

Towards a Grand Convergence for child survival and health:

A strategic review of options for the future building on lessons learned from IMNCI

COUNTRY ASSESSMENT: NEPAL.

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ABBREVIATIONS

CHD	Child Health Division
CMAM	Community - Based Management of Acute Malnutrition
D/PHO	District /Public Health Office
DHO	District Health Office
DoHS	Department of Health Services
DTOT	District Training of Trainers
FCHV	Female Community Health Volunteer
GoN	Government of Nepal
IRHDTC	Integrated Rural Health Development Training Center
ITC	Inpatient Therapeutic Care
M&E	Monitoring & Evaluation
MoH	Ministry of Health
NGO	Non-Governmental Organization
OTC	Outpatient Therapeutic Care
SAM	Severe Acute Malnutrition
SBA	Skilled Birth Attendant
VDC	Village Development Committee
WHO	World Health Organization
UNICEF	United Nations International Children's Emergency Fund

1. Introduction:

Child survival does not merely depend on the quantity of health programs being implemented, but it is also affected by the socio-economic and political trends and threats ongoing in the developing countries. It is understood that in developing countries children have to struggle to survive in unfavorable and hostile conditions. Factors affecting child survival rate in Nepal include illiteracy and poverty. These factors may be directly or indirectly related to mothers and to children as well. Other factors such as geographical constraints, inadequate health services at various government health institutions, political instability and lack of transport facilities might also be attributing to childhood survival rate.

Despite all hindrances, Nepal has made significant progress in improving the health of children by reducing child mortality rates, achieving the Millennium Development Goals (MDG-4) targets. This has been possible through effective implementation of a variety of community-based and national campaign approaches which include CB-IMCI, Vitamin A supplementation and deworming, an increase in childhood immunization rates and moderate coverage of exclusively breastfeeding children under 6 months of age.

Integrated management of childhood illness strategy, initiated by WHO/UNICEF, is focused on the identification, classification and management of deadly diseases in children in a holistic way. It is believed that IMCI is one of the 10 most cost effective interventions, although the initial investment may be expensive. Moreover, IMCI has equal emphasis on both curative and preventive aspects. It addresses 3 main sensible issues of the health system which can help strengthen the health delivery services at the health facility as well as at the community level:

- i. Improving the skills of the health workers
- ii. Improving the health system
- iii. Improving the family and community practices.

In the country assessment report of Nepal, we tend to highlight the role of the Integrated Management of Childhood and Newborn Illness (IMCI/IMNCI) strategy in the improvements in child health status, as well as facilitating factors and barriers in the implementation of IMCI/IMNCI and other child health strategies. We also provide information on additional ways of improving access, quality, coverage and utilization of child health services. The country assessment is a Strategic Review of the IMCI/IMNCI program, which analyzes IMNCI implementation to better assess and manage major childhood conditions. The aims are to improve health worker performance and to engage the private sector, community interventions and other innovations to increase access to and utilization of child health services at community, country and global levels. Two main methods were used for the country assessment:

1. **In Phase 1;** An extensive in-country structured desk review, drawing from published and unpublished reports, evaluations and articles in the programmatic and scholarly literature, and statistical data, was completed by May 2016.
2. **In Phase 2,** an international consultant in collaboration with the national consultants, reviewed the report and jointly conducted key informant interviews at national and sub national levels (**including Kavrepalanchowk and Bajura districts - see annex 1**). Interviews were focused on what has been learned during the desk review and responses to the global IMNCI implementation survey. The interviews were successful in filling in informational gaps and collecting additional information on future strategies, approaches and roles of IMNCI were defined in order to prevent child and newborn deaths. This phase was completed by May 2016 as well.
3. Data analysis took place between the national and international consultants using the following methods: systematic extraction of key information from interviews using an Excel spreadsheet,

triangulation between written sources and interviews and amongst key informants, and debriefing of preliminary results with Ministry personnel and in-country stakeholders.

2. Demographics at a glance:

Nepal has an area of 147,181 sq. kms. Administratively, it is divided into 14 Zones, 5 Development Regions and 75 Districts, with Village Development Committee (VDC) being the lowest political unit. The numbers of VDCs vary from as low as 12 to over a hundred in a district. There are nine wards in each VDC and a Female Community Health Volunteer (FCHV) is based in each ward.

National census 2011 [1] estimates the country's population to be 26,494,504 and the total population of children under five to be 2,820,060. The National population and housing Census 2011 (CBS, 2011) and the Nepal Multiple Indicator Cluster Survey (NMICS, 2014) have estimated the Child Mortality Rate to be 52.9/1000 live births and the Neonatal Mortality Rate to be 23/1000 live births respectively. Although, the under five mortality has decreased significantly (from 118 in 1996 [2] to 52.9 in 2011) the data of neonatal mortality is not promising and it accounts for the majority of child mortality.

Table 1. Summary statistics on child health in Nepal.

Indicator	Value	Source
Total population	26,494,504	CBS, 2011
Total underfive population	2,820,060	CBS, 2011
Annual births	614,666	Annual Report, Department of Health Services, 2014/2015 [3]
Neonatal mortality rate (per 1000 live births)	23	MICS, 2014 [4]
Annual neonatal deaths	12,974	UNICEF/WHO/The World Bank/UN Pop Div. Levels and Trends in Child Mortality. Report 2014 [5]
Average annual rate of U5MR reduction, 2000-2012 (%)	5.7	UNICEF Nepal [6]
Under5 mortality rate (per 1000 live births)	52.9	CBS, 2011
Annual child deaths	22,674	UNICEF/WHO/The World Bank/UN Pop Div. Levels and Trends in Child Mortality. Report 2014
Average annual rate of NMR reduction, 2006-2011 (%)	2.8	Poudel et al; "Neonatal Health in Nepal: Analysis of Absolute and Relative Inequalities and Impact of current efforts to reduce Neonatal mortality"; BMC Public Health 2013, 13:1239. [7]

Table 2. District-wise population distribution.

Districts	Total population	Under five population	Annual live births	Under five mortality (per 1000 live births)
Taplejung	127,461	13280	2,927	63.0
Panchthar	191,817	19318	4,202	56.8
Ilam	290,254	27776	5,900	47.9
Jhapa	812,650	83716	18,287	48.6
Morang	965,370	100542	21,967	48.7
Sunsari	763,487	81543	17,602	49.3
Dhankuta	163,412	16499	3629	28.2
Terhathum	101,577	10080	2192	32.9
Sankhuwasabha	158,742	16032	3435	38.0
Bhojpur	182,459	17614	3913	46.0
Solukhumbu	105,886	10584	2325	53.2
Okhaldhunga	147,984	15095	3416	32.9
Khotang	206,212	19947	4416	50.3
Udaypur	317,532	34018	7397	43.5
Saptari	639,284	68351	14490	64.9
Siraha	637,328	69701	15035	59.7
Dhanusa	754,777	81084	17510	98.0
Mahottari	627,580	70307	15099	73.9
Sarlahi	769,729	87123	18682	77.7
Sindhuli	296,192	31432	6858	45.0
Ramechap	202,646	19672	4368	29.2
Dolakha	186,557	18270	4070	35.2
Sindhupalchowk	287,798	28180	6235	38.3
Kavrepalanchowk	381,937	36661	8146	33.5
Lalitpur	468,132	45776	9960	20.8
Bhaktapur	304,651	29965	6625	17.1
Kathmandu	1,744,240	174914	37830	21.5
Nuwakot	277,471	26978	5963	38.6
Rasuwa	43,300	4345	977	43.4

Districts	Total population	Under five population	Annual live births	Under five mortality (per 1000 live births)
Dhading	336,067	34122	7537	40.9
Makwanpur	420,477	43676	9501	45.0
Rautahat	420,477	80647	17119	110.4
Bara	687,708	79296	16792	66.4
Parsa	601,017	68739	14511	48.9
Chitwan	579,984	58756	12856	38.6
Gorkha	271,061	25670	5840	30.1
Lamjung	167,724	16518	3743	24.5
Tanahu	323,288	32518	7119	35.8
Syangja	289,148	26706	5943	29.5
Kaski	492,098	50001	10937	19.7
Manang	6,538	568	139	0.0
Mustang	13,452	1159	283	37.6
Myagdi	113,641	11697	2658	32.1
Parbat	146,590	14752	3356	20.0
Baglung	268,613	28268	6287	43.2
Gulmi	280,160	27748	6192	32.1
Palpa	261,180	25622	5690	24.0
Nawalparasi	643,508	66507	14460	46.3
Rupandehi	880,196	95049	20506	49.9
Kapilbastu	571,936	64554	13956	88.0
Arghakhanchi	197,632	20688	4612	36.9
Pyuthan	228,102	25773	5739	68.3
Rolpa	224,506	25234	5619	63.8
Rukum	208,567	23214	5075	51.9
Salyan	242,444	27081	5950	62.0
Dang	552,583	59901	12980	53.0
Banke	491,313	54937	11777	66.0
Bardiya	426,576	44743	9835	67.6
Surkhet	350,804	39966	8728	55.5

Districts	Total population	Under five population	Annual live births	Under five mortality (per 1000 live births)
Dailekh	261,770	30886	6829	56.7
Jajarkot	171,304	20916	4570	83.8
Dolpa	36700	4344	991	114.7
Jumla	108,921	12989	2881	85.5
Kalikot	136,948	17096	3825	99.4
Mugu	55,286	6858	1581	68.4
Humla	50,858	6180	1425	100.7
Bajura	134,912	16187	3577	101.5
Bajhang	195,159	23218	5094	92.8
Achham	257,477	30529	6808	53.5
Doti	211,746	24222	5455	51.0
Kailali	775,709	85399	18478	64.2
Kanchanpur	451,248	49009	10675	54.5
Dhadeldhura	142,094	16086	3578	58.0
Baitadi	250,898	28290	6344	43.7
Darchula	133,274	14938	3359	46.3

In the **Ecological regions**, the highest under5 mortality rate is found in the mountains followed by Terai and then hills. Similarly, in **Developmental regions**, the highest under5 childhood mortalities occur in the mid-west and western development region differing in 25.3 deaths per 1000 live births [1].

In the **Eco-developmental regions**, the highest under5 mortalities occur in the Midwestern mountains and the lowest amount of under mortalities occur in the western mountains with a difference of 65 deaths per 1000 live births. At the district level, the highest under5 mortality rate occurs in the Dolpa district(114.7) and the lowest under 5 mortality rate occurs in Bhaktapur (17.1) deaths under 5 years per 1000 live births.

Table 3. Region-wise child mortality distribution.

Eco-developmental Regions	Under-five mortality rate (per 1000 live births)
Eastern Mountain	49.7
Eastern Hill	43.0
Eastern Terai	52.7
Central Mountain	37.4
Central Hill	30.6
Central Terai	73.5
Western Mountain	27.0
Western Hill	29.8
Western Terai	60.5
Mid-western Mountain	92.0
Mid-western Hill	62.5
Mid-western Terai	61.4
Far-Western Mountain	83.5
Far-western Hill	50.1
Far-western Terai	59.8

The figure below represents a timeline of the trends in CBR and CDR of Nepal. Over the past 5 decades, the CDR has declined to almost half (47 per 1000 people in 1961 to 24.3 in 2011). Similarly, there has been a steady decline in the CBR over the past 4 decades resulting in a decline by more than half (22 per 1000 people in 1961 to 9.6 in 2001).

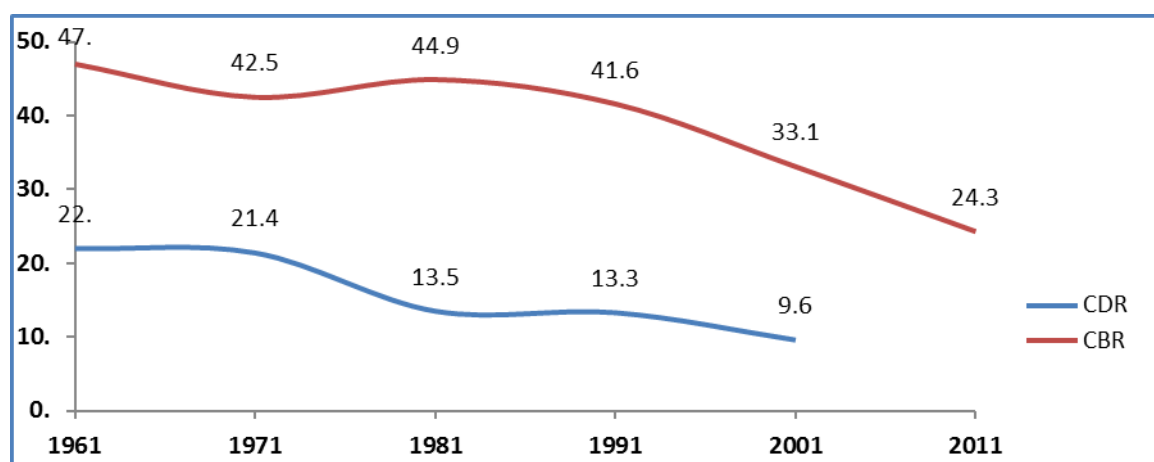


Fig 1: Crude Birth and Crude Death rates, Nepal (CBS reports)

There is evidence of worsening economic inequalities in access and use of health services. Child mortality is higher among children from mountain districts, rural areas, and in certain caste/ethnic groups. There are also differences in the nutritional status of children by caste/ethnicity. The factors leading to inequalities in health outcomes and health services need to be better understood and appropriately addressed. Evidence from literature supports that a number of strategies may reduce inequities and poor access to health care in rural regions. Despite substantial progress in reducing child mortality rates, concerted efforts remain necessary to avoid preventable under5 deaths in the coming years and to accelerate progress in improving child survival rates.

