

**Progress Report on  
Major Health Related Research and Studies in  
2011/12**

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## ACRONYMS

AHW	Auxiliary Health Worker
ANC	Antenatal Care
BEONC	Basic Emergency Obstetric and Neonatal Care
BFH	Baby Friendly Hospital
BH	Bharatpur Hospital
CEONC	Comprehensive Obstetric and Neonatal Care
COPD	Chronic Obstructive Pulmonary Disease
CPR	Contraceptive Prevalence Rate
FCHV	Female Community Health Volunteer
FGD	Focus Group Discussion
FP	Family Planning
GBV	Gender Based Violence
HDC	Hospital Development Committee
HFMC	Health Facility Management Committee
HHS	Household Survey
HP	Health Post
ISAAC	International Study of Asthma and Allergies in Childhood
IUCD	Intrauterine Contraceptive Device
JZH	Janakpur Zonal Hospital
KZH	Koshi Zonal Hospital
NBFH-	Non Baby Friendly Hospital
NDHS-	Nepal Demographic and Health Survey
NLSS-	Nepal Living Standard Survey
PEFR	Peak Expiratory Flow Rate
PER	Public Expenditure Review
PHCC	Primary Health Care Centre
PNC	Postnatal Care
PP	Postprandial
RMNCH	Reproductive, Maternal, New born and Child Health
SBA	Skilled Birth Attendant
SHP	Sub Health Post
STS	Service Tracking Survey
UP	Uterine Prolapse
VHW-	Village Health Worker
WHO	World Health Organisation
WRH-	Western Regional Hospital

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# 1 INTRODUCTION

## 1.1 Background

The health system in Nepal has changed over dramatically the last few decades. Changes in the political system, technological improvements, enhanced access to information and services, increased urbanisation and connectivity, changes in the development process, the promotion of equity and social inclusion, and many other changes have shaped a new reality in the country. These and other factors, in one way or another, have had a profound impact on the epidemiological and health seeking behaviour patterns of the population. As a result, new and unique opportunities as well as new challenges are arising. Facing this new reality calls for rethinking the concept of the government's role and public policy. It is time for innovation, for building new decision making capabilities, and for consolidating and ensuring stability and the effective operation of our health policy. With rising expectations and demand for health services, the government's responsibility to provide an efficient and purposeful health system has considerably increased. This includes protecting economically and socially vulnerable groups, combating poverty, ensuring universal coverage or social health protection, promoting equity, mobilising financial and human resources, protecting against catastrophic payments and so on. We should not underestimate the significance of those challenges, which place a premium on enhancing the efficiency and productivity of the country.

## 1.2 Objectives and Methods

The objective of this report is to assemble the findings from various health research reports, published articles and studies conducted in 2012 to enable policy makers to use this evidence for policy purposes.

This is not a systematic review, and does not validate or ensure the relevance of the research designs, or advocate the health policies presented. It simply collects and highlights evidence from various sources available to the researcher in the allotted time. The research reports were collected through email communications, visits to the research institutions/organisations, collection from the library of the Nepal Health Research Council, and web searching of the research institutions in December 2012.

All research reports, articles published or studies carried out in 2012 that were available to or accessible by the researcher within the given time are included in this study. The main findings of the reports and articles that are relevant to existing major health policies for Nepal are summarised in this report.

## 2 ANALYSIS

	Method	Key findings	Key recommendations
<b>1. Nepal Population and Housing Census, 2011 (Report published 2012)</b>			
	Census	<p>Total population= 26,494,504. Growth rate= 1.35%</p> <p>Ownership of housing units= 85.26%</p> <p><i>Source of drinking water:</i> Tap/piped water = 47.78%; tube well/hand pump = 35%</p> <p><i>Usual fuel for cooking:</i> Firewood= 64%</p> <p>More than one third (38.17%) of total households do not have a toilet in their houses.</p> <p><i>Sex Ratio:</i> The sex ratio (number of males per 100 females) at the national level decreased from 99.8 in 2001 to 94.2 in 2011.</p> <p><i>Population growth in districts:</i> The fastest decadal population growth rate was in Kathmandu district (61.2%) and the slowest in Manang (-31.8%). Altogether 27 districts including Manang, Khotang, Mustang, Tehrathum, Bhojpur recorded negative population growth rate during last decade.</p> <p><i>Working age population:</i> The working age population (15 to 59 years) increased from 54% (12,310,968) in 2001 to about 57% (15,091,848) in 2011.</p> <p><i>Literacy Rate:</i> The overall literacy rate (for aged 5 years and above) increased from 54.1% in 2001 to 65.9% in 2011. The male literacy rate is 75.1% compared to the female literacy rate of 57.4%. The highest literacy rate is reported in Kathmandu district (86.3%) and the lowest in Rautahat (41.7%).</p>	
<b>2. Household Survey (HHS), 2012</b>			
	The sampling strategy used a stratified multistage cluster design.	The HHS 2012 found that 47% of the population was living within 30 minutes travel time to a health post or sub health post. This is far from the 2013 target	

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	<p>The country was divided into three ecological zones: mountain, hill and terai.</p> <p>The district selection followed the method used in the Nepal Demographic and Health Survey (NDHS), which stratifies Nepal by the 3 eco-zones and 5 development regions, into 13 sub regions. The mountain districts in the west, mid-west and far-west are combined into one sub-region due to the relatively small populations. One district was randomly selected from each of the 13 sub-regions.</p> <p>The study captured 10,250 households to access the information.</p>	<p>of 70%.</p> <p>Overall 37.5% of the population had utilised outpatient services at government health facilities (district hospitals or lower) in the last 12 months.</p> <p>Overall 0.5% of the population had utilised in-patient services at district hospitals over the last 12 months.</p> <p>Of all women who delivered children in the last 12 months, 5% had caesarean sections. This is higher than the target for 2013 and 2015, and also meets the international recommendation of between 5-15% of all deliveries (WHO 2009).</p> <p>Of children under five years old who had suffered from diarrhoea in the last two weeks, more than one fifth (22%) had been treated with zinc and ORS.</p> <p>Of children under five years old who had suffered from pneumonia in the last two weeks, more than one-third had received antibiotics (36%). This puts the indicator on track to reach the 2013 target of 40%. There is a small improvement from NDHS 2011 (35%).</p> <p>Of women who had delivered children in the last year, 43% had delivered in a health facility. This surpasses the 2013 target (35%) and the 2015 target (40%). It represents a large improvement compared to the NDHS 2011 (35%). However, it should be noted that the NDHS findings reflect deliveries over the last five years, whereas HHS 2012 covers only the past one year.</p> <p>Most maternity clients (92%) were satisfied with the health care they had received.</p> <p>Overall, 90% of outpatients were satisfied with their care. Inpatients (94%) were more satisfied than outpatients (90%) and maternity (91%) clients.</p> <p>One-fifth of households (20%) had a hand washing station near their latrine with soap and water. This is far from the target of 65% for 2013, suggesting that this target will not be reached. It is considerably lower than the percentage recorded in the NDHS 2011 (48%).</p> <p>Overall, 34% of women of reproductive age (15-49) were aware of safe</p>	

