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Attaining the Health and Education Millennium Development Goals in Nepal

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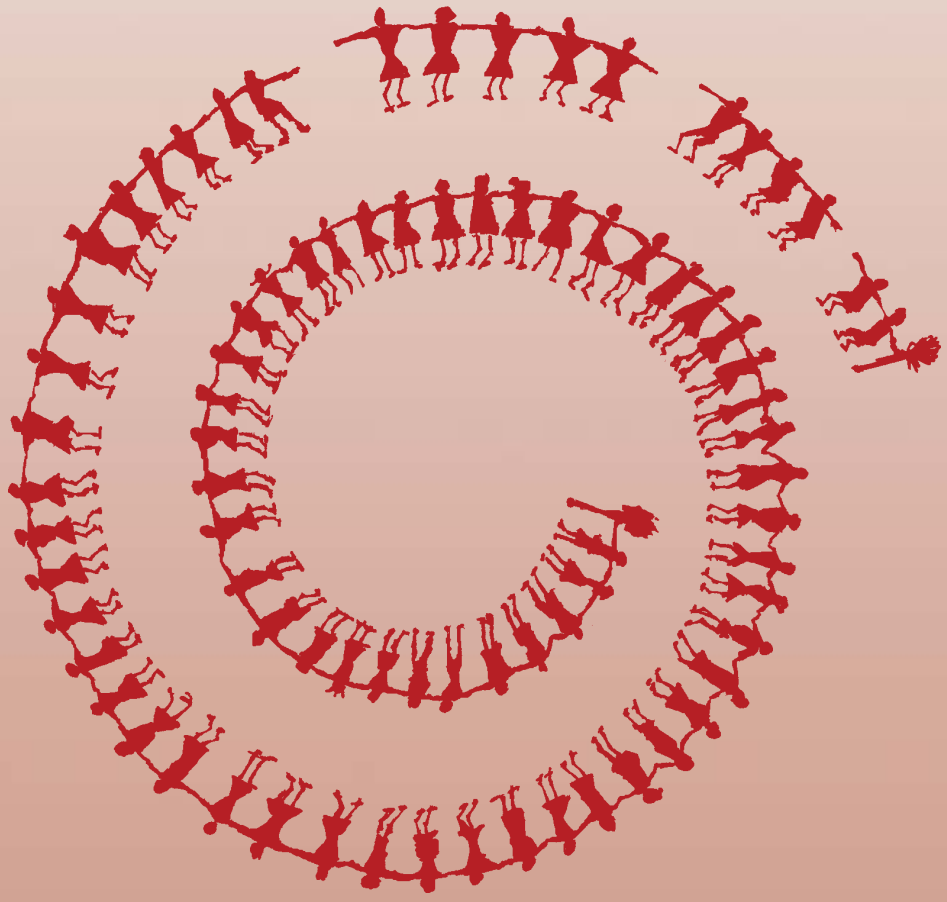

Discussion Paper Series

Attaining the Health and Education Millennium Development Goals in Nepal

South Asia Human Development Sector
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Contents

EXECUTIVE SUMMARY I

1. Attaining the Millennium Development Goals in Education 1

A. EDUCATION OUTCOMES: CURRENT STATUS AND TRENDS 1

Quality of education *8*
Learning outcomes *12*

B. EDUCATION SECTOR POLICIES AND PROGRAMS: GOVERNMENT, PRIVATE SECTOR, AND HOUSEHOLDS 13

Government *13*
Private sector contribution *20*
Household spending on education *20*

C. POLICY DIRECTIONS 22

REFERENCES 24

2. Attaining the Millennium Development Goals in Health 25

A. HEALTH OUTCOMES: PROGRESS AND PROSPECTS 25

Infant and child mortality *26*
Maternal mortality *29*
Infectious diseases: TB and HIV/AIDS *32*

B. FACTORS EXPLAINING PROGRESS IN HEALTH OUTCOMES 32

Government *32*
The private sector *43*
Households *45*

C. CHALLENGES FOR THE FUTURE 48

REFERENCES 50

Statistical Annex 52

BOXES

Box 1.1: Secondary school enrollment and completion rates 7
Box 1.2: Conditional cash transfers 12

FIGURES

Figure 1.1: Primary school net enrollment rates across countries 4
Figure 1.2: Primary school net enrollment rates across geographic regions and across per capita household expenditure quintiles 5
Figure 1.3: The main reasons for not attending school in 2003/04 6
Figure 1.4: Primary school completion rates across regions and per capita household expenditure quintiles 9
Figure 1.5: Primary school completion rates in low-income countries, by GDP per capita 10
Figure 1.6: Real public expenditure on education, in 1995 US dollars 14
Figure 1.7: Public expenditures on education as a percent of GDP against GNI per capita (US$) for countries with less than 10,000 GNI per capita 14

Figure 1.8: Benefit incidence of education expenditures by schooling level in Nepal (millions of current NRS) 17
Figure 1.9: Distribution of educational expenditures in 1995/96 21
Figure 2.1: Under-five mortality rate against GDP per capita (US$) 26
Figure 2.2: Under-five mortality across development regions in Nepal 26
Figure 2.3: Infant mortality rates against GDP per capita 28
Figure 2.4: Infant mortality rates across development regions in Nepal 28
Figure 2.5: Maternal mortality rates across GDP per capita 30
Figure 2.6: Public expenditure on health as a fraction of GDP per capita (US$) 33
Figure 2.7: Public expenditure on health, South Asian countries 33
Figure 2.8: Percent of households within 30 minutes of the closest health post, across regions and household welfare quintiles 35
Figure 2.9: Use of government doctors and paramedics by household welfare quintiles among those receiving health services 36
Figure 2.10: Immunization rates for DPT3, polio3, and measles across regions in Nepal 37
Figure 2.11: Detection rate of all cases and treatment success rates of new smear-positive cases of TB, South Asian countries 38
Figure 2.12: Household facilities, 1995/96 & 2003/04 39
Figure 2.13: Percent who sought healthcare for an illness or injury in the last month 40
Figure 2.14: Proportion of deliveries by doctors, other health professionals, ... 41
Figure 2.15: Density of physicians and nurses and midwives per 100,000 people, South Asian countries 42
Figure 2.16: Healthcare professional sought for care across regions and welfare quintiles 43
Figure 2.17: Use of healthcare facilities across regions and welfare quintiles 44
Figure 2.18: Proportion of total household expenditures allocated to healthcare expenditures across regions and welfare quintiles 45
Figure 2.19: Proportion of babies breastfed within the first hour of birth 46
Figure 2.20: Percentage of mothers who went for a prenatal checkup, by region 47
Figure 2.21: Percentage of mothers who went for a prenatal checkup, ... 47
Figure 2.22: Proportion of households reporting knowledge about means of preventing or spacing pregnancies, by region 48

TABLES

Table S1: Progress towards the Millennium Development Goals (MDGs)

Table 1.1: Basic information on schooling in Nepal 2
Table 1.2: Gross and net enrollment rates across education levels 3
Table 1.3: The evolution of teaching strength across schooling levels and regions 15
Table 1.4: Regular and development expenditures 19
Table 2.1: HIV/AIDS in Nepal 2003 32
Table 2.2: Budget performance by source and type of funding, 2003-04 34
Table 2.3: Health facilities under the Ministry of Health 34
Table 2.4: Trends in deaths due to acute diarrheal diseases 39
Table 2.6: Distribution of healthcare professionals 42

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Abbreviations and Acronyms

ANM	Auxiliary Nurse Midwife
CMS	Community Managed Schools
DDC	District Development Committees
DEO	District Education Officer
DfID	Department for International Development, U.K.
DHS	Demographic and Health Survey
DIMC	Decentralization, Implementation and Monitoring Committee
DPT	Diphtheria, Pertussis and Tetanus Toxoids vaccine
GDP	Gross Domestic Product
GNI	Gross National Income
IDA	International Development Association
IMR	Infant Mortality Rate
MCHWs	Mother and Child Health Workers
MDG	Millennium Development Goal
MMR	Maternal Mortality Rate
MSM	Men who have Sex with Men
NER	Net Enrollment Rate
NGOs	Non-Governmental Organizations
NLSS	Nepal Living Standard Survey
NPC	National Planning Commission
NTC	National Tuberculosis Center
NTP	National Tuberculosis Control Program
ORS	Oral Rehydration Salts
PHC	Primary Healthcare Center
PRSP	Poverty Reduction Strategy Paper
SLC	School Leaving Certificate
SMC	School Management Committees
STI	Sexually Transmitted Infection
STD	Sexually Transmitted Disease
U5M	Under-Five Mortality
UNESCO	United Nations Educational, Scientific and Cultural Organization
TB DOT	Tuberculosis Directly Observed Treatment
TBAs	Traditional Birth Attendants
VDCs	Village Development Committees
WHO	World Health Organization

EXECUTIVE SUMMARY

Like almost all countries in the world, Nepal has committed itself to achieving the human development targets embodied in the Millennium Declaration by 2015. The eight time-bound goals specified in the declaration have received unprecedented acceptance by policymakers, academics, civil society, and the development community. The goals include halving income poverty and hunger; achieving universal primary education and gender equality in schooling; reducing infant and child mortality by two thirds and maternal mortality by three quarters; reversing the spread of HIV/AIDS; and halving the proportion of people without access to safe water. Most of the targets are to be achieved by 2015, from their levels in 1990.

The Millennium Development Goals

1: Eradicate extreme poverty and hunger

2: Achieve universal primary education

3: Promote gender equality and empower women

4: Reduce child mortality

5: Improve maternal health

6: Combat HIV/AIDS, malaria, and other diseases

7: Ensure environmental sustainability

8: Develop a global partnership for development

With less than a decade remaining to achieve the MDGs, there is an urgent need to assess achievements thus far and to understand the prospects and challenges for the future. This study seeks to contribute to that understanding by focusing on five of the major MDGs in Nepal related to education and health. In education, it focuses on universal completion of primary school and gender disparities in schooling. In health, it focuses on under-five mortality, maternal mortality, and the spread of diseases. The degree of quantitative analysis varies with data availability. The primary data sources used in the paper are: (i) unit record data from the 1996 and 2001 rounds of the Demographic and Health Survey (DHS); (ii) the two rounds of the Nepal Living Standards Survey (NLSS) (1995/96 and 2003/04); (iii) School Level Education Statistics of the Ministry of Education and Sports; and (iv) Ministry of Health administrative statistics.

Education

In the last decade, Nepal has made tremendous strides in broadening access to basic education. Since the mid-1990s, primary school enrollment has increased considerably, especially for girls, children in the poorest regions, and the lowest income groups. More Nepalese children are in school now than ever before. Today, primary school gross enrollment rates are 112 percent, up from 94 percent in the mid-1990s. Similarly, net enrollment rates, which measure the extent to which children are enrolled at the age-appropriate level of schooling, increased from 57 to 72 percent between 1995/96 and 2003/04. If this pace of progress is maintained, Nepal is likely to achieve universal primary enrollment by 2015.

The increase in primary school net enrollments, driven by an increase in net enrollment rates for girls, has narrowed the disparities in enrollment rates across socioeconomic groups. Enrollment rates have increased sharply in the most backward regions of the country (the Mid-West and Far-West), reducing the enrollment gaps among regions. Enrollment rates across income groups and castes have narrowed as well. The poorer three income quintiles have realized larger gains in net enrollment rates than the richer two quintiles and there have been large increases in the net enrollment rates of Dalits, middle castes, and other Janajatis. However, significant socioeconomic and regional disparities persist in primary net enrollment rates and a concerted effort is needed to erase them.

Schooling remains poor. The challenge of educating children does not end with enrollment; it involves providing children with good schooling. Nepal's school completion rates, a widely accepted yardstick of school quality and one of the goals of the MDGs, are low.[1] Progress has been made over the last decade: the proportion of children aged 11–13 completing primary school rose from 27 to 38 percent between 1995/96 and 2003/04. However, the gains are insufficient for Nepal to meet the MDG for school completion. Furthermore, despite a reduction in disparities across socioeconomic groups in the last decade, large regional, caste, and income disparities persist in primary school completion rates, and are far more pronounced than disparities in enrollment.

Considerable progress has been made in reducing gender disparities in school enrollment. The gender parity index for the net enrollment rate (that is, girls' net enrollment rate as a percentage of boys') improved from 70 to 86 percent over the study period. Good progress has also been made in gender parity in secondary and tertiary enrollment and also in the literacy rates of young adults. Assuming these trends continue, Nepal will achieve the MDG goal of gender parity for primary education well before 2015.

The gains to date reflect government commitment to reform, increased private provision of education, and increased household demand for education. The Government has shown its commitment by increasing the resources of the education system and the resulting expansion of schools and increased numbers of teachers have helped to raise enrollments. At the same time, the Government has implemented policies (stipends, etc.) to encourage the inclusion of poor children in the schooling system. Expansion of private schooling in the urban areas and growth in household demand for education (a result of lower poverty rates and the cumulative effect of increases in female literacy) has also helped to raise enrollment.

To achieve the MDG of universal primary education within the next ten years, Nepal will need to reduce the number of out-of-school children, improve the education system, and continue to narrow the gaps across socioeconomic groups.

Getting almost a million children, who have either never enrolled in school or have dropped out of school, into school will require focused interventions. These interventions could include:

- Strengthening existing demand-side programs by targeting them more effectively. When cash-strapped families turn to child labor as a source of immediate disposable income, as happens in Nepal, conditional cash transfers can be used to lure these children back into school.

- Facilitating greater private sector involvement, possibly with incentives for poor students to attend private schools as currently piloted with textbook production and delivery.

[1] Completion rates are ideally calculated using longitudinal data as the fraction of children who complete a level of schooling to the number of children who began that level of schooling. Since household surveys are essentially snapshots at a particular point in time, we define the completion rate as the proportion of children aged 11 through 13 who have completed primary school.

- Making schools more attractive to subgroups of out-of-school children, possibly by hiring female teachers and teachers familiar with special languages, ensuring that all schools have separate toilets for girls and boys, and ensuring a cordial and interactive relationship between school administrators/teachers and the community.

To improve the overall quality of primary schools, interventions could include:

- Continuing the shift towards community-managed schools—which has the potential to increase the accountability of schools to the communities they serve;
- Increasing the capacity for teacher certification and ensuring that effective teaching techniques are passed on to would-be teachers during their training;
- Upgrading school infrastructure and materials;
- Modernizing the curriculum to improve learning and increase the link from schooling to the labor market.

Efforts to increase enrollment and improve school quality can be streamlined with more rigorous and frequent evaluations to ensure that scarce public resources are being spent efficiently. Monitoring and evaluation with a feedback loop can lead to better program design and greater impact. Three areas in particular call for review: the targeted stipend program, the move from central management of schools to the community managed system, and the private production and delivery of textbooks. In addition, the prevailing disparities in education indicators across regions, castes, and gender highlight the need for more concentrated interventions to redress the inequities in human development.

Health

Nepal has achieved a sharp reduction in deaths among children between the ages of one and five, and has also made some progress in reducing infant mortality. However, there remains a lot of geographic variation both in under-five mortality and in rates of progress. If current rates of progress are maintained, Nepal is likely to attain the Millennium Development target for reducing under-five mortality by two thirds of its value in 1990, but it is unlikely to attain the target for reducing infant mortality (also by two-thirds). Further, not all regions are likely to achieve the child mortality MDGs, with the Eastern and Far-Western regions at particular risk of falling far short.

Unfortunately, data on Nepal's maternal mortality ratios vary significantly depending on the source, making trend analyses difficult. But it appears that Nepal is not making sufficient progress in reducing the mortality of women at or around childbirth. Maternal mortality is among the highest in the world, with around 540 maternal deaths per 100,000 live births. Given that the health of a mother has a profound impact, not only for her but for her infants and children, her family, and society, there is an urgent need to address this health indicator.

Data limitations preclude a quantitative analysis of the prevalence of diseases in Nepal. Available information suggests that almost half the population of Nepal is infected with tuberculosis, but the incidence of TB and deaths due to TB are declining. Around 60,000 people are estimated to be living with HIV/AIDS. Thus far, HIV/AIDS is a concentrated epidemic, with especially high rates of prevalence among intravenous drug users, sex workers, and clients of sex workers.

Diverse factors have affected health outcomes in Nepal. Outside the health sector, increasing incomes, literacy, access to roads, and access to clean water and sanitation have played a vital role in the health of the Nepalese. Within the health sector, focused programs appear to have been particularly effective.

Coverage of immunization and vitamin A supplementation programs has sharply increased, including to some of the most remote parts of the country. Another focused intervention, namely the TB DOT (directly observed treatment—short course) program, has proved very successful in detecting and treating tuberculosis. The availability of health facilities has also risen considerably, from a low base a decade ago, but this availability has not increased the utilization of health services when household members are ill.

Current spending suggests a need for higher resource mobilization, but the money must be spent efficiently. Government spending on health is low in Nepal relative to that in other low-income countries (those with GDP per capita lower than US$1,000), and other countries in South Asia. These low expenditures are contributing to shortages of medicines and medical equipment and to the overall weak infrastructure, which in turn is leading to low utilization of health services. For example, skilled assistance during births is still relatively uncommon, and almost all births take place at home rather than in healthcare institutions. Needed improvements will require more resources for healthcare. These resources need to be allocated to regions whose health outcomes are lagging and to preventing and curing the diseases that account for a large share of the disease burden.

Disparities in healthcare access, measured by commute times, need to be reduced. Among the poorest 20 percent of households, fewer than half are within 30 minutes of a health post, while among the richest households more than 80 percent are within 30 minutes of a health post. To achieve greater equity in healthcare across Nepal, the Government will need to begin by addressing the deficiency of skilled human resources in remote parts of the country. Incentives, both financial and non-financial, will have to be provided to qualified medical personnel. Non-monetary incentives used in other countries include: opportunities for training and career advancement, improved physical infrastructure of health facilities and residential facilities, and a staff transfer mechanism to ensure a fair deployment to unpopular areas.

The quality of healthcare must be upgraded. Nepal's ongoing decentralization effort has the potential to improve healthcare by aligning the incentives of providers with the communities they serve. Increasing the accountability of healthcare professionals in this way can reduce absenteeism, increase effort, and improve provider-patient relationships. However, decentralization cannot take place without an efficient flow of funds, technical assistance, and knowledge sharing. These requirements are not always being met and a systematic and sustainable solution is clearly needed.

The private sector should contribute more to the provision of healthcare. Private providers already play an important role in healthcare in Nepal, but their contribution can be leveraged further by fostering better public-private partnerships. Specific measures could include: expanding accreditation and regulation, for instance, of traditional birth attendants (TBAs); creating an incentive system for TBAs and other delivery attendants to refer complicated deliveries to public medical facilities; and facilitating the private provision of primary healthcare.

Progress is needed, not only within the health sector itself but on multiple fronts. Policymakers must treat the health of the population as a top priority and should address the broad determinants of health. Evidence from within Nepal and from international experience suggests that measures designed to increase incomes of households; literacy, especially of mothers; connectedness though road access; and access to water and sanitation make a significant impact on health outcomes.

Better monitoring and evaluation of healthcare provision is needed with respect to the MDGs. Reliable time-series data at the sub-national level are severely lacking for maternal mortality ratios, and for the incidence of HIV/AIDS and malaria. This constraint makes routine monitoring of health outcomes and impact evaluation of health interventions too imprecise. This issue must be addressed to ensure political commitment, government/donor resources, and to ensure that scarce public resources are being channeled into programs that deliver and are available in regions that most need them.

Table 1: Progress towards the Millennium Development Goals (MDGs)		
MDG	**Nepal's current position**	**Prospects and issues**
Achieve universal primary education by 2015.	Between FY95/96 and FY03/04, net enrollment rate (NER) of primary-aged children rose from 57% to 72%, as did youth literacy (56% to 73%). These significant gains bode well for meeting the primary enrollment MDG. Universal primary education also entails completion of primary school, for which rates have only risen marginally since 1995.	Quality of primary education remains a concern, as the system is characterized by high repetition rates, high dropout rates, and low completion rates. If current trends continue, universal education will not be attained. Although equity in education has improved, wide disparities remain across socioeconomic groups.
Make progress towards gender equity and empowering women by eliminating gender disparities in primary/secondary education by 2005.	Females account for most of the increase in literacy rates. Girl's access to education has improved, and the gender parity index for net enrollment rate (ratio of NER of girls to boys) increased from 70 in FY95/96 to 86 in FY03/04.	Growth in school completion rates by girls has outpaced that for boys. If the trend continues, gender parity in primary education will be reached by 2010.
Reduce child mortality rates by two-thirds between 1990 and 2015.	Under-5 mortality fell sharply (at 5% annually) from 118 to 91 between 95/96 and 03/04, mainly due to greater coverage in immunization, and disease prevention and treatment. The infant mortality rate has been declining at 3.7% per year since the mid-1980s, with a drop from 79 per 1,000 live births in 95/96 to 64 in 03/04.	Given current trends, Nepal can attain the child mortality target. However, progress in reducing infant mortality has been slow and the rate will have to accelerate to meet the MDG. In addition, progress in reducing child mortality in the eastern and Far-Western regions has been slow, and these regions are unlikely to meet the MDGs.
Reduce maternal mortality rate by three-quarters between 1990 and 2015.	Maternal mortality remains high (539 per 100,000 live births in 1996). Fewer than 6 in 10 deliveries are assisted by skilled attendants.	Nepal's maternal mortality is the highest in the region. Prospects of achieving the maternal mortality MDG are unclear due to lack of comparable time series data.
Have halted by 2015, and begin to reverse the spread of HIV/AIDs, and the incidence of malaria and other major diseases.	TB-related deaths have fallen from 15,000-18,000 (1994) to 8,000-11,000 annually. TB cases have been declining (from 301 per 100,000 in 2000 to 258 in 2003). The prevalence of HIV/AIDS in the general population is unknown, although it has been estimated that 62,000 are living with HIV infection (2003). HIV/AIDS is a concentrated epidemic, with high incidence rates among intravenous drug users, sex workers, and STI (Sexually Transmitted Infection) patients.	Prospects for curbing TB are positive but face two challenges: (i) co-infection with HIV and TB cases could render detection and treatment more difficult; and (ii) increase in incidence of multi-drug resistant forms of TB. Data gathering and estimation of HIV/AIDS rates are still in their infancy, and the HIV/AIDS program lacks an appropriate institutional mechanism with inter-sectoral involvement.