In Nepal, 5 children die every 2 hours among which 3 are neonates [17]. Prematurity along with birth asphyxia and sepsis cause almost 70% of neonatal deaths in Nepal. On the other hand, pneumonia and diarrheal disease account for almost 45% of child mortality which is illustrated in the table 5.

Table 5: Major causes of child deaths in Nepal [8]:

Neonatal deaths	Under five deaths
Prematurity (31%)	Pneumonia (30%)
Birth Asphyxia, Birth trauma (23%)	Diarrheal disease (15%)
Sepsis and subsequent infections (18%)	Non communicable disease (15%)
Congenital anomalies (13%)	Injuries (15%)
Pneumonia (4%)	Pertussis (6%)
Diarrhea diseases (1%)	CNS infections (3%)
Tetanus (1%)	Other conditions (15%)
Injuries (1%)	

In an attempt to identify the major causes of neonatal deaths, a verbal autopsy study was carried out in six CB-NCP implemented districts of Nepal (Dolpa, Jumla, Palpa, Salyan, Chitwan and morang) which reported that sepsis alone was responsible for almost 48% of deaths (refer to Figure 2)

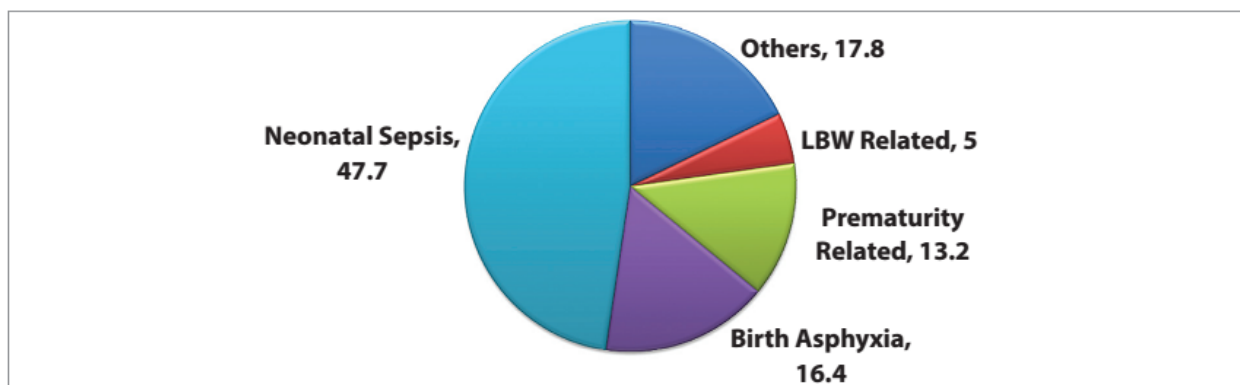


Fig 1: Verbal Autopsy to ascertain neonatal deaths in 6 districts of Nepal, 2014

Various national efforts have contributed to reductions of under five mortality rates in Nepal. These efforts include nationwide implementation of CB-IMCI, National Vitamin A supplementation, and Expanded program on Immunization (EPI), macro-level policies and socioeconomic development (the population living below poverty line dropped from 42.0% in 2002 to 25.2% in 2014 [9]); the development and implementation of health sector policies, plans and high-impact child survival interventions; strengthening of the health system; and increased investment in the health sectors (per-capita health expenditure increased from US\$ 12 in 2000 to US\$ 40 in 2014 [10], which further needs to be increased.)

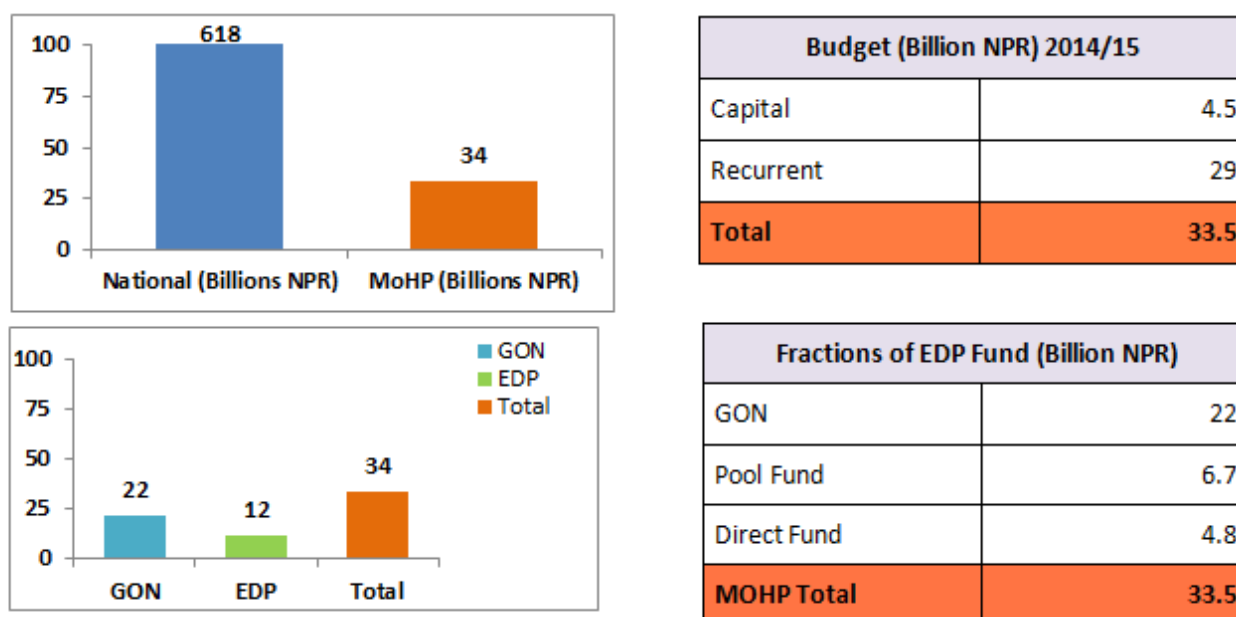
Fig 2: A line graph depicting the per capita health expenditure of Nepal. (Source: World Bank)



Fig 3: A line graph depicting the per capita health expenditure of Nepal. (Source: World Bank)

In the last fiscal year 2071/72 (2014/15 AD), NPR allocated 33.5 billion dollars to MoHP out of which NPR 22 billion was provided by GoN whereas, NPR 11.5 billion by External Development Partners (EDP) in the form of pool fund and direct fund (see Table 6 below).

Table 6: Budget allocation and its fractions of the MoH, Nepal



Similarly, in the fiscal year 2015/16, 5,218,638 NPR was allocated for Child Health Division and NPR 2,491 millions in Integrated Child Health & Nutrition Program (ICHNP). Comparatively we can see an increment of almost 36% in the funding of ICHNP from 2013/14. We can clearly see that only a small part of the budget has been spent which is reflected in Table 7 below.

Table 7: Budgeting of Child Health sector in Nepal at a glance

CHD Budget Allocation		ICHNP 2013/14		ICHNP 2014/15	
Chart Area		Budget	1831	Budget	2491
2015/16	2014/15	Expenditure	745	Expenditure	7
5218638	3066374				

Integrated Child Health & Nutrition Program - ICHNP (Millions NPR)			
2013/14		2014/15	
GON	704	GON	780
EDP	1,127	EDP	1,711
Total	1,831	Total	2,491

The table 8 below clearly illustrates the total budget and expenditures of various donor agencies (2013/14) in the field of child health in Nepal. We can observe that most of the fund has been utilized.

Table 8: Funding by various donors in Nepal's child health sector.

Budget and Expenditures of Donors' Fund 2013/14 (in Millions)		
Sources	Budget	Expenditure
Donor-Pool Fund	6113	6048
GAVI	483	165
Global Fund	1876	666
SAARC Fund	30	1
UNFPA	94	30
UNICEF	372	87
WFP	31	0
WHO	199	108
SCI	75	

Table 9: Budget of the GoN showing funding for Child health program

Funding 2070/71		
1. Government (Red book budget)	Recurrent	Capital
Allocated	Nrs 560,678,000 (29.23%)	Nrs 143,809,000 (53.91%)
Released	Nrs 424,726,788 (32.83%)	Nrs 80,510,165 (69.83%)
2. Donors:		
Allocated	Nrs 1,082,579,000 (21.17%)	Nrs 44,040,000 (4.50%)
Released	Nrs 239,391,399 (11.08%)	Nrs 634,171 (0.14%)

3. Background

CB-IMCI, CB-NCP and CB-IMNCI: a chronological development

The Child survival intervention program was initiated in Nepal with the Control of Diarrheal Disease (CDD) in 1983. Furthermore, the Acute Respiratory Infection (ARI) Control Program was initiated in 1987. During the inception of community based programs in the country, the referral model was adopted to maximize the ARI related services in households. The treatment model was adopted at the community level as a piloted program in the mid 1990s. An evaluation of this intervention in 1997 revealed that the treatment model was more effective and popular in the community than the referral model. In 1997/98, ARI intervention was combined with CDD and renamed the CBAC program. A year later, two more components, nutrition and immunization, were included in the CBAC program. The Integrated Management of Childhood illness (IMCI) was piloted in the Mahottari district in 1998 extending services to the community level. Finally, the government decided to merge the CBAC and the IMCI in 1999 to create Community Based Integrated Management of Childhood Illness (CB-IMCI). It included two deadly childhood diseases, malaria and

measles. The strategies adopted in IMCI were improving knowledge and case management skills of health service providers, improving community and household level care practices, and strengthening the overall healthcare system. After a pilot study of using low osmolar ORS and Zinc supplementation, they decided to incorporate these findings in the CB-IMCI program in 2005. Nationwide implementation of CB-IMCI was completed in 2009 and was revised in 2012 incorporating new interventions.

By 2005, Nepal had made significant progress in reducing mortality rates in children under five and infant mortality, but the reduction of neonatal mortality was slow. By this time, Nepal had not implemented any newborn targeted interventions. Nepal's state of newborn report 2002 showed that the major causes of neonatal mortality were infections, asphyxia, low birth weight and hypothermia. Government of Nepal formulated the National Neonatal Health Strategy 2004. The 'Community Based Newborn Care Program (CB-NCP)' was designed in 2007/08, and piloted in 2009. It incorporated the following seven strategic interventions:

- Behavior change communication
- Promotion of institutional delivery
- Postnatal care
- Management of neonatal sepsis
- Care of low birth weight newborn
- Prevention and management of hypothermia and
- Recognition and resuscitation of birth asphyxia.

The Ministry of Health and Population decided to implement the Chlorhexidine (CHX) Digluconate (7.1% w/v) in September 2011, aiming to prevent umbilical cord infection in newborns. The program was evaluated in 10 piloted districts. Simultaneously the government expanded the CB-NCP program to 41 districts covering 70% population by 2014.

The impact of CB-IMCI and CB-NCP on neonatal mortality and under five mortality reductions have not been documented in Nepal. However, the infant and under five mortality rates are seen to have been significantly reduced (as shown in the figure 1.1 below) possibly due to efforts put in place by the diarrhea and ARI programs. The care seeking practices and household level practices have been improved. The CB-IMCI program is thought to be one of the successful community-based programs in Nepal. Other interventions, in reducing post-neonatal child mortality include Vitamin A supplementation and the immunization expansion program. The essential newborn care practices were also improved in CB-NCP in the implemented districts.