	Method	Key findings	Key recommendations
		<p>abortion sites. This is on track to reach the target of 35% by 2013. However, this figure is far lower than that recorded in NDHS 2011 (59%).</p> <p>Overall, 57% of women of reproductive age (15-49) know at least three pregnancy related danger signs. This already exceeds the target for 2013 (40%) and 2015 (50%).</p> <p>Nearly half (48%) of women of reproductive age (15-49) know at least three newborn danger signs. This exceeds the target for 2013 (40%).</p> <p>Overall, 69% of infants were exclusively breastfed for their first five months. This far exceeds the relatively low target of 48% in 2013, as well as the target for 2015 (60%). This finding is very similar to that recorded in the NDHS 2011 (70%).</p> <p>Among children aged 6 to 59 months, 90% had received vitamin A supplements. This meets the 2013 and 2015 targets of 90%. This figure is the same as that recorded in the NDHS 2011 (90%).</p> <p>Among married women of reproductive age (15-49), the contraceptive prevalence rate (CPR) for modern methods is 43.1%. This is far from the 2013 target of 52%, suggesting that the target will not be met. It is very similar to that recorded in the NDHS (43.2%).</p> <p>Nearly half (48%) of pregnant women attended at least four antenatal check-ups. This is not on track to reach the 2013 target of 65%. The figure is similar to the NDHS 2011 finding of 50%.</p> <p>Nearly half of women who delivered in the last year were assisted by a skilled birth attendant (SBA) (46%). This exceeds the target of 40% in 2013, and is a major improvement from the NDHS 2011 figure (36%).</p>	

	Method	Key findings	Key recommendations
<b>3. Service Tracking Survey (STS), 2012</b>			
	<p>The same districts were used in HHS and STS, 2012.</p> <p>The total number of 198 facilities was selected in STS 2011.</p>	<p>Most of the clients (91%) were satisfied with the care they received at health facilities. This exceeds the targets set by NHSP-2 for 2013 and 2015 (74% and 80% respectively).</p> <p>All districts had at least one facility providing the signal functions applicable for both Basic Emergency Obstetric and Neonatal Care (BEONC) and Comprehensive Obstetric and Neonatal Care (CEONC) 24 hours per day for 7 days per week (24/7): normal vaginal delivery, assisted (vacuum or forceps) delivery, manual removal of placenta, removal of retained products, parenteral antibiotics, parenteral oxytocic drugs, parenteral anticonvulsants and neonatal resuscitation. However, provision of the additional two CEONC only signal functions (providing blood transfusions and caesarean sections 24/7) was lower, and just 62% of districts had these facilities. This is an improvement over 2011 data, where 39% of districts had a facility providing blood transfusions and 54% had a facility providing caesarean sections.</p> <p>A remarkable increase was observed in the percentage of Primary Health Care Centres (PHCCs) providing all BEONC signal functions 24/7, from 14% in 2011 to 39% in 2012.</p> <p>Nearly all health posts classified as birthing centres offered delivery services 24/7 (93%). This finding is above the NHSP-2 target set for 2011 onwards (80%).</p> <p>The availability of long acting family planning services at safe abortion sites remained high between STS 2011 and STS 2012 (91% and 90% respectively). Most safe abortion sites (90%) were providing intrauterine contraceptive device (IUCD) services while only three-quarters (76%) were providing implant services.</p> <p>As in STS 2011, STS 2012 found that all health posts provided short term hormonal (pills and injectables) and non-hormonal (condom) contraception</p>	

	Method	Key findings	Key recommendations
		<p>options. However, very few health posts provided IUCDs (17%) or implants (15%). A large drop was seen in the provision of IUCDs at health posts from 35% in STS 2011 to 16% in 2012.</p> <p>Only 19% of sanctioned posts at PHCCs and 56% at district hospitals were filled. The findings are better for nurses than for doctors, but still poor at PHCCs, where only 59% of sanctioned posts were filled. The situation at district hospitals is better, with 83% of nursing posts filled.</p> <p>Looking at the individual categories of health workers, we found that only 50% of district hospitals have five SBA trained nurses. Only 21% of the district hospitals have obstetrician/gynaecologists or medical doctor general practitioners (MDGPs).</p> <p>This survey found that 41% of health facility management committees (HFMCs) and hospital development committees (HDCs) had the targeted three female and two Dalit or Janajati members. Hospitals (8%) and PHCCs (29%) are least likely to meet this guideline and there has been a decrease from 2011. Lower level facilities – HPs (44%) and SHPs (47%) – are performing better for this indicator).</p> <p>The survey found that 21% of facilities conducted social audits, exceeding the target for 2013 (15%).</p>	
<b>4. Responding to Increased Demand for Institutional Delivery in Nepal</b>			
	<p>(Situational Analysis and Emerging Options)</p> <p>Data was collected from six referral hospitals out of the 12 reportedly overcrowded hospitals. The six hospitals were purposively selected to represent the five development regions and ecological zones.</p>	<p>The number of normal deliveries at the referral hospitals has increased by 43% in three years.</p> <p>The number of complications managed shows an irregular trend with increases in four hospitals and decreases in two hospitals.</p> <p>Caesarean sections as a proportion of all hospital deliveries remained stable over the period. The number rose from 6,000 to nearly 9,000.</p> <p>Overall, 18% of all deliveries are by caesarean section in the public hospitals.</p>	<p><i>Enhance maternity services at the district hub by either:</i></p> <p>Expanding current maternity wards (4/6 hospitals already have plans);</p> <p>Establishing additional Birthing Units at hospitals for normal deliveries; or</p> <p>Establishing additional maternity</p>

	Method	Key findings	Key recommendations
		<p>The service utilisation in private medical colleges implementing the Aama Programme was gradually increasing. However, delivery by caesarean section was higher, at 28% in the private facilities sampled.</p> <p>Comparing the ethnicity of users of referral hospitals with the ethnicity of the total district populations shows that the terai castes used the services proportionally more than the other castes (users - 28%, population share - 11%).</p> <p>The reverse is true of Janajati ethnic groups, who used referral hospitals less (20%) and preferred birthing centres (43%) compared to their proportion of the total population (39%).</p> <p>Users among the Brahmin/Chhetri (34%), Dalit (10%) and Muslim groups (5%) were about proportionate to their share of the districts' population.</p> <p><i>Bed occupancy rates</i> — The bed occupancy rate of maternity wards showed an increasing trend at all the hospitals studied over the last four years. The bed occupancy rate of Janakpur Zonal Hospital (JZH) was more than 100%.</p> <p><i>Sanctioned and vacant positions</i> — The sanctioned positions for health workers, which determine the number and skill mix of hospital staff, were created more than 20 years ago. Further, many sanctioned posts lie vacant. All the senior positions for matrons, medical superintendents and senior nursing sisters (supervisors) were vacant across all six referral hospitals. Anaesthetists were available only in Koshi Zonal Hospital (KZH), Bharatpur Hospital (BH) and Western Region Hospital (WRH). At all the other referral hospitals, anaesthesia assistants were providing this service.</p> <p><i>Infrastructure and basic amenities</i> — All the hospital buildings except for BH were over 30 years old and built to cater to a much smaller number of clients. The poor state of the toilets across the hospitals was evidence of the experience for women. Basic hygiene and infection prevention are highly compromised.</p>	<p>hospitals at the district level.</p> <p>Strategic Birthing Centres package: Create a package of services for strategically located birthing centres including:</p> <ul style="list-style-type: none"> <li>Information about and promotion of birthing centres in local communities;</li> <li>Free referral services (ambulance/voucher/cash);</li> <li>24/7 human resources;</li> <li>Incentives for FCHVs;</li> <li>Involve health facility management committees in birthing centre management;</li> <li>Assign SBAs to hospitals for short periods (referral and confidence improvement);</li> <li>Hospitals 'adopt' birthing centres.</li> </ul> <p>Revise incentives:</p> <p><i>For private hospitals provide:</i> Costs to reflect direct and indirect costs.</p> <p><i>For birthing centres provide:</i> Performance based payments for birthing centre; Incentive payments to FCHVs.</p>

