MSS-2 Assessment
1	Jiri Hospital (Dolakha)	75%	86%	90%	79%	88%	81%	84%				65%	69%
2	Ramechhap District Hospital	54%	69%	73%	66%	77%	71%	73%				60%	
3	Sindhuli District Hospital	62%	81%	85%	80%	82%	96%	96%				59%	
4	Dhading Hospital	69%	87%	93%	89%	86%						81%	
5	Rasuwa District Hospital	37%	54%	70%	68%	74%						42%	69%
6	Trishuli Hospital (Nuwakot)	72%	77%	79%	68%	74%						61%	63%
7	Bagauda Hospital (Chitwan)	41%	57%	65%	50%	53%						46%	
8	BakulaharRatnanager Hospital (Chitwan)	52%	55%	71%	76%	80%						70%	
9	Hetauda Hospital	49%	70%	72%	67%	57%						53%	
10	Chautara Hospital (Sindhupalchowk)	45%	76%	82%	66%	69%						74%	
11	Methinkot Hospital	61%	63%	73%	61%	56%						57%	59%
12	GodawariBajrabarahi hospital											27%	
13	Bhaktapur Hospital											38%	
14	Bir Hospital											41%	
15	Bharatpur Hospital											50%	
Gandaki Province	Name of Hospital	WS 1	WS 2	WS 3	FU 1	FU 2	FU 3	FU 4	FU 5	FU 6	FU 7	New MSS-1 Assessment	New MSS-2 Assessment
1	Mustang District Hospital	58%	64%	72%	52%	58%	61%	66%				43%	
2	Myagdi District Hospital	75%	89%	91%	85%	82%	84%	87%				51%	56%
3	Parbat District Hospital	53%	84%	91%	59%	56%	64%	69%	72%			47%	
4	Bandipur Hospital	45%	52%	55%	66%	69%	72%	69%				50%	64%
5	Damaili Hospital	44%	78%	69%	71%	72%	75%	68%				65%	
6	Gorkha District Hospital	71%	75%	78%	80%	77%						38%	
7	Manang District Hospital	39%	57%	65%	62%	55%						37%	
8	Syangja District Hospital	59%	74%	78%	75%	77%	87%					63%	
9	Chapakot Hospital, Syangja	29%	42%	63%								28%	
10	MatriSishuMiteri Hospital, Batalichaur, Kaski	69%	90%	90%								52%	
11	Sisuwa Hospital, Kaski	41%	65%	70%								42%	
12	Sundar Bazar Hospital, Lamjung	38%	63%	60%								29%	27%
13	Dhaulagiri Hospital Baglung											57%	
14	Pokhara Academy of Health Science											46%	

Curative Service

Lumbini Province	Name of Hospital	WS 1	WS 2	WS 3	FU 1	FU 2	FU 3	FU 4	FU 5	FU 6	FU 7	New MSS-1 Assessment	New MSS-2 Assessment
1	Pyuthan District Hospital	48%	61%	69%	64%	59%	76%	72%	64%	81%		50%	54%
2	Rolpa District Hospital	43%	59%	63%	67%	67%	66%	73%	70%	67%		62%	
3	Gulariya District Hospital, Bardiya	58%	81%	85%	76%	73%	80%	88%	90%			62%	
4	Lamahi Hospital, Dang	42%	40%	45%								28%	
5	Argakhanchi District Hospital	58%	76%	85%	76%	59%	59%	68%	72%			55%	
6	Bhim Hospital, Rupandehi (Bhairawa)	59%	69%	63%	59%	60%	76%	78%	73%			64%	
7	Tamghas District Hospital (Gulmi)	57%	72%	78%	69%	73%	69%	71%	75%			62%	
8	Taulihawa District Hospital (Kapilvastu)	46%	57%	74%	53%	57%	76%	78%	74%	72%		55%	66%
9	Pipara Hospital, Kapilvastu	50%	51%	55%	54%	41%						36%	
10	Prithivi Chandra Hospital, Nawalparasi	61%	57%	74%	60%	77%						54%	
11	Shivaraj Hospital (Kapilvastu)	52%	60%	75%	79%	74%						58%	
12	Palpa District Hospital	47%	65%	71%	60%	50%						47%	
13	Rampur Hospital, Palpa	59%	73%	68%	73%	60%						38%	
14	Chisapani Hospital, Bardaghat, Nawalparasi	38%	52%	66%								40%	
15	Rapti Provincial hospital											42%	
16	Lumbini Provincial Hospital											36%	
17	Rapti Academy of Health Science											36%	
18	Bheri hospital											35%	
<hr/>													
Karnali Province	Name of Hospital	WS 1	WS 2	WS 3	FU 1	FU 2	FU 3	FU 4	FU 5	FU 6	FU 7	New MSS-1 Assessment	New MSS-2 Assessment
1	Rukum District Hospital	56%	52%	75%	43%	50%	32%	57%	71%	80%		60%	
2	Salyan District Hospital	49%	72%	78%	57%	64%	67%	78%	75%	75%		66%	
3	Dailekh District Hospital	60%	73%	71%	69%	82%	87%	91%	92%			78%	
4	Dullu Hospital	38%	42%	65%	69%	72%	58%	65%	66%			57%	
5	Mehilkuna Hospital, Surkhet	36%	47%	55%	59%	48%	62%	76%	77%			43%	
6	Kalikot District Hospital	35%	71%	89%	80%	65%	67%	70%	70%			57%	
7	Mugu District Hospital	24%	40%	75%	59%	47%	50%	55%				38%	
8	Dolpa District Hospital	69%	59%	59%	73%	69%						43%	
9	Humla District Hospital	39%	52%	52%	65%	67%	76%					55%	
10	Jajarkot District Hospital	38%	48%	68%	58%	71%						37%	
11	Karnali Provincial Hospital Surkhet												
<hr/>													
Sudur Pachchim Province	Name of Hospital	WS 1	WS 2	WS 3	FU 1	FU 2	FU 3	FU 4	FU 5	FU 6	FU 7	New MSS-1 Assessment	New MSS-2 Assessment
1	Achham District Hospital	45%	60%	75%	72%	70%	88%	90%	89%	89%		71%	
2	Bajura District Hospital	47%	45%	70%	56%	53%	67%	65%	67%	68%		55%	
3	Doti District Hospital	45%	75%	76%	53%	47%	59%	68%	73%	89%		77%	
4	Baitadi District Hospital	48%	72%	74%	70%	61%	65%					65%	
5	Bajhang District Hospital	53%	77%	83%	87%	84%	81%	80%	77%			60%	
6	Darchula District Hospital	35%	57%	67%	73%	75%	75%	82%	76%			64%	
7	Gokuleshwor Hospital	39%	59%	68%	70%	58%	66%	82%				67%	
8	Jogbudha Hospital (Dadeldhura)	50%	73%	77%	82%	82%						63%	
9	Malakhet Hospital	28%	39%	51%	49%	50%						29%	
10	Tikapur Hospital (Kailali)	48%	84%	88%	82%	84%						55%	
11	Mahakali Hospital											35%	
12	Seti Hospital											42%	
13	Dadeldhura Hospital											30%	

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 Interim Constitution of Nepal, 2007 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, 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 zonal and regional 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.

Major Activities and Achievements in the fiscal year 2076/77

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.

7.1.2. Hospital reporting

Nineteen hundred and Ninety Three hospitals were listed in the HMIS under DoHS in 2076/77, of which 149 (7.47) were public hospitals and 1844 (92.52%) non-public hospitals (Table 7.1).

86 percent of public and 51 percent of non-public hospitals submission of monthly reports (Table 5.1);

The HMIS received all 12 monthly progress reports from 64 percent of public hospitals and 30 percent of non-public hospitals respectively (Table 7.2);

(11) out of the 13 tertiary level hospitals submitted all 12 monthly progress reports, with secondary A hospitals having 55 out of 56 achievement , 98.2 % report submission all 12 month progress report and secondary BI hospitals 100% (7 out of 7)report submitted all 12 month progress report only 86.7% report submitted among all report (Table 7.3).

Table 7.1.1: Hospital reporting status, FY 2076/77

Province	No. of Hospital			Submission of Monthly Report					
				Non Public		Public		No.	
	Non Public	Public	Total	No.	%	No.	%	No.	%
1 Province 1	102	24	126	968	80.6	243	84.4	1211	81.3
2 Province 2	151	14	165	823	46.5	156	92.9	979	50.5
3 Bagmati Province	1306	41	1347	6741	43.1	329	66.9	7070	43.8
4 Gandaki Province	65	16	81	742	95.9	191	99.5	933	96.6
5 Lumbini Province	145	23	168	1286	75.1	261	94.6	1547	77.8
6 Karnali Province	46	16	62	462	86.5	180	98.4	642	89.5
7 Sudurpashchim Province	29	15	44	243	70.6	172	95.6	415	79.2
Total	1844	149	1993	11265	51.2	1532	86.12	12797	53.9

Source: HMIS, DoHS

Table 7.1.2: Hospital submitting all 12 monthly progress reports, FY 2076/77

Province	No. of Hospital			Hospital Reporting 12 months a year					
				Non Public		Public		No.	
	Non Public	Public	Total	No.	%	No.	%	No.	%
1 Province 1	102	24	126	66	64.7	19	79.2	85	67.5
2 Province 2	151	14	165	53	35.1	11	78.6	64	38.8
3 Bagmati Province	1306	41	1347	253	19.4	14	34.1	267	19.8
4 Gandaki Province	65	16	81	54	83.1	12	75.0	66	81.5
5 Lumbini Province	145	23	168	82	56.6	16	69.6	98	58.3
6 Karnali Province	46	16	62	36	78.3	12	75.0	48	77.4
7 Sudurpashchim Province	29	15	44	17	58.6	12	80.0	29	65.9
Total	1844	149	1993	561	30.4	96	64.4	657	33

Source: HMIS, DoHS

Table 7.1.3: Status of different levels of hospitals submitting all 12 monthly reports, FY 2076/77

Type of Hospital	No. of Hospital	12 months reporting		No. of Reports		
		No.	%	Expected	Received	%
ACADEMY	8	7	87.5	96	84	87.5
GENERAL HOSPITAL	9	4	44.4	108	63	58.3
LABORATORY	1	0	0.0	12	0	0.0
OTHER HEALTH FACILITY	1	0	0.0	12	0	0.0
PRIMARY HOSPITAL	50	39	78.0	579	486	83.9
SECONDARY A HOSPITAL	56	55	98.2	672	671	99.9
SECONDARY B HOSPITAL	7	7	100.0	84	84	100.0
SPECIALIZED HOSPITAL	4	1	25.0	48	12	25.0
TERTIARY HOSPITAL	13	11	84.6	156	132	84.6
Total	149	124	83.2	1767	1532	86.7

Source: HMIS, DoHS

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 2076/77

Federal -level government hospitals that submitted all 12 monthly reports ranged from bed occupancy rate 0.7 percent in Civil Service Hospital to 74.2 percent in Koshi Hospital, Biratnagar, 6 federal level hospital no reporting (Figure 7.1); Province level hospitals ranged from (144.2.0%) in Gorkha District Hospital to 0.00 percent in Rapti provincial Hospital and Rukum purba Hospital due to incomplete report and (Figure 7.2). Primary level hospitals ranged from 59.6 percent at Bhardaha hospital , Saptari to 0.66 percent at Chapakot Hospital, syanja Due to incomplete report. 13 primary hospital have no report (Figure 7.3).

Figure 7.1: Bed occupancy rate (in %) of Federal -level public hospitals, FY 2076/77

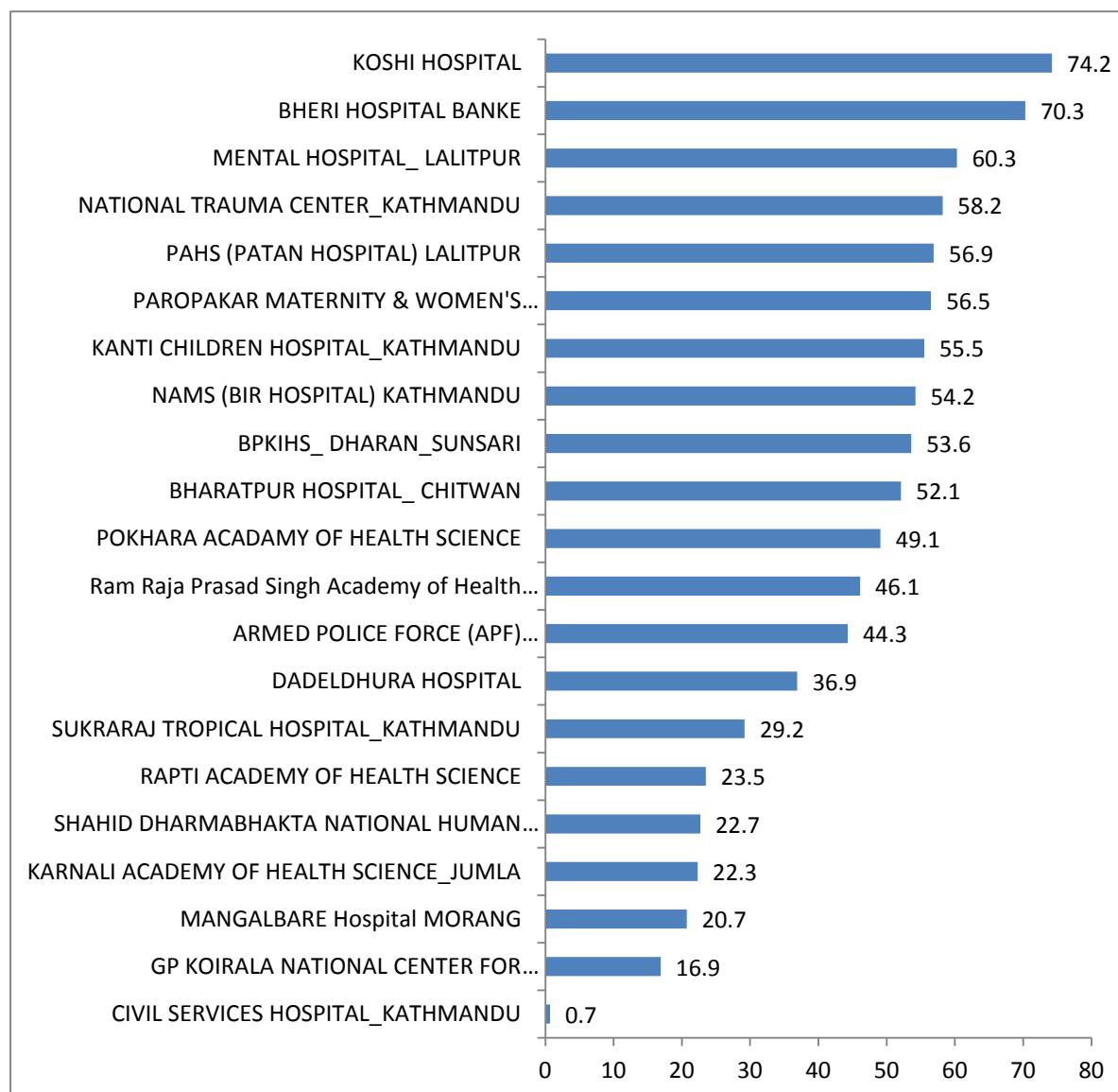


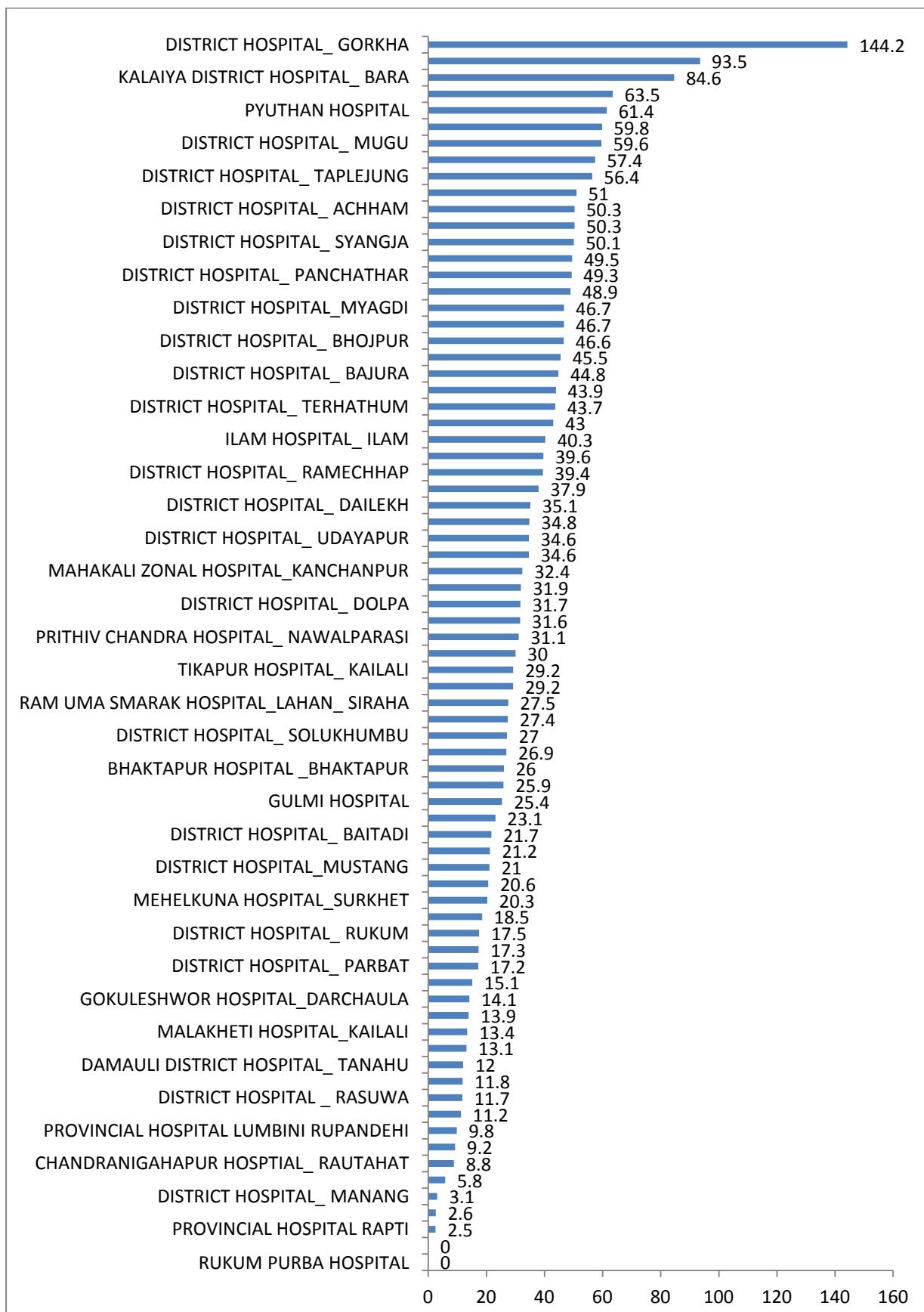
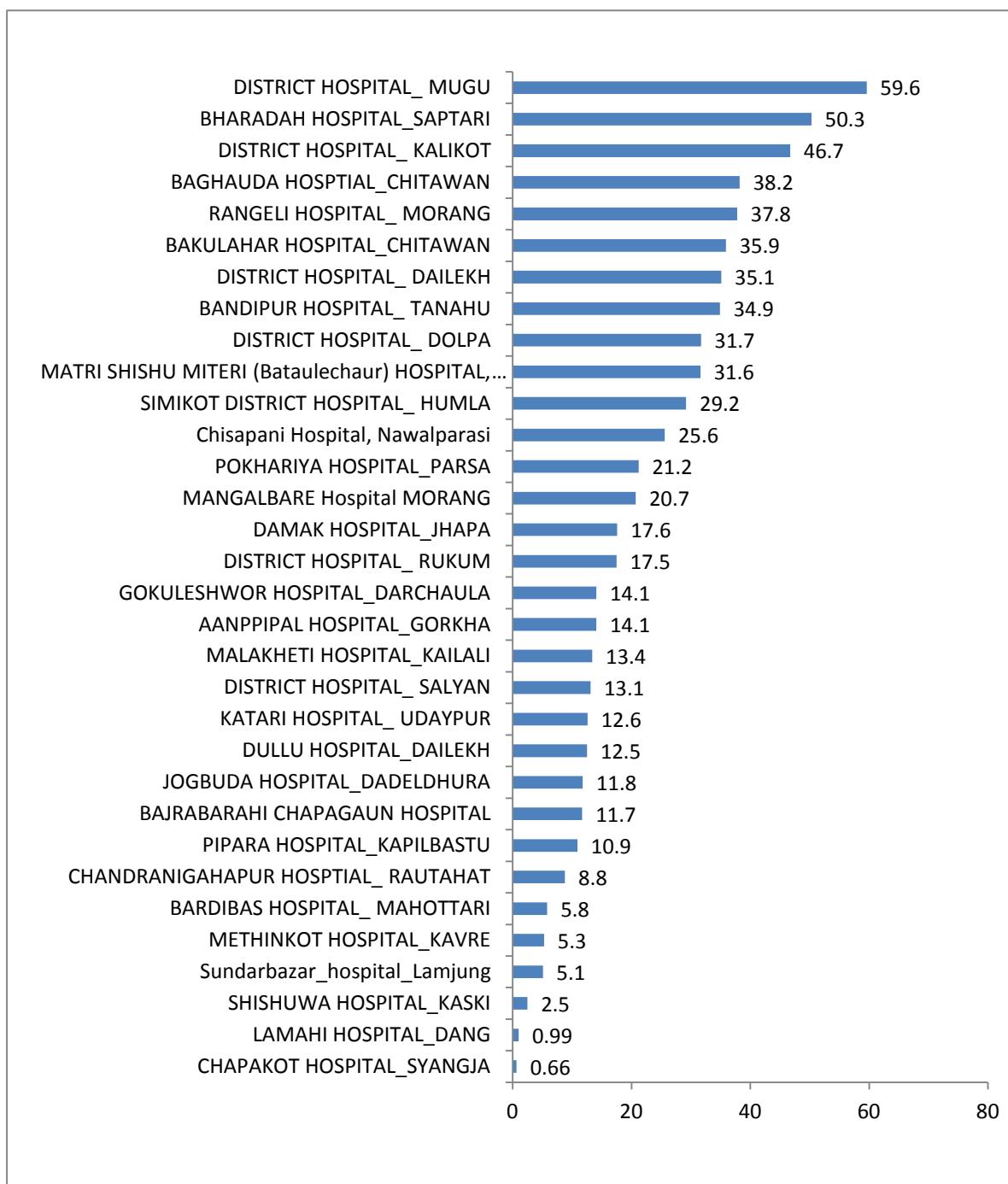
Figure 7.2: Bed occupancy for Provincial hospitals, FY 2076/77

Figure 7.3: Bed occupancy in Primary level hospitals , FY 2076/77

Average length of stay — In fiscal year 2076/77, the average length of stay by inpatients:

at Federal-level government hospitals ranged from 2.3 days at GP KOIRALA NATIONAL CENTER FOR RESPIRATORY DISEASE, TANAHUto 12.6 days at the Mental Hospital,Patan and 10 Federal hospital are no reporting (Figure 7.4);

at provincial hospitals ranged from 0.11 day at Bardibas hospitals to 5.7 days at District hospital doti(Figure 7.5); and 5 provincial hospital no reporting

at primary level hospitals ranged from 0.16 day at Chapakot hospital,Syangja to 17.8 days in Chisapani hospital (Figure 7.6) and 15 primary hospital no reporting.

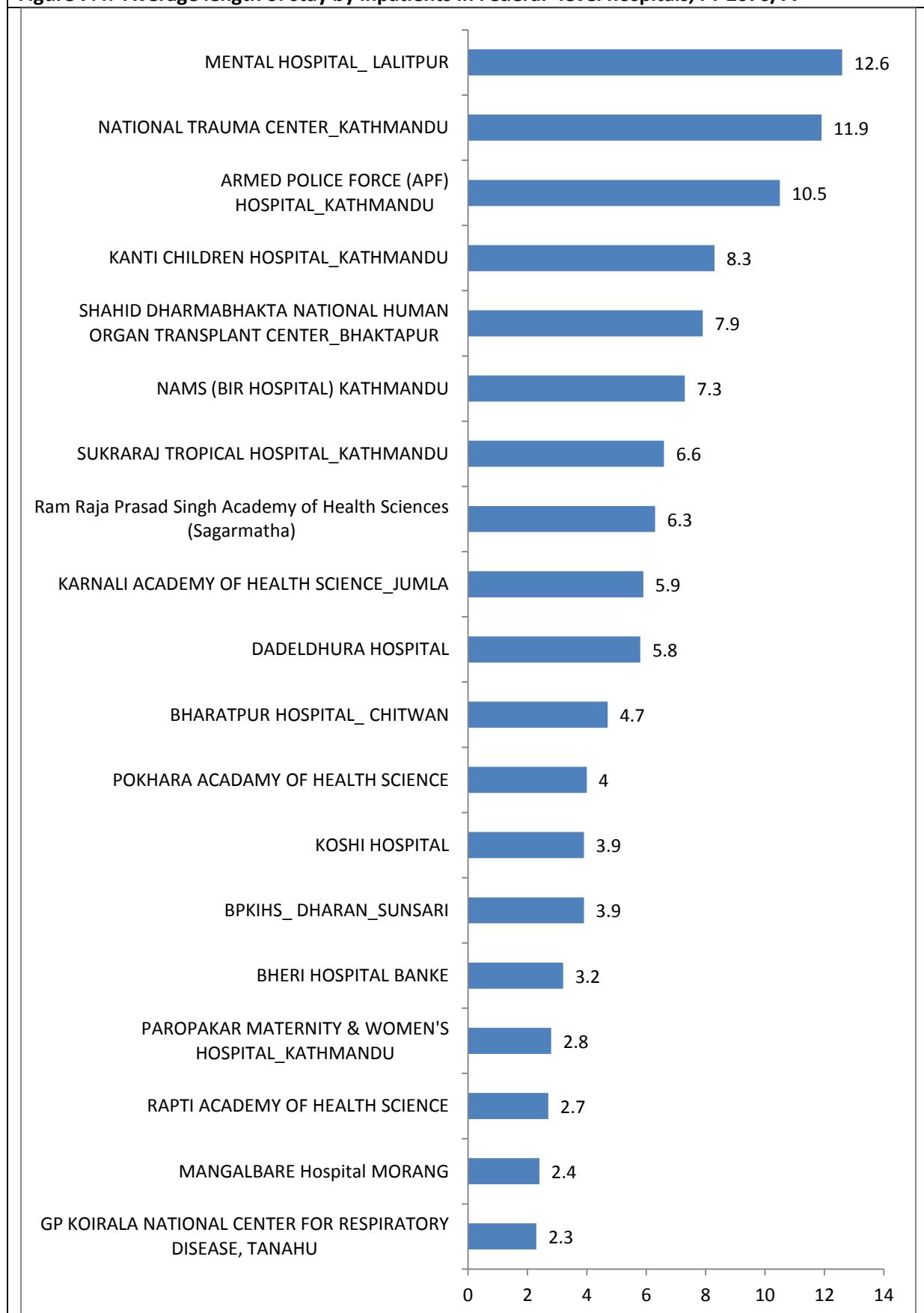
Figure 7.4: Average length of stay by inpatients in Federal -level hospitals, FY 2076/77

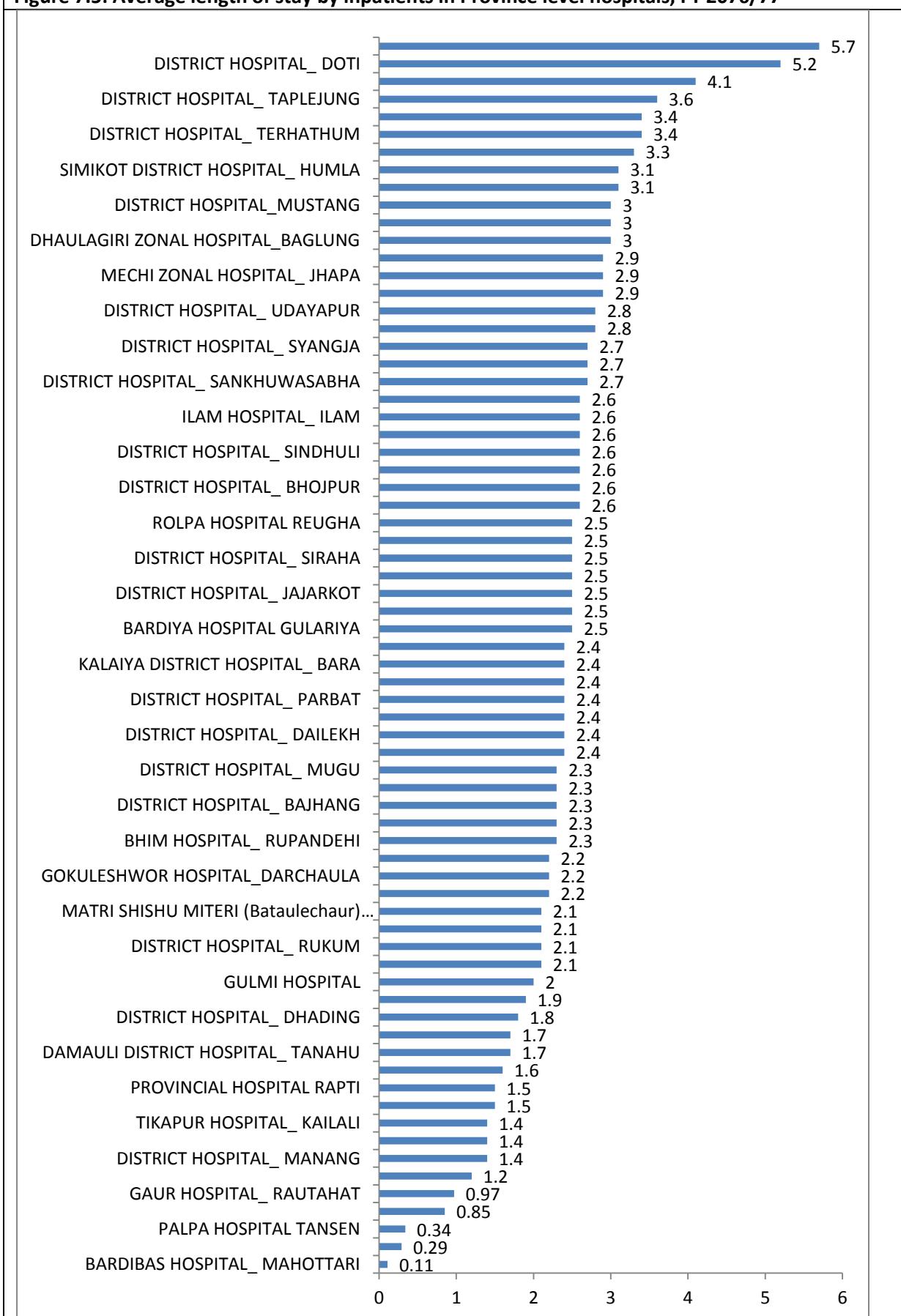
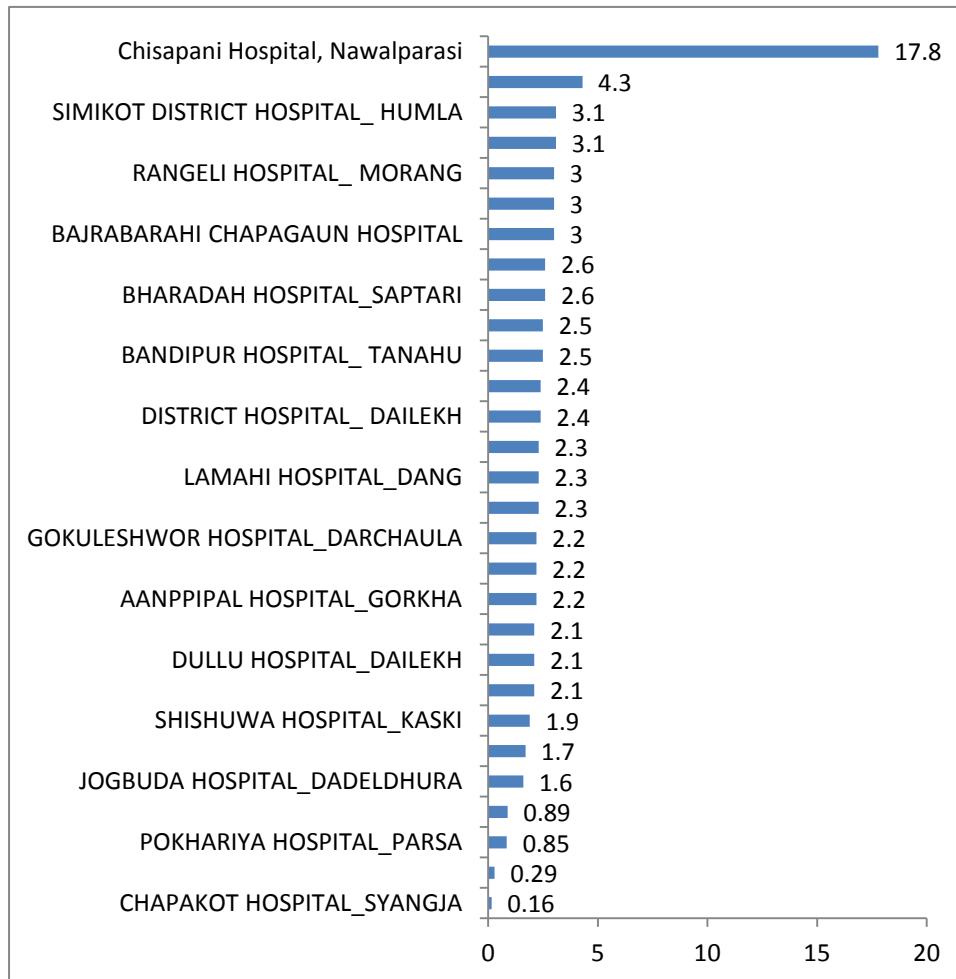
Figure 7.5: Average length of stay by inpatients in Province level hospitals, FY 2076/77

Figure 7.6: Average length of stay by inpatients in other Primary level hospitals, FY 2076/77

7.1.1 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 2076/77 was as follows:

- Among Federal level hospitals, BPKIHS, Dharan recorded the highest attendance at its emergency ward (73866) while Mental Hospital recorded the lowest(468) (Figure 7.7).
- Among provincial hospitals Hetauda Hospital had the highest attendance at its emergency unit (62290) while Rukum Purba Hospital had the lowest (240) (Figure 7.8).
- Among primary level hospitals Rangeli Hospital, Morang had the highest attendance at its emergency ward (9104) while Kharpunath community hospital, Humla had the least (33) (Figure 7.9).Primary hospital number(11) no reported.

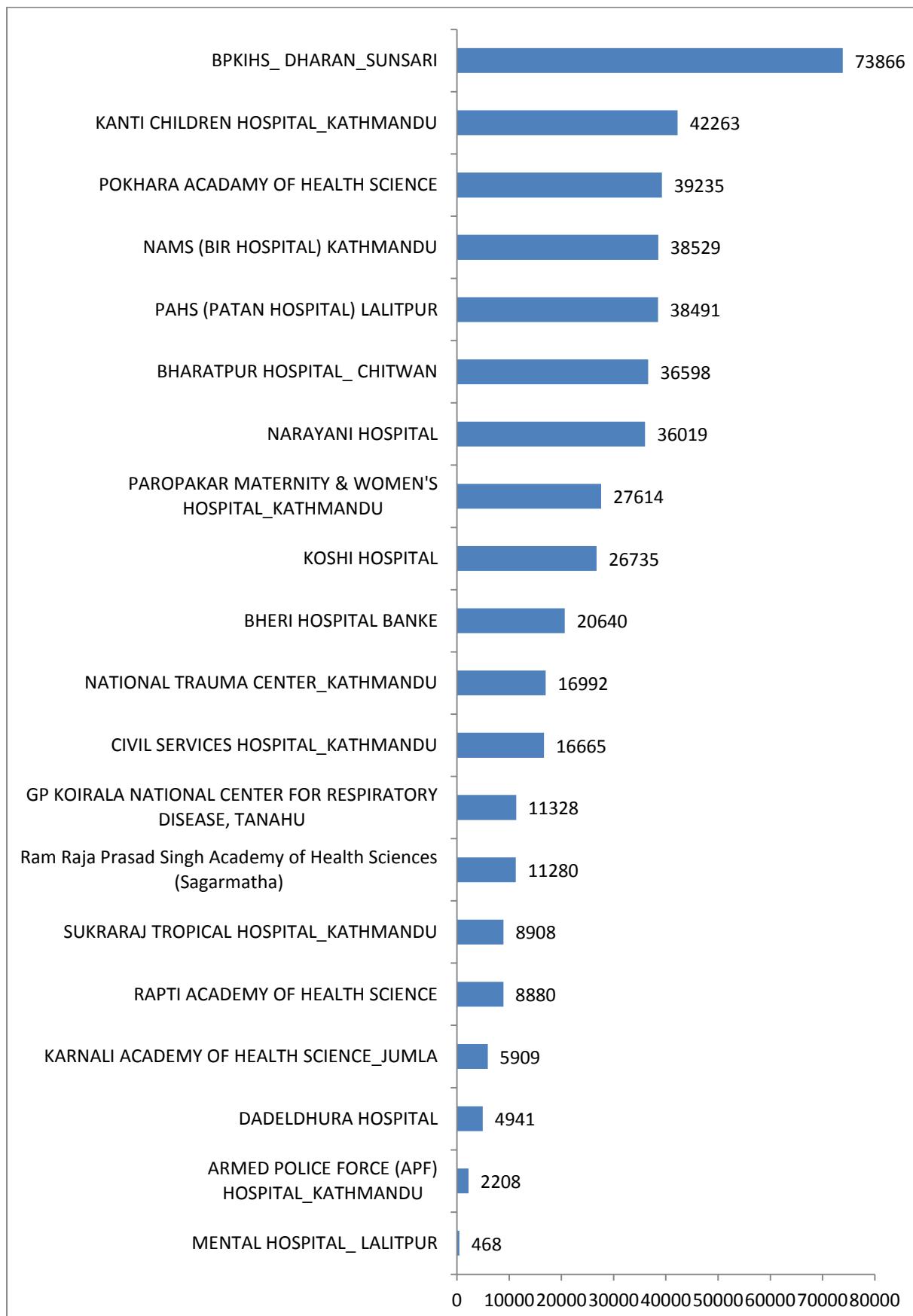
Figure 7.7: Emergency ward attendance in Federal level hospitals, FY 2076/77

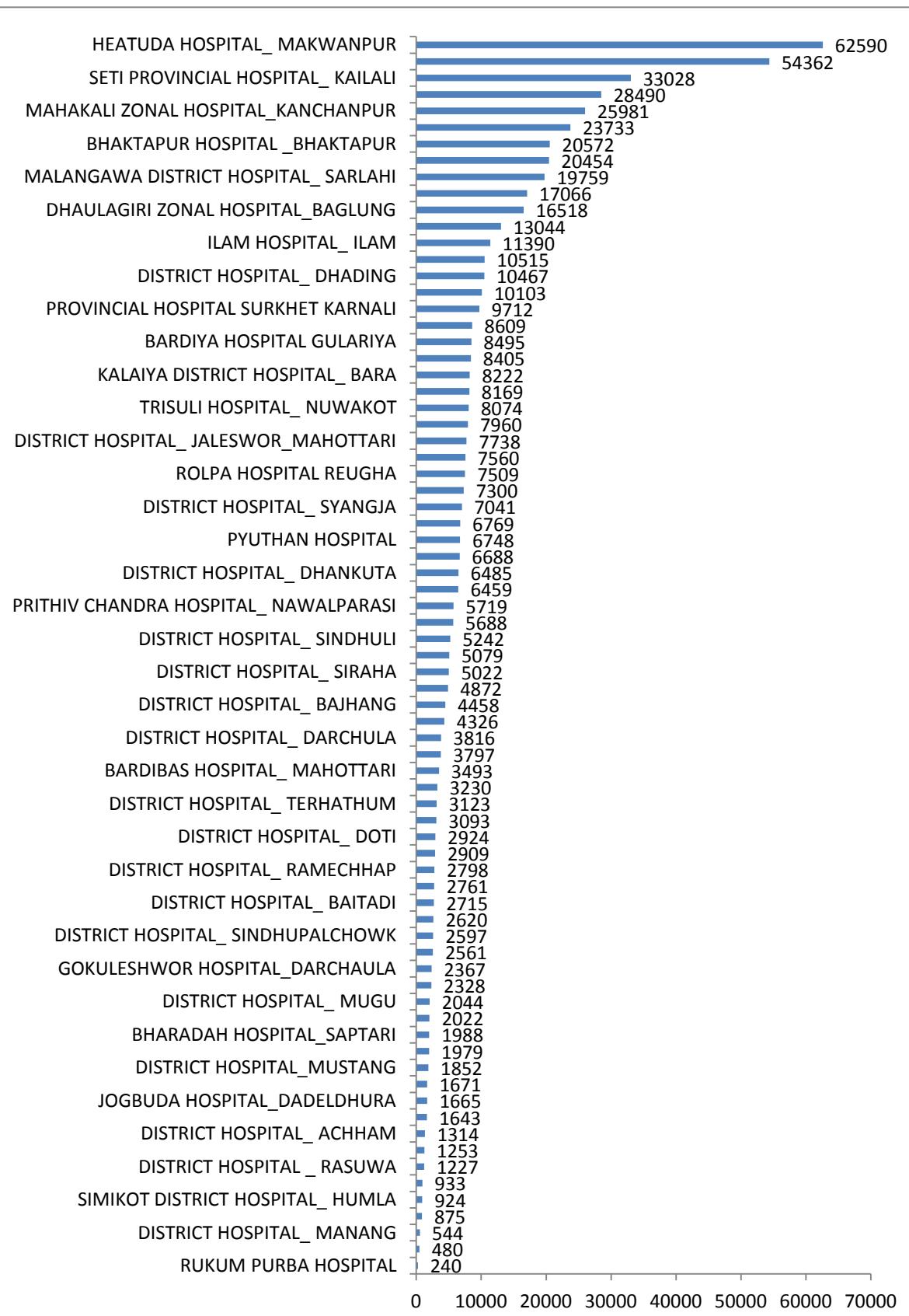
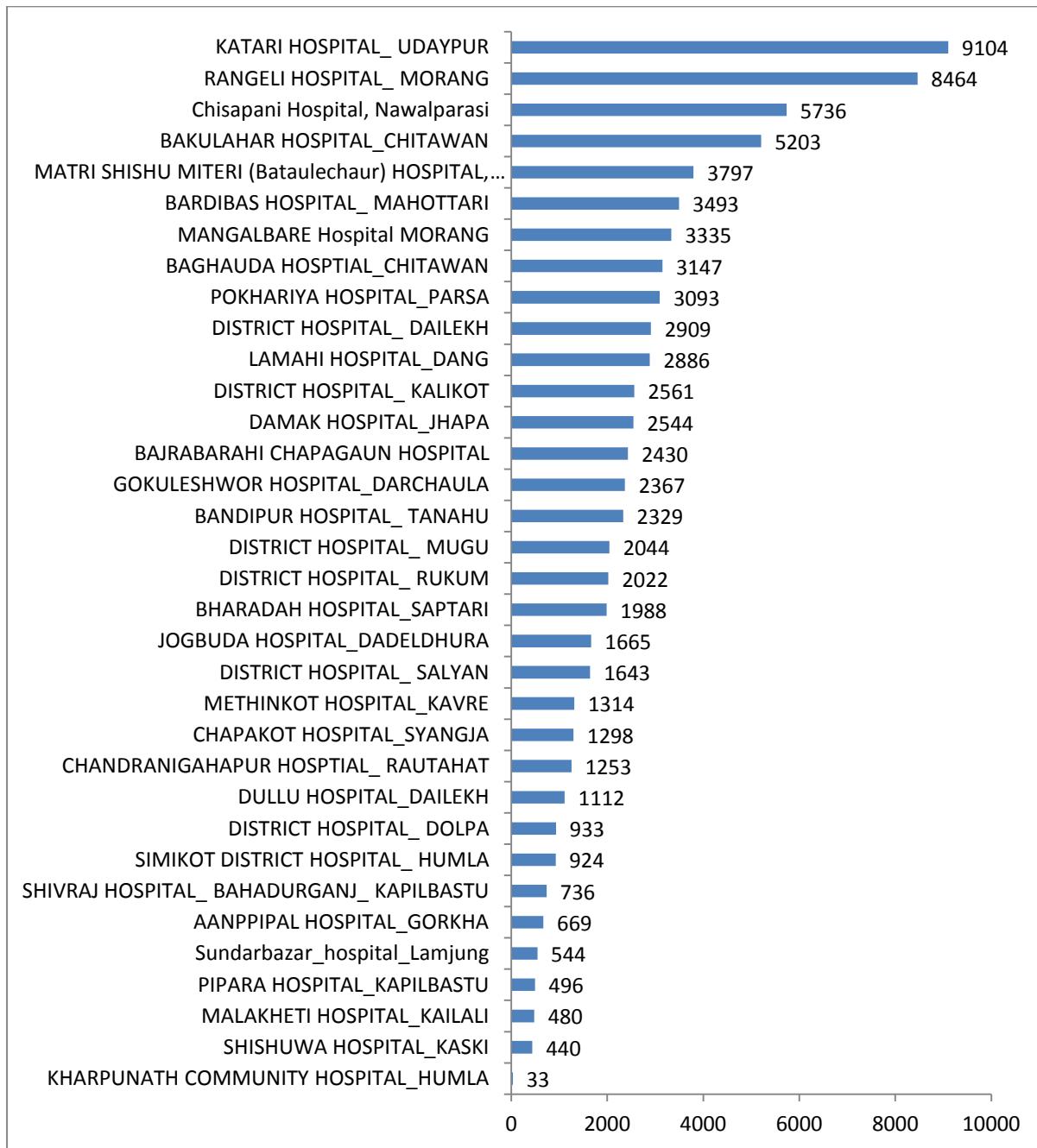
Figure 7.8: Emergency ward attendance at provincial hospitals, FY 2076/77

Figure 7.9: Emergency ward attendances at primary level hospitals, FY 2076/77

Outpatient attendance in the fiscal year 2076/77 at hospitals with full progress reporting was as follows:

Outpatient attendance at Federal level hospitals ranged from 44363 at Karnali Academy of Health Science , Jumla to 4651 at Armed Police Force(APF)Hospital most of federal hospitals are no reporting of OPD morbidity (Figure 7.10).

Outpatient attendance at Provincial hospitals ranged from 49926 patients at Ilam Hospital to 1723 at Seti provincial Hospital (Figure 7.11).

Outpatient attendance at Primary level hospitals ranged from 57647 at Bakulahar Hospital, Chitawan to 1465 at KHARPUNATH COMMUNITY HOSPITAL_HUMLA (Figure 7.12).