1. ATTAINING THE MILLENNIUM DEVELOPMENT GOALS IN EDUCATION

Like almost all countries in the world, Nepal has committed itself to achieving the human development targets embodied in the Millennium Declaration by 2015. For education, these goals include achieving universal primary education and school completion and ensuring gender equality at all levels, including in literacy. The impact of schooling on economic welfare and social well being is well known. Investment in schooling is an extraordinarily powerful instrument to enhance earnings, decrease poverty, and promote social mobility, to increase health, nutrition, and life expectancy, and to produce sustained, long-term human development. It is also self-reinforcing and self-perpetuating across generations, with educated parents exhibiting strong preferences for investing in schooling for their children.

This paper reviews what Nepal has achieved towards the MDG goals in education and describes the challenges remaining. The primary data sources used are (i) the two rounds of the Nepal Living Standards Survey (NLSS) (1995/96 and 2003/04); and ii) school-level education statistics of the Ministry of Education and Sports.

The paper finds that between 1995/96 and 2003/04 Nepal made tremendous gains in primary school enrollment for girls, the poorest regions, and the lowest income groups. These gains in participation were the result of government policies, private sector expansion, and increases in household demand for education. If these improving trends continue, and policies to enroll the nearly one million out-of-school children succeed, Nepal will achieve the MDG for universal primary enrollment by 2015. Similarly, if gains in secondary and tertiary enrollment and in literacy continue, Nepal should achieve gender parity at all levels of the education system, and in literacy, by 2015. The outlook for achieving universal school completion is less good: school completion rates have risen, but the level and trend rate of increase are not sufficient for Nepal to meet the MDG by 2015.

These results indicate that Nepal will need to improve the quality of its education system. Nepal is already moving in this direction through the introduction of community managed schools—which will increase the accountability of schools to the communities they serve. However, the success of this initiative, and of efforts to enroll the remaining out-of-school children will need to be stepped up.

The paper is organized as follows: Section A details the current state of Nepal's MDG indicators and analyzes progress towards the goals; Section B describes the policies that have contributed to Nepal's success, and policies that constrain its future achievements; and the final section outlines the challenges facing Nepal in achieving the education MDGs.

A. EDUCATION OUTCOMES: CURRENT STATUS AND TRENDS

Nepal's education system comprises primary, lower secondary, secondary, and higher secondary school. Most schools are public, though the number of private schools has grown in recent years, particularly in

urban areas. Students in primary school are supposed to begin grade 1 at age 6 and to complete grade 5 by age 10. Thereafter, the duration of lower secondary school is three years and secondary and upper secondary schools take two years each. After completing 10th grade, students take the national school leaving certificate (SLC) examination. The further levels of schooling include higher secondary, university, and professional degrees.

More than 26,000 schools serve the more than 3 million pupils studying in the primary level in Nepal (Table 1.1).[2] Lower secondary schooling is available in fewer than 8,000 schools and secondary schooling is available in only 4,500 schools around the country. For every teacher, there are about 28, 42, and 22 pupils in primary, lower secondary, and secondary school, respectively.

Table 1.1: Basic information on schooling in Nepal

	Primary	Lower Secondary	Secondary
Official age	6 – 10	11 – 13	14 - 15
Number of schools	26,638	7,917	4,541
Number of teachers	111,027	28,571	23,028
Number of students (x1,000)	3,074	1,188	496
Students per school	115.4	150.1	109.2
Students per teacher	27.7	41.6	21.5
Teachers per school	4.2	3.6	5.1

Source: Ministry of Education, Government of Nepal (2004).

Primary school enrollment

This section reviews Nepal's progress towards achieving the MDG of universal primary enrollment. The results show that Nepal has made impressive gains in enrollment, narrowing disparities across regions, household welfare groups, and gender. Provided this trend continues, Nepal should be able to meet the MDG of universal primary enrollment, as well as the goals for gender equality at all levels of the education system, with the exception of preschools, by 2015.

Aggregate level and trends

More children are in school in Nepal now than ever before. Nepal has made impressive progress in gross enrollments in the last few decades.[3] By 2003/04, gross enrollment rates were 112 percent in primary school, and 71, 54, and 33 percent respectively in lower secondary, secondary, and upper secondary school.

Nepal has also made impressive gains in the net primary enrollment rate. While gross enrollments are a measure of total number of children enrolled at a given level of schooling, the net enrollment rate measures the extent to which children are enrolled at the age-appropriate level of schooling. As such, net enrollment rates are a better indicator of the performance of the education system. Table 1.2 shows that over the last decade, net primary enrollment rates have increased significantly in Nepal at all levels of the system. Net enrollment rates in primary school increased from 57 to 72 percent between 1995/96 and

[2] Other levels of schooling may also be available at schools serving the primary level. As a result, the total number of schools in Nepal is smaller than the sum of the schools that provide primary, lower secondary, and secondary level schooling.

[3] Gross enrollment is the ratio of total enrollment in a given level of schooling to the total number of children of the official age. Gross enrollments can be greater than 100 percent. Net enrollment is the ratio of enrollment by children of the official age in a given level of schooling to the total number of children of the official age. We focus here on the net enrollment rate, because this is one of the indicators of progress identified in the MDGs.

2003/04. Assuming continued progress along these lines, Nepal should achieve universal primary enrollment by 2015.

Table 1.2: Gross and net enrollment rates across education levels

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
			Gross enrollment			
Primary	108.4	79.9	94.3	122.7	101.8	112.3
Lower secondary	61.9	44.1	53.6	73.8	67.2	70.7
Secondary	58.6	29.2	43.4	61.9	46.2	54.1
Upper secondary	24.0	10.3	16.9	38.9	28.0	33.5
University	4.9	0.7	2.6	8.3	2.7	5.0
			Net enrollment			
Primary	66.8	46.5	56.8	77.9	66.9	72.4
Lower secondary	23.3	14.3	19.1	31.1	26.4	29.0
Secondary	12.9	6.0	9.3	16.8	13.4	15.1
Upper secondary	1.9	1.8	1.8	9.3	6.0	7.7
University	1.6	0.5	1.0	3.7	1.5	2.5

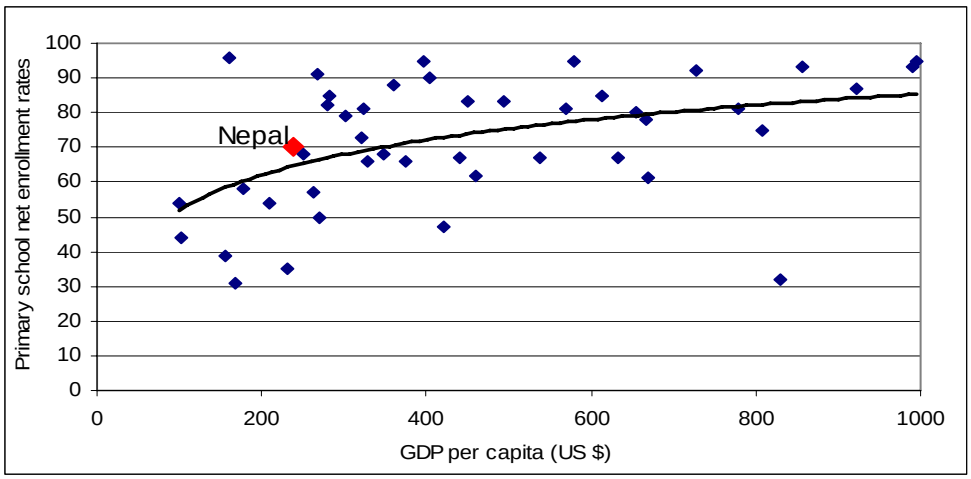
Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Primary school net enrollment rates in Nepal are comparable with those in other South Asian and low-income countries). The rate in Nepal is higher than in Pakistan (49), India (53), and Bangladesh (65), but lower than in Sri Lanka (96 percent). [4]

Nepal's net enrollment rates remain low in all other levels of education. Net enrollment rates are only 29, 15, and 8 percent in lower secondary, secondary, and upper secondary schools, respectively, (Tables A7, A8, and A9). Tertiary enrollment rates are even lower, with only 2.5 percent of the university age population enrolled (Table A10).

[4] World Bank (2005). These enrollment rates are calculated using household data.

Figure 1.1: Primary school net enrollment rates across countries



Sources: World Bank for NERs in all countries except Nepal. NER for Nepal is computed from NLSS II

Primary school net enrollments

The increase in primary school net enrollments has narrowed gender, wealth, and geographic disparities in enrollments. The primary driving force of this improvement has been the increase in NERs for girls. The gender parity index for the NER (that is, the ratio of the NER of girls to that of boys) increased from 70 to 86 percent between 1995/96 and 2003/04. Assuming this trend continues, Nepal will achieve the MDG goal of gender parity in primary education by 2010. Enrollment rates have increased sharply in the most backward regions of the country[5] (the Mid-West and Far-West), reducing the enrollment gap between regions (Figure 1.2).[6] Enrollment gaps across income groups and castes have narrowed as well: the poorer 60 percent of the population have achieved larger gains in NERs than the richer 40 percent, and large increases have taken place in the NERs of Dalits, middle castes, and other Janajatis.

Even so, significant socioeconomic and regional disparities in primary NERs persist in Nepal. The gap between the NER of the poorest (56 percent) and top quintile (84 percent) is still very large (Figure 1.2). Regional disparities are still evident. Interestingly, the NER ranges from 85 percent in the relatively poor Western region to 62 percent in the relatively rich Central region. And though the gender gap has narrowed, the net enrollment rate for girls (67 percent) is still much lower than for boys (78 percent).

Multivariate analyses are needed to understand why children do or do not attend school. Since multiple factors affect enrollment decisions simultaneously, multivariate regression can isolate the factors that affect the probability of enrollment, holding other factors constant. These factors include those that affect the supply of education (e.g., distance to school) and the demand for education (e.g., permanent income, education of parents). International evidence suggests that supply side factors, measured by the distance to school or the presence of a school in the village, significantly determine school enrollments.[7] On the

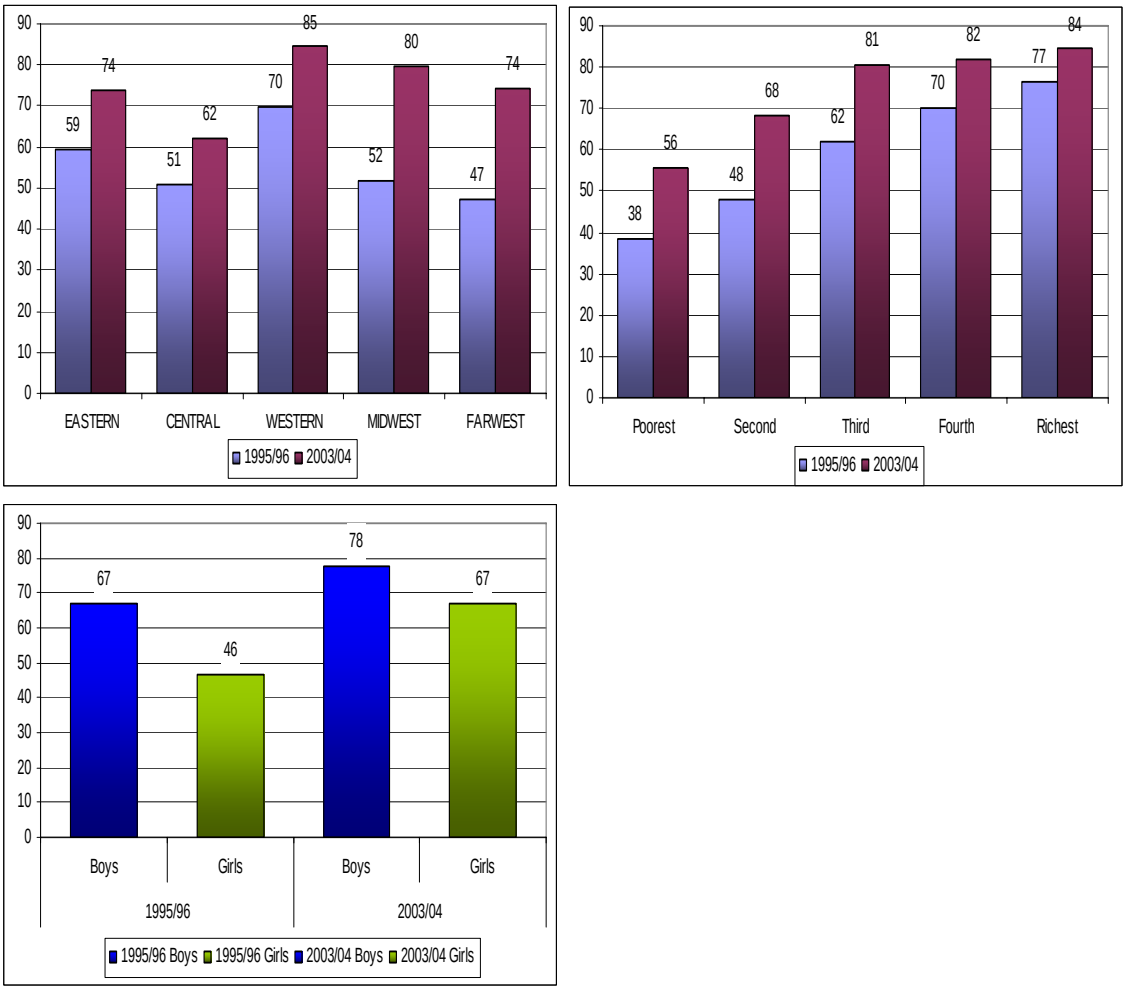
[5] The regions of Nepal arrayed from the highest to the lowest poverty rates are the Mid-Western (45%), Far-Western (41%), Eastern (29%), Western (27%), and Central (27%).

[6] The coefficient of variation has decreased from 0.16 to 0.12. Here, the coefficient of variation is calculated by dividing the standard deviation of the NERs across regions by the average NER across regions.

[7] See Filmer (2000) for a multi-country analysis of school enrollments using DHS data, including the 1996 Nepal DHS.

demand side, factors such as geography, gender[8], and the education of adults in the family all generally play an important role in determining school enrollment.

Figure 1.2: Primary school net enrollment rates across geographic regions and across per capita household expenditure quintiles



Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Individual level data from the NLSS 2003/04 indicate that both demand and supply factors affect household decisions to enroll their children in school.[9] Results from the analysis are summarized below (also see Table A12 in the statistical annex):

From a supply perspective, households with easy access to schools are more likely to enroll their children in primary school. Distance to school is not an important determinant of enrollment in lower secondary and secondary school, however. The implication is that parents are uncomfortable sending young children long distances to school, but are more willing to do so as the child grows older.

[8] Filmer (2000) finds that gender gaps in South Asia are particularly pronounced, putting women at a great disadvantage.

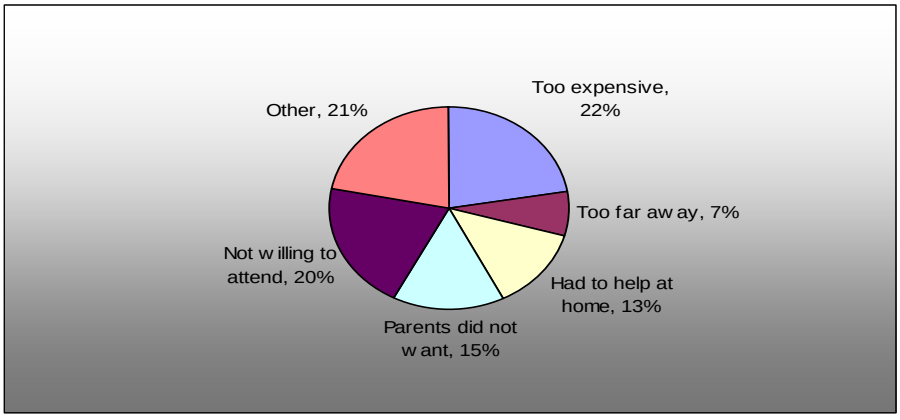
[9] A probit model of enrollment in primary school is estimated for all 6 to 10 year olds in Nepal. See Maddala (1983) for a description of probit models. See also New Era (2004) for the determinants of net primary school enrollment in Nepal.

From a **demand** perspective, several factors increase the probability that a child will be enrolled in school:

- **Higher-income children are more likely to attend school than poorer children.** This is not surprising, as the direct and indirect costs associated with school attendance can be prohibitive for poorer households relative to the benefits, which are generally observable only in the longer term.
- **Children of educated parents/literate household heads are more likely to attend school** than children of uneducated parents/or illiterate household heads.[10] This finding of a strong influence of parental education emphasizes the reality that intergenerational socioeconomic mobility is more the exception than the rule.
- **Caste matters**. Hindu upper caste children are more likely to be enrolled in school than are children of the Hindu middle castes, Hindu Dalits, and religious minorities.
- **Intra-household dynamics play an important role** in decisions to enroll children in school. The presence of female siblings (vs. no sibling) appears to raise the probability of primary school attendance for boys. The likely explanation is that female children assist with the household chores, increasing the probability that their male siblings attend school. The probability of girls attending school is not affected by the presence/absence of a male sibling
- **Geography matters.** Compared to the Eastern region, children in the Central region (low poverty) are less likely to be enrolled in primary school, while children in the Western region (or high poverty) are more likely to be enrolled in primary school**.**

Why do many children never attend school? The results above show that children, particularly girls, from low income, low caste, and less educated families, living in areas where schools are distant, are less likely to attend school. The main reasons why children do not attend are: (i) low income (many households cannot afford to send their children to school), (ii) unwillingness of children to attend school, and (iii) unwillingness of parents to send children to school. However, these households do *not* cite the absence of a school, or the belief that education is not useful, as reasons for not sending their children to school (Figure 1.3). The main reason for never sending their children to school is the parents' inability to afford the direct costs (fees, etc.) and the indirect costs (of releasing children from work at home). These reasons for never attending school broadly remained the same between 1995/96 and 2003/04.

Figure 1.3: The main reasons for not attending school in 2003/04



Source: World Bank staff estimates using NLSS 2003/04.

[10] This finding is also documented in Filmer (2000) using the NLSS 1995/96 data.

Summary

Nepal has made significant gains in net enrollment rates, narrowing disparities across regions, castes, income groups, and particularly gender. If current rates of progress are maintained, Nepal is on track to meet the primary school enrollment MDG. Nepal is also likely to attain gender parity before 2015. It is striking that these enrollment gains took place during a time of political insurgency in the country. However, further increases in primary enrollment will require reducing the distances to school and also reducing the direct and indirect costs of schooling for poor, low caste girls with less educated/illiterate parents. Particular attention will need to be paid to rural areas and the Central region.

Box 1.1: Secondary school enrollment and completion rates

Improvements in secondary school enrollments are not an MDG goal. However, increasing enrollment and quality of secondary school, particularly its relevance to the labor market, is the next challenge for Nepal.

Enrollment rates: Lower secondary and secondary NERs have also increased over the last decade (Tables A7 and A8 in the statistical annex). Girls' enrollment has grown almost twice as fast as boys'. Geographically, the big winner has been in one of the poorest regions (Far-Western). These improvements in NERs have dramatically narrowed the geographic disparities in secondary school NERs.[a] From a welfare perspective, however, the gains have not been pro-poor; they have been concentrated in the middle and upper quintiles of the population.