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		<p><i>Quality of care</i> — This study was not a full quality of care assessment, but the field observations and responses of users and staff strongly suggest that managing high volumes of clients in under-resourced facilities compromises the quality of care. Data on birth outcomes was collected, but the findings need careful interpretation given the varied settings and user populations.</p> <p><i>Utilisation pattern of birthing centres</i> — The overall utilisation of birthing centres for childbirth was low, at 11.5%. Birthing centres are heavily underutilised in the districts where the road and transport network is better and where SBAs are not available 24/7.</p> <p>Birthing centres at PHCCs appeared to be less well used than those at health posts. Responses suggested that women who could reach a PHCC would be able, and prefer, to go directly to a higher-level facility.</p> <p>A poorly functioning referral system has been noted in previous studies and is a well-recognised problem that contributes to self-referral to the higher institutions and reduces confidence in birthing centres. Referral issues observed in this study were as follows:</p> <p>No formal referral mechanism (referral guidelines are being developed).</p> <p>Informal referral practices are based on personal preferences.</p> <p>The SBAs trained at their local referral hospitals used their relations, linkages, and mobile phones to confer treatment options as well as referral.</p> <p>SBAs and female community health volunteers (FCHVs) accompanied mothers to the hospital.</p> <p>The responsibility for transport lay on the families.</p> <p>Higher rates were charged for transporting women in labour.</p> <p>In some cases ambulance drivers used their discretion to take women to hospitals further away or to private hospitals out of financial considerations.</p>	<p><i>For users:</i></p> <p>Provide free transport from birthing centre to referral hospital (ambulance/vouchers/cash);</p> <p>Provide investigations and discharge drugs and commodities at hospitals free of cost.</p> <p>Utilise excess capacity in the private sector</p> <p>This is a potential opportunity, as long as the following risks are managed:</p> <p>Over-medicalisation (with more caesarean sections);</p> <p>Increased costs for the system and users;</p> <p>Widening the equity gap.</p>

	Method	Key findings	Key recommendations
		<p><i>Costs of care in hospitals and birthing centres:</i></p> <p>In the six hospitals surveyed, the average unit cost of a normal delivery in 2011/12 was NPR 1,847. In the birthing centres surveyed, the average unit cost of a normal delivery in 2011/12 was NPR 3,625, more than double that in the hospitals.</p> <p>The lower hospital unit costs arise from the very high bed occupancy rates, old infrastructure and low staffing levels. If these costs are re-estimated on the basis of international standards and zero vacancies, this 'normalised' average unit cost would rise from NPR 1,847 to NPR 2,445.</p> <p>High birthing centre unit costs arise from low utilisation. We found a huge variation in utilisation rates and birthing centre unit costs with a 12-fold difference between best and worst performers. For the better performing birthing centres, that were achieving utilisation rates of 60%, the unit cost of a normal delivery is around NPR 1,873. (This does not include any additional costs of a functioning referral system or other activities necessary to upgrade the birthing centre system.)</p> <p>These results suggest that the normalised cost of a normal birth in a hospital and a birthing centre with appropriate occupancy and utilisation rates is similar.</p> <p>The unit costs in the birthing centres were highly variable for normal deliveries. On current estimates, they can achieve good cost outcomes if utilisation rates reach 50-60%.</p> <p>In addition to comparing normal delivery costs, the study estimates that the average hospital unit cost of a complicated delivery is NPR 3,226 and a caesarean section NPR 11,143.</p>	
<b>5. Rapid Assessment of the Aama Programme</b>			
	The assessment was conducted in six purposively selected districts of	Women have adequate knowledge about the Aama transport incentives and free delivery care but very limited awareness of the 4ANC (antenatal care)	A proper review of the Aama and 4ANC programmes within the private sector is

	Method	Key findings	Key recommendations
	<p>Nepal. A total of 48 health facilities were sampled, comprising 24 Health Posts/Sub Health Posts (HP/SHPs), 12 Primary Health Care Centres (PHCCs), 7 public and 5 private hospitals. The main participants for this RA were women who had delivered in the last six months at a health facility and women who had delivered at home with assistance.</p>	<p>programme and limited uptake; only 13% of women who had delivered in a health facility received the 4ANC incentive.</p> <p>Not all women are receiving free delivery care; overall, 23% are still paying some costs for their delivery.</p> <p>On the planning and budgeting aspects, this RA found that those districts involved in developing their own plans and budgets for the Aama programme were more likely to manage their budget well and have less fund deficits throughout the year.</p> <p>On reporting, monitoring and supervision, mismatches were found between districts and the health facilities within them (overall 10% of cases) and between the health facilities and the women (overall 5%), but this should not be interpreted as a misuse of funds since human error could be a factor.</p> <p>Only a minority of facilities reported having regular monitoring and supervision in relation to the Aama programme, undermining the motivation to complete the annexes properly and to report on time.</p> <p>Overall, only 54% of facilities publicly display the <i>Annex 10</i> (information of women delivered in a health facility), which limits public accountability of the Aama programme.</p> <p>Review of the implementation aspects revealed that in the terai districts, and contrary to the Aama guidelines, most of the disbursed incentives are given to husbands or other relatives.</p>	<p>required before considering scale-up because the programmes are being implemented with poor orientation and some institutions were found to be running them at a loss.</p> <p>A strengthening of reporting systems and regular monitoring with cross verification are needed in order to deter any misuse of funds.</p>
<b>6. Benefit Incidence Analysis in Health, 2012</b>			
	<p>(Secondary data analysis)</p> <p>The basis for the study was the 3rd Nepal Living Standard Survey (NLSS III, 2010-2011) for demand side variables. All supply side figures concerning public expenditures on</p>	<p>The rate of utilisation of public health services is almost twice as high among Dalits and upper caste groups as it is among other castes.</p> <p>The lowest rates of utilisation of public health services are found in the Far-Western region, with a mere 4% utilisation rate, compared to almost 8% in the Mid-Western region.</p> <p>Most of the difference in utilisation rates across regions is driven by the rate of</p>	

	Method	Key findings	Key recommendations
	<p>health care by type of service and region have been provided by a Public Expenditure Review (PER) that was carried out recently for the health sector in Nepal, covering public expenditures for the period 2010-2011.</p>	<p>utilisation of primary health care services. Populations living in rural areas tend to use primary health care services to a much greater extent, whereas urban dwellers overwhelmingly use the more expensive hospital services.</p> <p>When utilisation is broken down by income level, we find that the highest rates of utilisation of public health services are found in the middle quintiles (between 6% and 7% for quintiles 2,3,4), whereas the top and bottom quintiles have significantly lower rates of utilisation of health services (between 4% and 5%). In the former case, this may be due to the use of alternative, private health care options, whereas in the latter it may be due to access costs, which prevent poor households from accessing public health services.</p> <p>The study revealed that households that are deprived in the education dimension have significantly lower rates of utilisation of public health services than non-deprived households (3% vs. 6%).</p> <p>The unit cost for providing health services is almost twice as high in the Far-Western region (NPR 1346 per visit) as in the Mid-Western region (NPR 679).</p> <p>The breakdown of figures by type of facility shows that health post services are the cheapest, at NPR 388, and hospital services are the most expensive, at NPR 1418 on average.</p> <p>Total out-of-pocket expenditures incurred by Nepali users amounted to NPR 2964 for hospital services and NPR 439 for mobile clinics and primary health care services. More than half of overall out-of-pocket expenditures were related to the purchase of medicines.</p> <p>Fees paid by public health services users were the highest for hospital services, at NPR 830 per visit, compared to NPR 28 for the use of Sub-Health Post services.</p> <p>When differences in usage rates for different services are taken into account, the average Nepali person who used health services in the 30 days preceding</p>	