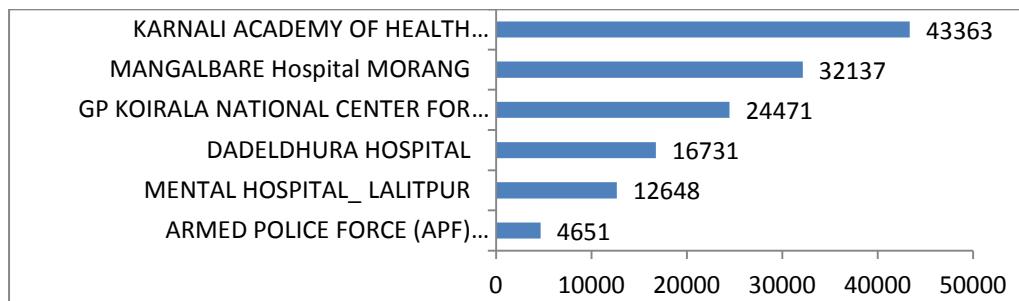
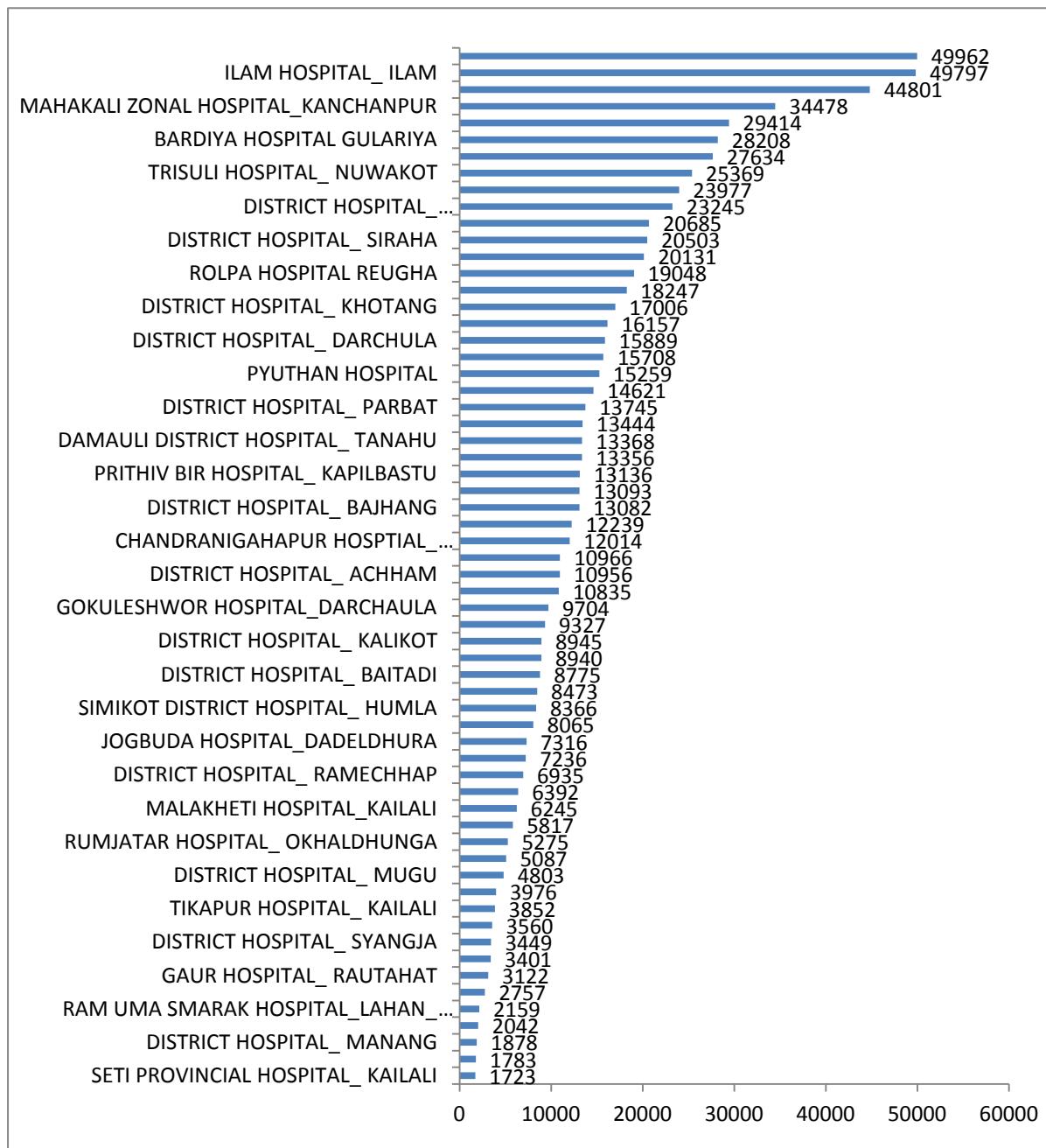
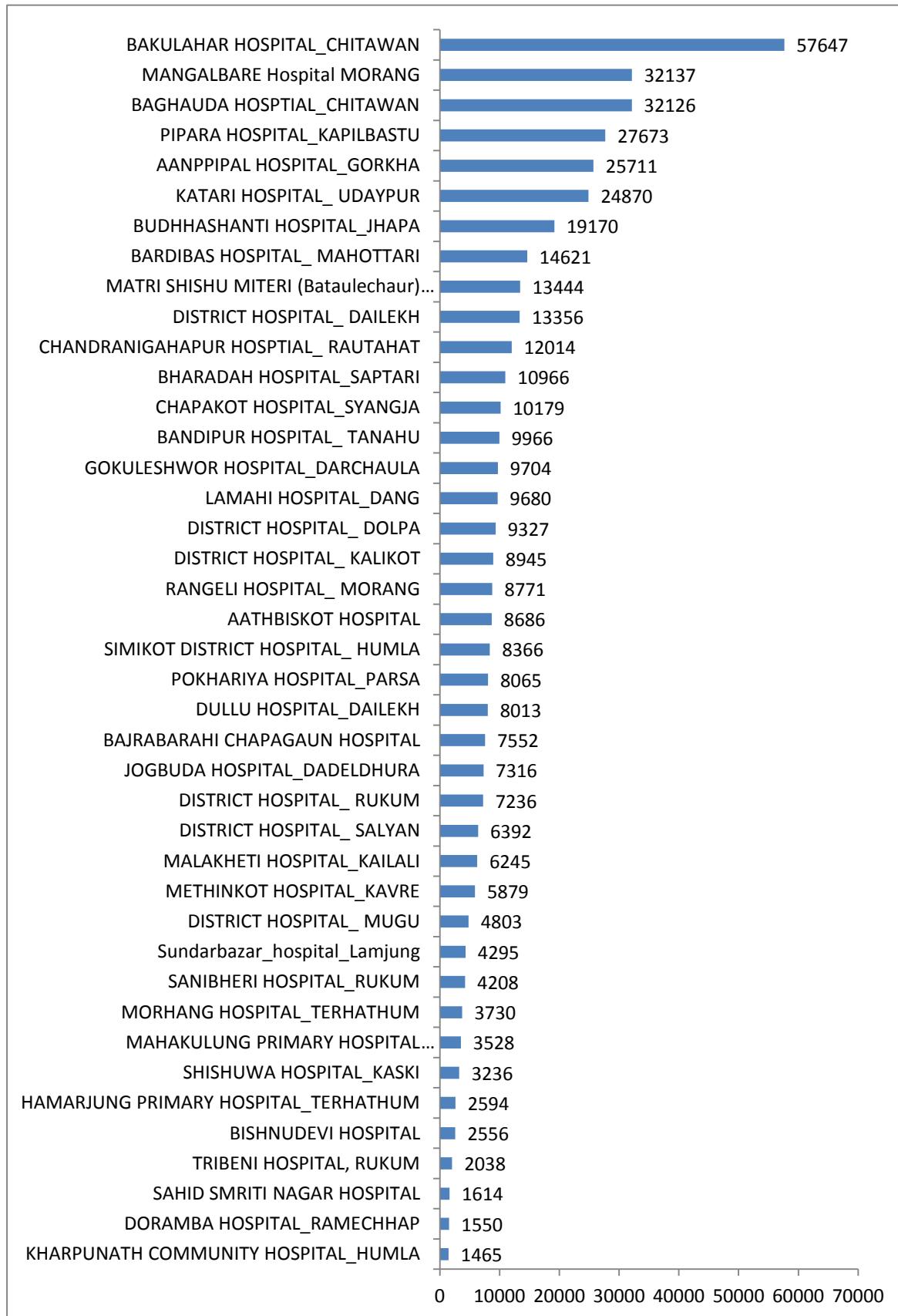
Figure 7.10: Outpatient attendance at Federal level hospitals, FY 2076/77**Figure 7.11: Outpatient attendance at provincial hospitals, FY 2076/77**

Figure 7.12: Outpatient attendance at primary level hospitals, FY 2076/77

Inpatient attendance in 2076/77 at hospitals with full progress reporting was as follows:

BPKIHS, Dharan had the most inpatient admissions 35618 with the Mental Hospital, Patan having the fewest (322) some federal hospital had no report (Figure 7.14)

Among public provincial hospitals, Lumbini Provincial Hospital had the most inpatient admissions (29482), while District Hospital, Manang had the fewest (60) some provincial hospital had no reported (Figure 7.15).

Among primary hospitals Bardibas Hospital, Mahotary recorded the most inpatient admissions (3376) while Lamahi Hospital Dang recorded the fewest (27) (Figure 7.16).some primary hospital had no reported

Figure 7.14: Inpatient admissions at Federal level hospitals, FY 2076/77

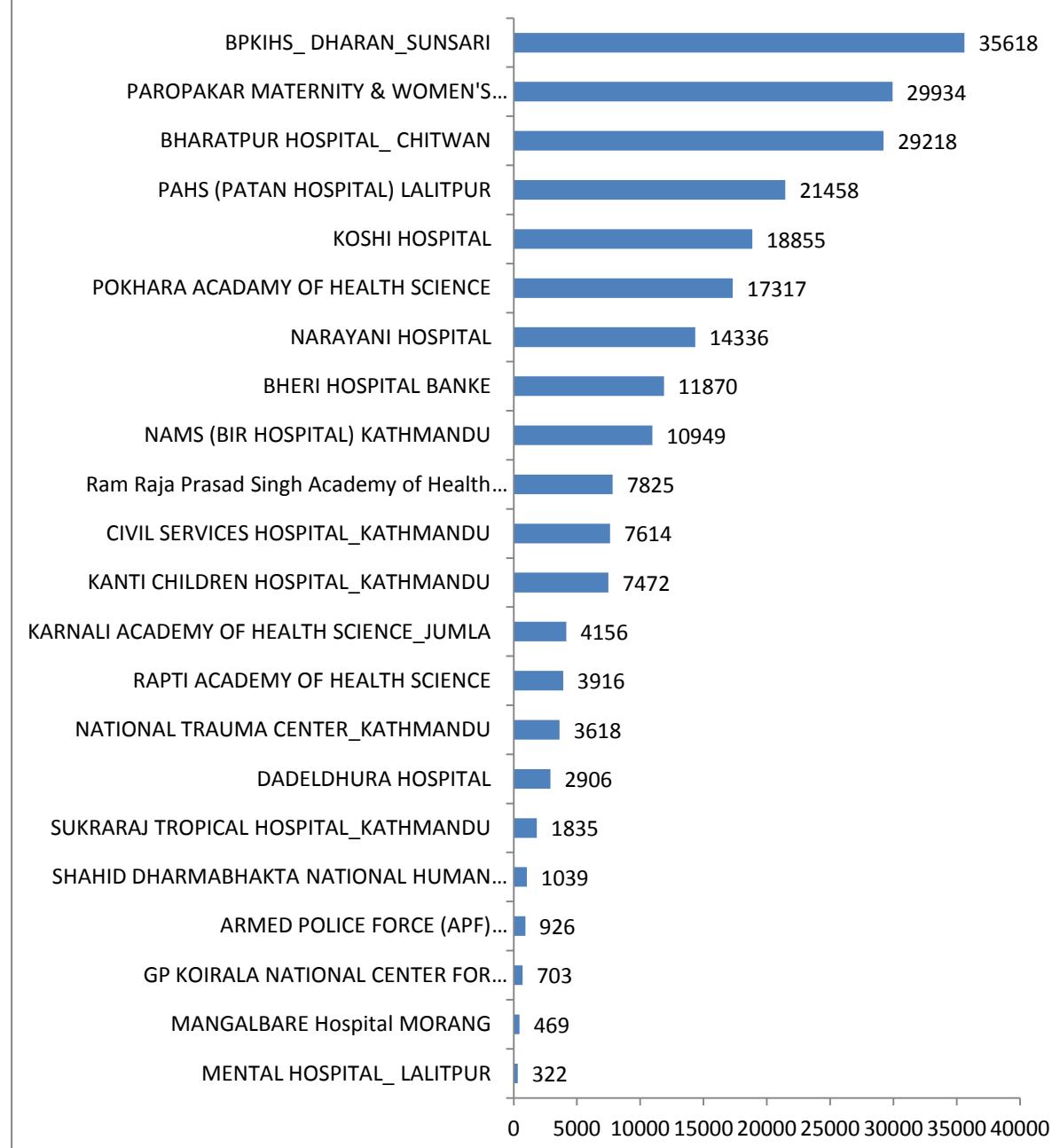


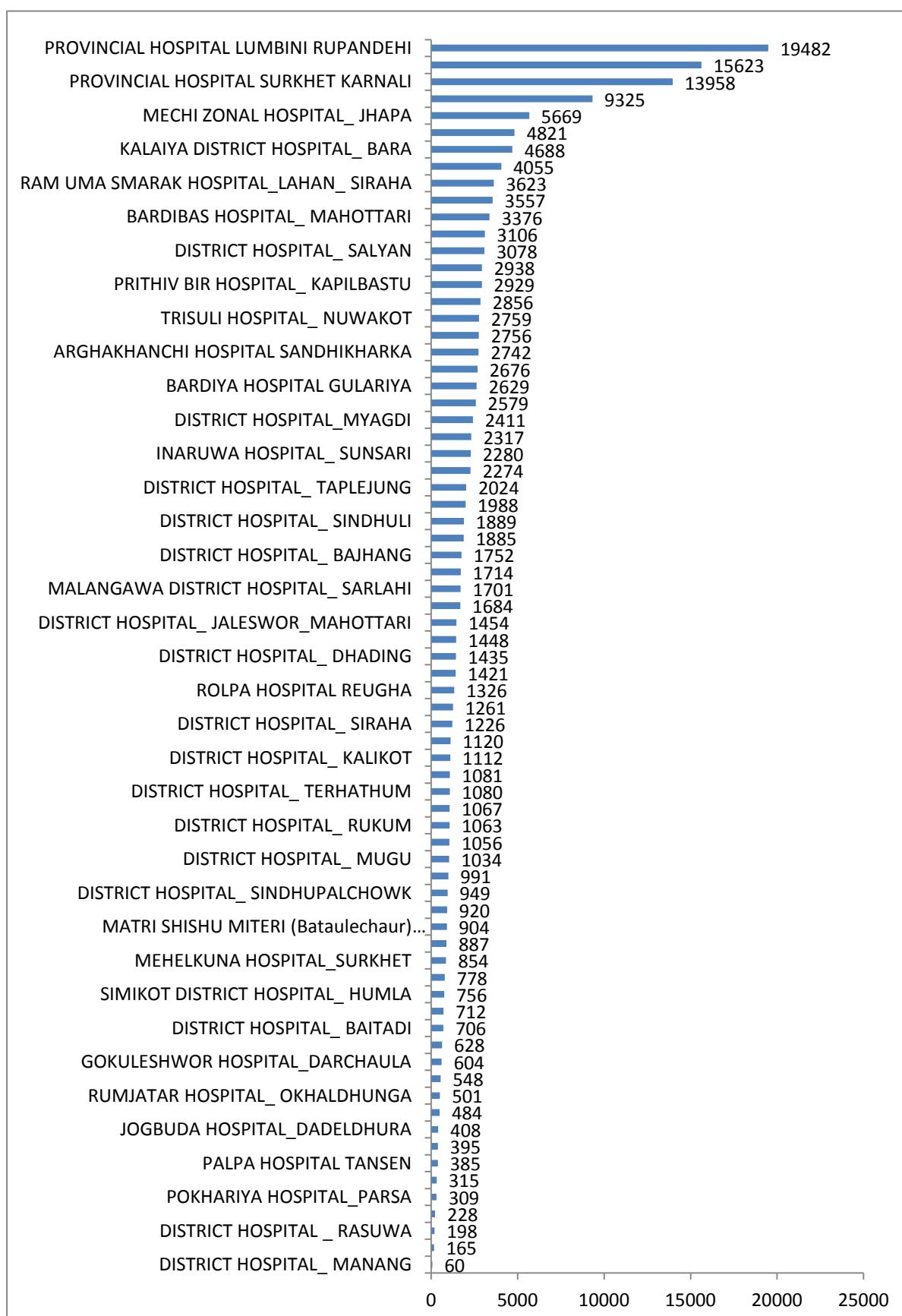
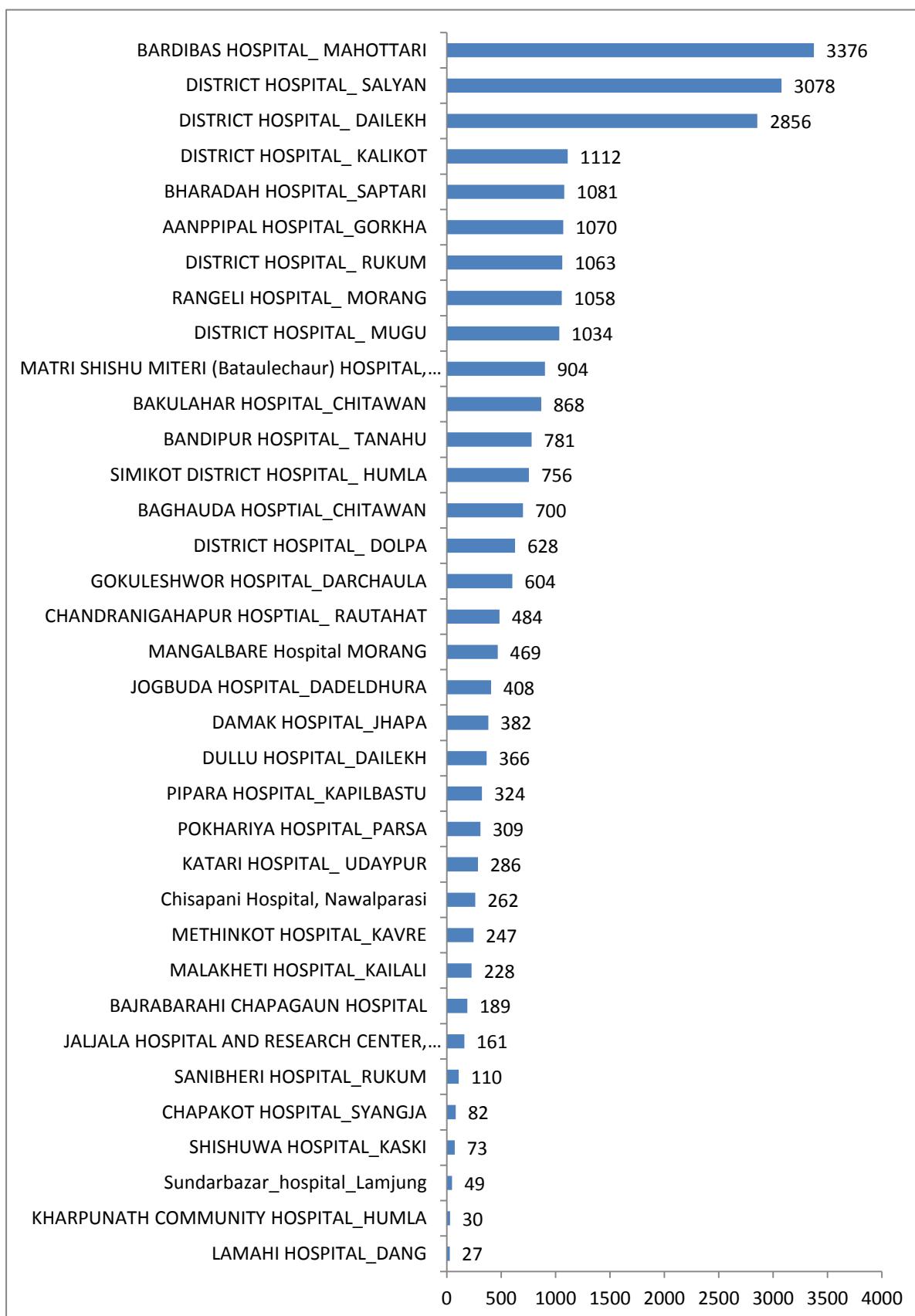
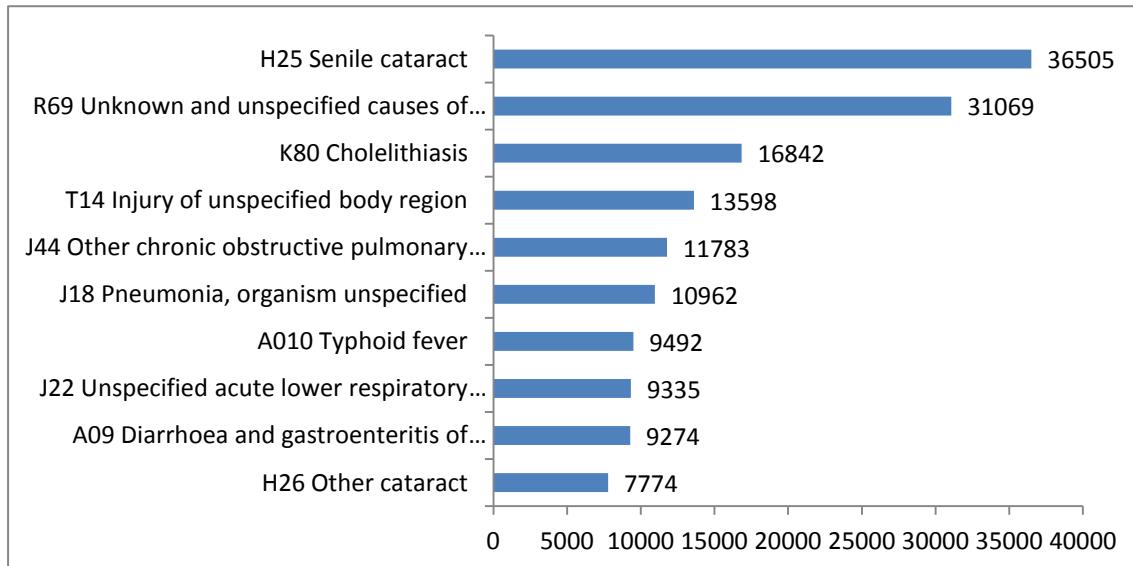
Figure 7.15: Inpatient admissions at provincial hospitals, FY 2076/77

Figure 7.16: Inpatient admissions at primary level hospitals, FY 2076/77

7.1.2 Disease analysis

Top ten morbidities among inpatients — In fiscal year 2076/77 other Senile cataract is the number one reason for inpatient admission (36505) followed by unknown and unspecified causes (31069) (Figure 7.18).

Figure 7.18: Top ten inpatient morbidities in FY 2076/77



Source: HMIS/DOHS

Total patients — In 2076/77 Nepal's the HMIS recorded 1212294 patients (female 58.47%—male 41.53%) being discharged from all types of hospitals (Table 5.5). Of this number 1116516 (92.09%) were recorded as cured or recovered, while 21642 (1.78%) did not show clinical improvement. A total of 5591 (0.46%) patients died within 48 hours of admission while , whereas 5993(0.49%) patients died more than 48 hours after admission. Most patients were aged between 20-29 years (22.97%), More than a half of the inpatients were aged 15-49 years (54.29%).

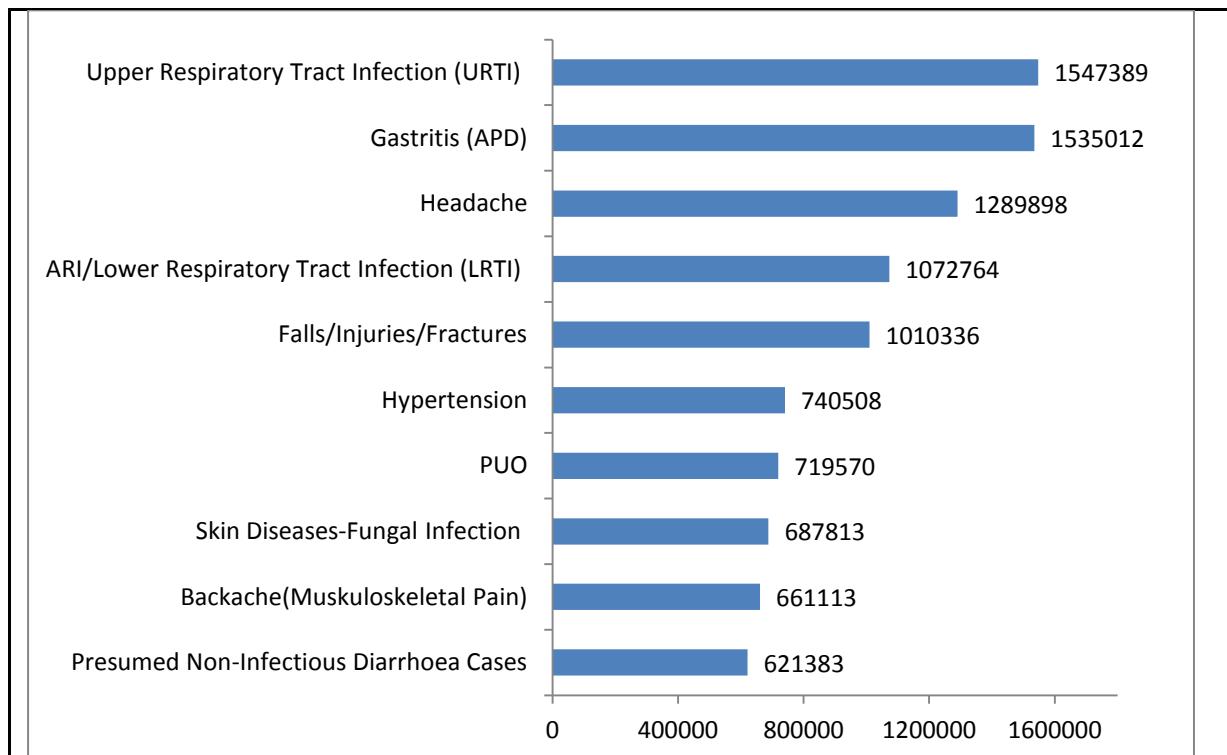
Table 7.5: Inpatient morbidity by age and sex, all hospitals, FY 2076/77

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/Cure	Female	27507	17343	20386	27058	54531	209583	97371	67404	57165	83157	661505	
	Male	33993	23946	27705	38338	31047	55627	51107	51954	55513	85781	455011	
Not Improved	Female	275	305	307	569	584	1237	1186	1149	1339	3091	10042	
	Male	371	543	501	752	1103	1143	1149	1282	1373	3383	11600	
Referred Out	Female	567	445	608	577	847	2672	1153	853	873	1853	10448	
	Male	730	694	589	703	550	1077	1020	954	900	2074	9291	
DOR/LAMA/DA MA	Female	1203	938	1091	983	1561	4086	2568	1913	1812	4677	20832	
	Male	1595	1274	1373	1333	1126	2087	2308	2096	2190	4849	20231	
Absconded	Female	36	37	64	71	93	285	137	78	66	134	1001	
	Male	45	58	61	74	71	83	120	66	65	106	749	
Deaths in <48 Hours	Female	237	73	45	52	61	189	184	265	343	964	2413	
	Male	452	113	50	56	52	153	241	381	479	1201	3178	
Deaths in ≥48 Hours	Female	175	79	42	48	47	142	187	244	363	1307	2634	
	Male	265	118	42	72	56	157	225	367	572	1485	3359	
Total	Female	30000	19220	22543	29358	57724	218194	102786	71906	61961	95183	708875	
	%	44.48	41.81	42.64	41.53	62.93	78.34	64.66	55.74	50.35	49.05	58.47	
	Male	37451	26746	30321	41328	34005	60327	56170	57100	61092	98879	503419	
	%	55.52	58.19	57.36	58.47	37.07	21.66	35.34	44.26	49.65	50.95	41.53	
	Total	67451	45966	52864	70686	91729	278521	158956	129006	123053	194062	1212294	
		%	5.60	3.80	4.40	5.90	7.60	23.00	13.10	10.70	10.10	16.00	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 2076/77 was for upper respiratory tract infection (6.80%), followed by Gastritis(APD) (6.75%) (Figure 7.19).

Figure 7.19: Top ten reasons (%) for outpatient consultations, FY 2076/77

Disease types — In terms of disease types among inpatients and outpatient services in FY 2076/77:

the number one airborne disease was pneumonia (organism unspecified) (10,962 cases) followed by pneumonia (unspecified) (4,198 cases) and Acute tonsillitis (2,541 cases) (Table 7.6);

among the 158 cases of vector borne diseases total death case 5, among 76 cases 4 death reported from Viral Encephalitis (Table 7.7);

typhoid fever was the leading cause of inpatient waterborne disease (A01 :9492 cases), followed by diarrhoea and gastroenteritis (A09: 9274 cases) (Table 7.8);

22.9million communicable and non-communicable diseases were reported by outpatients in 2075/76 (communicable 11.46%, non-communicable 88.58%) (Table 7.9)

Table 7.6: Breakdown of airborne disease cases among inpatients, FY 2076/77

ICD Code and Name	Inpatients Morbidity Cases			Inpatients Morbidity Deaths		
	Femal e	Male	Total	Femal e	Mal e	Tota l
A15 Respiratory tuberculosis, bacteriologically and histologically confirmed	124	230	354	3	9	12
A16 Respiratory tuberculosis, not confirmed bacteriologically or histologically	48	79	127	2	2	4
A17 Tuberculosis of nervous system	5	10	15	1	2	3
A18 Tuberculosis of other organs	34	83	117	0	2	2
A19 Miliary tuberculosis	6	14	20	0	1	1
A190 Acute miliary tuberculosis of a single specified site	1	0	1			0
A198 Other miliary tuberculosis	4	3	7	2		2
A199 Miliary tuberculosis, unspecified	10	20	30	1	1	2
G03 Meningitis due to other and unspecified causes	63	107	170	2	2	4
G030 Nonpyogenic meningitis	2	12	14			0

G038 Meningitis due to other specified causes	1	2	3			0
G039 Meningitis, unspecified	155	227	382	6	4	10
J02 Acute pharyngitis	319	324	643	2	4	6
J020 Streptococcal pharyngitis	4	0	4	0		0
J028 Acute pharyngitis due to other specified organisms	0	4	4			0
J029 Acute pharyngitis, unspecified	31	56	87	0	0	0
J03 Acute tonsillitis	1306	1235	2541	0	0	0
J030 Streptococcal tonsillitis	14	12	26	0	0	0
J038 Acute tonsillitis due to other specified organisms	10	2	12	0	0	0
J039 Acute tonsillitis, unspecified	215	202	417	0	0	0
J18 Pneumonia, organism unspecified	4871	6091	1096 2	202	217	419
J180 Bronchopneumonia, unspecified	130	184	314	0	2	2
J181 Lobar pneumonia, unspecified	48	82	130	1	0	1
J182 Hypostatic pneumonia, unspecified	12	9	21	0	0	0
J188 Other pneumonia, organism unspecified	17	31	48	3	6	9
J189 Pneumonia, unspecified	1892	2306	4198	67	82	149
J40 Bronchitis, not specified as acute or chronic	734	933	1667	140	98	238
Total			1225	2231		
			10056	8	4	432
					432	864

Table 7.7: Breakdown of vector borne diseases among inpatients, FY 2076/77

ICD Code and Name	Inpatients Morbidity Cases			Inpatients Morbidity Deaths		
	Female	Male	Total	Female	Male	Total
A50 Congenital syphilis	2	2	4			0
A86 Unspecified viral encephalitis	29	47	76	0	4	4
B50 Plasmodium falciparum malaria	3	2	5	0	0	0
B51 Plasmodium vivax malaria	11	10	21	0	0	0
B519 Plasmodium vivax malaria without complication	1	4	5	0	0	0
B54 Unspecified malaria	7	18	25	0	0	0
B559 Leishmaniasis, unspecified	9	13	22	0	1	1
Total	62	96	158	0	5	5

Table 7.8: Water borne diseases among inpatients, FY 2076/77

ICD Code	Inpatients Morbidity Cases			Inpatients Morbidity Deaths		
	Female	Male	Total	Male	Female	Total
A00 Cholera	143	120	263	0	0	0
A00.0 Cholera due to Vibrio cholerae 01, biovar cholerae	7	6	13	0	0	0
A00.1 Cholera due to Vibrio cholerae 01, biovar eltor	37	48	85	0	0	0
A00.9 Cholera, unspecified	55	50	105	10	7	17
A01 Typhoid and paratyphoid fevers	2078	1647	3725	49	40	89
A010 Typhoid fever	4774	4718	9492	68	70	138
A011 Paratyphoid fever A	51	32	83	0	0	0
A012 Paratyphoid fever B	0	0	0	0	0	0

Curative Service

A013 Paratyphoid fever C	7	9	16	0	0	0
A014 Paratyphoid fever, unspecified	41	30	71	0	0	0
A02 Other salmonella infections	2	1	3	0	0	0
A020 Salmonella enteritis	0	0	0	0	0	0
A021 Salmonella septicaemia	0	0	0	0	0	0
A022 Localized salmonella infections	0	0	0	0	0	0
A028 Other specified salmonella infections	0	0	0	0	0	0
A029 Salmonella infection, unspecified	0	4	4	0	0	0
A03 Shigellosis	24	27	51	0	0	0
A030 Shigellosis due to Shigella dysenteriae	14	13	27	0	0	0
A031 Shigellosis due to Shigella flexneri	6	8	14	0	0	0
A038 Other shigellosis	0	2	2	0	0	0
A039 Shigellosis, unspecified	171	171	342	0	1	1
A04 Other bacterial intestinal infections	2	0	2			0
A041 Enterotoxigenic Escherichia coli infection	11	1	12			0
A047 Enterocolitis due to Clostridium difficile	0	5	5			0
A048 Other specified bacterial intestinal infections	0	5	5			0
A049 Bacterial intestinal infection, unspecified	8	3	11			0
A05 Other bacterial foodborne intoxications	2	2	4	0	0	0
A050 Foodborne staphylococcal intoxication	0	2	2			0
A054 Foodborne Bacillus cereus intoxication	0	1	1			0
A059 Bacterial foodborne intoxication, unspecified	8	11	19	0	0	0
A06 Amoebiasis	100	94	194	3	7	10
A060 Acute amoebic dysentery	39	37	76	0	0	0
A061 Chronic intestinal amoebiasis	3	4	7			0
A063 Amoeboma of intestine	14	17	31			0
A064 Amoebic liver abscess	0	12	12	0	0	0
A065 Amoebic lung abscess	1	0	1			0
A068 Amoebic infection of other sites	0	4	4			0
A069 Amoebiasis, unspecified	68	83	151	5	2	7
A07 Other protozoal intestinal diseases	7	13	20			0
A071 Giardiasis [lambliasis]	3	3	6			0
A08 Viral and other specified intestinal infections	11	3	14			0
A081 Acute gastroenteropathy due to Norwalk agent	10	3	13			0
A082 Adenoviral enteritis	4	2	6	0	0	0
A083 Other viral enteritis	1	0	1	0	0	0
A084 Viral intestinal infection, unspecified	2	0	2			0
A09 Diarrhoea and gastroenteritis of presumed infectious origin	4846	4428	9274	85	88	173
A090 Other and unspecified gastroenteritis and colitis of infectious origin	2	0	2			0
B15 Acute hepatitis A	26	27	53	4	4	8
B150 Hepatitis A with hepatic coma	10	4	14	2	1	3
B159 Hepatitis A without hepatic coma	67	69	136	0	1	1
B16 Acute hepatitis B	20	27	47	1	2	3

B160 Acute hepatitis B with delta-agent (coinfection) with hepatic coma	0	1	1			0
B169 Acute hepatitis B without delta-agent and without hepatic coma	36	65	101	0	1	1
B17 Other acute viral hepatitis	66	52	118	0	0	0
B170 Acute delta-(super)infection of hepatitis B carrier	1	1	2			0
B171 Acute hepatitis C	5	4	9	0	0	0
B172 Acute hepatitis E	4	5	9	2	1	3
E86 Volume depletion	143	134	277	0	0	0
K52 Other noninfective gastroenteritis and colitis	70	76	146	0	1	1
K520 Gastroenteritis and colitis due to radiation	22	29	51			0
K521 Toxic gastroenteritis and colitis	1	0	1	0	0	0
K522 Allergic and dietetic gastroenteritis and colitis	2	1	3	0	0	0
K528 Other specified noninfective gastroenteritis and colitis	7	14	21	0	0	0
K529 Noninfective gastroenteritis and colitis, unspecified	349	273	622	1	0	1
R17 Unspecified jaundice	622	772	1394	10	25	35
Total	14003	13173	27176	240	251	491

Table 7.9: Communicable and non-communicable diseases among outpatients by province, FY 2076/77

Province	Communicable		Non-Communicable		Total
	Cases	%	Cases	%	
Province 1	366467	8.1	4105111	91.80	4471578
Province 2	650073	16.45	3300145	83.54	3950218
Bagmati	437832	8.09	4971252	91.90	5409084
Gandaki	233763	8.82	2414659	91.17	2648422
Lumbini	427063	9.68	3983177	90.31	4410240
Karnali	229787	12.69	1580924	87.30	1810711
Sudurpashchim	219465	10.03	1967083	89.96	2186548
Nepal	2564450	10.30	22322351	89.69	24886801

7.1.3 Communicable and non-communicable diseases (inpatients)

Cases — In 2076/77, 535790 cases were discharged to hospital, of which 92.97 percent were non-communicable disease cases (Table 7.10). There were nearly five times as many non-communicable disease deaths as communicable disease deaths.

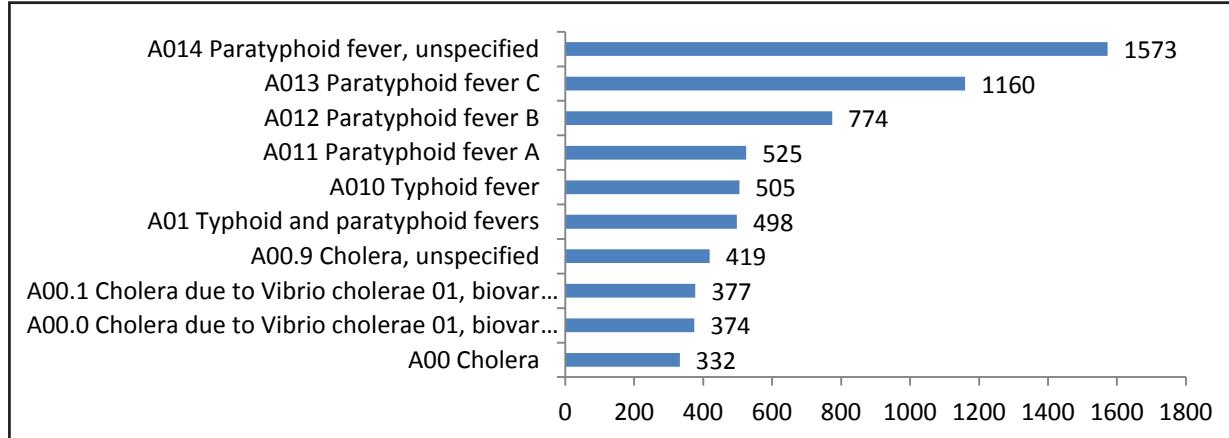
Table 7.10: Communicable and non-communicable disease cases and deaths (inpatients), FY 2076/77

Diseases	Cases	%	Deaths	%
Communicable	37667	7.03	707	4.64
Non-communicable	498123	92.97	14515	95.35
Total	535790	100	15222	100

Cause of death — Regarding the causes of death (and morbidity) among inpatients in FY 2076/77:

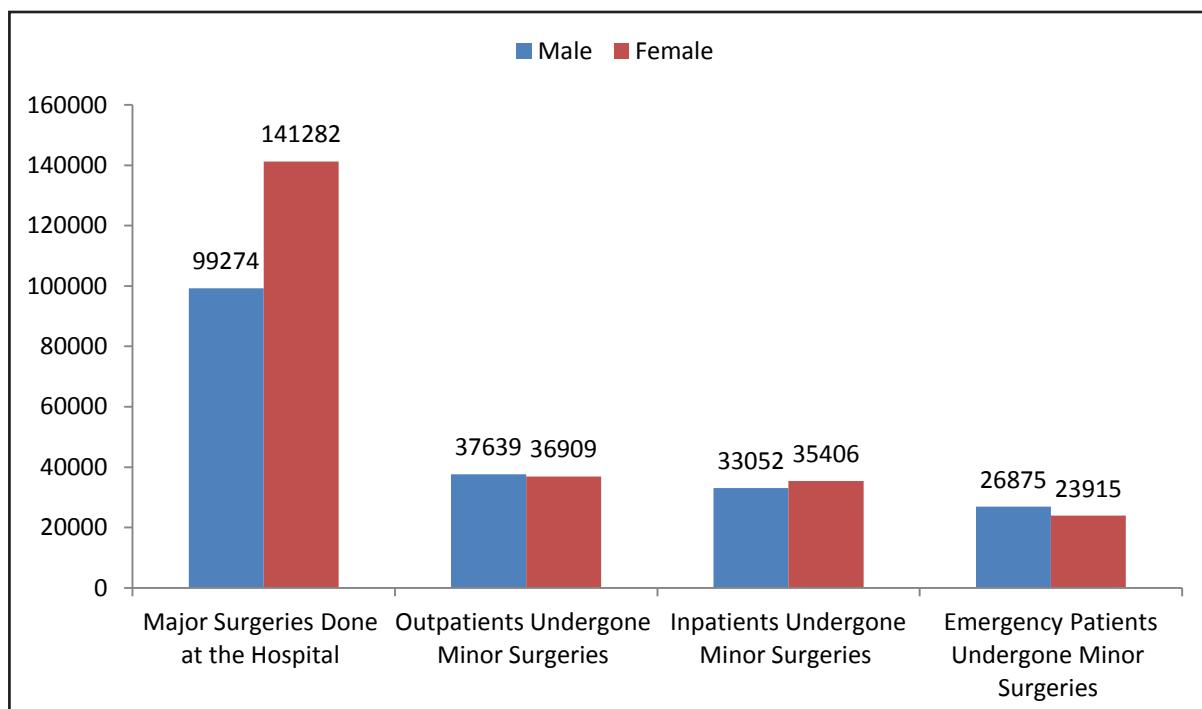
The leading cause of death among inpatients was 'Paratyphoid fever, unspecified cause of morbidity (1573) (Figure 7.22).

Figure 7.22: Top 10 causes of death among inpatients, FY 2076/77

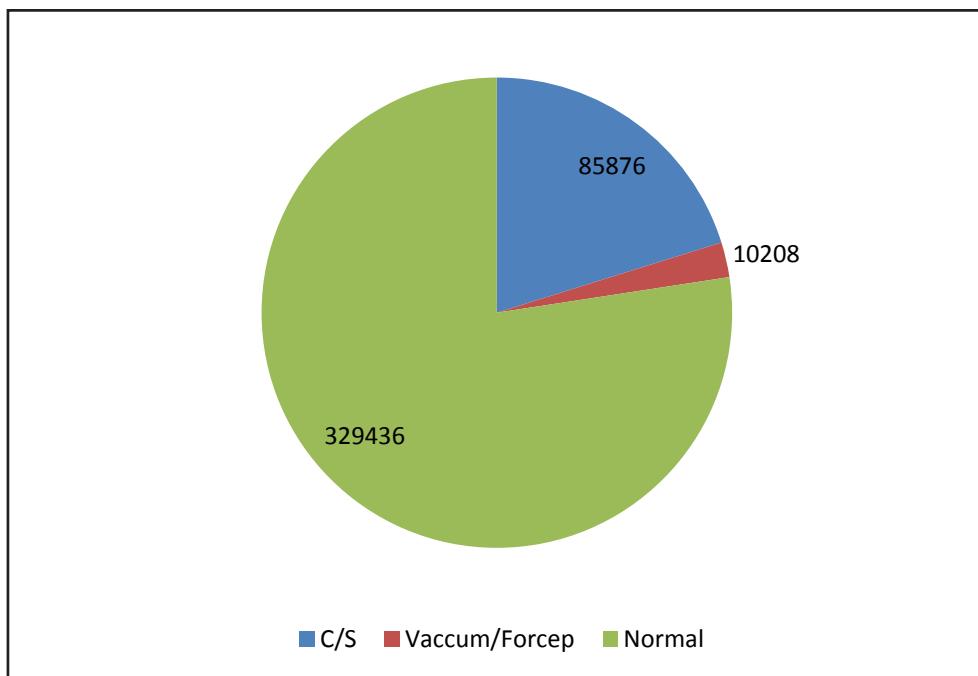


Surgeries — 141282 major surgeries were performed in the reporting period (combined inpatient and outpatient surgeries) of which 58.73 percent were female cases (Figure 5.23). A total of 74548 minor surgical procedures were performed on hospital outpatients while 68458 were performed on an inpatient basis. Females accounted for 49.65 percent of all minor surgeries. More of the minor emergency surgery cases were males than females

Figure 7.23: Surgeries in hospitals, FY 2076/77



Deliveries — 425,520 deliveries were conducted in Health Facilities in 2076/77 of which 77.49 percent happened through spontaneous labour, 20.18 percent through caesarean sections and 2.42 percent were vacuum assisted (Figure 7.24).

Figure 7.24: Deliveries in hospitals, FY 2076/77

Note: Please see Annex 3 for more details.

Hospital Brought deaths and Post-mortem cases — In FY 2076/77:

3980 brought dead to hospital cases (60% male–40% female) and 7974 hospital post-mortem cases (67% males–33% females) were reported to the HMIS (Table 7.11).

Table 7.11: Hospital brought dead and post-mortem cases, FY 2076/77

	Female	%	Male	%	Total
Brought dead	1590	39.94	2390	60.05	3980
Post-mortem done	2605	32.66	5369	67.33	7974
Total	4195	35.09	7759	64.90	11954

7.2 Human Organ Transplant

7.2.1 Introduction

Shahid Dharma Bhakta National Transplant Center (SDNTC) was established in 2012 by the Ministry of Health and Population (MoHP) to strengthen and expand organ transplantation services in the country. This center started 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 Main objectives of the center are:

- 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 affordable price.
- 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.

7.2.3 Major achievements of FY 2076/77

- Completion of the process of permanent recruitment of the Staffs through Lok Sewa Aayog in different departments.
- Active participations during the pandemic period by mobilization of Doctors and Nurses in different Covid Hospitals with in the Capital.
- Regular Dialysis of Covid Positive Patients by using our own manpower within our premises.
- Performing major's surgeries with full precautions.
- Cathlab is restarted from July 2020.
- Worldwide halted Renal Transplantations resumed from October 20, 2020.
- HLA and cross match machine is been installed and can be run within 1 months.

7.2.4 Status of specialized diagnostic services

- Total OPDs - 22691 : Admitted cases- 1,039
- Total Major OTs including Lapcholecystectomy, PCNL, URSL, Nephrectomy, TURBT/TURP performed -218
- Total Minor OTs including AV Fistula, DJ Stent performed -488
- Total Kidney Transplant performed -49
- Total Liver Transplant performed- 1
- Total Coronary Angiography done- 34
- Total Hemodialysis Services provided, Free- 18,478 And Paid-2,042 and Total CAPD cases provided -15.
- The number of lab tests done in FY 2076/77 was 85,801
- The number of ultrasound tests and X-ray and CT scan in the FY 2076/77 was 1915, 2032 and 583 respectively.
- Similarly, the number of ECG done was 1,593 while that of the echocardiograph was 900 followed by 290 endoscopy and colonoscopy.

The total number of BCM done was 137 and that of ABG was 102.

Total Kidney Biopsy done was 82.

Total Physiotherapy services provided was 470.

7.2.5 Physical infrastructures at SDNTC- FY 2076/77

Hospital owned land: 0 Ropani

Building:

- Hospital Room: Inadequate
- Doctor quarter: Not available
- Staff quarter: Not available

Ambulance : Functioning - 1

7.2.6 Available Equipment:

- X-Ray machine – 1, USG – 3
- 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 : 34
- OT/ICU Major Equipment's : 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
- ACT
- HLA

7.3 Homeopathic services

7.3.1 Background

Homeopathy was discovered by Dr. Samuel Hahnemann of Germany in 1796AD. This is based on the fixed principle of "*similia similibus curentur*". Medicine is provided on healthy human being and symptoms are recorded in Homeopathic pharmacology i.e. Materia Medica. Medicine is prescribed on the basis of sign and symptoms obtained from patients.

The hospital has been using the present workforce for its OPD services. The hospital having the present IPD facilities has not been utilized due to various factors like lack of manpower, and allocation of budget. The Hospital is following up on implementing the O&M survey 2076.

7.3.2 Strategies Adopted

Pashupati Homeopathic Hospital is the only hospital in Nepal providing homeopathic services to the public sector. The homeopathic system is easy, effective and, economic having minimum side effects. The Hospital has been conducting various awareness programs on Homeopathy as an effective way of treatment on some specific diseases like warts, corn, allergic rhinitis, urticaria, piles, etc. Including these awareness programs the hospital has been conducting free Health Camps, and seminars regarding the utilization of Homeopathy.

Curative Health Services: Free Health Services.

Preventive Service: Preventive and Counseling Service only.

Health Camps: In Different Areas Hospital provide homeopathic Service and Information about homeopathic system of medicine.

Cost Effectiveness: Government has to bear minimum cost for medicine.

Trends of Service Provided at Homeopathic Hospital: FY 2071/72 - 2076/77

Fiscal year	Total Service Provided	G/M	Skin	ENT	Eye	Dental	Gyn / Obs	Others
2071/72	73736	40545	18786	3389	1203	1409	1312	7092
2072/73	82079	43247	21390	3740	1486	1670	2037	8509
2073/74	83376	44150	22067	3124	1560	1732	1994	8749
2074/75	83895	44311	22209	3237	1610	1903	2231	8394
2075/76	84448	45302	21125	3135	2025	1806	2530	8525
2076/77	49267	24317	11290	1430	1033	838	978	9381
	37493	Arsenicum Album 30 c distribution for prevention (prophylaxis) of COVID-19						
	86760	2076/77 Total service without health camps						

7.3.3 Health Camp Services: Fiscal year 2076/77

District: Namobuddha Nagarpalika-4 Bhakunde Bensi, Kavrepalanchowk

Venue: Methinkot Hospital, Kavrepalanchowk

Total number of patients: 311 (Male:-139 and Female:-172)

7.3.4 Summary of Financial/Allocation Expenditure:

Fiscal Year	Regular Budget in Rs (In thousands)	Development Budget Rs (In thousands)	Total Budget Rs (In thousands)
2076/77	15100	2100	17200

7.3.5 Constraints:

Due to limited budget it has been difficult to manage the medicine for increasing number of patients.

Due to lack of enough human resources for the increasing number of patients in hospital basically the medical officers.

Due to unavailability of laboratory and Diagnostic services patients have been referred outside for further investigation.

Human resource especially the doctors, technical staff and other supporting staff do not have any opportunities to expose themselves for higher studies, attending in the training and seminars.

7.3.7 Conclusion

The homeopathic hospital is providing service to outdoor patients free of cost. People all over the Nepal have not been exposed to the services of this hospital that are away from Kathmandu valley. Thus, the services should be expanded in order to provide services to people residing in all the Seven Provinces of Nepal with utmost priority.

SUPPORTING PROGRAMS

8.1. Health Training

8.1.1 Background

Established in 1993 AD, NHTC in a federal structure has been working on managing the health trainings in Nepal. It has been working for developing needed training materials, conducting various trainings and maintaining the standard of the health trainings so as to strengthen the capacity of health service providers across the country. It is primarily responsible for policy formulation, planning/budgeting, need assessment, curriculum design, training monitoring and evaluation (M&E) and overall quality assurance related to training system on health in lined with federal function. The competent human resources for health are the pillars to achieve the goals and targets set by the nation and fulfill the commitments shown by the government. The robust training system is paramount important in the present federal context, which requires strengthening of national health training system with competent staffing, established process, skilled human resources and its appropriate structures. Strong co-ordination and collaboration with the provincial and local level agencies working in this field is one of the keys to upgrade the national health training system in our country. NHTC's focus will be to lead more on collaborative health training management with the health agencies working on training in all the tiers of government. This is accomplished through the active participation, coordination, and collaboration of the Provincial health training centers (Dhankuta, Pathaliya, Kathmandu, Pokhara, Butwal, Surkhet and Dhangadi) and 49 clinical training site.

As health workforce being the cornerstone of health and societal development, capacity building of these workforces cannot be ignored where their professional and personal development should be continuous, and according to the development needs of the country based on scientific evidence and best practices observed in other developed countries. NHTC not only involved in training different cadres of health workers but also continuously evaluates the performances of already trained health professionals. As the national body for coordinating and conducting all training activities under MoHP, NHTC plans and conducts its training activities in line with the National Health Training Strategy, 2004 and according to the need of the different Departments, Divisions and Centers, thus contributing to meet the targets envisioned in the National Health Policy 2076 BS, National Health Sector Strategy (2015- 2020) and Sustainable Development Goals(2015- 2030 AD).

8.1.2 Goal:

The overall goal of NHTC is to enhance the technical and managerial capacity of health care service providers at all levels to deliver quality health care services towards attainment of the optimum level of health status of Nepali citizens.

8.1.3 Objectives:

- To standardize the training Learning Resource Packages (LRP) i.e. Trainer's Guide, Participant's Handbook and Reference Manual of different trainings
- To organize and conduct in service trainings to address the need of the country and to support the quality of care by enhancing the service provider's competency
- To ensure the quality of training activities by different mechanisms in adherence to national standards and to enhance the capacity of different training sites

Supporting Programs

- To adopt and promote innovative training approaches
- To strengthen mechanism and capacity for post training follow up, enhancement and support.