Despite these improvements, secondary school NERs are low relative to primary school NERs and significant inequalities exist across geographic regions, castes, and household welfare levels. Fewer than three in ten children of the lower secondary school official age are attending school, and about one in seven children of the secondary school official age attend school. Geographic disparities are large: lower secondary NERs in the Mid-Western region are about 12 percentage points lower than those in the Western region. Across household welfare quintiles, the disparity in NERs is very pronounced. For instance, lower secondary school NERs among the richest households are more than seven times the NERs in the poorest households. Muslims and Dalits have below average lower secondary and secondary school NERs. Gender disparities for secondary school also remain, but are small in comparison (17% boys and 13% girls). However, if current rates of progress are maintained, then Nepal can expect to achieve gender parity in lower secondary and secondary school.

The determinants of enrollment in lower secondary and secondary school confirm many of the bivariate relationships discussed earlier (Table A12). Geography, caste, gender of child, parents' education, and household per capita expenditures all matter. Interestingly, commute time to school does not significantly determine enrollment in lower secondary or secondary school enrollment, which differs from the findings of primary school. The implication is that parents are uncomfortable sending their children long distances to primary schools, but are more willing to do so as the child grows older. Compared to children in the Eastern region, children in the Central and Mid-Western regions are less likely to be enrolled.

Completion rates: There has been a sizable increase in lower secondary and secondary school completion, with completion rates for girls doubling in the last decade (Tables A14 and A15). By far, the Far-Western, or poorest, region has increased its completion rates the most. Interestingly, the improvements have not been pro-poor, though, with standout improvements for children from quintiles 3 and 4, respectively.

Lower secondary and secondary school completion rates remain extremely low. Only one in four children who start lower secondary school complete it and only one in seven who start secondary school complete it. Secondary school completion is also highly sensitive to: geography, with the Central region showing completion rates 3 times higher than the Far-Western region; household welfare level and castes, with fewer than 2 percent of children from the poorest quintile and Muslim background completing secondary school relative to the 38 percent from the richest quintile and 41 percent of Newar children.

The determinants of lower secondary and secondary school completion are not substantively different from the determinants of primary school completion (Table A18). Again holding all else constant, richer children, with more educated parents, of higher castes, from urban areas are more likely to complete these levels of schooling, while children from the Far-West are less likely to complete secondary school.

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[a] With the coefficient of variation of lower secondary NER decreasing from 0.31 to 0.17 between 1995/96 and 2003/04 across the regions.

Quality of education

The challenge of educating children does not end with enrollment; the harder task for the education system is to ensure that children progress through school and acquire age-appropriate knowledge at each level of the educational system. This section reviews the available quality indicators for the education system.

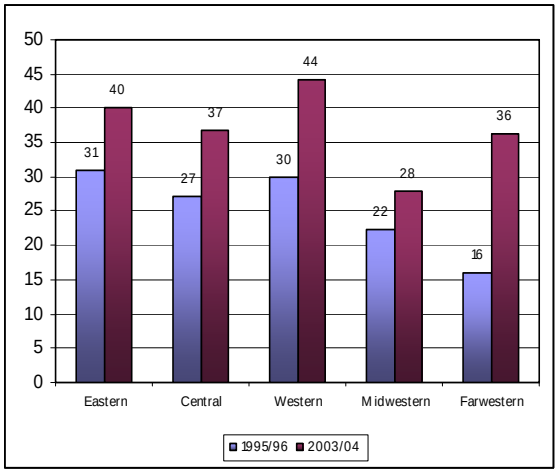
The gains in enrollments noted in the previous section have been accompanied by improvements in school quality, as measured by school completion rates. Despite the gains, however, completion rates remain quite low in Nepal, and if current trends continue, Nepal is unlikely to meet the MDG of school completion. It should be noted that Nepal has made gains in improving the basic literacy rates of young adults, and, under current trends, is likely to meet the MDG for gender equality in literacy by 2015.

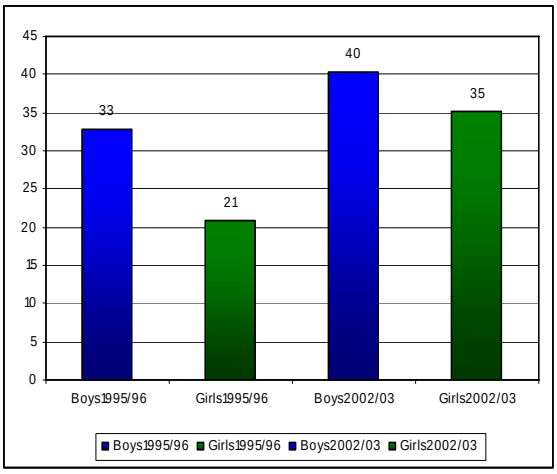
Primary completion rates

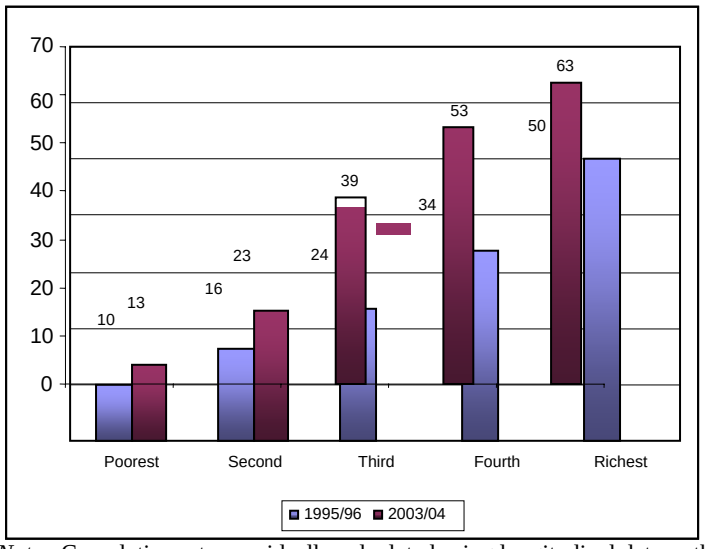
Primary school completion rates have risen from 27 to 38 percent (Table A13). Thus, only just over a third of students complete primary school within three years of the official age (i.e., between 11 and 13). There are two main reasons why. First, children drop out before completing grade 5. Second, children finish primary school very late, after age 13, possibly due to high repetition rates, frequent breaks from schooling, or simply because they start school at a late age.

Primary school completion rates have improved in all regions and castes, for girls, and for all household welfare groups (Figure 1.4). The highest growth rates in completion rates are observed in the Far-Western region and for households in the middle and upper quintiles. In each case, the growth in girls' completion rates far outpaces the growth in boys'. However, the growth in completion rates has benefited quintiles 3, 4, and 5 more than poorer households.

Figure 1.4: Primary school completion rates across regions and per capita household expenditure quintiles







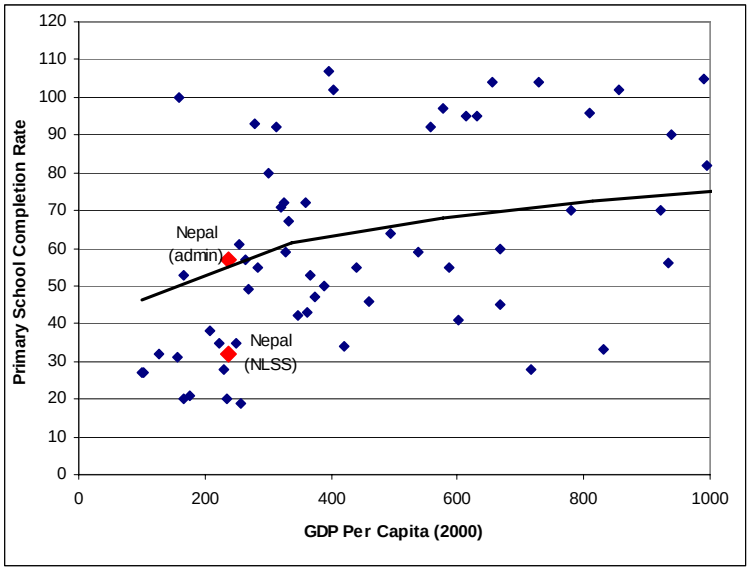
Note: Completion rates are ideally calculated using longitudinal data as the fraction of children who complete a level of schooling to the number of children who began that level of schooling. Since household surveys are essentially snapshots at a particular point in time, we define the completion rate as the proportion of children aged 11 through 13 who have completed primary school.
Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

There exist large regional, caste, and income disparities in completion rates. The primary school completion rates are far lower in the Mid-West than in other regions, and rural completion rates are much lower than urban completion rates (Table A13). Children from higher-income households also have higher completion rates than children from poorer households. The rate of completion for non-poor children is nearly five times greater than for children from poor households. Similarly, children from the Chhetri and Newar castes have on average higher completion rates.

Comparisons of primary school completion rates across countries are very difficult because consistent data are not available. Administrative data on primary school completion rates suggest that Nepal's

completion rate of 57 percent is in line with those of other South Asian countries (Figure 1.5).[11] However, the completion rate of 32 percent shown by the household data is low relative to those of neighboring South Asian countries. Completion rates calculated using household data range from 95 percent in Sri Lanka to 66 percent in Bangladesh, 61 percent in India, and 51 percent in Pakistan.[12]

Figure 1.5: Primary school completion rates in low-income countries, by GDP per capita



Source: World Bank for NERs in all countries except Nepal. NER for Nepal is computed from NLSS II.

Determinants of primary school completion (Table A18). To better understand the factors that determine primary school completion, a multivariate probit model for school completion is estimated.[13] The results show that:

- **Access to schooling,** as measured by the time taken to go to school, is a significant factor affecting enrollment. But conditional on being in school, it doesn't appear to have an additional impact on completion rates.
- **Children from higher income (and better educated) households** are more likely to complete all levels of schooling than poorer children.
- **Caste plays a vital role in school completion rates**. The probability of primary school completion is significantly lower for Hindu middle, Hindu Dalits, Janajati-hill, Janajati-terai, and religious minorities than for Hindu upper class children.

[11] An important caveat here is that administrative data on completion rates are calculated using the ratio of all students who complete primary school regardless of the age at which they complete that schooling level to the population of students who started that level of schooling. Household survey data, on the other hand, computes completion rates as the proportion of a particular age bracket that has completed primary school.

[12] World Bank (2005).

[13] A number of the bivariate relationships to school completion discussed above hold in a multivariate setting as well. We estimate a probit of the probability of school completion for children aged 11 to 13 for primary, 14 to 17 for lower secondary, and 16 to 19 for secondary. The determinants are chosen from an extensive array of student, family, and regional characteristics.

- **Girls are less likely to complete primary school** than boys, regardless of whether or not they have siblings.

Dropouts and repetitions

As noted above, only a third of 11 to 13 year olds have completed primary school in Nepal. Completion rates are low because children drop out before finishing the five years of schooling required or because of delays, for example caused by high repetition rates.

More than one in six children who begin grade 1 drop out of school in that year (Table A20).[14] The highest dropout rates in Nepal occur between entering school and grade 1 and in grade 5, respectively.

The costs of schooling to households are an important reason why children drop out of school. Qualitative results from the NLSS 2003/04 survey indicate that the main reasons why children drop out of primary school are the high direct costs (fees, uniforms, text books, etc.) and indirect costs (in terms of work forgone within or outside the household) of schooling, or that parents do not want to send their children to school. Interestingly, girls and boys drop out for different reasons. For boys, the main reason is poor academic progress, followed by the high direct costs of schooling. For two thirds of girls, the need to help at home or cultural factors (their parents no longer want them to attend school) are the main reasons.

Repetition rates in Nepal's primary schools are high relative to those in other countries in the region.[15] In grade 1, which has the highest repetition rate, almost 40 percent of students repeat the school year. Average repetition rates in Nepal are around 22 percent, much higher than in India, Bangladesh, and Bhutan (whose repetition rates are 4, 6, and 13 percent respectively).[16,17] High repetition rates are caused, in part, by low readiness for school (particularly in grade 1)[18], but also by poor instruction. High repetition rates strain the capacity of schools to absorb out-of-school children and also increase dropout rates because repeaters are more likely to drop out of school.

Summary

While completion rates have improved in Nepal, they remain low relative to those of other countries in the region. Reducing the number of dropouts and repeaters[19] will require looking closely at teacher quality, student performance, and readiness, particularly for grade 1. In addition, since dropouts are partly the result of the high costs of education, particular attention will be need to be paid to allaying the direct and indirect costs of going to school -- through, for example, conditional cash grants (Box 1.2). Boys with weak academic performance will need particular focus, as will girls, particularly from poor and low caste households.

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[14] There was no change in this dropout rate between 1995/06 and 1998/99.

[15] Nepal's repetition rate is defined as the proportion of pupils enrolled in a given grade in a given school year who study in the same grade in the following school year, as reported in Ministry of Education, Government of Nepal (2004). Other data on repetition rates are reported in UNESCO (2003).

[16] UNESCO (2003).

[17] However, caution must be exerted in comparing repetition rates across countries or even across regions in a country. These measures of internal efficiency depend crucially on the standards applied in the school for advancing grades. Some schools may be satisfied with minimum levels of attendance, while others might be more interested in examination scores.

[18] Two factors contributing to low readiness are: (i) almost a quarter of the students starting primary school do so at age five, which may be too young for some children; and (ii) too few students have gone though an early childhood development program, which greatly increases a child's ability to cope with the primary school program.

[19] The promotion rate is the proportion of pupils promoted to the next grade in the next year. It is generally a grade-to-grade transition, rather than a transition from one level of schooling to another level.

Box 1.2: Conditional cash transfers

Several countries provide cash transfers conditional on attendance in school. Two prominent examples are the Progresa program in Mexico and the Food-for-Education program in Bangladesh.

A key goal of Progresa is to increase secondary school enrollment (primary school enrollment in Mexico is already high at 93 percent for the poor), especially for girls (Wodon and others 2003). Educational grants are provided to promote enrollment, and subsequent grant payments are made conditional on minimum attendance levels, as reported by school teachers. Targeting is achieved by first identifying marginal communities the census and health/education ministry data. Once eligible communities are identified, a survey is fielded to all households to separate the poor from the non-poor households using a principle components analysis. Thereafter, the community then has the opportunity to adjust the list of beneficiaries for inclusion or exclusion errors. Households then have the option to participate in the program.

A unique feature of the Progresa program is that data for program evaluation are readily available and hence, multiple evaluations of the impact of the program have been conducted by independent researchers. This openness to evaluations reflects a deliberate attempt by the designers to ensure that lessons learned could be fed back into the system and also to ensure that good evaluations will force governments to persist with the program, rather than be tempted to "revamp and redesign" programs with the political cycles. Most impact evaluations show that the number of years of schooling for both boys and girls has increased significantly.

Bangladesh's food-for-education program was implemented to keep children from poor rural families in school by reducing the incentives for child labor (Ravallion and Wodon 1999). The program offers a stipend to households that participated as long as the condition of 85 percent of primary school attendance each month is met. Targeting is achieved by first identifying economically backward areas and then gathering information from community groups regarding eligible households based on idiosyncratic information. Studies on the effectiveness of the program show that stipends considerably less than the mean child wage are sufficient to ensure close to full attendance by households that participate in the program.

Learning outcomes

Literacy

Literacy rates among Nepal's young adults improved tremendously between the mid-1990s and the early 2000s (Table A19). Basic literacy is an important goal of the primary school system. The proportion of people aged 15 to 24 who can read and write a letter rose from 56 percent to 73 percent between 1995/96 and 2003/04. Although literacy is a measure of actual knowledge, unlike enrollments or even completion, literacy is difficult to assess, and hence is susceptible to large measurement errors. In the case of the NLSS, for example, the interviewer asks the respondent whether they can read a letter and whether they can write a letter. If the answer to both questions is yes, then the respondent is assumed to be literate. Two obvious problems with this approach are that respondents may feel embarrassed to admit to being illiterate in front of family members or the enumerator, and that a large variance in reading and writing ability simply gets recorded as a yes or no.

Literacy rates have improved across geographic regions, per capita household expenditure quintiles, gender, and castes (Table A19). The 15 to 24 year olds in the poorer Far-Western and Mid-western

regions have experienced a considerable increase in literacy rates since the mid-1990s. Literacy rates for the poorest household quintile improved significantly, rising from 34 to 48 percent between 1995/96 and 2003/04. Finally, women were among the biggest beneficiaries of the overall increase in literacy rates, raising their literacy rate by 5.3 percent a year to almost 63 percent. If the trend continues at this rate, gender parity in literacy will likely be achieved before 2015.

Standardized exams

While the school system is able to teach basic literacy, results from standardized exams for grade 10 -- another proxy for what knowledge is gained from school -- indicate that the **learning outcomes in the public school system are quite weak**. The school leaving certificate (SLC) pass rates of public school students are quite low, at 25 to 35 percent. Students from private schools perform much better, with average pass rates of 75 percent.[20]

B. EDUCATION SECTOR POLICIES AND PROGRAMS: GOVERNMENT, PRIVATE SECTOR, AND HOUSEHOLDS

This section reviews the factors that have contributed to the significant gain in school enrollment in Nepal, as well as those that constrain improvements in quality.

Government

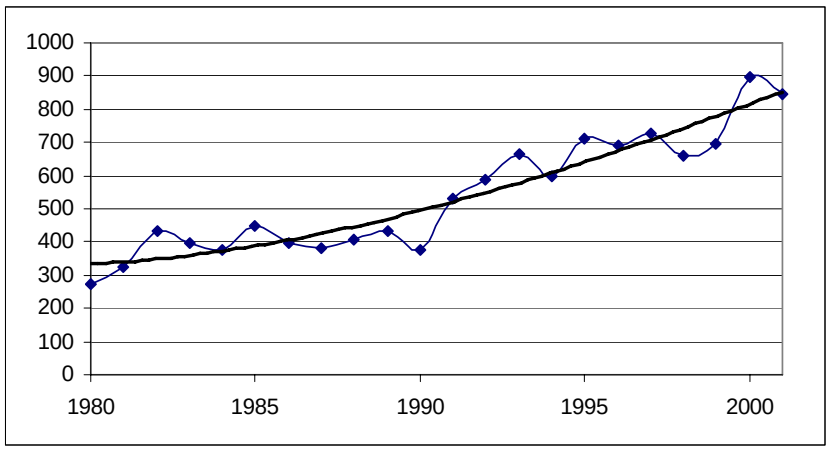
Education is a priority in Nepal and the Government is committed to improving both coverage and quality. Evidence of this commitment to education is presented in the Government's main poverty reduction strategic plans, namely the Poverty Reduction Strategy Paper (PRSP) and the 10th Five Year Plan documents.

Public finance

Not only have priorities been articulated, but funding for education has consistently increased in the last two decades (Figure 1.6). Specifically, education spending has increased from 9 percent in the early 1980s to recent estimates of 15 percent of the national budget, and approximately 3.5 percent of GDP is allocated to the education sector (Ministry of Education, Government of Nepal, 2002). This makes education the largest sub-sector in the government. In addition, education expenditures feature as a top priority in the government's medium-term expenditure framework, indicating continuing commitment to this sector.

[20] World Bank (2004a).

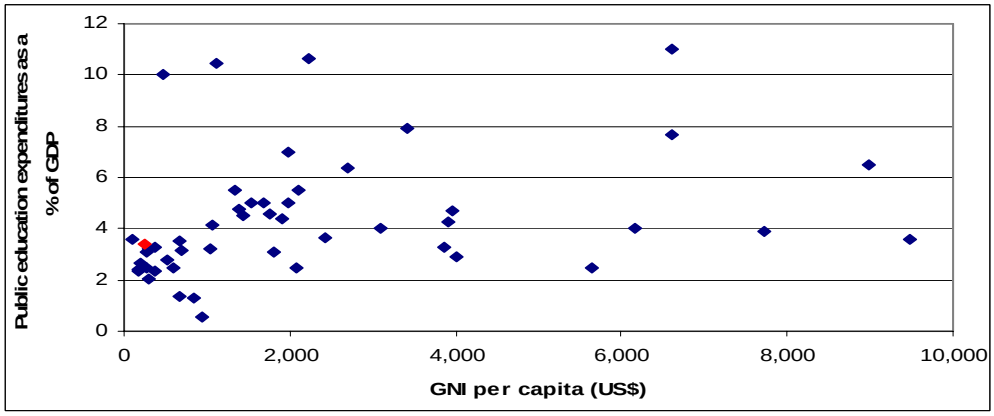
Figure 1.6: Real public expenditure on education, in 1995 US dollars



Source: World Bank.

As a proportion of GDP, Nepal's public expenditures on education compare favorably with those in other countries in the region: India allocates about 4 percent, Sri Lanka about 3.1 percent and Bangladesh about 2.5 percent (Figure 1.7). But Nepal's GNP is the smallest in the region, and its per capita expenditures on public education of $21 a year (FY96/97) are the lowest in the region (around half of India's allocation).

Figure 1.7: Public expenditures on education as a percent of GDP against GNI per capita (US$) for countries with less than 10,000 GNI per capita



Notes: Nepal is marked in red.
Source: World Bank for NERs in all countries except Nepal. NER for Nepal is computed from NLSS II.