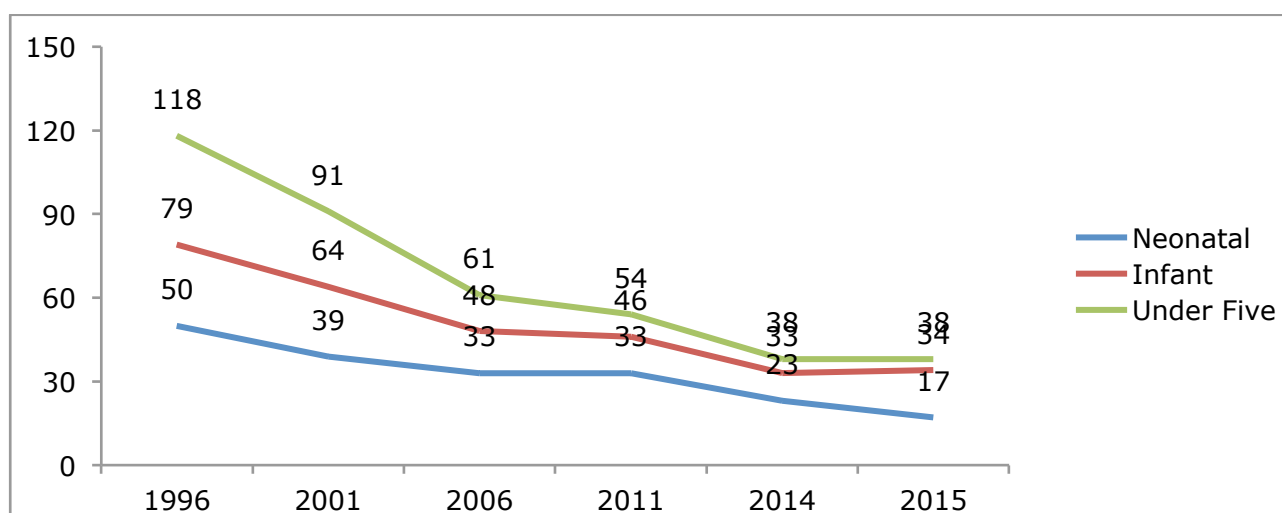


Fig 3: Mortality trend: 1996 (NFHS), 2001-11 (NDHS), 2014 (MICS), 2015 (MDG targets).

In both of the programs (CB-IMCI and CB-NCP), FCHVs were considered as front line health service providers but the quality and coverage of service was lacking. For instance, only 1.5% of the total sepsis cases were seen by FCHVs, and only 33% of FCHVs could use thermometer correctly (Assessment report-2012). According to NDHS 2011, only 3% of under five children sought services from FCHVs, and none of ARI cases utilized the FCHVs' services. About 86% of mothers sought care for the treatment of neonatal sepsis. This was an important learning opportunity in CB-NCP implementation. (7% within two days of home delivery). FCHVs for post natal care (PNC) were also low even when they provided with incentives. Furthermore, the need for asphyxia management (1.5%) by paramedics and ANMs working in non-birthing centers were considerably low because their skills were very rarely used.

CB-NCP and CB-IMCI have similar interventions including program management, service delivery, and target beneficiaries. Both programs had duplicate interventions like management of neonatal sepsis, promotion of essential newborn care practices, infection prevention, and management of low birth weight. Although, FCHVs have been working hard to distribute and promote healthy behaviors they have been poorly performing in service delivery. This happened due to their being overburdened with number of works. Similarly, a resource was being used in a fragmented manner providing services to the same targeted population. The inequity in quality service delivery and utilization presents a big challenge for newborn and child health programs. Health governance is trying to facilitate improving how the health system functions. Considering the management and maintenance challenges in regulating CB-NCP and IMCI programs, MOHP decided to merge both programs into CB-IMNCL.

Table 10: District coverage of CB-IMCI (1997-2014) and CB-NCP (2009-2014)

FISCAL YEAR	DISTRICTS	NUMBER OF DISTRICTS
1997/98	Mahottari	1
1998/99	Nawalparasi, Bardiya and Kanchanpur	3
1999/00	Dhanusha and Nuwakot	2
2000/01	Rupandehi and Kaski.	2
2001/02	Dhankuta, Makwanpur, Banke, Kailali and Bara	5

2002/03	Jhapa, Morang, Sunsari, Saptari, Kavre, Tanahu, and Dang	7
2003/04	Sarlahi, Dadeldhura, Doti, Bajhang and Humla	5
2004/05	Udayapur, Sankhuwasava, Sindhuli, Gorkha, Parbat, Kapilvastu, Jumla, Surkhet, Palpa and Lamjung.	10
2005/06	Panchthar, Siraha, Chitwan, Parsa, Dhading, Syngja, Gulmi, Mugu, Rukum, Pyuthan, Jajarkot, Achham and Baitadi.	13
2006/07	Bhojpur, Ilam, Solukhumbhu, Rasuwa, Rautahat, Dolakha, Ramechhap, Arghakhanchi, Baglung, Myagdi, Dailekh, Dolpa, Kalikot, Bajura, Salyan, Lalitpur	16
2007/08	Bhaktapur, Kathmandu, Khotang, Okhaldhunga, Taplejung, Tehrathum, Sindhupalchowk, Manang, Mustang, Rolpa and Darchula	11
2008/09	Community level training in Bhaktapur, Kathmandu, Khotang, Okhaldhunga, Taplejung, Tehrathum, Sindhupalchowk, Manang, Mustang, Rolpa and Darchula	10

	CB-NCP	
FISCAL YEAR	PILOTING PHASE	NO. OF DISTRICTS
2009/10	Dhankuta, Morang, Palpa, Dang, Chitwan, Kavre Parsa, Sunsari, Bardiya, Doti	10
	SCALING UP PHASE	
2010/11	Tehrathum, Sankhuwasabha, Sarlahi, Myagdi, Kailali, Mahottari, Saptari, Bajhang Salyan, Dailekh, Jumla, Kapilvastu, Argakhachi, Banke, Nawalparasi	15
2011/12	Lamjung, Humla, Kanchanpur, Taplejung, Bara, Baglung, Dolpa, Rautahat, Baitadi	9
2012/13	Bajura, Udayapur, Rupandehi, Pyuthan, Dadeldhura	5
2013/14	CB-NCP revision	
2014/15	Makwanpur, Sindhuli	2
	Total CB-NCP districts	41

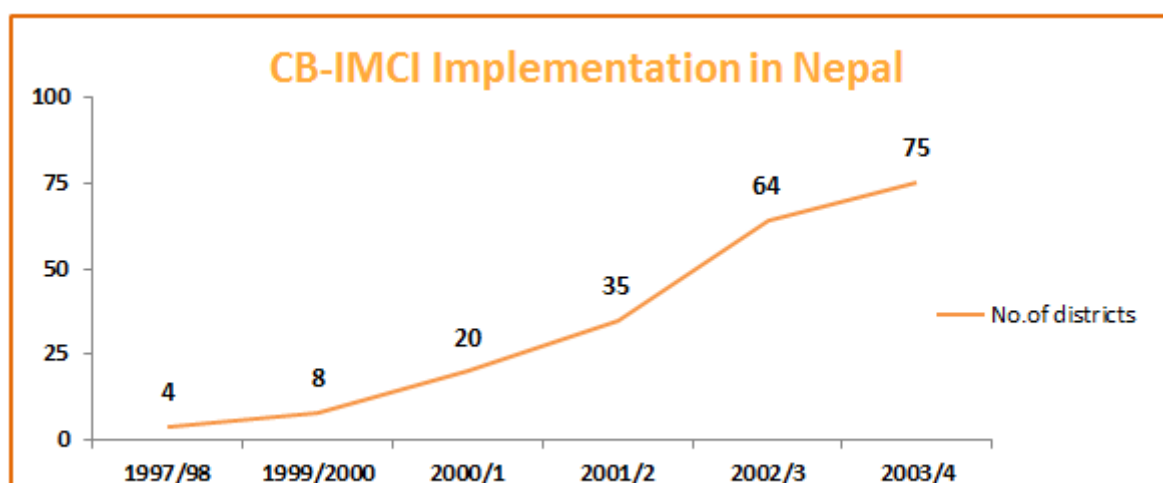


Fig 5: Timeline of CB-IMCI implementation in Nepal.

3.1 CB-IMNCI

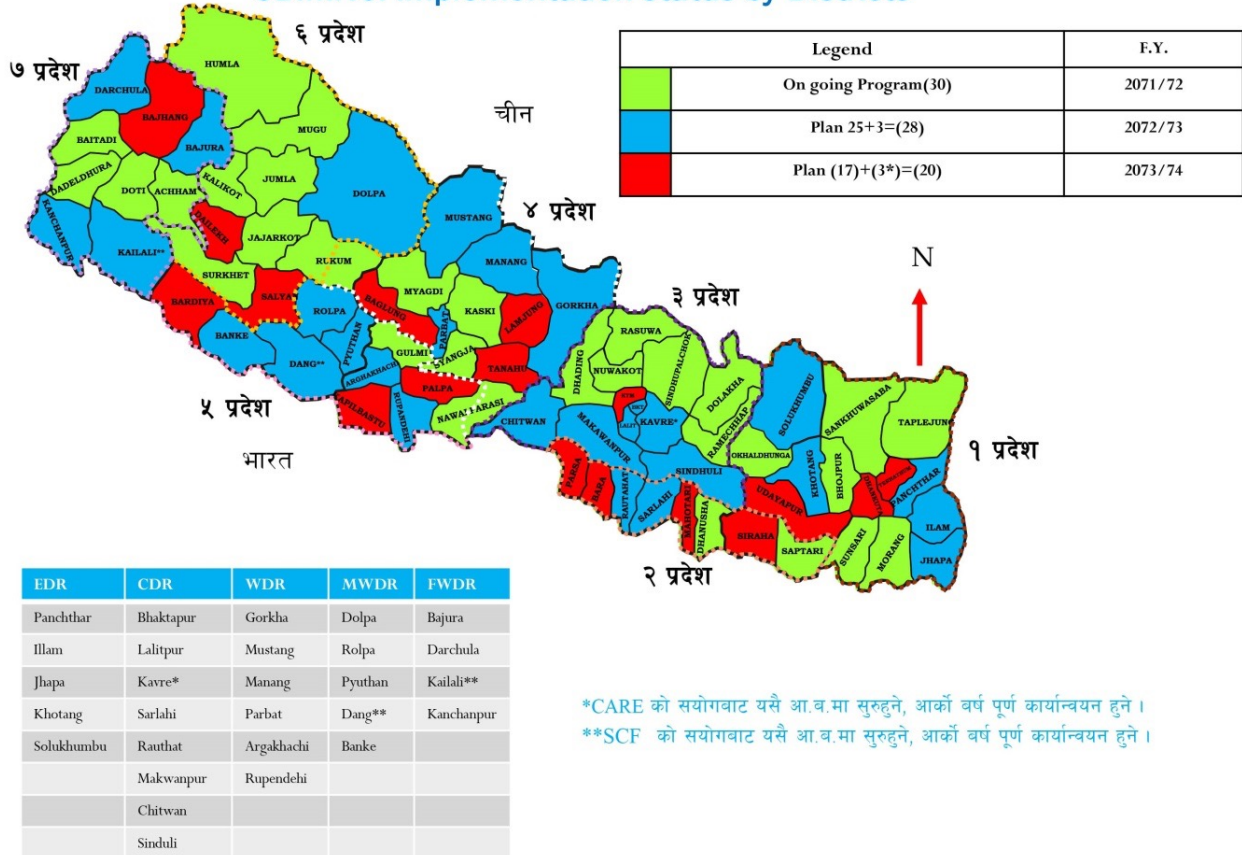
The MOHP decided to integrate the CB-IMCI and CB-NCP into CB-IMNCI in 2071/6/28 (October 14, 2015). It will be implemented in 30 districts by years 2071/72 (FY 2014/15). It comprises child survival interventions on essential newborn care and newborn complications including non-breathing babies at birth, neonatal sepsis, jaundice, hypothermia, low birth weight, preterm conditions and counseling on breastfeeding. The role of FCHVs is to identify and refer sick young infants and underfive children to health facilities. The CB-IMNCI targets children between 2 to 59 months of age to specifically provide services for diseases like pneumonia, diarrhea, malaria, measles and malnutrition in a holistic way.

In CB-IMNCI program, FCHVs are expected to provide counseling on maternal, newborn and child health conditions and to dispense essential commodities which do not require assessment and diagnostic skills like distribution of iron, zinc, ORS, chlorhexidine and referrals in the case of mortal signs of danger. The health workers provide services on the management of non-breathing cases, kangaroo care, and neonatal. The CB-IMNCI program also provides post-natal care to mothers through primary health care outreach clinics. For treatment of neonatal sepsis, the treatment regimen includes administering oral amoxicillin and gentamicin injections. Institutionalization and accreditation of training takes place in all trainings. The program is designed in such a way that the role of CHD is to assure the quality of and to monitor the CB-IMNCI program. The NHTC coordinates and makes all arrangements for trainings. Respective districts have full responsibility for program implementation.