8.1.4 Strategies:

NHTC has adopted following strategies to address the National Health Training Programs

- Assessing, standardizing and accrediting training activities and clinical training sites
- Developing and standardizing training packages and revising them periodically
- Institutional Capacity development of all levels of training units
- Conducting pre-service, in-service, orientation, refresher, short term and long term trainings as per national requirements
- Integration and institutionalization of training activities
- Developing the linkage between in service trainings with the mandatory and optional courses of Continuous Professional Development (CPD) activities which ultimately linked up with the renewal of council registrations
- Strengthening Training Information Management System (TIMS) and developing the trainer's roaster at federal, provincial and local level as well.

8.1.5 Organizational structure and network of NHTC:

National health training network co-ordinates and supports seven Provincial Health Training Center, under Ministry of Social Development (MoSD) of each Province and 49 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 clinical training program. The new organizational structure and training network are as shown in below.

Figure 8.1.1 New Organizational Structure of NHTC:

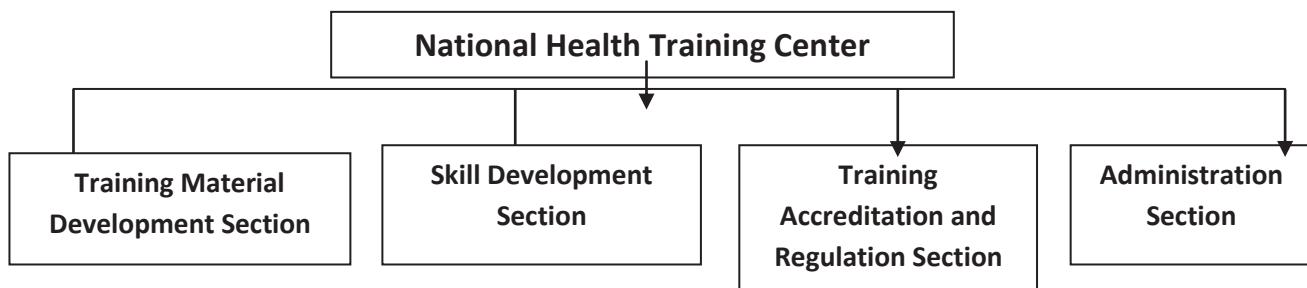
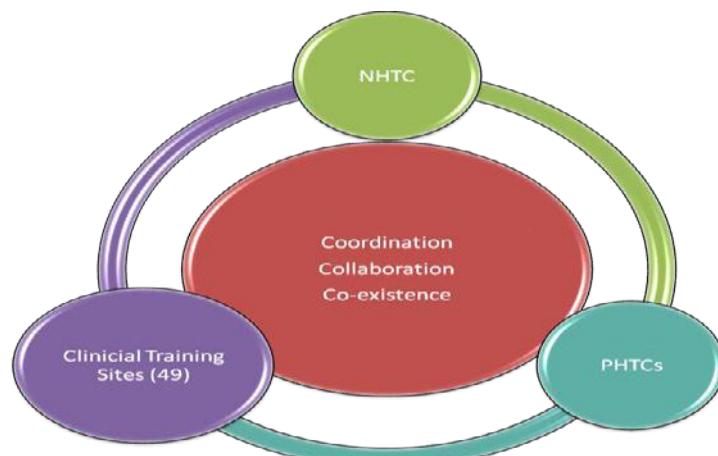


Figure 8.1.2. NHTC training networks



8.1.6 Different Clinical Training Sites accredited by NHTC:

National Health Training Centre provides following training through different training sites as below.



Table 8.1 List of Clinical training sites by province

Province	Number of training sites	Name of the training site	Site accredited for
Province 1	11	FPAN, Charali, Jhapa	Implant
		AMDA Hospital, Damak, Jhapa	SBA, RUSG, MLP, AAC, PTC,
		Mechi Provincial Hospital, Bhadrapur, Jhapa	MLP
		FPAN, Itahari	IUCD, Implant, CAC, COFP, ASRH
		BPKIHS, Dharan	PNC, VIA
		Koshi Hospital, Biratnagar	SBA, IUCD, Implant, PPIUCD, CAC, MA, ASRH, GBV
		Nobel Medical College, Biratnagar	PPIUCD
		MSSBiratnagar	CAC
		Okhaldhunga Community Hospital	MLP, GBV
		Inaruwa Hospital, Sunsari	GBV
		Ghaighat Hospital, Udayapur	GBV
Province 2	4	Gajendra Narayan Singh Hospital, Rajbiraj	SBA, Implant, IUCD
		FPANJanakpurdham, Dhanusa	Implant , IUCD, Minilap
		Province Hospital, Janakpur	SBA, Implant, IUCD, Minilap, NSV, ASRH, CoFP Counseling, GVB
		Narayani Hospital, Birgunj	SBA,PPIUCD
Bagmati Province	15	Paropakar Maternity and Women's Hospital, Kathmandu	ASBA, SBA, Implant,IUCD, PPIUCD, ASRH, GBV,AAC,RUSG, CNC(SNCU), VIA/CRYO, STI, SAS (CAC,MA,2nd Trimester Abortion Care), Minilap
		CFWC, Chhetrapati, Kathmandu	FP, ASRH
		Bhaktapur Hospital, Bhaktapur	ASRH
		FPAN, Pulchowk	FP, SAS
		MSS, Satdobato	FP, SAS
		FPAN, Chitwan	FP, SAS
		MSS, Narayanghat	FP, SAS
		Bharatpur Hospital, Chitwan	ASBA, SBA, MLP, SAS, OTTM, GBV
		PHECT Nepal Kirtipur Hospital, Kathmandu	SBA, FP, VIA, Burn Care
		PHECT Nepal Model Hospital, Kathmandu	SAS, VIA,AAC
		Kathmandu Medical College, Sinamangal	OJT on 2nd Trimester Abortion Care
		Army Hospital, Chhauni, Kathmandu	SBA, FP
		TUTH, Maharajgunj, Kathmandu	NICU, ICU, OTTM, PNM, Medicolegal

		Kanti Children Hospital, Kathmandu	Pediatric Nursing care
		Nepal Cancer Care Foundation, Lalitpur	VIA/CRYO
Gandaki Province	3	Pokhara Academy of Health Science, Pokhara	RH, GBV, AAC
		Community Hospital, Lamjung	SBA, MLP
		Dhaulagiri Provincial Hospital, Baglung	SBA, MLP
Lumbini Province	10	Lumbini Province Hospital, Butwal	SBA, SAS, GBV
		Bhim Hospital, Bhairahawa	SBA
		AMDA Hospital, Butwal	OTTM
		FPAN, Butwal	FP, SAS
		MSS, Chandrauta, Kapilvastu	FP, SAS
		Lumbini Medical college, Palpa	FP, SBA
		FPAN, Dang	FP
		Bheri Hospital, Nepalganj	RH, GBV
		Mission Hospital, Palpa	SBA, MLP
		Nepalganj Medical College	SBA, MA
Karnali Province	2	Karnali Provincial Hospital, Surkhet	SBA, FP (Implant, IUCD, NSV, Minilap)
		Karnali Academic of Health Science, Jumla	SBA, IP
Sudurpaschim Province	4	Seti Provincial Hospital, Dhangadhi	RH, GBV, MLP, RUSG,
		Mahakali Provincial Hospital, Kanchanpur	SBA, ASBA
		FPAN, Kanchanpur	FP
		Dadeldhura Hospital	SBA, MLP, ASBA

8.1.7 MAJOR ACTIVITIES CONDUCTED in FY 2076/77

8.1.7.1 Training Material Development

In the fiscal year 2076/77, the training material development section of NHTC has developed training packages on spinal cord injury, road traffic accident, antimicrobial resistance, occupation health and safety management, Essential Critical Care, COVID-19 preparedness and response, Case investigation and contact tracing (CICT) guideline, Online Nepali version of COVID-19 related training packages developed by WHO and burn care management. In addition, the National Health Training Strategy which has been developed in the last fiscal year is still in the process of the development while the Minimum Initial Service Package (MISP) for the Sexual and Reproductive Health (SRH) and Adolescent Sexual and Reproductive Health (ASRH) was updated with incorporation of recent data and scientific evidence.

8.1.7.2 Skill Development

From annual allocated budget of NHTC, the total of 592 participants were trained among 1354 targeted for the FY which is 35.70% of total target for that fiscal year. Of the total trained, 100% target was achieved in Diploma in Bio-Medical Engineering Training and Anaesthesia Assistant Training. Likewise, CTS Training achieved 75% and Rural Ultrasound Training achieved 73.33%

whereas Operation Theater Techniques and Management Training, ICU/Critical Care Training, Climate Change and Health Training, Mental Health Training, PEN Training (NCD Package) each achieved 66.67% of the target. Similarly, 50% and more achievement were observed in Training for Pool Clinical Trainers (60%), HFOMC Training (57.14), Advance SBA Training (50%), Medico Legal Training (50%), Cervical Cancer (VIA/CRYO) Training (50%), Palliative Care Training (50%), Gender Based Violence Training (50%). While Paediatric Nursing Training achieved 13.09% and Discussions for advocacy on Climate Change and Health Impact (7 Provinces) achieved 14.28%. It is observed that the Induction Training was not conducted for new service entrants because the Public Service Commission has not taken any new health cadres for that fiscal year.

Types of Training under NHTC

NHTC conducts various clinical and managerial training and orientation program. The NHTC is following classroom based in-person training modality. But due to surge of COVID-19 this year NHTC has conducted virtual training also. The various trainings are classified as pre-service and in-service training.

1. Pre-service training

This type of training is focused for the health professionals in their academic and non-academic course who can enter the health system after completion of their study. NHTC provides the eighteen-month Diploma in Biomedical Equipment Engineering (DBMEE) pre-service training course to produce biomedical equipment technician (BMET). The CTEVT accredited DBMEE training is targeted for the plus two science graduate who will work as biomedical equipment technician after training completion. The graduate will perform preventive and repair maintenance of healthcare equipment used in different health facilities across Nepal. The AAC 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 Anesthesia Assistant. Staff nurses and health assistant are the candidates for this course and after graduation; they support in various emergency surgeries especially the cesarean section in peripheral hospitals as well as elective surgeries where anesthesiologist is unavailable.

2. In-service training

NHTC provides different kinds of trainings to the health service provider who are in service to develop their capacity so that they can perform specific clinical and public health task. The in-service trainings can be classified here based on the type of training provided.

i) 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.

ii) Competency based training

NHTC organize various clinical training for government health workers in coordination with multiple clinical training sites to upgrade their knowledge and skills in multiple clinical areas. These in-service trainings are based on local need. NHTC fulfill the training demand by developing the new training courses, update and revise the existing training curricula according to the national and international practice and scientific evidence. Twenty courses are offered which are listed in box below:

<i>Competency based courses</i>	
Skilled birth attendance	Mid-level practicum (MLP)
Advanced skilled birth attendance	Palliative care
Anaesthetic Assistant Course	Pediatric nursing care
Rural ultrasonography (USG) for nurses	Gender based training
Medico-legal Training	Clinical training skills (CTS)
Non-scalpel vasectomy	Operation theatre technique

Intrauterine Contraceptive Device (IUCD) Postpartum intrauterine contraceptive device (PPIUCD) Minilaps Implants Safe abortion services Comprehensive abortion care Medical abortion	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) Packages of Essential Non-communicable Diseases
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iii) Refresher training

Refresher training is also provided to the existing government health service provider to update and improve their knowledge and skills in a frequent time interval and when there are changes in practices. CAC, FCHVs, and SBAs are in-service refresher training provided according to the need of divisions and centers.

iv) Induction training

NHTC has begun providing induction training for newly recruited health service groups from 2072/73. The one-month courses (1 month) are provided for all health service disciplines. This training is provided to the newly recruited health officers only through the NHTC.

v) Other training

- 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).
- Orientation program (HFOMC, Appreciative Inquiry).

8.1.7.3. Training Accreditation and Regulation

In Fiscal year 2076/77, the accreditation and regulation section of NHTC has conducted following activities.

Four new training sites accreditation

- o MSS Biratnagar for CAC,
- o Nepalgunj Medical College for SBA,
- o Province Hospital Surkhet for MLP, Vasectomy, Implant, IUCD, and SBA, and
- o Karnali Academy of Health Sciences (KAHS) for SBA, Implant/IUCD

Follow up enhancement for SBA/MLP/FP in 5 districts (Bhojpur, Rautahat, Achham, East Rukum and Rasuwa)

Training Information Management System (TIMS) installation and onsite training conduction in all 7 Provincial Health Training Centre (PHTCs)

Health Training Management Guideline and QI tools development

8.1.8 Annual target and achievements

a. Program activities

In the fiscal year 2076/77, a total of 4,837 participants were registered in TIMS from NHTC and its network in different 77 trainings programs. Among the total trained participants, 64.32% were females (3,111) and 35.68% were male (1,726).

b. Budget and Expenditure

The overall physical progress of the NHTC was 57 percent and financial progress was 51.27 in the FY 2076/77.

Status of budget allocation and financial progress in three consecutive fiscal years

Budget	FY 2074/075 (in NRs '000)		FY 2075/076 (in NRs '000)		FY 2076/077 (in NRs '000)	
	<i>Allocated Budget</i>	<i>Expenditure (%)</i>	<i>Allocated Budget</i>	<i>Expenditure (%)</i>	<i>Allocated Budget</i>	<i>Expenditure (%)</i>
National Health Training programs	204,149	90.3	10,37,00	91.23	92,500	51.27

8.1.9. RECOMMENDATIONS (WHO SYSTEM MODEL)

8.1.9.1 Service delivery

- Establish one door accredited training system
- Develop the SOP for training packages and training sites
- Establish adequate training sites especially for RUSG training
- Develop comprehensive training sites in each province
- Shift from the traditional to blended learning approach and link it with the CPD

8.1.9.2. Health workforce

- Recruit and place adequate technical skilled human resources in health training centres in provinces
- Select proper candidate for long term training
- Develop the capacity of both clinical and non-clinical trainers
- Integrate trainings in pre-service education

8.1.9.3 Health information

- Implement and extend TIMS in province and local levels
- Maintain trainer's roaster in each province
- Develop one door system for registration and certification of all health related trainings

8.1.9.4. Logistics and infrastructure

- Build own building of health training centre in Bagmati and Lumbini province
- Strengthen the support in infrastructure development of training sites
- Manage hostel facility for trainings of long duration

8.1.9.5. Financing

- Allocate adequate budget for training monitoring and quality assurance
- Establish the mechanism of self-sustainability of trainings and
- Initiate of paid training systems through contracting out with the private sectors

8.1.9.6 Leadership and governance

- Ensure uniform training related budget expenditure norms in all provinces
- Clarify the federal and provincial roles in supporting partner's mobilization
- Develop follow up and skill enhancement mechanism at working station
- Advocate for re-establishment of separate health training centre in Karnali province

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 (NMO). On 12th June 1996, the center was named as Vector Borne Disease Research and Training Center. The key objective of Vector Borne Disease Research and Training Center is to fulfill the knowledge gap and supplement with evidence base in the better understanding of VBDs 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, Chikungunya, Lymphatic filariasis, Scrub typhus and Japanese encephalitis.

Major activities in FY 2076/77

- 1. Training
 - 1.1 VBDs training

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 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 Rampur hospital, Palpa and Baitadi hospital, Baitadi district. The methodologies used were lecture, audio/visual aids, power-point presentation, group works and discussion. A total of 50 persons (25 persons/group) including MO, VCI/ VCO/ MI, HA, AHWs, SN, ANMs and MR were trained on VBDs as preset program schedule.

VBDs training for physicians, pediatricians, medical generalist and medical officers

The objective of this training is to orient the physician, pediatrician, **medical generalist** and medical officers working in emergency department on strategies and treatment protocol of VBDs and facilitate early diagnosis, prompt and appropriate treatment of VBDS based on national program implementation guidelines and treatment protocols. The orientation was conducted in academy of Karnali Health Science, Jumla and Bharatpur hospital, Chitawan. Consultant physician, medical superintendents, physician and pediatrician and & medical generalist, director, senior health administrator, Vector control officer were used as facilitators. A total of 60 (30 in each hospital) doctors were oriented in the fiscal year 2076/77.

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.

Malaria microscopy refresher training

This course is intended to provide training to those who had previously obtained basic malaria 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, was conducted in VBDRTC 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 43 persons were trained in refresher malaria microscopy training in 3 groups. WHO had provided technical as well as financial support for 2 groups. Among trained 43 persons, 35 persons had achieved more than 80% and 12 persons achieved more than 90% in final aggregate score of theory and practical.

8.2.2. 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 (DPOs). Programme was conducted in 10 sentinel hospitals namely Kalikot, Dailekh, Rautahat, Bara Kapilvastu,Lamjung, Gorkha, Dhading, Nawalparasi east and Lalitpur. 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 discussed. Timeliness and completeness has been improved among the oriented sentinel hospitals but there is lack of optimum utilization of EWARS buletin.

8.2.3. Molecular diagnosis of Covid-19 using RT- PCR at VBDRTC

Polymerase chain reaction (PCR) is a molecular method based on DNA amplification and has been used since the late 1980s. In VBDRTC, RT PCR was used to diagnose, quality assurance, surveillance and outbreak investigation of malaria and serotyping of dengue virus. In FY 2076/77, VBDRTC's PCR lab is used as Covid-19 laboratory to diagnose the case of corona virus. Covid-19 laboratory was started from 20 chaitra 2076, the starting stage of covid-19 outbreak in Nepal. A total of 27300 throat and nasopharynxial swab samples were tested till 28 Ashwin2077. Among them, 2496 samples were found positive.

8.2.4. Research activities

8.2.4.1 Landscape Analysis of Vector-borne diseases (VBDs)

Introduction

Vector-borne diseases (VBDs) are a major public health concern, affecting around half of the world's population. The frequent outbreaks of dengue, malaria, chikungunya, yellow fever and zika have afflicted populations, claimed lives, and overwhelmed health systems in many countries. The common VBDs of Nepal are malaria, Kala-Azar, dengue, JE and LF. In recent years, Chikungunya, West Nile virus (WNV) and Scrub typhus have also created a threat in the Nepalese population. Global travel and trade, unplanned urbanization, and human migration have added the VBDs burden around the world. SEARO region bears a high burden of VBDs, including dengue, malaria and lymphatic filariasis (LF). In Nepal, the diverse topographical and climatic variations have supported in the abundance of insect vectors and major disease outbreaks. The vector expansion has become more intense because of global climate change. The landscape analysis of VBDs is necessary to find out the current disease burden in country context and set-up future research priority.

Methods

The landscape analysis of VBD research of Nepal from 1970 to March 2020 was conducted to assess the greater understanding of VBD-research status in Nepal. The published research articles related to VBDs in Nepal were searched using key-words. A final list of publication was prepared in excel. A total of 115 publications were included. Based on the review findings, the strength, weakness, opportunities and challenges in VBD researches in Nepal were analyzed to find out the potential research gaps in VBD research.

Result

The highest 13 (11.3%) number of articles were published in 2014. In a total of reviewed articles, the highest number were concerned with epidemiology 44(38.3%) and diagnostics (29 (25.2%) categories. The maximum number of publications 32(31.1%) were belonged to Kala-azar followed to malaria and dengue i.e. 17(17.8) in each. The vector-studies were only limited for mosquitoes and sand fly. Most of the study were hospital based 33 (33.0%) followed to Terai-region 25 (21.7%). Of

115 publications, 52 (45.2%) were only based on descriptive analysis. The 66 (57.3%) research publications were financially supported from different organizations. The major donor organizations were WHO TDR, EU and NHRC. In the analysis of first author in publication, 83(72.2%) were Nepalese origin. These scientific researches were published in 45 different peer-reviewed journals of National and abroad.

Conclusions

The study would be useful to know the current research status of VBD, strength weakness, challenges and barriers in VBD researches in national perspective, potential gaps, research provision and categorize the research priorities for coming next 5-10 years and to meet the "*Global Vector Control Response (GVCR) 2017–2030*" that was approved by the World Health Assembly in 2017.

8.2.4.2 Study of Factors Associated with Transmission of Dengue Virus: An Epidemiological and Entomological Study in Bharatpur Metropolitan City, Chitwan, Nepal

Background:

Dengue fever is a mosquito-borne tropical disease caused by the dengue virus. Dengue virus (DENV) is an RNA virus of the family Flaviviridae; genus Flavivirus. The biological vector of dengue is female mosquitoes of the Aedes type, principally, Ae. aegypti and Aealbopictus. In Nepal, dengue fever has been a great challenge to public health, especially in Terai region. At present, the vector dispersal in hilly areas is posing a serious public health threat. Climate change is affecting the incidence of dengue infections spread by two species of Aedes mosquitoes: Aedes aegypti and Aedes albopictus. The study on the factor associated with the transmission of dengue virus in Bharatpur Municipality of Chitwan district was conducted in between September to October 2019 to assess the knowledge and practices of community people using interview and vector prevalence survey in the outbreak area of 1, 2 and 3 wards of Bharatpur municipality, Chitwan.

Methodology:

Community based cross-sectional study through direct interview using a standard questionnaire and for entomological survey, a systematic sampling method was applied for Aedes larval survey.

Result:

Of the 200 participants, the majority 60 (30%) belonged to the age group 20-29 years. The participants had different duration of febrile illness: 156 replied 0-7 days followed by 8-14 days in 11 participants. In symptoms, the majority of them (138 (69.0%)) had complex symptoms i.e. Headache, retro-orbital pain & muscular pain. Regarding the disease transmission, 146 (72.6%) participants' replied transmission through a mosquito bite while 51 (25.4%) replied dengue transmission from the virus. There was a significant relationship between the knowledge of dengue transmission and water storage i.e. χ^2 (10, N=200) = 40.7, $p<0.01$. 63 (31.5%) and 60 (30.0 %) participants replied morning and day time bites of dengue vector. In travel history, 19 (9.5%) had traveled in the past 2-weeks duration. 73(36.5%) had sleeping habits during day time. 172 (86.0%) participants had used preventive measures to stop mosquito bite. 88(44.0%) had stored water in overhead tanks. In entomological survey of 100 households, larvae and pupae were found in 60 (60.0%) houses. Among 277 water-holding containers, 127 (45.8%) were infected with Aedes mosquito larvae and pupae. The overall house index (HI) and Breatheau index (BI), and pupal index (PI) were 60.0, 45.8, 127.0, and 144.0 respectively. In water-holding containers, highest positivity percentage of Aedes mosquito larvae was recorded in plastic drums (16.6%), followed by automobile tires (13.7%), plastic pots (4.4%), paint containers (3.3%), flower pots (1.4%), buckets (1.4%), bowls (1.1%), bottles (0.7%), fridge vessels (1.4%), discarded automobile parts (1.1%) and earthen pots (0.7%), respectively.

Conclusion:

Major risk factors observed in this study were lack of adequate knowledge on dengue, use of open and half sleeve clothes, sleeping during day time without using LLIN, storing multiple water holding containers without covering with lid, high level of overall House hold, Cotainer, Breatheau, and Pupal Index are major risk factor of dengue outbreak.

8.2.4.3 Susceptibility Test on *Anopheles fluviatilis* with Alphacypermethrin

Dhanusha, Mahottari and Sindhuli districts of Nepal

Objective

To assess the susceptibility status of malaria vector *Anopheles fluviatilis* mosquitoes with pyrethroid insecticide (Alphacypermethrin).

Materials and methods

Insecticide susceptibility tests were performed using the WHO susceptibility test kits and test procedures for insecticide resistance monitoring in malaria vector mosquitoes. Wild caught adult female Anopheline mosquitoes were exposed to papers impregnated with the WHO-recommended discriminating concentration of Alphacypermethrin (0.05% obtained from Universiti Sains Malaysia, Penang, Malaysia. The control tests were performed using pre-impregnated papers with Silicone oil (PY control) along with each set of insecticide susceptibility test. For the susceptibility test, adult female Anopheline mosquitoes were collected inside the animal sheds in the morning hours during the time period of 05:30 am to 07:30 am. Flashlights used to locate the adult female Anopheline mosquitoes resting indoor and mouth aspirators used to capture them. Collected mosquitoes were placed in WHO susceptibility test holding tubes. Adult female Anopheline mosquitoes that physically fit for the susceptibility test were sorted. Blood fed, half gravid and gravid adult female Anopheline mosquitoes were exposed in this susceptibility test. Wild caught mixed species of Anopheline adult female mosquitoes were exposed for 1 hour with 0.05 percent discriminating concentration of Alphacypermethrin along with PY-control papers simultaneously. At the end of 1 hour of exposure period, mosquitoes were transferred to the holding tubes for 24 hours post-exposure observation. During 24 hours of post-exposure observation, holding tubes were allowed to stand upright on the slide so that its mesh screen end up and a piece of cotton wool soaked with 10% glucose solution was placed on the mesh screen. The mortality rate was calculated after 24 hours of post-exposure observation period. After the completion of each test, species of Anopheline mosquitoes were identified under the stereoscope and morphologically using standard keys used for the identification of *Anopheles* mosquitoes. At the end of 24 hours post-exposure holding period, numbers of dead and alive mosquitoes were counted in both exposure and control tubes. The mortality rate was calculated using following formula;

$$\text{Test mortality} = \frac{\text{No. of dead mosquitoes}}{\text{No. of mosquitoes exposed}} \times 100$$

$$\text{Control mortality} = \frac{\text{No. of dead mosquitoes}}{\text{No. of mosquitoes exposed}} \times 100$$

If the control mortality observed > 20%, all the susceptibility tests were discarded for that day. However, if the control mortality was between 5% and 20%, the data were adjusted with Abbott's formula as follows;

$$\text{Corrected mortality} = \frac{\text{Test mortality} - \text{Control mortality}}{100 - \text{Control mortality}} \times 100$$

The resistance status was defined according to WHO standard test procedures for insecticide resistance monitoring in malaria vector mosquitoes (Second edition 2016) guidelines, which state that 98 – 100% mortality indicates susceptibility, 90 – 97% indicates the possibility of resistance that needs to be confirmed and < 90% indicates resistance.

8.2.4.4 Susceptibility test carried out in Dhanusha district

Test area and climatic condition

Tulsichaura village lies at the base of the forested Siwalik foothills (Churia) and located about 5 kilometer north of Lalgadh Leprosy Hospital in Dhanusha district. According GPS way point recorded, the elevation of Tulsichaura village is 250 meters, Latitude N 27°00'36.8" and Longitude E 085°55'35.2".

During the time period of present susceptibility test experiments (18 – 20 Kartik, 2076), temperature and relative humidity was recorded by thermo-hygrometer. In the field entomology laboratory (Lalgadh Leprosy Hospital, Lalgadh, Dhanusha district) where present susceptibility test was performed, daily air temperature averaged a maximum of 27.3°C and minimum of 21.3°C and relative humidity averaged a maximum of 78.2% and minimum of 60.4%.

Results

Altogether 18 replicates were performed with 0.05 percent discriminating concentration of Alphacypermethrin exposing batches of 15–25 adult female Anopheline mosquitoes in each replicate and 9 replicates of PY-control papers were also performed simultaneously exposing batches of 15–25 adult female Anopheline mosquitoes in each replicate. Susceptibility tests were performed by exposing 105 wild populations of adult female *Anopheles fluviatilis* mosquitoes with 0.05 percent discriminating concentration of Alphacypermethrin and 38 wild populations of adult female *Anopheles fluviatilis* mosquitoes exposing with PY-control papers simultaneously. Susceptibility test performed on 105 wild populations of adult female *Anopheles fluviatilis* mosquitoes with 0.05 percent discriminating concentration of Alphacypermethrin showed 97.14% mortality.

Conclusion

Since *Anopheles fluviatilis* is the main malaria vector in Nepal, present susceptibility test was carried out to assess the insecticide susceptibility status of this species against pyrethroid insecticide (Alphacypermethrin) which is currently being in use for malaria control. The mortality observed for *Anopheles fluviatilis* against discriminating concentrations of Alphacypermethrin (0.05%) was 97.14% in the present susceptibility test indicates that the adult female *Anopheles fluviatilis* mosquitoes collected from Tulsichaura village ward no. 11 of Mithila Municipality in Dhanusha district are resistance to this insecticide. To confirm the resistance, it needs to be repetition of susceptibility tests on wild populations of adult female *Anopheles fluviatilis* mosquitoes against Alphacypermethrin in same locality

8.2.4.5 Susceptibility test carried out in Mahottari district

Mosquito collected area and Climatic condition during the period of present susceptibility test

Kalapani village lies inside the forested Churia hills and located about 10 kilometer north of Bardibas town. According GPS waypoint recorded, the elevation of Kalapani village is 336 meters, Latitude N 27°03'19.1" and Longitude E 085°56'19.2".

During the time period of present susceptibility test experiments (25 – 26 Kartik, 2076), temperature and relative humidity was recorded by thermo-hygrometer. In the field entomology laboratory (Lalgadh Leprosy Hospital, Lalgadh, Dhanusha district) where present susceptibility test was performed, daily air temperature averaged a maximum of 26.5°C and minimum of 22.2°C and relative humidity averaged a maximum of 73.5% and minimum of 58%.

Results

Altogether 9 replicates were performed with 0.05 percent discriminating concentration of Alphacypermethrin exposing batches of 15–25 adult female Anopheline mosquitoes in each replicate and 4 replicates of PY-control papers were also performed simultaneously exposing batches of 15–25 adult female Anopheline mosquitoes in each replicate. Susceptibility tests were performed by exposing 105 wild populations of adult female *Anopheles fluviatilis* mosquitoes with 0.05 percent discriminating concentration of Alphacypermethrin and 46 wild populations of adult female *Anopheles fluviatilis* mosquitoes exposing with PY-control papers simultaneously. Susceptibility test performed on 105 wild populations of adult female *Anopheles fluviatilis* mosquitoes with 0.05 percent discriminating concentration of Alphacypermethrin showed 100% mortality.

Conclusion

The mortality observed for *Anopheles fluviatilis* against discriminating concentrations of Alphacypermethrin (0.05%) was 100% in the present susceptibility test indicates that the adult female *Anopheles fluviatilis* mosquitoes collected from Kalapani village ward no.3 of Bardibas Municipality in Mahottari district are susceptible to this insecticide.

Susceptibility test carried out in Sindhuli district

Description of mosquito collected area and Climatic condition during the period of present susceptibility test

Batase village ward no. 9 of Kamalamai Municipality in Sindhuli district was selected for conducting the susceptibility test on malaria vector *Anopheles fluviatilis* with pyrethroid insecticide (Alphacypermethrin). Batase village is inner terai and located about 5 kilometer east of Bhiman town in Sindhuli district. According GPS waypoint recorded, the elevation of Batase village is 324 meters, Latitude N 27°04'45.7" and Longitude E 086°00'13.9".

During the time period of present susceptibility test experiments (10 – 12 Mansir, 2076), temperature and relative humidity was recorded by thermo-hygrometer. In the field entomology laboratory (Lalgadh Leprosy Hospital, Lalgadh, Dhanusha district) where present susceptibility test was performed, daily air temperature averaged a maximum of 24.8°C and minimum of 20.4°C and relative humidity averaged a maximum of 73% and minimum of 60%.

Results

Altogether 15 replicates were performed with 0.05 percent discriminating concentration of Alphacypermethrin exposing batches of 15–25 adult female Anopheline mosquitoes in each replicate and 9 replicates of PY-control papers were also performed simultaneously exposing batches of 15–25 adult female Anopheline mosquitoes in each replicate. Susceptibility tests were performed by exposing 102 wild populations of adult female *Anopheles fluviatilis* mosquitoes with 0.05 percent discriminating concentration of Alphacypermethrin and 50 wild populations of adult female *Anopheles fluviatilis* mosquitoes exposing with PY-control papers simultaneously. Susceptibility test performed on 102 wild populations of adult female *Anopheles fluviatilis* mosquitoes with 0.05 percent discriminating concentration of Alphacypermethrin showed 99.01% mortality.

Conclusion

The mortality observed for *Anopheles fluviatilis* against discriminating concentrations of Alphacypermethrin (0.05%) was 99.01% in the present susceptibility test indicates that the adult

female *Anopheles fluviatilis* mosquitoes collected from Batase village ward no. 9 of Kamalamai Municipality in Sindhuli district are susceptible to this insecticide.

The CDC bottle bioassay on *Anopheles annularis* with Lambda-cyhalothrin in Nawalpur district, Nepal

Objective of the bioassay was to assess the susceptibility status of malaria vector *Anopheles annularis* mosquitoes with pyrethroid insecticide (Lambda-cyhalothrin).

Materials and methods

In order to assess the susceptibility status of *Anopheles annularis* mosquitoes against Lambda-cyhalothrin insecticide, the CDC bottle bioassay was performed at the diagnostic dose of 12.5 g/bottle and diagnostic exposure time of 30 minutes using "Guideline for Evaluating Insecticide Resistance in Vectors Using the CDC Bottle Bioassay (Brogdon, W. G., and Chan, A., 2014)". In CDC bottle bioassay, wild caught adult female *Anopheles annularis* mosquitoes were exposed to 250 ml glass Wheaton bottles treated with diagnostic dose 12.5 g per bottle of Lambda-cyhalothrin insecticide for a diagnostic exposure time of 30 minutes. The diagnostic dose of 12.5 g per bottle which was applied in present study is recommended by Centers for Disease Control and Prevention (CDC), Atlanta, USA (Brogdon, W. G., and Chan, A., 2014). Stock solution (10 mg/ml) of Lambda-cyhalothrin insecticide was obtained from CDC, Atlanta, USA. To perform the CDC bottle bioassay, bottles were prepared at entomology laboratory of Vector Borne Disease Research and Training Center (VBDRTC), Hetauda according to CDC guidelines. Stock solution (10 mg/ml) of Lambda-cyhalothrin insecticide was further diluted in 50 ml of acetone to make the diagnostic dose of 12.5 g/bottle for the treatment (coating) of bottle interiors. A 1 ml portion of the diluted solution of Lambda-cyhalothrin insecticide was transferred to a 250 ml of Wheaton glass bottle. The inside surfaces of four 250 ml Wheaton glass bottles were coated with Lambda-cyhalothrin insecticide and one bottle was coated with acetone only for the control. The bottles were coated by shaking, rolling and inverting in such a way that all surfaces of bottle exposed to the solution. After coating with solutions the cap of bottle were removed and the bottles were then left open to dry in the dark.

To perform the CDC bottle bioassay, mosquitoes were collected inside the animal sheds in the morning hours during the time period of 05:30 am to 07:30 am. Collected adult female *Anopheles annularis* mosquitoes were placed in WHO susceptibility test holding tubes. Keeping the holding tubes in cool box, collected mosquitoes were carefully brought to the field entomology laboratory which was established in Milan Guest House, Kawasoti town of Nawalpur district where CDC bottle bioassay performed. Upon reaching in field entomology laboratory, collected mosquitoes were placed in a mosquito cage for the rest. *Anopheles annularis* mosquitoes were identified morphologically one by one through the hand lens. Adult female *Anopheles annularis* mosquitoes that physically fit were sorted for the CDC bottle bioassay. Blood fed, half gravid and gravid adult female *Anopheles annularis* mosquitoes were exposed in this CDC bottle bioassay.

Batches of 10 – 25 adult female *Anopheles annularis* mosquitoes were released to each bottle using a mouth aspirator. Mosquitoes were exposed for a diagnostic exposure time of 30 minutes according to the CDC protocol. At the end of 30 minutes of diagnostic time, dead and alive mosquitoes were counted in both exposure and control bottles and the mortality rate calculated. After the completion of each CDC bottle bioassay, mosquitoes were removed from the bottles and to avoid any error *Anopheles annularis* were re-identified morphologically through the stereoscope using standard keys used for the identification of *Anopheles* mosquitoes.

The data interpretation and resistant status of mosquito samples of CDC bottle bioassays in present study was done according to the CDC bottle bioassay guideline as described below;

Supporting Programs

Mortality rate = 100%: the population is fully susceptible.

Mortality rate < 100%: the population is considered resistant to the tested insecticides.

Susceptible status: The tested mosquitoes with insecticide coated bottles were considered susceptible when died before the diagnostic time.

Resistance status: Mosquitoes survived beyond diagnostic time, these survivors represent a proportion of the population with some degree of resistance.

The mortality rate was calculated using following formula;

Test mortality = No. of dead mosquitoes / No. of mosquitoes exposed X 100

Control mortality = No. of dead mosquitoes / No. of mosquitoes exposed X 100

Mosquito collected area, Climatic condition and result of the CDC bottle bioassay on *Anopheles annularis* with Lambda-cyhalothrin in Nawalpur district, Nepal

Kushanhari village ward no.13 of Kawasoti Municipality in Nawalpur district was selected for the CDC bottle bioassay on *Anopheles annularis* with pyrethroid insecticide (Lambda-cyhalothrin). Kushanhari village is inner terai and located about 5 kilometer south of East West highway and Kawasoti town in Nawalpur district. According GPS waypoint recorded, the elevation of Kushanhari village is 136 meters, Latitude N $27^{\circ}37'52.4''$ and Longitude E $084^{\circ}08'26.9''$.

During the time period of present CDC bottle bioassay experiment (22 – 23 Falgun, 2076), temperature and relative humidity was recorded by thermo-hygrometer. In the field entomology laboratory (Milan Guest House, Kawasoti town of Nawalpur district) where present CDC bottle bioassay was performed, daily air temperature averaged a maximum of 25.1°C and minimum of 19.2°C and relative humidity averaged a maximum of 73% and minimum of 56%.

Results

Altogether 8 replicates of CDC bottle bioassay were performed for diagnostic dose of 12.5 g per bottle of Lambda-cyhalothrin insecticide exposing 120 wild caught adult female *Anopheles annularis* mosquitoes and 2 replicates of control bottles (coated with acetone only) were also performed simultaneously exposing 32 wild caught adult female *Anopheles annularis* mosquitoes. CDC bottle bioassay performed on 120 wild caught adult female *Anopheles annularis* mosquitoes with diagnostic dose of 12.5 g/bottle of Lambda-cyhalothrin insecticide and diagnostic exposure time of 30 minutes showed 92.5% mortality.

Conclusion

In this CDC bottle bioassay experiment, 92.5% mortality observed in *Anopheles annularis* against Lambda-cyhalothrin at the diagnostic dose of 12.5 g/bottle with 30 minutes exposure time which indicates resistance of this species to this insecticide. To confirm the resistance, it needs to repeat the CDC bottle bioassay on wild populations of adult female *Anopheles annularis* mosquitoes against Lambda-cyhalothrin insecticide in same locality.

Entomological survey of dengue vectors (*Aedes aegypti* and *Aedes albopictus*)

Makwanpur and Chitwan districts of Nepal

Objective

General objectives of the survey was to carry out entomological survey of dengue vectors (*Aedes aegypti* and *Aedes albopictus*) in dengue outbreak localities of Hetauda submetropolitant and Bharatpur metropolitan cities. Specific objectives were to determine the; breeding habitats of *Aedes* mosquitoes, level of *Aedes* infestation and prevalence of *Aedes* mosquito species.

Methods and materials

House to house entomological survey was carried out in houses and peri-domestic areas to detect *Aedes* larval breeding habitats with a view to study the level of infestation of areas with *Aedes* larvae. The larvae and pupae collections were made in each locality by using dipping and pipetting method to find out the *Aedes* breeding in all the water filled containers present in and around the houses and their premises. The numbers of water filled containers inspected were recorded, including information on which had or did not have larvae and pupae of *Aedes* mosquitoes. Larvae and pupae were put immediately in water filled labeled specimen bottles and transported to the insectary of Vector Borne Disease Research and Training Center (VBDRTC), Hetauda. All collected larvae and pupae were reared in insectary of VBDRTC until adults emerged. However, samples of *Aedes* mosquito larvae and pupae collected from different localities of ward no. 1, 2 and 3 of Bharatpur Metropolitan City in Chitwan district were transported to the field entomology laboratory established in a hotel at Narayangarh, Chitwan and collected larvae and pupae were reared in field entomology laboratory until adults emerged. All adults that emerged from the pupae were sorted and species identification done morphologically using stereoscope and number of *Aedes* adults emerged from pupae were counted. Similarly collection of adult *Aedes* mosquitoes around the breeding habitats was also done by using mouth aspirator. Captured adult *Aedes* mosquitoes were placed in test tubes and identified morphologically.

The data on larvae, pupae and adult collections were recorded in the pre-designed entomological survey forms. Similarly information on type of inspected water-holding containers which have or do not have immature stages of *Aedes* mosquitoes was also recorded. To assess the levels of *Aedes* infestations, larval and pupal survey data were analyzed and calculated in terms of different indices like container index (CI), house index (HI), Breatheau index (BI) and pupal index (PI) as per the Comprehensive Guidelines for Prevention and Control of Dengue and Dengue Haemorrhagic Fever (2011).

House Index (HI) = Number of houses infested / Number of houses inspected X 100

Container Index (CI) = Number of positive containers / Number of containers inspected X 100

Breatheau Index (BI) = Number of positive containers / Number of houses inspected X 100

Pupal Index (PI) = Number of pupae / Number of houses inspected X 100

Survey area, climatic condition and results of entomological survey of dengue vectors (*Aedes aegypti* and *Aedes albopictus*) in Hetauda sub-metropolitan city, Makwanpur district

It is a submetropolitan city and the capital of Bagmati Province and administrative headquarters of Makwanpur district. Hetauda is situated in a unique geographical structure called Doon, giving it a valley-like geography. It is surrounded by mountains, with the Mahabharata Range to the north and the Sivalik Hills to the south. It lies in the 27°25' N Latitude and 85°02' E Longitude and is situated at a level of 300 – 390 meter above the sea level. The rivers Rapti and Karra run through the Hetauda city and flow southwest to meet the Narayani River. Present entomological survey of *Aedes* mosquitoes was carried out in different localities; *Buddha Tol*, *Prativanagar Tol*, *Birendranagar Tol* and *Thaha Chowk* of ward no. 4 in Hetauda sub-metropolitan city, Makwanpur district.

An outbreak of dengue, which occurred in Hetauda sub-metropolitan city during 3rd and 4th week of the July, 2019 reported highest numbers of dengue cases from different localities of ward no. 4.

During the time period of present **entomological survey** (19 – 22 Shrawan, 2076), temperature and relative humidity was recorded by thermo-hygrometer. Daily air temperatures averaged a maximum of 31.6°C and minimum of 26.9°C and relative humidity averaged a maximum of 70.8% and minimum of 52.6%. Since this is the rainy season (monsoon), rainfall occurred during the present entomological survey of dengue vectors.

Results

A total of 100 houses were surveyed in *Buddha Tol*, *Prativanagar Tol*, *Birendranagar Tol* and *Thaha Chowk* of ward no. 4 in Hetauda sub-metropolitan city to detect the presence of *Aedes* mosquito breeding habitats. Among these 100 houses surveyed, 85 (84.15%) houses were found positive for *Aedes* mosquito larvae and pupae. Overall 350 water-holding containers were inspected in 100 houses. Among these 350 water-holding containers inspected, 220 (62.85%) were found infested with *Aedes* mosquito larvae and pupae. The overall HI, CI, BI and PI were 84.15, 62.85, 217.82 and 328.71 respectively.

Among 14 types of water-holding containers inspected during survey of dengue vectors, *Aedes* mosquito larval breeding was detected in 13 types of water-holding containers. Among the water-holding containers inspected, highest positivity percentage of *Aedes* mosquito larvae was recorded in plastic drums (20.0%), followed by automobile tyres (14.6%), buckets (3.4%), plastic cups (3.1%), metal drums (2.6%), earthen pots (2.6%), bottles (2.0%), bowl (2.0%), fridge vessels (1.2%), flower pots (1.2%), cemented water tank (0.5%) and discarded small size plastic and metal containers (2.8%) respectively. A total of 332 pupae were collected from different types of water-holding containers. All collected pupae were taken to the insectary of VBDRTC, Hetauda where they reared until adults emerged. All 332 reared pupae were emerged to the adult stage. Of these 332 adult *Aedes* mosquitoes emerged, 245 (73.8%) were *Aedes aegypti* and 87 (26.2%) *Aedes albopictus*.

Survey area, climatic condition and results of entomological survey of dengue vectors (*Aedes aegypti* and *Aedes albopictus*) in ward no. 4 of Hetauda sub-metropolitan city, Makwanpur district

Present survey of dengue vectors was carried out in different localities of Bharatpur metropolitan city; *Pulchowk*, *Pokhara bus park* of ward no. 1, *Lions Chowk*, *Balkumari Road*, *Kshetrapur* of ward no. 2 and *Kamalnagar*, *New Road* of ward no. 3. All these localities are adjacent to Narayangarh town of Bharatpur metropolitan city. Narayangarh town lies in the 27°41'44.4" N Latitude and 84°25'18.6" E Longitude and is situated at a level of 194 meter above the sea level. It has also the center for hospitality industry which includes hotels, restaurants and transportation hub for the Chitwan district.

During the time period of present entomological survey (31 Bhadra, 2076 – 06 Aaswin, 2076), temperature and relative humidity was recorded by thermo-hygrometer. Daily air temperatures averaged a 29.5°C and minimum of 26.5°C and relative humidity averaged a maximum of 77.5% and minimum of 63.8%. Although this is the post-monsoon season, rainfall observed during present entomological survey.

Results

A total of 100 houses were surveyed in different localities of ward no. 1, 2 and 3 of Bharatpur Metropolitan City to detect the presence of *Aedes* mosquito breeding habitats. Among these 100 houses surveyed, 60 (60.0%) houses were found positive for *Aedes* mosquito larvae and pupae. Overall 277 water-holding containers were inspected in 100 houses and peri-domestic areas during this entomological survey. Among these 277 water-holding containers inspected, 127 (45.8%) were found infested with *Aedes* mosquito larvae and pupae. The overall HI, CI, BI and PI were 60.0, 45.8, 127.0 and 144.0 respectively.

Altogether 11 types of water-holding containers inspected in 100 households and peri-domestic areas were found positive for *Aedes* mosquito larval breeding. Among the more common water-holding containers inspected, highest percentage of *Aedes* mosquito larvae was recorded in plastic drums (16.6%), followed by automobile tyres (13.7%), plastic pots (4.4%), paint containers (3.3%), flower pots (1.4%), buckets (1.4%), bowls (1.1%), bottles (0.7%), fridge vessels (1.4%), discarded automobile parts (1.1%) and earthen pots (0.7%) respectively.

A total of 144 pupae were collected from different types of water-holding containers. All collected pupae were transported to the field entomology laboratory, where they reared until adults emerged. All 144 reared pupae were emerged to the adult stage. Of these 144 adult *Aedes* mosquitoes emerged, 113 (78.5%) were *Aedes aegypti* and 31 (21.5%) *Aedes albopictus*.

Conclusion

In all localities of ward no. 4 of Hetauda sub-metropolitan city in Makwanpur district and ward no. 1, 2 and 3 of Bharatpur metropolitan city in Chitwan district, the larval indices HI, CI and BI are higher than the threshold values (threshold of 5% for the HI and BI, and 3% for the CI) accepted by the World Health Organization (WHO). The high observed values of the *Aedes* mosquito larval indices suggest a high risk of dengue transmission when dengue cases become established in the area.

The potential cause of high level of entomological indices observed in both areas seems to be the lack of aware of community, unmanaged and scattering of solid-waste materials, automobile tyres around the community and storage of water in containers with out cover found factors responsible for high *Aedes* mosquito breeding.

8.2.5 Financial Achievement

Fiscal year	Allocated budget	Total Expenses	Expenses %	Remaining	Irregularity regulated	Irregularity (cumulative)
2073/74	22,600,000.00	16,366,998.55	72	6,233,001.45	0	29,700.00
2074/75	30,030,000.00	15,235,068.58	51	14,794,931.42	0	1015973.10
2075/76	23260000	20459136.09	87.9	2800863.91	0	1015973.10

8.2.6. Problems/ constraints

S. N	Problems/ constraints	Action to be taken	Responsibility
1	VBDRTC's Office & dormaory for trainees is occupied by the 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/MOHP
4	Lack of vehicles for training, research, surveys and outbreak investigation of VBDs.	At least one vechicle should be provided for field program.	VBDRTC/MOHP
5	Lack of sanctioned post for microbiologist, epidemiologist, research officer and statistical officer.	O & M survey to be done to develop VBDRTC as center of excellance.	VBDRTC/MOHP

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 policies and plans. The centre functions to support national health programmes and services to achieve national health goals and SDGs through health promotion, education, information and communication approaches. 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 led social change strategies to implement its programmes.

8.3.2 Vision:

Healthy, alert and conscious citizens oriented to happy life.

8.3.3 Goal:

The goal of NHEICC is to contribute to the attainment of the highest level of health of the people of Nepal

8.3.4 Objectives:

The general objective of health education, information and communication is to raise health awareness of the people as a means to promote improved health status and to prevent disease through the efforts of the people themselves and full utilization of available resources.

The specific objectives of NHEICC are listed below:

- To mobilize and use modern and traditional communication multimedia and methods to raise health awareness, knowledge and promote healthy behaviour among the general public.
- To strengthen, expand and implement health communication programmes at all levels.
- To generate, collect and mobilize resources to implement health information, education and communication (IEC) programmes.
- To prevent the unauthorized dissemination and duplication of health related messages or information and IEC materials on different issues.
- To enhance capacity on health communication to develop, produce and disseminate quality, correct, authorized, uniform and appropriate messages and information.
- To 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:

- Advocating with all levels of stockholders for building healthy public policy and health in all policies.
- Implementing a one-door integrated approach for all health IEC programmes under MoHP.
- Ensuring adequate budget for health IEC programmes.
- Coordinating and collaborating with all levels of stakeholders through technical committees and other means.

- Ensuring implementation of health IEC programmes through health infrastructure at all tiers of federal government i.e. federal, provincial and local 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 IEC 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 federal, province and local level in 2076/77

Health education, information, communication and health promotion activities that were carried out by federal level in the reporting period are listed in the following table (table 8.3.1).

Table 8.3.1: Major activities carried out by federal level in 2076/77	
Development and production of IEC materials and distribution to stakeholders.	Health awareness and communication program on mental health and birth defect
Development, production and broadcasting of health messages through radio, television, and newspapers.	Dissemination of messages and information through popular online media
Broadcasting of health messages through radio Nepal and Nepal television in packages including jeevanchakra, janawasthya radio program, janawasthya bahas.	Communication programme on smoking and tobacco product control and regulation.
Awareness and communication programme on IMNCI, immunization, diarrhoeal diseases, pneumonia etc.	Communication programme on communicable disease and epidemic prevention.
Child health, free health, communicable and non-communicable disease prevention related IEC materials printing and distribution	Safe motherhood, delay marriage and family planning, adolescent health related interpersonal, social mobilization and mass communication programme
Communication programme on risk factors of non-communicable diseases through social mobilization, interpersonal communication as well as electronic and print media.	Airing and broadcasting of disease outbreak and epidemic related messages.