The Government's commitment to education has attracted considerable donor financing. A significant portion of education expenditures are funded by donors, including the International Development Association (IDA), Denmark, Finland, Norway, and recently the UK Department for International Development (DfID).

Almost 60 percent of total education expenditures are used for basic education.[21] The largest component of basic education is primary education, which accounts for 53 percent of the total education

[21] Basic education includes primary education, technical and vocational education, the school feeding program, non-formal education, scholarship program, women's education, special education, population education, and distance education.

budget. Secondary education accounts for 23 percent and higher education for 20 percent of overall education expenditures. The rest is allocated to non-formal education and technical and vocational education.

Expansion of educational inputs

The increase in public funding for education has helped augment the number of schools, partly explaining the increase in enrollment. The proportion of households with primary schools within ten minutes of their residence has increased from 42 to 51 percent between 1995/96 and 2003/04[22] (Table A21). This increase in accessibility has significantly benefited the Western region (where the proportion of households within ten minutes of a primary school has risen from 38 to 54 percent) and the Far-Western region (where the proportion of households within 30 minutes of a primary school has risen from 82 to 93 percent). Enrollments in both of these regions have increased considerably between 1995/96 and 2003/04.

The number of teachers in the public school system has also increased. The number of teachers in public schools rose by about 10,000 between 1996 and 2002 (Table 1.3). The Central regions (excluding Kathmandu) and Western regions received the bulk of this increase. At the lower secondary level, the biggest teacher increases have been in the Kathmandu, Western, and Central (excluding Kathmandu) regions respectively. Kathmandu and the Eastern region have received most of the increase in upper secondary school teachers, broadly in line with the pattern of increased enrollments.

Table 1.3: The evolution of teaching strength across schooling levels and regions

	1996					
	Primary school		Lower secondary school		Secondary school	
	Total teachers	Public teachers	Total teachers	Public teachers	Total teachers	Public teachers
Eastern	21,199	19,668	4,790	3,848	3,943	2,454
Central	19,274	17,561	3,304	2,810	2,831	2,424
Kathmandu	8,533	4,066	3,406	1,367	2,988	1,079
Western	21,283	18,898	4,497	3,561	3,980	3,134
Mid-Western	10,910	10,153	2,036	1,621	1,645	1,423
Far-Western	8,179	7,518	1,671	1,421	1,036	918
Nepal	89,378	77,864	19,704	14,628	16,423	11,432
	2002					
	Primary school		Lower secondary school		Secondary school	
	Total teachers	Public teachers	Total teachers	Public teachers	Total teachers	Public teachers
Eastern	23,853	19,284	5,730	4,202	4,413	3,091
Central	23,721	19,573	4,771	3,497	3,819	2,827
Kathmandu	11,054	4,276	6,112	2,653	5,826	1,889
Western	28,642	20,561	6,539	4,306	5,452	3,368
Mid-Western	13,107	10,530	2,808	1,837	1,877	1,437
Far-Western	9,796	7,483	2,200	1,402	1,366	952
Nepal	110,173	81,707	28,160	17,897	22,753	13,564

Source: Ministry of Education.

[22] Of course, besides an increase in supply, it is also possible that commute times have decreased because roads, modes of transport, etc., have improved.

Programs for poor or excluded groups

The government has paid particular attention to increasing the enrollment of poor and underserved communities. Key among these programs is a scholarship program for students from "oppressed and backward communities" to attend private/boarding schools. The government also provides scholarships to the first child or first girl of poor families from which none of the household members have completed primary school. According to NLSS 2003/04, stipends have been given to 384,172 Dalit students, out of a total of 527,204 Dalit students.

Nepal has also implemented a number of other programs to promote inclusiveness. First, free schooling is extended past the primary level for all girls and for those boys of oppressed castes and backward areas, and for families below the poverty line.[23] Second, to reduce problems arising from different languages being spoken in different communities, schooling at the primary level is to be provided in the mother languages of the community in which the school is located. Third, recognizing that private schools have become significantly more important than they were a decade ago, the Government of Nepal is identifying a regulatory role to be played by government, partly to ensure that prices are in line with norms. Fourth, a Rural Education Development Fund will be set up to fund the education of marginalized communities; funds for this program will come from a levy of 1.5 percent of the income of private/boarding schools. Fifth, to further stimulate the enrollment of girls, more female teachers will be hired. Currently, female teachers account for about 30 percent in primary and fewer than 9 percent in secondary school (Ministry of Education, Government of Nepal, 2004). This representation of female teachers in Nepal is the lowest in South Asia.[24] Separate latrines for girls and boys will also be provided to ensure access for girls in school.

The scholarships currently available to families "to help pay for educational expenditures" are not well targeted. NLSS 2003/04 indicates that about 70% of all Dalits receive the stipend, although it is intended for all Dalit pupils. Among non-Dalits, half the stipends are allocated to males; and almost 60 percent of these go to the non-poor. However, the conclusions that can be drawn from the above incidence analysis must be treated with caution. Their main limitation is that the NLSS only gets information on whether a stipend is received and the amount of the stipend, with no information on whether or not the government is the source of the stipend.

A large proportion of the education budget is allocated to primary schooling. In 2003-04, per capita expenditures on all levels of education were approximately NRS 550. Given that the population attending school is almost 4 million, the total educational expenditures are around NRS 1.3 billion. The distribution of these education expenditures across the three levels of schooling in Nepal is 56, 24 and 10 percent for primary, secondary and higher education respectively in 2005-06. Assuming that the budget allocations, in percent terms, haven't changed substantially since 2003-04, we find that expenditures per student in primary, secondary and higher education are NRS 1,444, 626, and 256 million respectively. Although it is useful to understand the expenditure patterns across the different levels of schooling, it is also important to analyze the incidence of these expenditures on households of differing welfare levels. For that, benefit incidence analysis is needed.

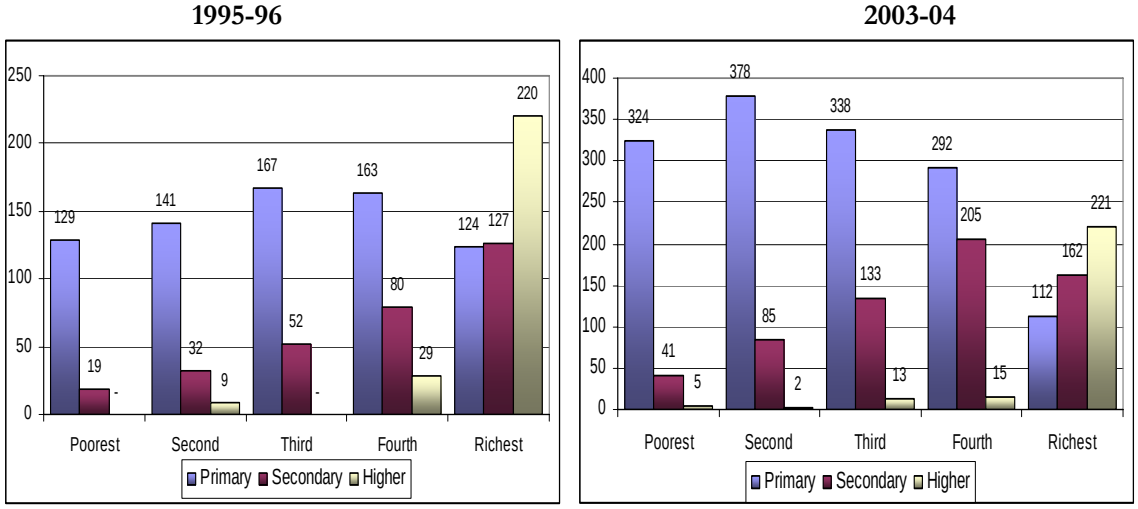
Estimates of benefit incidence using the 2003-04 NLSS reveals that 43 percent of total education expenditures reach the upper two quintiles, and 36 percent reach the lower two quintiles (Figure 1.1**)**. Only in the case of primary education are public expenditures captured by poorer households relative to

[23] In Nepal, public schools are free, meaning no periodic fees. However, other expenses might apply, such as textbooks, uniforms, registration fees, examination fees.

[24] More than a third of all teachers in Bangladesh and India are female. In China, more than half and in Malaysia about two-thirds of all teachers are female.

richer households. Almost half of all expenditures on primary schools are captured by students from the bottom two quintiles of the welfare distribution, while 28 percent of all primary school expenditures are captured by the upper two quintiles. One of the key reasons for this pattern to emerge is that students from the upper two quintiles are significantly more likely to attend private schools than students from poorer households. But, the finding of high benefit incidence at the primary school level does not extend to the secondary and higher education levels. In secondary schools, 20 percent of expenditures on this level of school are captured by the bottom two quintiles, while the upper two quintiles capture about 60 percent. At the higher education level, the picture is starker, with more than 90 percent of expenditures captured by the upper 2 quintiles, and about 3 percent captured by the bottom two quintiles. As revealing as the above expenditure patterns are, it would be useful to analyze the likely beneficiaries of a marginal increase in educational spending. In other words, we take as given the benefit incidence and compute the marginal benefit incidence of an increase in education expenditures.

Figure 1.8: Benefit incidence of education expenditures by schooling level in Nepal (millions of current NRS)



Source: World Bank staff estimates using NLSS 1995/96, 2003/04.

Much of the increase in the education budget seen in the last decade has been to increase expenditures in primary schools. Between 1995-96 and 2003-04 there was an 80 percent increase in the nominal education budget allocated to the three levels of schooling. Almost 70 percent of that increase in the education budget was allocated to primary schools. Secondary schools also increased the nominal expenditures by 31 percent, with higher education showing a slight decline in nominal expenditures.

The increase in education expenditures in the last decade has been pro-poor. To simulate the expected beneficiaries of a marginal increase in the education budget, we use the levels of expenditures from government estimates and the distribution of students in the different levels of schools from the NLSS 1995-96 and 2003-04. Across welfare quintiles, almost half the increase in the education budget was captured by the bottom two quintiles, with about 25 percent of the increase reaching the top two quintiles. In other words, the increased education expenditures have been pro-poor. These expenditures are pro-poor mostly because of the large increase in the population of students in primary school, which as discussed above benefits poor households more than non-poor households. Focusing on primary school alone, where 70 percent of the entire increase in the education budget took place, about 60 percent of the increased primary school budget reached households in the bottom two quintiles. For secondary school, the expenditures have not been pro-poor, with half of all expenditures benefiting households from the top two quintiles and only 24 percent benefiting households from the bottom two quintiles.

Improving the quality of education

Nepal's education system suffers from poor instruction, outdated and misaligned curricula, lack of teaching materials including textbooks, teacher absenteeism, poor infrastructure, and, particularly, lack of accountability and low parental involvement.

Instructional quality remains a concern. With fewer than half of all teachers receiving any training, the proportion of trained teachers in Nepal is among the lowest in the region. Fully trained teachers account for only around 16 percent of all primary school teachers and only around 30 percent are partially trained.[25] Nepal maintains a two-tier system of accreditation, where fully trained teachers have at least passed their SLC and completed ten months of training, while partially trained teachers are at least SLC graduates with two and a half months of training. In Bangladesh and the Maldives, around two-thirds of all teaches have completed their training, and in Bhutan, the proportion exceeds 90 percent. Of Nepal's female teachers, only 40 percent have completed some training. To ensure that teachers employ techniques learned in training requires granting them autonomy, motivating them, and assessing them on the basis of transparent outcomes.[26]

There is limited accountability in the system. The prevailing institutional structure gives **s**chool administrators little leverage over centrally hired teachers, and the accountability of the school system to households has been very low. Education specialists in Nepal often point to the high rates of teacher absenteeism as a consequence of this lack of leverage and accountability in the system.

Curricula, teaching materials, and textbooks also need improvement. A key problem is the fragmentation of curricula between the schooling levels; considerable irrelevant subject matter or outdated material; and a high concentration on factual materials, which promotes rote learning rather than real understanding and creative thinking.[27] Some headway has been made in tailoring the curriculum to local conditions and local languages (reference materials have already been developed in eleven languages). However, the Ministry of Education has highlighted the need to design a curriculum that is "practical and relevant to the lives of children, youths, and adults." Teaching materials, such as textbooks, often arrive late and in short supply. In an effort to stem some of these problems, textbook production and delivery is being opened to the private sector.

The quality of infrastructure is probably poor. Spending on new school construction and maintenance of existing structures is low. Only about 15 percent of the development budget and 6 percent of the total basic and primary education budget is allocated to construction (Table 1.4).

[25] Ministry of Education, Government of Nepal (2004).
[26] Teacher training hasn't worked very well, mainly because training is badly designed and because teachers do not apply the techniques they learn. World Bank (2004a).
[27] World Bank (2001).

Table 1.4: Regular and development expenditures

Regular expenditures		Development budget	
Teacher salary and allowances	75.25	Primary schools construction project in support of EFA (2003-2005)*	8.86
Administrative cost	3.37	Primary school nutritious food program	8.44
Post-service benefits (pension etc.)	7.36	Teacher education project (2002-2007)*	6.4
Education management (educational managers' salary and allowances)	3.5	Planned program (high scenario)	21.36
Other	0.34	Other	14.78
Total	89.82	Total	59.84

Community management

The government's strategy to improve quality is to be achieved largely through a system of community managed schools, in the belief that accountability is the key to ensuring that children receive quality education.[28] About 1,350 public primary schools, or a little over 5 percent, are fully managed by the communities, with a target of 8,000 community managed schools by 2007. School management committees (SMC) manage and supervise these community schools. The district development committees (DDCs) and village development committees (VDCs) become facilitators, monitors, and evaluators.

The motivation for the move to community management is simple: those benefiting directly from the school and those closest to the school are better placed than the central government to ensure that the school is properly managed. Besides the ability of communities to tailor their education to local needs, these community managed schools (CMSs) have the potential to empower the local residents and give them a voice in the school's decisions. School management committees can reassign government-recruited teachers out of the community-managed schools, they can hire and fire local teachers, and tie the salaries of community teachers to school performance. Giving SMCs the power to hire teachers means that the accountability of teachers rests squarely in the hands of residents who are better suited to ensure teacher attendance and hire based on merit rather than political affiliation.[29]

NGOs, donors, and government officials seem optimistic about the prospects for community management. Donor optimism is based on the knowledge that between 1851 and 1972, schools in Nepal were primarily run by the community.[30] The school management committees (SMC), comprised local social workers, donors, parents, and teachers, while the role of government included registering schools, creating the curricula, and administering the 10th grade examinations.[31,32]

[28] World Bank (2003).
[29] A hiring freeze has started to ensure that the SMCs are the primary hiring agency of teachers under this decentralized system.
[30] The common perception is that quality was much higher.
[31] UNDP (2002).
[32] Communities have recently been engaged in forestry management, with initial evaluations suggesting improved outcomes. However, as expected, decentralization achieved good outcomes in regions with the technical capacity to

The move to community management and the effective operation of CMS has been opposed by teachers' unions, which appear to see community schools as a threat to job tenure. With more than 100,000 primary school teachers currently on government payrolls, the political and economic issues surrounding the transfer of power are vitally important. Education regulations are also being amended to protect the interests of teachers recruited by communities.

The effective operation of community managed schools has also been hindered by the limited capacity of some key institutions. Notably, the Decentralization Implementation and Monitoring Committee (DIMC)—the key body responsible for decentralization monitoring and effective implementation—has been quite weak. The absence of elected representatives at various levels has been particularly problematic, and the DIMC is not holding meetings. The District Education Officer (DEO) position has been identified as another weak link in the chain; DEOs are frequently transferred from one district to another.[33]

In addition to community management, performance based financing has been implemented to improve school quality. To motivate and encourage schools, block grants will be provided to schools based on a set of performance based criteria. The hope is that these incentives will spur greater effort by teachers and administrators and thereby improve educational outcomes for the community at large.

Private sector contribution

The private sector has played an important role in increasing enrollments in education (Table A22). Private schools are significantly more important than they were a decade ago; they now number about 6,000 (almost a quarter of all primary schools) and have a total enrollment of about half a million children. Attendance in private primary schools has more than doubled between 1995/96 and 2003/04, raising the proportion of children in private primary school from 6 percent to 14 percent.

Private schools largely serve the non-poor. Their fees are ten times higher than those of public schools, on average, and more than two-thirds of the students in private primary schools are non-poor. Even so, the number of poor children enrolled in private primary schools doubled between 1995/96 and 2003/04. Private schools are mainly found in urban areas, and especially in Kathmandu, where around 83 percent of all primary school children are in private school. But rural areas have also seen a large increase in private school enrollment, with the Eastern and Western regions quadrupling their primary school enrollment numbers.

As noted above, private schools have higher pass rates and higher completion rates than public schools.[34] There are visible signs that inputs are better in private schools: private schools are relatively new to Nepal, so school infrastructure is generally quite new, and unlike public schools, private schools respond to the demand for instruction in English.

Household spending on education

The increased demand for education by households is fueled in part by higher income. One of the main reasons why children do not enroll in school is the direct and indirect costs of schooling. But, since

prepare and manage projects, beneficiary participation, and transparency at the local level. See the MoF's Public Expenditure Review for 2000.

[33] This is despite the fact that the Civil Service Act of 1999 bars the transfer of civil servants within two years from a given appointment. However, in practice, the rule is circumvented by appointing DEOs on an "acting" basis, for which the transfer rules do not apply.

[34] Pass rates on the SLC are 73 and 22 percent respectively for private and public schools (World Bank 2004)

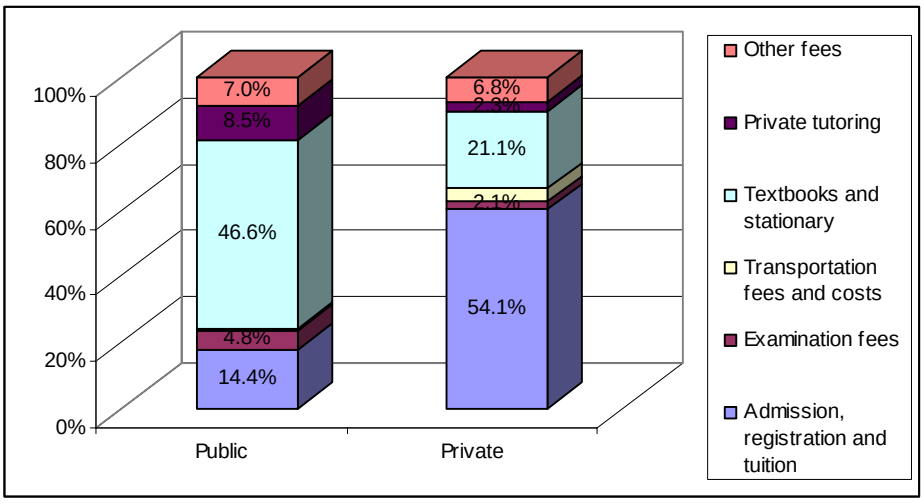
incomes have been rising, the proportional costs of education have decreased, enabling higher rates of enrollment.

The growing demand also reflects a greater value placed on girls' education. Girls' increasing participation in the education system, noted above, probably reflects the increase in female literacy; most studies of the reasons why families decide to send a child to school indicate that the schooling of the mother has the most significant and positive impact. But clearly more remains to be done. Most of the children who do not attend school are girls who stay home to help their families with household chores.

Households spend a small but important share of their income on public education. The NLSS 2003/04 indicates that a typical household spends Rs. 514 per year on education for each child in public primary school. This represents about 5 percent of total per capita household spending on average (ranging from 5.2 percent in the poorest households to 4.2 percent in the richest). Almost half of all education expenditures are for textbooks, writing supplies, and stationary; admission, registration, and tuition account for about 14 percent, and private tutoring for another 9 percent.[35] Thus, reducing the out-of-pocket costs of textbooks/supplies will be key to reducing the direct costs of public education for the poor.

Households (largely non-poor) with students in private schools spend a much greater share of their income on education. For students in private primary school, educational expenditures amount to Rs. 6,347, which is around 20 percent of total per capita household expenditures. Of household expenditures for students in private primary school, the bulk (54 percent) is used for admission, registration, and tuition; another 20 percent is allocated to textbooks, writing supplies, and stationary. [36]

Figure 1.9: Distribution of educational expenditures in 1995/96



Source: World Bank staff estimates using NLSS 1995/96.

[35] The breakdown of expenditures is only available for 1995/96 and not for 2003/04.
[36] The breakdown of expenditures is only available for 1995/96 and not for 2003/04.

C. POLICY DIRECTIONS

To achieve the MDG of universal primary education, Nepal will need to reduce the number of out-of-school children, improve the quality of the education system, and continue to reduce disparities across socioeconomic groups.