The CB-IMNCI program will not be limited to completing training and will be implemented and strengthened to make it a more successful program. The process of rapid need assessment is expected to be helpful for contextual planning and customization of the implementation approach in each of the districts.

The core objective of the CB-IMNCI program is to reduce the morbidity, mortality and disability among newborns, infants and children aged under five and to improve the nutritional status of children.

CBIMNCI Implementation status by Districts



In the interviews of key informants conducted by the international consultant, respondents summarized the history, implementation, adaptations, strength and weakness, barriers and lessons learned during the program up-scaling process. Ideas regarding useful innovations, strengthening of health systems, linking community with health facilities and co-ordination among partners were extracted.

The barriers and facilitators to IMNCI implementation and up-scaling in Nepal are summarized in the table below.

Table 11: Facilitators and barriers to IMNCI implementation & up-scaling reported by key informants

Facilitators/ Strengths.	Barriers/ Weakness.
<ul style="list-style-type: none"> • Child health division as a separate functional unit of the department of Health services • National leadership and commitment • National vision encompassing Millennium development goals • Professional and technical support by partners and professional associations • Increase Government's investment in health sector • Global commitment to maternal, newborn and child health and its reflection in Nepal • Inclusion of IMCI/IMNCI in pre-service teaching in health institutions • WHO technical support 	<ul style="list-style-type: none"> • Geographical and terrain difficulties • Untimely Rotation/Transfer of trained staff within health facilities, coupled with untrained new staff • Ineffective implementation of IMCI/IMNCI in urban health centers and private hospitals • Lack of IMCI/IMNCI focal person at district level, contributing to lack of ownership of IMNCI at district level • Delay in release of budget (funds) by the government which is usually done 4-5 months prior to the end of fiscal year • Ineffective referral system • Improper and incomplete recording/reporting. • Ineffective co-ordination among center and districts regarding logistics of attaining supplies • Lack of refresher training of health workers • Lack of timely monitoring

3.2 Stakeholders involved in IMCI/IMNCI in Nepal:

A. Government: Director, Child Health Division and IMCI section chief and its personnel, who are actively involved in,

- Annual work planning.
- Stake holder meeting.
- Supervision of Implementation of IMCI.
- Monitoring and evaluation of the program so as to incorporate the required child health causes and its interventions needed in the Program.

B. Civil society/NGOs: Such as IRHDTC are involved in the,

- Facilitation (Provision of Trainers, logistics)
- Provision of Training and consultations.
- Revision and update of the IMCI protocols, guidelines and training materials.
- Coordination with key stakeholders.
- Program monitoring support.

C. Bi- and multi-lateral agencies:

1. World Health Organization (WHO).
2. United Nations International Children Emergency Fund (UNICEF).
3. U.S. Agency for International Development (USAID).
4. PLAN International.
5. CARE Nepal.
6. Save the Children International (SCI).
7. ONEHEART.
8. JSI
9. ADRA

10. UKaid
11. Health for Life (H4L)

All of these agencies/INGOs are involved in:

- Package design and development
- Advocacy for IMCI
- Technical assistance to applying countries.
- Improvement of health worker's case management skills through classroom work and clinical practice.
- Advocate with the government to improve their health systems, essential drug supply and equipment.
- Buying and distribution of Vitamin A, vaccinations, insecticide-treated nets, malaria home management kits
- Assistance with improving the organization, co-ordination and management of child health interventions; improving the monitoring and evaluation of health services
- Working with the government and the community, to facilitate efforts to improve family and community practice such as breastfeeding, hand hygiene and malaria prevention
- Gathering and review of existing information in association with other partners and NGOs to mobilize support and tackle the challenges identified
- Facilitation of the IMCI training for health workers and Technical Capacity Assessment
- Conduction of IMCI training at community and Health facility levels

D. Private sector: Nepal Pediatric Society helps with,

- Conduction of IMCI training.
- Package design and development.

Adaptions of IMCI [11] were done through review of local and global evidence and consensus-building among representatives of professional child health associations, child health related programs and stakeholders, and have included:

1. Modification of 9+2 days training program to 6+1 days (Training of Trainers)
2. Exclusive breastfeeding age was changed to 5 months from 4-6 months as per National Nutrition Policy. Now it has been changed to 6 months.
3. Vitamin 'A': Vitamin 'A' was added in the treatment of persistent diarrhea.
4. Mebendazole was replaced by Albendazole because a single dose of Mebendazole was not available in Nepal.
5. Co-trimoxazole was replaced by Amoxycillin as the first line drug in ARI.
6. FCHVs were trained and permitted to use a bag and mask but later it was revoked due to ineffective outcomes.

4. Child Health in Nepal

Child health programs in Nepal are run by the Child Health division which is a fully functional separate division of the Department of Health Services under the Ministry of Health (MoH). Other departments under MoH include:

1. Family Health Division
2. Logistic Management Division
3. Management Division
4. Primary Health Service Revitalization Division
5. Epidemiology and Disease Control Division

Newborn care is also a part of child health programs within the child health division. There is a separate IMCI/IMNCI section within the child health division with a chief and is fully funded by the Government of Nepal.

4.1 Child health strategies in Nepal

A. National Neonatal Health strategy (2004):

Neonatal health is an important component of the National Reproductive Health Strategy. The National Safe Motherhood Program, which also aims to reduce maternal and neonatal mortality, has always intended that the neonatal health component be developed as a separate document. As part of this activity, the Ministry of Health initiated the development of the **National Neonatal Health Strategy** with support from the Saving Newborn Lives Initiative, Save the Children Federation US. This strategy will describe the more specific directions and broad objectives for future interventions focussing directly on improving neonatal health and focussing on evidence-based practices and evidentiary proven interventions. Cost effectiveness of interventions and innovativeness of approach and the capacity of the community health were other factors considered. The NNHS was launched with an aim “to improve the health and survival of newborn babies in Nepal”. The principal objectives of this strategy were,

- To achieve a sustainable increase in the adoption of healthy newborn care practices and reduce prevailing harmful practices
- To strengthen the quality of preventive and curative neonatal health services at all levels

B. CB-IMCI/CB-IMNCI

Integrated management of childhood illness strategy, initiated by WHO/UNICEF tries to address these five major deadly diseases in a holistic way. The main objective of the IMCI is not to allow any underlying disease to go undetected, which may potentially prove to be fatal. When a child is brought to a health facility with signs and symptoms of an apparent disease, health workers might miss other underlying causes. In other words, a singular diagnosis in a sick child sometimes may not be adequate. It is believed that IMCI is one of the 10 most cost effective interventions, although the initial investment may be expensive. It can avert about 14% of the health burden (World Bank Report 1993 investing on health). Moreover, IMCI has equal emphasis on both curative and preventive aspects.

It addresses 3 main issues of the health system which can help strengthen the health delivery services at the health facility as well as at the community level:

- i. Improving the skills of the health workers
- ii. Improving the health system
- iii. Improving the family and community practices.

C. National communication strategy for maternal, newborn and child health (2011-2016)

The National Health Education Information and Communication Center (NHEICC) was established in 1993 with the goal of attaining the highest level of health by means of information, education and communication. Various national communication strategies were developed in the past which included the Safe Motherhood Information Education and Communication (SMIEC) and the National Family Planning/ Maternal and Child Health (FP/MCH) strategies. With a motive of providing an integrated, gender and inclusion sensitive framework, the National communication Strategy for Maternal Newborn and Child Health (SMNCH) was initiated with the following rationale:

- To support Nepal Health Sector Program (NHSP) II's vision, objectives and the results framework and contribute towards achieving the health-related MDGs
- To scale up successful interventions and plans on the basis of lessons learned
- To update SMIEC and FP/MCH strategies and develop Nepal's first national communication strategies for Maternal and Child Health such as SM, Newborn, EPI, IMCI and Nutrition in an integrated fashion
- To address the continuing low health status and disparities on MNCH across different regions, communities, groups, and gender.
- To garner ownership of the MNCH programs by all stakeholders from the central government to local communities in recognition of decentralization and the important role of households and communities in improving MNCH
- To facilitate resource generation and resource allocation for communication activities in the respective programs.

This strategy is organized via the government so that each program can see how their section fits into the overall communication strategy, audience, content and indicators for their individual program sections.

NHEICC initiated the process for this communication strategy to address safe motherhood and newborn health. The community based integrated management of childhood illnesses/newborn care program (CB-IMCI/NCP) expanded the program to include immunizations (EPI) and nutrition.

D. National Immunization Program / Comprehensive Multi-Year Plan (2011-2016):

The immunization program is one of the government's highest priority programs. The immunization program has helped in reducing the deaths of children and mothers from vaccine preventable diseases (VPDs) and has contributed in achieving Millennium Development Goals (MDG) 4 and 5. The Government, through its policy documents, has emphasized reaching poor and marginalized populations with equitable service. Over the past decades, new vaccines have become available to the market, and the Government is keen to provide all available means to reduce morbidity and mortality. In this regard, it is essential to have a long term immunization plan with priority activities identified as well as a financial sustainability plan.

The comprehensive multi-year plan 2011-2016 provides a plan for the next five years to achieve the immunization related goals expressed by the Government in various policy documents, the MDGs and WHAs resolutions, and different national and international forums. The plan also takes into consideration the Global Immunization Vision and Strategy (GIVS). 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 the introduction of new vaccines, eradication, elimination and control of targeted VPDs and strengthening of routine immunization.

Goal, objectives, strategies and key activities:

*The **goal** set for next five years is as follows:*

To **reduce child mortality, morbidity, and disability** associated with vaccine preventable diseases.

*The **objectives** are as follows:*

Objective 1:

Achieve and maintain at least 90% vaccination coverage for all antigens at national and district levels by 2016.

Objective 2:

Ensure access to quality vaccines adhering to appropriate waste management.

Objective 3:

Achieve and maintain polio free status. The last case of indigenous wild poliovirus in Nepal was detected in 2000. However 4-6 cases of imported WPV has been detected each year in 2005-2008 and again in 2010 (Nepal was polio-free from 2001 to 2004 and 2009).

Objective 4:

Maintain maternal and neonatal tetanus elimination status. Nepal achieved MNT elimination status in 2005. The government is planning several activities to maintain MNT elimination status.

Objective 5:

Achieve measles elimination status by 2016. Nepal has achieved the mortality reduction goal of decreasing measles deaths by >90% when compared to 2003 data. Nepal has taken further steps and has targeted measles for elimination by 2016.

Objective 6:

Accelerate control of vaccine-preventable diseases through introduction of new and underused vaccines.

Objective 7:

Strengthen and expand VPD surveillance. Currently the integrated surveillance of VPDs targeted for eradication, elimination, and control (AFP, measles, JE and NNT) is ongoing.

Objective 8:

Continue to expand immunization beyond infancy. Currently TT immunization has been provided to school children of grade one in 12 districts. The government plans to expand the school based immunization program to other districts as well as add new antigens including typhoid.

Recent update on Immunization:

18 January, 2015: This day marks another great initiative in the milestone of the National Immunization Program in Nepal with the introduction of another new vaccine – Pneumococcal Conjugate Vaccine (PCV) [12].

The introduction of the pneumococcal vaccine was to address one of the major causes of deaths in children: pneumonia. Some of the other severe forms of pneumococcal disease include pneumonia, and meningitis, causing life-long disabilities such as hearing loss and learning disability. All of these are significant public health problems and have a serious impact in child health around the world. In Nepal, as in other developing countries, deaths from pneumococcal disease are common in young children.

Nepal introduced PCV-10 which protects against the 10 serotypes causing most of the severe illnesses in children. This decision is supported by evidence of the circulating predominant serotypes in Nepal. PCV has been introduced in 16 districts in the Western Development region with immediate plans for gradual expansion into remaining districts of Nepal. PCV 10 is scheduled to be given in three doses at 6 weeks, 10 weeks and 9 months.

The Government and its partners WHO, UNICEF and GAVI and extensive community network in immunization are committed to ensuring that every child has equitable access to vaccines for a healthy and

prosperous future. The introduction of the PCV will reduce preventable child mortality rates. This is one of the Millennium Development Goal targets set to be achieved by 2015.

E. Second Long term Health Plan (1997-2017) [18]:

GoN, Ministry of Health felt the need of having a perspective health plan for another 20 years after the end of *the first long term health plan (1975-1990)* that would build upon the National Health Policy and guide health sector development in response to changing trends in the society. The perspective health plan would result in the improved health status of the population particularly those whose health needs often are not met:

- the most vulnerable groups,
- women and children,
- the rural population,
- the poor,
- the underprivileged and the marginalized.

Specific Purpose of the Second Long Term Health Plan

The specific purpose of the Second Long Term Health Plan is to provide a guiding framework to:

(a) Build successive periodic and annual health plans that would lead to improvement in the health status of the population. Recognizing there may be a need for adjusting the policies to accommodate changes in the health sector, the "Second Long Term Health Plan: is not a fixed blue print for the coming 20 years. Rather it is a resource document and rolling plan for the preparation of successive five-year development plans and annual implementation plans.