	Method	Key findings	Key recommendations
		<p>the interview spent NPR 273 on fees, NPR 730 on medicines, and NPR 150 on transport and other expenses related to the usage of public health services during the period. This represented 40% of the average monthly household income in Nepal.</p> <p>The highest out-of-pocket expenditures for usage of public health facilities were found in the Far-Western region (NPR 2134 in the 30-day period preceding the interview compared to NPR 703 in the Mid-Western region). This represents about 60% of total monthly household consumption in the Far-West, compared to 30%-40% of total monthly household consumption in other regions.</p> <p>A breakdown of out-of-pocket expenditures by caste shows that health expenditures tend to be proportional to household income, at around 30%-40% of total monthly household consumption. One exception was disadvantaged Janajatis, who spent on average almost 50% of their total monthly household consumption on health-related expenditures. This was due both to the higher expenditures incurred by this group, and to their lower income levels.</p> <p>The breakdown of health related expenditures by gender shows that women have significantly higher health expenditures than men, particularly in urban areas.</p> <p>The breakdown by income level shows that out-of-pocket expenditures associated with the use of public health facilities tend to be constant at around 40% of total monthly household consumption for the middle quintiles, but is significantly higher for the bottom quintile (over 50%), and significantly lower for the top quintile (less than 30%), suggesting the possible existence of access barriers for the former group.</p> <p>When differences in unit costs and utilisation across regions are taken into account, the study revealed that 80% of the gross public health subsidy goes to hospital services and Sub-Health Posts.</p>	

	Method	Key findings	Key recommendations
		<p>When fee payment is taken into account, the net subsidy for hospital services decreases significantly, from 45% to 29% of the total, while the net subsidy for Sub-Health Posts represents 49% of total net public health subsidies.</p> <p>The largest recipients of public health subsidies in net terms are Dalits (NPR 61 per capita per month). Disadvantaged Janajatis receive only NPR 28 per capita per month, and actually incur a negative subsidy (i.e. they pay more than they receive) for usage of hospital services. The largest per capita gross subsidy goes to the Western Region (NP 64), whereas the largest net subsidies are found the Mid-Western and Far-Western regions (NPR 52).</p> <p>Women receive slightly higher gross subsidies than men (NPR 57 vs. NPR 54).</p> <p>When subsidies are broken down by income quintile, we find that the largest gross subsidy accrues to the 4th quintile (NPR 65) and the lowest to the bottom quintile (NPR 46). However, when fee payment is taken into account, the largest net subsidy is received by the 2nd quintile (NPR 50), and the lowest is received by the top quintile (NPR 34).</p> <p>Malnutrition rates are almost twice as high in rural areas than in urban areas.</p> <p>The highest rates of malnutrition are found in mountain areas in the Mid-Western region (10% of children under 5 have a height for age more than 2 standard deviations below the WHO median).</p> <p>The analysis by multidimensional poverty reveals that children living in households where no woman is literate, and in households deprived in education or influence, are twice as likely to be undernourished as children living in non-deprived households.</p>	
<b>7. Build and they will come? Looking beyond supply to demand-side barriers to health service utilisation in the mountains of Nepal.</b>			
	<p>(Systematic review)</p> <p>The study used literature to expand quantitative results. First it examined details of barriers related</p>	<p>Limited supply of health services leading to long distances in difficult conditions is a major barrier to utilisation of reproductive, maternal, newborn and child health (RMNCH) in the mountains of Nepal. This contributes significantly to the disparities in service coverage and health outcomes</p>	

	Method	Key findings	Key recommendations
	<p>to access and social determinants of health.</p> <p>Second, it explored the evidence of strategies addressing those barriers in similar settings (i.e. low and lower-middle income countries with poorly accessible mountain terrain).</p> <p>The study drew on literature published in academic databases (Medline, Web of Science, Scopus, Google Scholar, Eldis) and unpublished literature provided by development agencies in Nepal.</p>	<p>between households of the mountains compared to the hill and terai areas. However, this analysis has shown that supply is not the only barrier.</p> <p>Demand-side factors of low women’s education, limited wealth, less knowledge and access to information for women in the mountains, and poor attitudes to health, make a very large, statistically significant contribution to the disparities in the mountains compared to the hills and the terai.</p> <p>Attempts to increase utilisation are undermined by the low status of women and caste prejudice, limited understanding of health danger signs and the importance and availability of care, underutilisation of FCHVs, low and inequitable participation and inactivity of mothers groups, dissatisfaction with facility quality and health worker attitudes and practices, and significant cultural and spiritual traditions.</p> <p>While many of these demand-side barriers can be seen across Nepal, the intensity and repercussions are of far greater magnitude in the mountains. This conclusion is supported by both the econometric analysis and the systematic literature review undertaken for this study.</p> <p>There are some promising strategies that can address this dual burden of geographical access and lower levels of education and strong, sometimes harmful, cultural practices.</p> <p>Task shifting, more comprehensive outreach teams and greater investment in Community Health Workers (CHWs) have all proved effective in a range of similar settings. Health workers require more time allocated to providing additional counselling and health education in these communities, if they are to effect behaviour change equivalent to other areas of Nepal.</p> <p>Existing national health education programmes require further adaptation for communities who have not had any experience of the formal health system, if they are to trust health service providers or follow their health advice.</p> <p>In short, build, staff, and equip facilities and some women will come to use the</p>	

	Method	Key findings	Key recommendations
		<p>services. Ensure that these services are of high quality and more women will return. But equal importance must be given to addressing the current level of health knowledge, and individual and community beliefs and attitudes toward the care of women during delivery and to the health of newborns. Comprehensive context-specific responses are essential if we wish to see greater equity, higher service coverage and better health outcomes for women and children in the mountains of Nepal.</p>	
<b>8. Assessing the Medical Abortion Services provided by Auxiliary Nurse Midwives</b>			
	<p>(Pilot study) Assessment from 81 peripheral health facilities in 10 districts</p>	<p>Success rate of MA= 98.9% The follow up rate of medical abortion (MA) client= 98% Post MA complication= 0.3% Post MA contraception utilisation rate= 83% <i>Utilisation of MA:</i> Disadvantaged Janajatis= 46% Upper caste groups= 42% Dalits= 14% Youth (&lt;25 yrs) utilisation= 33% Utilisation of MA by illiterate women= 27% Women receiving MA services who were referred by FCHVs= 14%</p>	<p>The preferred method of contraceptive choice was condoms. An in-depth study should be done to determine why women are not choosing longer term methods after having an unwanted pregnancy and abortion.</p>
<b>9. Impact Evaluation of Uterine Prolapse Surgery in Nepalese Women</b>			
	<p>A cross-sectional study from eight districts, which were selected from the three ecological regions and five development regions</p>	<p>The mean age at the first Uterine Prolapse (UP) check-up among women of the terai districts is 41.6 years, and in the hill/mountain districts 45.2 years. The two main reasons for not having an immediate check-up are a feeling of shyness (49%) and a lack of knowledge (31%). <i>In the hill/mountain districts, the percentages of women who went to the health camp for surgery by ethnicity:</i></p>	

	Method	Key findings	Key recommendations
		<p>Dalits=78.6%; Janajatis=60%; Brahmin/Chhetri =53%</p> <p>The survey shows that health camps are filling the gap in demand for surgery among disadvantaged women.</p> <p><i>Use of IEC materials during counselling:</i></p> <p>Minimal in all three service facilities –more than 75% reported no use of such materials in counselling.</p> <p><i>The average cost for surgery:</i></p> <ul style="list-style-type: none"> <li>• Health camps – NPR 4,900</li> <li>• Non-government hospitals – around NPR 21,700</li> <li>• Government hospitals – NPR 16,000</li> </ul> <p>Around 28% reported that they paid for surgery.</p> <p><i>The incidence of post-surgery problems:</i></p> <ul style="list-style-type: none"> <li>• Health camps – 15.1%</li> <li>• Non-government hospitals – 11.1%</li> <li>• Government hospitals – 10.1%.</li> </ul> <p>It is noted that 9.3% of women reported that their husband had another wife, and 13 (17.1%) out of 76 women said that UP was the reason.</p> <p>UP surgery generated positive attitudes in husbands towards their wives; 42 (71%) out of 59 husbands had changed their attitude from negative to positive.</p> <p>Of the 646 women interviewed, 74% were very satisfied or satisfied with the health workers involved in surgery, and 4% felt they were very bad or bad.</p> <p>Regarding the service provided by the service centres, 77% felt it was above average and 10% below average.</p>	