Proactive measures must be put in place to reduce the number of out-of-school children. To achieve universal primary education, Nepal needs to consolidate the gains made in primary school enrollment—focusing attention on enrolling the more than 900,000 out-of-school children. This is a difficult task, because easy gains in enrollment have likely already been achieved. Moreover, depending on fertility assumptions, population projections suggest that between 2000 and 2015 the population of 6 to 10 year olds is likely to increase by between 14 percent and 44 percent, making universal enrollment a more challenging goal.[37]

Key actions in the following areas are likely **to help decrease the number of out-of-school children**:

- **Strengthen demand-side programs**, such as the functioning stipend program, to ensure that they provide opportunities to all children, including the poorest. The stipend needs to be better targeted. There is considerable leakage of the program to households not eligible for the stipend, while some children who would qualify are not receiving the stipend.

- **Facilitate greater private sector involvement.** Although private schools largely serve the non-poor, they are an important means by which governments can free up public resources for the children who attend public schools. Private production and delivery of textbooks has been piloted in Nepal, as noted above, but little is known about the effectiveness of this program or ways to replicate good practices. (International evidence too has been mixed, emphasizing the need for an assessment of the program.)

- **Take steps to make schools more attractive to sub-groups of out-of-school children.** Measures could include: hiring female teachers and teachers familiar with special languages, ensuring that all schools have separate toilets for girls and boys, and ensuring a cordial and interactive relationship between school administrators/teachers and the community. These measures can reap rich dividends in enticing girls, low caste, and poor children to enroll in school.

School quality remains in urgent need of improvement. The low completion rates in Nepal (vs. other countries) and low pass rates in public schools on national examinations (relative to the private sector) indicate that public school quality remains an obstacle to progress. Dropouts and repetition in grade 1 and grade 5 are a particular problem. To improve the overall quality of primary schools, interventions could include:

- **Continue the shift towards community-managed schools.** This has the potential to improve school quality by motivating teachers and administrators to be present in school and provide high quality teaching: if teachers feel accountable to the communities they serve, whether it be through hiring decisions, promotions, salary or bonuses, or better schooling materials, the likely outcome is better education. Since school administrators can establish educational goals, match teachers to classrooms, evaluate and motivate staff, distribute school materials, and develop a

[37] Population projections for 5-14 year olds are derived from: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2002 Revision and World Urbanization Prospects: The 2001 Revision <http://esa.un.org/unpp> 17 February 2005. The population of 6 to 10 year olds is then assumed to be half the population of 5-14 year olds.

close relationship with community members, ensuring that they are wholly accountable to their communities is vital.

- **Increase the capacity for teacher certification** and ensure that effective teaching techniques are passed on to would-be teachers during teacher certification programs. There is a strong need to boost the numbers of certified teachers, especially if the current growth in enrollments continues and if class sizes are to be maintained at manageable levels. Although teacher training is a priority, school administrators too can benefit from training.[38]

- **Upgrade schooling infrastructure and schooling materials.** International experience suggests that schooling infrastructure and instructional materials also play an important role in improving attendance by both pupils and teachers and enhancing the learning experience for children. The poor condition and often delayed distribution of textbooks point to a need to improve the teaching materials used in classrooms. In this regard, the pilot project of privatized production and delivery of textbooks needs to be carefully observed.

- **Modernize the curriculum to improve learning and increase the link to the labor market.** A comprehensive review and revision of the curriculum is crucial for Nepal to harness the gains from its population's increased educational attainment.

- **Efforts to increase enrollment and improve school quality can be streamlined with more emphasis on monitoring and evaluation.** Rigorous and frequent evaluations are needed to ensure that scarce public resources are channeled into programs that deliver and are available in regions that most need them. Three areas, in particular, could benefit from M&E: the targeting of the stipend program and the overall ability of this program to attract out-of-school children; second, the bottlenecks emerging in the move towards community managed schools; and third, the move to privatize the production and delivery of textbooks.

[38] In Sri Lanka, a school principals' training center is being developed to provide leadership and management training.

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2. ATTAINING THE MILLENNIUM DEVELOPMENT GOALS IN HEALTH

Recognizing the importance of health in the welfare and productivity of its population, the Government of Nepal has developed a very comprehensive health sector reform program, with the objective of improving the health of the population in line with the MDGs. The core element of this Nepal Health Sector Strategy, and of the Health Sector Program Implementation Plan, is to provide a package of essential healthcare services, particularly to the poor and the vulnerable.

Despite the insurgency, Nepal made major progress in reducing infant and child mortality and in detecting and treating tuberculosis (TB). Over a decade these improvements have contributed to an increase of more than five years in life expectancy at birth, to almost 61 years in 2001.[39] The improvements reflect the success of focused programs for immunization, vitamin A supplementation, and treatment of tuberculosis using DOTS (directly observed treatment—short course), as well as progress in water supply and sanitation, literacy, and health awareness. Demographic factors have also contributed to the improved health outcomes.

Maternal mortality and infant mortality rates in Nepal remain high relative to those in other countries. Differences in these rates by region and household income group reflect entrenched inequalities, which will require concerted and directed action targeting the most vulnerable groups.

This paper contributes to the understanding of what it will take for Nepal to achieve its MDG health goals. It takes stock of what Nepal has achieved to date and describes the challenges remaining. To ensure progress towards the unmet MDGs in health, the Government will need to create a more effective health system with adequate financing, high quality staff and inputs, and better incentives, which achieved by decentralizing certain aspects of care.

The paper is organized as follows. Section A discusses infant and child mortality, maternal mortality, and infectious diseases (HIV/AIDS and TB), and their prospects for the future. Section B expands on some of the factors that have affected health outcomes in Nepal, and Section C focuses on a number of crucial challenges for Nepal in attaining the health MDGs. The primary data sources used in the paper are: (i) unit record data from the 1996 and 2001 rounds of the Demographic and Health Survey (DHS); (ii) the two rounds of the Nepal Living Standards Survey (NLSS) (1995/96 and 2003/04); and (iii) Ministry of Health administrative statistics.

A. HEALTH OUTCOMES: PROGRESS AND PROSPECTS

Among children under the age of five, mortality has decreased sharply. Much of this average reduction has been due to a reduction in child mortality (mortality between the ages of 1 and 5), rather than infant mortality (mortality before age 1). Significant geographic variation exists in under-five mortality rates, with alarmingly high rates in the Far-West of the country (Table A4). Maternal mortality rates are still very high. TB prevalence appears to be on a downward trend and treatment is improving. Data constraints limit assessment of the prevalence of HIV/AIDS and malaria.

[39] Ministry of Health (2004).

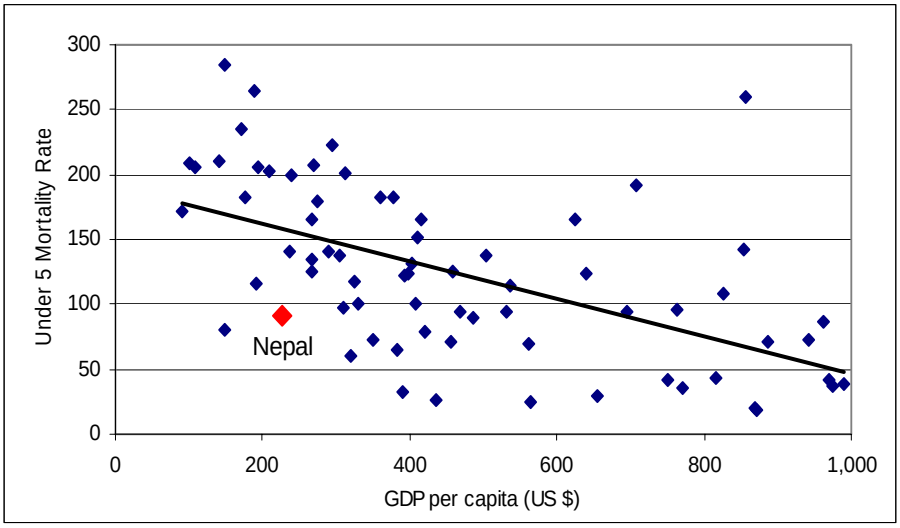
Infant and child mortality

Under-five mortality

Under-Five mortality (U5M) **in Nepal has fallen steadily by about 5 percent a year between 1996 and 2001,** from 118 to 91 per 1,000 live births (DHS, 1996, 2001)[40]. This means that one in eleven children born in Nepal dies before the age of five.

Nepal's under–five mortality rate is comparable with those of other South Asian countries and lower than those of some other countries with similar incomes; it is less than two thirds of what it would be if GDP per capita were the only predictor of U5M (Figure 2.1).[41] U5M rates in Nepal are broadly comparable with those of Bangladesh, India, and Bhutan, at 73, 90, and 94, respectively[42]. Sri Lanka and China record significantly lower U5M rates of 15 and 38 per 1,000 live births respectively.

Figure 2.1: Under-five mortality rate against GDP per capita (US$)



Source: Mortality rate data for all countries except Nepal are from World Bank, World Development Indicators for 2002. Those for Nepal are from DHS (2001).

Both in current levels of U5M and in rates of progress, there is wide geographic variation within Nepal but little gender disparity.[43] In 2001, U5M was almost twice as high in rural areas as in urban, and there was also considerable variation across the development regions of Nepal: from 84 deaths per 1,000 live births in the Western region to 149 deaths per 1,000 live births in the Far-Western region (Figure 2.2).[44] Under-5 mortality rates were 105 and 112 per 1,000 live births for girls and boys, respectively (Table A24).

Figure 2.2: Under-five mortality across development regions in Nepal

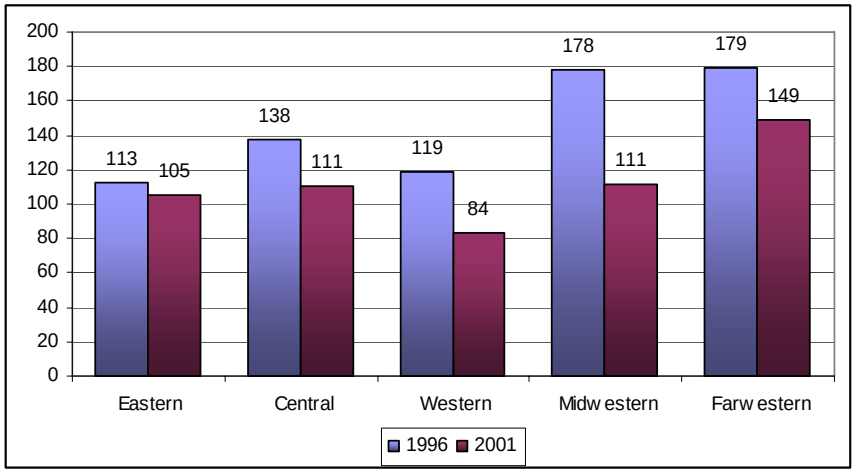
40 Computed for the five years preceding the survey.

41 Using a sample of all countries with GDP per capita under US $1,000, we estimate that a GDP per capita of $230 alone predicts a U5M rate of about 157 deaths per 1,000 live births.

42 World Bank, World Development Indicators for 2002.

43 These mortality rates pertain to the ten-year period preceding the survey. See Table A24.

44 Similarly, across ecological regions the variation in U5M is significant. For instance, in the mountainous regions of the country, one in seven children dies before the age of 5, while in the hill regions, the rate is closer to one death per 11 live births.



Source: DHS (1996, 2001).

Child mortality, not infant mortality, has been the main driving force in the reduction in under-five mortality. Between 1996 and 2001, child mortality decreased by 7.9 percent a year, while infant mortality (deaths below the age of 1 year) fell by only 3.9 percent a year.

Provided current rates of progress are maintained, Nepal is likely to attain the Millennium Development Goal for reducing U5M.[45] Even so, some of the lagging regions—particularly the Eastern and Far-Western regions -- are unlikely to meet this target.

Infant mortality

Nepal's infant mortality rate (IMR) has been declining at 3.7 percent a year since the mid-1990s. Infant mortality rates fell from 79 to 64 infant deaths per 1,000 live births between 1996 and 2001[46]. Infant mortality, which accounts for two-thirds of all under-five deaths in Nepal[47], suggests that one in 13 children born in Nepal dies before reaching age one.[48]

Nepal's infant mortality rate is lower than the average rate for low-income countries but comparable to those in some South Asian countries (Figure 2.3).[49] In 2002, countries with less that $1,000 in GDP per capita recorded an average infant mortality rate of about 81 deaths per 1,000 live births. Nepal's IMR, like its under-five mortality rate, is lower than its GDP per capita alone would predict.[50] Bangladesh, Bhutan, and India recorded IMRs in 2002 of 48, 74, and 65 deaths per 1,000 live births respectively[51], while Sri Lanka and China recorded 16 and 30 deaths per 1,000 live births respectively.

[45] Assuming a constant rate of decline, the death rate for children under the age of five can be extrapolated back to 1990 and projected forward to 2015. We estimate that 185 deaths occurred per 1,000 live births before children reached the age of five in 1990. Further, if U5M continues to decrease at about 5 percent a year, then Nepal is likely to reduce its U5M to 62 deaths per 1,000 live births by 2015, and therefore, attain its Millennium Development Goal for U5M.

[46] DHS (1996, 2001)

[47] Neonatal deaths (deaths within the first 28 days) account for about 60 percent of infant deaths. In other words, 40 percent of all under-five deaths occur within the first month after birth.

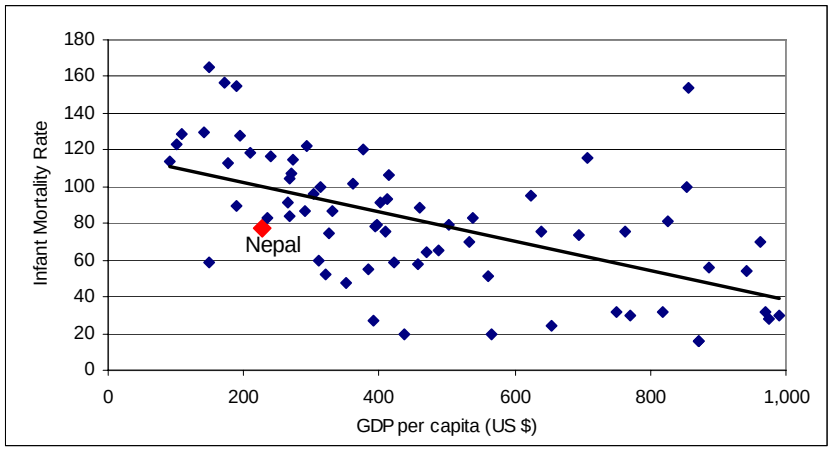
[48] DHS (1996, 2001).

[49] Among 188 countries in which data exists, Nepal ranks among the top 25 percent for the IMR.

[50] If GDP per capita were the only predictor of IMR, then the Nepal's GDP per capita of $230 would predict an IMR of 110 deaths per 1,000 live births.

[51] World Bank, World Development Indicators 2004.

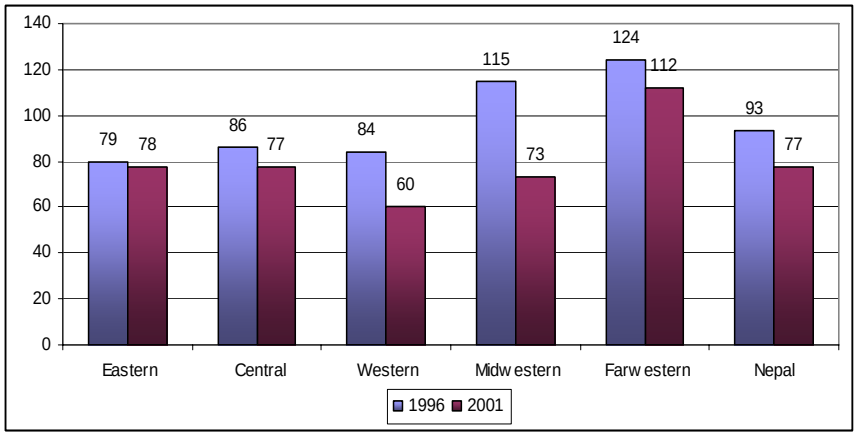
Figure 2.3: Infant mortality rates against GDP per capita (for countries with less than $1,000 GDP per capita)



Sources: Data on infant mortality rates for all countries except Nepal are from World Bank, World Development Indicators for 2002. Data for Nepal are from DHS 2001.

Geographic variation in infant mortality rates is large, but gender variation is small. The infant mortality rate in urban areas is about two thirds that of rural areas. Infant mortality rates also vary greatly across development regions (Figure 2.4, Table A24): in the Far-Western region, 112 infant deaths are recorded per 1,000 live births, while the Western region records only about 60 per 1,000 live births.[52] As with U5M, there is little variation in infant mortality across gender, with 79 males and 75 females dying before age one per 1,000 live births in 2001.

Figure 2.4: Infant mortality rates across development regions in Nepal



Source: DHS (1996, 2001).

Nepal is unlikely to attain the MDG for infant mortality at current rates of progress. Nepal's IMR decline will have to be accelerated from 3.7 to 4.3 percent a year to achieve the 2015 goal. The Eastern, Far-Western, and Central regions have improved the least and are likely to fall far short of meeting the millennium challenge.[53]

[52] There is also considerable IMR variation across ecological zones. In the mountainous regions, one out of every nine infants dies, a rate that is about 70 percent higher than the rate of one out of 16 in the hill zones.

[53] The terai and mountainous regions will also have to improve significantly faster than they have thus far to make inroads into the high rates of infant mortality.

Reducing infant mortality will be much more complex than reducing child mortality. While the fall in child mortality probably reflects the greater coverage of immunization and better disease prevention and treatment, reductions in IMR will also require better nutritional practices and an increase in the proportion of births that are professionally assisted.

Determinants of infant and child mortality

There are two basic approaches for estimating the determinants of infant mortality.[54] The medical literature focuses on biological factors such as infections or malnutrition, using statistics typically obtained from death records or clinical case records and paying little attention to the role of socioeconomic factors. The social science literature, by contrast, focuses on socioeconomic factors such as household incomes, geography (to capture environmental factors), ethnicity (which may affect personal illness control), and maternal education, but does not generally analyze the medical causes of mortality.

More than half of all births in the five years preceding the survey were high risk births falling into one or more of the following three risk categories.[55] First, neonatal or postnatal mortality occurs more when mothers are very young (below the age of 20) and when they are older (above 30). Second, there is a U-shape in the mortality risk across birth order, with a high risk for the first child and then an increasingly high risk for birth order 4 or higher. Third, child spacing is important: among births spaced less than two years apart, the IMR is 124 per 1,000 live births, while among births spaced more than four years apart, the IRM is only 40 per 1,000 live births.

Multiple regression of the probability of an infant death confirms the above correlations. The most recent DHS survey is used to estimate a logit model of the infant mortality rate to help understand the impact of a particular variable, holding all other included independent factors constant.

The main findings are that **literacy, age, pre-natal care, and area of residence of the mother are important for reducing child mortality**. Holding all else constant, it appears that literate mothers are less likely to experience an infant death, possibly because they have better information about pregnancy and post-pregnancy practices. Older mothers are less likely to experience an infant death than mothers under the age of 19. Mothers who receive prenatal care and the tetanus toxoid vaccine are less likely to have their infants die. Prenatal care can provide mothers with information about pregnancy and birthing, but also alert them to possible complications in risky cases. Finally, mothers in the Mid-Western and Far-Western regions of the country are more likely to experience an infant death than mothers in the Eastern region.

To reduce infant mortality, these results argue for increased education of mothers, inducements for better prenatal care, and a focus on the Mid-Western and Far-Western regions. Discouraging early marriage[56], to avoid young pregnancies, is also desirable.

Maternal mortality

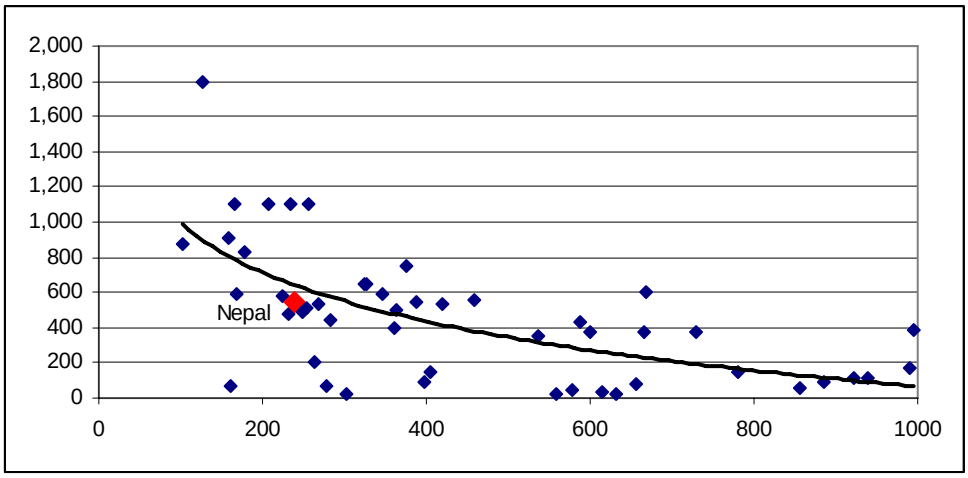
In Nepal, maternal mortality rates (MMR) vary significantly depending on the data source, and no comparable time series data are available.[57] In 1996, maternal mortality rates were around 540 per

[54] See Mosley and Chen (1984) for a framework for analyzing child survival.
[55] Indeed, 16 percent of all births were in multiple risk situations and 37 percent were in single-risk situations (Ministry of Health and others, 2002). The risk categories are defined as mothers below the age of 18, mothers above the age of 34, birth interval less than 24 months, and birth order 4 or greater.
[56] Late marriage will likely increase mother's age at first child birth (Maitra 2001).
[57] Given that caveat, estimates of MMR are 1,500 in 1990 (WHO, UNICEF 2004), 830 in 1995 (WHO, UNICEF, UNFPA 2001), and 740 in 2000 (WHO, UNICEF, UNFPA 2004). The main factors that make maternal mortality ratios difficult to measure are that information is required about deaths that occurred among pregnant women or soon after

100,000 live births.[58] This appears to be the most recent and reliable estimate, but Nepal's Poverty Reduction Strategy projected 415 maternal deaths per 100,000 live births in 2001/02.[59]

Nepal's maternal mortality rate is high even compared to the relatively high rates of maternal mortality elsewhere in South Asia. At 540, Nepal's maternal mortality rate is higher than the average for low-income countries (460), but lower than predicted by Nepal's GDP per capita alone (Figure 2.5). Rates in Bhutan and Bangladesh are 380 and 350 per 100,000 live births respectively[60], while in Sri Lanka the MMR is closer to 60 deaths per 100,000 live births.