(b) Develop appropriate strategies, programs and action plan that:

- reflect the national health needs and priorities;
- are affordable; and
- Consistent with available resources.

(c) Establish co-ordination among public, private and NGO sectors, and donor partners.

Targets for the period of the Second Long Term Health Plan

By the end of the Second Long Term Health Plan, the following targets will be achieved:

- a) Infant Mortality Rate will be reduced to 34.4 per thousand live births from its present level of 74.7.
- b) Under five mortality rate will be reduced to 62.5 per thousand from its present level of 118;
- c) Total Fertility rate will be reduced to 3.05 from its present level of 4.58;
- d) Life expectancy in years will be increased to 68.7 from its present level of 56.1;
- e) Crude birth rate will be reduced to 26.6 per thousand from its present level of 35.4;
- f) Crude death rate will be reduced to 6 per thousand from its present level of 11.5;
- g) Maternal Mortality Ratio will be reduced to 250 per hundred thousand births from its present level of 475;
- h) Contraceptive Prevalence Rate will be increased to 58.2 percent from its present level of 30.1;
- i) Percentage of deliveries attended by trained personnel will be increased to 95% from present 31.5;
- j) Percentage of newborns weighing less than 2500 grams will be reduced to 12 percent;
- k) Essential Healthcare Services at district will be available to 90% of the population living within 30 minutes travel time.

F. National Safe Motherhood and Newborn Health Long Term Plan (2006-2017) [19]:

This revised National Safe Motherhood and Newborn Health Long Term Plan (2006-2017) was developed to be in line with the Second Long Term Plan Health Plan (1997-2017), the Nepal Health Sector Program Implementation Plan and Millennium Development Goals (MDG). The revision took into account recent developments such as the increased specific emphasis on neonatal health, recognition of the importance of skilled birth attendance in reducing maternal and neonatal mortalities, health sector reform initiatives, legalization of abortion, recognition of the significant levels of mother to child transmission of HIV/AIDS and increased emphasis on equity issues in safe motherhood services.

The overall goal of this plan is to improve maternal and neonatal health and survival especially among poor and socially excluded communities, with indicators drawn from the MDGs. These include a reduction in the maternal mortality ratio to 134 per 100,000 live births by 2017 and a reduction in the neonatal mortality ratio to 15 per 1,000 live births by 2017.

The purpose is increased healthy practices and utilization of quality maternal and neonatal health services, especially by the poor and excluded, delivered by a well-managed health sector. The indicators are an increase in the number of deliveries assisted by Skilled Birth Attendants (SBA) to 60 percent by 2017 and an increase in the number of deliveries in a health facility to 40 percent by 2017. Met need for Emergency Obstetric Complications will be increased by 3 percent each year and the met need for Caesarean Sections by 4 percent each year.

Eight key outputs have been identified, with individual indicators and key activities:

- 1. Equity and Access*
- 2. Services*
- 3. Public Private Partnership*
- 4. Decentralization*
- 5. Human Resource Development: Skilled Birth Attendant Strategy*
- 6. Information Management*
- 7. Physical Assets and Procurement*

8. Finance

The Seven most common cross cutting issues and approaches were identified, which are common to all the outputs. These are: social inclusion, gender, rights based approach, research and advocacy, enabling environment, public private partnership and decentralization.

4.2 Health systems strengthening strategies to support implementation of newborn and child health interventions:

A. National health logistics system:

According to the National Health Policy (1991) and the Eighth Plan (1992-97), a new organizational structure was introduced in July 1993. Major structural changes took place at the central level. All vertically organized structures were integrated into five divisions in the Department of Health Services. The establishment of the Logistics Management Division (LMD) significantly contributed to improve the overall health system. Over the last two decades, this system was carefully scaled and enhanced, with the creation of the Logistics Management Information System (LMIS), logistics management training and capacity building, construction of commodity warehouses and the introduction of the pull system,.

B. Facility based Maternal and Neonatal health service:

The government has undertaken an ambitious goal of increasing the proportion of **SBA-assisted deliveries** to 60% by 2017. However, this will remain a challenge in the short run, especially given that new birthing centers are rapidly expanding. Health workers who are currently providing care during pregnancy, labor, and childbirth in many of these centers do not necessarily have the full range of skills to be considered SBAs. Training health workers to detect, prevent, and manage complications during delivery is vital. In addition, the MoHP's community-based activities and programs have resulted in demand-creation for institutional delivery if any problems are encountered during pregnancy, delivery and post-partum periods for both mothers and newborns.

C. Local health governance:

In 2002, recognizing the importance of good health governance, the GoN, under the leadership of the National Health Training Centre (NHTC) and with support from external development partners, initiated the handover of the management of peripheral government health facilities to Health Facility Operation and Management Committees (HFOMCs). These committees are formally established local health bodies that govern the affairs and management of health facilities and comprise a variety of community representatives including village development committee (VDC) elected members, school teachers, FCHVs, Dalits and women members, thereby acting as an important bridge between the community and health facility.

Mere hand-over of health facilities; however, was not enough, and thus capacity building of HFOMCs was deemed necessary. Initially, capacity building of HFOMCs was not thought of as a process, but was equated to a one-time event or training. For this reason, in 2009, a refined and consolidated approach that focuses on continual and intensive capacity building was developed, named the **Health Facility Management Strengthening Programme (HFMSPP)**. HFMSPP's objective is to strengthen the management efficiency and governance of health facilities, mobilize local resources for health and increase service utilization by the community, particularly the excluded groups.

In the two years since HFMSPP was initiated, program and monitoring data, supported by NFHP II, show that the three key and interlinked areas that the intervention target, community engagement, social inclusion and local health governance, have been strengthened in a significant way. It is expected that these three components will ultimately improve health care service delivery.

4.3 Evidence that suggests such strategies are clearly working:

Nepal has made notable progress over the last few decades in improving access to maternal, neonatal, and child health services despite poor infrastructure, resource constraints, political instability, and difficult logistical circumstances.

Some underlying reasons for the success have been the improvements in leadership and governance, service delivery, and medical technologies, three of the six components outlined in the WHO Health Systems Thinking Framework. It is widely held that they will continue to play an important role in Nepal's overall health system.

There was a considerable increase in the number of health facilities providing 24 hour birthing facilities, with a resultant rise in the number of institutional deliveries by SBAs [13].

With the launch of the chlorhexidine Navi (cord) care program and administering training to all health workers and the community significantly decreased the morbidity and mortality cases resulting from cord infections. In a pilot study, the use of the antiseptic chlorhexidine for umbilical cord care was proven to reduce the risk of death by 24% in Nepal [14].

Fig 6: A Bar diagram representing trend of overall immunization coverage.

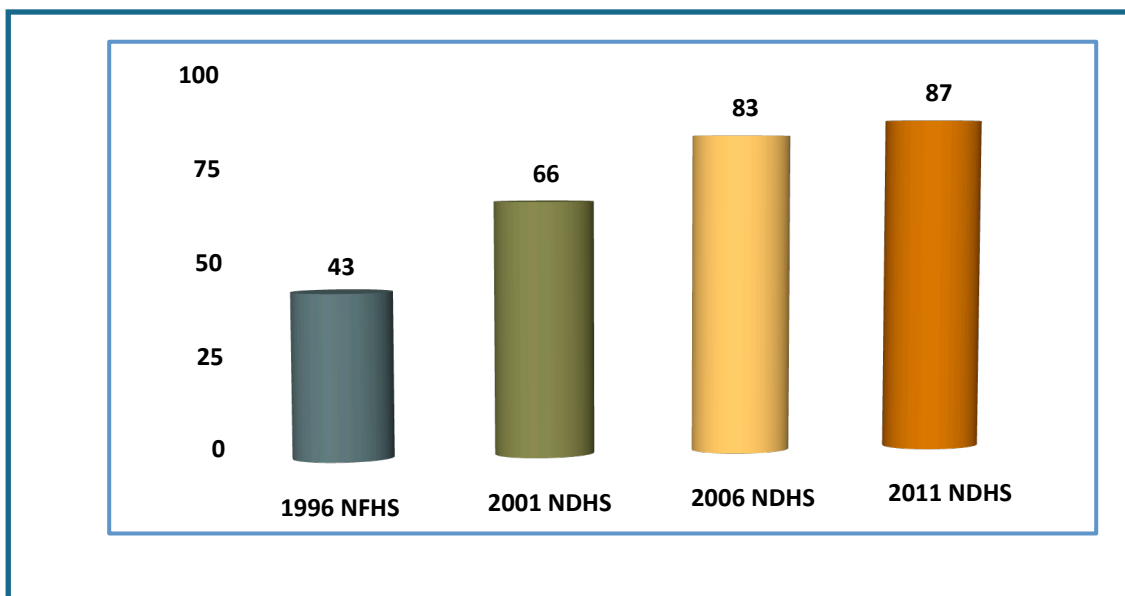
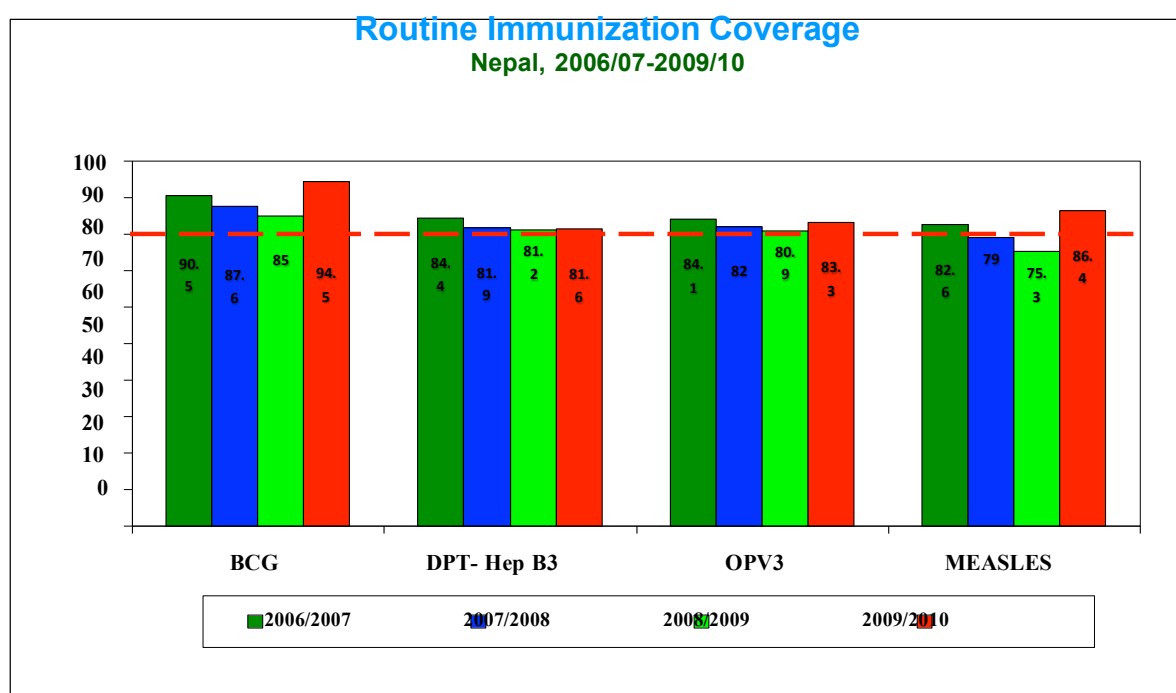
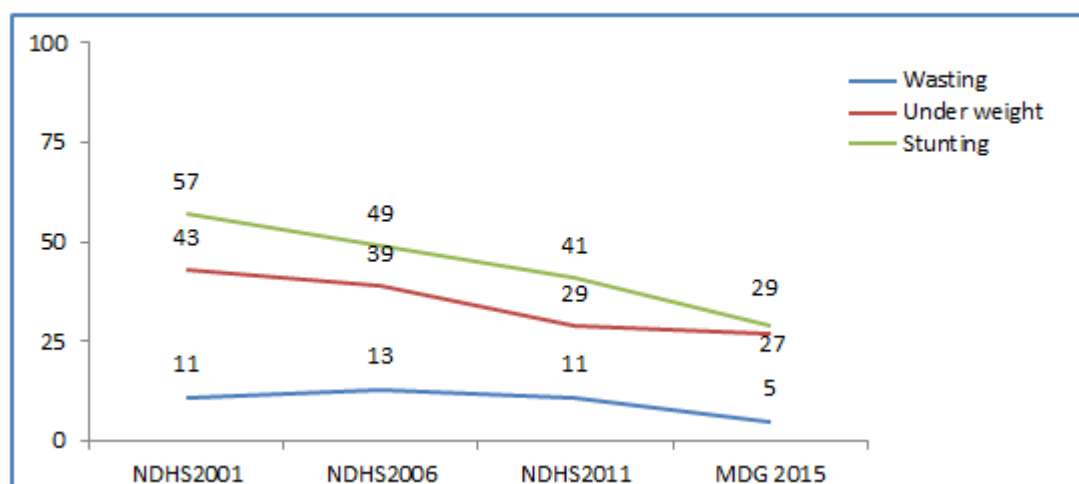


Fig 7: Immunization coverage of individual vaccines [15]



There has been a significant decline in the rates of malnourished children with the implementation of various nutrition programs in the country. This fact has been illustrated in figure 8 below. Despite all these achievements, Nepal is yet to reach the MDG targets in nutrition aspect.