	Method	Key findings	Key recommendations
<b>10. A Rapid Participatory Ethnographic Evaluation and Research (Rapid PEER) Study, Nepal</b>			
	<p>PEER is a participatory qualitative research method which captures the voices of ordinary members of a community and obtains an insider's view of social relationships and health-related behaviour and beliefs.</p> <p>The study was undertaken with men and women from six ethnic/caste groups in six districts across Nepal.</p>	<p><i>Service-related barriers</i> arose from not having same-sex health workers in the delivery of services at facilities and in outreach.</p> <p><i>Gendered decision-making and permission-seeking processes</i> denied and delayed women's use of health services. Associated examples of Gender-based Violence (GBV) were reported in each of the 12 study sites to enhance men's control at home, inhibit women's access to services, and increase the need for service use to deal with consequences of physical violence.</p> <p><i>Socio-cultural expectations</i> that women should give birth, and that this is a normal, natural phenomenon, were at odds with the use of family planning (FP) and safe abortion services, and meant that maternal health services (Antenatal Care (ANC), institutional delivery and Postnatal Care (PNC)) were not perceived as necessary. Husband, family, and community control over daughters'-in-law use of public space inhibited access to services.</p> <p><i>Son preference practices</i> reduced the use of temporary and FP services and enhanced the risk of maternal health problems through sex-selective abortion in each of the 12 studies.</p> <p><i>Women's heavy work burden and financial dependence on men</i> decreased access to services, owing to time limitations, and heightened maternal health risks (e.g. miscarriage, uterine prolapse).</p>	<p>Child immunisation services:</p> <p>Provide orientation to Village Health Workers (VHWs), Auxiliary Health Workers (AHWs), and contracted service providers.</p> <p>Develop a local plan for immunisation in consultation with local communities, including excluded groups.</p> <p>Safe abortion services</p> <p>Develop communication strategies to raise awareness of the availability of safe abortion services.</p> <p>Develop communication messages and social mobilisation to address the social and cultural beliefs and attitudes around abortion, including stigma and taboos.</p> <p>Maternal health services</p> <p>Develop innovative approaches to functionalise birthing centres that are accessible to, and trusted by, poor and excluded communities.</p> <p>Develop communication approaches to reach women, men, and in-laws to recognise the benefits of 4 ANC visits, institutional deliveries, PNC, and the</p>

	Method	Key findings	Key recommendations
			<p>dangers of home-based delivery.</p> <p>Review the Aama programme to measure its ability to overcome the financial barriers faced by the ultra-poor and geographically excluded.</p>
<b>11. Family Planning Needs of Migrant Couples in Nepal</b>			
	<p>The study was qualitative in nature and was conducted in six districts namely, Nawalparasi, Parsa, Doti, Gulmi, Dailekh and Udayapur. The study was conducted in two phases. In the first phase the district level stakeholders were interviewed and a consultative meeting took place to select the study VDCs. In the second phase the team carried out the study at the community level.</p> <p>The primary respondents were 1) Wives whose husbands are away from home at present, 2) Wives of childbearing age whose husbands usually stay outside but are at home at present, and 3) Husbands who have wives of reproductive age and who are currently at home but usually live away from home. Both in-depth interviews (IDIs) and focus group discussions (FGDs)</p>	<p>The husbands informed their wives a month in advance regarding their return. However, planning and preparedness for family planning was not common. It was very rare for the wives of migrant men to procure or use any contraceptive method prior to their husband's arrival. Men mostly relied on the withdrawal method if they were unable to procure a condom in time.</p> <p>Wives whose husbands came home more frequently were found to use methods such as injectables and pills while the wives of those who visited less frequently used the withdrawal method or condoms.</p> <p>Switching of methods during the migrant husband's stay was common. Many couples had switched to condoms or withdrawal or pills.</p> <p>A few women who had never used an FP method still reported misconceptions regarding the safe period.</p> <p>Inter-spousal communication takes place with regard to family size, type of contraceptive method to be used and to prevention/spacing of births. However, the impact of inter-spousal communication in the adoption of long acting contraceptive methods is not visible from the study. Although many couples did not desire more children, they were not using a method of FP.</p> <p>Interaction with FCHVs was common among the wives of the migrant couples as they are the first point of contact for receiving FP advice at the community level. Women generally visit FCHVs for advice on FP methods and birth spacing as well as to seek methods from them.</p>	

	Method	Key findings	Key recommendations
	<p>were carried out with these respondents.</p> <p>The other respondents were FCHVs, government health providers and district level stakeholders with whom semi-structured interviews were carried out.</p> <p>A total of 47 in-depth interviews (13 each with the spouses of migrants and 21 with the male migrants) and 18 Focus Group Discussions (FGDs) (12 FGDs among wives whose husbands were away and 6 FGDs with male migrants currently at home and their wives) were conducted. In addition to this, 25 interviews were conducted with FCHVs and health providers and 36 interviews were carried out with district level stakeholders.</p>	<p>Unintended pregnancies were commonly reported by the migrant couples. Insufficient and inaccurate information about contraception, inadequate access to services and supplies, incorrect and inconsistent contraceptive use, and lack of adequate preparedness and planning at the time of the husbands' arrival were the main reasons for unintended pregnancies.</p> <p>Government hospitals, pharmacies and private clinics were the main places where women sought abortion services while a few women had also used unsafe methods such as taking herbs and unknown medicines to abort their pregnancies.</p> <p>Migrant couples reported several barriers in accessing FP services. The major barriers were supply side barriers, problems from the community and physical barriers.</p> <p>The behaviour of service providers, lack of service providers, lack of desired methods at the health facilities and religious restrictions were also mentioned.</p> <p>Being blamed for infidelity was another issue raised by the wives of migrant men if they prepared FP methods in advance. Thus FP use among migrant couples was seen to be low, and planning and preparedness for the use of FP prior to the husband's arrival was lacking.</p>	
<b>12. An Assessment of the Baby Friendly Hospital Initiative in Nepal</b>			
	<p>A comparative cross sectional study conducted at postnatal wards of four baby friendly hospitals (BFH) and four non baby friendly hospitals (NBFH).</p>	<p>Initiation of breastfeeding is found to be higher among BFH beneficiaries (61%) than NBFH beneficiaries (53%).</p> <p>A higher proportion of BFH beneficiaries (35.5%) identified the correct measures (burping) to be taken after feeding breast milk to the baby than NBFH (16%).</p> <p>The findings showed that 82% of beneficiaries from BFH and 78% of</p>	

	Method	Key findings	Key recommendations
		<p>beneficiaries from NBFH said that babies should be exclusively breastfed for up to 6 months from childbirth.</p> <p>More than half of the beneficiaries from BFH (54.5%) and 43% from NBFH reported that babies should be breastfed for up to 2 years.</p> <p>Regarding knowledge about the nature of breastfeeding, 38.5% of beneficiaries from BFH and 35.5% from NBFH replied that demand feeding is the best breastfeeding regime.</p> <p>Over 90% of beneficiaries from both hospitals knew that breastfeeding makes children healthy.</p> <p>About 80% of beneficiaries from BFH and 74% from NBFH believed that taking milk or juice or any liquid can help to improve milk secretion.</p> <p>There is a significant difference in knowledge about the frequency of urine that an exclusively breastfeeding baby should pass in one day between BFH and NBFH beneficiaries (0.008).</p> <p>A higher proportion of BFH beneficiaries (80%) have correct planning about the period of exclusive breastfeeding than NBFH beneficiaries (65%) and the difference is statistically significant (0.002).</p> <p>About 87% from BFH and 90% from NBFH identified the correct technique of breastfeeding.</p>	
<b>13. An Assessment of the Burden of Disease in the Central Development Region, Nepal</b>			
	<p>A descriptive cross sectional study was conducted to examine mortality and morbidity in Nepal. The study was conducted in four districts of the Central Development Region. Multistage</p>	<p>The causes of mortality were non communicable diseases (60%), communicable diseases (29%), injuries (10%) and unidentified causes (1%).</p> <p>The causes of morbidity were communicable diseases (45%), non-communicable diseases (27%), injuries (9%) and other conditions. Infectious diseases like diarrhoea, dysentery, and worm infestations were responsible for 17% of total mortality and 23% of total morbidity.</p>	