Figure 2.5: Maternal mortality rates across GDP per capita



Source: UNICEF (2003).

With no comparable time-series MMR numbers, it is difficult to predict whether or not the goal for 2015 will be achieved. If the 1996 MMR of 540 is compared with the 2001 estimate, then MMR in Nepal has been falling at 5.1 percent a year. This rate of decline is considerably slower than the 6.3 percent a year required by the MDG target.[61]

The disparity in maternal mortality between the developed and developing countries is greater than for any other development indicator.[62] The problem is not due to incomes: experiences in Bolivia, China, Egypt, Honduras, Indonesia, Jamaica, Malaysia, Sri Lanka, and Zimbabwe all show that much can be achieved in low-income countries. Nor is the issue confined to maternal mortality. Evidence from other countries estimates that for every woman who dies, another 30 to 50 women suffer injury, infection, or disease.

Improving maternal health is crucial for Nepal.[63] Improvements in maternal mortality will likely have a significant impact on national life expectancy and mortality.[64] The health of a mother has a profound

delivery, together with the medical cause of death. These deaths are relatively rare, even in countries with a high MMR, and hence very large samples are needed to make accurate estimates of MMR.

[58] Maternal mortality is defined here as any death caused by or made more acute by a state of pregnancy, during delivery, or during the first weeks after delivery.

[59] This estimate is a projection made by the Government of Nepal and has not been updated with realized data.

[60] UNDP (2002).

[61] The target in the Poverty Reduction Strategy paper is to reduce MMR from 415 in 2001/02 to 300 in 2006/07.

[62] Pathmanathan and others (2003).

[63] Although mortality as a result of pregnancy or delivery complications have been identified as an MDG, a much larger number of mothers in developing countries experience serious long term health morbidity.

impact on her infants and older children, her family, and society. Besides the obvious impact maternal health has on labor productivity, reducing maternal mortality has been shown to greatly improve the prospects for children to live a productive life. For instance, mortality rates for children under the age of five double if the mother dies at childbirth.[65] In addition, infants and toddlers of mothers who die during delivery suffer from lack of care and are less likely to attend school.[66]

Determinants of maternal mortality

Available data for Nepal do not permit an analysis of the determinants of maternal mortality, but global evidence indicates both direct and indirect determinants. Of the direct determinants, more than 70 percent of the deaths that occur during pregnancy or childbirth can be traced to: hemorrhage (25%), infection (15%), complications of unsafe abortion (13%), hypertension (12%), and obstructed labor (8%).[67] These complications generally require emergency obstetric care by a trained health professional. Indirect determinants (preexisting diseases or diseases unrelated to obstetric determinants that develop due to the physiological effects of pregnancy) include anemia, malaria, hepatitis, and diabetes.[68] Half of all maternal deaths take place within a day of delivery and another fifth take place within a week of delivery.[69]

Looking at the non-medical determinants of maternal health and maternal mortality, some clear associations stand out.[70] First, very young and very old mothers are at risk, especially if they have poor access to prenatal care and if they have other health issues such as anemia and malnutrition. Second, short birth spacing can increase the risk faced during delivery. Third, complications during pregnancy and childbirth can result from malnutrition and from anemia, which is an especially acute problem in South Asia.[71] Fourth, empowered, literate, or educated women are more likely to avail themselves of reproductive or maternal health services and are more likely to possess better maternal skills. Fifth, cultural norms or traditions can have an important impact on healthcare practices such as delivery in homes, use of contraception, or intra-household distribution of expenditures. Sixth, access to quality healthcare is essential if women are to obtain help from trained professionals: not only must geographic coverage be adequate, but trained staff and medicines must be available and these facilities must strive to be inclusive regardless of the caste, religion, etc., of the mother.

Poor families are at further risk because the above determinants reinforce each other and can have a greater impact when combined with household poverty. Poor families may delay seeking emergency obstetric care when complications arise, not only because of financial constraints but for lack of information or knowledge about the severity of the problem. Poor families in remote areas may have difficulty accessing maternal health services because of difficult terrain or lack of transport, and they may experience gender, caste, or other forms of discrimination at the healthcare facility.

These results argue for improvements in education and empowerment, nutrition, utilization of health institutions for delivery, contraception, and utilization of healthcare services for women. In addition, promoting late marriage[72], to avoid young pregnancies, is desirable.

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[64] Complications during pregnancy and childbirth are the leading cause of death of women 15-44 years in the developing world. Lule and others (2005)
[65] Lule and others (2005).
[66] Gelband and others (2001).
[67] Lule and others (2005).
[68] Gelband and others (2001).
[69] Gelband and others (2001).
[70] Adopted from Lule and others (2005).
[71] For women with severe anemia, even modest amounts of blood loss can be fatal.
[72] Late marriage will likely increase the mother's age at first child birth (Maitra 2001).

Infectious diseases: TB and HIV/AIDS

Almost half the population of Nepal is infected with TB, but deaths from this disease are declining.[73] About 90,000 people have active TB and more than 40,000 develop the disease every year. It is estimated that 20,000 people have infectious pulmonary disease and are contagious. In 1994, about 15,000 to 18,000 people died of TB in Nepal. Since then, the number of deaths attributable to TB has fallen dramatically to about 8,000 to 11,000 each year (despite the 2.4 percent annual population growth rate). The incidence of TB has declined from 301 per 100,000 in 2000 to 258 per 100,000 in 2003.

Around 60,000 people are estimated to be living with HIV/AIDS. Data gathering and estimation of HIV/AIDS rates are still in their infancy in Nepal. Half the cases come from the mobile population and there is some evidence that migrants are returning with HIV/AIDS. Heterosexual relations are believed to be the major form of transmission. Although the prevalence is high among intravenous drug users, these constitute only 14 percent of all affected persons (Table 2.1). Issues of stigma and conservative attitudes relating to sexual behavior preclude a good understanding of the problem. Government authorities too acknowledge that there is little knowledge of prevalence among low-risk groups such as stay-at-home women.

Table 2.1: HIV/AIDS in Nepal 2003

Category of population	Prevalence (%)
Adult prevalence	0.52
Intravenous drug users	38.4
MSM (Men who have sex with Men)	0.8
Sex workers	4.2
Clients of sex workers	2.1

Source: National Centre for AIDS and STD Control, Ministry of Health.

B. FACTORS EXPLAINING PROGRESS IN HEALTH OUTCOMES

Diverse factors, both in and outside the health sector, have impacted health outcomes in Nepal. We focus here on the government, the private sector, and households, and conclude with the some of the cross-cutting issues that have led to the current health outcomes.

Government

Lack of government commitment has been a key factor explaining low levels of progress in health outcomes. This section outlines some of the main measures taken by the Government to affect health outcomes.

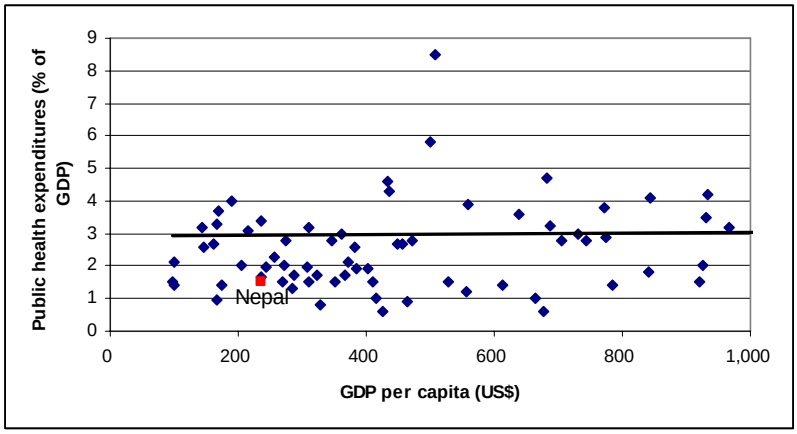
Financing

Public expenditure on healthcare as a fraction of GDP in Nepal is approximately half the average for low-income countries. Nepal allocates only about 6 percent of total government spending and 1.5 percent of GDP towards public health**.** This share has increased slightly in recent years[74], but is only half the average share among low-income countries (about 3 percent of GDP) (Figure 2.6). Within Asia,

[73] Sharma (2004).
[74] WHO (2004).

Nepal's share is comparable with those of Bangladesh (1.5 percent of GDP), Bhutan (3.6 percent), China (2 percent), India (0.9 percent), and Sri Lanka (1.8 percent).

Figure 2.6: Public expenditure on health as a fraction of GDP per capita (US$)

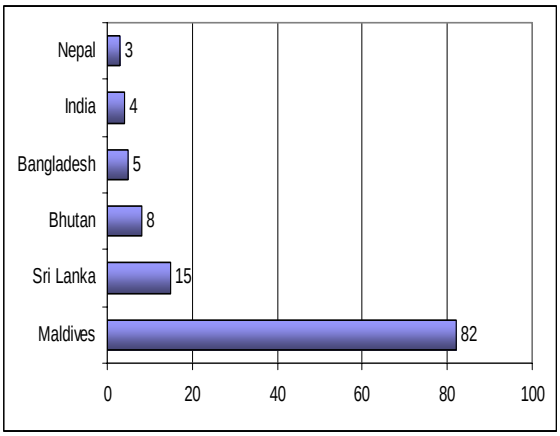


Note: Limited to countries with GDP per capita under US$1,000 in 2001.
Source: WHO (2004)

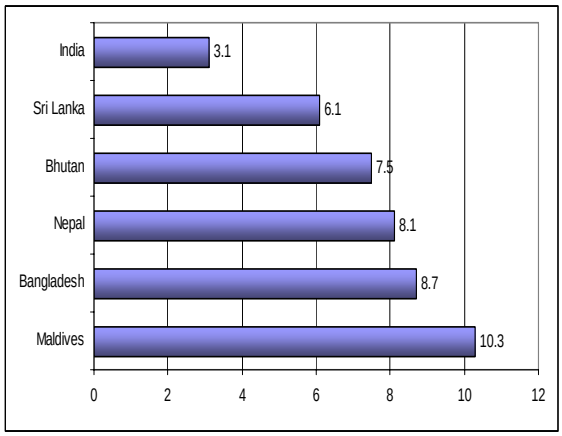
Health expenditures per capita in Nepal are among the lowest in the region, reflecting Nepal's small GDP. Government health expenditures in Nepal are around US$3 per capita/year. In comparison, Sri Lanka, Bhutan and Bangladesh allocate per capita health expenditures that are a factor of 5, 2.7 and 1.7 more than Nepal (Figure 2.7).

Figure 2.7: Public expenditure on health, South Asian countries

Per capita government expenditure on health at average exchange rate (US$), 2001



General government expenditure on health as % of total general government expenditure, 2001



Source: WHO Statistical Information System (WHOSIS).

The allocation of Nepal's health expenditures needs considerable improvement. Interviews in Nepal revealed two key problems. First, in-kind expenditures are so low that they prevent the efficient use of the monetary expenditures. While more than 92 percent of the Nepal's health budget was released (and spent) in 2003/04, only 39 percent of in-kind assistance was released (Table 2.2). Thus, only a small fraction of the total distribution of health materials and medicines is reaching those in need. A second issue pertains to the timely release of funds. Health posts and sub-health posts receive supplies at irregular intervals, making distribution to the population challenging and unresponsive to demands at

the time. These inefficiencies can be addressed by streamlining the institutional mechanisms that undertake such spending.

Table 2.2: Budget performance by source and type of funding, 2003-04

Type and source of fund	Budget (NPR)	Release (NPR)	Percent released
HMG	1,403,791	1,296,107	92.33
Reimbursable	152,285	117,623	77.24
Cash grant	111,441	65,994	59.22
In kind	777,262	305,763	39.34
Direct payment	411,519	-	0
Total	2,856,298	1,785,487	62.38

Source: Ministry of Health (2004).

Improved access/availability of health facilities

The availability of health facilities has increased considerably in Nepal. Despite the low government financing for health, Nepal has come a long way since a few decades ago when health services were largely confined to urban areas. Starting from a low base, the number of healthcare institutions has more than quadrupled, from 1,098 in 1991/92 to 4,439 in 2001/02.[75] Public health facilities have been extended to the sub-national and community levels with the establishment of 3,179 sub-health posts and 711 health posts, almost all of which sprang up during the 1990s (Table 2.3). In addition, there are more than 15,000 PHC outreach clinics (extensions of health posts and sub-health posts) at the community level; these are staffed by volunteer health workers and Mother and Child Health Workers (MCHWs) who travel once a month to prearranged places.

Table 2.3: Health facilities under the Ministry of Health

Under Ministry of Health	Number of facilities
1. Specialized/central hospitals	5
2. Regional hospitals	1
3. Sub regional hospitals	1
4. Zonal hospitals	9
5. District hospitals	67
6. District health offices	75
7. Primary healthcare centers (PHCs)	180
8. Health posts	711
9. Sub health posts	3,179
10. PHC outreach clinics	15,548

Source: Ministry of Health.

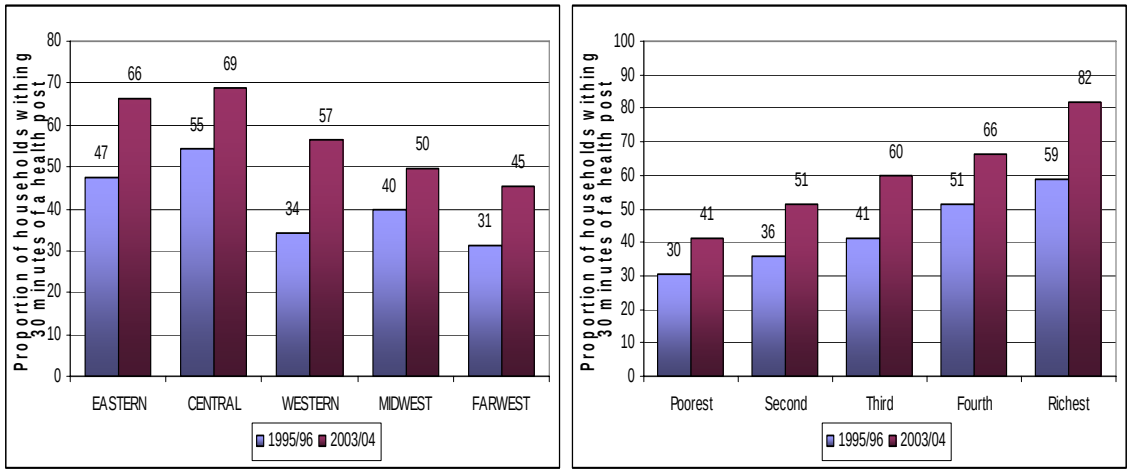
The increase in the number of health facilities has decreased the overall commute time to healthcare services. Measuring access by the time taken to reach the closest health facility, the median commute time has decreased 42 percent, from about 86 minutes to 50 minutes between 1995/96 and 2003/04. Encouragingly, the highest rates of improvement have been in the Western and Far-Western regions, the

[75] Ministry of Health (2004).

two regions with the lowest fraction of households within 30 minutes of the nearest health center (Figure 2.8).[76]

Despite overall improvements in access, commute times for poor households are still high (Figure 2.8**).** Between 1995/96 and 2003/04, the median poor household reduced its commute time to the closest health center by half, to about an hour. However, only 41 percent of the poorest quintile of households is within 30 minutes of a health post, while more than 80 percent of the richest households are within 30 minutes of a health post.

Figure 2.8: Percent of households within 30 minutes of the closest health post, across regions and household welfare quintiles

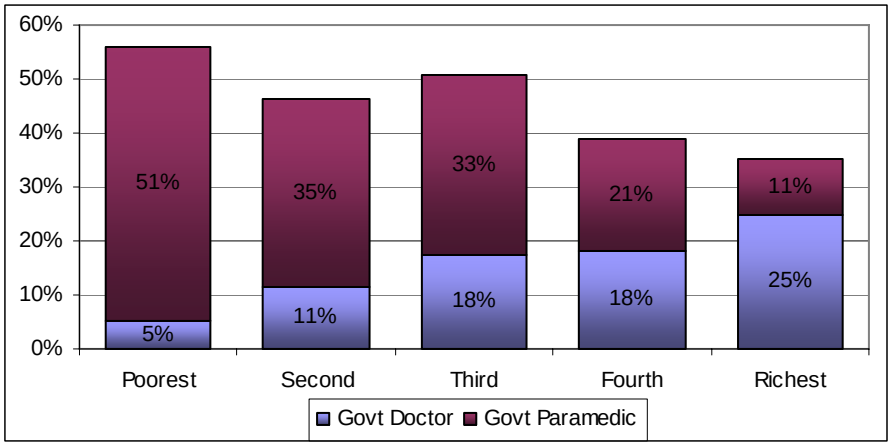


Source: Author's estimates using NSLL I and NLSS II.

Although access has improved, poor households remain at a disadvantage even for government health services. Rich people are five times more likely to see a doctor than poor people when health services are sought out (Figure 2.9).[77] Government paramedics, on the other hand, appear to serve poor people's needs; more than half of all healthcare consultations for poor people take place with a government paramedic.

[76] Particularly sharp improvements are seen in the terai regions of the country. In the rural Western terai region, for example, the proportion of households within 30 minutes of a health post has almost doubled to 65 percent.
[77] In fact, the rich are also more likely to seek out heath services than the poor.

Figure 2.9: Use of government doctors and paramedics by household welfare quintiles among those receiving health services



Source: Author's estimates using Nepal Living Standards Survey (2003/04).

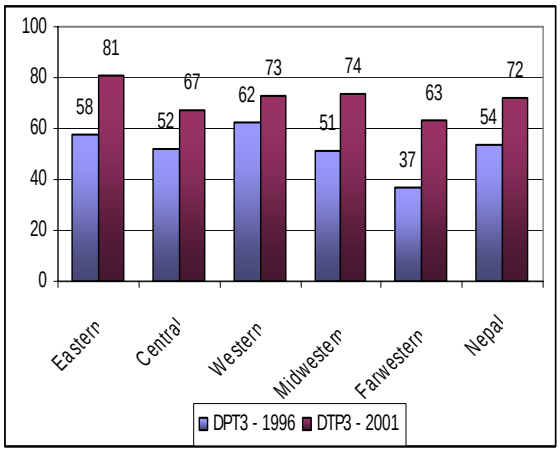
Immunization

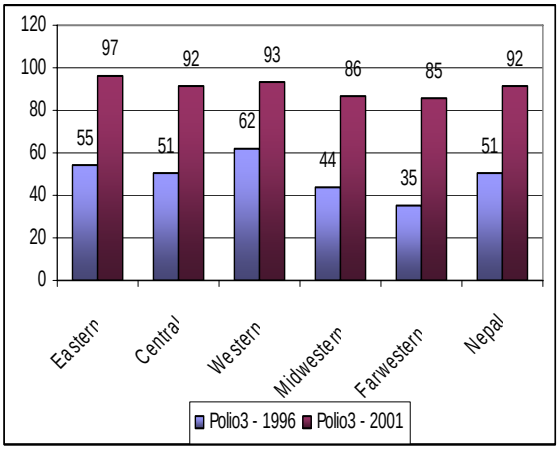
Despite limited resource allocations, focused health programs have helped to improve health outcomes. Immunization coverage rates have increased tremendously in the last decade (Table A25). Between 1991 and 2001, the proportion of children fully immunized by 1 year of age increased from 37.2 percent to 60.1 percent (DHS 1991, 2001). Full immunization is when the child has received one dose of BCG, three doses each of DPT and OPV and one dose of measles vaccine. Much of this increase in immunization coverage occurred between 1996 and 2001.[78] During that period, the proportion of children receiving the DPT3 vaccine increased from 54 percent to 72 percent, while those receiving the third dose of the polio vaccine increased from half the population to more than 90 percent, and those receiving the measles vaccine increased from 57 percent to 71 percent.[79] The increased immunization coverage has reduced vaccine-preventable deaths from diseases like tetanus, measles, and diphtheria and thereby contributed to the drop in the under-five mortality rate.