Fig 8: Status of Nutrition among children in Nepal.



Encouraging responses from mothers of under 5 children:

• **Mothers were concerned about Growth Promotion and Development.**

- Improvement in Exclusive breastfeeding for 6 months
- Mothers had knowledge of appropriate complementary feeding from 6 months while continuing breastfeeding up to 24 months
- Mothers provided adequate micronutrients through diet

• **Improvement in Care Seeking and Compliance**

- Mothers took their child to complete full course of immunization
- They were able to recognize when child needed treatment outside of the home and consulted health workers
- Followed health worker's advice about treatment, follow-up and referral
- Improvement in antenatal visits

• **Improvement in Disease Prevention**

- Proper disposal of feces, washing hands after defecation, before preparing meals, and before feeding the child
- Mothers ensured that children slept under insecticide treated bed nets

4.4 Issues of Child Health policies in Nepal– Gaps and contradictions

1. IMCI service delivery in health facility:

- Lack of attention to proper use of IMCI registers and protocols, especially among higher level health workers
- Lack of IMCI training for recently recruited health workers
- Lack of refresher training for health staff
- Adverse effects on quality of care due to increased caseloads, especially in outpatient departments
- Low proportion of sick children under two months old registered at health facilities

2. IMCI service delivery at community level;

- Difficulty among older and illiterate FCHVs in assimilating new information
- Insufficient representation of minority groups among FCHVs

3. Referral system.

- Hospital staff, especially medical officers, not following the IMCI protocol
- Health facilities, and even some hospitals, are not properly equipped to treat seriously ill newborns and staff not receiving appropriate training
- Lack of an effective referral system between local health facilities and hospitals

4. IMCI service delivery in municipalities

- Inadequate coordination between district health offices, municipalities and the private sector
- Lack of clear reporting lines
- Social practices among temporary settlements, such as squatters, groups of extreme poor or excluded communities, not supporting health seeking behavior
-

5. Private sector and child health care:

- Mushrooming of the private sector, making it a challenge for CHD to provide training/orientation to all private providers
- Conflict of interest for private providers, since following IMCI protocols does not provide a high income (recommended measures are simple and low cost)
- Lack of a system for regulating quality of care in the private sector
- Lack of data reporting from the private sector, which affects the accuracy of overall national data.

6. Logistics supply and management

- Lack of district level implementation skills to ensure supplies are ordered in good time
- Inadequate commodity estimation and distribution at district level and below
- Lack of utilization of the LMIS at local level
- Poor monitoring and utilization of information reported from logistics system.

7. Reaching the poor and marginalized

- Low levels of utilization of IMCI services by poor and vulnerable groups
- Low representation of Dalit, Terai Janjati and Muslim groups among FCHVs
- Lack of specific approaches for reaching vulnerable and poor communities
- Wider socio-economic inequities, which impact the ability of families from different social groups to access services for their children
- Poor tracking mechanisms to identify the unreached

8. Recording and reporting

- Poor recording and inconsistent reporting
- Registers not completed according to the protocol
- Private sector service coverage not captured in HMIS reporting

9. Monitoring and supervision

- Inadequate supervision and monitoring systems
- Insufficient monitoring and supervision specifically for FCHVs
- Insufficient attention to solving community problems at district and community level review and monitoring meetings – the focus is on health facility issues
- Lack of proper feedback mechanisms
- Irregular outreach clinics and lack of community involvement in monitoring.

10. Communication, awareness and Pre-service training.

- Limited interpersonal communication skills of health workers in client interactions at all levels
- Insufficient BCC materials and messages in local languages
- Insufficient use of culturally appropriate and locally available BCC activities

- Lack of attention to child and newborn care in mass media messaging
- Insufficient linking between communication activities and social issues; such as social norms/practices, impact of limited decision making power of women on child health, caste/ethnicity constraints, language based discrimination
- Weak integration of IMCI messaging with national campaigns such as Vitamin A distribution and EPI campaigns

11. IMCI beyond child survival

- Lack of knowledge about the overall disease burden, especially non-communicable diseases, among children
- The need for a multi-sectorial approach to early childhood development
- Lack of focus on “non-priority” childhood illnesses and conditions in the government program, for example disabilities.

4.5 Lessons learned

About Up-scaling:

- Rapid implementation of the IMCI program into 75 districts decreased the quality of care due to insufficient refresher training.
- It should be done slowly in a properly coordinated and supervised manner focusing on quality rather than quantity. (In Nepal, training was done in an effective manner without noticing the quality of training that was provided to cover the 100% coverage of IMCI implementation)
- During implementation, identifying the lowest performing district was not performed which resulted in loss of quality of care.
- Focus from IMCI section as a single division started to lack due to rapid up scaling.
- Emergency order point for replenishing supplies as well as facilitating a rapid way to logistically provide these supplies was challenging due to non-synchronized governmental support.
- Implementation and up scaling alone won't help, it needs proper evaluation, feedback and sufficient adaptations.
- Proper supervision is required.

How to improve the implementation of the program at the district level?

- Provision of pediatricians in district hospitals who follow IMCI guidelines
- Upgrade health facilities with equipment and manpower. (In district hospitals NICU needs to be established to reduce the mortality rate of newborns)
- Increase the number of focal persons at district level for proper IMCI implementation
- Co-ordinations between Skilled Birth Attendants (SBA) and IMCI programs
- In each district, there should be a separate IMCI focal person for proper supervision and monitoring of the program.

How to improve training and supervision

- Provide pre-training for newly recruited health workers prior to transfer of the previously trained health workers.
- Timely monitoring and supervision by a separate group of government officials in coordination with partners.
- Training should be quality-oriented rather than incentive-oriented.
- Follow up, monitoring, and supervision are essential and should be frequently done by personnel from the central as well as district levels.
- Provide evidence of the current management protocols to the health workers so that they won't be hesitant to follow these treatment protocols even at urban hospitals.

5. Perspectives for the future:

IMCI/IMNCI is a priority child health program of the government of Nepal. It has been linked with CB-NCP, immunization and nutrition programs. ***Regarding newborn*** health strategies, providing NICUs in each district will improve and promote birthing centers making them more well-equipped, improving the referral system, and encouraging institutional deliveries. It is also necessary to include newborn care in SBA trainings and to provide pediatricians in each district to facilitate better future healthcare.

Communication by means of BCC needs to be improved for ***to promote closing the gap between the community and health facility***. Organizing various health camps, distributing pamphlets and posters, engaging in TV / radio advertisements, watching street drama/shows, attending VDC discussions and volunteering would be promote effectiveness. Furthermore, encouragement in the form of incentives should be given to those health workers who bring a sick child to a referral health center for further treatment. In order to ***strengthen the health system***, it is necessary to provide health facilities with the appropriate equipment, improve the referral system, empower children through strict child rights, and implement an IMCI/IMNCI corner in the OPD.

6. Summary of key informant interviews and key messages for the review:

Definition of IMCI/IMNCI

IMCI is an integrated approach to child health that focuses on care of the sick child and aims to reduce death, illness and disability. IMCI, was initiated by WHO, UNICEF, USAID in conjunction with the Government of Nepal. It is a holistic community-based program which addresses five major deadly diseases in children (diarrhea, malaria, measles, pneumonia and malnutrition). This program emphasizes both preventive and curative aspects and strengthens health delivery services both at the health facility and community levels. IMCI encompasses a holistic approach to identification, classification and management of common childhood illness (children aged 2-59 months) in order to decrease their morbidity and mortality and hence, improve their survival. It has both preventive and curative aspects and promotes growth and development in children under 5 years of age.

Brief history of IMCI

Community-based ARI and CDD (Control if Diarrheal Disease) programs were combined and renamed CB-IMCI. This program has now been implemented nationwide. Implementation began in 1997 in the Mahottari district and was expanded to cover 75 districts in Nepal by 2009.

1. 1997/98 Mahottari
2. 1999/2000 Nawalparasi, Bardiya and Kanchanpur.
3. 2000/01 Dhanusha, Nuwakot
4. 2001/02 Rupandehi, Kaski

- | | |
|---|-----|
| 5. 2002/03 Dhankuta, Makwanpur, Banke, Kailali, Bara | 6. |
| 2003/04 Jhapa, Morang, Sunsari, Saptari, Kavre, Tanahu and Dang. | |
| 7. 2004/05 Sarlahi, Dadeldhura, Doti, Bajhang and Humla. | 8. |
| 2005/06 Udayapur, Sankhuwasabha, Sindhuli, Gurkha, Parbat, Kapilvastu, Jumla, Surkhet, Palpa and Lamjung. | |
| 9. 2006/07 Panchthar, Siraha, Chitwan, Parsa, Dhading, Syangja, Gulmi, Mugu, Rukum, Pyuthan, Jajarkot, Accham and Baitadi. | 10. |
| 2007/08 Bhojpur, Ilam, Solukhumbu, Rasuwa, Rautahat, Dolakha, Ramechhap, Argakhanchi, Baglung, Myagdi, Dailekh, Dolpa, Kalikot, Bajura, Salyan, Lalitpur. | 11. |
| 2008/09/10 Bhaktapur, Kathmandu, Khotang, Okhaldhunga, Taplejung, Terhathum, Sindhupalchowk, Manang, Mustang, Rolpa and Darchula. | |

Organization/management

Government of Nepal in coordination with global partners like WHO, UNICEF and USAID and some NGOs implemented the IMCI program through its Child Health Division/ IMCI section. The Child Health Division (IMCI section) Ministry of Health is the center of the IMCI program throughout the country. The chief working under the Child Health Division of the Ministry of Health is responsible for the complete management of the program. He is directly involved in implementation, monitoring, funding and scaling up of the program through partners.

Key stakeholders:

WHO, UNICEF, USAID, JSI and INGOs/ NGOs like IRHDTC, PLAN, CARE, Save the Children, Government of Nepal, JICA, SCI.

Status of implementation:

IMCI has been implemented in all 75 districts in the community since 2010. The IMCI program was effectively implemented nationwide due to active participation from the Government of Nepal, donors, private sectors like Nepal Pediatrics Society (NEPAS) and various NGOs. Once this program was implemented nationwide, the results demonstrated a significant reduction in the childhood mortality rate. By 2009, there was a drastic decline in U5 MR and IMR. This program provided FCHVs (Female Community Health Volunteers) training for treatment of pneumonia which proved to be very beneficial. Since the program was discontinued over the last two years, FCHVs are now only involved in health promotion, no longer curative aspects.

Since 2014, a new strategy of IMNCI has been implemented in 2 phases. **First phase:** IMNCI has been implemented in 30 districts. 25 districts are still in the first implementation phase. **Second Phase:** The implementation of IMNCI in 20 districts will be done in the next fiscal year. From 2014 records have been maintained to monitor which government health workers have received training after the IMNCI program was implemented.

Evidence of impact

- After IMCI was implemented; there was a **decline in under five mortality rates** reaching the Millennium development goals (91 per 1000 live births in 2001 to 38 in 2014). Infant mortality rates decreased from 79 per 1000 live births to 33, and neonatal mortality decreased from 39 in 2001 to 23 in 2014.
- Overall **quality of care** has improved.
- **Community health workers** are well trained.
- **Mothers** who were previously hesitant to consult healthcare professionals in regards to their sick children now understand the importance of seeking medical attention for their children.
- Mothers were satisfied that their children were being treated in accordance with IMCI protocol guidelines.
- Awareness of the harmful practices have been increased.
- IMCI is one of the most cost effective programs promoting child health.