	Method	Key findings	Key recommendations
	<p>sampling was done to select districts and VDCs. A census was done to collect household information in each ward. Primary data were collected from household surveys, and secondary data were collected from respective health institutions.</p> <p>There were 131,494 people and 24,890 households surveyed in the study. Altogether morbidity was 30,513 and mortality was 464.</p>	<p>Cardiovascular disease like hypertension, stroke contributed to 17.4% of total mortality and 0.5% of total morbidity.</p> <p>Respiratory infections like acute respiratory infection, common cold, chronic obstructive pulmonary disease (COPD), and asthma contributed 28.0% to total mortality and 23.0% to total morbidity.</p> <p>Neonatal and maternal mortality accounted for nearly 8% of the total deaths.</p>	
<b>14. The Prevalence and Determining Factors of Diabetes Mellitus and Hypertension in Kathmandu</b>			
	<p>A cross sectional, community based study was conducted to assess the prevalence and determining factors of type 2 diabetes and hypertension in Kathmandu district.</p> <p>In this study, 1545 eligible subjects aged 20 years and above were selected from urban and rural areas of Kathmandu, and 1539 voluntarily participated.</p> <p>Anthropometric metrics, blood pressure and blood sugar (fasting and 2h post glucose) were measured. Fasting capillaries blood</p>	<p>The prevalence of type 2 diabetes mellitus was found to be 9.6% among people aged 20 years and above.</p> <p>Among the 1539 subjects 118 (7.6%) cases had already been already diagnosed as diabetic. Only 29 (1.88%) cases were diagnosed as a new diabetes cases.</p> <p>The prevalence of hypertension was 30.8 Among 1528 subjects, 305 (19.8%) had been diagnosed earlier and 174 (11%) were diagnosed during the study. Hypertension was found to be more prevalent than diabetes.</p> <p>Type 2 diabetes and hypertension were present in 26.3% and 62.3% respectively of people above 60 years of age, 13.5% and 44.5% among those between 41-60 years old, and 2.9% and 15.7% among those between 20-40 years old.</p> <p>Among urban residents, 14.8% and 39% respectively had diabetes and hypertension, while the figures for rural residents were 7.1% and 27.8%. Diabetes and hypertension were more prevalent among males (13.3% and</p>	

	Method	Key findings	Key recommendations
	glucose and two hours glucose load (PP) were taken and measured by glucose meter (Contour <sup>(R)</sup> TS).	38.7%) than females (7.3% and 26.9%). People suffering from hypertension had type 2 diabetes more frequently (23.2%) than others (3.4%).	
<b>15. The Distribution and Determinants of Diarrheal Disease in the Western Development Region of Nepal</b>			
	This cross sectional study was designed to investigate the different epidemiological factors associated with diarrheal disease and associated water quality. The study contained two components. The first sought to identify the causes of diarrhoea in patients visiting the health facility, and the quality of the water the patients consumed. The second component was a questionnaire survey to determine their knowledge and practice regarding diarrhoea as well as water and sanitation related practices.	<p>About 14% of stool samples of the patients from Palpa district contained E. histolytica and about 8% percent contained G. lamblia. Neither of these parasites was found in any stool samples collected from Nawalparasi district.</p> <p>Bacteria like E. coli, Klebsiella sps, Shigella sps, and Vibrio spp were found in the stool samples collected from diarrhoeal patients from Palpa and Nawalparasi districts</p> <p>Non-pathogenic growth was observed in significant numbers of stool samples (48.45%) collected from Palpa district.</p> <p>Microbiological analysis of water for the presence of E.coli found that 53.6% and 26.03% of water samples collected from Palpa and Nawalparasi districts respectively were positive for E.coli.</p> <p>Loose watery stool was the most commonly seen symptom among diarrhoeal patients from both districts.</p> <p>Nearly 59% of patients from Palpa and 65% of the patients from Nawalparasi were found to be consuming the same amount of liquids as usual.</p> <p>However, 3% of patients from Palpa and 10% from Nawalparasi completely stopped consumption of liquids while suffering from diarrhoea.</p> <p>Most respondents (93.81%) from Palpa district had a toilet of their own, while most respondents (76.71%) from Nawalparasi district did not have a toilet.</p>	

	Method	Key findings	Key recommendations
<b>16. An Assessment of Impacts of Particulate Air Pollutants on Respiratory Health of School Children in Kathmandu Valley</b>			
	<p>A baseline survey was conducted among 1184 children in seven schools in different locations in Kathmandu valley using a structured questionnaire, the modified ISAAC (<i>The International Study of Asthma and Allergies in Childhood</i>) questionnaire.</p> <p>Following the baseline survey, a correlational study was done to assess the health impact in two schools among 137 students out of 507.</p> <p>St. Xavier's school (urban roadside) and Santaneshwor Vidya Mandir (Semi urban residential) were taken for this second component. The lung function of children between 10 and 15 years of age was assessed daily by measuring their morning peak expiratory flow rate. At the same time, data for particulate matter (PM 2.5) was also recorded daily for both schools by using a personal monitor (dusttrak). Weather data was accessed from the Department of Hydrology and Meteorology.</p>	<p>The mean concentration of particulate matter (PM) 2.5 was 203.14 (<math>\pm 75.01</math>) and 137.69 (<math>\pm 44.52</math>) in schools 1 and 2 respectively. This difference is statistically significant (<math>p = 0.04</math>).</p> <p>The mean peak expiratory flow rate (PEFR) was higher for school 1 with a statistically significant difference (<math>p &lt; 0.05</math>, 95% CI 39.61 – 126.17).</p> <p>The mean PEFR level between the two sexes of school 1 was significantly different (<math>p = 0.01</math>, 95% CI 10.52- 80.36), the value being higher for the male children.</p> <p>The PEFR level of all the students of school 1 was found to vary on certain days with the changing levels of PM concentration. It was seen to vary between the values of <math>100 \mu\text{g}/\text{m}^3</math> and nearly <math>340 \mu\text{g}/\text{m}^3</math>.</p> <p>The PEFR levels of younger children (10-12 years old) seemed to be correlating with the changes in PM 2.5 concentrations in the initial days and the later days of the assessment. Similarly, the PEFR levels of female children also seemed to be correlating with the variation in daily PM concentrations on a few days.</p> <p>The daily PEFR levels of 20 students from the semi urban school is in an inverse relationship with the changes in PM concentrations for most of the days in the latter half of the study. It can be concluded that there is an association of lung function with the particulate matter in the atmosphere. However, the relation could not be quantified statistically due to the limited number of observations.</p>	

	Method	Key findings	Key recommendations
	<p>Nearly 70% percent of the children from St. Xavier’s school (school 1) and 85% percent of the children from Santaneshwor Vidya Mandir (school 2) were between 13 to 15 years old. The remaining students in both schools were between 10 to 12 years old. Male children were nearly 60% in both schools. The mean age of the children was just above 13, without any significant difference.</p>		
<b>17. Service Quality and Effectiveness of Privately Run Traditional Medicine Based Health Service Providing Centres in Kathmandu Valley</b>			
	<p>This descriptive study explores the present situation of privately run traditional medicine based health service providing centres in the Kathmandu valley.</p> <p>Data and information were gathered through interviews, observation, and questionnaires.</p> <p>A format was prepared based on the Guideline-2061 prepared by the Ministry of Health and Population as a tool to gather information regarding infrastructure, human resources, services, tools and equipment,</p>	<p>The study noted that 59.85% of patients had visited modern hospitals before going to traditional medicine based health service centres, and that 64.4% believed modern medicine could not cure their problems. Three-quarters (75%) of patients had been encouraged by relatives and other acquaintances to visit traditional medicine centres and 72.72% were first time visitors.</p> <p>Regarding the outcome of their treatment, 55.33% believed that their problem had improved; 43.18% said they were not yet cured, but were ‘hopeful of being cured soon; 29% were fully satisfied by the treatment; 53% said the ‘treatment was satisfactory’, and 60% said the ‘doctors were very good’.</p>	