Source: NHEICC/DOHS

Supporting Programs

Health education, information, communication and health promotion activities that were carried out by provincial and local level in the reporting period are listed in the following table (table 8.3.2).

Table 8.3.2: Major activities carried out by province and local level in 2076/77	
Broadcasting of messages via local mass media	Celebration of world health day and other health related days, week and months.
Journalist interaction on different health issues.	School health education, mother group and social behaviour change campaign for health in local level.
School health education program.	

Source: NHEICC/DOHS

8.3.7 Trend program analysis by federal, provincial and local level

The physical and financial achievement in the year 2076/77 regarding Health education, information, communication and health promotion programme by federal level was 99 percent and 75 percent respectively. Provincial and local level achievement report was not available in the reporting year. The trend is shown in the following table (Table 8.3.3)

Table 8.3.3: Percentage trend of physical and financial achievement by federal, provincial and district level in 2073/74 to 2075/76.						
Programme	2074/75		2075/76		2076/77	
	Physical	Financial	Physical	Financial	Physical	Financial
Federal Level	56.04	79.12	95	76.41	99	75
Provincial and local Level	85	83	NA	NA	NA	NA

Source: NHEICC/DOSH

8.3.8 Strength, Weakness and Challenges:

The strength, weakness and challenges of Health education, information, communication and health promotion programme in the 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. Good organizational structure at Federal/Province level for health promotion program Behaviour change communication for health approach has been developed in line with national health communication policy 2012. Programmes flow from federal to province and local level.	Limited human resource for health promotion at federal and province level. No human resource for health promotion at local level. No organizational structure for health promotion at local level.	Inadequate compliance with national health communication policy (NHCP), guidelines and directives. Less emphasis in health promotion activities according to changing disease pattern. 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, forecast, quantify, procure, distribute health commodities for the health facilities and the monitoring and evaluation of health programmes. The division is also responsible for monitoring the quality of air, environment health, health care waste management, water and sanitation. It also monitors the construction and maintenance of public health institution buildings and supports the maintenance of medical equipment. It also involved repair and maintenance of bio-medical equipment, instruments and the transportation vehicles. 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.
- To plan and carry out the logistics activities for the uninterrupted supply of essential medicines, vaccines, contraceptives, equipment, HMIS/LMIS forms and allied commodities for the efficient delivery of healthcare services from the health institutions of government of Nepal in the country.

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, HIIS, 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

Supporting Programs

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.

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 Federal, Provincial, District and Local level for the storage and distribution of health commodities.

Promote Online Inventory Management System and Non-Expendable/Expendable Items Inventory System in Federal, Provincial, District and Local level warehouses.

Auctioning of non-functional cold chain equipment's/furniture, vehicle etc.

Repair and maintenance of bio-medical, cold chain equipment's/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 all levels.

Implement effective Pull System for year-round availability of Essential Drugs and other health commodities at all levels (Federal, Provincial, District and Local level 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 IHIMS Working Group at Federal and Provincial levels.

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 Management Section
Environmental Health and Health Related Waste Management Section
Health Infrastructure Development Section
Logistic Management Section

8.4.1. The Integrated Health Information Management Section (IHIMS)

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. Health Infrastructure Development Section (HIDS)

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.

Supporting Programs

- Identifying the status of and maintaining medical equipment;
- Rolling out the out sourcing of maintenance contract 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.

8.4.3. Environment Health and Health Related Waste Management Section (EHHMS)

As per the work description approved from council of ministers federal gvernement 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 (IMS)

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.

Major ongoing activities

The following innovative activities were conducted on a regular or ad-hoc basis in 2076/77 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 were disbursed through the Management Division till 2074/075. All other construction works costing more than one million is done through DUDBC. Since 2061/62, 2035 facilities have been built while in 2076/077 NPR 3,619 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 – 2076/077)

Detail	Number
Total number of health facilities built	2035
Number of facilities under construction	125
Near to completion facilities	106
Completed/handed over facilities	1804*
Budget allocated (in NPR) in 2076/077	5,05,25,54,000
Expenditure (in NPR) in 2076/077	3,61,93,95,850 (71.63%)

* Out of 1804 completed/handed over facilities, 51 facilities are completed but final payment is due.

Table 8.4.2: Building construction scenario in previous five years from DUDBC.

Types of building	2072/73	2073/74	2074/75	2075/76	2076/77
Health posts with birthing centres	101	275	-	-	-
Doctors' quarters	-	20	-	1	-
Staff quarters	-	36	-	-	-
PHCCs	2	6	-	-	-
Birthing centres	5	8	-	-	-
District health stores	-	-	-	-	-
BEOC buildings	-	-	-	-	-
CEOc buildings	-	-	-	-	-
Public health office buildings	2	-	-	-	-
District hospital buildings	5	3	-	6	-
Regional hospital buildings	-	-	-		
15 bedded hospital building	2	-	-		
Zonal hospital buildings	2	-	-		
Sub-regional hospital buildings	2	-	-		
Maternity units in zonal hospitals	1	-	-		
Emergency blocks in district hospitals	1	-	-		
Block A buildings in districts	-	-	-		
Maintenance and Renovation	-	-	-	-	4

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.

e) Logistics Management Information System (LMIS) - This unit was established in 1994. LMIS unit just started Online Inventory Management System in 2 Central Warehouses, 5 provincial warehouses and 77 District Warehouses. 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)

Supporting Programs

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.

The following are the major activities conducted by the Management Division in 2076/77:

Conducted 25th National Annual Performance Review Meeting, 2076/77.

Continued HMIS's web-based online reporting system.

Prepared dashboards in dHIS-2 so that major indicators can be easily observed.

Manage to print and distribute HMIS/LMIS forms, stock books and different forms required for all health institutions.

Major Problems encountered in dHIS-2 were fixed.

Prepared, printed and distributed the DoHS Annual Report, 2075/76 (2018/19).

Support and conducted HMIS/DHIS 2 training for newly recruited health workers and palika level health incharge throughout the country.

Arranged the printing and supply of HMIS recording and reporting tools.

Orientated and trained health workers on health care waste management.

Orientation and training on health care waste management to Province and Local level staff.

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.

Support on implementation and functioning of Web Based LMIS. Web based LMIS will be modified and robust into Online Inventory Management System at federal, 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 unusable equipment, materials and other health commodities.

Coordination with partner INGOs and NGOs 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.

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 1% 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
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
Low Budget in Drug Procurement and supply in local level	Budget will be revised as demand in next year.
Capacity building in procurement, forecasting, quantification and LMIS	LMS has planned to conduct that training at all provinces.
Management of Expired, Wastage and unused materials	LMS will collect those materials from all provinces and destroy or disposed as process.
Inadequate of HMIS/LMIS tools and late supply	Tools will be supplied in time and adequately
High demand of required equipments	LMS will demand budget for equipment procurement.

Supporting Programs

Table 6.8.6: Specific recommendations — health service management

Recommendations	Responsibility
a. Health infrastructure	
<p>Endorse proposed Central Coordination Committee and Technical Committee Form joint taskforce representing MoHP, DoHS-MD, RHDs and DUDBC officials to assess delayed and ongoing infrastructure projects and make plan to address issues</p> <p>Operationalise joint monitoring team for the field monitoring of construction projects</p> <p>Endorse standard building design and guidelines</p> <p>Develop a building planning cycle</p> <p>Establish/strengthen a health infrastructure section with adequate capacity at central and regional levels to be responsible for construction related planning and budgeting.</p> <p>Update and strictly implement land development criteria considering geographical variation, urban/rural settings (guidelines have been endorsed by MoH with ministerial decision).</p> <p>Assess regional, sub-regional, and zonal hospitals against standard guidelines and develop standardization plan.</p> <p>Develop mechanism to standardise PHC-ORC structures in coordination with communities.</p>	MoHP, DoHS-MD, PPICD, RHDs, DHOs, DPHOs
Information management	
<p>Initiate and continue measures to functionalise and regularize all routine information systems.</p> <p>Roll-out routine data quality assessment mechanisms at all levels.</p> <p>The monthly generation of data from all data platforms; sharing and review with concerned programmes, divisions, RHDs, DHOs, DPHOs, and hospitals.</p> <p>Provide data access through public portal, including meta-data and resources.</p> <p>Ensure interoperability among all existing management information systems.</p> <p>Develop and implement a long-term survey plan.</p>	MoHP, DoHS-MD, PPICD, RHDs, DHOs, DPHOs
Supervision and monitoring	
<p>Update and implement integrated supervision checklist, supervision plan and feedback tools.</p> <p>Deploy functional feedback mechanism with provision of coaching and mentoring services.</p> <p>Develop monthly integrated online supervision calendar and submit to higher authority to monitor effective execution at all levels.</p>	All levels

8.4.4 Logistic 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.

To systematize the management of logistics, the Logistics Management Information System (LMIS) unit was established in LMD in 1994. LMIS unit started Web-based LMIS in 2065/66 and online IMS was implemented 2073/74 for store management. Further, MD started using eLMIS from Baishakh 2075 B.S to strengthen supply chain management, LMIS data entry and data visualization for better decision making. After the restructure of Nepal's governance in federal structure, the logistics 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 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 through data visibility in electronic logistics management information system (eLMIS).

Strengthen physical facilities at the Central, Provincial, Health Offices and Local Level Government for the storage and distribution of health commodities.

Promote Inventory Management System and Non-Expendable/Expendable Items Inventory System in Central, Provincial, Health Office and Local Level Government warehouses.

Auctioning of non-functional cold chain equipment/furniture, vehicle etc.

Repair and maintenance of bio-medical, cold chain equipment/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, Province, Health Office, LLG 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 of FY 2076/77

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 eLMIS.

Conduct capacity building on Public Procurement Act and Regulations with coordination of Public Procurement Monitoring Office to provincial and local level managers and Storekeepers.

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 unusable equipment, materials, and other health commodities.

Coordination with partner INGOs and NGOs likeUNICEF, 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

LMIS Reporting Status

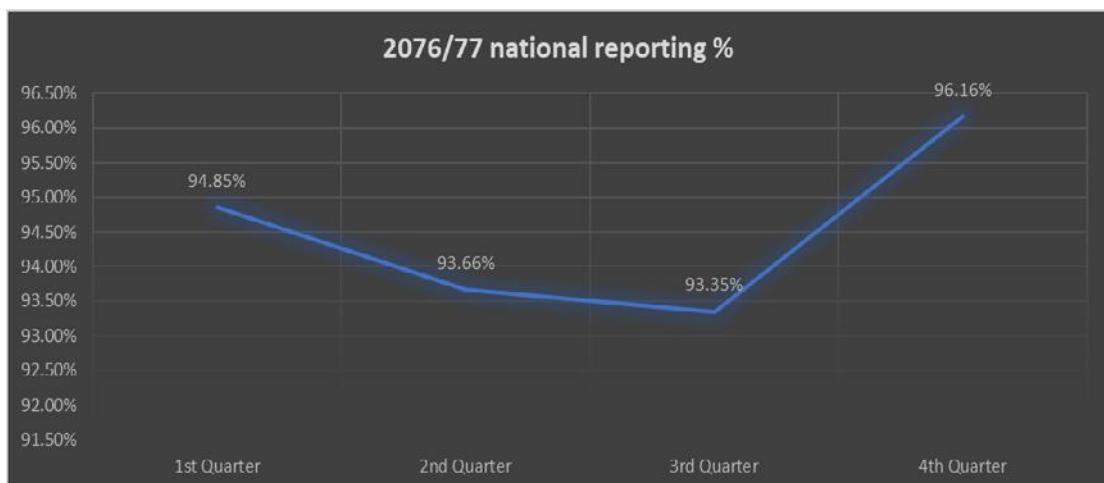
Review and optimization of information flow for the LMIS reports

MD together with technical assistance with GHSC-PSM advocated for improved reporting rate, as a result, MoHP issued a letter to all provinces to make necessary arrangements for LMIS data entry at district or LLG level instead of sending reports to Kathmandu. To address this directive, the MD along with GHSC-PSM to implement the eLMIS reporting License module to all provinces and 77 DHOs. The objective of the LMIS data entry activities at the district level was to improve reporting timeliness, increase data visibility for forecasting, quantification, and procurement at the local level, and reduce the costs of transporting LMIS forms to Kathmandu. In line with this program, eLMIS refresher training was organized in Province 5 along with the LMIS data entry program. GHSC-PSM trained a total of 174 participants across six provinces.

LMIS Reporting Rate

In FY 2075-76 Q4, the reporting rate was 76%. In FY 2076-77, the quarterly average reporting rate remained at 94.51% with highest in Q4 accounting for 96.16%

Improving trend in reporting rate



These efforts have resulted in improved reporting rates. The reporting rate for FY 2074/75 Q4 was only 30% whereas the reporting rate for FY 2075/76 Q4 was increased more than two-fold to 76%. Similarly in 2076/77 average quarterly reporting rate remained at 94.51%, all time high. Timeliness of reporting improved significantly after the implementation of data entry in health office in the district.

eLMIS implementation

MD/LMS has successfully implemented the Electronic Logistics Management Information System (eLMIS) in all Central Medical Stores, all Provincial Health Medical Stores (PHMS), 64 Health office stores and 72 hospitals, 23 LLGs and 23 Service Delivery Points within FY 2076/77. Remaining 13 Health Office stores and other sites are on the process of implementation.

With the COVID-19 pandemic, MD initiated to track and trace COVID-19 commodities in eLMIS. In less than three weeks, MD with technical of GHSC-PSM provided remote technical assistance to complete an eLMIS roll-out to 39 designated COVID-19 sites. Using remote implementation methods, staff in 39 COVID-19 target facilities were trained to operate the

system. Additionally, COVID-19 specific dashboard was created in eLMIS for better decision-making.

A separate configuration was added on eLMIS to manage and track COVID-19 commodities. Separate new requisition type as 'COVID-19' in addition to regular and emergency requisition.

A new dashboard was added on eLMIS for tracking COVID-19 commodities.

Additional real-time reports to track COVID-19 stock status.

Specific format as per Health Emergence Operation Center (HEOC) reporting requirement was added on eLMIS for live monitoring.

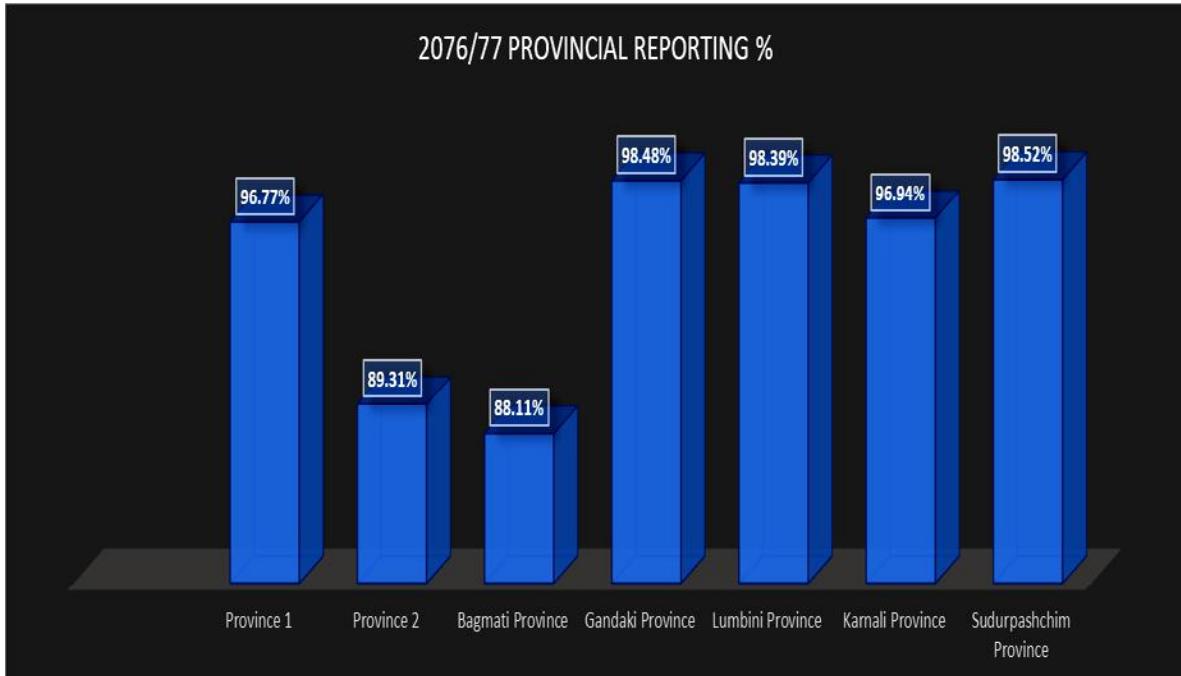
- **eLMIS implementation at Provincial and Health Offices**—eLMIS is implemented in all central and provincial stores across all 7 provinces. eLMIS is also implemented in majority of Health Offices and hospitals within FY 2076/77. Few LLGs were also covered during the period providing an easy and effective way to automate the daily operation.
- **Develop support mechanism and help desk**—The establishment of a helpdesk, staffed by support executives and one support manager, located at the Management Division, provides user support through a toll-free helpline, trouble-shooting guidelines, support personnel and training. The helpdesk receives calls and emails from eLMIS users, which are logged and given support tickets. Each query is tracked in the support Team Foundation Server software.
- **Standard operating procedures** – The project developed and implemented standard operating procedures (SOPs) for the functionality of the eLMIS to address user difficulties. The procedures have been submitted and approved by the Management Division.

eLMIS monitoring and data utility for decision making eLMIS performance and COVID-19 dashboards were developed and updated daily to monitor stock status of COVID-19 commodities and show the use of the eLMIS at the live sites.

The eLMIS scale-up was approved on May 20, 2020 from MoHP from health secretary level. With the approval of scale-up, it was requested to implement eLMIS in all remaining Provincial Health Logistics Management Centers, Health Offices, Local Level Government stores and gradually to all the hospitals and health facilities. It was also suggested to use Mobile application on the Health Facility level for the periodic LMIS reporting. With the approval of Scale-up Plan, MD with technical support with GHSC-PSM had initiated the rollout task. 136 sites are now planned to rollout across the country among them 55 are Health Offices, 61 are Hospitals, 14 are Medical college and 7 are Provincial Public Health Laboratories. Due to urgency to rollout on COVID-19 hit regions and due to COVID-19 pandemic, mixed approaches are taken on the site readiness assessment. Majority of the sites are assessed through phone calls and some are assessed physically to understand the store capability, Internet/computer and human resources availability.

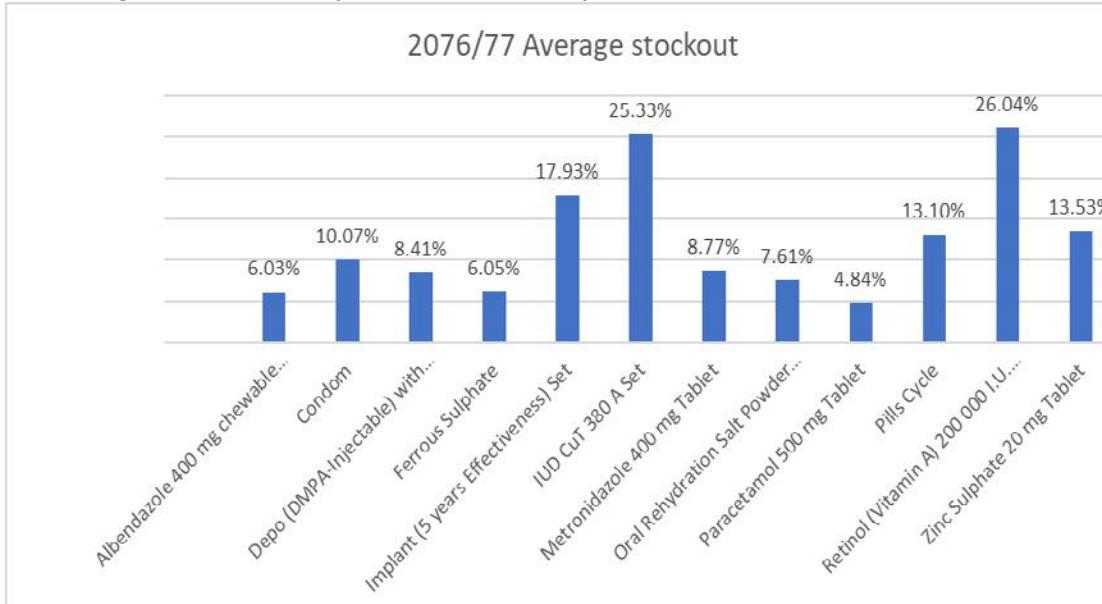
1. Pradesh Reporting Status, fiscal year 2076/77

Figure 8.4.2. Reporting Status



2. Availability of Key Health Commodities

Figure 8.4.3: Commodity Stock out Status, fiscal year 2076/77



LMIS report provides data visibility of stock status at the health facility level of key health commodities like Condom, Depo, Pills, ORS, Zinc, Vitamin A, Ferrous Sulphate, Albendazole, Paracetamol and Metronidazole 400mg and essential drugs for free health services on a quarterly basis. The figure shows average stockout rate(quarterly) in 2076/77. Among three FP commodities, Condom and Pills have stockout of 10% and 13% respectively, whereas Depo is slightly lower (8%). Out of MNCH and essential commodities, Paracetamol has the lowest stockout at 4.84% whereas Vitamin A shows the stockout of 26%.

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 were 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 were 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. Forecasting and Supply Planning

Forecast 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/MOHP, districts, social marketing organizations and EDPs.

Annually, quantification exercise has been undertaken through organizing consensus workshop. As in the past, in this FY also, workshop was organized by MD in the technical support of USAID GHSC-PSM Program with 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 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.

Forecasting and quantification of Essential drugs, RH/FP commodities, MNCH commodities, vaccines, syringes, and HIV& AIDS commodities were carried out for the coming FY. The forecast was based on scientific data which included demographic data, consumption pattern, morbidity issues and some special programmatic considerations. The workshop also incorporated other factors effecting forecasting i.e., non-prescribed drugs, replacing drugs, fast moving drugs and duplication.

The workshop was successful in addressing issues on forecast and quantification of health commodities and came out with recommendations. 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 with technical assistance and financial support from NHSSP. Procurement Unit of Logistic Management Section took a lead role to prepare CAPP.

c. Consensus Forecasting

Due to COVID-19 pandemic, there was no forecasting workshop organized in FY 2076/77.

d. 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 were 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 39 health commodities were discussed.

In FY 2019/20 due to COVID-19 pandemic emergency, MD organized one in person and one virtual quarterly pipeline monitoring meetings on Dec 26, 2019, and Oct 22, 2020 to share the stock status of the 39 key commodities including FP, EPI Vaccines and some program commodities. Based on evidence, decisions were taken to cancel or postpone or prepone or even relocation / redistribution of the stock averting a situation of stockout or overstock and expiry.

e. Strengthen Storage Capacity

Ideal storage conditions for essential drugs and commodities are required to deliver quality health services from any service delivery sites and ensure optimal health service utilization by consumers. Numerous districts seriously lacked ideal storage space for handling health and other allied commodities including vaccines. Earlier assessment showed that storage space was inadequate, and security was poor, store space 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.

Logistics Management Section in technical assistance with USAID GHSC-PSM enhanced warehouse capacity at the central and province 5 and 6 warehouse with installation of storage equipment, and induction of good warehouse practices. Health Commodities store at the health office of Provinces 2, 4, and 7 were reorganized making it possible to institute supportive supervision and good practices. In the reporting period, GHSC-PSM worked closely with stakeholders – DoHS Divisions mainly the MD, provincial health directorates (PHDs) and Logistics Management Centers (PHLMCs), Health offices, local level governments (LLGs). The purpose is to ensure availability of uninterrupted supply of health commodities to patients.

In the reporting period, in coordination with MD, GHSC-PSM delivered new storage and safety equipment – racks, trolley, pallets, fire extinguishers to five PMSs. GHSC-PSM also worked closely with Save the Children (SC) and USAID Nepal Reconstruction Engineering Services (NRES) Project implemented by CDM Smith on designing the new construct warehouse in CMS Pathlaiya, to rebuild the warehouse floor to improve its' strength to accommodate modern racking and movement of forklift or stacker and new construction at different provinces.

Data on expired commodities was built by collecting the list of expired and damaged commodities from PMSs and health office stores through GHSC-PSM field support officers (FSOs). In the process of importation of family planning commodities for social marketing GHSC-PSM has facilitated

Supporting Programs

Contraceptive Retail Services (CRS). All scheduled shipments for FY 18&19 were procured and delivered on time.

f. Improving Inventory Management and Warehouse Best Practices

Proper warehouse storage and practices are key for maintaining quality health commodities and a functional supply chain system. Effective and efficient management of racking and shelving simplifies the warehouse operation. A competent, motivated, skill-mixed workforce is required to ensure good storage practices, operations and that health commodities reach where they are needed most.

MD in collaboration with GHSC-PSM supported Provincial Health Directorate, and Health Office through mobilization of FSO, LMIS Officers and pharmacist in all the districts organize all health office stores aligning the process for effective inventory management. This included arranging stores based on warehouse best practices, conducting a physical count, removing expired commodities, updating inventory records, building overall capacity of staff with an emphasis on inventory management,



supportive supervision, teamwork, dedication, hard work and cooperation with the local government institutions.

Achham District store after reorganization and inventory support by GHSC-PSM. Photo credit: GHSC-PSM

During a site visit the following tasks are performed with supportive supervision as part of inventory management and warehouse best practices:

Cleaning of the storage area

Organizing of stores based on FEFO/FIFO and separation of non-useable health commodities from usable products;

Performing physical count of all health commodities in a store;

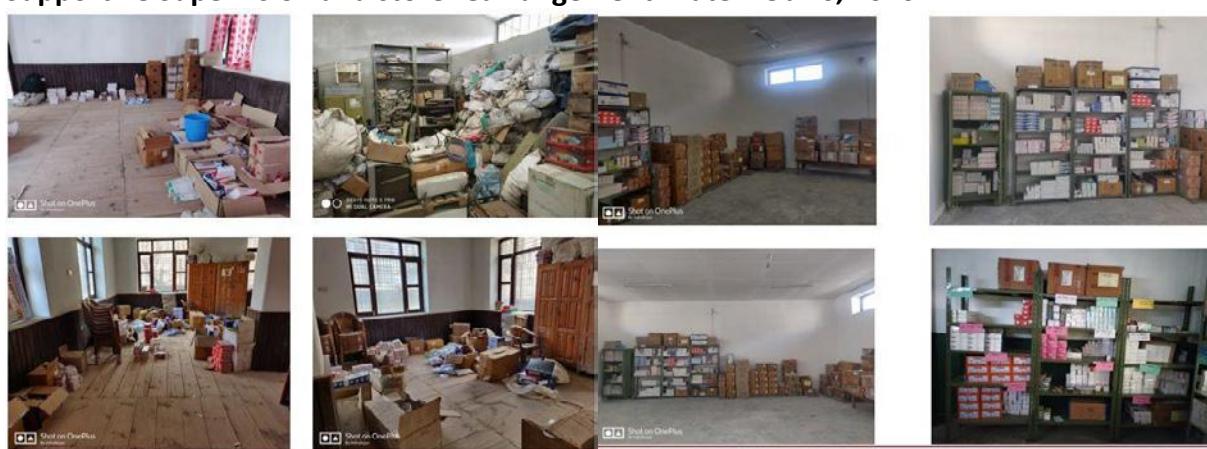
Verifying and reconciling counted stock with stock registers;

Signing and stamping reconciled quantities by relevant authority;

Updating all inventory records and tools (registers and eLMIS)

On-the job-training on inventory management and any relevant supply chain management function.

Supportive Supervision and store rearrangement. Date: Feb 26, 2020



All the district stores were successfully reorganized with an updated stock balance in the system as well as segregation and record in the separate register of expired and damaged commodities. The event was highly appreciated by the district and provincial health directorates.

Effective Vaccine Management is one of the cores 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. LMS had 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.

g. Capacity Building in Logistics Management

New Intervention

Quality assurance of Inj Oxytocin

Injection Oxytocin being sensitive to environmental factor is found to be degraded quickly, if exposed to adverse temperature condition, even before the labeled expiry date. Quality assurance of such sensitive product is critical at all level of supply chain right from procurement, warehousing, distribution and until the lastmile. Ensuring proper storage condition is always a top priority for this life-saving product to be made available at the birthing center at all time. The product is very critical as it is an intervention in place currently for reducing maternal mortality.

Therefore, procure and dispense this product only if its storage condition is strictly in compliance with label condition, that is, store in 2-8 degree centigrade. If refrigerator is not available, it needs to be stored in cold chain with due precaution for avoiding adverse mix up with vaccine products.

Real Time Inventory Management System (IMS)

The Ministry of Health and Population's (MoHP) overarching strategy (the Nepal Health Sector Strategy, NHSS, 2016-2021), OC9.1 calls for the improved delivery of health care services using evidence-based decision making at all levels of supply chain. In line with this, MD introduced Electronics Logistics Management Information System (eLMIS) as an improved logistics management information system for informed and evidence-based decision making to strengthen public health supply chain management in Nepal.

eLMIS has two major capability modules; reporting and transactional capabilities. Both options are used to ensure both the availability and visibility of data for informed decision making to ensure continuous availability of health commodities to end users.

The overall benefits of eLMIS implementation will be threefold:

Strategic impacts

Availability of logistics data for measuring SC Performance.
Capture and analyze logistics data for informed decision making
Availability of real-time data enables MoHP to strengthen supply and demand planning, optimize transportation processes, control inventory costs, and minimize risks that lead to Stockouts, expiries and wastage.
Capability to set up and report on KPIs for FP, MNCH, Vaccines, Essential drugs programs
Integration with Health information system for visibility and analytics
Full visibility and real time data for management of SCM.

Operational impacts

Reduced cycle time for doing some SC activities (e.g., Order processing and reporting)
Improved efficiencies in capturing consumption and other critical SC data
Reduced LOE required to prepare and process orders
Provided capabilities to SC performance enabling PHLMC, DHO, SDPs, and MD/DoHS of MoHP to make accurate decisions within appropriate timelines
Provided end-to-end visibility into operational data on a real time basis

Public health impacts

Increased availability of health commodities at SDPs
Reduced stockouts of health commodities

h. Manual Revision and Pull System Training

Training manual was revised in line to structural changes in Federal Nepal. Trainings for different levels were organized with an aim of improving knowledge, skill and attitude of the storekeepers and health workers at different levels 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.

i. Development of Basic Logistics Training Manual

LMS has developed Trainers' guide and participants handbook for Basic Logistics Training.

j. Conduction of eLMIS training

LMS conducted eLMIS reporting module training to all 77 Health Offices across all Provinces. Also, eLMIS transactional module training was conducted to 39 COVID-19 designated sites, 64 District Stores, 19 LLGs and 72 hospitals through different modes like remote connectivity, videos, on-site coaching and classroom training.

RDQA: Data quality assessment was conducted at Family Planning Central store in FY19. The main objective of data quality assessment was to monitor quality of eLMIS data on data accuracy, timeliness and data availability.

k. 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.

I. 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	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/IHIMS
High demand of required equipments	LMS will demand budget for equipment procurement.	DoHS/MD/LMS

8.5 National Public Health Laboratory

8.5.1 Introduction

Nepal's healthcare system consists of laboratories involved in diagnostic services as well as those involved in public health related activities i.e. surveillance and research etc. National Public Health Laboratory (NPHL) is a national level referral lab which regulates the laboratory services in the country. It was established in 1968 A.D. as Central Health Laboratory and began its function as Public Health Laboratory since 1991 A.D.

NPHL is concerned to identify and confirm the agents involved in public health threats, including those which may cause public health emergencies of international concern (PHEIC). Along with diagnostic facilities, NPHL conducts laboratory-based surveillance and plays a crucial role during the outbreaks of various emerging and re-emerging diseases for laboratory confirmation of outbreaks. It also operates as a quality assurance body, responsible for registration and licensing of private sector laboratories and blood centers as a focal point for blood safety in the country. Other programs included are National Influenza Centre, HIV referral laboratory along with the ARV monitoring facilities, Antimicrobial resistance (AMR) program, JE/Measles/Rubella surveillance, Molecular diagnostic laboratory and quality control program.

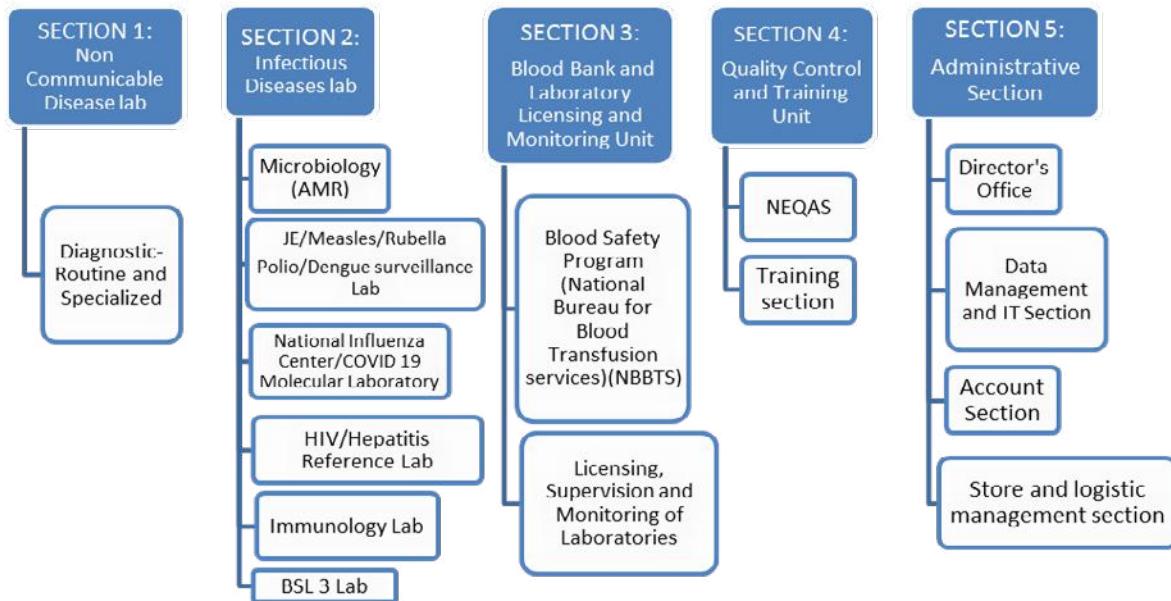
NPHL is operating as per the NHSS-IP's five -year program (2016-2021 A.D.). It has started molecular diagnostic laboratory for molecular characterization and genotyping of the pathogenic organisms and early infantile diagnosis of HIV in infants below 18 months using the molecular PCR technology. A BSL-3 lab has been constructed for the purpose of bio containment precautionary required to isolate dangerous biological agent (Risk group 3 agents).

With the start of 2020, there was spread of corona virus worldwide. NPHL, being a central laboratory under MOHP, it has responsibility for all public health laboratory issue. So it is playing an active role in control of this COVID-19 pandemic.

8.5.2 OBJECTIVES:

- To act as a national reference laboratory;
- To encourage research and collaboration to inform and improve the quality of health laboratory services;
- Training and workshops;
- Assisting MoHP for preparing medical laboratory related, policy, legislation and guidelines;
- Quality assurance of laboratories;
- Support and regulation of laboratory services. Clinical Laboratory licensing, supervision and monitoring;
- Support and regulation of blood transfusion service;
- Support to surveillance and screening programmes related public health problems;
- To act as central laboratory;
- Introducing newly arrived/available tests for communicable and non-communicable related tests to decrease outsourcing of tests; and
- To address public health emergency.

8.5.3 Working Structure of NPHL



8.5.4 NON-COMMUNICABLE DISEASE DEPARTMENT

Four sections (Haematology, Biochemistry, Endocrinology and Histo-cyto-pathology) 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 Nepalganj, Bharatpur, Dhangadi and Butwal. Various research activities are also being carried out in these sections.

8.5.5 NATIONAL BUREAU FOR BLOOD TRANSFUSION SERVICES:

The National Bureau for Blood Transfusion Services (NBBTS), which is based at National Public Health Laboratory (NPHL), is the national authority for implementing the National Blood Programme (NBP). NBBTS works to ensure the safe, adequate supply of blood and blood products to meet transfusion needs by developing policies, guidelines, standards and related soft wares. 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 governing National hemovigilance program, training BTSC staff, supervising, monitoring, licensing of BTSCs and motivational program. Also, provide equipments to the BTSCs to initiate or enhance the related services.

8.5.6 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.

Most of the activities of fiscal year 2076-2077 were dedicated to COVID-19 pandemic

8.5.6.1 ISO 15189:2012 accreditation:

NPHL was granted accreditation as per ISO 15189:2012 "Medical laboratories- Requirement for quality and competence" in the discipline of clinical chemistry, immunology, serology/ molecular testing and hematology 11-05-2020 after a yearlong effort. This achievement is result of a great teamwork and dedication towards quality, which NPHL strives to continue throughout its journey. Various ISO related activities are still on going and few more tests are planned to be added in the scope of accreditation this fiscal year. A formal certificate handover was also organised on the occasion of World Accreditation day (June 9 2020).

8.5.6.2 Trainings:

Due to COVID-19 pandemic, many of the regular trainings could not be conducted. A number of COVID-19 focused trainings were conducted in centers and in provinces.

A total of 34 trainings/ workshops were conducted.

List of COVID-19 and Non COVID-19 trainings organized by NPHL Fiscal year 2076/077

COVID-19 Related				Non COVID related			
<u>S.N.</u>	<u>In-house Training</u>	<u>S.N.</u>	<u>Interlaboratory Training</u>	<u>S.N.</u>	<u>In-house Training</u>	<u>S.N.</u>	<u>Interlaboratory Training</u>
1	Orientation of online data entry for COVID-19	1	SARS-CoV-2 Sample collection, Transport, storage and Biosafety for central level- Government and Private hospitals	1	Sickle Cell Surveillance draft Presentation	1	Viral Load Testing Training
2	Infection Prevention and control regarding covid-19	2	SARS-CoV-2 Sample collection, Transport, storage and Biosafety in Provincial Level	2	Orientation Programme of laboratory ISO 15189	2	Early infant diagnosis(EID) HIV Training
3	Infection Prevention and control regarding covid-19 for Helping staff	3	TOT training on sample collection ,Packaging , Transport & Biosafety for COVID-19 Testing	3	Orientation training of medical equipment management system for NPHL staff	3	CD4 Count Test for Bagmati Province government Lab Staff(Group A)
4	Infection Prevention and control regarding covid-19 for NPHL Staff	4	Orientation training on sample collection, Packaging, Transport & Biosafety for COVID-19 Testing	4	Orientation of biosafety for NPHL staff	4	CD4 Count Test for Bagmati Province government Lab Staff(Group B)
5		5	Hands on training on COVID-19 PCR Testing	5	QC training for NPHL staff	5	Biosafety and Health care Waste Management Training For PPHL Staff
6		6	Orientation training on sample collection ,Packaging , Transport & Biosafety for	6	Phlebotomy training for sample	6	Orientation of State regarding activities of

			COVID Province-1		collection staff		Public health lab for PPHL and ministry of social development staff
7		7	Orientation training on sample collection, Packaging, Transport & Biosafety for COVID Province 2	7	PCR Orientation training for NPHL staff	7	Training of QA in microbiology for AMR site Staff
8		8	Orientation training on sample collection, Packaging, Transport& Biosafety for COV for Bagmati Province	8	Polio environment surveillance for NPHL staff	8	Workshop on Provincial Lab
9		9	Orientation training on sample collection, Packaging, Transport & Biosafety for COVID Gandaki ,Province	9		9	AMR dissemination 2019 for AMR surveillance sites.
10		10	Orientation training on sample collection, Packaging, Transport & Biosafety for COVID Lumbini Province	10		10	SWOT analysis for NLSP
11		11	Orientation training on sample collection, Packaging, Transport & Biosafety for COVID Karnali, Province	11		11	HIV TOT for Bagmati Province Govt Laboratory staff
12		12	Orientation training on sample collection, Packaging, Transport & Biosafety for COVID Sudurpashim, Province	12		12	Mycology Training for AMR surveillance lab personnel.
						13	ESBL tricycle training for ESBL tricycle site lab Personnel

In addition to above mentioned list, some virtual trainings on COVID related topics were also conducted for NPHL and other COVID-19 PCR labs. This activity is continued till date and following is the table for training conducted in the fiscal year 2076-2077

S.N.	Topics
1.	COVID-19 PCR basic, result interpretation & Trouble shooting
2.	COVID 19 PCR Result interpretation

External quality assessment schemes:

Various EQA schemes are being carried out by NPHL, covering different lab testing panels. The activities and their progress in fiscal year 2076-2077 has been listed below:

8.5.7 (NEQAS):

National EQAS (External quality assessment scheme) is one of the oldest EQA scheme being run by NPHL and under function since 1997.

Under this program, Proficiency 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 550 labs are enrolled in this program and the number is still increasing.

Though the program is intended to run three times a year, only two lots could be conducted this fiscal year, due to nationwide lockdown during COVID- pandemic.

Lot number	Sample dispatch date	Number of labs enrolled (samples dispatched)	Results obtained from (Number/ %)	Number of labs with Score (%)			
				+/- 0-1	+/-1-2	+/-2-3	+/->3
44	076- Bhadra	467	300 (64.24%)	55 (18.33%)	64%	17.67%	0
45	076- Mangsir	532	367 (68.98%)	8.99%	73.02%	17.17%	0.82%

8.5.7.1 TTI- NEQAS Blood transfusion service sites

Under this program, EQAS is being run for Blood transfusion service sites and TTI screening test is targeted (HIV, HBsAg, HCV and VDRL). 112 such sites were enrolled in recent program. This program is intended to run every six month (biannually). However, only one round was possible in fiscal year 2076-77, due to COVID-19 pandemic.

Lot number	Date	Number of labs Sample was dispatched to	Results obtained from	Average score in %
NTQ 2076/077-1	076 Mangsir	112	80 (71.43%)	99.2%

8.5.7.2 EQAS for HIV testing:

Two kind of EQA scheme are being conducted for HIV testing laboratories.

8.5.7.3 Retesting using DBS sample:

This program is conducted in trimonthly frequency on all the samples received from sites. However, due to kit stock out at different interval of time of the year, the retesting was done only once in six month in the first phase, on systematically selected random samples.

Phase II was carried out in regular process (trimonthly frequency on all the received samples)

Phase I:

Duration: 2076-4-1 to 2076-9-15

No. of Participating sites: 18

SN	Percentage concordance score	No of Sites with score
1	91-100	16 (88.88%)
2	81-90	2 (11.22%)
3	<=80	0

Phase II:

Duration: 2076-9-16 to 2077-3-31

No. of Participating sites: 12

SN	Percentage concordance score	No of Sites with score
1	91-100	12 (100%)
2	81-90	0
3	<=80	0

8.5.7.4 CD4 EQAS:

Under this scheme, EQA samples are distributed by NPHL to CD4 testing labs in the country. These samples are obtained from Siriraj Hospital, Bangkok, Thailand and evaluation is also done by the same institute. NPHL receives the feedback after submitting the results and the same is forwarded to concerned laboratories. This program is bimonthly in frequency and as with all other EQA programs, the EQA was not run in full-fledged fashion.

SN	LOT NO.	DATE	SAMPLE DISPATCHED TO	REPORTED BY	RESULT	
					Within +-2SD	Out of +-2SD
1.	COE102#	2076/6/30	24 SITES	1	1	0
2.	COE 103#	2076/8/26	28 SITES	4	4	0
3.	COE104#	2076/10/26	28 SITES	4	4	0

COVID focused activities:

Most of the function of QC and training unit was focused on COVID-19 pandemic. Some major activities are listed as below.

- 4.1 Training related to COVID- sample collection, PCR testing, biosafety etc;
- 4.2 Documentation- Preparation of protocols, guidelines, SOPs, formats etc;
- 4.3 Validation of Kits: Different kits such as extraction kit, PCR kit relating to COVID-19 were validated at NPHL under QC and training unit and this activity is still continued, expanding the scope to antigen kits, VTM and other new technologies; and
- 4.4 Validation of COVID-19 PCR labs: Newly established COVID 19 PCR labs were validated by retesting the samples (10 positive and 10 negative) at NPHL (3 hub labs are also performing this function).

8.5.8 HIV REFERENCE LABORATORY

HIV/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. 10350/year), HBV Viral load (Approx. 940/year), HCV Viral load (Approx. 297/year) and Early Infant Diagnosis of HIV (Approx 358/year) are conducted on routinely basis. In Immunoserology, CD4 testing by flowcytometry, HIV 1&2 Ab ELISA, HIVAg/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 FACS Calibur and BD FACS Count for CD4 Testing and e411, Roche for ECLIA machine.

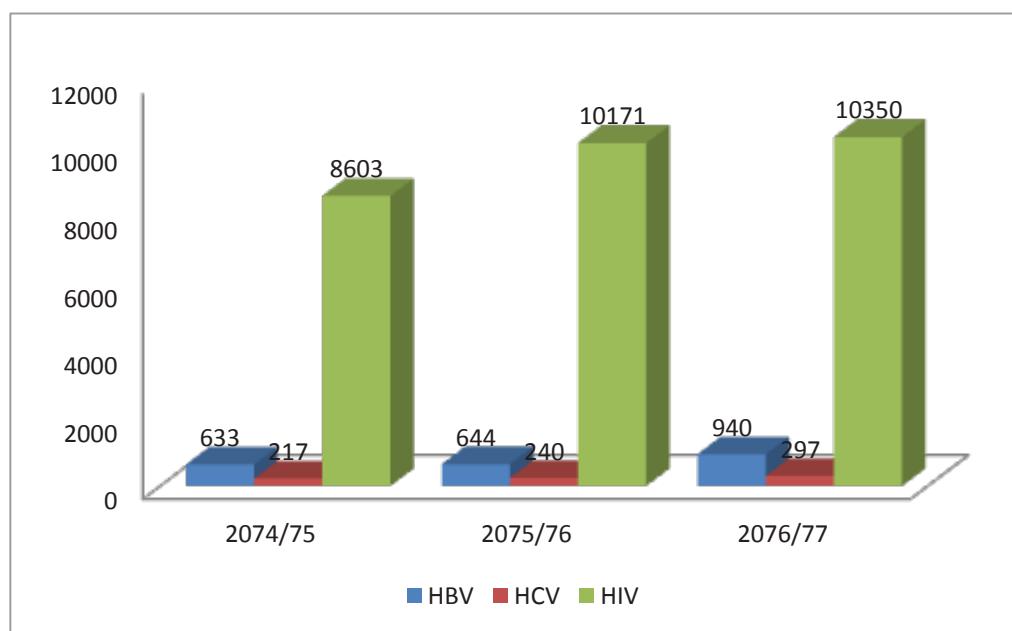
To assure our Quality of Reports, we have been participating in Proficiency Testing Program for HIV Viral Load and EID using Dried Tube Specimen by Centres for Global Health, CDC, USA, HBV and HCV viral load from NRL Australia, CD4 test EQAS from Siriraj Hospital, Bangkok and Serology EQAS from NRL, 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. This year we

have implemented Proficiency panels tests (PT) using Dried Tube Specimens (DTS) and also have dispatched the DTS to Gandaki Province and Province 2. Other Provincial sites are under process.

NCASC and Global fund, EPIC Nepal (FHI360) 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 DR(PDR), IBBS survey for HIV by NCASC. We have planned for the use of Plasma Separation Card (PSC) for performing HIV viral load which is under finalization process. Laboratory Integration System (LIS) for HIV viral load and EID reporting is also under process in the support of Save The Children/Global Fund. We have been planning for Gene sequencing for HIV Drug resistance and HCV genotyping in coming future.

Trend of the viral load tests on HBV, HCV and HIV are shown in figure 6.5.1

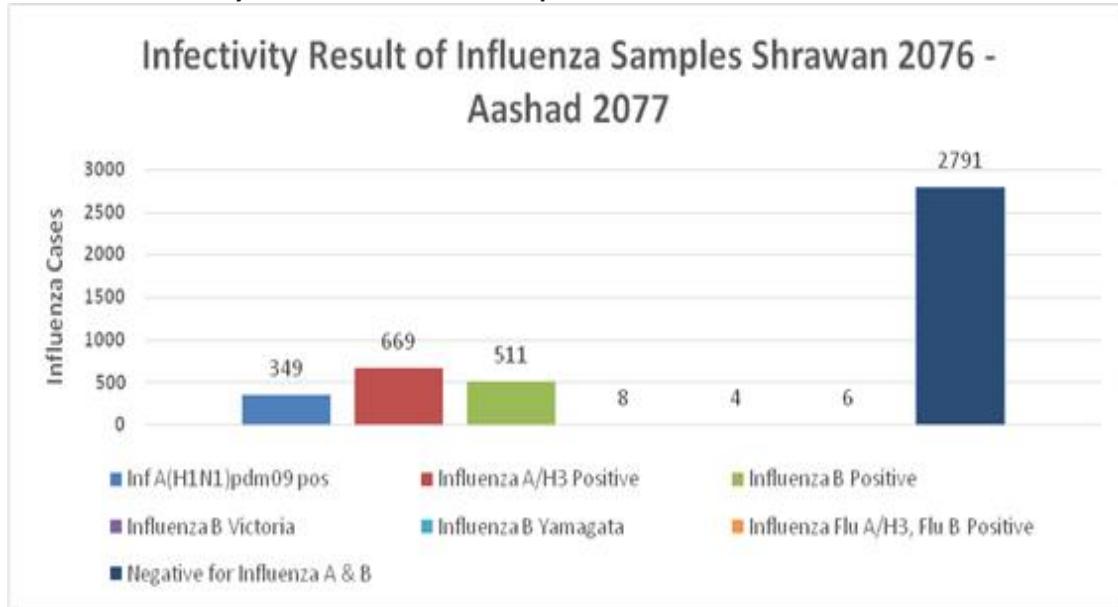
Figure 8.5.1: HIV Reference Unit (Viral load tests on HBV, HCV and HIV)



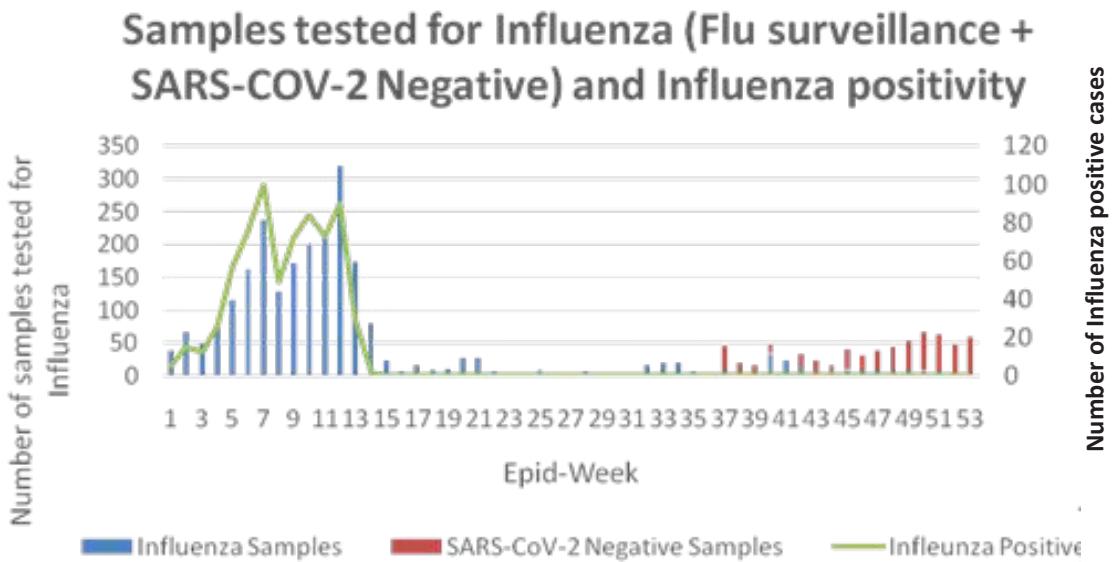
8.5.9 NATIONAL INFLUENZA CENTRE

NPHL has been designated as National Influenza Centre (NIC) on 19th April, 2010. It is one of the highly equipped departments of National Public Health Laboratory (NPHL) 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 and Response System (GISRS).