Adaptations

- Without compromising the training quality, the number of training days were reduced and 2 extra days of

IMCI management training was added which focused on planning, supervision and monitoring of the IMCI program. It included logistical management, district situation analysis and managerial skills development. The CB-IMNCI program management training will be based on the following principles:

1. Logistics regarding local resources for program sustainability
2. Training and orientation
3. Recording and reporting
4. Information cycle, data analysis and data quality
5. Information, education, and communication strategy
6. Coordination with stakeholders
7. Good governance

- **CB-NCP and CB-IMCI were merged to create the CB-IMNCI program.** This was a strong community level component in the IMCI program in which peripheral health workers are trained to recognize and treat life-threatening diseases
- Provision of low osmolar ORS and Zinc supplementation in the treatment of diarrheal disease in children had already been proven to be successful in other countries and was adapted into Nepal's IMCI program as well (In Nepal, zinc treatment was difficult to implement due to the tablet size and the duration of treatment).
- Co-trimoxazole was replaced by Amoxicillin as first-line drug treatment due to easy accessibility.

NEEDED ADAPTATIONS:

- Management of **childhood injuries and developmental delay and congenital malformations** in future adaptations
- Need to include tonsillitis and skin infections
- With the integration of CB-NCP into CB-IMNCI, the community's management of neonatal illness has increased. However due to poor utilization of the bag and mask and resuscitation techniques by the FCHVs, the neonatal part of the IMNCI program was removed.
 - FCHVs are now considered health promoters, due to not meeting their investment and training goals, as opposed to their previous roles of being service providers.
 - USAID did not want to prescribe amoxicillin because they had to re-train all the community health workers in regards to the dosing of amoxicillin. This was a difficult change for UNICEF and the Government of Nepal to adopt.
 - Now they are limited to counseling, promotion, and ORS.
- Co-trimoxazole was replaced by Amoxicillin as the antibiotic of choice for treating pneumonia.

Other effective interventions for child health

- Control of diarrheal disease (CDD)
- Acute respiratory infection control program (ARI)
- Community-based ARI control and diarrhea prevention program (CB-AC)
- **Community based newborn care program (CB-NCP)**
 - Extended Program of Immunization (EPI)
 - Integrated management of malnutrition (IMAM)

Strategies to improve coverage

- **Enact Legislation of Child Rights Act** which states that any person refusing to seek medical care for a sick child will be punished by law.
- **Logistics and drug supply should be coordinated at the district level** instead of at the central level to ensure timely provision and distribution of commodities. (There has been difficulty with regard to accessibility of essential drugs due to geographical remoteness).
- **Change focus from training to program implementation and strengthening:** Individual donor agencies focused on providing funds and implementing IMCI in their respective districts, which hindered the scaling up of IMCI. On the other hand, the Government of Nepal provided funds and materials needed for implementation of the program and consequentially rapid up scaling of the program occurred. In the future instead of utilization of funds for training, it would be better to strengthen the supply chain for

provision of services and essential drugs for the community.

- **Focus on pre-service training and short-term training** (2 day course instead of 7 day course) especially for students of medical and paramedical fields as a part of their curriculum. This could potentially be added after graduation, but before entering their respective graduation
- **Inclusion of pregnant women/maternal health into the IMCI program** so as to provide antenatal and maternal care at every opportunity
- Disperse healthcare workers throughout the country or **establish access to pediatricians, in rural areas**, who can consult on more complex cases.
- Improvements in the referral system, and given the focus on reducing neonatal mortality **focus on equipping district hospitals with NICU's** for example.
- Need to involve **private practitioners and medical colleges** for implementation of IMCI.
- Proper supervision is essential for implementation of the program.

IMCI strengths and weaknesses

Strengths:

- **Decline in child mortality rates at the community and national levels**
- **Community awareness** and case management for treating sick children was improved leading to an increase in **community level care-seeking** resulting in timely referrals,
- **Decline in the harmful health practices** at community level
- Increased coverage of immunization, sanitation and nutrition awareness
- Improvements in child healthcare including awareness, management, and declining mortality trends
- Increase in institutional deliveries
- Drastic improvement in the fields of child healthcare awareness, consultation-seeking, and survival.
- Improvement in the case management skills of all health workers
- Improvement in the family and community practices

Weakness:

Management Issues

- The **budget is provided during the last few (4-5) months** of the fiscal year making it difficult to do all the implementation activities in time . This results in a delay in supply of essential materials (logistically reaching the district/community during the 4th-5th month instead of the 1st month of every fiscal year)
- **Program was implemented very rapidly** so quality of care was decreased and its effectiveness was lost.
- It consumed resources and time. (particularly doctors at the regional and central levels)
- **No focal person at the district level** for supervision. This resulted in inadequate logistical coordination between district health officers and the central level. At the same time, the program became more complex and lacked coordination
- Early transfer of trained personnel and difficulty training new recruits

Logistical issues:

- Government was not able to provide some of the essential drugs in a timely manner.
- Once the government removed FCHVs from providing treatment and reassigned the task to other healthcare personnel, their findings suggested that the healthcare personnel were less dedicated than the FCHVs.
- Referral system was inefficient, and physicians are not trained in IMCI and referral care is poor even at teaching hospitals.

IMNCI Systems Issues:

- Lack of follow-up after training and monitoring. Since there was no supervision built in, after training, **HW's pretty much functioned on their own, without feedback from supervisors.**
- Inadequate implementation of **IMCI protocols in urban areas.** (Doctors are reluctant at central and regional levels to follow IMCI guidelines because it is a time-consuming process and they practice under alternative guidelines).
- **Referral care manual has not been used in Nepal.** Some healthcare workers have no knowledge of its existence.

- Improper and incomplete recording (IMCI register)
- Based on IMCI protocol, RDT testing is necessary prior to anti-malarial treatment, but RDT testing is not available in most of the health facilities.

Biggest bottlenecks.

Funding and Government Issues:

Funding gaps: Donor agencies provide funds to selected districts in phases, but don't have long-term funds to further implement the IMCI program in those districts. This creates a funding gap. To complete the remaining phases of implementation, district personnel await funding from either the Government of Nepal or donor agencies. In addition **a lack of categorization of target districts** occurs as the government should does not focus their attention on the lowest performing districts

The **unstable political condition** leads to **frequent transfers of personnel**, and lack of accountability. In addition since no training records are kept, there have been instances where healthcare personnel have been unnecessarily IMCI trained multiple times. Multiple unions of health workers affiliated with political parties allow for disparities in the implementation and monitoring process. (Such as untimely transfer of trained personnel to health facilities)

Regional and District management Issues:

Since there **is no dedicated IMCI focal person at the district level** (currently HW tends to be transferred every year or two.) These health workers, don't have a fixed job and can vary from being the in charge at a health Center, to working at the district level as a focal point etc. Since there is no tract for the IMCI focal person at the district level [such as the EPI focal person, who has if fixed position and can move from one district to another as an EPI for a person and has an ability to rise in his or her career in the EPI track].

Health Post and Referral Care:

Inadequately equipped health centers (eg lack of NICUs in district hospitals) and **poor referral care** results in, an increase in child morbidity and mortality rates. Since rural Nepal is geographically difficult to access, there are limited transportation facilities in rural areas for referral and lack of supervisory visits, compound this issue of quality of care. Due to limited health post office hours (10 AM-2 PM), mothers are often compelled to consult with FCHVs who have recently been limited in availability and do not have the ability to treat anymore, due to the government changing the description for the work of FCHV,s.

Lessons learned about scaling up

Rapid implementation of the IMCI program into 75 districts decreased the quality of care (follow-up after training was not sufficient). It should be done slowly in a properly coordinated and supervised manner, focusing on quality rather than quantity. In Nepal, training was conducted in an ineffective manner without paying close attention to the quality of training to obtain optimal IMCI implementation. The quality of care suffered because the focus was on wider coverage as opposed to quality. Furthermore during the implementation process, the lowest performing districts were not identified resulting in a **mismatch between need and implementation**. Finally, while rapid scaling up was being implemented, systems for supervision one not implemented. Thus very often health and Post health Center workers, remained **unsupervised for years at a time**, as a simple perusal of the HMIS records revealed.

There is a need for **refresher training**, however since health workers a transferred very frequently, and there is **no tracking mechanism for who is trained**, there often trained many times in their career. Since they get a per diem, are transported to a different town or city for the training, since they are taken off duty at the health post or health center or district level office, they often do not indicate that they have received training before. Hence the **redundancy in training**, results in overspending on training. All of the partners, the WHO and UNICEF included, tend to focus on percentage of health workers trained percentage of districts covered, this funding is often spent that the expense of programmatic implementation.

Finally, health post and health center workers were **not offered separate training in management skills** for HMIS or supply chain management, until recently when such a program has been implemented. Thus

emergency supply ordering as well as timely logistical supplies arrival was challenging due to non-synchronized governmental support, and inadequate staff training.

Useful innovations

Training of community level health workers (FCHVs) (In Nepal, FCHVs are the most active healthcare workers in the community). From the very beginning, Nepal focused on the community component of IMCI, but empowered FCHV's to provide health care for the management of ARI, diarrhea and malnutrition. In everyone's assessment, this was the main reason that Nepal decreased infant and under five mortality, using community IMCI.

The government of Nepal developed a **2-day package for management training** instead of a 7-day IMCI training to ensure proper implementation, monitoring, and evaluation. In the past, district level managers physicians, healthcare workers, nurses, all received the full seven-day IMCI package of training. However many of them required management training rather than the clinical IMCI training. Recognizing this mismatch, The Government of Nepal, developed this two-day training package, which is now targeted to personnel involved in management of supply chain, health post management, etc.

How to improve district implementation

Decrease the burden of training imposed upon districts by implementing mandatory pre-service training for all health care workers. Since the start of IMCI training almost 20 years ago, most current health workers have received training several times for various aspects of IMCI. As guidelines have been changing, [example the addition of zinc treatment for diarrhea, or change in first line antibiotic for pneumonia] retraining have occurred for many healthcare workers. This has resulted in a massive amount of resources being spent in training and retraining periodically over the last 20 years. Preservice training ostensibly does occur, but most healthcare workers and physicians and nurses, just view it as a part of the training, but is not taken seriously, because these are not included in examinations. The suggestion was made, by the current director, that prior to obtaining the degree, mandatory preservice training be implemented at all levels.

Develop an IMCI tract for the district focal point for IMNCI. This would increase the number of focal people at the district level to ensure proper monitoring and supervision of IMCI implementation. If there were a formal job description, with a formal IMCI program [much as with EPI], including district management training, health Center and health post pathways for IMCI, in effect the development of an IMCI program, with separate streams of funding from the government, this would be the most ideal circumstance. Some of the obvious advantages are listed below. The focal people from each district should have a record of the IMCI trained personnel to ensure that if they are transferred to another district, they attend a short-day training refreshment course. Allocation of logistical duties to the focal person at the district level to strictly monitor and supervise the timely arrival of essential supplies. Supervision of the health Center and health post implementers of IMNCI would improve quality of care significantly.

Feedback from the Community, Health Post and Health Centers: While regional level meetings occur quarterly, and district level meetings occur monthly since there is not a formal dedicated IMNCI focal point at the district or regional levels, coordination often does not occur. Annual meetings should be held at the district level to glean feedback from the community and to solve problems encountered by the community. Such analysis should be discussed at least annually at the central level for proper implementation.

Coordination between Skilled Birth Attendants (SBA) and IMNCI programs. Since the focus of reducing mortality in childhood has shifted to reduction in neonatal mortality, it is critical that there is better coordination between skilled birth attendants of all levels and IMNCI implementation. Currently the two programs for maternal mortality reduction and child survival are in 2 separate directorates in the Ministry of health, with very little coordination. As a result there is very little coordination at the district level as well. The IMNCI program should probably take a lead in this direction.

Referral care: Establish healthcare facilities with proper equipment and personnel. (In district hospitals a

NICU needs to be established to reduce the neonatal and infant mortality rates). Provision of pediatricians in district hospitals who follow IMCI guidelines, or the referral care guidelines for management of sick children is considered essential. At this point, even at the teaching hospitals in Kathmandu, and all of the regional and district level hospitals, the WHO referral care guidelines, are not being utilized, and in fact most physicians are unaware of this resource. It is urgently required that WHO develop more user friendly, focused referral care guidelines.

How to improve training and supervision

1. Provide pre-training for new recruits prior to transferring the previously trained health workers.
2. Trainings should be held by corporations including JSI, UNICEF, IRHDT, not by local NGOs.
3. Training should be quality-oriented rather than incentive-oriented.
4. Provide evidence of the current management protocols to the health workers so they won't have reservations implementing these treatment protocols.
5. Senior pediatricians should provide training.
6. Follow-up, monitoring, and supervision are essential and should be frequently done by personnel from the central as well as district levels.
7. Timely routine monitoring and supervision by government officials in coordination with partners
8. Management of trained personnel is necessary to ensure that a short refresher training course can be provided if need be.
9. Ministry of Health supervision and coordination with external donor agencies' should be performed in a timely manner to ensure appropriate interventions, are implemented in districts where it is most needed..