	Method	Key findings	Key recommendations
	<p>drugs and other factors.</p> <p>Twenty-seven different registered hospitals or clinics (five from each traditional system and two more practicing Ayurveda) were selected by a simple random method and 132 patients were chosen at the convenience of the researchers, 5-7 patients from each of the centres.</p>		
<b>18. Knowledge, Attitude and Practice (KAP) on Tuberculosis (TB) and Co-infection of TB and HIV in Nepal</b>			
	<p>An exploratory and cross sectional descriptive study design was adopted.</p> <p>Ten districts were selected representing all five development zones and three ecological regions.</p> <p>403 community people, 208 People Living with TB (PLTB) and 164 family members of PLTB were selected from the ten districts.</p> <p>A semi structured questionnaire was introduced among community people, PLTB, and family members of PLTB.</p> <p>The primary focus was given to quantitative methods to access information on TB and TB-HIV co-</p>	<p><i>Awareness about TB and TB-HIV co-infection:</i></p> <p>More than 80% of community people, TB-infected people and their family members did not know that bacteria are the main causative agent of the TB.</p> <p>More than 66% of these people knew that coughing was the main probable sign of TB infection.</p> <p>Less than half of the community people (47%) knew about the exact duration of TB treatment, while more than four-fifths of PLTB (82%) were aware of this.</p> <p>More than three-fifths (&gt;60%) of the respondents, including family members, knew about TB transmission and that it might spread from one TB infected person to another via coughing and sneezing.</p> <p>Although two-fifths of PLTB and their family members knew that TB could be prevented by covering the mouth while coughing; only one-fourth of community people had such knowledge.</p> <p>A significant proportion (&gt;90%) of the respondents, including family members, knew that TB could be cured by consuming specific drugs provided by health institutions.</p>	<p>Community people, people with TB and their family members should be provided with knowledge regarding the main causative agent of TB, the main probable signs and symptoms of the TB infection, the mode of TB transmission including the preventive aspects, the exact duration of TB treatment, and the consequences of not consuming TB drugs for the full course.</p> <p>Conduct a mass awareness campaign regarding TB-HIV co-infection, especially focussing on community people, PLTB and their family members.</p> <p>Family members of PLTB should be provided with a counselling package which must include the various social</p>

	Method	Key findings	Key recommendations
	infection related issues, including prevention and control.	<p>One-tenth of family members (10%) of PLTB were aware of TB-HIV co-infection, while such awareness among PLTB and community people was 16%.</p> <p>More than one-third (&gt;33%) of community people, TB-infected people and their family members knew the causes of TB-HIV co-infection.</p> <p>Half of such people (50%) said that it is necessary for PLTB to be tested for HIV.</p> <p><i>Attitude towards TB and TB-HIV co-infection</i></p> <p>More than half (57%) of community people, and family members of PLTB agreed that PLTB should not be isolated from their family.</p> <p>Nine-tenths of these people also said they avoided sharing food with PLTB.</p> <p>Nearly three-fifths of community people, PLTB and their family members stated that PLTB did not face any prohibition from visiting public places and attending social functions.</p> <p>Slightly more than half of family members (52%) of PLTB felt that spouses of PLTB would not go for second marriages.</p> <p>Nearly four-fifths of community people (78%) said that TB-HIV co-infected people should not be isolated from their families, while 56% of family members of PLTB expressed such a view.</p> <p>More than nine-tenths of family members (&gt;90%) of PLTB stated that they would like to avoid sharing food with TB-HIV co-infected people, while nearly three-fourths (73%) of the community people stated the same.</p> <p>More than three-fifths of community people (69%) felt that TB-HIV co-infected people should not face any prohibition from visiting public places.</p> <p>Around 70% of these people, including family members, stated that the spouses of TB-HIV co-infected people would not go for second marriage.</p> <p>More than nine-tenths of these people expressed that TB-HIV co-infected people should not be excluded from society.</p>	<p>dimensions of TB and its related stigma.</p> <p>If the PLTB are married, it is highly recommended to call his/her spouse to the DOTS clinic and try to provide him/her with the above mentioned counselling package.</p> <p>Conduct a road play in the rural areas regarding sharing of food, visiting public places, attending social functions, the misconception of infertility, and the social stigma of TB and TB-HIV co-infection in order to reduce negative attitudes.</p> <p>If the PLTB happen to be infected with HIV, extra efforts regarding the sharing of food, visiting public places, and attending social functions – the double discrimination due to TB-HIV co-infection needs to be emphasised in counselling their family members and especially their spouses (if married).</p> <p>More emphasis should be given to the proper use of masks or any similar protective measures and their benefits, especially during coughing and sneezing, and also while visiting public places.</p>

	Method	Key findings	Key recommendations
		<p><i>Practices on TB and TB-HIV co-infection</i></p> <p>More than 70% of community people, PLTB and their family members stated that they cover their mouth and nose while coughing and sneezing.</p> <p>Around one-fifths of PLTB (20%) dispose of their sputum at a definite place and cover it with mud.</p> <p>More than four-fifths of PLTB (84%) have not been tested for HIV.</p> <p>Three fifths (60%) of community people did not use any mask or protective measures while visiting public places.</p> <p>Most of the respondents (85%) always visited health facilities when they had a cough for more than two weeks with evening fever or bloody sputum.</p>	<p>It is highly recommended to dispose of the sputum of PLTB at definite places and cover it with mud.</p> <p>Make a system to persuade PLTB to go for HIV tests, and at the same time, make a provision that all spouses of PLTB should go for HIV tests.</p> <p>Increase the practice of visiting health facilities, especially when someone has been coughing for more than two weeks with evening fever or bloody sputum.</p>
<b>19. Approaches to improve Gender Equality and Social Inclusion in TB Services in Nepal</b>			
	<p>A cross-sectional descriptive study design was adopted by applying both qualitative and quantitative methods in the study.</p> <p>In order to give national level representation, ten districts (13% of 75 districts) were selected, representing all five development regions (eastern, central, western, mid-western and far-western) and all three ecological regions (mountain, hill and Tarai).</p> <p>In total, 1 hospital, 1 PHCC, 2 HPs and 2 SHPs were selected from each selected district.</p> <p>Four groups of respondents were</p>	<p>In general, men tend to know more about TB services than women and the so-called higher castes tend to know more than Dalits.</p> <p>Dalits tend to be more dependent on local institutions and Brahmin/Chhetris and advantaged Janajatis use more hospital facilities.</p> <p>Gender preference in treatment is seen, in that men visit private pharmacies and hospitals for illness, while women have to wait till the situation becomes critical to obtain the same level of treatment.</p> <p>Some Dalits feel that the behaviour of care providers is not friendly.</p> <p>Dalits, Janajatis and Muslims had no knowledge about the types of disease and only limited respondents knew about TB HIV co infection.</p> <p>Some people still felt that isolation is necessary if someone is infected by TB. Among Janajatis and Dalits more women had the wrong perception about isolation of TB patients than men. Among Brahmin/Chhetris more women had the correct perception towards TB patients' than men. Muslim women had a negative perception.</p>	<p>To improve the quality of care, adequate and quality infrastructure and equipment, an adequate supply of drugs, and the deputation and retention of skilled staff needs to be ensured.</p> <p>Flexible opening hours need to be devised.</p>