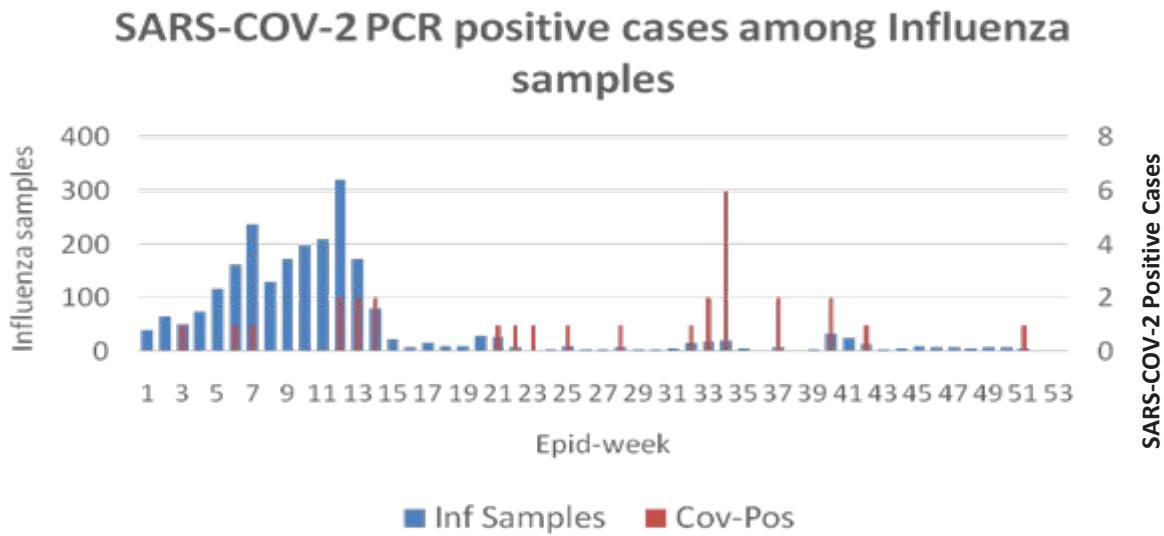
Influenza Surveillance started since 2004 in Nepal with the aim to identify the influenza viruses from suspected cases of influenza like illness (ILI) and immediate response to minimize the circulation of viruses during outbreak. Molecular diagnostic assay based influenza surveillance was started with 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). 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 Influenza test done in 2076/77 is as shown in the figure below.

Figure 8.5.2: Infectivity Result of Influenza Samples

During 2020, when the Novel Coronavirus outbreak started from China, NIC took up the role of working as the first laboratory to start SARS-CoV2 RT-PCR. The department during the peak of this pandemic was working 24X7 and processed above 2000 specimens for COVID testing. Other staffs from NPHL were also mobilized for the COVID testing and four new RT-PCR thermocyclers were also installed along with two automated RNA extraction machines that gave RNA extract within an hour. This in turn decreased the turn-around time for the testing and resulted in a surge in capacity. The samples received at NIC for influenza surveillance were also tested for SARS-CoV2 and the details are shown in the figure below.

Figure 8.5.3: Samples tested for Influenza (Flu surveillance + SARS-COV-2 Negative & Influenza Positivity)

During 2020 approximately 100,000 RT-PCR have been performed. The software for reporting results was updated according to the growing need for reporting tests according to directions from the Ministry of Health and Population and Biometrics that include taking a photo of the patient was also installed at NPHL.

Figure 8.5.4: SARS-COV-2 positive cases among Influenza samples

8.5.10 JAPANESE ENCEPHALITIS, MEASLES AND RUBELLA & POLIO CONTAINMENT 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 accredited again by WHO during October 2018.

8.5.10.1 Environmental Surveillance for Polio Virus in Nepal

Environmental surveillance is a highly sensitive method for detecting Polio virus(PV) in environmental samples and this practice has been adopted by many countries and region worldwide.

The examination of composite human faecal samples through environmental surveillance links Polio virus isolates from unknown individuals to population served by the wastewater system. Environmental surveillance can provide valuable supplementary information, particularly in high density urban populations where AFP surveillance is absent or questionable, persistent virus circulation is suspected, or frequent virus re-introduction is perceived.

No WPV have been reported from Nepal since 2010. National Public Health Laboratory (NPHL) in collaboration with WHO, has been conducting environmental surveillance of polio virus since November 2017 and no poliovirus (wild/VPD/Sabin type 2) has been isolated from sewage samples in Nepal.

8.5.11 MICROBIOLOGY:

AMR surveillance and routine microbiology activities go hand in hand in the Microbiology Department. NPHL is the National Reference Laboratory and National Coordinating Centre for AMR Surveillance. The Director is the chairperson and The Microbiology Head is the Member Secretary of Human Health Technical Working Group (HH-TWG) for AMR surveillance. HH-TWG meetings were held every two to three months, mostly online this year.

Protocol for Laboratory based Surveillance of antimicrobial resistance in clinical bacterial isolates in Nepal was printed and distributed to the surveillance sites. SOP on Bacteriology for AMR Surveillance was also printed after interactions with microbiologists and specialists from various institutions. The SOP and bench aids were distributed to the surveillance sites in valley as other sites were unapproachable due to lockdown. Three batches of Microbiology EQAS were sent to the AMR surveillance sites including two unknown organisms per panel sent. This year Molecular laboratory was also established in the department. It will be used for detection of resistance genes in multi-drug resistant strains received at NPHL from the surveillance sites.

The AMR surveillance data received from all the sites was collected, collated and the complete data from 15 sites was submitted to Global AMR Surveillance System (GLASS) with the help of WHO country office and FHI 360 (Fleming Fund). NPHL in collaboration with FFCGN, performed need assessment and monitoring visits at 4 proposed AMR sites, with an aim to add at least one hospital from each province. Different activities (with support from FFCGN) were conducted as part of technical support to AMR participating laboratories and expansion of AMR network laboratories. Nomination of Biosafety and biosecurity focal person at FFCGN supported surveillance sites, renovation and capacity building of FFCGN supported human and veterinary surveillance sites and procurement, installation and maintenance of various equipment and consumables was conducted during this year.

Nepal's first MALDI-TOF (VITEK-MS from Biomerieux) was installed along with automated Antibiotic sensitivity platform VITEL-MS. These two equipments will help in earlier diagnosis of rare organisms with provision of Minimum inhibitory concentrations for bacteria including Mycobacteria, yeast and fungi.

8.5.11.1 Conduction of various training/workshop:

A refresher Training on Laboratory based Antimicrobial Resistance Surveillance of Selected Bacterial Pathogens was organized from 17th -22nd February, at NPHL with 24 participants from various human hospitals and veterinary institutions who were trained on media preparation, isolation and identification of pathogens and performing antimicrobial susceptibility test. A hands-on training on Bio-repository management of Bacterial Isolates was conducted for medical technologists and microbiologist based at NPHL and veterinary officers from Central veterinary laboratory from May 14-16, 2019. The training was facilitated by facilitators from Mahidol University, who oriented on

various methods of preservation of isolates, maintenance of culture stock of standard strains and procedure for its subculture and revival. The training also oriented on creating a bio-repository and documentation of the same. A four-day training on AMR Data Analysis, Interpretation, Use and Reporting was conducted from May 27-30 at Alfa house Baneshwor, Kathmandu. A total of 21 participants (mostly microbiologist and IT personnel) from various hospitals were oriented on how to collate record and send AMR data. The training was facilitated by facilitators from FHI, CVL and other institutions. The training also provided an opportunity to learn different software such as EPI info to analyse the generated AMR data.

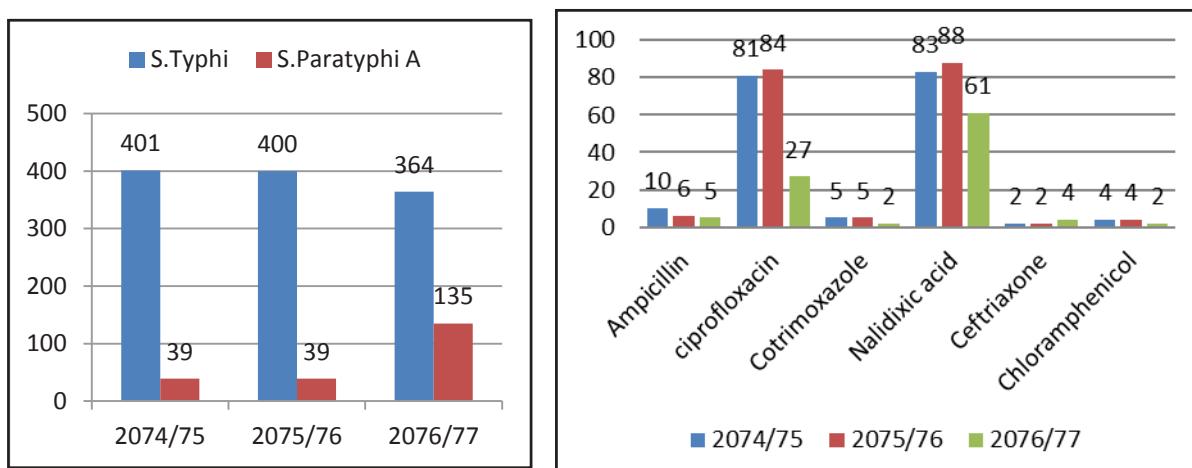
A Training of Trainers (ToT) on Laboratory Biosafety, Biosecurity and Health Care Waste Management was conducted from 3rd-7th September at NPHL. A total of 23 participants from different institutions were trained as facilitators on laboratory safety, issues of biosecurity and methods of health care waste management. Training on Quality Assurance in Microbiology was conducted from 24-27th September at NPHL. A total of 20 participants were trained and was facilitated by facilitators from NPHL, FHI and other institutions. Training of Trainers on WHONET for AMR data management was conducted on 15-16th November at Bougainville events, Kathmandu. The training was facilitated by John Stelling from UK, and was based on as how to extract data from local LMIS and possibility of integration of local LMIS in WHO-NET. The participants interacted directly revealing their issues which were addressed by the facilitators.

8.5.12 AMR (Antimicrobial Resistance) surveillance activities

NPHL conducts laboratory surveillance on ten pathogens for antimicrobial resistance surveillance to monitor the burden of these diseases and to inform disease control strategies. Frequency of various pathogens and their antibiotic resistance are described below.

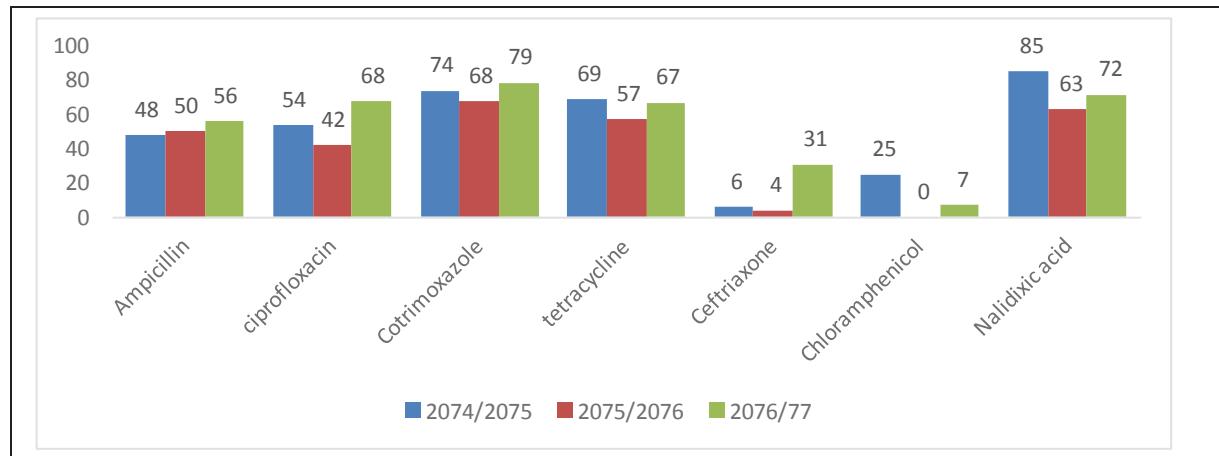
A total of 3847 isolates of surveillance interest were reported in the year 2019. Majority of the isolates were reported from Patan hospital (28.8%) of the total isolates). The data thus obtained was analysed and interpreted accordingly. In addition to the resistance pattern analysis, the data collected in 2019 was also analysed for specimen type, age and sex wise distribution for each organism. Of them, MDR Klebsiella spp (34%) was the highest reported pathogen followed by MRSA (22%), ESBL producing *E.coli* (16%), *Salmonella* spp (14%), MDR Acinetobacter spp (8%) and others. Fastidious organisms, *S.pneumoniae*, *N.gonorrhoeae* and *H.influenzae* are only reported from few sites reported in very low numbers. Only 1 *V.cholerae* has been reported in 2019.

Figure 8.5.5: Trend of enteric fever (cause and AMR)



A total of 565 *Salmonella* were reported in 2019 of which 64.4 % were *Salmonella enterica* serovar Typhi (364/565), 23.8 % were *Salmonella enterica* serovar Paratyphi (135/565) and 9.9% (58/557) were *Salmonella* spp. most of the isolates were recovered from blood sample. *S.Typhi* isolates showed high resistance to Ciprofloxacin, Chloramphenicol, Cotrimoxazole and Azithromycin as compared to *S.Paratyphi* A. However, *S.Paratyphi* A. isolates showed high resistance against Ampicillin and Ceftriaxone. A total of 11 isolates of *Salmonella* spp was reported from Central veterinary Laboratory. 100% of *Salmonella* spp were found to be resistant against orfloxacin and 50% against Cotrimoxazole.

Figure 8.5.6: Trend of AMR in bacterial diarrhea



A total of 33 *Shigella* isolates were reported in the year 2019. The isolates were 79% resistant to cotrimoxazole followed by 68% to Fluoroquinolones, 66% to tetracycline, 56% to Ampicillin and 30% to third generation cephalosporins. 45.4% of the *Shigella* isolates were MDR exhibiting resistance to 3 or more classes of antibiotics.

Only 1 *Vibrio cholerae* was isolated in 2019. The isolate was susceptible to Ampicillin and tetracycline but resistant to Cotrimoxazole and Nalidixic acid.

Figure 8.5.7: AMR in respiratory infections

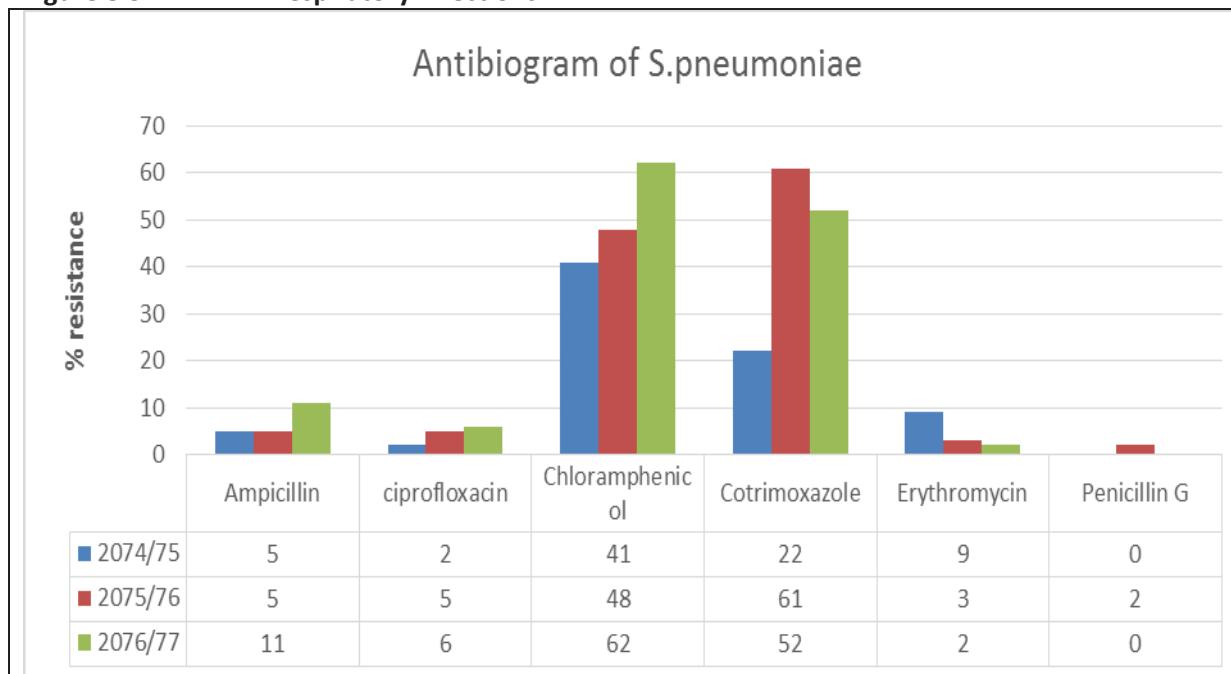
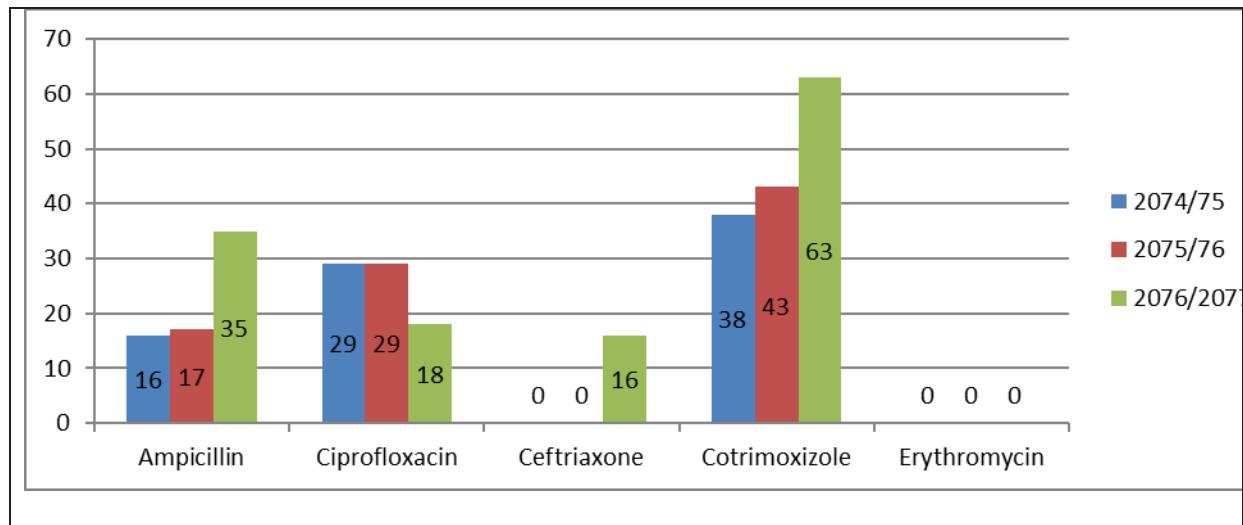
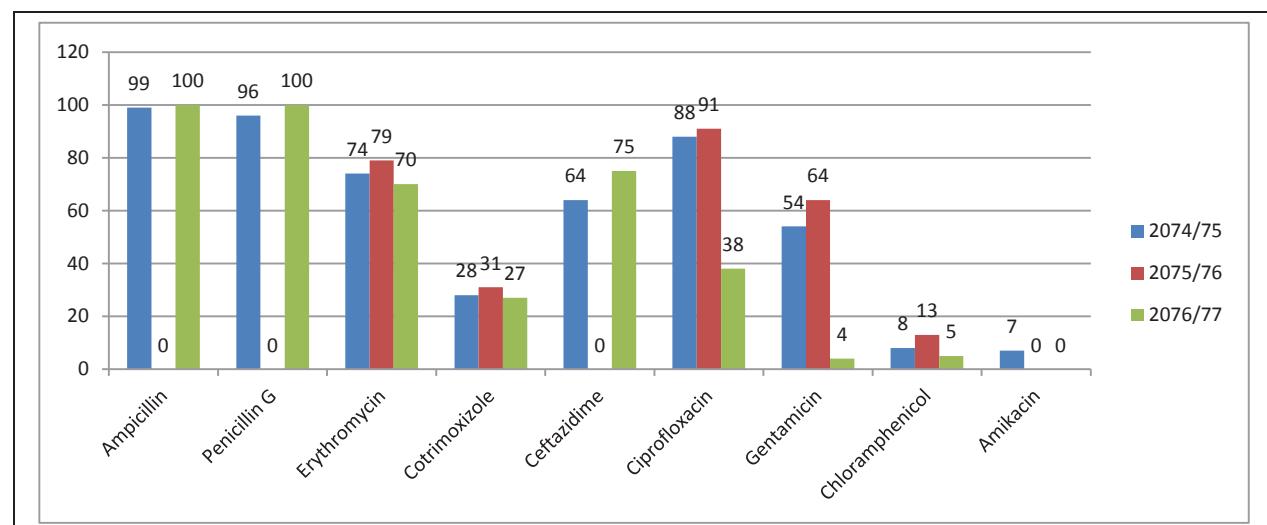


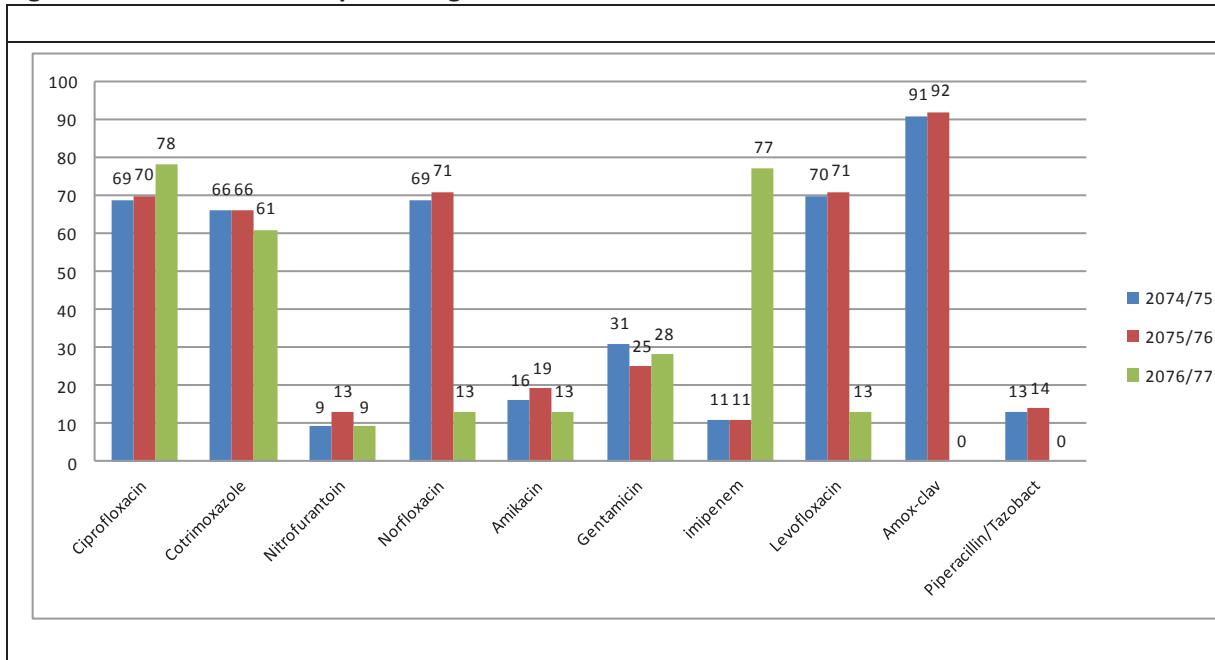
Figure 8.5.8: AMR in respiratory infections

A total of 82 *Streptococcus pneumoniae* isolates were reported in 2019. The isolates showed 61 % resistance against Cotrimoxazole, 51% to Erythromycin, 34% towards Azithromycin, 27% against clindamycin, Isolates offered least resistance to ofloxacin (16%) and Chloramphenicol (6%) but were sensitive to Linezolid and Vancomycin.

Only 35 *Haemophilus influenzae* isolates were reported in the year 2019. 63% of the reported isolates were resistant towards Cotrimoxazole followed by 35% towards Ampicillin and 17.6% to Fluoroquinolones, 16% towards Ceftriaxone, 3% towards Chloramphenicol. All the isolates were susceptible to Ampicillin/Sulbactam. Of the total, 11.4% were MDR. Only 14 *Neisseria gonorrhoeae* isolates were reported in the year 2019, mostly from males of 15-30 years age group. The reported isolate exhibited 71% resistance to Ciprofloxacin, 28% against ceftriaxone.

Figure 8.5.9: AMR in MRSA

Since 2013, MRSA was included as one of the pathogens of AMR interest. A total of 3101 isolates of *S.aureus* were reported in 2019, of which only 943 (30.3%) were methicillin resistant. Most of the isolates were recovered from pus followed by blood and urine. The reported MRSA isolates exhibited 74% resistant towards Ciprofloxacin followed by macrolides (70%), clindamycin (53.4%), Gentamicin (38%) and Chloramphenicol (4%). All the isolates were sensitive to Linezolid.

Figure 8.5.10: AMR in ESBL producing E.coli

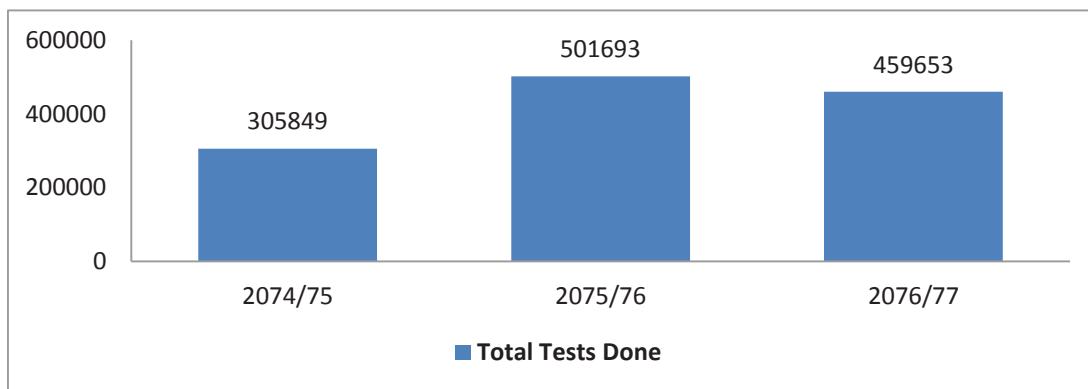
A total of 3374 Klebsiella isolates were reported of which 1201 (35.5%) were MDR. from 14 participating laboratories in 2019. Of them 79% (2679) were *Klebsiella pneumoniae*, 296 (8.7%) were *Klebsiella oxytoca* and 1.7% (399) were Klebsiella spp (not differentiated upto spp level). MDR *Klebsiella* exhibited 64% to 96% resistance against all tested antibiotics.

A total of 1546 Acinetobacter spp were reported in 2019 from 11 participating laboratories of which 496 (32.8%) were MDR. Most of the isolates were recovered from blood however most MDR Acinetobacter were recovered from respiratory samples.

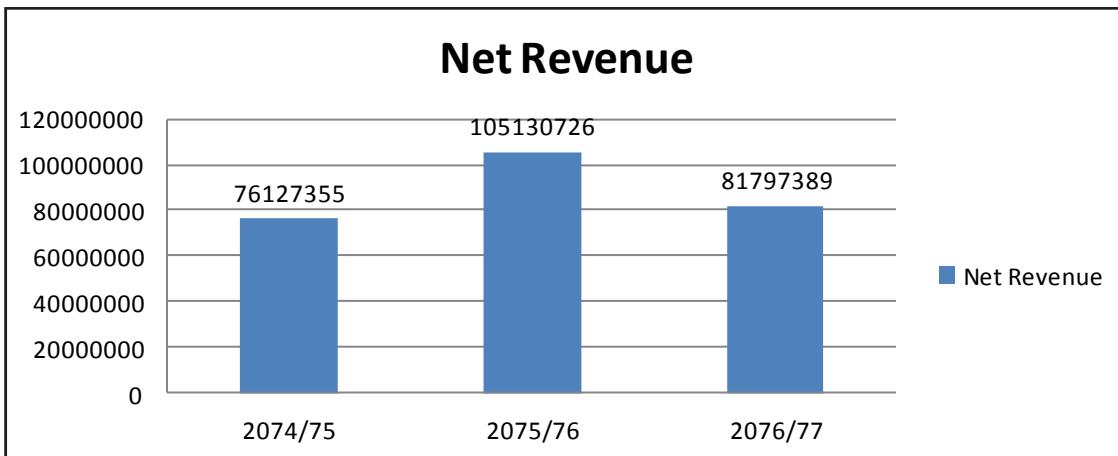
The range of MDR varied from 22% to 75% depending on the institution. MDR Acinetobacter isolates showed 80-90% resistance to all tested antibiotics except tetracycline and had high resistance as compared to non-MDR ones.

8.5.13 REVENUE GENERATION

NPHL generates revenue from different laboratory testing services. There is increasing trend on revenue generation and laboratory services provided in comparison with previous years.

Figure 8.5.11: Total number of laboratory testing services provided by NPHL

Source: NPHL/DoHS

Figure 8.5.12: Trend of revenue generation from laboratory service at NPHL (*amount in Nrs.*)

Source: NPHL/DoHS

Note: Service effected by COVID-19 Pandemic FY 2076/77

8.5.14 MAJOR ACTIVITIES OF NPHL:

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, regarding function of clinical lab & BTSCS; National External Quality Assurance Scheme (haematology, biochemistry, gram stain, microbiology, AMR on selected bacterial pathogens and TTIs); Sample processing for Polio containment; Assisting MoHP for preparing medical laboratory related, policy, legislation and guidelines; Procurement of especial types of kits and reagents and equipment for provincial and local level government laboratories; and General administration functions.

8.5.15 FUTURE PLAN:

Updating the Health Laboratory Guideline 2073; Listing the tests which are at present out-sourcing from different laboratories and health sectors; Complete functionalization of PPHL (Provincial Public Health Lab.) in all seven provinces and Decentralization of public health and diagnostic services. Manage PPHL with its own infrastructure (At present PPHL are mostly in rented building) with needful equipment and manpower; Laboratory mapping: All the laboratories from all heath sectors should be monitored and supervised directly or with help of its provincial/local government sectors by NPHL. At present there is no clear data of the entire laboratory (Category E to A); Strengthening diagnostic as well as research activities in government based provincial and district level hospitals. Register all government hospitals-laboratory in NPHL; Categories all the hospital-, polyclinic- or clinic- based laboratories in into A to E category; Emphasize for ISO accreditation for government laboratories; Planning to get ISO accreditation for rest of the routine tests (presently more than 78 tests got ISO 15189:2012 accreditation) as well as COVID -19 PCR Test;

Emphasize appropriate Management Information Systems in laboratories. Emphasize online appointment, report dispatch and counselling;
 Establishment of IRC in NPHL;
 Emphasize for ISO accreditation for government laboratories;
 Emphasize appropriate Management Information Systems in laboratories. Emphasize online appointment, report dispatch and counselling;
 Emphasize special tests, molecular tests, tests for research purpose and decrease load of routine tests in NPHL; and
 Emphasize for EQAS for all laboratory.

8.5.16 ISSUES, CONSTRAINTS AND RECOMMENDATIONS

Issues	Recommendation	Responsibility
Lack of appropriate laws and bylaws most needed for laboratory standardization and accreditation.	Provision of laboratory related law, protocol standardization and accreditation.	MoHP, NPHL
Insufficient budget allocation for quality assurance activities of medical laboratories	Provision of adequate budget allocation for quality assurance activities of medical laboratories	MoF, MoHP, NPHL
Lack of scholarships for higher education and advance level trainings for laboratory personnel as well as lack of pro-research environment and inadequate number of functional skilled human resources.	Provide scholarships for higher education and advance level trainings as well as creating enabling environment for pro-research	MoHP, MoE, DoHS, NHTC, NPHL
Strengthen NPHL as referral central with Prevention of out sourcing clinical sample outside country.	Data collection of out-sourcing and management for increasing referral centres within the country.	MoHP, DoHS, NPHL
Involvement of local government in controlling illegally running laboratories as well as providing rights for monitoring and licensing of at least initial level (Category E) laboratory.	Laboratory mapping and providing rights for monitoring to local government.	MoHP, DoHS, NPHL
Laboratory mapping	planning and implementation of laboratory mapping	MoHP, DoHS, NPHL
Strengthening diagnostic as well as research activities in government based provincial and district level hospitals. Register all government hospitals-laboratory in NPHL.	Planning and implementation of increasing diagnostic as well as research based tests with sufficient infrastructure, equipment and manpower.	MoHP, DoHS, NPHL
Manpower, Strengthening laboratories with proper and needful manpower comparable to international standards. Strengthening at least A and B category laboratory with molecular tests to combat pandemic issue like COVID-19 in future.	planning and implementation of laboratory services with sufficient infrastructure, equipments and manpower	MoHP, DoHS, NPHL
Laboratory safety: Proper biosafety and biosecurity is essential in all laboratories. Waste management of hazardous/infectious material.	Short course training of "biosafety and biosecurity" to staffs and new comers.	NPHL
Poor implementation of NEQAS.	Provision of sufficient training, and effective policy for its implementation.	MoHP, NPHL

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. According to delegated Authority of Ministry 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 delegated authority of ministry.
- To place health staff at sanctioned posts under DoHS.
- To manage human resources at the different levels under DoHS.
- 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 requested by health workers.
- To provide legal opinion and advice on the questions of legal dilemma.
- To prepare reply to defence on the cases filed against the department of health services.
- To provide assistance and opinion on legal documents as well as on the procedure & guidelines to be prepared.

8.6.2 Routine activities

The number of sanctioned and fulfilled posts under DoHS of fiscal year 2076/77 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 2076/77

SN	Types of human resources	Grade/level	Sanctioned	Fulfilled
1	Director General	12 th	1	1
2	Director	11 th (G.H.S.)	1	1
3	Director	11 th (PHA)	2	2
4	Director	11 th (HI)	1	1
5	Director	11 th (G.Nur.)	1	1
6	Senior /Sub Health Administrator	9/10 th (PHA)	3	1
7	Senior General Nursing	9/10 th (GN)	1	1
8	Senior Community Nursing Administrator	9/10 th (PHN/CN)	2	1
9	Senior Public Health Administrator	9/10 th (H.I)	3	2
10	Chief Medical Officer/Medical Superintendent	9/10 th (G.H.S.)	2	2
11	Senior/ Consultant Medical Generalist	9/10 th (MG)	3	0
12	Senior/ Consultant Dermatologist	9/10 th (D&V)	1	0
13	Senior /Consultant Gynaecology and Obstetrics	9/10 th (G/O)	1	1
14	Senior /Consultant Psychiatric	9/10 th (Psy)	1	0
15	Senior /Sub-Health Administrator	9/10 th (Intrigitated Chiki)	2	0
16	Chief Nutrition Officer	9/10 th (H.I)	1	0
17	Senior /Consultant Dental Surgeon	9/10 th (Denti.)	1	0
18	Director /Deputy Director/ Senior Demographer	Gazetted II (Stat.)	1	0
19	Under Secretary	Gazetted II	1	1
20	Under-Secretary (Finance)	Gazetted II	1	1
21	Section Officer	Gazetted III	7	6
22	Account Officer	Gazetted III	2	1
23	Legal Officer	Gazetted III	1	1
24	Statistics Officer /Demographer	Gazetted III	5	5
25	Pharmacist	7/8 th (Phar)	2	2
26	Senior /Public Health Officer	7/8 th (H.I)	9	7
27	Nutrition Officer	7/8 th (H.I)	1	0
28	Medical Officer	8 th	7	1
29	Senior Medical Lab Technician	7/8 th (G.M.L.)	1	0
30	Senior Community Nursing Officer	7/8 th (PHN/CN)	7	5
31	Senior/ Nursing Officer	7/8 th (GN)	5	4
32	Entomologist	7/8 th (HI)	1	0
33	Veterinary Doctor	Gazetted III(Agri/Vet.)	1	0
34	Computer Officer	Gazetted III	3	3
35	Mechanical Engineer	Gazetted III	1	0
36	Biomedical Engineer	7/8 th (Bibi.)	2	0
37	Architect Engineer	Gazetted III	1	0
38	TB/Ileprosy Officer	7 th (HI)	1	0
39	Nayab Subba	Non gazetted I	8	7
40	Health Assistant /Public Health Inspector	5/6 th (HI)	6	6
41	Cold Chain Assistant	4/5 th (HI)	3	2
42	Lab Assistant	4/5/6 th (G.M.L.)	2	2
43	Light Vehicle Driver	Not classified	7	7
44	Office Assistant (Peon)	Not classified	8	8

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.

Issues	Recommendations
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
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)
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.
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
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.
The one-door placement of medical officers	Develop and implement an incentive package to retain doctors at PHCCs and in remote areas.
Placement of scholarship doctors in Tarai and mountain districts	Authorize DoHS to place doctors at PHCCs.

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 Administration Section (FAS) is the focal point for financial management for all DoHS programmes. 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 2076/77

Out of total National Budget of Rs. 15,32,96,71,00,000.00 a sum of Rs. 42,67,09,00,000.00 (2.78%) was allocated for the health sector during the fiscal year 2076/77. Of the total health sector budget, Rs. 9,32,20,00,000.00 (21.84%) 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 2076/77 (in NPR)

Budget	Total	Recurrent	%	Capital	%
Department of Health Services	160,908,357	160,908,357	100	0	0
Integrated Women's Health and Reproductive Health Programme	347,300,000	337,400,000	97	9,900,000	3
Integrated Child Health and Nutrition Programme	3,104,591,000	2,834,291,000	91	270,300,000	9
Epidemic and Disease Control Programme	462,500,000	433,600,000	94	28,900,000	6
Disability Prevention and Leprosy Control Programme	25,500,000	24,300,000	95	1,200,000	5
Drugs and Equipment Supply	245,500,000	111,400,000	45	134,100,000	55
Hospital Construction, Maintenance and Management Information System	181,700,000	175,900,000	97	5,800,000	3
Therapeutic Service Programme	252,491,000	245,391,000	97	7,100,000	3
Nursing and Social Security Services Programme	2,400,672,000	2,397,472,000	100	3,200,000	0
Covid -19 Control	1,688,478,000	1,609,478,000	95	79,000,000	5

Supporting Programs

Table 8.7.2: Central level recurrent budget expenditure by source and programme, FY 2076/77

Budget Code No	Programme budget heading	Released Budget By Source				Total
		GoN	%	Donor	%	
370010113	Department of Health Services	152,547,583.66	100	0.00	0	152,547,583.66
370011033	Integrated Women's Health and Reproductive Health Programme	53,617,733.00	20	208,464,706.75	80	262,082,439.75
370011043	Integrated Child Health and Nutrition Programme	878,991,230.00	39	1,371,605,016.40	61	2,250,596,246.40
370011053	Epidemic and Disease Control Programme	169,476,942.30	95	9,243,811.00	5	178,720,753.30
370011063	Disability Prevention and Leprosy Control Programme	5,498,492.00	88	722,980.50	12	6,221,472.50
370011073	Drugs and Equipment Supply	39,134,631.86	67	18,855,346.94	33	57,989,978.80
370011083	Hospital Construction, Maintenance and Management Information System	64,612,036.27	87	9,793,855.20	13	74,405,891.47
370011153	Therapeutic Service Programme	132,527,106.00	100	0.00	0	132,527,106.00
370011163	Nursing and Social Security Services Programme	2,322,851,411.80	100	0.00	0	2,322,851,411.80
370001183	Covid -19 Control	90,794,814.31	8	1,011,286,496.00	92	1,102,081,310.31
Total		3,910,051,981.20	60	2,629,972,212.79	40	6,540,024,193.99

Table 8.7.3: Central level capital budget expenditure by source and programme, FY 2076/77

Budget Code No	Programme budget heading	Released budget by source				Total
		GoN	%	Donor	%	
370011034	Integrated Women's Health and Reproductive Health Programme	9281820.00	100	0.00	0	9281820.00
370011044	Integrated Child Health and Nutrition Programme	13268702.00	23	44544572.00	77	57813274.00
370011054	Epidemic and Disease Control Programme	6709849.60	100	0.00	0	6709849.60
370011064	Disability Prevention and Leprosy Control Programme	0.00	0	0.00	0	0.00
370011074	Drugs and Equipment Supply	87935033.00	100	0.00	0	87935033.00
370011084	Hospital Construction, Maintenance and Management Information System	2783511.00	100	0.00	0	2783511.00
370011154	Therapeutic Service Programme	939666.00	100	0.00	0	939666.00
370011164	Nursing and Social Security Services Programme	2005968.70	100	0.00	0	2005968.70
370001184	Covid -19 Control	0.00	0	71369054.00	100	71369054.00
Total		122924550.30	51	115913626.00	49	238838176.30

Table 8.7.4: Cumulative financial irregularities up to 2076/77 (NPR In,000)

Irregularity amount to be regularized	Irregularity clearance	Percent
4,07,86,69	41,53,55	10.18

Table 8.7.5: Irregularity clearance status of last three years FY 2074/75 - 2076/77 (NPR In ,000)

Fiscal Year	Total irregularity amount	Irregularity clearance	Clearance %
2076/77	4,07,86,69	41,53,55	10.18
2075/76	2,18,01,50	1,44,53,16	66.29
2074/75	3527321	14,39,096	40.80

Source: Finance Section, DoHS

8.7.3: Issues of financial management

Following major issues of financial management given below:

Problems and constraints
No single platform for the planning and budgeting to ensure harmonization of budget planning and program implementation across the three layers of government.
Mismatch in the allocation of health budget to the LGs in the certain levels.
Still remain to ensure the rational allocation of health budget to the Provinces and local level programs and availability of human resources.
Non-release of committed EDPs budgets in time.
Difficulty in financial reporting procedures and reimbursement from External Development Partners (EDPs)

8.8 Medico -Legal

Medico-legal field or field of Forensic Medicine in Nepal is still waiting for its proper identity. This field has a 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 yet addressed adequately and remains as one of the unrecognized sectors. As a result of improper, incomplete and nonscientific application of forensic evidences the 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 its 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 Tortureguarantees and in violation of such fundamental rights there are provisions of proper remedy or compensation. There are other articles like article 42 Right to social justice, article 44 Right of consumers which are partially or completely related with medico-legal field for their proper implementation in real life of people. For effective application of above constitutional rights, medico-legal sector in Nepal must be addressed and prioritized.

Time has compelled to recognize medico-legal field and it is shown by other way with spontaneous appearance of more than four dozen 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 come 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 has created few posts for consultants in this field at four hospitals of the country. Now five major hospitals of different provinces are lucky enough to have Forensic Medical Officers providing medico-legal services.
2. A historical first International Medico-legal Conference was held last year at Kathmandu which was organized by MELESON with participation of medico-legal experts from more than 15 countries sharing experiences with each other.
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.
4. National Health Training Center from Department of Health 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. During the last fiscal year most of the SOPs are amended with consideration of concurrent changes in laws and more practical approaches of their application.

Revision of following manuals and SOPs is performed during last year:

- SOP and manuals for autopsy work
- SOP and manuals for injury examination
- SOP and manuals for sexual offence cases examination
- SOP and manuals for age estimation
- SOP and manuals for examination of victims of torture

5. Clinical Protocol on Gender Based Violence 2015 has been amended with consideration of changes in concurrent laws in the country and more efficient and scientific approaches for its effective application.
6. There were difficulties to conduct regular Medico-legal Trainings for Medical Officers working at periphery due to COVID 19 pandemic. Even though the GESI section of Population

Division of Ministry conducted trainings in three provinces for more than 50 doctors. Because of constraints of training sites and COVID 19 pandemic the trainings in autopsy by NHTC were limited within last year.

7. During fiscal year 075/076, Cabinet of Ministries of Nepal has passed a Medico-legal Services Operation Guideline 2075 and within one year time two private Medical Colleges were permitted to conduct medico-legal autopsy and clinical medico-legal examination at Dhulikhel by KUSMS and at Bhaktapur by Kathmandu Medical College resulting in medico-legal services provided by specialists. Similarly, Nepal Medical College has been permitted through it's Forensic Medicine Department to provide clinical medico-legal services.
8. According to new guideline for medico-legal service operation, a Central Medico-legal Services Operation Committee is formed at MoHP and number of meetings have been conducted with planning for the preparation of an action plan to develop medico-legal service sector in Nepal. The Central Committee is also taking initiations to establish Provincial Medico-legal Coordination Committees in all seven Provinces.
9. Recently developed and updated Minimum Standards for Health Facility included the requirements related with medico-legal services.
10. Public Health Act 2075 has included few sections related to medico-legal service but unfortunately the newly enacted Public Health Regulation could not cover the procedural issues in medico-legal service sector.
11. A guideline on management of CIVID 19 deaths was developed timely but because of lacking in educating people created some kind of 'cultural terror' in general public at the beginning phase of its application. Doctors and hospitals were blamed by public for stealing and selling internal organs from the bodies only because of inability of government to prevent decomposition in bodies which could be prevented by constructing at least one cool room in one hospital.

Though there are many problems in health care service delivery system in the country, the medico-legal service sector which is in pathetic condition must be addressed to keep minimum standard. There are suggestions provided from the National Medico-legal Workshops 2074 and 2075 for very basic and minimum care in forensic medicine sector. Proper implementation of the provisions given by new legal provisions, guideline and standards must be implemented to keep this sector for elimination of existing malpractice and sub standards in medico-legal service sector of the country. The minimum standards enlisted in new plan of health services of Nepal must be established and updated with priority. Medico-legal unit in all major hospitals of the country is basic start to focus for upliftment of this sector and the Forensic Medicine Departments of all Medical Colleges in the country must provide the medico-legal services to the people of those localities. Within few years, all Province Hospitals of Nepal must be equipped with at least one Forensic Medical Officer as compulsory post in their organogram. Production of human resources in this field must be managed immediately with an action plan developed through discussion between MoHP, MELESON, Medical Education Commission, Universities and Health Sciences Academy. If the above-mentioned provisions are implemented step by step, it may take no longer time to achieve minimum standard in this service field. A separate Section or Division or Unit through O & M at Ministry and similar structures at all Provinces seems to be necessary establishment to take responsibility for the proper implementation of newly emerged and planned thoughts and idea for upliftment of medico-legal service standards.

8.9 Monitoring and Evaluation

9.1 Background

Monitoring and evaluation plays the significant role for operative and persuasive execution of plans, policies, programmes and projects. Recognizing the need for a methodical, simplified, result-driven, reliable, and effective monitoring and evaluation system, Nepal Health Sector Strategy (NHSS) 2015-2020 directed to improve access and operation of the health information with the use of Information Communication Technology (ICT). It also emphasize for better and interoperable routine health information systems, prioritises surveys and research. Correspondingly, it endeavours for improved and integrated health sector reviews at different levels that feed into the planning and budgeting process. Towards achieving Universal Health Coverage (UHC) and Leave No One behind (LNOB), the NHSS and Sustainable Development Goals (SDGs) place an emphasis on monitoring and reducing the equity gap in the health outcomes of different population sub-groups. The details can be obtained from result framework of National Health Sector Strategy 2015-2020¹.

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 2076/77 (2019/20)

Major Progress

Integrated Health Information Management

In alignment with the NHSS and the spirit of the 15th Periodic Plan, the Integrated Health Information Management Section (IHIMS) under the Management Division (MD) has initiated integration of Routine Health Information Systems (RHISs), such as Health Management Information System (HMIS), Logistic Management Information System, (LMIS) and Health Infrastructure Information System (HIIS). The section has prepared a National Integrated Health information Management System (IHMIS) Road Map (2020–2030) for the integration of different RHISs. The proposed e-Health architecture framework and the road map will further strengthen planning, coordination and implementation of the proposed architecture blueprint among all stakeholders, particularly government and implementing partners at all levels.

The IHIMS Section has completed an assessment of the RHISs, which has identified their strengths and the areas to improve for their better functionality and integration.

e-LMIS has now been configured to cater for the needs of COVID-19 logistics data management and reporting. e-LMIS roll-out has been scaled up from 58 e-LMIS sites to 446 new e-LMIS sites during the period from September to November 2020.

Table 8.9.2.1The status of e-LMIS roll-out, 2018–2020

Year	e-LMIS Sites	
2018	58 sites	2 PHLMCs in Lumbini and Karnali Provinces, 22 Health Offices, 4 LLGs, 23 SDPs
2019	e-LMIS reporting modules implemented at 77 Health Offices	LMIS reporting aggregation moved to HOs instead of central level New features added on e-LMIS to improve easy and flexible

¹Government of Nepal, Ministry of Health and Population, *Nepal Health Sector Strategy* (Kathmandu Nepal, 2015).

Supporting Programs

Year	e-LMIS Sites	
		usage of the system for users, along with Ma Le Pa Room roll-out approach tested in LLGs of Banke and Bardiya for cost-effectiveness, timeliness and ease of management
2020	173 e-LMIS sites configured to support COVID-19 commodity inventory management	PHLMCs, HOs, COVID-19 hospitals, laboratories and Medical Colleges
	446 new e-LMIS sites September– 24 November, 2020	GoN moved e-LMIS implementation responsibility to IHMIS Strong engagement with PGs, HOs and LLGs All LLGs of Gandaki, Sudurpashchim, Bagmati and Lumbini Provinces covered; Province 2 ongoing All LLGs (753 in all provinces) expected to be completed

The e-LMIS was implemented in two central stores, three PMSs, 33 hospitals and one national laboratory in less than one month.