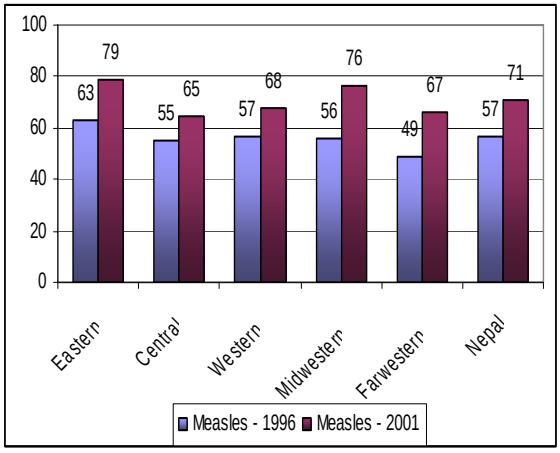
Between 1996 and 2001, immunization spread to some parts of the country that had very low immunization coverage (Figure 2.10 and Table A25)**.** Rural regions have seen sharp gains in immunization rates. In the Far-Western region, around a third of the population had DPT3 and polio3 coverage in 1996, and by 2001, these rates had increased to 63 percent and 85 percent respectively. In every region the immunization rate increased and the disparity between the minimum and maximum immunization rate narrowed between 1996 and 2001.

[78] Ministry of Health (2004).
[79] Ministry of Health data suggests that immunization rates are somewhat higher.

Figure 2.10: Immunization rates for DPT3, polio3, and measles across regions in Nepal







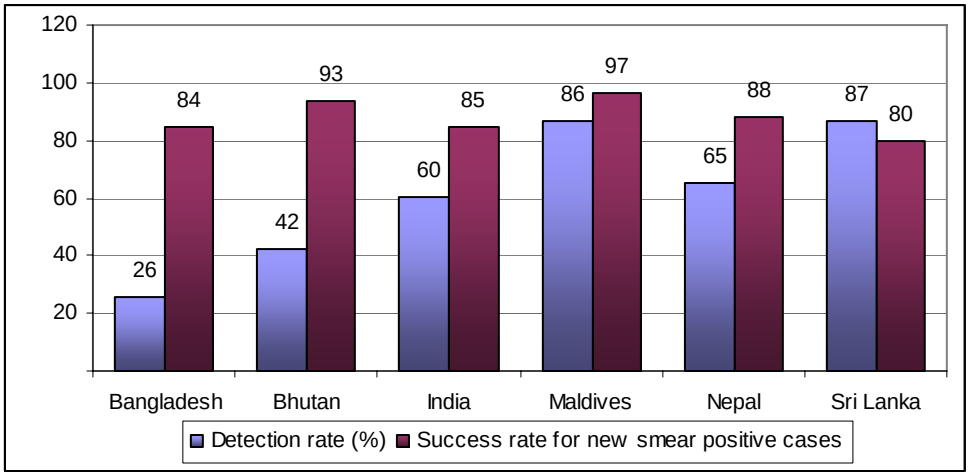
Source: DHS (1996, 2001).

The TB DOTs Program

There is little doubt that the decline in TB is due to the success of the directly observed treatment-short-course (DOTS).[80] DOTS was introduced in Nepal in 1996 and proved to be significantly more successful than the detection and treatment methods previously used. Introduced initially as a pilot program in four districts, DOTS has now been scaled up to cover all 75 districts and 94 percent of the population in 335 treatment centers and 1,407 sub-centers. Treatment success rates more than doubled after the introduction of DOTS, going from 40 to 88 percent between 1994 and 1999. Case detection has also made considerable progress in Nepal, with case detection rates increasing from 30 percent in 1994 to about 65 percent in recent years (Figure 2.11).

[80] Sharma (2004).

Figure 2.11: Detection rate of all cases and treatment success rates of new smear-positive cases of TB, South Asian countries



Source: WHO (2004).

The National Tuberculosis Control Program (NTP) was set up in the late 1980s, with the National Tuberculosis Center (NTC) as its focal point. The goal of the NTC is to have all TB patients treated under DOTS by 2006. The strategy of the NTP has broadly been threefold. First, to improve access to treatment for communities through treatment centers and sub-centers, with a special focus on poor communities; all patients with TB are eligible for free treatment through the basic health services. Second, to establish diagnostic microscopy facilities. Third, to coordinate with the HIV/AIDS program because of the high rates of co-infection between HIV/AIDS and TB.

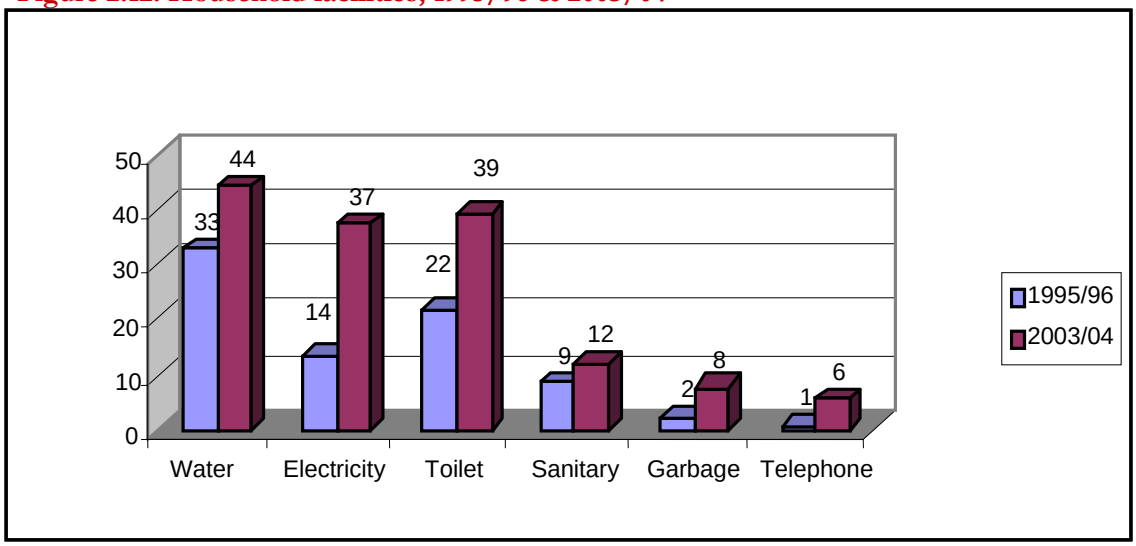
Although the prospects for curbing TB prevalence in Nepal are positive, two challenges are emerging. First, co-infection between HIV and TB (currently almost 2% of TB cases) could render detection and treatment more difficult. Detection will depend on factors such as the degree of anonymity provided to patients and the quality of care provided to these patients. Second, the increase in the incidence of multi-drug-resistant forms of TB (more than 1% of TB cases), has increased the complexity involved in treatment.

Other public programs: access to roads, water, and sanitation

Clean water and sanitation are important for improving health outcomes, and have a strong positive impact on maternal and child mortality rates.[81] Making hand-washing and safe disposal of feces easier with improved access to water and sanitation has a favorable impact on health.[82] The share of households reporting that their homes have piped water rose from 33 percent in 1995/96 to more than 44 percent in 2003/04, while the share living in homes with flush toilets rose from 22 to 39 percent (Figure 2.12). Not surprisingly, much of the latter improvement has taken place among households in the top three income quintiles. Although two thirds of the rural population still lacks flush toilets in their houses, the progress remains encouraging. Finally, more basic forms of sanitation have increased marginally, with the share of the population reporting an underground drain, open drain, or a soak pit increasing from 9 to 12 percent.

[81] For example, see Lee and others (1997) or Abou-Ali (2005).
[82] World Bank (2004).

Figure 2.12: Household facilities, 1995/96 & 2003/04



Source: Author's estimates using Nepal Living Standards Survey (1995/96 and 2003/04).

Child deaths due to diarrhea diseases--a leading cause of child mortality--have also declined over the last decade. The number of deaths due to diarrhea has fallen considerably, from almost 1,800 in 1991 to fewer than 250 in 2001 (Table 2.4). And significantly fewer children are reportedly suffering from the symptoms of diarrhea now than a decade ago: in 1995/96, more than 270,000 suffered from symptoms of diarrhea, while in 2003/04 less than 250,000 did so. Some of the largest reductions in diarrheal illnesses took place in the Western, Mid-Western, and Far-Western regions of the country.

Table 2.4: Trends in deaths due to acute diarrheal diseases

Years	Number of deaths
1991	1,795
1992	1,049
1994	448
1998	742
1999	384
2000	94
2001	247

Source: Ministry of Health: Annual Report of Epidemiology and Disease Control Division (2001).

The decline in mortality due to acute diarrheal diseases may be due to better sanitary practices, access to water and toilets, better nutritional practices, and vitamin A supplementation.[83,84] The success of the vitamin A supplementation program has likely reduced the incidence and severity of diarrhea and the associated child mortality.

Utilization and quality of health services

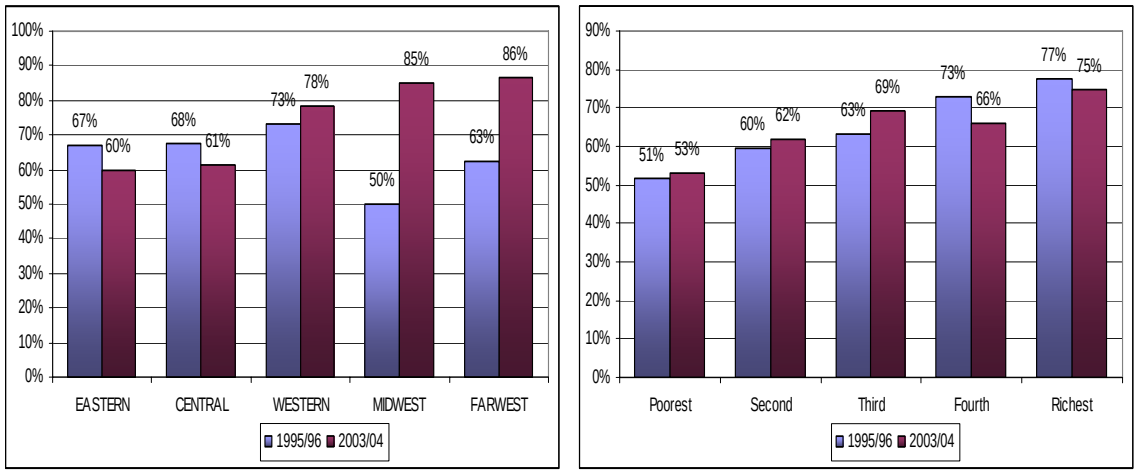
Despite the increased availability of health services, overall utilization rates have not changed in the last decade (overall, about two thirds of people with an illness consulted someone, both at the beginning and the end of the period). Desirable health outcomes are not the result of increased availability of healthcare facilities alone, but of the effective use of those facilities.

[83] For example, see Lee and others (1997) or Abou-Ali (2005).
[84] World Bank (2004).

However, there have been sharp changes in utilization rates across some regions (Figure 2.13, Table A26). Utilization rates have decreased somewhat in the Eastern and Central regions but increased considerably in the Mid-Western and Far-Western regions, which now have the highest utilization rates in the country.

There are sharp disparities among income groups in the utilization of health services. In 2003/04 three fourths of all people in the top quintile suffering from an illness or injury sought consultation, while only half of all those in the poorest quintile did so. These utilization rates across household welfare quintiles reflect several regularities seen in other countries. The determination of what constitutes an illness worthy of a visit to a health center varies across welfare groups. In addition, since only low quality health services are available to poor households, these households may not see the benefits of visiting the health facilities in their neighborhoods and hence tend to self-treat illness.

Figure 2.13: Percent who sought healthcare for an illness or injury in the last month



Source: Author's estimates using Nepal Living Standards Survey (1995/96 and 2003/04).

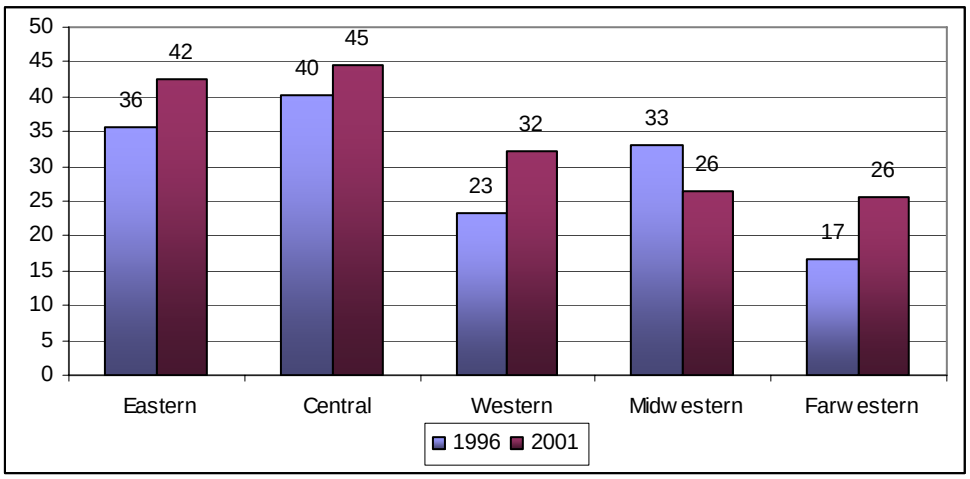
A particular problem—from a maternal or neonatal mortality perspective—is the small proportion of births receiving professional assistance. The proportion of births assisted by doctors, other health professionals, or traditional birth attendants rose from 32 to 37 percent between 1996 and 2001 (Table A27). Thus more than six in ten births receive no skilled assistance. Professionally assisted deliveries are crucial in ensuring that complications are detected early and emergency obstetrics are recommended and referred early. Much of the improvement that took place in maternal mortality in Europe and North America is attributed not to high technology healthcare equipment, but to the near universal use of skilled birth attendants at the time of delivery and the availability of emergency obstetrics for referral.[85] Sri Lankan and Malaysian experiences, too, highlight the importance of midwives and nurse-midwives in curbing maternal mortality rates. In both these countries, the midwife provides the first point of contact for mothers with the formal health system.[86]

The share of professionally assisted deliveries has improved in some regions. In the Western region the proportion of assisted births has increased from a quarter to a third, and in the Far-Western region the proportion has increased from 17 percent to more than a 25 percent (Figure 2.14). In urban areas in 2001, almost two thirds of all births were assisted deliveries, but in rural areas assisted deliveries make up only about a third of all births (Table A27).

[85] Gelband and others (2001).

[86] The midwife would either provide care or refer the mother to alternative channels in the health system.

Figure 2.14: Proportion of deliveries by doctors, other health professionals, or traditional birth attendants



Source: DHS (1996, 2001).

The proportion of births taking place at home decreased marginally from 92 to 88 percent between 1996 and 2001 (Table A28), **but large disparities are seen across geographic regions.** In the Mid-Western region, only 2.6 percent of deliveries were conducted at a health facility, while the in the Eastern and Central regions more than 10 percent of deliveries were conducted at a health facility. More than 43 percent of births in urban areas took place at hospitals, compared with only 6 percent in rural areas.

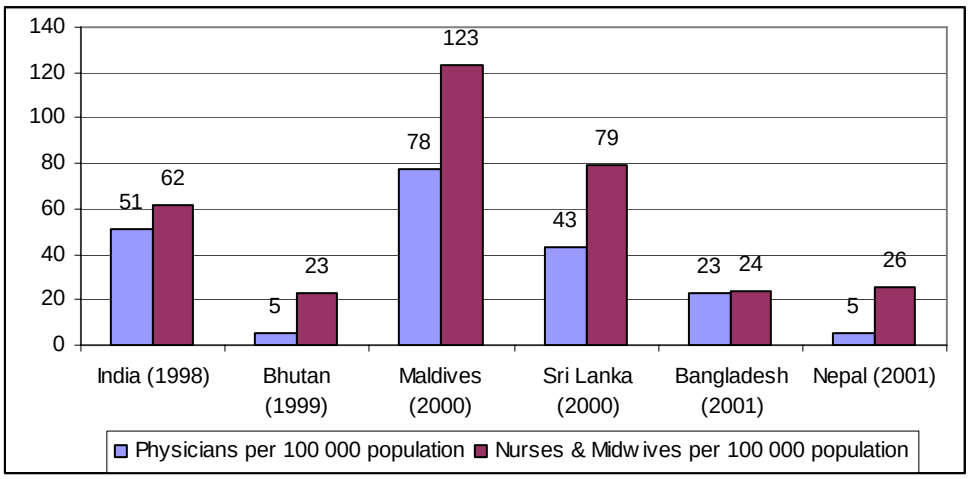
A survey of patients has shown some of the key factors affecting low utilization. Fewer than 8 percent of patients had a good perception of service and more than a third of patients had a bad perception of service.[87] Households emphasized the following problems in obtaining high quality service: (i) lack of medicines; (ii) lack of staff; (iii) poor attitude of health workers; and (iv) poor physical conditions.[88] When healthcare workers were asked specify the problems of the health services, given the same list, the findings were as follows: (i) more than 84 percent indicated the lack of medicines; (ii) almost two thirds indicated the lack of staff; and (iii) a little over 60 percent cited the poor physical facilities.

Although systematic information is not available on health workers' attitudes, the physical conditions of health facilities, or the availability of medicines, regional comparisons indicate that Nepal has a shortage of trained medical practitioners. The country has only five physicians for every 100,000 people, while India has 50 and Bangladesh has 25. The density of nurses and midwives is also one of the lowest in the region (Figure 2.15). Nepal's ratio of 26 nurses and midwives per 100,000 people is about a third of Sri Lanka's and significantly less than India's (62 per 100,000 people).

[87] NPC (1998).

[88] Households were asked to name up to three problems associated with their interactions with government health services. They were asked to pick from the following list: lack of medicines, poor condition of facilities, bad attitude of staff, lack of staff, facility too far away, lack of equipment, too expensive, no female staff, lack of community support, and no problems.

Figure 2.15: Density of physicians and nurses and midwives per 100,000 people, South Asian countries



Source: WHO.

The shortages of health professionals are particularly acute in specific regions of the country. Doctors and nurses are generally concentrated in urban areas, leaving rural areas with significant unmet demand (Table 2.5). As a result, the Central region (including the Kathmandu valley) has 34.5 percent of the population but 70 percent of the doctors, while the Far-Western region has 9.5 percent of the population and only 2 percent of the doctors. Getting trained professional staff to rural and remote areas is a challenge, and not one that is unique to Nepal.

Table 2.5: Distribution of healthcare professionals

Region	Population %	Doctors %	Nurses and ANM %	Retail pharmacies %
Eastern	23	14	23	17
Central	34.5	70	40	64
Western	20	11	26	12.5
Mid-Western	13	3	8	3.5
Far-Western	9.5	2	3	3
All Nepal	100	100	100	100

Decentralization

Nepal is decentralizing the provision of healthcare. The passage of the Local Self Governance Act of 1999 has paved the way for considerable decentralization of health services, and by 2007 health facilities will be transferred to village development committees (VDCs) and to hospital management committees in a phased manner. To date, about 700 sub-health posts have already been handed over to the VDCs.