	Method	Key findings	Key recommendations
	<p>identified for the study: a) general population, b) people with TB, c) family of TB patients, and d) health service providers.</p>	<p>The nearest health facility is the most convenient place to seek health service. From a gender and ethnicity perspective there is not much difference about visiting the nearest health facility. Most of the respondents prefer to go to a public facility as the service is free.</p> <p>Some people are still stigmatised if infected with TB and do not want to disclose their illness publicly. Slightly more men are stigmatised than women. Ethnicity wise this is in the same range for all caste groups.</p> <p>The availability of only a low quality of care in the nearest health facility was found as a barrier to accessing health services.</p> <p>Among physical facilities, limited availability or ill maintained equipment and infrastructure, and the availability of drugs are limiting factors to access the services.</p> <p>For the people in remote locations, the distance to health facility is an additional barrier.</p> <p>The behaviour of the service providers, and communication and information also limit access to health services.</p> <p>Most women indicate their lack of decision making power as a barrier for their visiting a health facility.</p> <p>The irregularity of health service providers' presence in the health facility and the economic situation also contributed to limiting access to health services.</p> <p>The opening hours are inconvenient for many people, which limits access to health service.</p>	
<b>20. National Estimates of infections in Nepal</b>			
	<p>The latest Spectrum software (version 4.50) with the built-in Estimation and Projection Package (EPP) was used to generate the</p>	<p>Total estimated number of people living with HIV = 50,200 (With an overall national HIV prevalence of 0.3 per cent, a decline from the 2010 national prevalence of 0.38 percent.)</p> <ul style="list-style-type: none"> <li>• Children (0-14 age group) = 7.6%</li> </ul>	

	Method	Key findings	Key recommendations
	2011 HIV estimates of Nepal.	<ul style="list-style-type: none"> <li>• Adults (15 and above) = 92.4%</li> <li>• <i>By sex:</i></li> <li>• Male = 66.5%</li> <li>• Female = 33.5%</li> </ul> <p><i>Estimated HIV infections among key population groups:</i></p> <ul style="list-style-type: none"> <li>• Remaining Female Population = 27.3%</li> <li>• Male Labour migrants = 27%</li> <li>• Remaining Male population = 16%</li> <li>• Men who have sex with men (MSM)= 14.4%</li> <li>• Male Sex Workers, transgender and their Clients (MTCs)= 7.2%</li> <li>• Clients of FSWs=4.4%</li> <li>• People who inject drugs (PWIDs)= 2.2%</li> <li>• Female Sex Workers (FSWs)= 1.5%</li> </ul>	

### 3 CONCLUSIONS

A credible measure of the effects of health policy can be a powerful instrument for focusing the attention of policy makers on improving health indicators and promoting equity in health services. Evidence produced using rigorous methodology and systematic research serves as an instrument to measure, describe, monitor, evaluate and analyse the existing health policy.

Some of the components of essential health care services, such as reproductive, maternal and child health services in Nepal, have sufficient evidence for clear and systematic planning and action to improve the health indicators. However, other areas, for instance mental health, oral health, non - communicable diseases, and so on still need to be researched to generate further information.

## REFERENCES

- Bell, S. K. Dahal, D. Thomas, C. Jha, H.N.Suvedi, and S.Prasai. 2012. Voices from the Community: Access to Health Services, A rapid participatory Ethnographic Evaluation and Research (Rapid PEER) Study, Nepal. Kathmandu, Nepal: Nepal Health Sector Support Programme.
- Byrne, A, A. Hodge, E.J. Soto, and A. Morgan (2012). Build and they will come? Looking beyond supply to demand –side barriers to health service utilisation in the Mountains of Nepal. Queensland, Australia: The University of Queensland.
- Health Research and Social Development Forum (HERD) (2012). Knowledge, Attitude and Practice (KAP) on Tuberculosis (TB) and Co-infection of TB and HIV in Nepal. Kathmandu, Nepal: Health Research and Social Development Forum, Government of Nepal, Ministry of Health and Population.
- Health Research and Social Development Forum (HERD) (2012). Study on Gender Equality and Social Inclusion in TB Services in Nepal. Kathmandu, Nepal: Health Research and Social Development Forum.
- Leavder S.S. (2012). Benefit Incidence Analysis in Health. Kathmandu, Nepal: Nepal Health Sector Support Programme.
- Ministry of Health and Population (MOHP) [Nepal] (2012). An Assessment of Baby Friendly Hospital Initiative in Nepal. Kathmandu, Nepal: Nepal Health Research Council, Ministry of Health and Population.
- Ministry of Health and Population (MOHP) [Nepal] (2012). Assessment of Burden of Disease in Central Development Region, Nepal. Kathmandu, Nepal: Nepal Health Research Council, Ministry of Health and Population.
- Ministry of Health and Population (MOHP) [Nepal] (2012). Assessment of Impacts of particulate Air pollutants on Respiratory Health of School Children in Kathmandu Valley. Kathmandu, Nepal: Nepal Health Research Council, Ministry of Health and Population, ICIMOD.
- Ministry of Health and Population (MOHP) [Nepal] (2012). Distribution and Determinants of Diarrheal Disease in Western Development Region of Nepal. Kathmandu, Nepal: Nepal Health Research Council, Ministry of Health and Population.
- Ministry of Health and Population (MOHP) [Nepal] (2012). Household Survey 2012. Kathmandu, Nepal : Ministry of Health and Population.
- Ministry of Health and Population (MOHP) [Nepal] (2012). Impact Evaluation of Uterine Prolapse Surgery in Nepalese Women. Kathmandu, Nepal: DOHS, Family Health Division, Ministry of Health and Population.
- Ministry of Health and Population (MOHP) [Nepal] (2012). Increasing Access to Safe Abortion Services through Auxiliary Nurse Midwives Trained as Skilled Birth attendants- Finding from an Implementation Research .Kathmandu, Nepal: DOHS, Family Health Division, Ministry of Health and Population, and Ipas
- Ministry of Health and Population (MOHP) [Nepal] (2012). National Estimates of HIV Infections in Nepal. Kathmandu, Nepal: National Centre for AIDS and STD Control, Ministry of Health and Population.

Ministry of Health and Population (MOHP) [Nepal] (2012). Prevalence and Determining Factors of Diabetes Mellitus and Hypertension in Kathmandu. Kathmandu, Nepal: Nepal Health Research Council, Ministry of Health and Population.

Ministry of Health and Population (MOHP) [Nepal] (2012). Rapid Assessment of the Demand Side Financing Schemes: Aama programme and 4ANC. Kathmandu, Nepal: Nepal Health Sector Support Programme, Ministry of Health and Population.

Ministry of Health and Population (MOHP) [Nepal] (2012). Responding to Increased Demand for Institutional Delivery in Nepal –Situational Analysis and Emerging Options. Kathmandu, Nepal: DOHS, Family Health Division, Ministry of Health and Population.

Ministry of Health and Population (MOHP) [Nepal] (2012). Service Tracking Survey 2012. Kathmandu, Nepal: Ministry of Health and Population.

Ministry of Health and Population (MOHP) [Nepal] (2012). Service quality and effectiveness of privately run traditional medicine based health service providing centers in Kathmandu Valley. Kathmandu, Nepal: Nepal Health Research Council, Ministry of Health and Population.

Ministry of Health and Population (MOHP) [Nepal] (2012). Study on Aedes Mosquitoes and Climate Change Along an Altitudinal Transect in Central Nepal. Kathmandu, Nepal: Nepal Health Research Council, Ministry of Health and Population.

Ministry of Health and Population (MOHP), USAID and CREPHA (2012). Family Planning Needs of Migrant Couples in Nepal. Kathmandu, Nepal: Ministry of Health and Population, USAID and CREPHA.

National Centre for AIDS and STD Control (NCASC) (2012). National Estimates of HIV infections. Government of Nepal, Ministry of Health and Population.

National Planning Commission (NPC) [Nepal] (2012). National Population and Housing Census 2011 (National Report). Kathmandu, Nepal: Government of Nepal, National Planning Commission.

Progress Report on Gender Equality and Social Inclusion for NHSP-2.