Table 8.9.2.2: e-LMIS rollout, 2020

e-LMIS roll-out in 2020		
Provinces	# of Districts	# of LLG
Sudurpashchim	9	88
Gandaki	11	85
Bagmati	12	107
Lumbini	10	93
Total	42	373

IHMIS is coordinating e-LMIS roll-out activities. In year 2020, e-LMIS has been rolled out in 373 LGs from 42 districts. The e-LMIS has also been expanded in 55 Health Offices, 60 hospitals, 12 medical colleges and seven provincial public health laboratories.

Continuous follow-up and coordination with PHLMCs resulted in a LMIS reporting rate of 95 per cent, the highest reporting rate ever, by the end of FY 2076/77. LMIS reports from more than 4,000 SDPs are recorded on quarterly basis. All COVID-19 commodities are recorded in e-LMIS. All central data for COVID-19 lab commodities from NPHL and regional labs are in e-LMIS. Roll-out of e-LMIS is expected to be completed in all provinces by December 2020. Likewise, the recording and reporting tools of OCMCs and SSUs are being digitised in the DHIS2 platform and linked with the HMIS.

The Health Facility Registry, a tool that keeps track of all HFs within the country, public and private, and also provides information on which services are offered, has been updated. The registry has an interface that allows other information systems to connect to it in order to keep their individual lists of HFs up to date and synchronised with the MoHP. The registry can be accessed from the MoHP website.

The MoHP continues to expand the electronic reporting of service data from HFs. In FY 2020/21, 1,400 public HFs submitted HMIS monthly reports electronically. As HPs and PHCCs are now being managed by LGs, the MoHP is focusing on enhancing their capacities on health information management, including the use of the DHIS2 platform. All 753 LGs reported HF-based service statistics electronically to the national database (HMIS). This has been a milestone for the continuous flow of data from LGs to the national HMIS system. The HMIS e-learning modules for the orientation of health workers, statisticians, computer operators and programme managers have been updated and are available on the DoHS website (www.dohs.gov.np).

Supporting Programs

The web-based RDQA tool and the e-learning package have been updated, incorporating feedback from users; they are available on the MoHP website (www.rdqa.mohp.gov.np). Twenty-six HFs were reported to have completed the RDQA this year.

The web-based digital dashboards hosted at the MoHP website that help monitor major health indicators, including the NHSS RF and health-related SDG indicators, have been updated.

MoHP has established an Information Management Unit (IMU) to establish, strengthen and operationalize an integrated information management system for better informed decisions and monitoring of the health sector response to the COVID-19 pandemic. The unit coordinates and manages information related to different domains, such as: logistics, human resources, case investigation, contact tracing, laboratory, hospitals, quarantine, isolation centres, health desks at points of entry, communication and continuation of regular services. The unit consists of a skill-mixed team of statisticians, demographers, epidemiologists, health workers, ICT experts and public health professionals. This unit assists the Incident Command System (ICS) operations and other entities of the MoHP by providing analyzed information on a regular basis. The IMU will also be expanded to sub-national level and will continue after the COVID-19 pandemic for effective and integrated health information management in any future disaster or emergency. The unit has established a daily report of the case management status from COVID-19-designated hospitals. This system has been very effective in monitoring and managing the caseload and reimbursing COVID-19 case management costs to the hospitals.

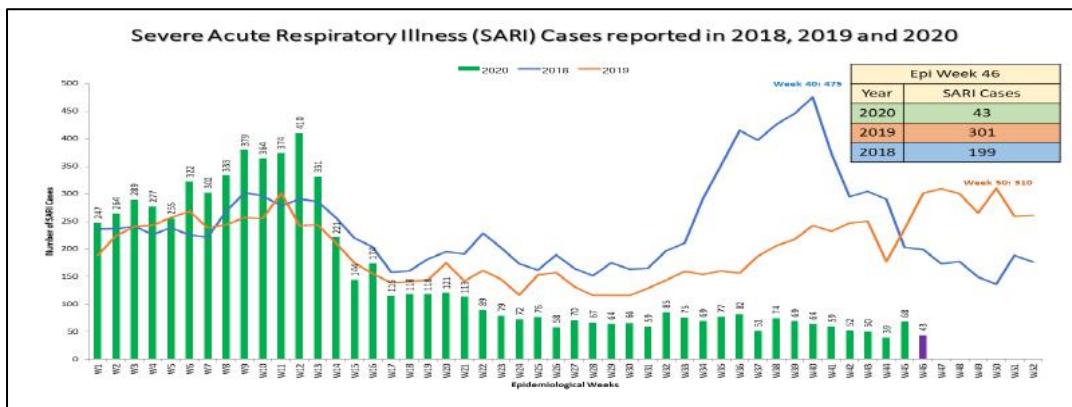
Surveillance systems

Maternal Perinatal Death Surveillance and Response (MPDSR):

The plan to expand the facility-based MPDSR system from 77 hospitals in FY 2018/19 to an additional 16 hospitals in FY 2019/20, and to expand the community-based MDSR system from 11 districts to an additional seven (Taplejung, Rautahat, Nuwakot, Myagdi, Palpa, Dailekh and Bajhang) in FY 2019/20, could not take place because of the COVID-19 pandemic. As the routine MPDSR system has been affected by COVID-19, the Family Welfare Division (FWD) has developed a system in Open Data Kit (ODK) for monitoring of maternal and neonatal deaths occurring at Health Facilities (HFs) during the COVID-19 pandemic.

Early Warning and Reporting System (EWARS)

EWARS is a hospital-based sentinel surveillance system where the sentinel sites (hospitals) send weekly reports (including zero reports) on six epidemic-prone, vector-borne, water- and food-borne diseases in order to detect outbreaks. EWARS started in 1997 with eight sentinel sites and expanded to 24 sites in 1998, 26 sites in 2002, 28 sites in 2003, 40 sites in 2008, 82 sites in 2016 and 118 sites in 2020. EWARS sentinel sites are now reporting in the DHIS2 platform, which has contributed to building better linkages with the HMIS. The weekly reporting EWARS has now been upgraded to report SARI cases on a daily basis; this facilitates monitoring of SARI cases so that they can be tested with RT-PCR for COVID-19 as per the National Testing Guidelines. There has been a sharp decline in the number of SARI cases reported in 2020 compared to those reported in 2019 and 2018. Figure 8.9.1 shows that from the 17th epidemiological week of the year 2020, a smaller number of Severe Acute Respiratory Infection (SARI) cases have been reported compared to the same epidemiological weeks of the years 2019 and 2018.

Fig 8.9.2.1 SARI Cases Reported, by Epidemiological Week (2018–2020)

A total of 12,553 SARI cases were reported in 2018 and 10,542 cases in 2019 (January–December). There were 11,554 cases until the 46th week in 2018 and 8,890 cases during the same period in the year 2019, whereas 6,928 cases had been reported by the 46th week of 2020. Figure 8.9.2.1 shows the trend of SARI cases reported in 2018, 2019 and 2020 by the epidemiological week. The 2020 data in the figure reflects the data available to date, and these numbers could be different going forward. The SARI cases reported through EWARS need further analysis by sites and the reporting period.

8.9.3 Survey, research and studies

The first **Nepal Health Facility Survey (NHFS)** was performed in 2015; the second was planned for early 2020, with data collection from February to May 2020, but the preparatory work, such as questionnaire finalisation and selection of the implementation agency, was delayed because of the COVID-19 pandemic. By September 2020, the selection of the survey-implementing partner and the finalisation of the tools had been completed and the Master Training of Trainers (MToT) was in progress.

Similarly, the sixth series of the **NDHS** is planned for FY 2020/21. MoHP has initiated preliminary consultation with relevant stakeholders and the questionnaire development process is in progress. The selection of the survey implementation partner has also been completed.

The sixth series of the **NMICS, 2019**, conducted by the Central Bureau of Statistics (CBS) from May to November 2019, has been completed. The key findings of the survey released in 2019 and the full report are expected by the end of 2020. NMICS 2019 provides data from an equity perspective by indicating disparities by sex, province, location, education, household wealth and other characteristics. The NMICS 2019 is a national survey of 12,800 households; 14,805 women aged 15–49, 5,501 men aged 15–49, 6,658 mothers/caretakers of children U5, and 7,792 mothers/caretakers of children 5–17 years were interviewed. In addition, water quality testing for E. coli and arsenic was performed in 2,536 households.

The **National TB Prevalence Survey (2018–2019)**, the first of its kind in Nepal, was completed in 2020. The survey was based on a nationally representative sample, covering 55 districts. The survey has provided exact information on burden of disease and health seeking behaviour among TB patients. It reflects the true epidemiology of TB, monitors ongoing programme impact and collects relevant data on incidence and prevalence.

Maternal Mortality Study following the Census 2078: For the first time in its history, MoHP is planning to conduct a maternal mortality study following the Census. The forthcoming 12th series of the Nepal Population and Housing Census (NPHC) will take place from Jesta 25 to Asar 08, 2078 (8

to 22 June 2021). The 11th series of the NPHC in 2011 had for the first time given a national estimate of the pregnancy-related mortality ratio (480 per 100,000 live births) but did not deal with the causes of maternal deaths. The proposed maternal mortality study following NPHC 2021 aims to identify programmatically useful information to inform investment and interventions directed towards improvement of maternal health in Nepal. The specific objectives of this study include:

- To increase the evidence base available on maternal mortality in Nepal to generate estimates of current levels of maternal mortality at national and sub-national levels, for the first time in Nepal.
- To gain a better understanding of why women are dying during pregnancy, childbirth and the postpartum period, and the social and clinical determinants.
- To provide information to policy makers and programme managers at the national and sub-national levels to identify and plan targeted interventions that are successful in reducing maternal mortality and morbidity.

The Nepal Burden of Disease (NBoD) 2019 Study: The NBoD 2017 study was conducted under the leadership of the Nepal Health Research Council (NHRC) and the report was published in April 2019. With the Global Burden of Disease (GBD) 2019 estimates released in October 2020, this summary provides a picture of the NBoD 2019 around Disability-adjusted Life Years (DALYs), Years Lived with Disabilities (YLDs), Years of Life Lost (YLLs), and risk factors attributing death and disability.

The study covers the disease burden quantified as DALYs. These are broadly categorised into DALYs due to Communicable, Maternal, Neonatal and Nutritional (CMNN) diseases, NCDs and injuries. GBD 2019 estimates for Nepal revealed a major shift in disease burden and cause of. In 2019, 71.1 per cent of all deaths were caused by NCDs, 21.1 per cent of deaths by CMNN diseases and the remaining 7.8 per cent by injuries. NCDs have emerged as leading causes of deaths in both males (70.8%) and females (71.5%). Approximately 61.2 per cent of total DALYs are attributed to NCDs, 29.3 per cent to CMNN diseases and 9.6 per cent to injuries. Out of the total YLDs in 2019, 74.9 per cent were due to NCDs, 17.6 per cent due to CMNN diseases and the remaining 7.5 per cent due to injuries. Cardiovascular diseases (24.0%), chronic respiratory diseases (21.1%) and neoplasm (11.2%) were the top three causes of death in 2019. Among risk factors, behavioural risk factors, environmental/occupational risk factors and metabolic risk factors attribute 38.1 per cent, 31.2 per cent and 22.9 per cent of total deaths, respectively. Air pollution has emerged as the single leading cause of death, attributing 21.8 per cent of total deaths, followed by tobacco (19.4%) and high systolic blood pressure (12.8%). As per GBD 2019 estimates, the average life expectancy of a Nepalese citizen is 71.1 years. The life expectancy in males is 69.2 years, while it is 73.0 years in females. A Nepalese born in 2019 can expect to live 62.2 years of healthy life compared to 50.4 years for those born in 1990.

With the evidently growing pattern of a double burden of NCDs and CMNN diseases, there is an arduous challenge for the health system to rightfully address with urgency the rapidly growing burden due to NCDs and injuries without deprioritising interventions on reducing the burden due to CMNN diseases.

Further Analysis of Routine Data on Maternal Health and FP

A further analysis, titled “Determinants of Maternal Health and Family Planning Service Coverage in Nepal: Modelling of Routine Data” was carried out under the leadership of IHIMS, MD, DoHS, MoHP. The analysis intended to identify the determinants of coverage of maternal health and FP services in Nepal, utilising service coverage data from the HMIS for five years, from FY 2014/15 to FY 2018/19, and district characteristics data from ‘the Population Atlas of Nepal, 2014’.

A composite coverage index was formed to access maternal health services, combining the coverage of first ANC visit, four ANC visits, ID, and PNC visit within 24 hours, giving equal weight to each of them. Similarly, modern CPR (mCPR) was used for assessing FP services.

Key findings:

This analysis showed that districts with a higher proportion of female household heads had higher coverage of ID.

Out of 77 districts, 31 had higher than average (60% as an aggregate of five years analysed in this study) and 30 districts had lower than average composite coverage of maternal health services. Gandaki Province, Province 2, and Bagmati Province had 27 per cent, 26 per cent and 15 per cent lower composite coverage of maternal health services, respectively, than districts in Province 1.

The mCPR of 21 districts was above the national average value (39% as an aggregate of five years analysed in this study) while the other 37 districts had below the average value. This analysis revealed HDI, province and predominant caste of the district as the key determinants of mCPR. With one-unit increase in HDI of the district, the mCPR of the district increased by almost three per cent. Compared to districts with Brahmin as the predominant caste, districts with Gurung, Magar and Tharu as predominant caste had 32 per cent, 26 per cent and 18 per cent higher mCPR. Conversely, compared to districts with Brahmin as predominant caste, districts with Rai, Chhetri, Limbu and Newar as predominant caste had 29 per cent, 28 per cent, 27 per cent and 21 per cent lower mCPR. Similarly, compared to districts in Province 1, Gandaki Province, Lumbini Province and Bagmati Province had almost 37 per cent, 18 per cent and 12 per cent lower prevalence of mCPR.

A significant variation was found in composite coverage of maternal health services as well as FP services. Out of 77 districts, the number with less than the average value of composite coverage of maternal health services and mCPR was 30 and 37, respectively. The current federal structure allows for an extra opportunity for tailored targeted interventions in districts with low coverage of maternal health services and FP services.

- NHRC has conducted a number of research projects/studies in FY 2018/19; NHRC approved 805 and 500 research projects respectively in 2019 and 2020.
- NHRC has plans to conduct the following studies in the coming months of FY 2020/21:
 - A study on effectiveness of traditional (Ayurveda) health services to promote health
 - National survey on mental health
 - Studies on burden of diseases in Nepal and tropical diseases
 - Studies on pharmacovigilance and AMR in Nepal
 - Study on outbreak investigation of infectious diseases
 - Operational research on integrated disease surveillance in Nepal
 - An interventional study on the prevention and control of NCDs and their risk factors
 - A study on the prevention and control of cancer in Nepal (including population-based cancer registry)
 - A study on diagnosis, control and prevention of sickle cell anaemia and thalassaemia in Nepal
 - A study on neonatal and child health in Nepal

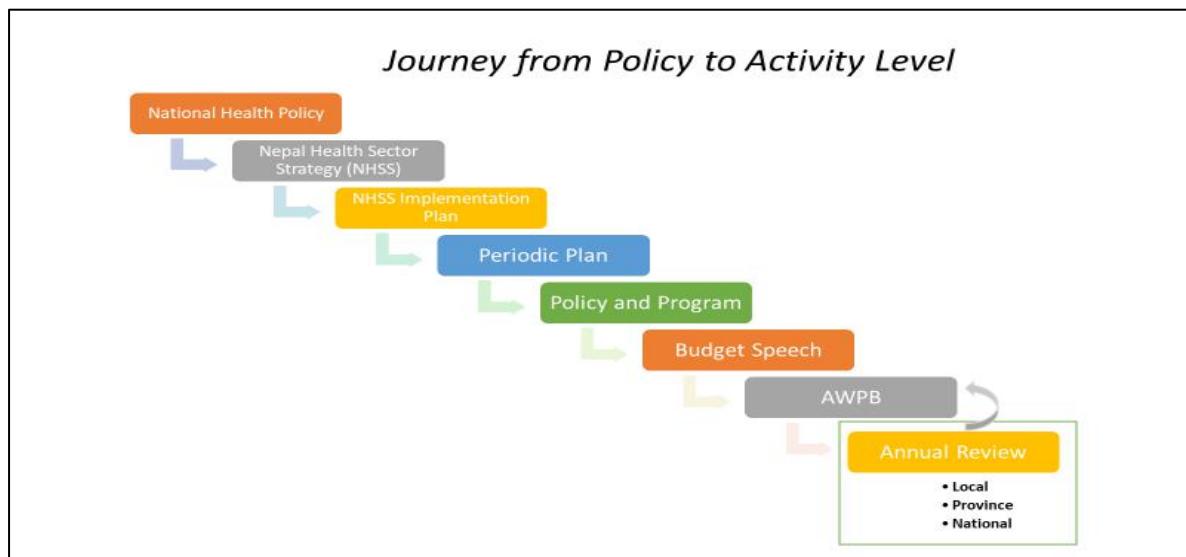
- A survey of HIV-infected migrants in Nepal
- Studies on COVID-19 (including clinical trials, epidemiology, policy, laboratory, diagnostics, mental health, public health measures, social science aspects: 25 in total as of 30 November 2020)
- Additional research is also planned, with support from WHO, in different areas, such as NCDs, air pollution, UHC and the effects of the COVID-19 pandemic on provision and utilisation of selected services.

In the current FY, GoN has increased the budget for the health research by 110 per cent.

8.9.4 Health Sector Reviews with Functional Linkage to Planning Process

The periodic performance reviews, at both national and sub-national levels, have been contributing to monitoring the sector performance under the NHSS. MoHP, together with EDPs, have been streamlining these reviews and improving their alignment with the priorities of the NHSS and the 15th Periodic Plan. The AWPB has been a useful instrument to translate strategy into action by linking resources to achievements. The AWPB provides a comprehensive set of activities needed to achieve the output, outcome and ultimately the goal of the NHSS.

Figure 8.9.4.1 Journey from Policy to Activity Level



8.9.5 Way Forward

- Ensure compliance of timely reporting from HFs on monthly basis.
- Digitise HMIS recording registers to facilitate on-time reporting, improving data quality and use of data at the point of data generation.
- Standardise the M&E orientation package for induction training to different health cadres and roll out.
- Digitise and integrate Ayurveda Information Management System with the national database.
- Ensure functional and reliable data sources for all NHSS and SDG indicators.
- 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.
- Institutionalise and regularise production of NHA.

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 (16 June 1996). NNC is an autonomous body formed to maintain quality nursing and midwifery education for the provision of quality nursing and midwifery services to the public.

9.1.2 The main functions of the council are:

1. Register the nurse and midwife through licensing examination and manage the registration of qualified nursing/midwifery 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.

Till 2077 Ashad, there were 277 nursing and 3 midwifery courses running in Nepal among nursing college , Proficiency level nursing 121, B. Sc. nursing 50, Bachelor in nursing 45, master level 12 and 49 Auxiliary nurse-midwife (ANM) .

Table 9.1 Nursing and midwifery education programs

S.N.	Nursing education programs	Number
1	Auxiliary Nurse Midwife (ANM)	49
2	Proficiency Certificate level (PCL)	121
3	B.Sc. Nursing	50
4	Bachelor in Nursing Science (BNS)	45
5	Master in Nursing (MN/MSC)	12
		Total
		277
1	Bachelor in Midwifery	3

The NNC had registered **95,864** Nepali nurses (PCL 61321 and 34432 ANM) and 844 foreign nurses till 28th September 2020.

Table 9.2 NNC register nurses :

Categories of Nurses	Number
Nurses	61,421
ANM	34,432
Total	95,864
Midwives (bachelor level)	11
Foreign Nurses	844

9.1.3 Major activities carried out by NNC on 2076/77

- Start to provide the online good standing and verification certificate to the nurses who are out of country
- Revised the different tools such as accreditation, monitoring, feasibility, self assessment to the all level of nursing education
- Develop the examination guidelines and competencies guidelines for midwifery licensing examination
- Midwife registration by licensing Exam and practical exam was also included to test the skill for newly graduate during licensing exam
- Curriculum and Minimum requirement to PCL level midwifery education was developed.
- Develop the different tools require to monitoring and accreditation midwifery program
- Conducted Election For 3 board members of NNC
- Put the essential documents at NNC web site such as: minimum requirement, self assessment form, code of ethics for nurses and midwives etc, scope of practice for midwives
- Renovated the well equipped meeting hall in top floor of NNC building.

Ways forward

- Development the scope of practice for different level of nurses (in process)
- Development of guidelines for Continue Professional Development CPD) (in process)
- Distribution of Specialized license certificate
- Plan to Held Specialized license exam for Master nursing who graduate after Amendment of NNC act as per federal system
- 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
- Separate the licensing system for PCL and bachelor level nursing program.

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 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:

MD & Bachelor Level Programme

1. Tribhuvan University, IOM, Ayurveda Campus, Kirtipur (With MD)
2. Mithila Ayurveda College & Research Center, Janakpur, Dhanusha (Affiliated by NSU)
3. Nepal Ayurveda Medical College, Birgunj, Parsa (Affiliated By T.U.)
4. Nepal Sanskrit University, Kendriya Ayurveda Vidhyapeeth, Bijauri, Dang.
5. Patanjali Ayurveda Medical College & Research Centre, Dhulikhel, Kabhre. (Affiliated By NSU)

Certificate Level Programme (AHA)

1. NSU, Janta Vidhyapeeth, Bijauri, Dang
2. Dhanwantari Ayurbigyan Adhyayan Sansthan, Baphal, Kathmandu (Affiliated by CTEVT)
3. Himalayan Ayurveda College, Baneshwor, Kathmandu. (Affiliated by CTEVT)

Under CTEVT, Ayurveda Health Worker (AAHW)

1. Sailaja Acharya Politechnical Institute, Sishwani, Morang.
2. Jagadamba Medical Institute, Rajbiraj, Saptari.
3. Modern Institute of Health Science, Gaighat, Udayapur.
4. Ayurvedic Medical Institute, Janakpurdham, Dhanusha.
5. Shankar Technical Training Centre, Janakpur, Dhanusha.
6. National Institute of Science & Technology, Bharatpur, Chitwan.

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7. Bardiya Medical Institute, Gulariya, Bardiya.
8. Institute of Community Service Assistant, Dhangadhi, Kailali.
9. Dadeldhura Paramedical Campus, Dadeldhura.
10. White Park College, Dadeldhura.
11. Rastriya Prabidhik Sikhsalaya, Surkhet.
12. Triyuga National Education Academy, Udayapur, Gaighat.
13. Ilam Technical Institute, Ilam.
14. 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 (up to 2077/09/13)

- MD/MS/PG	115
- BAMS/equivalent	760
- Ayurveda B. Pharmacy	05
- AHA/Equivalent	1,560
- AAHW/TSLC	2,563
- Traditional healers	19
- Academic institutions	22
- Foreigner practitioners	04

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. It was established in 1991 by an Act of Parliament and was given the responsibility to promote and coordinate health research for the improvement of the health status of the 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 evidence. Nepal Health Research Council serves as the main national institution responsible for technical and ethical review of proposals submitted by individual health researchers, national authorities, NGOs, INGOs and universities. After review, the Ethical Review Board (ERB) of NHRC approves these proposals. In its role of generating evidence, NHRC carries out research on its own on national health issues aligning with the national health priorities. NHRC has also approved 52 Institutional Review Committee at different academic and research institutions in Nepal. The capacity-building roles of NHRC encompass providing education, organizing a training on various aspects of health system research to national scientists with special emphasis on promoting the research competency of young researchers. Nepal Health Research Council 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 database and the NHRC Journal.

9.3.2 Major Activities in the fiscal year 2076/77

Research project/Activities

Nepal Health Research Council conducted different research activities with support of Government of Nepal and other development partners in FY 2076/77. The research activities conducted by NHRC during the last fiscal year are listed below:

1. Non-communicable diseases Risk Factors: STEPS survey 2019
2. National Mental Health Survey 2020
3. Population-Based Cancer Registry, Nepal
4. Exploring the Opportunities, Challenges and Feasibilities in integrating the Complementary and Alternative Medicine into Conventional Medicine in Nepal
5. Status of Menstrual Hygiene Management among Adolescent Girls of Nepal
6. Quality of Essential Medicines in Public Health Care Facilities of Nepal
7. Population Based Cancer Registry
8. Population based Screening of Sickle Cell Anemia in Tharu Paopulation of Bardiya Municipality, Bardiya district.
9. Antimicrobial resistance pattern among adult patient with deep space neck infections in department of ENT Head & Neck surgery in Tribhuvan University Teaching Hospital, Nepal

COVID-19 related research projects

1. Public Understanding and Their Response to COVID-19 in Nepal. Kathmandu, Nepal
2. An Online Survey on Stress, Anxiety and Depression among Health Care Workers Working during COVID -19 Pandemic in Nepal
3. Assessment of compliance with SMS measures against COVID-19 in Kathmandu Valley

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4. Comparative Evaluation of Commercially Available Rapid Diagnostic Test Kits for the use of Screening of Suspected Cases of Novel Corona virus infection in Nepal
5. Assessment of Health-related Country Preparedness and Readiness of Nepal for Responding to COVID-19 Pandemic
6. Assessment of COVID-19 specific symptoms in those people returned from foreign countries to Nepal.

Table 9.3.1 Health Research Grants

S.N	Grants	Total number of grants provided
1	Provincial Research Grant	31
2	Post Graduate Research Grant	35
3	Under Graduate Research Grant	30

Table 9.3.2 Training and Workshops

Name of the Training	Training Program (Fiscal Year 2076/2077)	
	Date of the Training	Number of Participants
Proposal Development Training	18 - 23 August 2019	36
	22 - 27 November 2019	33
	23 - 28 February 2020	37
Data Management Training	22 - 27 September 2019	35
	29 December 2019 - 03 January 2020	30
Scientific Writing	10 -12 November 2019	27
	19 – 02 January 2020	26
Total		224

Dissemination of Health Research Findings

1. Dissemination Workshop on Promoting Use of Evidences in Health System Strengthening through National Summit of Health and Population Scientists in Nepal (2076/04/09)
2. Dissemination Workshop on Factsheet of Non-Communicable Diseases Risk Factors: STEPS Survey 2019 (2076/08/05)

Journal Publications: Articles are available online on:

<https://www.inhrc.com.np/index.php/inhrc/issue/archive>

Journal of Nepal Health Research Council, Vol. 17 No. 3 Issue 44 Jul-Sep 2019

Journal of Nepal Health Research Council, Vol. 17 No. 4 Issue 45 Oct-Dec 2019

Journal of Nepal Health Research Council, Vol. 18 No. 1 Issue 46 Jan-Mar 2020

Journal of Nepal Health Research Council, Vol. 18 No. 2 Issue 47 Apr-Jun 2020

Sixth National Summit

The Sixth National Summit of Health and Population Scientists in Nepal was a continuum of the previous annual summits celebrated every year on the establishment day of NHRC (10-12 April). Due to the global health emergency of the COVID-19 pandemic, the summit was postponed on its annual celebration day and held on 06-07 July 2020 through a virtual platform; themed with “Addressing Emerging Public Health Issues through Interdisciplinary Research”. The summit was a platform for researchers and policymakers to virtually gather together and discuss the research evidence and their potential implication in health policymaking in Nepal. Around 147.7 thousand people were reached through Facebook and 5.5 thousand people viewed the program on YouTube. There were

33 oral presentations, 53 poster presentations and 10 national and international invited talks in the summit covering diverse issues including Communicable and Non-Communicable Diseases, Neglected Tropical Diseases, Sexual and Reproductive Health, Maternal and Child Health, Adolescent Health, Mental Health, Disabilities, Health Governance, Health Economics and Health Financing, Nutrition, COVID-19, Interdisciplinary and Implementation Research and so on.

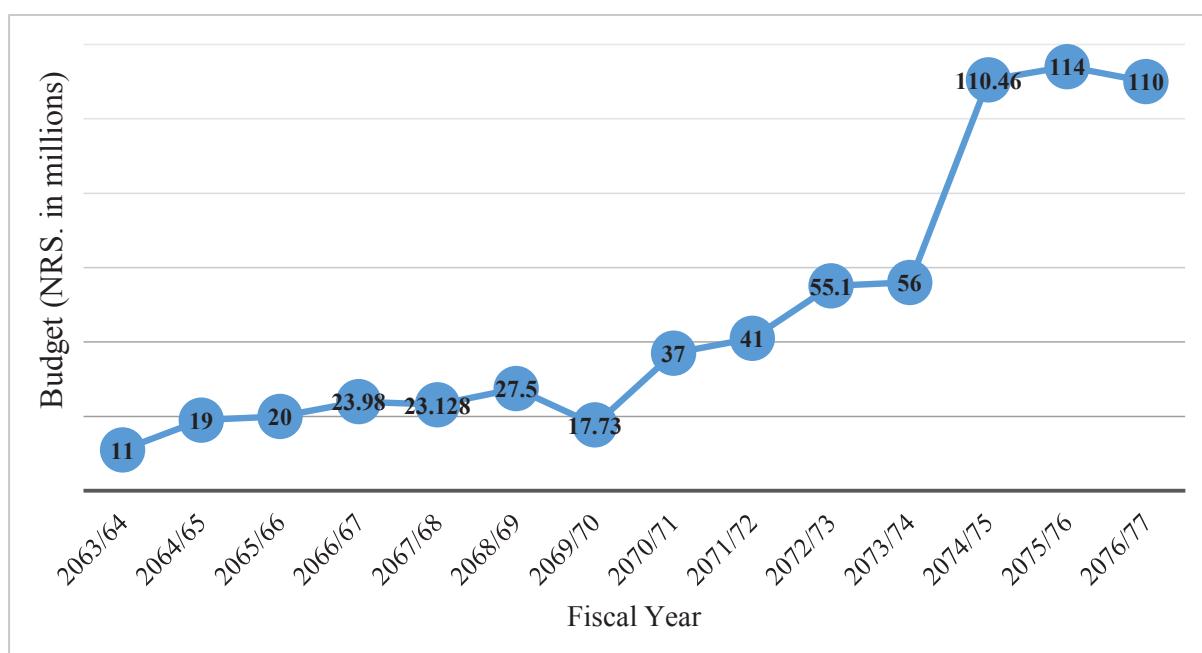
Ethical Review, Approval, Monitoring and Supervision of Research Proposals:

Ethical Review Board (ERB) of NHRC received 875 health research proposals for ethical clearance in the FY 2076/2077. For this, 36 ERB meetings and 30 Expedited sub-committee meetings were conducted to review and discuss the submitted proposals. Total 748 research proposals got ethical approval with 56 proposals in process, 17 proposals were withdrawn from the researcher due to unavailability of the budget and emergency situation of the country and the rest proposals were not responded to by the researcher. Forty high-risk research projects were monitored among approved research proposals. During the fiscal year ERB, NHRC received international accreditation from Forum for Ethical Review Committees in Asia and the Western Pacific (FERCAP). ERB, NHRC conducted a workshop on Standard Operating Procedure (SOP) and guideline finalization, Risk categorization, and International training on responsible conduct of research.

Institutional Review Committees (IRCs)

There are 52 IRCs established until the last fiscal year across the country to promote health research at the institutional level especially in health science universities, institutes, colleges and hospitals. Every year, a team from NHRC inspects the Institutional Review Committees approved by NHRC. During FY 2076/77, NHRC monitored five approved IRC's. Similarly, a training on "Responsible conduct of research" for IRC members was conducted on an online platform and two such training was conducted in person.

9.3.4 Financing Research



9.4 Nepal Medical Council

9.4.1 Introduction

Nepal Medical Council (NMC) is a regulatory organization established by an Act of Parliament (NMC Act 2020) that comprises 19 members. NMC is empowered to protect and promote the health and safety of the public by ensuring proper standards in the training and practice of modern medicine, registering doctors and regulate their practice and ensuring that individual professionals have a fair and unbiased hearing at any disciplinary inquiry. The community and patients occupy a supreme position in the conduct of its multiple duties.

9.4.2 Progress Report

1. Licensing Examination

Nepal Medical Council Conducts Licensing Examination for undergraduates (MBBS & BDS) and Special Examination for postgraduates (MD, MS & MDS) every four months round the year to certify Medical and Dental practitioners.

Examination conducted in 2020 as follows

Table 9.4.1 Licensing Examination

Licensing Examination Conducted in 5 th September and 17 th October			
Total Candidate	Passed	Fail	Absent
2937	1813	1090	34

Table 9.4.2 Special Examination

Special Examination Conducted in 29 th Feb. and 27-28 th Nov.			
Total Candidate	Passed	Fail	Absent
1163	755	399	9

2. Registration Status

The major function of Nepal Medical Council is to register and maintain proper archives of medical/dental practitioners as NMC Registered doctors, who have duly graduated in MBBS/ Diploma from Nepal or abroad.

2.1. National Doctors Registered

The data of registered national doctors till 2020 December in Nepal Medical Council are as follows:

UNDERGRADUATE			
Program	Male	Female	Total
MBBS/BDS	17995	10482	28477

POSTGRADUATE			
Program	Male	Female	Total
MD/MS	5906	2395	8301

2.2. Foreign National Doctors (FND)

The provision of temporary registration to foreign doctors is on the basis of recommendation of Government of Nepal, Medical Colleges or organizations related with healthcare and their academic qualification. In fiscal year 2075/76, total number of 185 foreign doctors has been registered at Nepal Medical Council to provide health services in various parts of the country.

3. Eligibility Certificate Issuance

Eligibility Certificates were provided as per the NMC regulations to those who possess minimum qualification to pursue Medical Degree/ Diploma from abroad. NMC has granted Eligibility Certificates as below mentioned data:

UG Eligibility in 2020 (Till September)

S.N.	Country	MBBS	BDS
1	Bangladesh	79	0
2	Philippines	15	0
3	China	6	0
4	India	8	0

5	Pakistan	1	0
6	Ukraine	1	0
7	Australia	1	0
	Total	111	0

PG Eligibility in 2020 (Till September)

SN	Country	Total	SN	Country	Total
1	USA	80	5	China	9
2	India	55	6	Thailand	1
3	Pakistan	40	7	Egypt	1
4	Bangladesh	14	8	Netherland	1
				Total	201

4. Ethical Cases :

Nepal Medical Council has been playing crucial role in enforcing code of conduct and developing guidelines and protocols related with medical and dental professions. In order to maintain standard of conduct in health services, Code of Ethics & Professional Conduct 2017 was developed and implemented. Investigating complaints, registered against the medical services/ doctors and provision of enacting penalty or recommending concerned bodies for legal actions in case of any disobedience/ fraudulent found, also lies under the sphere of Nepal Medical Council. The complaints filed against the misconduct related with medical profession has been operating in following procedure

No. of complaints	Processed & finalized	Under process
42	16	26

9.4.3 Major Achievements in FY 2076/77

- 5.1 IT friendly organization
 - Computerized database of doctors completed
 - Commencement of computer based examinations for specialist license
 - Online submission of exam form (licensing and specialty exams)
 - Updated website and database
- 5.2 Infrastructure Development
 - Renovation and restructuring of NMC Building
 - New parking space (space provided by BPKIHS) constructed
- 5.3 Decentralization of licensing exams: Two exams conducted from outside Kathmandu valley for undergraduate level licensing examinations.
- 5.4 Implementation of CPD program: training of trainers conducted, online version of modules and being developed.
- 5.5 O & M in progress with assistance from Staff College
- 5.6 Suggestions for revision of Nepal medical council act is submitted to ministry of health and population.
- 5.7 Legal and ethical actions: legal actions against those violating NMC law is being taken on regular basis
- 5.8 Draft of staff regulation is being developed with consultation with public service commission.

9.5 Nepal Health Professional Council

9.5.1 Introduction

Nepal Health Professional Council (NHPC) has been established to make more effective the 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.

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

Registration levels and its qualification requirements

According the qualification of health professionals, the NHPC will register into respective groups.

1. The health professional with Master degree will be registered into "Specialization" category of the related subject.
2. The health professional with Bachelor degree will be registered into "First Class" (A) category of the related subject.
3. The health professional with proficiency certificate level or equivalent will be registered into "Second Class" (B) category of the related subject.
4. 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.

Subject committees of the Council

For the registration of health professional, the council has 9 different subject committees:

1. Medical subject committee
2. Public Health subject committee
3. Radiology subject committee
4. Laboratory Medicine subject Committee
5. Physiotherapy and Rehabilitation subject committee,
6. Ayurveda subject committee,
7. Dental subject committee
8. Optometry Science Subject committee
9. Miscellaneous subject (Homiyo, Yunani, Naturopathy etc.) committee

9.5.2 Activities performed by council at FY 2076/77

Subject, Level and Numberof Health Professionals Permanent Registered

S.N.	Subject	Specialization	First	Second	Third
1	Public Health	126	366		
2	Health Education		1		
3	Medicine			1,975	2,279
4	Medical Microbiology	7	7		
5	Health Lab	3	113	856	1,768
6	Radiography	7	40	262	
7	Biochemistry	5			
8	Homeopathy			3	
9	Acupuncture		1	6	
10	Physiotherapy	17	171	20	
11	Dental Science			107	5
12	Naturopathy		8		
13	Ophthalmology	2	148	228	
14	Operation Theater and Allied Health Sciences			15	
15	Clinical Psychology	2			
16	Speech and Hearing	2			
Sub total		171	855	3,473	4,052
Total				8,551	

9.5.3 Major achievements in FY 2076/77

1. Made ready all require legal draft to conduct examination.
2. Furnished office rooms & Meeting hall.
3. Upgraded web site & shifted all data to Govt data storage center from unknown storage center.
4. Maintenance of whole building.
5. Description collection of institutes in online on the process.

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 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. It is a family-based program. Family has to pay the contribution amount to enroll in the program. Currently enrollment is voluntary. The households, communities, and employees of the government organizations also can be involved in this program. This program attempts to address barriers in health service utilization and ensure equity and access to poor and disadvantaged groups as a means to achieve Universal Health Coverage.

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 3,500 per year and NPR 700 per additional member. The main features of HIB are as follows:

- The government bears a contribution amount for ultra-poor, MDR TB, Leprosy, HIV /AIDS, and disabled people's families having a poverty identity card and red card respectively.
- Insurees have to renew their membership through annual contributions.
- Benefits of up to NPR 100,000 per year are available for families of up to five members with an additional NPR 20,000 covered for each additional member. The maximum amount available per year is NPR 200,000.
- The government bears a contribution amount after 70 years old citizens and Benefits of up to NPR 100,000 per year.
- 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 a cashless system for members seeking health services.
- The program is IT-based with enrolment assistants using Smartphone's.

10.4 Program Implementation Status

The Health Insurance Program started from the Kailali district on 25th, Chaitra, 2072. Then it was expanded to Ilam and Baglung district in FY 2073/74. At the end of FY 2074/75, the program was implemented in 36 districts of the country. Till the end of FY 2076/77, the program was implemented in 58 districts and 563 Local levels of the country. The next 19 districts are in the pipeline. HIB is planning to implement this program all over the country as well. The list of HIB program launched districts is as shown in Table 1.

Table 1: List of districts implementing National Health Insurance program till FY 2076/77

SN	Name of Province	Districts
1	Province 1	Ilam, Jhapa, Sunsari, Bhojpur, Khotang, Solukhumbu, Sankhuwasabha, Dhankuta, Okheldhunga, Morang, Terathum
2	Province 2	Rautahat, Mahottari, Parsa, Dhanusa, Siraha
3	Bagmati	Bhaktapur, Makawanpur, Chitawan, Sindhuli, Ramechhap, Kabhreplanchock, Dhading, Nuwakot
4	Gandaki	Baglung, Myagdi, Kaski, Gorkha, Tanahun, Syanja, Parbat
5	Lumbini	Palpa, Bardiya, Arghakhanchi, Kapilvastu, Rolpa, Rukum east, Pyuthan, Banke, Gulmi,
6	Karnali	Jajarkot, Surkhet, Rukum west, Jumla, Kalikot, Mugu, Humla, Dolpa, Dailekh
7	Sudur Paschim	Kailali, Achham, Baitadi, Bajura, Bajhang, Kanchanpur, Darchula, Doti, Dadeldhura

10.5 Enrollment and Health service utilization Status of fiscal year 2076/77

There were 13,507 people insured in FY 2072/73 same as 228,113 people insured in FY 2073/74, likewise 1,130,575 people insured at the end of FY 2074/75 whereas 147,938 people were reenrolled. Similarly 1,640,879 peoples are active insurees in FY 2075/76, whereas 507,059 peoples dropped out of program, respectively at the end of 2076/77 the total number of enrolled people are 3,158,212 whereas 976,260 insurees dropped out the program. Among the total insurees active are 2,181,952. Respectively 286,850 people are insured based on the ultra-poor category, whose contribution amount has been paid by the Government of Nepal. The total coverage of the Health insurance program is approximately 11.92 Percent out of the total population of Nepal. Among the total insures about 1,120,259 people have taken health services from listed health institutions in FY 2076/77. The leading top five districts based on the number of enrollments are Jhapa, Chitwan, Sunsari, Palpa, and Morang. Present enrollment status has shown in Table 2.

Table 2: Summary of numbers of enrollment by district and province

S.N.	Province	Name of District	Nos. of Insurees	Drop out of Insurees	Active Members of Insurees	No. service takers
1	Province 1	Ilam	90333	28788	61546	36534
2		Jhapa	372220	87295	284961	160869
3		Sunsari	247377	64075	183334	101501
4		Bhojpur	24859	11172	13687	5140
5		Khotang	34808	7922	26887	4535
6		Solukhumbu	6422	3590	2832	892
7		Sankhuwasabha	15513	4632	10882	3246
8		Okheldhunga	16023	1	16022	1461
9		Morang	150102	148	149972	23657
10		Terathum	2882	0	2882	17
11		Dhankuta	5521	5	5516	0
12		Rautahat	16114	7325	8789	4435
13	Province 2	Mahottari	13052	5428	7624	2145
14		Parsa	21610	6492	15119	4921
15		Dhanusa	7230	3529	3701	1286
16		Siraha	28851	3454	25400	3637
17		Bhaktapur	124161	31769	92409	63318
18	Bagmati	Makawanpur	121843	43707	78138	58147
19		Chitawan	268927	98603	170357	143834
20		Sindhuli	65019	24738	40283	16571
21		Ramechhap	31575	10964	20615	8336
22		Kabhreplanchock	44413	1	44419	6154
23		Dhading	6586	4	6582	65

24		Nuwakot	20	0	20	0
25	Gandaki	Baglung	61853	22624	39229	21644
26		Myagdi	20867	8577	12293	9651
27		Kaski	152695	65034	87668	72968
28		Gorkha	51421	20764	30657	18878
29		Tanahun	76734	30986	45747	31042
30		Syanja	53544	15684	37864	16291
31		Parbat	3902	25	3881	50
32		Palpa	184413	37486	146944	99118
33	Lumbini	Bardiya	92247	30205	62045	22485
34		Arghakhanchi	50385	17624	32762	15108
35		Kapilvastu	56953	23736	33217	12467
36		Rolpa	21641	10410	11231	99118
37		Rukum east	6008	3208	2800	309
38		Pyuthan	37344	18575	18770	10406
39		Banke	30355	9571	20784	7328
40		Gulmi	18142	0	18193	253
41	Karnali	Jajarkot	37348	21980	15368	9039
42		Surkhet	45599	24282	21319	21771
43		Rukum west	47015	27636	19363	23586
44		Jumla	45813	15590	30227	14025
45		Kalikot	33586	26400	7202	4766
46		Humla	6480	2925	3555	123
47		Dolpa	2000	875	1125	103
48		Mugu	2914	1702	1212	89
49		Dailekh	2322	0	2322	33
50		Kailali	158007	41236	116771	39783
51	Sudur Paschhim	Achham	36342	16156	20187	2790
52		Baitadi	16179	6716	9463	2411
53		Bajura	29070	15122	13948	3040
54		Bajhang	34215	10556	23659	3599
55		Kanchanpur	17614	3316	14301	2601
56		Darchula	7833	3610	4223	554
57		Doti	1042	1	1041	1
58		Dadeldhura	857	0	857	8
Total			31,58,212	9,76,260	21,81,952	11,20,259

Table 3: Gender wise Insurees Trend since FY 2072/073- 2076/077

serial no.	Fiscal year	No. of Total Insurees	Gender wise distribution		
			Male	Female	Others
1	2072/73	12,623	5,972	6,647	4
2	2073/74	228,113	107,804	120,277	32
3	2074/75	1,130,575	533,829	596,633	113
4	2075/76	1,640,879	782,143	858,449	287
5	2076/77	3,158,212	1,509,771	1,648,106	335

Source: IMIS 2076/77 Ashadha 31 data drawn 15 Nov 2020

10.6 Opportunities of HIP program

The program is addressed in Constitution of Nepal 2072, in Article no.51 of State's guideline principle

Health Insurance Act 2074 has envisioned the compulsory enrollment of the people working in formal sector.

High political commitment.

Designed as a 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.
 Supportive role of government (Constitution provision, periodic plan/ 15th plan and annual Budget have given high priority to Health insurance Program)
 Universal Health Coverage
 Strong support of partner organizations
 Interest and concern of Provincial and Local level
 Health system of government

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-poor etc.)
 Poverty card related issues.
 Fragmented social health security program (within MoHP and beyond)

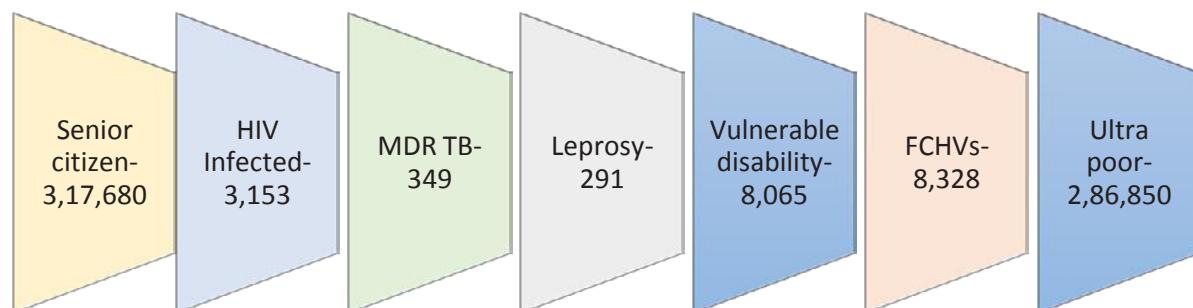
Table 4: Province Wise Total No of Service Provider Health Institutions types of FY 2076/077

Province	No of Govt. Health Institutions	No. of Private Health Institutions	Total
Provence 1	64	19	83
Provence 2	33	9	42
Bagmati	54	12	66
Gandaki	35	5	40
Lumbini	42	9	51
Karnali	28	2	30
Sudurpaschhim	31	5	36
Total	287	61	348

Provence	Total Population	Total Insured	In %
Provence 1	45,35,943	9,66,150	21.29%
Provence 2	5,404,145	86,856	1.60%
Bagmati	55,29,452	6,62,514	11.90%
Gandaki	24,03,757	4,21,000	17.51%
Lumbini	44,99,272	4,97,465	11.06%
Karnali	15,70,418	2,23,069	14.20%
Sudurpaschhim	25,52,517	3,01,158	11.79%
Total insured 31,58,212 percentage 11.92 %			

Table 5: Province wise Total Number of Insurance:

Figure 1: ENROLLMENT OF TARGETED GROUPS:



DEVELOPMENT PARTNERS SUPPORT

The outcomes discussed in the previous chapters are the results of combined efforts of the Ministry of Health and Population (MoHP), various development partners (multilateral, bilateral) and other supporting organizations including international organizations and national NGOs and private sectors. The Department of Health Services acknowledges its partnership with these organizations and their large contributions to Nepal's health sector. This chapter lists the focus of these organizations' various programmes. 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. In the current sector programme, 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). UKAid and GAVI are also disbursing part of their commitments against some DLRs identified and agreed with the MoHP. During the second half of the Fiscal Year 2019/2020, Development Partners reprioritized some of their programmes to support the MoHP in its response to COVID-19 impact.

The matrix below provides contributions of various partners for supporting the NHSS.