Effective interventions and delivery strategies

1. Training of community level FCHVs in the care of newborns
2. Use of low osmolar ORS and zinc in children with diarrhea
3. Provision of management training, register recording, and maintenance training

How to strengthen the health system

1. **Child Health Right to survival** should be taken up at the legislative level and laws passed to ensure this right is observed, and where there are failures, either in the system or at an individual level, prosecution be instigated.
2. **Increase funding in the child health sector**, and what funding is available should be focussed more on childhood survival strategies rather than on training programs. (e.g. funds utilized to print handbooks and pamphlets can instead be used in implementation.
3. **Improvement of the referral system**;
 - a. Stocking the healthcare facilities with the necessary equipment and supplies
 - b. All facilities should have updated medical records to be better able to determine the specific disease and cause of death (formal medical audits at all facilities)
 - c. Effective monitoring and supervision for all central, regional, and district levels
 - d. Availability of pediatricians at the district level
 - e. Provision of a separate IMCI corner with trained health personnel in the OPD

mHealth

In Nepal, mobile health is difficult to implement, because of the geographically difficult terrain. mHealth is only available for adolescent and reproductive health. It was felt, that It is probably necessary to include child health as well. However it is necessary for pediatricians to be able to communicate with healthcare providers from rural areas, since referrals will exponentially increase.

How to link facility, community

1. **Health workers should educate the community** regarding the management of childhood illnesses. This could be done by improved communication through interactive videos for community awareness, and involvement of mass media, pamphlets, VDC discussions, student volunteers etc. Another idea would be for health camps provided by health facilities in the community
2. **Involve community level politicians** and volunteers to actively participate in promoting IMCI
3. There should be a **new referral system involving direct transportation of sick patients by the health care worker**. The concerned health worker will be responsible for transporting the sick child to the health facility for treatment and returning the sick child back to the mother. Incentives for the healthcare workers who are transporting the sick children for further treatment to the referral center should be provided. (Mothers are hesitant to take their child to the referral centers because it consumes their time during the harvest season)

Newborns

Newborn care has recently been incorporated into IMCI in order to achieve the Millennium Development Goals of reducing neonatal mortality. Suggestions include the following:

1. Increase the number of institutional deliveries by incentivizing mothers and spreading awareness eg: improve birthing centers so that they are better utilized
2. Strengthen SBA trainings to include essential newborn care (which it is not currently)
3. Since newborn cases tend to be complicated, there should be adjustments in the training protocol to begin with newborn care and then address the care of older children.
4. Provision of NICUs at district hospitals

Link IMCI with child health program

IMCI has been linked with the CB-NCP program (nutrition and immunization programs of the government)

Actions needed at national, regional, district, facility, and community levels

National:

1. Review of package focusing more on newborns
2. Maintain quality of program by supporting the health system
3. Involve more partners on a regular and long-term basis
4. Strict enforcement of the Child Health Act, which states that if the parents of a sick child do not seek medical attention for their child, the parents will be investigated and could face legal repercussions
5. Incorporate IMCI in the medical school curriculum to ensure that doctors and paramedics treat children in regard to these specific guidelines
6. A data analysis needs to be conducted to set a target goals to reduce the childhood morbidity and mortality rates.

Regional District Level:

1. Review of data based on HMIS, in order to prioritize areas for support
2. Strong coordination with supply team
3. Supplies should be readily available
4. Proper follow-up after training
5. Increase the funding to provide the necessary monitoring and training
6. Quarterly reviews of the system should be conducted at district, regional, and central levels

Health Facility Level

1. Provision of IMCI trained pediatricians in district hospitals
2. Proper training of low level health workers regarding timely referral system
3. Ensuring that district health centers have the necessary healthcare equipment
4. Proper management of supplies to ensure the appropriate items are available in Emergency situations

At the Community Level

1. Community awareness to improve care-seeking
2. Disseminating of health education to the community

IMCI fit with govt. plans?

Yes, implementing the child health plan, IMCI, is the government's main priority. Results after implementation have shown that the program has substantially minimized harmful practices and reduced morbidity and mortality rates.

How to attain donor investment

1. Organizing donors' conferences annually in regards to child health policies
2. Set a target goal so that all the donor agencies will coordinate as a single team in achieving the desired target within the time frame
3. The government should meet the expectations of the programs implemented through proper utilization of the funds.
4. Achievement updates should be provided to the donors, in the form of tangible data.
5. Transparent fund utilization to encourage regular and long-term funding
6. Ensuring the donors that the Child Health Act is a major priority of the government and needs monetary support for successful implementation.

How to enhance coordination between govt. and partners

1. **Establishing annual meetings** amongst the government and the partners to improve coordination and facilitate proper implementation A multi-sectorial program should be established to unite the stakeholders to establish continuous support. The Gov. of Nepal should prioritize child health in stakeholders' conferences
2. **The government should directly coordinate with the donors** to implement funding, training, and logistics regarding supplies via stakeholders' meetings nationally and internationally. This should include development of donor guidelines to clearly identify their philanthropic interest.
3. **Involvement of the partners** in every aspect of the program including funding, program development, adaptations scaling up, implementation and monitoring, phases. Thos would inclues frankly discussing the hindrances to proper implementation. Give regular feedback on service delivery, funding status, and funding utilization.

How to monitor progress and hold the government accountable

At the National Level:

1. Provision of regular (annual if possible) **nationwide monitoring** of the implemented programs
2. An **annual data analysis** is necessary to determine the areas that need the most help in their performance. (More focus should be given to the poorest performing districts). The government (central level) should be notified periodically regarding any issues and help should be administered accordingly
3. **Expansion of the program should be delayed** until satisfactory results are achieved. We can monitor the population every 3-4 months and administer health facility surveys

4. Regular feedback to the IMCI (Child health Division-Ministry of Health) should be provided to make them **accountable** and more involved

Improving Monitoring:

1. There should be frequent and **regular monitoring of the program**.
2. Improvements are needed in **recording and reporting systems** at all levels but most at the community and central levels.
3. Data **collection and analysis** should be performed and a presentation should be conducted involving communications of their findings.
4. A **designated focal person from each district** should monitor the program. Focal people from each district should regularly communicate with the center and provide updates regarding supervision and monitoring to close the gap.
5. Providing a **separate team for monitoring** at the district and central levels who can communicate easily with each other and work efficiently year-round.

How to better communicate IMCI

1. Implementation of Behavior Change Communication
2. Interactive videos and posters to promote community awareness
3. Revise and update the curriculum of health workers in regards to
4. Improvement of inter-personal and inter-departmental communications on all aspects of health programs
5. Provision of nationwide awareness campaigns
6. Communication and advocating strategies promote changes in social, economic and environmental contexts.
7. Rather than attempt to change the care practices and health-seeking behaviors of individuals through the design and delivery of messages alone, an approach based on community engagement and discussion to establish the social conditions is needed.
8. The participatory communication processes that are used in sectorial programs can be enriched and combined, improving the engagement of community members in wanted to learn more about child health and development.
9. Strengthening inter-personal communication skills at district and central levels
10. Development of a direct communication line with central personnel regarding the needs of the community
11. Strengthening of BCC (Behavioral Change Communication) to adapt healthy
12. Focus on inter-personal and inter-departmental communication on all aspects of health programs

What global stakeholders must understand

1. Nepal poses geographical difficulties for proper implementation of the program.
2. They should be aware of the unstable government so that they can increase their own participation in the implementation process. The monetary support should be collected multiple times per year to close the funding gap. Natural disasters(e.g. earthquakes) can cause governmental reprioritization resulting in the need for additional funding.
3. All of the donor agencies should work synergistically in order to consume less resources.
4. Skilled healthcare personnel should be designated to regulate proper trainings.
5. Treatment protocols should not be overly complex in regards to the community.
6. There are still discrepancies in following IMCI guidelines amongst hospitals and the community.
7. Global stakeholders, including the Government of Nepal, should implement doctors in following the IMCI treatment guidelines at the central level.

8. A data analysis is very important to determine the major causes of death in children to ensure timely interventions.
9. Funds solely allocated for trainings are not sufficient for the promotion of child health.
10. Provision of separate treatment protocols for physicians and FCHVs
11. An analysis needs to be conducted to determine the major diseases in the least performing countries so that those diseases will be included in the IMCI program to decrease morbidity and mortality rates.

How can partners coordinate

1. Previously WHO was the main support for IMCI. Currently, UNICEF has led in funding support.
2. The partners need to coordinate amongst themselves to provide expanded and equivocal support. A partners' meeting should be held to determine a unified approach to provide support to the program-implemented countries.
3. Increase and monitor funding, provide essential drugs and skilled manpower
4. International coordination to ensure homogeneous achievements, adequate funding, and supervision Organization of regular meetings, workshops and multi-lateral conversations for overall collaboration • Each of the partners should have a specific focus so that they can effectively implement the program to facilitate cumulative success.
5. Promotion of inter-agency working groups to share information/analytical findings during annual meetings
6. Information dissemination amongst partners is imperative to determine the obstacles/gaps.
7. A data analysis is critical and should be conducted amongst the Government of Nepal (MoH) and donor agencies to prioritize the lowest performing districts and also cover funding gaps.
8. Organizing and promoting regular meetings and workshops to understand each other's roles in the program and to discuss long-term funding support

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Annex- 1 (District profile of Kavrepalanchowk):

Indicator		Value (mean)	Source (Year)
Total population		381,937	CBS 2011
Total under-five population		36,661	ANNUAL REPORT 2014/15
Annual births		6,235	ANNUAL REPORT 2014/15
Under-5 mortality rate (per 1000 live births)		33.5	CBS 2011
Main causes of death for children under 5	<ol style="list-style-type: none"> 1. Pneumonia 2. Sepsis (PSBI). 3. Low birth weight. 		
How is this district different from the national average?	The under five mortality rate of Kavre district is lower (33.5) compared to the national average of 52.9		
Why was this district selected as a focus district for the Strategic Review?	This district was selected as a focus district for the strategic review because it was found to be a good (above national average) performing district.		
What specific issues need to be studied during the visit to this district? If any	<p>Logistic supplies</p> <p>Proper recording and reporting of the program.</p>		
Are there any relevant innovations for child health being implemented in this district?	Newborn corner and Stabilization center have been newly started.		
What else is it important to know about this district before visiting?	Know about its geographical situation, distribution of VDCs and their respective population, health facilities available and the health indicators of the district.		

A one day visit to Ugrachandi Janagal Health Post, Banepa, Kavrepalanchowk district

Health Post In-Charge, Mr Maheshwor Shrestha, has worked here for the last 9 years with the briefed the team (Dr.Simoes Eric, Dr. Benu B Karki, Mr.Ram Bhandari and Dr. Niraj Nakarmi)

The Ugrachandi Janagal health post is situated in two neat and clean rooms provided by the local Village Development Committee. It has a catchment area with a population of about 7000 encompassing 110 households . Surprisingly this number has suddenly jumped to 1700 after the devastating earthquake of 25 April 2015. Because this would benefit a large number of people availing the government support given to the earthquake sufferers.

The HP had a target of 191 new births this year; however, there were only 75 reported. There are 9 FCHVs working in the area of this HP of which Mrs. Ganesh Maya Ranjitkar was available to appraise the team about her work.

The FCHV register contains all of the information regarding the services provided in IMNCI . They provide these services either by visiting the houses or at their own home if the mother or her child come there. Previously they were given Rs.400 per a pregnant mother in exchange for providing follow up services for her multiple times. This is no longer occurring because an evaluation team found that the amount of mother's was insignificant compared to the results found. They used to treat ARI in the with cotrimoxazole and amoxicillin but now that this is no longer used in treating ARIs, FCHCs refer ARI cases to HP. The team noted at the HP that the register was well designed but it was not properly maintained indicating that supervision was lacking.

Annex – 2
(District Profile of Bajura)

Indicator	Value (mean)	Source (Year)
Total population	134,912	CBS 2011
Total under-five population	16,187	ANNUAL REPORT 2014/15
Annual births	3,577	ANNUAL REPORT 2014/15
Under-5 mortality rate (per 1000 live births)	101.5	CBS 2011
Main causes of death for children under 5	<ol style="list-style-type: none"> 1. Pneumonia 2. Sepsis (PSBI). 3. Low birth weight. 4. Diarrheal disease. 	
How is this district different from the national average?	The under -five mortality rate of Kavre district is very high (101.5) compared to the national average of 52.9	
Why was this district selected as a focus district for the Strategic Review?	This is a very low performing district in terms of child health indicators and hence, selected as a focus district for the strategic review.	
What specific issues need to be studied during the visit to this district? If any	Logistic supplies Proper recording and reporting of the program. Supervision and Monitoring Community level health awareness programs.	
What else is it important to know about this district before visiting?	We should have knowledge about its geographical situation, distribution of VDCs and their respective population, health facilities available and the health indicators of the district.	