Development Partners Contributing to Health Sector in Nepal

11.1 MULTILATERAL ORGANIZATIONS

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
UNFPA	Sexual Reproductive Health and Rights; Family Planning; Midwifery Education; RH morbidities; Adolescents Sexual Reproductive Health; Health Response to GBV and, Emergency preparedness and response including RH sub-cluster coordination and support.	Provincial presence: 2, 5 and 7. Districts: Sunsari, Sarlahi, Udayapur, Rautahat, Sindhuli, Okhaldhunga, Dang, East Rukum, Rolpa, Pyuthan, Kapilavastu, Arghakhanchi, Baitadi, Bajura, Bajhang, Achham,	Total allocated budget of all programs activities: US\$ 7,674,000	Office address: UNFPA Nepal UN House, Pulchowk Lalitpur Tel: +977 1 5523880 Email: nepal.office@unfpa.org registry-np@unfpa.org The amount includes the additional purchase of FP commodities of amount US\$2.3m Web: http://nepal.unfpa.org/
UNICEF	1. Health Maternal and Newborn Health, Child Health and Immunization, Adolescent Health, Health Emergencies, Disaster Risk Reduction and Systems Strengthening 2. Nutrition Capacity development in Adolescent, maternal, infant and child nutrition; improving capacity in quality care and treatment of acute malnutrition; Capacity development in nutrition specific interventions; Multi-sectoral Nutrition Plan development, implementation and monitoring	Nation-wide with sub-national presence covers Province 2, Lumbini, Karnali, and Sudurpaschim provinces	Total support USD 15,745,228 In kind/supplies: USD 4, USD 4,465,814 Cash and Technical Assistance USD 11,279,415 11,279 USD 1187 Lalitpur 44700 Telephone: 980554 or 5523200	Elke Wisch, Representative James McQuen Patterson, Deputy Representative UNICEF Nepal Country Office UN House, Pulchowk, P.O. Box E-mail: kathmandu@unicef.org Website: http://www.unicef.org/nepal
WHO Nepal	1. Vaccine preventable disease surveillance and technical support to strengthen immunization coverage. 2. Strengthen public health emergency preparedness and response – support	Federal, Provincial and Local (in collaboration with federal and provincial governments)	Allocation (Award): 11.7m Expenditure: 5.27m	Dr Rajesh Sambhajirao Pandav WHO Representative WHO Country Office for Nepal UN House, Pulchowk, Lalitpur

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	<p>to establish health emergency operation centers (HEOCs) and strengthening hub-hospital networks with adequate stockpiles.</p> <p>3. Support implementation of package of essential non-communicable (PEN) diseases interventions and development and update of national protocols and frameworks including Multi-sectoral Action Plan 2021-2025.</p> <p>4. Support development and implementation of Mental Health Strategies and programme.</p> <p>5. Technical support to achieve and sustain communicable disease elimination and control targets – Tuberculosis, Malaria, Lymphatic filariasis, Trachoma, Kala-azar, HIV, Hepatitis and Leprosy.</p> <p>6. Support to strengthen health systems capacities – policy, legal frameworks, strategies, plans, guidelines, protocols. Support establishing standards of NSS at facility level, BHSP, EHSP.</p> <p>7. Support production of National Health Accounts on annual basis.</p> <p>8. Support implementation of Safe Motherhood Act and Reproductive Health Regulation.</p> <p>9. Support implementation of Safe</p> <p>10. Support defining HRH needs, HWF Registry and staff adjustments.</p> <p>11. COVID-19 response: strengthening point-of-entries, surveillance, case management, laboratory capacity, risk</p>			Email: dandavr@who.int Phone: + 977-1-552199 Fax: + 977-1-5527756

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	<p>communication, data management, psychosocial counselling, call-center.</p> <p>12. Sexual reproductive health rights programme with focus on improving access to safe abortion services and family planning.</p>			
The World Bank Group	<p><u>Health Sector Management Reform Program-for-Results</u></p> <p>-To improve efficiency in public resource management systems of the health sector in Nepal</p> <p><u>COVID-19 Emergency Response and Health Systems Preparedness Project</u></p> <p>-To prevent, detect and respond to the threat posed by COVID-19 and to strengthen national systems for public health preparedness in Nepal</p>	Nationwide	<p>Total disbursed against FY 2019/2020 Budget</p> <p>US\$52 million</p>	<p>Office address: The World Bank Group Yak and Yeti Complex Durbar Marg Kathmandu</p> <p>Tel: 977-1-4236000 Fax: 977-1-4225112 Email: infonepal@worldbank.org Web: https://www.worldbank.org/en/country/nePAL</p> <p>Office address: Patandhoka Road Chakupat-10, Lalitpur 44600</p> <p>Tel: 977-01-5260607 Fax: 977-1-5260607 Email: wfp.kathmandu@wfp.org Web: www.wfp.org</p>

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	of the multiple forms of micronutrient deficiency 4) Technical support to the FWD/MoHP to support implementation of the MSNP			

11.2 BILATERAL ORGANIZATIONS

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
German Development Cooperation/GIZ (Technical)	1)Implementing a social health protection system 2)Supporting the availability of qualified human resources for health 3)Strengthening governance in the health sector 4)Digitalizing health information systems and work processes 5)Promoting adolescent health and development	District number: 61(National Health Insurance Scheme from Health Insurance Board) 74 (Formal sector insurance from Social Security Fund) District number: 9 District number: 4(5 Municipalities.) District number:10 District number: 1 (2 municipalities)	Total allocated budget of all programs activities: US \$ 3.8 million Total expenses of all programs activities: US \$ 3.5 million	Office address: Support to the Health Sector Programme (S2HSP) Sanepa, Lalitpur, P.O. Box 1457 Kathmandu, Nepal Tel:+977 1 5905128-30 Fax:+977 1 5905138 Email: alexandra.plueschke@giz.de Web: www.giz.de/nepal
German Development Cooperation (Financial)/KfW	Budget Support/Pool Fund NHSS Earthquake Recovery Phase 1 Earthquake Recovery Phase 2 Improvement of Mother Child Care in Remote Areas (IMCCR)	National Bagmati and Gandaki Provinces Bagmati Province SudurPachim – Dhadeldhura and peripherals	Disbursements: Euro 2 million Disbursements: Euro 3.42 million Disbursements: Euro 0.49 million	Shanker Raj Pandey shanker.pandey@kfw.de
USAID	MNCH, Nutrition, WASH, Reproductive Health, HIV/AIDS, Disability/Rehabilitation, Health Systems Strengthening	National	Total allocated budget of all programs activities: \$57,365,000	CARRIE RASMUSSEN Health Office Director U.S. AGENCY FOR INTERNATIONAL

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	British Embassy Kathmandu	Health system strengthening, including health policy, planning and budgeting, health governance and devolution (federalism), improving evidence science and accountability on health including monitoring, evaluation, surveillance and research, and social accountability in the health sector;	Total Expenses of all programme activities: £8,442,259 financial aid disbursed, and £9,699,649 technical assistance	<p>DEVELOPMENT U.S. Embassy, Maharajgunj Kathmandu, Nepal +977 98010 08801 www.usaid.gov/nepal @usaidnepal</p> <p>Office address: British Embassy Kathmandu PO Box 106 Lainchaur, Kathmandu, Nepal</p> <p>Email: BEkathmandu@fcd.o.gov.uk</p> <p>Web: https://www.gov.uk/world/organisations/british-embassy-kathmandu</p>

11.3 INTERNATIONAL NON-GOVERNMENT ORGANIZATIONS

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
ADRA Nepal	1)Family Planning & Adolescent Sexual and Reproductive Health program 2) Women's Health & System Strengthening project related uterine Prolapse 3) Improvement of Maternal & Child Health Program 4) Upgradation/Renovation of Birthing Centers 5) Institutionalize the immediate postpartum Family Planning service (PPFP)	District number: 10 District number: 4 District number:1 District number:2 District number:2	Total allocated budget of all programs activities: US \$1,993,444.66 Total expenses of all programs activities: US \$1,913,706.87	Office address: Sanepa, Lalitpur, Nepal Tel: (977) 5555913/14 info@adranepal.org http://adranepal.org/ https://www.facebook.com/joinADRANepal/ https://twitter.com/adranepal https://www.youtube.com/results?search_query=ADRA+Nepal
Ipas Nepal	Expansion and strengthening of SRHR including safe abortion and family planning services. Major support includes: training to Doctors/nurses on Safe abortion and family planning, post training support, clinical/programmatic/quality improvement, harmful social norms/stigma reduction and SBCC, engagement with CSOs and advocacy, research/studies and program monitoring and FP program in excluded and vulnerable community/piloting of Sayana Press injectable.	28 districts	Total allocated budget of all programs activities: \$1222002.00	Office Address: Kathmandu Metropolitan Ward Number-4, Pabitra workshop chowk, Baluwatar, Kathmandu Telephone: 1-4420787 Fax: 977-4425378 Email: gentle@ipas.org Website: https://nepal.ipas.org/

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
Birat Nepal Medical Trust (BNMT Nepal)	1) COVID19 Response 2) Tuberculosis 3) Sexual and Reproductive Health Rights (SRHR) including Menstrual Health 4) Mental Health and Psychosocial Support Services (MHPSS)	District number: Nationwide District number: 10 District number: 4 District number: Nationwide	Total allocated budget of all programs activities: US \$ 889,710	Office address: Lazimpat – 2, Kathmandu, Nepal. Tel: 977 1 4436434, 4428240 Fax: 977 1 4439108 Email: bnmtnepal@bnmt.org.np Web: www.bnmtnepal.org.np , www.twitter.com/BiratNepal , www.facebook.com/bnmtnpl
CARE Nepal	1. Capacity building of health workers on maternal & child health and family planning services (Training on SBA, LARC, Quality improvement, onsite coaching and mentoring etc) including equipment support to birthing centers and primary health care outreach clinic (PHC-ORC) 2. Community mobilization and empowerment for social behavior change (Revitalization of health mother' groups, dialogue / interaction with mother in laws about the maternal health, mobile health, roll out of FCHV modular training package, school health programs, dialogue with recently married young couple about family planning etc) 3. Promoting social accountability for quality health with the use community health scoreboard (CHSB) and capacity building of HFOMC members with training	District number: 5 District number: 5 District number: 5	Total expenses of all programs activities: US \$695,751.44	Office address: House # 777/34, Ward # 3, Jhamsikhel Lalitpur (Next to Capital Grill (JIMBU)) Tel: 5525576,5522800 & 5521202 Email: npl.carenepal@care.org Web: carenepal.org

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	4. Support for COVID-19 response: PPE and sanitary material support to birthing centers and hub hospitals as well as roll out of the RMNCH (reproductive maternal neonatal and child health) interim guideline.			<p>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</p>

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	<ul style="list-style-type: none"> ○ Provided hand washing station to ART sites and city clinics ○ Provided PPE, masks, sanitizer, infrared thermometer ○ Provided hygiene kits to key populations and people living with HIV ○ Emergency procurement and supply of antiretroviral (ARV) drugs ○ Home delivery of ARV drugs 	<p>Technical support to National Center for AIDS and STD Control (NCASC) and National Public Health Laboratory (NPHL)</p> <p>Support to national networks of key populations and people living with HIV</p> <p>UK aid-funded Fleming Fund Country Grant for Nepal</p> <p>Support to Antimicrobial Resistance Multisectoral Steering Committee (AMR CSC), National Technical Working Committee-AMR (NTWC) and Technical Working Groups (TWGs)</p> <p>Develop/Update AMR National Action Plan/Protocols/Guidelines/Standard Operating Procedures</p> <p>Capacity building: hands-on skill-based trainings and onsite coaching/mentoring for lab professionals from AMR sentinel</p>	<p>National level</p> <p>12 laboratories/surveillance sites (8 human health and 4 animal health sectors, 7 districts)</p>	<p>Total allocated budget: US\$ 1.3M</p> <p>Total Expenditure: US\$ 0.6M</p>

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	laboratories	<p>Linking national reference laboratories with External Quality Assurance in improving the performance</p> <p>Procurement and supply of laboratory equipment and supplies/consumables</p> <p>Renovation of selected laboratories</p> <p>Establishment and functioning of AMR/AMU surveillance in AMR sentinel laboratories (Recording and reporting, Analysis and Dissemination of the results for evidence-based policy and planning)</p> <p>Mapping of antibiotic distribution pathways for use in human and animal health</p> <p>Support to strengthen laboratory biosafety and security (BSS) and waste management at AMR surveillance sites</p> <p>Promote rational use of antimicrobials through support on organizing interaction programs among lab-clinical/lab-vet professionals, national AMR data dissemination (sharing current AMR trends), panel discussion among on health experts and among policy makers.</p>		

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
Helen Keller International, Nepal	1. Nutrition, Maternal and neonatal health, child health, Family planning, health system strengthens and good governance. 2. MNCH, PHC/ORC strengthening, WASH, HMG mobilization, Enhanced Homestead Food Production, Health System Strengthen & Governance, MSNP, Family Planning 3. Government collaboration on BMS Act amendment and monitoring 4. Nutrition research - PoSHAN survey and AflaCohort	District number: 42 District number: 6 Center Level	Total allocated budget of all program's activities: US \$13,805,132 Total expenses of all program's activities: US \$10,882,652	Office Address: Helen Keller International P.O. Box: 3752, Green Block, Ward No: 10, Chakupat, Lalitpur Telephone: 977 1 5260247, 5260837 Fax: 977 1 5260459 Email: ddavis@hki.org Skype: dale.davis21 Web: www.hki.org
Handicap International	1. Support MoHP (EDCD/LCDMS) to integrate rehabilitation service into public health system. 2. Establish new, strengthen existing and support government and non-government rehabilitation units for providing quality and sustainable rehabilitation service. 3. Strengthen capacity and support rehabilitation workers, health workers, community health workers and community in providing quality rehabilitation and disability related care	District number: 21	Total allocated budget of all programs activities:USD 410,542	Office address: SallaghariMarg, Kathmandu, PO Box: 10179- Nepal Tel: +977 1 4378482 Total expenses of all programs activities:USD 255,522 Fax: + 977 1 4376983 Email: info@nepal.hi.org Web:....www.hi.org

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
JICA	<p>1. Reconstruction of hospital buildings (Bir and Paropakar Maternity Women's Hospital) and Improvement of medical and diagnostic service through the upgrade/enhancement of medical equipment in tertiary hospitals (federal level).</p> <p>2. Improvement of MCH at grassroots level through supporting NGO's activities at MatrishishuMiteri Hospital</p>	Bagmati Province (Kathmandu valley) and Gandaki Province (Kaski District)	Off budget support (Grant Aid)	JICA Nepal Office np_oso_repp@jica.go.jp
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.	Different districts.	Allocated Budget: MOHP/DoHS	Office address: 304 Surya Bikram Gyawali Marg,Baneswor,Kathmandu Tel: 4115636 Fax: 4115515 E-mail: kumudkafe@gmail.com Web:www.inrud-nepal.org.np
World Vision International Nepal	<p>1) Maternal, Child Health and Nutrition based on MIYCN (Maternal, infant and young child nutrition)</p> <p>2)PD (Positive deviance) Hearth</p> <p>3)Construction of PHCORC</p> <p>4) COVID response</p>	District number: 5 (Doti, Achham, Kailali, Sindhuli, Udayapur)	Total allocated budget of all programs activities: US \$1,032,203	Office address: KC Tower, Kusunti, Lalitpur-13, P.O. Box 21969, Kathmandu, Nepal. Tel: +977-1-5548877 Fax: +977-1-5013570 Total expenses of all programs activities: US \$ 1,009,208
United Mission to	1) Community Health: Integrated components on MCH, mental health, Nutrition, WASH,	District number:1	Total allocated budget of all	PO Box: 126 www.wvi.org/nepal Thapathali, Kathmandu

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
Nepal (UMN)	FP,ASRH, and health system strengthening 2) Maternal and child Health, ASRH and HIV 3) Mental health 4) COVID response	District number: 2 District number: 5 District number:4	US \$ 434,155 Total expenses of all programs activities: US \$455,968	programs activities: Tel: 4228118, 4268900 Fax: 4225559 Email: communications@umn.org.np Web: umn.org.np
One Heart Worldwide	Maternal and Neonatal Health	District number: 16	Total allocated budget of all programs activities: US \$1,172,070 Total expenses of all programs activities: US \$913,10	Office address: P.O.Box No: 3764 Latipur -4, Bagdol Tel: 01-5188515; 5188516 Email: survya@oneheartworldwide.org Web: www.oneheartworldwide.org
Netherlands Leprosy Relief Nepal (NLR Nepal)	Leprosy control program activities. Disability Prevention through Inspire 2 Care program activities. Disability inclusive development program activities.	District number: 20 (Province 1 & Sudurpaschim Province) District number: 6 (Province 1 & Sudurpaschim Province)	Total allocated budget of all programs activities: US \$405158.98 Total expenses of all programs activities: US \$405158.98	Office address: Sankhamul, New Baneshwor, Kathmandu Tel: 01-47842296 Email: info@nlrnepal.org.np Web: www.nlrnepal.org.np

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
		District number: 6 (Province 1 & Sudurpaschim Province)	US \$379313.65	
Plan International Nepal	1) Promoting Nurturing Care through Gender Responsive Positive Parenting Education 2) COVID-19 Response (support health equipment's and materials including WASH Facility improvement in quarantine and public places)	District number: 05 District number: 07	Total allocated budget of all programs activities: US \$518480.94	Office address: Lalitpur Metropolitan City, Maitri Marga, Bakhundole Tel: + 977-1-5535580, 5535560 Total expenses of all programs activities: US \$ 513426.46
Population Services International Nepal	Women's Health Project (WHP) Improve Knowledge and access to Long Acting Reversible Contraception (LARC) and Safe abortion Services through private and public sector: Training on Implant, IUCD and MA to Providers onsite quality assurance, distribution of FP commodities,medical equipment, recording and reporting using HMIS, communication and counselling	Province: 1, 2, 3, 4, 5 & 7 District number: 28	Total allocated budget of all programs activities: US \$ 3,447,738	Office address: Pulchowk, Krishnagali, Lalitpur, Nepal Tel: 5553190. 5550620 Total expenses of all programs activities: US \$2,341,110

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
	<p>through community / level mobilizer and mass media</p> <p>Adolescent Youth Project (AYP)</p> <p>Increase knowledge and use of family planning products and services among adolescents and youth (15-24) from private sector adolescent youth from service sites</p> <p>Health and Hygiene Activity (HHA)</p> <p>Support infection prevention at public facilities through provider behavior change related activities and counselling for personal WASH related hygiene behavior change among public facility clients.</p>	<p>Province: 5, 7 District number: 7</p> <p>Province: 6 District number: 5</p> <p>District Number: 33 (7 districts overlapping in WHP and AYP)</p>	<p>Total allocated budget of all programs activities:</p> <p>US \$403,175</p> <p>Total expenses of all programs activities:</p> <p>US \$377,740</p>	<p>Office address: Sanepa, Lalitpur</p> <p>Tel: +977-1-5013180</p> <p>Email: nepal@fairmed.ch</p> <p>Web: www.fairmed.org.np</p>
FAIRMED Foundation Nepal	<p>1) Neglected Tropical Disease</p> <p>2) Maternal and Child Health</p> <p>3) Disability Inclusive Development</p> <p>4) Health System Strengthening</p>	<p>District number: 5 (Districts: Kapilbastu, Nawalparasi West, Rupandehi, Baglung, Sindhupalchowk)</p>		

Organization	Major program focus	Geographical coverage	Health sector budget for FY 2019/2020	Contact details
Save the Children	Core program	9 Districts	Budget for All Program including Covid Response	Sangita Khatri Health Advisor Sangita.khatri@savethechildren.org
	• Newborn Health			
	• Child Health			
	• Adolescent Health			
	• Reproductive Health and Family Planning			
	• Maternal Health			
	• Health in Emergency			
	• WASH			
	• System Strengthening			
	• Integrated			
	Management of Acute Malnutrition (IMAM)			
	• Infant Young Children Feeding (IYCF)			
	• Nutrition in Emergency			
	• System Strengthening			
	Global Fund Program			
	• HIV			
	• TB			
	• Malaria			

11.4 Non-Governmental Organizations

Organization	Major program focus	Geographical coverage	Budget for health sector for FY 2019/2020	Contact details
Nepali Technical Assistance Group (NTAG)	1) Onsite coaching events on Maternal Infant and Young Child Nutrition 2) Promotion and advocacy of National Vitamin A Program 3) Development of IEC/BCC materials for management of SAM 4) Nutrition education training for rural women farmers 5) Study on Addressing Malnutrition and Investing in Early Years in Nepal in a Federalized Context	<ul style="list-style-type: none"> • 42 districts (Suaahara-II) • 77 districts (National Vitamin A Program) • 3 municipalities of Province # 2 and 3 municipalities of Karnali Province (A Study on Addressing Malnutrition and Investing in Early Years in Nepal in a Federalized Context) • National level 	Total allocated budget of all programs activities: NPR. 35,546,911.00 US \$ 302,707.24 Total expenses of all programs activities: NPR. 19,048,021 US \$ 162,207.45	Office address: Kathmandu Metropolitan City, House #: 193, Ukti Marga-11, Maitighar Height, Kathmandu, Nepal Tel: 977-1-4224884/ 4223477/4221133 Email: info@ntag.org.np Web: www.ntag.org.np

Organization	Major program focus	Geographical coverage for FY 2019/2020	Budget for health sector for FY 2019/2020	Contact details
Nick Simons Foundation International (NSFI)	1) Hospital Support Program - Rural Staff Support Program 2) Hospital Support Program - Rural Staff Support Partnership Program 3) Hospital Support Program - Hospital Strengthening Management Program 4) Training (AAC, DBEE, MLP, SBA, ASBA, OTTM, PEC)	District number: 18 District number: 24 District number: 77 District number: 77	Total allocated budget of all program activities: US \$2,197,420.00 Total expenses of all program activities: US \$3,209,578.00 (The expenses are higher due to the COVID expenses)	Office address: Box 8975, EPC 1813 Sanepa 2, Lalitpur Tel: 5520322, 5550318 Fax: 977-1-5554250 Email: nrshrestha@nsi.edu.np Web: nsi.edu.np
Marie Stopes International/Sunaul o Parivar Nepal	1) Sexual and Reproductive health service delivery through Static Clinics 2) Sexual and Reproductive health service delivery through Outreach 3) Sexual and Reproductive health service delivery through mobile nurses (MS Ladies)	District number: 32 District number: 37 District number: 17	Total allocated budget of all program activities: US \$4.33 million Total expenses of all program activities: US \$4.33 million	Office address: Thirbam Sadak, Baluwatar, Kathmandu 44600, Nepal Tel:+977-01-4419 371/ 01-4439 681 Fax: 01-4420416 Email:msi@mariestopess.org.np Web:www.mariestopess.org.np
Nepal CRS Company	1. Sales and distribution of FP, MCH and STI commodities 2. PPM-TB Care and Control Project	District number: 77	Total allocated budget of all program activities: 379,011,035 (including commodity procurement)	Office address: Mahadevtar, Tokha Road, Kathmandu

Organization	Major program focus	Geographical coverage	Budget for health sector for FY 2019/2020	Contact details
		District number: 6	budget)	Tel: 01-4962097 Email: info@crs.org.np md@crs.org.np Website: www.crs.org.np
Family Planning Association of Nepal (FPAN)	<p>1) Integrated SRH services including sexuality counseling, contraceptives, obstetrics, gynecological, safe abortion, STIs, HIV, safe abortion and sexual/gender-based violence services.</p> <p>2) Comprehensive Sexuality Education/Gender Equality and Empowerment of Youth and Women.</p> <p>3) Comprehensive abortion Care (Safe abortion Service).</p> <p>4) Provide Minimum Initial Service Package (MISP) in disaster effected area.</p>	District Number 33	Total allocated budget of program activities US \$ 2,967,190 288,155,901 (including commodity costs)	Office Address: Family Planning Association of Nepal Central Office, Pulchowk, Lalitpur P. O. Box 486, Kathmandu, Nepal Total expenses of program activities on 2019 US \$ 3,152,492.29
Nepal Red Cross Society	<p>1) Pre Hospital Servie (Ambulance /FA Services)</p> <p>2) Institution Based Services (Blood Bank service/Eye Hospital)</p> <p>3) Community Health service (Reproductive Maternal Neonatal and Child Health, Communicable and Non Communicable Diseases awareness activities and system strengthening)</p>	District number: 77	Total allocated budget of all programs activities: US \$ 6,011,692.00	Office address: Nepal Red Cross Society Headquarter, Kalimati, Soltee Mode. Tel: +977-1- 4272761 Total expenses of all programs activities: Fax: +977-1-4271915, 4273285

Organization	Major program focus	Geographical coverage	Budget for health sector for FY 2019/2020	Contact details
	4) Emergency Health Response (Including COVID-19 response)	District Number: 77	US \$4,208,104	Email: nrcs@nrcs.org , info@nrcs.org Web: www.nrcs.org
The Leprosy Mission Nepal	1)Zero Leprosy Transmission – Outreach Leprosy Control programmes 2)Zero Leprosy Disability – Hospital 3)Zero Discrimination: Awareness campaigns, advocacy 4)Leprosy and other NTD's Research and Training government health workers and community volunteers	District number: 11. District number: all over the country District number: all over the country District number: 20	Total allocated budget of all programs activities: US \$ 2.7 million Total expenses of all programs activities: US \$ 2.5 million	Office address: Talchikhel, Ward No. 14, Satdobato-Tikabhairab Rd, Patan 44700 Tel: +977 015151371 Email: shovakhark@tlmnepal.org Web: www.tlmnepal.org
PHASE Nepal	1) Basic Essential Primary Health care. 2) Maternal and Child Health 3) Community awareness program 4) Traditional healers Training	Sindhupalchowk, Kathmandu, Gorkha, Humla, Bajura, Nuwakot and Mugu districts	Total allocated budget for all programs activities US\$518453.29 Total Expenses of all programs activities: US \$513472.39	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 2019/2020	Contact details
Medic Mobile	<p>1) Advance good health and human flourishing for and with the hardest-to-reach communities. Build and apply technology that helps health workers deliver equitable care.</p> <p>2) Design, configure, and implement open-source mHealth tools for community-based maternal and child health care coordination. Use cases that are currently deployed in Nepal in partnership with municipalities and NGO partners include:</p> <ul style="list-style-type: none"> a) Antenatal care b) Postnatal care c) MPDSR (in those districts where MPDSR has been implemented) 	<p>District number: 19</p>	<p>Total allocated budget of all programs activities: US \$706574</p> <p>Total expenses of all programs activities: US \$220950</p>	<p>Office address: Medic Mobile Nepal Inc. Pvt Ltd. Chakupat, Lalitpur</p> <p>Tel: +977 9802024110</p> <p>Email: nitin@medicmobile.org</p> <p>www.medicmobile.org</p>

Source: Respective EDPs, INGOs and NGOs

ANNEXES

ANNEX 1 Major activities carried out in FY 2076/77**Child Health and Immunization activities**

SN	Activities	Unit	Target	Achievement	%
1	Procurement: Vaccine Carrier 3.0 – 3.5 ltr, 0.6 ltr Ice Pack Model Capacity – 3000 Nos	Time	1	1	100
2	Procurement: Vaccine Carrier 1.5 – 2.5 ltr, 0.4 ltr Ice Pack Model Capacity – 2000Nos	Time	1	1	100
3	Procurement with tax clearance of WHO PQ Gross volume75 - 85 ltr. And Net volume minimum 58 - 65 Ltr. Holdover time 43 Degree Celsius temp. for more than 55 hours capacity ILR Refrigerator – 50 Nos	Time	1	1	100
4	Ice pack 0.6 ltr – 20000 Nos	Time	1	1	100
5	Ice pack 0.4 ltr – 10000 Nos	Time	1	1	100
6	Vaccine Procurement: BCG with diluent-200000, BCG diluent syringe (2 ml) – 225000, AD Syringe (0.05 ml) – 1100000, bOPV with dropper-250000, MR with diluent – 200000, MR & JE diluent (5ml) – 550000, TD-180000	Time	1	1	100
6	GAVI Commodities vaccine: IPV – 277000, Penta-220000, PCV-1864000, AD syringe-3165000, diluent syringe-48000, Safety box-35000, MR-19000, MR with diluent for campaign-324410, AD syringe for MR campaign-3280500, diluent syringe for MR campaign – 364200, Safety box for MR campaign – 40100, Rota – 1279000	Time	1	1	100
7	UNICEF commodities: bOPV along with MR campaign-100,223	Time	1	1	100
8	GAVI co-financing for Penta – 26400, PCV-51900, MR with Diluent-6630 and Rota	Time	1	1	100
9	GAVI Commodities: Cold chain equipment along with GoN for custom clearance	Time	1	1	100
10	Cold chain equipment procurement co-financing	Time	1	1	100
11	3 days workshop for revision and update of documents related to safe injection, multidose vial vaccine, new vaccine implementation guideline, Immunization fund operation guideline, DQSA, vaccine related waste disposal	Batch	1	1	100
12	Provincial level orientation on AEFI and Management	Batch	13	13	100
13	UNICEF Commodities_MR Campaign: MR campaign guideline finalization workshop and guideline printing, IEC materials production and distribution, Immunization card printing and distribution	Time	1	1	100
14	MR Campaign launching at province level	Event	1	1	100
15	High level official and media orientation at central level and province level on MR Campaign	Event	8	8	100
16	Monitoring and supervision for MR campaign	Regular			
17	WHO Commodities_Indelible ink marker procurement and distribution for MR campaign Immunization center	Time	1	1	100
18	UNICEF direct payment for mass media mobilization on MR campaign and full immunization	Time	1	1	100
19	Provincial ToT on immunization program and Microplanning – 5 days	Batch	7	7	100
20	4 days basic training on immunization for vaccinators	Batch	8	8	100
21	NIP and AEFI one day training adjoining with provincial annual review	Batch	7	7	100
22	One day workshop with media person on national immunization program and AEFI	Event	1	1	100
23	Local level resource mobilization planning meeting and workshop for full immunization sustainability in low performing local level	Batch	7	7	100

ANNEX 1 Major activities carried out in FY 2076/77

24	UNICEF commodities: Full Immunization card and full immunization guideline production and distribution according to Immunization act	Time	1	1	100
25	Monitoring for full immunization process, verification and participation	Regular			
26	AEFI Management and treatment Expenses	As per need			
27	Materials production and distribution used for routine immunization program	Time	1	1	100
28	For sustain and management of fund in the immunization service deposit the amount in immunization treasury	Time	1	1	100
29	Joint monitoring of immunization program				
30	DQSA for low coverage and high dropout district	Regular			
31	Rota vaccine introduction – IEC materials production & distribution, Briefing High level officers, MoH and national Immun. Committee, Stake holders and partners, Launching, monitoring & Supervision	Time	1	1	100

IMNCI activities

SN	Activities	Unit	Target	Achievement	%
1	Comprehensive Newborn Care (Level II) Training for Medical Officers	No. of batches	9	2	22%
2	FBIMNCI Training for Medical Officers	No. of batches	3	3	100
3	FBIMNCI Training for Nursing staffs and Paramedics	No. of batches	6	6	100
4	KMC Guideline development workshop	No. of batches	1	1	100
5	CBIMNCI related guideline revision	No. of times	2	1	50
6	FBIMNCI/ Newborn Care Mentor/ Coach training	No. of times	2	2	100
7	Early Childhood Development Guideline Development Workshop	No. of times	1	1	100
8	CBIMNCI orientation and planning to provinces	No of times	7	0	0
9	Free Newborn Care Program	Times	1	1	100
10	Level II training for Nursing Staffs	Times	1	0	0
11	CBIMNCI/ Newborn research	Times	1	0	0
12	Procurement of CBIMNCI	Times	1	1	100
13	Procurement of SNCU/ NICU equipment	Times	1	0	0
14	Monitoring and supervision	Times	1	1	100
15	IMNCI RDQA ToT	Times	1	1	100
16	ToT on POCQI (Province 2)	Batch	1	1	100

Nutrition activities

S. N	Activities	Unit	Targets	Achieved	In %
1	National Nutrition Program Review (Two Days) – with participation of Nutrition Representative of all provinces	No of times	3	1	33
2	Two-day capacity enhancement program of staff employed in the nutrition rehabilitation house	No of times	1	1	100
3	Review and plan formulation of Multi-Sector Nutrition and Food security Directive Committee and stake	No of times	1	0	0

	holders All provinces				
4	MToT on Comprehensive Nutrition Specific Intervention package for Health Cordinator and Focal person of Social Development Ministry Basic Health Nutrition Package (18 District-Taplejung, Bhojpur, Sangja, Magdile, Palpa, Rupandehi, Gulmi, Arghakhanchi, Banke, Puthanjan, Dang, Salan, Kailali, etc.)	No of times	9	0	0
5	MToT on Comprehensive Nutrition Specific Intervention package for Health Cordinator of 30 MSNP districts	No of times	9	5	56
6	capacity building with concerned stakeholders on the sale and distribution of breast milk products.	No of times	1	0	0
7	Celebrate National Day / Month on nutrition related Programs (Breastfeeding Week, School Health and Nutrition Week, Iodine Month etc.)	No of times	4	4	100
8	Preparation, refinement and printing of training directory for nutrition programs, preparation, modification and updating of micronutrient guidelines based on nutrition strategies.	No of times	1	1	100
9	Monitoring and Supervision of Nutrition Programs	No of times	1	1	100
10	Orientation, capacity building and Planning of Disaster Risk Reduction	No of times	1	1	100
11	Operation of Nutrition Rehabilitation Home for malnutrition management (through hospital: Bheri, Koshi, Narayani, Bharatpur, Sagarmatha, Pokhara Health Sciences Foundation, Rapti Health Sciences Academy, Dadeldhura Hospital and Kanti Children Hospital).	No of times	1	1	100
12	Purchase of Laptop and LCD for Nutriton Section	No of times	1	1	100
13	Purchase and distribution of nutritional materials (Vit A, RUTF / RUSF, f75, F100, Resomal, Albendazole, MNP, Rapid Test Kit, Height / weight Machine, Shakir's Tape (MUAC), dummy baby and mother for breast feeding)	No of times	1	1	100
14	Orientation to social development Ministers team about nutrition program and intervention to all provinces	No of times	1	0	0
15	Mother Baby Friendly Hospital (MBFHI)- 5 hospital	No of times	1	1	100
16	Program for the Health and Education Parliamentary Committee for breastfeeding / nutrition promotion	No of times	1	1	100
17	Production and promotion of audio-visual material to enhance nutritional capacity of health workers	No of times	1	0	0

Family Planning and RH activities

SN	Activities	Unit	Target	Achiev	%
1	Family Planning (FP) Current users	Couple	3098000	2444000	79
2	VSC expected new acceptors	Couple	34900	21223	61
3	IUCD expected new acceptors	Couple	31000	14500	47
4	Implant expected new acceptors	Couple	100000	87600	88
5	FP program strengthening through DMT, WHO MEC wheel	Time	14	12	86
6	FP Microplanning and response actions implementation in low CPR districts	Time	10	7	70
7	Support to satellite clinic for LARC methoids	Time	753	450	60

ANNEX 1 Major activities carried out in FY 2076/77

8	Procurement of Condom	Time	1	1	100
9	Procurement of Depoprovera	Time	1	1	100
10	Procurement of Syringe for Depoprovera	Time	1	1	100
11	Procurement of Pills	Time	1	1	100
12	Procurement of Implant	Time	1	1	100
13	Procurement of Thermocoagulator machine	Time	1	1	100

Maternal & Newborn Health activities

SN	Activities	Unit	Target	Achievement	%
1	CEONC site strengthening and monitoring program	Time	3	3	100
2	PNC Microplanning guideline development and orientation in seven province	Time	2	2	100
3	Hospital and Community based MPDSR program strengthening and expansion	Time	7	7	100
4	Hospital quality improvement program	Time	7	7	100
5	Postpartum Haemorrhage prevention program orientation	Time	5	5	100

Epidemiology and disease control activities

S N	Activity	Unit	Annual Target	Achieve	%
Epidemic disease control					
1	Arrangement of materials required for installation and upgrading of health desks at international airports (equipment, tools and machinery related to office operations).	No. of times	1	1	100
	Contract based Manpower for Epidemic (Lab Sample receive&dispatch, Risk Communication, Media Monitoring, and Store Equipment Management)	No. of people	3	3	100
3	Orientation on influenza etc. management to educational institutions, doctors and health worker	No. of times	2	2	100
4	Epidemic disaster and response preparation and testing in hospitals	Institutions	3	3	100
5	Discussions and meetings on various diseases with supportive bodies, governmental, non-governmental bodies, subject experts, and managers	No. of times	3	3	100
6	Training program for hospitals on Clinician's role in Preparedness & Response Readiness in Infectious Hazards and pandemics	No. of times	1	1	100
7	Training to hospitals and health workers regarding Epidemiological Preparedness & Response)OBI, EPPR, FETP etc)	No. of times	2	2	100
8	Outbreak Deployment Kit management	No. of times	1	1	100
Malaria control activities					
1	Conduct annual national review meetings	No. of times	1	1	100
2	Checking the quality of malaria slides and monitoring the quality of the slides to ensure the quality of the sample slides.	No. of times	3	3	100
3	Celebrate world malaria day	No. of times	1	1	100

4	Workshop on Internal QA / QC Improvement of Malaria Microscopy (Cascade System)	No. of times	1	1	100
5	Training & refresher training for medical doctors on treatment guidelines including management of severe malaria - engaging private and professional organizations in the public sector, malaria prevention training & refresher training, purchasing various equipment required by the program management unit, to strengthen the related Technical Working Committee (TWG)	No. of times	3	3	100
6	RDT for malaria diagnosis. Purchase kit (including G6PD)	No. of times	1	1	100
7	Purchase of Drugs, RDT kit for Diagnosis and Control of Malaria and other materials	No. of times	1	1	100
8	Procurement and transportation of malarial drugs, microscopy, sparing pumps & parts to reduce and control malaria	No. of times	1	1	100
Kala azar control activities					
1	National review meeting on Kalazar	No. of times	1	1	100
2	Orientation to medical college, private hospitals, teaching hospitals on treatment procedure and on active case detection orientation to district with Kalazar case.	No. of times	1	1	100
3	Transport cost subsidy to the hospital for treatment of kala-azar patients in central hospitals (Rs. 1000 per case), various tests for kala-azar patients (up to Rs. 5000 per case)	No. of times	3	1	100
4	Procurement and supply of medicines and medical goods for Kala-azar contol.jgtrfgrdff (rK-39, Cap. Miltefosin, Inj. Liposomal Amphotericin B and Inj. Paramomycine)	No. of times	1	1	100
Natural disaster management					
1	Preparation, and printing of RRT Guideline Review for Infectious Diseases and Prevention of Infectious Diseases and Outbreak Response in accordance with the federal structure.	No. of times	1	1	100
2	Orientation to the provinces regarding revised RRT Guideline, Infectious Disease Prevention and Outbreak Response Guidelines.	No. of times	1	1	100
3	To conduct field work and mobilize experts for epidemic and disaster management	No. of times	3	3	100
4	RRT mobilization, multi-stakeholder interaction program for disaster management in case of epidemic and disaster	No. of times	2	2	100
5	Technical Assistance by WHO for Epidemic Disease Investigation, Control and Response	No. of times	3	3	100
6	To orient the RRT at the district level to promote reproductive health in the event of epidemics, emergencies, and natural disasters and to review the RRT reporting focal persons of the district and state health directorates on various activities related to disaster management at the state level.	No. of times	1	1	100
7	Epidemic Specimen Referral and Transport Capacity Development and mobilization to different Hospitals	No. of times	3	3	100
8	Monitoring, testing, reviewing, and upgrading PoEs by scheduling all potential public health events.	No. of times	2	2	100
9	Review epidemic / outbreak prevention planning and conduct alert and response activities to RRT	No. of times	1	1	100
10	Contract based Light vehicle driver for emergency conditions	No. of people	4	4	100

ANNEX 1 Major activities carried out in FY 2076/77

11	Create and operate toll free numbers, hotlines, apps for epidemic information collection and management	No. of times	3	3	100
12	Interact with the concerned agencies regarding disaster preparedness of chemical radiation, disaster management arising from radio nuclear and biochemicals and capacity building of working hospitals.	of .No times	1	1	100
13	Develop, implement, review, review and upgrade Media Communication, Risk Communication related programs and All-hazard emergency risk communication platform with media persons and stakeholders to streamline information flow in epidemic preparedness, response, and management work.	of .No times	3	3	100
14	Accumulated program to make necessary arrangements and programs according to the situation for the upcoming epidemic	Continuous	3	2	66/67
15	To procure medicines and equipment / tools required for epidemic / disaster management and send them to the concerned authorities	of .No times	1	1	100
Lymphatic Filariasis elimination activities					
1	National Filariasis Disease Prevention Program, Free Hydrocele Surgery Program, Planning, and review meeting	No of times	1	1	100
2	Printing and transportation of brochures, diagnostic cards, pamphlets, registers, and firm formats required for conducting common campaigns related to National filariasis Disease Prevention.	of .No times	1	1	100
3	Conducting Training of trainers for lymphatic filariasis Prevention Program, Morbidity Mapping Program	of .No times	1	1	100
4	Interactional program with province parliamentarians (Biratnagar, Pokhara, Nepalgunj and Dhangadi) to reduce cases of national lymphatic filariasis	of .No times	1	1	100
5	Technical assistance from the Center for National Filariasis Disease Prevention Program, Medicine Consumption Campaign, Morbidity Mapping Program and Free Hydrocele Surgery Program	of .No times	3	3	100
6	Preparation and printing of annual progress report of National filariasis Prevention Program	of .No times	1	1	100
7	Purchase and transportation of DEC (150,000 pills) and ALB (6,00,000 pills) required for the implementation of National Filariasis Disease Prevention Program.	of .No times	1	1	100
Zoonotic disease control activities					
1	Review and plan with snakebite treatment centers, medical stores and organizations using rabies vaccine	of .No times	1	1	100
2	To conduct manpower mobilization training etc. in the places where there is an epidemic of zoonotic diseases	of .No times	3	3	100
3	One health Multinational Workshop and interaction on Zoonotic Diseases, Interaction One health	of .No times	1	1	100
4	Programs for mapping and prioritization of zoonotic diseases	of .No times	1	1	100
5	Orientation to doctors and health workers against venomous snakes	of .No times	1	1	100
6	Celebrate public awareness day on rabies, snake bites etc.	of .No times	3	3	100
7	Formation, operation, preparation of guidelines, strengthening and meeting of technical working group on zoonotic diseases	of .No times	3	2	66/67

8	Orientation to Physicians and Health Workers on Malaria, Kala-azar Scrub Typhus, and other Infectious Diseases	of .No times	1	1	100
9	Preparation, Interaction, Orientation and Capacity Building Programs for Federal and Provincial Health Workers and Hospitals on Zoonotic Diseases (Brucellosis, Cysticercosis, Animal Bites, Toxoplasmosis, Scrub Typhoid, Leptospirosis, etc.)	of .No times	3	3	100
10	Buy kits for diagnosing various diseases like dengue, scrub typhus, chikungunya	of .No times	1	1	100
11	Arrangement of cellculture A.R.V. including purchase and transportation for those who are at risk of rabies	of .No times	1	1	100
12	Purchase and transportation of ASV for people suffering from venomous snake bites.	of .No times	1	1	100
13	Procurement and distribution of LLIN nets for pregnant women and other groups in malaria and other pest affected districts	of .No times	1	1	100
Dengue control activities					
1	National review meeting on Dengue	of .No times	1	1	100
2	Orientation to medical college, private hospitals, teaching hospitals on management of dengue cases	of .No times	1	1	100
3	Management and treatment of the complications of Dengue, Scrub typhus, chikungunya fever	of .No times	3	3	100
Disease Surveillance and EWARS activities					
1	Technical support to operate EWARS on DHIS2	of .No times	5	5	100
2	Orientation for physicians, health workers, Medical Recorder and Medical Recorder Officers of new and non-operating sentinel site	No. of units	4	4	100
3	Data Verification program of infectious disease from various sources	of .No times	3	3	100
4	Training of Medical Recorder and Medical Recorder Officers on reporting of infectious diseases through DHIS 2	of .No times	2	2	100
5	Orientation of newly appointed Medical Recorder and Medical Recorder Officers of sentinel site	of .No times	1	1	100
6	EWARS TWG formation, directory revision discussion and conduction of meeting	of .No times	3	3	100
7	Onsite coaching for EWARS Sentinel site (technical support)	of .No times	3	3	100
8	Study of EWARS' effectiveness and necessary improvements	of .No times	1	1	100
9	Analysis, dissemination, and publication of annual data obtained from EWARS	of .No times	1	1	100
10	National Event Reporting system evaluation & update related program	of .No times	1	1	100
11	Surveillance of radiation, chemical exposure events or poisonings and increase their surveillance capability.	of .No times	1	1	100
12	Integrated Surveillance of Vectors Transmitting Insect Diseases including Malaria, Kala-azar, Dengue, Elephantiasis, JE, Jika	of .No times	3	3	100
Water quality surveillance activities					
1	Study on water quality and safety and make necessary improvements	of .No times	1	1	100

Leprosy activities

S N	Activity	Unit	Target	Achieved	%
1.	Printing and distribution of information materials on skin diseases, leprosy, disability injuries and rehabilitation	of .No times	4	4	100
2.	Multi-drug transportation and management	of .No times	3	3	100
3.	Public awareness program on occasion of World Leprosy Day and Disability Day	of .No times	3	3	100
4.	Publicity and public awareness program on leprosy	of .No times	3	3	100
5.	Meeting with the Director, Technical and Coordinating Committee and stakeholders	of .No times	3	3	100
6.	Operational research (In collaboration with the hospital)	of .No times	3	3	100
7.	Orientation on leprosy in the seminar with dermatologists	of .No times	1	1	100
8.	Printing and bulletin of disability policy, revision of strategy and operational guideline on disability, also printing and distribution of annual report.	of .No times	3	3	100
9.	Leprosy post exposure prophylaxis orientation planning and monitoring in all seven provinces.	of .No times	3	3	100
10.	Leprosy Prevention Campaign	of .No times	3	3	100
11.	Food and shelter grants for leprosy victims in Khokana, Pokhara, Kapan and Budhanilkantha	of .No times	3	3	100

EDCD related others activities

1	Purchase of Microscope, Operating Instruments, Equipment and Machine Tools	No. of units	11	11	100
2	Contract based employment for sanitation, security, sweeper, and garden services.	No. of people	2	2	100
3	Contract based light vehicle drivers for emergency condition	No. of people	4	4	100
4	Create and operate toll free numbers, hotlines, apps for pandemic information collection and management	of .No times	3	3	100
5	Perform various tasks as per IHR-2005 (including directory preparation, printing, JEE, capacity building etc.)	of .No times	2	2	100
6	Capacity Assessment & Dissemination of Health Desk established as per IHR-2005	of .No times	1	1	100
7	Programs related to preparation and implementation of Codex, Infosan and International Health Regulations	of .No times	1	1	100
8	National Event Reporting system evaluation & update related program	of .No times	1	1	100
9	Online coaching from medical and technical managers for various diseases including malaria, kala-azar, dengue, scrub typhus, chikungunya in various hospitals and health institutions	of .No times	3	3	100
10	Establishment of microscopy quality database at central level	of .No times	1	1	100
11	Purchase of vaccine with syringes for diphtheria anti-toxin, rabies immunoglobulin and tetanus gammaglobulin	of .No times	1	1	100
12	Vaccine purchase program for Hajj pilgrims	of .No times	1	1	100

Curative Service Division of all sections program activities:

SN	Activities	Unit	Targets	Achieved	%
1	Telemedicine Service Guideline	Times	1	1	100
2	HP MSS Program Implementation	Times	3	3	100
3	Guideline for Clinical Audit	Times	1	1	100
4	Guideline Reformation of Social Audit	Times	1	1	100
5	Private Hospital Monitoring for Registration, Renewal and Upgrading	Times	95	50	52
6	Monitoring for Basic Health Service and Free Medicine	Times	24	15	62
7	School Health Curriculum Development of Oral Health	Times	1	1	100
8	Work plan for Patient Safety	Times	2	1	50
9	Medicine Procurement for Basic and Emergency Services	Times	3	2	66

Nursing and Social Security Division of all Sections program activities:

S.N.	Activities	Unit	Targets	Achieved	Percentage (%)
1.	Develop Nirdesika for deployment of one nurse in every school for the management of school health program	Times	1	1	100
2.	Develop guideline and standard regarding home based health care services	Times	1	1	100
3.	Develop e-based training package on geriatric care for health workers	Times	1	1	100
4.	Develop clinical protocols on chemotherapy preparation and administration, fistula puncture and hemodialysis, ventilator care	Times	3	3	100
5.	Deploy nine midwives in hospitals and provide safe motherhood and midwifery services (Budget surrendered)	persons	9	0	0
6.	Provision of scholarship to PCL and bachelor midwives to prepare midwife as required by Nepal (Budget surrendered)	Times	30	0	0
7.	Develop ten continue professional development module and piloting of it in two federal hospitals	Times	12	12	100
8.	Development of action plan and implementation of clinical audit program	Times	1	1	100
9.	Revise and update the job description of all level health workers	Groups	10	7	70
10.	Health and nursing care service support program in government secondary schools for school children and adolescents including menstrual hygiene management	Times	30	120	>100
11.	Capacity assessment of nurses working in safe motherhood area and develop standard bridge course	Times	2	1	50
12.	Conduct policy dialogue in Federal and Province level for nursing and midwifery services	Times	4	3	75
13.	Capacity development of nurses working in hospitals running geriatric ward and geriatric homes on geriatric care	Times	1	0	0
14.	Develop infection prevention and control web based training package and develop capacity of nurses on IPC	Times	2	1	50
15.	Celebrate, advocate and interact on Nurses and FCHV day	Times	2	2	100
16.	Revision of Gender based violence clinical protocol	Times	1	1	100
17.	Facilitation, review, orientation and onsite mentorship for hospital and its staff especially providing geriatric and GBV service	Times	8	8	100

S.N.	Activities	Unit	Targets	Achieved	Percentage (%)
18.	Regular supervision and monitoring of hospitals for quality nursing service	Times	40	4	10
19.	Integrated supervision of health institutions that providing SSU, OCMC, Geriatric care and reaching the unreachd program	Times	30	20	67
20.	Reimbursement and payment of fund quarterly to the hospitals that is listed under impoverished citizen treatment scheme (including previous Fiscal Year due)	Times	3	10	>100

National Tuberculosis Control Center program activities:

SN	Activities	Unit	Target	Achievement	Achieved %
1	Procurement of GeneXpert machine	Times	1	1	100
2	Construction of Chest Hospital	percent	40	20	50
3	Procurement of Scooter	Pieces	2	2	100
4	Procurement of Computer	Times	1	1	100
5	Procurement of Double Door Refrigerator	Times	1	1	100
6	Interaction with Prison at various Jail	Times	3	2	67
7	Data Management Training	Times	1	1	100
8	Procurement of N95 Mask and personnel protection equipment	Times	1	1	100
9	Supply of TB Drug to Medical Store and District	Times	21	21	100
10	Broadcasting of TB Related message by National level Television	Times	200	125	63
11	Revision of Guideline and Recording and Reporting form	Times	2	2	100
12	Commemoration of World TB day	Times	1	1	100
13	Conditional grant to Kalimati Chest hospital	Times	3	3	100
14	Procurement of Consumable and Chemical for sputum Microscopy	Times	1	1	100
15	Procurement of Second Line Drug	Times	1	1	100
16	Procurement of Falcon Tube	Times	1	1	100
17	Precurement of HR for National Reference Laboratory	Times	7	7	100
18	Printing of Annual Report, annual Program etc	Times	5	5	100
19	Procurement of Consumable and Chemical for C/DST	Times	1	1	100
20	Procurement of Digital Xray Film	Pieces	12000	12000	100
21	Procurement of First Line Drug TB	Times	1	1	100
22	Clinical Management Training to Medical Officer	Times	5	2	40
23	Procurement of Cartridge for GeneXpert Machine	Pieces	50000	50000	100
24	Transportation of TB Drug to Medical Store	Times	21	21	100
25	Courier service for Culture /DST test	Times	5000	3000	60
26	Supervision to TB Treatment Center	Times	225	100	44
27	TB Trainer's Training	Times	2	2	100

National AIDS and STI Control Center program activities:

SN	Activities	Unit	Targets	Achieved	%
1	Procurement of the ARV drugs	Times	3	3	100
2	Procurement of HIV test kits	Times	1	1	100
3	Procurement of the CD4 reagents	Times	3	3	100
4	DHIS -2 tracker training to ART counsellors	Times	7	1	14
5	AIDS day celebration	Times	1	1	100
6	Preparation and cost estimation of National Hepatitis Strategy	Times	1	1	100
7	ToT on PMTCT	Times	2	2	100
8	Update,preparation and printing of STI,HTC and PMTCT training materials/guideline	Times		2	100
9	ToT on HIV lab	Times	4	2	50
10	ToT on STI	Times	2	2	100
11	Logistic Training	Times	3	2	66
12	Monitoring and Supervision ToT on PMTCT	Times	1	1	100

National Health Training Center program activities:

SN	Activities	Unit	Targets	Achieved	%
1	Development and revision of training learning resources packages (LRP)	times	7	5	71
2	TOT on Anti-Microbial Resistance (AMR) prevention	times	7	0	0
3	MTOT on Climate Change and Health Impact	times	3	0	0
4	Advocacy and interaction program with provincial stakeholders regarding climate change and health impact	times	7	1	14
5	MTOT on Occupational Health and Safety (OHS)	times	2	0	0
6	MTOT on Road Traffic Accident and Safety	times	3	0	0
7	Operation Theater and Technique Management (OTTM)	person	40	24	60
8	TOT Burn Care and Management	times	7	1	14
9	Anesthesia Assistant Course (AAC)	person	10	10	100
10	Induction training for newly appointed health officers	times	5	0	0
11	Palliative care training for doctors and nurses	persons	64	36	56
12	Diploma in Biomedical Equipment Engineering (DBEE)	persons	24	24	100
13	Advanced Skilled Birth Attendants (ASBA)	person	16	10	62
14	NICU management training -Level II	Person	100	33	33
15	TOT on PEN package	times	6	5	83
16	Pediatric Nursing Care Training	Person	70	11	15
17	Mental Health Training-Module 2	times	3	2	66
18	Screening of pre-cancer lesion/VIA/Cold coagulation	person	60	23	38
19	Medico-legal training	person	120	30	25
20	Rural Ultrasound (RUSG) training	person	20	11	55
21	Transaction Accounting and Budget control system training	person	50	18	36
22	Gender based violence training for health service providers	batch	2	1	50
23	TOT on HFOMC (Provincial level)	times	7	4	57
24	Clinical Training Skills (CTS)	person	64	45	70
25	Training sites accreditation, renew and regulation	times	7	5	71
26	QI tools preparation	times	1	1	100
27	Follow up and Enhancement (FEP) on SBA, MLP	times	7	5	71
28	Orientation to Training Management Information System (TIMS)	times	7	7	100

ANNEX 1 Major activities carried out in FY 2076/77

29	Training Accreditation and Regulation Operational Guideline	times	1	1	100
30	Trainer's review meetings	times	7	4	57
31	Annual Report preparation	times	1	0	0
32	Trainer's pool preparation	times	5	4	80

National Public Health Laboratory program activities:

SN	Activities	Unit	Targets	Achieved	%
1.	Procurement of fully automated barcode labeling machine	Piece	1	0	0
2.	Procurement of real time PCR, HLA Machine and Extraction machine and initiation of service for communicable disease	Set	1	1	100
3.	Procurement of ECLIA and ELISA machine for virology and immunology unit	Set	1	1	100
4.	Construction of 2 to 8 degree cold store room	Piece	1	1	100
5.	Construction of molecular lab for no communicable diseases	Time	1	1	100
6.	Distribution and publicity of management, requirement and transportation of cold chain	Time	3	3	100
7.	Preparation and planning on up-gradation of NPHL to National Diagnostic Centre with latest technology	time	1	1	100
8.	Management of quality control in government and private hospitals	time	3	3	100
9.	Participation in international quality control program	Time	3	3	100
10.	Development of NEQAS Software	Time	1	1	100
11.	Research activities of NPHL	Time	3	3	100
12.	Sickle cell surveillance management	Time	3	3	100
13.	Laboratory Accreditation	time	2	2	100
14.	Management of BSL 3 Laboratory operation	Time	3	3	100
15.	Management of NIC, HIV, Microbiology, JE, Measles, Rubella, Hep B & C, Polio operation programs	time	3	3	100
16.	Laboratory service security management	Time	3	3	100
17.	Barcode management for laboratory service reliability and security	number	3	3	100
18.	Providing diagnostic services during epidemic outbreak	time	3	3	100
19.	Monitoring and evaluation of government hospitals, private hospitals and blood transfusion service centre	Time	50	50	100
20.	Participation in international quality control program	Time	3	3	100
21.	Operational expenses for NBBTS to improve blood transfusion services	time	3	3	100
22.	Procurement of essential kits, chemical, equipment& reagents for lab examination & conduction of National Influenza Center	Time	3	3	100
23.	Procurement of essential kits for examination of Sickle cell anemia	Time	3	3	100
24.	Viral load examination of Hep B & C	Time	3	3	100
25.	Construction of building & management of HR for service conduction of PPHL	Time	1	1	100
26.	Procurement of reagents for getting 50 % discount in lab/health examination for disadvantaged & vulnerable group like old aged people, differently abled, Jana Andolan Ghaite & Kidney patient	Time	3	3	100

National Health Education Information and Communication Center program activities:

SN	Activities	Unit	Targets	Achieved	%
1	Broadcasting and Airing of the messages regarding Smoking and Tobacco product control through private television and FM .	Times	1	1	100
2	Airing of health messages and public health radio program through Radio Nepal.	Times	2100	2100	100
3	Publication of health messages, information and press release in national newspapers.	Times	40	40	100
4	Dissemination of health news, information or messages through website, facebook, youtube, twitter, apps etc.	Times	3	1	33.33
5	Communication program on communicable and epidemic disease control and daily newspaper monitoring program.	Times	6	6	100
6	Health awareness and communication program for disable people	Times	3	0	0
7	Ear/Nose/Throat healthrelated health awareness and communication program.	Times	4	1	25
8	Dissemination of information and messages through online media	Times	3	3	100
9	Development and distribution of federal health communication policy, strategy	Times	1	0	0
10	Broadcasting of health related messages, informations through national private televisions	Times	2788	2788	100
11	Health literacy campaign program mobilization	Times	1	.5	50
12	Communication program on smoking and tobacco control and regulation.	Times	24	24	100
13	Communication program on non-communicable disease prevention and control.	Times	17	17	100
14	Health promoting school campaign framework or strategy development and campaign conduction	Times	8	1	12.5
15	Social media, SMS, Apps and IVR service from information technology center	Times	3	0	0
16	Advocacy and strategic communication on occupational, environmental health and air pollution, climate change	Times	12	6	50
17	Samriddha Nepal Shukhi Nepali Promotion Program	Times	5	2	40
18	Broadcasting of health messages, public health dialogue (Janaswasthya Bahas) and Jivan Chakra through Nepal Television	Times	2827	2827	100
19	AMR awareness and orientation health promotion program	Times	7	6	85.71
20	Communication program on brain death, kidney and organ donation	Times	3	1	33.33
21	Communication program on fuel emission and air pollution	Times	3	1	33.33
22	Development of print and visual materials on obstetric fistula	Times	2	2	100
23	Adolescent reproductive health (8 set booklet) printing.	Piece	5000	5000	100
24	Health message exhibition on assembly, event, sports, health camp musical and cultural program	Times	3	0	0
25	Organization of assembly, event, sports, health camp musical and cultural program	Times	1	1	100

ANNEX 1 Major activities carried out in FY 2076/77

26	Publication and dissemination of public health related press release, information and messages	Times	12	12	100
27	Coordination program among federal, provincial and local level for the development and expansion of health promotion activities.	Times	3	1	33
	Awareness and communication program on mental health	Times	24	0	0
28	Awareness and communication program on IMNCI, Immunization, Diarrheal diseases, Pneumonia etc.	Times	12	12	100
29	Awareness and communication program on birth defect.	Times	3	3	100
30	Awareness and communication program on family planning, safe motherhood and neonatal health.	Times	3	3	100
31	Awareness and communication program on family planning, safe motherhood, neonatal and adolescent health.	Times	12	12	100
32	Family planning, PPIUCD promotion and social behavioral change through inter personal communication for hard to reach group.	Times	3	3	100
33	Airing and broadcasting of messages relating to risk factors of NCDs through Radio Nepal and Nepal Television.	Times	1	1	100
34	Monitoring and facilitation at provincial and local level.	Times	100	62	62

Management Division related all Sections program activities:

S N	Activity	Unit	Target	Achieved	%
1	Conduction of coordination meetings of committees, divisions and sections as specified by various directives	Times	10	10	100
2	Monthly, bi-monthly, quarterly review, planning and infrastructure related development programs	Times	6	6	100
3	Printing and distribution of HIMS records, reports, monthly monitoring booklets	Times	1	1	100
4	Training for Data Managers on Health Information Management and Analysis (GIS / STATA) (SO/ SA and Medical Recorder Assistant)	Times	2	2	100
5	Training on data management, analysis and use (PHAT)	Times	3	3	100
6	Assistance for and monitoring of state and local level reviews	Times	3	3	100
7	Preparation and printing of annual report	Times	2	2	100
8	Development of Demography Dynamic model for projection of target population and health education material according to local level	Times	2	2	100
9	Payment of internet service connected to HMIS branch, server management, network optimization, procurement of firewall	Times	1	1	100
10	Procurement of Statistical Packages for Health Information Management, Word Processing Software and Antivirus	Times	1	0	0
11	Transfer and upgrade of old database to DHIS 2as per the report from Health Facility	Times	2	0	0
12	Development (customization) and use of digital recording information systems at health facilities	Times	3	3	100
13	HMIS and DHIS training to staff of Central Hospital, Teaching Hospital and other hospitals (including private ones)	Times	3	3	100
14	Onsite coaching and mentoring to improve health data quality in hospitals	Times	3	3	100

ANNEX 1 Major activities carried out in FY 2076/77

15	Update HMIS records and report forms, guidelines and health indicators	Times	2	2	100
16	Training for doctors including medical recorders from Central Hospital, Teaching Hospital and other hospitals (private) Mortality Statistics	Times	3	3	100
17	Maintenance and improvement of physical structures within the Department of health premises	Times	2	2	100
18	Construction of damaged boundary wall behind the National Health Training Center	Times	1	1	100
19	Procurement of Laptop-5 and Projector-1 for HIMS section	Set	6	6	100
20	Furniture and fixtures	Times	3	3	100
21	Biomedical tools and equipment maintenance including payments of previous remaining expenses	Times	1	1	100
22	From Human Resource Management Contract Services: Store Assistant 1, Civil and Mechanical Engineer 2, Data Analyst 1, Office Assistant 3, Computer Assistant 1, Driver 5, Sweeper Part-time-3	Person	16	16	100
23	Human Resource Management under Staff Administration section and Financial Administration section of DoHS	Person	6	6	100
24	Human Resource Management for PAM Unit, 10-Biomedical Engineers and 1-Public Health Officer	Person	11	11	100
25	Activities related to financial administration and disallowances	Times	1	1	100
26	Repair and maintenance of spare parts not included in the multi-year agreement after inquiry with concerned hospitals and payment	Times	1	1	100
27	Monitoring of biomedical equipment maintenance work	Times	3	3	100
28	Development of new policies, rules, directives and other documents including Revision and printing	Times	2	2	100
29	Follow-up and monitoring of minimum standards of physical infrastructures including buildings	Times	3	3	100
30	MTOT on Strengthening of Health Facility generated Waste Management	Times	2	1	50
31	Onsite coaching and follow-up of solid waste management for health organization	Times	24	24	100
32	Review and printing of Guidelines on Health Care Waste Management	Times	1	1	100
33	Strengthening of programs including drinking water and sanitation WASHFIT tools	Times	2	0	0
34	Continuous construction of modern central vaccine stores	Building	1	1	100
35	Continuous construction of Central Store Teku	Building	1	1	100
36	Reconstruction of Pathlaiya Store Building continues	Pcs	1	1	100
37	Procurement of office equipment	Set	12	12	100
38	Purchase of Hospital Equipment (including payment of old contract)	Times	3	3	100
39	Purchase of servers for expansion and operation of LMIS program	Times	1	1	100
40	Purchase of spare parts for vaccination and cold chain	Times	1	1	100

ANNEX 1 Major activities carried out in FY 2076/77

	management				
41	Fuel and other fuels for vaccine safety and transportation	Times	20	20	100
42	Pharmacist, LMIS technical service contract in store	Person	25	25	100
43	To be taken in staff service consultation	Person	20	20	100
44	Review and discussion with all the states about LMIS, HMIS.	Times	2	2	100
45	Seminar on quantification of health products in the Union	Times	1	1	100
46	Meetings of various committees and sub-committees related to supply management in the association	Times	3	3	100
47	LMIS program expansion and operating costs	Times	3	3	100
48	Management Division Website Updates	Times	1	1	100
49	LMIS Forms, Stock Book Printing	Times	1	1	100
50	Tools, means of transportation, maintenance of vehicles	Times	3	3	100
51	Drug and equipment quality testing	Times	3	3	100
52	Preparation of tender documents, publication of bill notice, third party insurance, vehicle tax and supply services.	Times	3	3	100
53	Rewraping, transportation, and redistribution of drugs, vaccines, and vaccines	Times	3	3	100
54	Washing and disposing of old, expired, broken medicines and other unusable health related items	Times	7	7	100
55	Capacity building for effective vaccine management	Times	4	4	100
56	Vaccination and Coldchain Management Plan Onsite Coaching with Preventive Maintenance	Times	50	50	100
57	Pre-evaluation activities for effective vaccine management	Times	1	1	100
58	Connection and management of Coldchain Equipment Sub Centers received through UNICEF	Times	2	2	100
59	Seminar on Vaccination and Cold Chain Management with Stakeholders	Times	2	2	100
60	Technical evaluation of effective vaccine management work	Times	3	3	100
61	Health in All Policy 13.1 Workshop	Times	2	0	0
62	Technical Specification Bank Enhancement Program	Times	2	2	100
63	TOT on Procurement and Basic Supply Management	Times	2	2	100
64	Supervision, coordination and technical Support	Times	70	70	100

Annex 2: Program Targets for FY 2077/78**Family Welfare Division: Child Health and Immunization section program activities:**

SN	Activities	Unit	Target
1	Procurement: Vaccine Carrier 2.9-3.5 ltr, 0.6 ltr Ice Pack Model Capacity – 3000 Nos	Time	1
2	Vaccine and water pack freezer procurement 120- 180 ltr, 40 Nos & 270-300 ltr, 30 Nos	Time	1
3	Procurement with tax clearance of WHO PQ Gross volume 75 - 85 ltr. And Net volume minimum 58 - 65 ltr. Holdover time 43 Degree Celsius temp. for more than 55 hours capacity ILR Refrigerator – 50 Nos	Time	1
4	Ice pack 0.6 ltr – 20000 Nos	Time	1
5	Ice pack 0.4 ltr – 10000 Nos	Time	1
6	Vaccine Procurement: BCG with diluent-200000, BCG diluent syringe (2 ml) – 225000, AD Syringe (0.05 ml) – 1100000, bOPV with dropper-250000, MR with diluent – 210000, MR & JE diluent (5ml) – 650000, JE with diluent – 250000, TD- 180000	Time	1
7	GAVI Commodities vaccine: IPV – 314000, Penta-109350, PCV-340550, AD syringe- 4505800, diluent syringe-72000, Safety box-50400, Rota- 1193900	Time	1
8	GAVI co-financing for Penta – 41950, PCV-23700, Rota- 114100	Time	1
9	GAVI Commodities: Cold chain equipment along with GoN for custom clearance	Time	1
10	Cold chain equipment damage, custom clearance and handling	Time	1
11	AEFI committee formation and orientation at provincial level	Time	1
12	Additional one day in province review and routine immunization strengthening and AEFI orientation	Time	1
13	3 days training for district focal person and statistician on DHIS	Event	7
14	Mentoring and supervision for routine immunization strengthening, full immunization declaration and sustainability	Regular	
15	Provincial ToT on immunization program and Microplanning – 5 days	Event	7
16	New vaccine Rota and hygiene promotion monitoring supervision	Regular	
17	AEFI Management and treatment Expenses	As per need	
18	Materials production and distribution used for routine immunization program	Time	1
19	For sustain and management of fund in the immunization service deposit the amount in immunization treasury	Time	1
20	Use of immunization card and sustainability, immunization act and routine immunization orientation to the districts with low coverage	Event	6
21	Discussion, planning with stakeholder for strengthening of routine immunization and hygiene promotion	Time	1
22	Interaction on immunization act, AEFI and NIP with member of parliament at central and province level	Time	1
23	3 days workshop for review and update on immunization related documents	Time	1
24	Full immunization card and full immunization guideline production and distribution	Time	1
25	Orientation on NIP & immunization act for elected bodies of Province II, Lumbini, Karnali and Sudurpaschim province	Event	50
26	Urban immunization strategy development and branding of immunization program	Time	1
27	Orientation on quality immunization service conduction, recording and reporting, Cold chain management inside valley	Group	2
28	Monitoring for full immunization process, verification and participation	Regular	
29	Immunization, hygiene promotion and cold chain management monitoring & supervision	Regular	

Annex 2: Program Targets for FY 2077/78

Family Welfare Division: Nutrition section program activities:

S.N	Activities	Unit	Targets
1	National Nutrition Program Review (Three Days) – with participation of Nutrition Representative of all provinces	No of times	3
2	Three-day capacity enhancement program of staff employed in the nutrition rehabilitation homes (NRH manager, Medical superintendent and Pediatric doctor of respective NRH)	No of times	1
3	Capacity building of national and provincial stakeholders for promotion and promotion on breast feeding as well as implementation of breast-feeding act and bi-law.	No of times	3
4	Celebrate National Day / Month on nutrition related Programs (Breastfeeding Week, School Health and Nutrition Week, Iodine Month etc.)	No of times	1
5	Monitoring and Supervision of Nutrition Programs	No of times	2
6	Support to operationalize Nutrition Rehabilitation Home for the management of acute malnutrition through federal hospitals (Bheri, Koshi, Narayani, Bharatpur, Sagarmatha, Pokhara Health Sciences Foundation, Rapti Health Sciences Academy, Dadeldhura Hospital and Kanti Children Hospital).	No of times	1
7	Purchase of Laptops and LCD for Nutrition Section	No of times	1
8	Procurement and supply of nutrition commodities (Vit A, RUTF, F75, F100, ReSoMal, Albendazole, MNP, Rapid Test Kit, Height / weight Machine, Shakir's Tape (MUAC), dummy baby and mother for breast feeding)	No of times	1
9	Maternal and Baby Friendly Hospital Initiatives (MBFHI) in 10 Hospitals (assessment and review in five hospitals and orientation and assessment of five additional hospitals	No of times	10
10	Capacity Building nutrition cluster members at federal and provincial levels	No of times	2
11	In-patient management of severe acute malnutrition with medical complications to medical Doctors and Nurses	No of times	1
12	Support NUTEC Meeting	No of times	1
13	Revise Maternal Baby Friendly Hospital Initiative Guideline, Formulation of National Action Plan for school health and nutrition program jointly by MoHP and MOEST, Develop and endorse National Action Plan for Nutrition in Emergency and DRR and Develop and endorse Nutrition Friendly Health Facilities Guideline	No of times	1
14	Nutrition program support during any kind of Emergency	No of times	1
15	Nutrition Officer for Nutrition Section	No of times	1
16	MToT on Comprehensive Nutrition Specific Intervention package for all seven Provinces and districts nutrition focal persons of District health offices.	No of times	12

Family Welfare Division: (3) IMNCI program activities:

SN	Activities	Unit	Target
1	Procurement of equipment for CBIMNCI program	times	1
2	Procurement of SNCU/ NICU equipment	times	1
3	Procurement of equipment for KMC units and KMC corners	times	1
4	Orientation of Prematurity (KMC) Guideline	times	1
5	Development of FBIMNCI/ Newborn Coaching/ Mentoring Guideline	times	1
6	Facility Based IMNCI (FB-IMNCI) ToT for Medical Officers	batch	1
6	Facility Based IMNCI (FB-IMNCI) ToT for Paramedics and Nursing Staffs	batch	7
7	Revision of national newborn health strategy and plans	batch	2
8	FBIMNCI/Newborn Care Coaching/ Mentoring Training	times	2

9	Development of Early Childhood Development Guideline	times	1
10	Mentoring for SNCU/ NICU staffs	times	-
11	IMNCI ToT for health workers	times	2
12	Comprehensive Newborn Care (Level II) Training for MOs	times	7
13	Free Newborn Care Program	No. of Hosp	107
14	Research on Newborn and IMNCI related program	times	3
15	ToT on Point of Care Quality Improvement (POCQI)	batch	1
16	IMNCI Routine Data Quality Assessment (RDQA) ToT	batch	2

Family Welfare Division :(4) Family Planning and RH

S.N.	Activities	Unit	targets
1	Family Planning (FP) Current users	Couple	3181000
2	VSC expected new acceptors	Couple	30000
3	IUCD expected new acceptors	Couple	32000
4	Implant expected new acceptors	Couple	110000
5	FP program strengthening through DMT, WHO MEC wheel	Time	14
6	FP Microplanning and response actions implementation in low CPR districts	Time	14
7	Support to satellite clinic for LARC methods	Time	753
8	Procurement of Depoprovera	Time	1
9	Procurement of Syringe for Depoprovera	Time	1
10	Procurement of Pills	Time	1
11	Colposcipe machine	Time	1
12	Procurement of Thermocoagulator machine	Time	1

Family Welfare Division :(5) Maternal and Newborn health

S.N.	Activities	Unit	Target
1	Hospital and community based MPDSR program strengthening (capacity enhancement of hospital and community, Review and planning coaching/mentoring)	No of times	1
2	SBA coach mentor development	No of times	1
3	FP,MNH related protocol, guideline development program	No of times	1
4	SBA clinical review and refresher program	No of times	1
5	PPH prevention orientation program expansion and strengthening	No of times	1
6	Safe motherhood roadmap provincial level planning and orientation program	No of times	1
7	MNH and MPDSR program mentoring, Development, revision and update of standards, guidelines and training materials on MNH, MPDSR strengthening activities.	No of times	1
8	CEONC sites strengthening program	No of times	1

Epidemiology and Disease Control program activities:

S N	Activity	Unit	Annual Target
Epidemic disease control			
1	Construction of well-equipped health desks at border points of neighboring countries China and India and international airports (points of entry)	units	13
2	Necessary equipment for health desks at international ports and airports(Devices, instruments and machine tools related to office operations)	No. of units	1
3	Interaction with various stakeholders on the risks of epidemicof COVID-19 in Nepal, the current situation and the lessons learned from the steps we have taken.	No. of units	1
4	To mobilize experts and health workers for disaster management of pandemic diseases like COVID-19, SARS, Influenza; (dissemination, production, publication, and distribution of materials.	No. of units	3
5	MTOT of Sample Collection and Safe Transport Criteria for Testing for Various pandemic diseases including COVID-19	No. of units	3
6	(Conducting activities such as pre-preparation, prevention, surveillance, control and management of epidemic diseases such as COVID-19, SARS and influenza. (Preparation,production, publication, and distribution of materials).	No. of units	3
7	Purchase ofOseltamivir and other RDTs, Reagents, medicines including essential items for theCovid-19, Influenza Epidemic / Disaster Management. (Purchase of medicine)	No. of units	1
8	Purchase of Cold chain box and Icebox required for transportation of samples for testing for epidemic diseases (Health Materials)	No. of units	1
Malaria control			
1	Engaging private and professional organizations in malaria prevention program, purchasing various equipment required by the program management unit, to strengthen the related Technical Working Committee (TWG)	No. of units	3
2	Purchase of Drugs, RDT kit for Diagnosis and Control of Malaria and other materials	No. of units	1
3	Procurement and distribution of LLIN nets for pregnant women and other groups in malaria and other pest affected districts along with disability and leprosy control program	No. of units	1
Natural disaster management			
1	Contract based Manpower for Epidemic (Lab Sample receive & dispatch, Risk Communication, Media Monitoring, and Store Equipment Management)	No. of person	3
2	Contract based Light vehicle driver for emergency conditions	No. of person	4
3	Preparation of annual program and guidance on epidemic and disease control, progress review, discussion and conducting of meetings	Time	3
4	Assistance from WHO for "National Action Plan on Health Securities, Joint External Evaluation,IHR, Research and Outbreak Investigation, Integrated Management of Adolescents and Adult Illness, Epidemic and Pandemic Preparedness and Response Course, International Health Regulations 2005, Rapid Risk Assessment, Health Sector Contingency Plan, Disease Prioritization, RRT field guidebook	Time	2

5	Development, revision, and printing materials related to various epidemic / epidemic diseases and program guidelines, standards, protocols	Time	1
6	Risk Communication MToT program for health workers to flow the information in epidemic response and management work	Time	3
Lymphatic filariasis elimination			
1	(Training of trainers for National Filariasis Prevention Program, Morbidity Mapping Program (Promotion, Material Production, Publication and Distribution)	Time	1
2	Technical assistance from the Center for National Filariasis Prevention Program, Medicine Consumption Campaign, Morbidity Mapping Program and Free Hydrocephalus Surgery Program	Time	3
3	National Filariasis Prevention Program, Free Hydrocephalus Surgery Program, Planning and Review meetings for Hospital Surgeons and Focal Persons	Time	1
4	Purchase and transportation of DEC (150,000 pills) and ALB (6,00,000 pills) required for the implementation of National Filariasis Disease Prevention Program.	Time	1
Zoonotic Disease			
1	Conducting review seminars and planning with snake bite treatment centers, medical stores and organizations using rabies vaccine.	Time	3
2	Mapping and prioritization of programs related to zoonotic diseases	Time	1
3	Preparation, Interaction, Orientation and Capacity Building Programs for Federal and Provincial Health Workers and Hospitals for Zoonotic diseases including brucellosis, animal bites, toxoplasmosis, scrub typhus, leptospirosis etc.	Time	3
4	To prepare Standard Training Modules on Rabies and Snakebites and to conduct training of trainers for health workers.	Time	2
5	Preparing Roadmap for Elimination of Dog-mediated Rabies by 2030 and conducting various activities as per action plan.	Time	3
6	Identify diseases caused by rabies, to prepare pocketbook for diagnosis and use of intradermal vaccine and immunoglobulin.	Time	1
7	Prevention of Prioritized zoonotic diseases, guideline regarding treatment and control, prepare SOP (production, preparation, and distribution of materials)	Time	1
8	To identify potential pandemic and prevent the Emerging and Re-emerging Zoonotic Diseases in Nepal by researching their current interactions with humans, animals, and the environment.	Time	2
9	To prepare co-ordination mechanism related to IHR-PVS, conduct Bridging Workshop, conduct joint risk assessments related to zoonotic diseases and prepare integrated working guideline for risk communication	Time	2
10	Conduct public awareness program considering Adverse conditions in human health due to livestock, animal products and animal production materials and anti-microbial resistance, food borne zoonotic diseases	Time	3
11	Technical Assistance by program experts for effective surveillance of insect borne diseases regularly operating at province and local level.	Time	2
12	WTO Financial and Technical Assistance for the Prevention and Prevention of NTD / VBD and Zoonotic Diseases (Other)	Time	1
13	Procurement and transportation of drugs and kits (Test KIT, rk-39, Cap.)	Time	1

Annex 2: Program Targets for FY 2077/78

	Miltefosin, Inj. Liposomal Amphotericin B and Inj. Paromomycin) for diagnosis, treatment, and control of insect-borne diseases		
14	Provision of cell culture ARV vaccine to those people who are in the risk of Rabies	Time	1
15	Purchase of diphtheria anti-toxin, rabies immunoglobulin and tetanus gammaglobulin and other vaccines including syringes	Time	1
16	ASV for people suffering from venomous snake bites. (Per Poison) including purchase and transportation	Time	1
Dengue Control			
1	Surveillance of vector causing dengue, mapping, Estimate national representative dengue burden by sero-epidemiology and testing aedes mosquitos for dengue virus from the endemic area of Nepal	Time	1
Disease Surveillance and EWARS			
1	On-site coaching for EWARS sentinel site	Time	3
2	Neurocysticercosis, Brucellosis, Avian Influenza, Scrub typhus, Anthrax Study Research: Neuroimaging, symptom identification, and epidemiological study, triangulation, analysis, research, etc.	Time	2
3	Collaboration with World Health Organization for monitoring of different diseases caused by climate change and climate informed early warnings	Time	3
4	To collect and transport samples by identifying hotspot for surveillance of epidemic diseases	Time	3
5	Disease control for infectious diseases and preparedness plan, discussion meeting and interaction seminar	Time	1
6	Surveillance and research of various infectious, emerging, and re-emerging diseases. (Study / Survey / Research)	Time	3
7	Orientation on Infectious Diseases, Data Verification Program for Physicians, Healthcare, Medical Recorder at the New and Non-Operating Sentinel Site	Site	8
8	Training / Review of Medical Recorder, Medical Recorder Officer, Health Workers on Infectious Diseases Reporting through EWARS (Including Newly Appointed.	Person	5
9	EWARS Technical Working Group Meeting Operations, Processing, Analysis, Publication and Dissemination of Annual Data from Sentinel Site	Site	3
10	Surveillance System Strengthening, Interaction with Stakeholders on Surveillance of Various Infectious Diseases and Surveillance Work	Time	1
Water quality surveillance			
1	(Interaction with stakeholders on Drinking Water Quality Monitoring (WQS) and formulation of action plans (dissemination, production, publication and distribution of materials)	Time	2
2	Monitoring, Development of Information System, Sample Collection Testing and Monitoring from Drinking Water Security Schemes for Various Infectious Diseases, Mapping for Water Quality.	Site	1
Non communicable and Mental Health			
1	Planning orientation, review and planning seminar on non-communicable diseases and mental health with state level ministries, directorates, medical colleges, hospital affiliated health managers (entrepreneurship, employment oriented / empowerment / skill development and capacity building training)	Time	1

2	Guidelines on Non-Communicable Diseases and Mental Illness, Modification of necessary Action Plan and Register, FirmFormat Preparation and Printing	Time	2
3	Two batches of ToT on non-communicable diseases program	Time	2
4	NCDs Public Awareness Program (Hypertension, Diabetes, COPD, Cancer Days) Day Celebration	Time	4
5	(Trainer Training on Basic Mental Illness for Health Workers and Psychosocial Counseling for Nursing Staff (Materials production, printing and distribution)	Time	2
6	TOT for Child and Adolescence, mental health	Time	1
7	Interactional workshop on collaboration with theState Ministry of Social Development, Directorate of Health, State Training Center, Medical College, Hospital manager in community mental health programs	Time	1
8	Mental health program for prisoners	Time	2
9	WHO technical assistance for NCDs related programs	Time	1
10	Programs related to mental health	Time	1
11	Clinical Supervision of Mental Health Program (Monitoring, Evaluation and Program Implementation, Travel Expenses	Time	1
12	Purchase of medicines related to NCDs	Time	1
13	Purchase of free medicines of mentalhealth	Time	1

Leprosy Control and Disability Management Section program activities:

S N	Activity	Unit	Target
1.	Printing and distribution of information materials related to skin diseases, leprosy, disability, injuries, and rehabilitation (promotion, material production, as well as publication and distribution)	Time	1
2.	Multi drug transportation and management (promotion, material production, as well as publication and distribution)	Time	3
3.	Awareness program on occasion of World Tuberculosis Day and International Day of Persons with Disabilities	Time	2
4.	Promotion and awareness program related to leprosy (promotion, material production, as well as publication and distribution)	Time	1
5.	Development of information system related to disability, skin disease, injury, leprosy, and rehabilitation (promotion, material production, as well as publication and distribution)	Time	1
6.	MTOT for health workers related to disability, skin disease, injury, leprosy, and rehabilitation (promotion, material production, as well as publication and distribution)	Time	1
7.	Modification of disability regulations and strategies, printing of work operations guideline related to disability, printing and distribution of bulletin and annual report (promotion, material production, as well as publication and distribution)	Time	3
8.	Planning and monitoring in all seven provinces regarding leprosy post exposure prophylaxis orientation (promotion, material production, as well as publication and distribution)	Time	2
9.	Standard Operating Protocol (SOP) related to physiotherapy services, development and printing of guidelines related to medical practice and supplementary material distribution (promotion, material production, as well as publication and distribution)	Time	3

Annex 2: Program Targets for FY 2077/78

S N	Activity	Unit	Target
10.	Development and printing of training manual related to leprosy, disability, and rehabilitation (training)	Time	1
11.	Leprosy prevention program (case investigation, skill development, etc.) (Health service)	Time	1
12.	Grants for the national seminar of dermatology specialists (others)	Time	1

EDCD related others activities

1	Photocopy machine with A3 printer, scanner, laptop	No. of times	3
2	Furnitures and fixtures	Set	1
3	Furnitures and fixtures for health desks established at the point of entry (Furnitures fixtures for offices)	Set	10
4	Purchase of laptops, printers (Office operating devices, tools, and machinery tools)		
5	Contract based sweeper and gardener, guard for safety and security of garden and its cleanliness.	No. of person	3
6	To appoint health workers on contract at the established health desk (International Airport Check-points – Kathmandu, Pokhara, Bhairahawa) according to International Health regulation - 2005	No. of person	180
7	To conduct Risk (Hazard) assessment of established Health desk as per IHR-2005	No. of times	1
8	Programs related to Sickle cell anemia and Thalassemia	No. of times	3
9	Programs related to Occupational health	No. of times	1
10	Vaccine purchase program for Hajj pilgrims	No. of times	1
11	Technical monitoring, supervision, and identification of sick ones, (and materials production, publication, and distribution)	No. of times	3
12	Quarterly Work Progress Review (Promotion and Material Production and Publication and Distribution)	No. of times	3

Nursing and Social Security Division program activities:

S N	Activity	Unit	Target
1	Development of Induction Training Package for School Nurses	Number	1
2	Development of Software for updating the activities done by school nurses	Number	1
3	Updating Software for BippannaNagarikAusadhiUpacharProgramme	Number	1
4	Development of Software for updating the profile and activities of Female Community Health Volunteers (FCHVs)	Number	1
5	Deployment of Professional Midwives in Central Hospitals	Persons	14

S N	Activity	Unit	Target
6	Development of Continuous Professional Development Educational Module for nurses working in specialized areas	Number	5
7	Nursing leadership development programme for nurses in e-based modality	Persons	90
8	Conduct policy dialogue in Province level for strengthening Geriatric Health Care	Number	5
9	Capacity building of health-workers about the care of older people in blended learning approach	Persons	60
10	Development of guideline and standards for establishment and Operation of Geriatric Care Center	Number	1
11	Interactive and Review workshop among stakeholders regarding the effectiveness of impoverished citizen treatment scheme	Number	1
12	Biomedical Technician and Hemodialysis Training for workers working in hospitals listed for impoverished citizen treatment scheme	Batches	3
13	Training of Trainers for Basic and Refresher Training of Female Community Health Volunteers	Batch	2
14	Capacity of nurses in Infection Prevention and Control based on blended learning approach	Batches	2
15	Revision of impoverished citizen treatment Operation guideline	Number	1
16	Review and Revision of guideline for Operation of Female Community Health Volunteers Fund and other documents on Female Community Health Volunteers	Number	1
17	Capacity building of nursing administrators on Leadership and management	Batch	1
18	Integrated Monitoring and Supervision of Hospitals with OCMC, SSU, Geriatric Health Care Programme and for Quality Nursing Services	Times	40
19	Regular monitoring and facilitation of listed hospitals and new hospitals requesting for listing on impoverished citizen treatment scheme	Times	21
20	Regular Monitoring, Evaluation and National Review of School Health and Nursing Service Programme	Times	3
21	Reimbursement and payment of fund to the hospitals listed under impoverished citizen treatment scheme along with free dialysis service of old people above 75 years, people with HIV/AIDS, Hepatitis B, C(including previous Fiscal Year due)	Times	30

Curative Service Division: (1) Hospital Services monitoring and strengthening program activities:

SN	Activities	Unit	Targets
1	Patient Safety program Implementation	Times	7
2	MSS follow up and Software Orientation for Federal Hospitals	Times	8
3	Assessment and Strengthening of Intensive Care	Times	1
4	EHR System for Federal and Provincial Hospitals	Times	8
5	Software for Mero Aspatal Apps	Times	1
6	Clinical Audit Program Implementation	Times	5
7	Telemedicine Service Strengthening	Times	1

Curative Service Division: (2) Basic & Emergency Management Section program activities:

SN	Activities	Unit	Targets
1	MTOT of BLS and PTC	Times	4
2	Orientation of EHS and STP	Times	1
3	Orientation of BHS and STP	Times	4
4	Digitalization of HP MSS Recording and Reporting	Times	1
5	MTOT of Social Audit Guideline	Times	4

Curative Services Division: (3) ENT and Oral Health Section program activities:

SN	Activities	Unit	Targets
1	MTOT for Facial injury Management	Times	1
2	Baseline Survey of Ear Diseases	Times	1
3	STP for EYE, ENT and Oral Diseases for Hospitals	Times	1
4	Orientation of Health Workers on EYE, ENT and Oral Health	Times	2
5	Artificial Dental Camp for Elderly People	Times	2

National Tuberculosis Control Center program activities:

SN	Activities	Unit	Target
1.	Procurement of GeneXpert machine	Times	2
2.	Construction of Chest Hospital	Times	1
3.	Procurement of Bright Field Microscopy	Pieces	10
4.	Establishment of TB OPD Software	Times	1
5.	Procurement of Double Door Refrigerator	Times	1
6.	Preparation of GIS Map of Local Level	Times	1
7.	Study on Infection control in TB	Times	1
8.	Preparation of TB related Guideline	Times	1
9.	Data Management Training	Times	2
10.	Procurement of N95 Mask and personal protection equipment	Times	1
11.	Supply of TB Drug to PLHMC	Times	21
12.	Broadcasting of TB Related message by National level Television	Times	200
13.	Revision of Guideline and Recording and Reporting form	Times	1
14.	Commemoration of World TB day	Times	1
15.	Conditional grant to Kalimati Chest hospital	Times	3
16.	Procurement of Consumable and Chemical for sputum Microscopy	Times	1
17.	Procurement of Falcon Tube	Pieces	300000
18.	Procurement of HR for National Reference Laboratory	Times	7
19.	Procurement of Lab consumable for DR Survey	Times	1

20.	Procurement of Consumable and Chemical for C/DST	Times	1
21.	Procurement of Digital Xray Film	Pieces	12000
22.	Procurement of First Line Drug TB	Times	1
23.	Procurement of Second Line Drug TB	Times	1
24.	TB Training (Medical Officer, Logistic lab etc.)	Times	7
25.	Procurement of Cartridge for GeneXpert Machine	Pieces	156300
26.	Courier service for Culture /DST test	Times	5000
27.	Supervision to TB Treatment Center	Times	45
28.	TB Trainer's Training	Times	2
29.	National PME Workshop	Times	3
30.	Printing of Annual Report and TB RR tools	Times	1

National AIDS and STI Control Center program activities:

SN	Activities	Unit	Target
1.	HIV counseling training Package update and conduction of training	Times	3
2.	HTC,PMTCT,STI training materials /guidelines update and printing	Times	1
3.	National Level Research on pretreatment HIV Drug resistant	Times	1
4.	Assesment on Mother to child HIV transmition	Times	1
5.	DHIS -2 tracker training to ART counsellors	Times	7
6.	Early warning indicator workshop for capacity building to ART counselor	Times	7
7.	Procurement of HIV test kits	Times	1
8.	Procurement of the ARV drugs	Times	1
9.	Procurement of STI/OIs drugs	Times	1
10.	Quaterly Review on HIV program with provinces	Times	1
11.	Procurement of the CD4 reagents	Times	1
12.	Capacity building training on HIV recording and reporting to ART counselor and Medical Recorder	Times	7
13.	HIV lab training	Times	2
14.	CMT (Clinical Management Training)	Times	2
15.	STI Management training	Times	2
16.	Finalization and printing of NHSP 2021-26	Times	1
17.	Logistic Training as per new regimen	Times	7
18.	AIDS day celebration	Times	1
19.	CMT training to MO, and ART counselor	Times	2
20.	Annual Logistic data review	Times	2
21.	PMTCT Training	Times	3
22.	Hepatitis B and C ToT for medical officers	Times	7
23.	Monitoring and Supervision	Times	12
24.	Interaction with Private sectors on HIV programmes	Times	1
25.	Preparation of National strategy of Hepatitis	Times	1

National Health Training Center program activities:

SN	Activities	Unit	Target
1	Training Need Assessment	times	7
2	Landscape Analysis	times	1
3	Workshop on priority setting of training packages	times	3
4	New training packages development and field testing	number	5
5	Preparation of standard operating procedure for training packages	times	1
6	Updating and revising the existing training packages	number	5
7	Advanced skilled birth attendant (ASBA)	person	12
8	Rural Ultrasonography Training (RUSG)	times	2
9	Pediatric nursing care training	person	40
10	Diploma in biomedical equipment engineering (DBEE)	times	1
11	Induction training for newly appointed health officers	times	5
12	Medicolegal training on post mortem examination and clinical forensic medicine	times	3
13	Operation theater technique and management (OTTM) training for nurses	person	30
14	Comprehensive new born care training (CNBC) level-2	times	3
15	Critical care (ICU/CCU) training for nurses	person	30
16	Trainer's pool preparation	times	2
17	TOT on road traffic accidents and safety	times	3
18	TOT on occupational health and safety	times	2
19	TOT on climate change and health impact	times	2
20	TOT on antimicrobial resistance prevention	times	3
21	TOT on clinical training skills	times	3
22	Anesthesia assistant training	person	10
23	TOT on palliative care training	times	3
24	Online reporting/recording on accounting /TABUCS/CGAS	times	2
25	Mental health training-module 2	person	60
26	TOT on packages of essential non communicable diseases	times	5
27	TOT on the role of health workers on gender based violence	person	36
28	TOT on Burn care and management	times	3
29	TOT on primary emergency care	times	2
30	TOT on VIA/cold coagulation	times	4
31	Preparation of master mentor/coach	times	2
32	Refresher training for different trainers	times	3
33	TOT on infection prevention and control	times	2
34	TOT on adolescent sexual and reproductive health	times	3
35	TOT on second trimester abortion care	times	1
36	TOT on environmental health, health care waste management and WASH	times	3
37	Trainer's review workshop	times	2
38	Annual report preparation and publication	times	1
39	Follow up and enhancement (FEP) on SBA, MLP, FP, OTTM trained participants	times	7
40	Training sites accreditation, renewal and regulation	times	5
41	Guideline/index preparation to measure the effectiveness of training program	times	1
42	Coordination and review workshop with supporting partners	times	3

SN	Activities	Unit	Target
43	Interaction program with provincial health training centers and training sites	times	7
44	Field testing and assessment of QI tools	times	2
45	Quality assessment of the training sites	times	6
46	TIMS software updating	times	1

National Health Education Information and Communication Center program activities:

SN	Activities	Unit	Targets
1.	Broadcasting and Airing of the messages regarding Smoking and Tobacco product control through television and FM	Times	1
2.	Airing of health messages and public health radio program through Radio Nepal.	Times	2100
3.	Publication of health messages, information and press release in national newspapers.	Times	40
4.	Dissemination of health news, information or messages through website, facebook, youtube, twitter, aps etc.	Times	3
5.	Communicable and epidemic disease control related communication program and daily newspaper monitoring program.	Times	6
6.	Ear/Nose/Throat related health awareness and communication program.	Times	4
7.	Dissemination of information and messages through online media	Times	3
8.	Health literacy campaign program mobilization	Times	1
9.	Communication program on smoking and tobacco control and regulation.	Times	1
10.	Communication program on non-communicable disease prevention and control.	Times	17
11.	Health promoting school campaign framework or strategy development and campaign conduction	Times	8
12.	Social media, sms, aps and IVR service from information technology center	Times	3
13.	Advocacy and strategic communication on occupational, environmental health and Air pollution, climate change	Times	12
14.	Broadcasting of health messages, public health dialogue (Janaswasthya bahas) and jivan chakra through Nepal television	Times	2827
15.	AMR awareness and orientation health promotion program	Times	7
16.	Communication program on brain death, kidney and organ donation	Times	3
17.	Communication program on fuel emission and air pollution	Times	3
18.	Health message exhibition on assembly, event, sports, health camp musical and cultural program	Times	3
19.	Organization of assembly, event, sports, health camp musical and cultural program	Times	1
20.	Coordination program among federal, provincial and local level for the development and expansion of health promotion activities.	Times	3
21.	Awareness and communication program on mental health	Times	24
22.	Awareness and communication program on IMNCI, Immunization, Diarrheal diseases pneumonia etc.	Times	12
23.	Awareness and communication program on birth defect.	Times	3
24.	Awareness and communication program on family planning, safe motherhood and neonatal health.	Times	3
25.	Awareness and communication program on family planning, safe motherhood, neonatal and adolescent health.	Times	12
26.	Promotion of family planning and PPIUCD through inter personal communication for hard to reach group along with media campaign for social behaviour change.	Times	3
27.	Broadcasting of health related messages and information through National	Times	2788

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SN	Activities	Unit	Targets
	Televisions.		
28.	Interaction program regarding public health for Journalist.	Times	12
29.	Healthy Nepal Campaign program	Times	1
30.	Airing and broadcasting of disease outbreak and epidemic related messages.	Times	5
31.	Airing and broadcasting of messages relating to risk factors of NCDs through Radio Nepal and Nepal Television.	Times	1
32.	Monitoring and facilitation for effective implementation of health promotion activities at provincial and local level.	Times	100

National Public Health Laboratory program activities:

SN	Activities	Unit	Target
1.	Construction of Laboratory building for curative center as per master plan	Number	1
2.	Procurement of RT-PCR machine for examination Hepatitis	Number	1
3.	Procurement of automatic immune analyzer for examination of HIV & down syndrome	Set	1
4.	Procurement of machine/biopsy for examination of cancer & upgradation of lab in central level hospital	Set	2
5.	Procurement of blood component machine for Karnali blood transfusion center	Set	1
6.	Procurement of point of care (CD4 machine)	Set	1
7.	Maintenance of BSL3 lab for accreditation	Time	1
8.	Conduction of ToT for quality control at NPHL & PPHL level	Time	14
9.	Orientation of laboratory related different software system	Time	30
10.	Conduction of awareness programme on laboratory service	Time	3
11.	Providing different service, integrated team mobilization during epidemic outbreak	Time	3
12.	Overall management of Quality control of public & private laboratory	Time	3
13.	Conduction of ISO, accreditation & quality control	Time	3
14.	Participation in International level for quality control of Hematology, Biochemistry, Endocrinology, HIV	Time	4
15.	Research activities of NPHL for communicable & non communicable diseases	Time	3
16.	Overall management of conduction of National beauro for quality control	Time	3
17.	Procurement of essential kits, chemical & reagents for regular lab examination	Time	3
18.	Procurement of essential kits, chemical, reagents& equipment for National Influenza center	Time	3
19.	Viral load examination of Hep B & C	Time	3
20.	Procurement of reagents for getting 50 % discount in lab/health examination for disadvantage & vulnerable group like old aged people, differently abled, Jana Andolan Ghaite & Kidney patient	Time	3
21.	Procurement of essential kits, chemical & reagents for molecular lab examination	Time	3

Management Division of all Sections program activities:

SN	Activities	Unit	Target
1	Construction of modern vaccine store	Building	1
2	Constructed central medical store	Building	1
3	Procurement of Instruments and equipments and reimbursement of remaining amount as per the prior agreement	Times	1
4	Procurement of Laptop, Photocopy Machine, Projector and Printer	Pcs	10
5	Procurement of emergency Equipment and Medicine	Times	2
6	Maintenance and improvement of physical structures within the Department of health premises	Times	2
7	Procurement of Cold Chain supplies, materials including spare parts for newly constructed cold rooms	Times	1
8	Completion of boundary wire and wall for Central Store Pathalaiya	Times	1
9	Restoring the old buildings within the premises of DoHS	Times	4
10	Equipment, rack etc for central store at Teku	Times	1
11	Furniture and fixtures	Times	3
12	Repair and maintenance of instruments, equipment, vehicle for transportation and vehicles for official purposes	Times	4
13	Contract services of Security of DoHS	Persons	12
14	Contract services for Sweeper	Persons	8
15	Continuity of agreement with third party for Waste Management and Sanitation within the premises of DoHS.	Times	4
16	Meta-analysis of Immunization Program since 2051	Times	2
17	Projection of target population as per the local level Program	Times	1
18	Operation of Specification Bank and Plasma Update	Times	4
19	Seminar to determine the quantity of health material	Times	1
20	Human Resource Management Contract Services	Persons	31
21	Auction of old and damaged material and scrapping of expired medicines	Times	4
22	Expenses for conduction Public Bid evaluation committee and other committee	Times	4
23	Necessary material and fuel for Vaccine Security related work	Times	4
24	Vehicle registration, renewal, third party insurance, vehicle tax and miscellaneous service tax	Times	86
25	Assessment of quality of medicine and equipment	Times	4
26	Rerepackaging, transportation and redistribution of medicine, vaccine and vaccine related materials	Times	4
27	Activities related to financial administration and disallowances	Times	4
28	Support and monitoring of provincial and local level review meeting	Times	4
29	Field work related to Integrated Online Health Information Mgmt and DHIS 2	Times	4
30	Onsite training and follow-up on HMIS and DHIS to staffs of Academy , Central Hospital, Teaching Hospital including Private hospital	Times	4
31	Onsite coaching mentoring and microteaching to improve health data quality in hospitals	Times	3
32	Regular follow-up and monitoring of building including physical infrastructure and plamas etc	Times	4
33	Apprenticeship related to data manager for health information management and analysis	Times	2

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34	Follow-up training for health workers working at Jail and other organization on HMIS and DHIS	Times	3
35	Plan preventive maintenance including onsite coaching for quality immunization and cold chain management	Times	1
36	Connection and mgmt of Cold Chain Equipment (CCEOP) provided by UNICEF, Technical support for timely implementation of monitoring work capacity	Times	1
37	Capacity building of technical and cold chain officer on operation and repair of cold-chain equipment for storage of COVID-19 vaccine to be received from support of GAVI	Times	1
38	Capacity building of health workers of cold-chain equipment for management of COVID-19 vaccine	Times	1
39	Strengthening of COVID-19 vaccine related data collection, analysis , vaccine management and cold chain	Times	1
40	Orientation of health workers receiving CCEOP through Cold Chain Equipment for effective vaccine management- One Incharge and 1 cold chain handler from each health facility	Times	1
41	Technical support for development of IP and EVMA improvement plan for effective vaccine management	Times	1
42	Development and implementation of national immunization and cold chain management, multisectoral budget	Times	1
43	Review of annual immunization and cold chain management at national and provincial level	Times	1
44	Capacity strengthening of NLWG	Times	1
45	Discussion on recording and reporting at federal level and other hospitals	Times	2
46	Payment of Tax/ VAT of grant received from donor agency	Times	4
47	Integrated Supervision and Monitoring of health service program, Travel expenses for work of special nature	Times	100
48	Per Diem and Travel Expenses for supervision, coordination, technical support including review, seminars. Workshop, investigation etc.	Times	100
49	Miscellaneous expenses	Times	4