Community management can increase the accountability of healthcare providers to their clients. Communities will be able to tailor the services provided to the needs of the community and potentially to empower the local residents and give them a voice in public health provision. Arguably, however, the primary benefit of management by the community is that residents of the community are much better

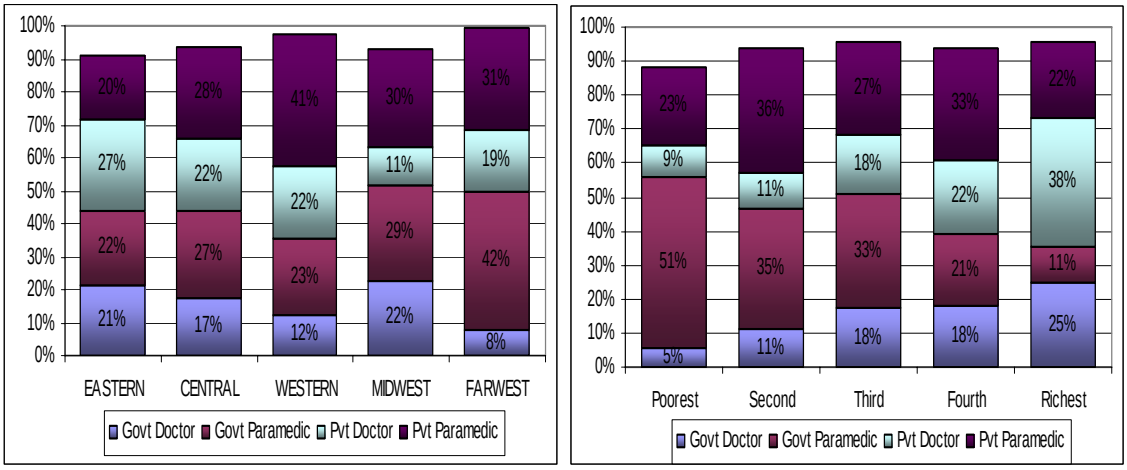
placed to monitor the progress of their health than anyone else. Accountability is the key to ensuring quality service provision and equitable distribution.[89]

Although the decentralization of health services is in its early stages, three bottlenecks are already evident. First, clear guidelines have not accompanied the hand-over of facilities. In particular, the staff of health facilities are unclear about the roles and responsibilities of the health committees and what decentralization means in practice. Second, funds are not flowing efficiently. For example, there are cases in which district development committees (DDCs) are not comfortable transmitting the funds to the VDCs, where they believe there are no effective accountability mechanisms, and the onus may fall on the DDCs. This is particularly relevant since the VDCs were dissolved in some places. Therefore, until elected VDCs are reinstated or elections held, interim VDCs must be empowered. Third, the lack of training of members of hospital/health facility management committees is showing. If genuine autonomy is to be achieved, members of these committees will need to be trained to deal with their new responsibilities.[90] Many of these problems need to be addressed with detailed monitoring and evaluation (M&E) of the process. Monitoring and evaluation must be part and parcel of the program if Nepal is to move successfully to a decentralized system of healthcare provision.

The private sector

The private sector plays an important role in healthcare provision in Nepal. This role is proportional to household welfare, unsurprisingly, but even among the poorest households, almost a third of health consultations are conducted with private providers (Figure 2.16). Households who can afford to do so are bypassing the public health system in favor of higher quality private providers.

Figure 2.16: Healthcare professional sought for care across regions and welfare quintiles



Source: Author's estimates using Nepal Living Standards Survey (2003/04).

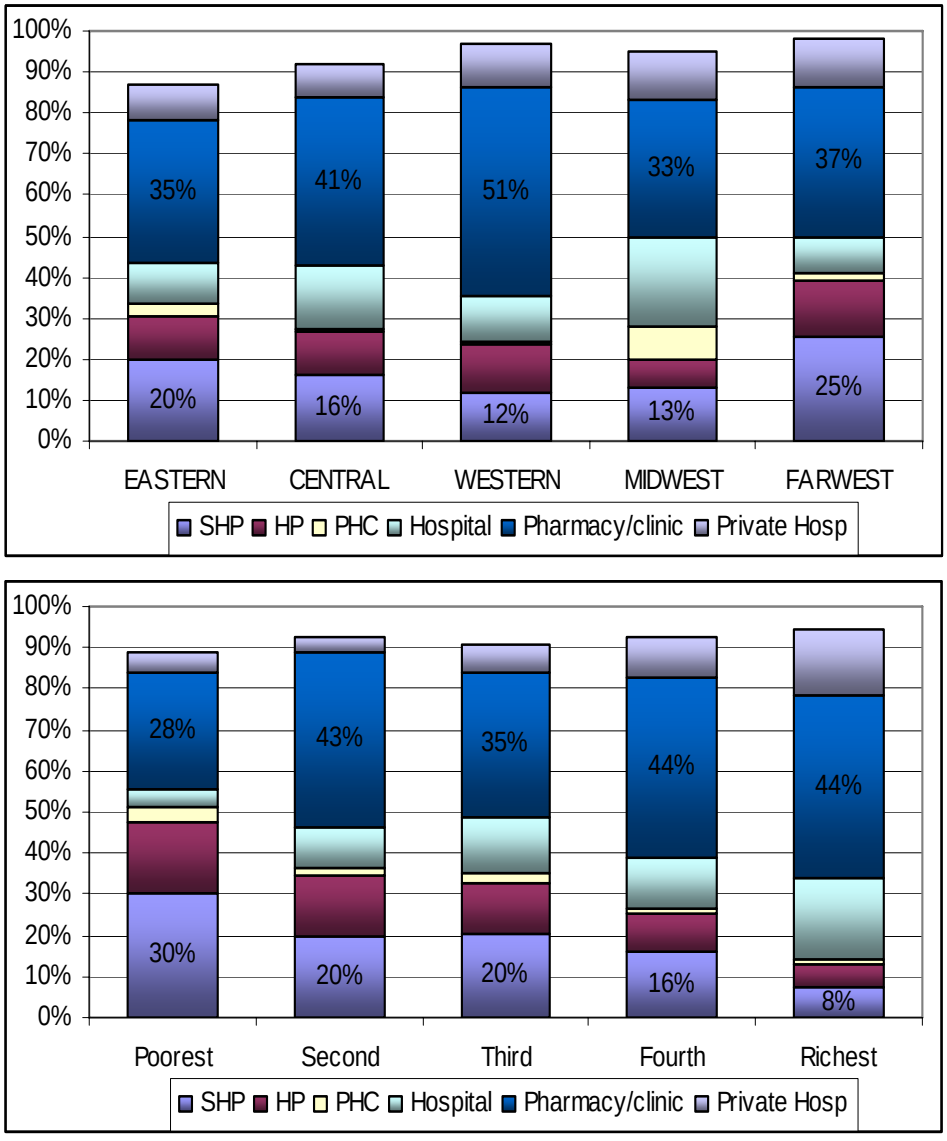
Use of doctors versus paramedics is generally determined by the household's welfare level. Only 9 percent of the poorest households use a private doctor for their consultations, while 38 percent of rich households do so.

[89] World Bank (2003).

[90] In India, during the early 1990s, after the passage of the 73rd and 74th constitutional amendments, which gave increased powers to local bodies, the government embarked upon a large-scale program with NGO assistance to educate and train members of local bodies in the their rights and responsibilities, governmental procedures, and budget management.

More than half of all consultations take place in private institutions. Private pharmacies/clinics and sub health posts are the most widely used facility for health consultations in Nepal.[91] Depending on the region, between a third (Mid-Western region) and a half (Western region) of all health consultations are conducted in pharmacies/clinics (Figure 2.17). Sub health posts (SHP) are the second most widely used healthcare facility, particularly in the Far-Western and Eastern regions. Across household welfare groups, too, there is variation in the use of public versus private healthcare facilities.

Figure 2.17: Use of healthcare facilities across regions and welfare quintiles



Source: Author's estimates using Nepal Living Standards Survey (2003/04).

[91] In Nepal, patients often go to pharmacists not only for drugs but also for diagnosis.

Households

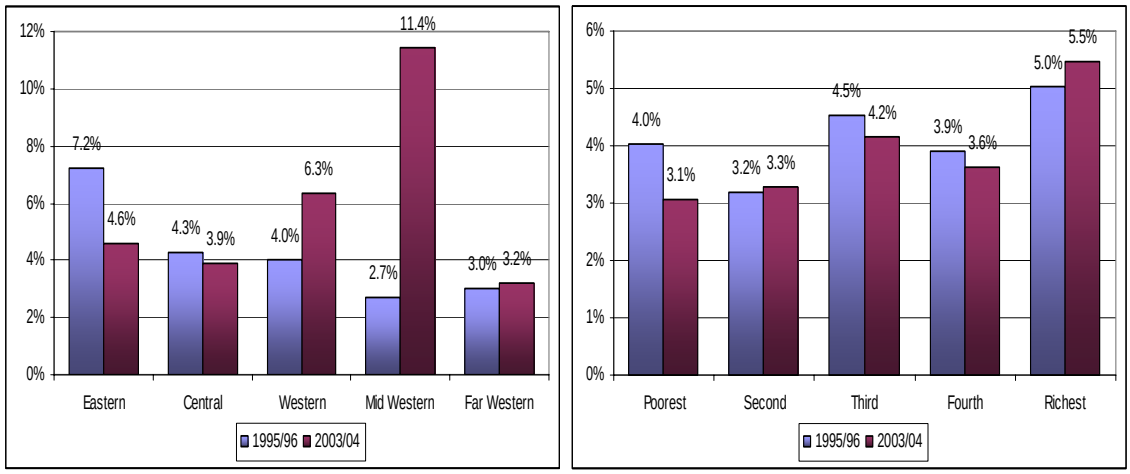
Households play an important role in influencing health outcomes. These are manifested in changes in private healthcare expenditures, household behavior, increased awareness and education, and household welfare.

Financing

For the average household, health takes only a small share of total per capita spending. This reflects both the low utilization of health services and the fact that many services are available free to households. According to the NLSS 1995/96 and 2003/04, per capita healthcare expenditures as a fraction of per capita household expenditures did not change much, increasing from 4.4 percent to 4.6 percent.[92]

Household spending patterns differ widely across regions and household welfare quintiles. Since the mid-1990s, households in the Mid-Western and Western regions have considerably increased their share of spending on health, but those in the Eastern region have reduced theirs. Household spending has also changed across household welfare groups. The poorest households have decreased their healthcare outlays relative to total household expenditures, while the richest households have increased theirs (Figure 2.18).

Figure 2.18: Proportion of total household expenditures allocated to healthcare expenditures across regions and welfare quintiles



Source: Author's estimates using Nepal Living Standards Survey (1995/96 and 2003/04).

Changes in household behavior

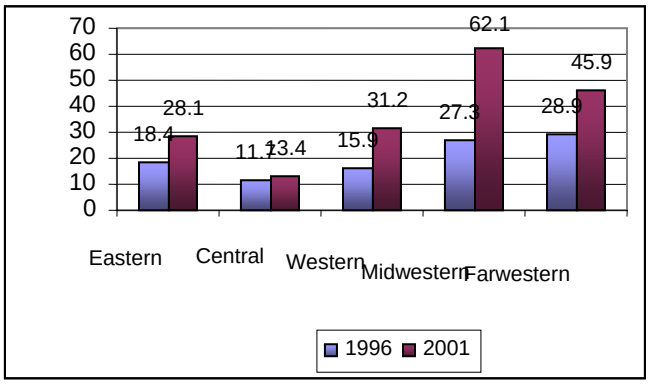
Major changes in household/maternal behavior have helped reduce infant and child mortality. These include improved breastfeeding practices, increased use of prenatal care, increased awareness of diarrhea treatment, and better birth spacing. Greater education and greater literacy/education among women and higher income are contributing to these behavioral changes.

Improved breastfeeding practices may be contributing to the reduction in under-five mortality. Between 1996 and 2001, the proportion of children breastfed within an hour of being born increased from

[92] The proportion of expenditures on healthcare has to be interpreted with care because it may reflect a combination of demand and supply factors. For instance, from the demand side, the incidence of illness and the attitudes of households towards heath care play a role, while from the supply side the healthcare cost differentials or the need for out-of-pocket expenses may be the driving force.

18 to 31 percent, with significant increases both in urban and rural areas (Figure 2.19, Table A29). The Mid-Western and Western regions saw the most dramatic improvements in breastfeeding practices. In the Mid-Western region, the proportion of children breastfed within the first hour of birth more than doubled from 27 to 62 percent; interestingly, this region also saw the highest reduction in infant mortality rates over that period. Similarly in the Western region, the proportion of children breastfed within the first hour of birth increased from 16 to 31 percent. However, geographic disparities both in levels and gains are numerous. Only 13 percent of children in the Central region are breastfed during the first hour of birth.

Figure 2.19: Proportion of babies breastfed within the first hour of birth



Source: DHS (1996, 2001).

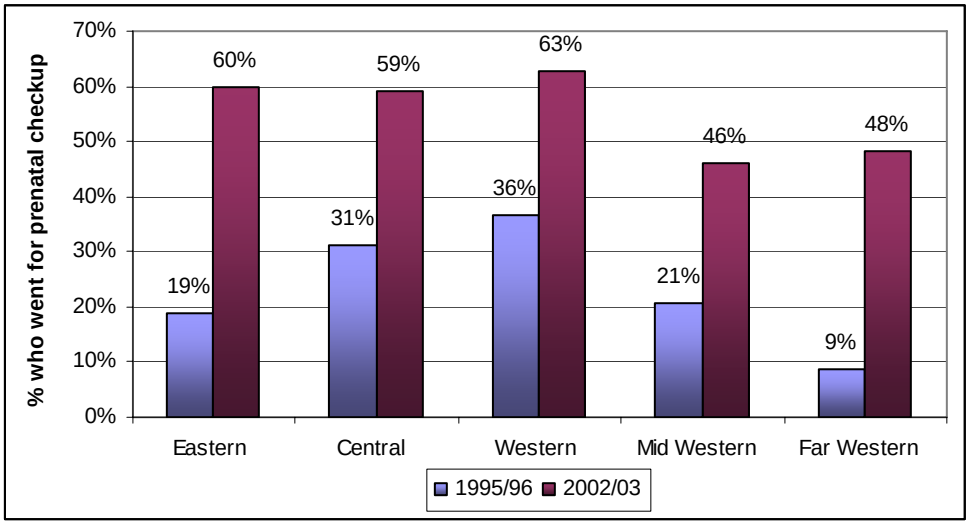
The proportion of mothers seeking prenatal care has increased tremendously in the last decade. Between 1995/96 and 2003/04, the proportion of mothers reporting that they had received prenatal care during their last pregnancy rose from 26 percent to 57 percent.[93] Effective prenatal care can benefit mothers and unborn children. Tetanus toxoid vaccines are generally administered during prenatal care visits. Complicated pregnancies can sometimes be flagged during these visits, averting complications during delivery. In addition, these visits help mothers, especially first-time mothers, learn about how to ensure a safe delivery.

Variation in the usage of prenatal care has decreased considerably.[94] Particularly sharp improvements in prenatal care utilization have occurred in the Far-Western and Eastern regions-- two of the regions that made the least use of prenatal care in the mid-1990s. In 1995/96, less than a tenth of pregnant mothers in the Far-Western region reported that they had had a prenatal checkup during their last pregnancy, while in 2003/04 almost half did so (Figure 2.20).

[93] The question in the NLSS is posed to all women who have given birth during the last 36 months and refers to at least one visit to a health center for prenatal consultation.

[94] The coefficient of variation in the proportion of mothers getting a prenatal checkup across the regions of Nepal has reduced from 47 percent to 14 percent between 1995/96 and 2003/04.

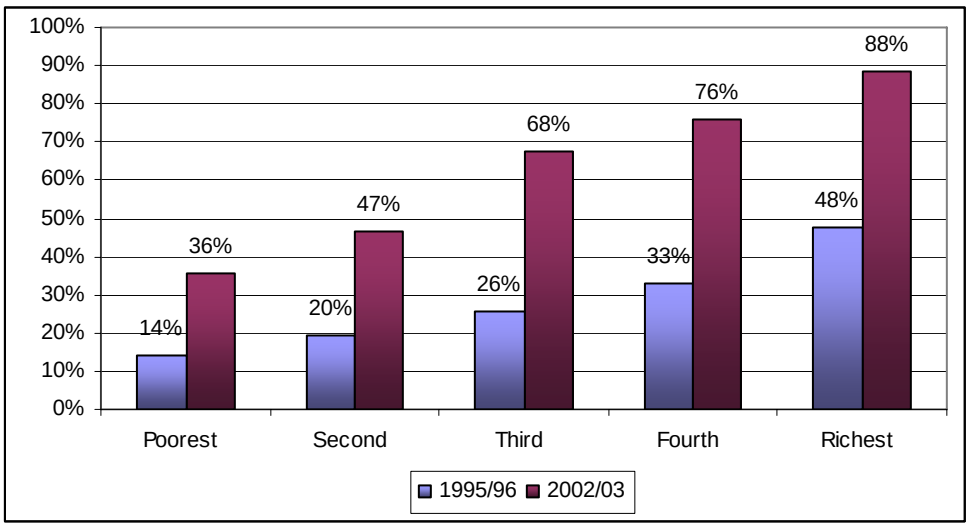
Figure 2.20: Percentage of mothers who went for a prenatal checkup, by region



Source: Author's estimates using Nepal Living Standards Survey (1995/96 and 2003/04).

The improvement in utilization of prenatal care by poorer households is particularly encouraging, but alarming disparities exist across household welfare quintiles.[95] A little over a third of the poorest mothers seek prenatal care but almost 90 percent of the richest mothers do so (Figure 2.21).

Figure 2.21: Percentage of mothers who went for a prenatal checkup, by household income group



Source: Author's estimates using Nepal Living Standards Survey (1995/96 and 2003/04).

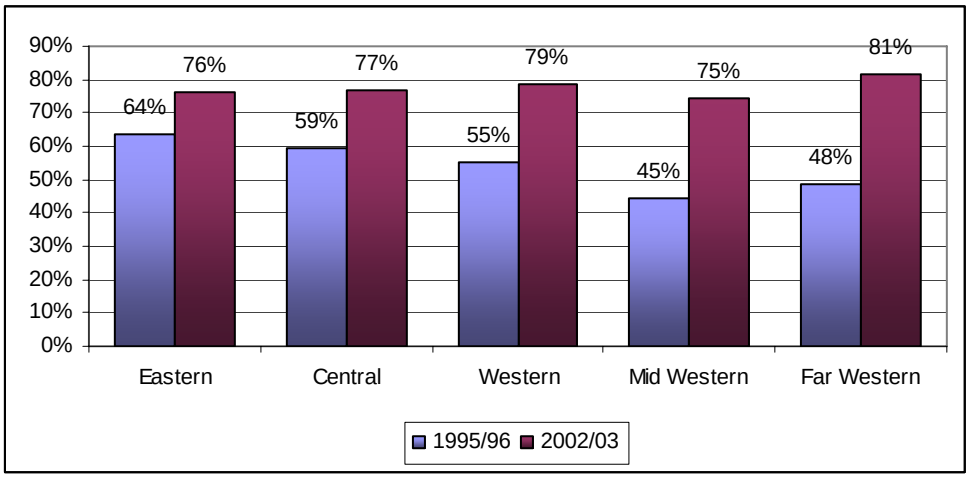
Increased awareness in the treatment of diarrhea and family planning

Knowledge about family planning methods is vital to reducing maternal and child mortality. Preventing unwanted pregnancies is a means of avoiding unsafe abortions. Between 1995/96 and 2003/04, mothers reported a 20 percentage point increase (from 57 to 77 percent) in knowledge about the

[95] The coefficient of variation in the proportion of mothers receiving a prenatal checkup during their last pregnancy across household welfare quintiles has decreased from 47 percent in 1995/96 to 34 percent in 2003/04.

means of preventing or spacing pregnancies[96]. This sharp increase has occurred in all regions of the country, with some of the most impressive gains recorded in the Mid-Western and Far-Western regions (Figure 2.22).

Figure 2.22: Proportion of households reporting knowledge about means of preventing or spacing pregnancies, by region



Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Awareness about means to treat diarrhea has also increased. In 1996, 92 percent of mothers knew about the oral rehydration salts (ORS) as a cure for diarrhea, but by 2001 this proportion had increased to 98 percent.

Education

The education of mothers has likely contributed to declines in infant and child mortality. In 2001, women with secondary or higher education were about three times more likely than women with only primary education to have a doctor assist in delivery. Among women with no education and women with secondary or higher education, the proportion of births receiving professional help was 33 percent and 62 percent respectively. Similarly, breastfeeding practices are better among more educated mothers. Mothers with no schooling and with primary school completed have about the same likelihood of breastfeeding babies within the first hour of birth, namely 30 percent. Among babies born to mothers with secondary or higher education, almost 40 percent of are breastfed within an hour of birth.

C. CHALLENGES FOR THE FUTURE

To reach its Millennium Development Goals in health, Nepal needs to strengthen its multisectoral approach.[97] More health centers will produce only marginal gains if the public does not get better access to water and sanitation. More birth attendants will produce marginal gains unless mothers have better knowledge of and access to family planning. Many factors play a role, and one factor can retard progress.

To achieve the health MDGs, Nepal will have to transform the current health system into a more effective and efficient one. The ongoing decentralization effort has the potential to align the incentives of

[96] Computed using NLSS.

[97] See for example Lewis (1981), De Melo (1981), and Crosswell (1981).

providers, so that quality health service provision will be the goal. But, decentralization cannot take place without an efficient flow of funds, technical assistance, and knowledge sharing. Some of the bottlenecks already appearing in the system require systematic and sustainable solutions.

In Nepal, expenditures on healthcare as a percent of GDP are around half of what they are in other low-income countries. At around US$3 per capita/year, they are among the lowest in South Asia. If input shortages are to be addressed and infrastructure improved, more funding will have to be allocated to healthcare. To further the Millennium Development Goals, the additional resources will need to be targeted to the most backward regions of the country, where current progress is slow. Existing resources can also be redistributed to ensure equity in health outcomes. For instance, providing incentives to doctors and health professionals to practice in those parts of the country with high human resource deficits can lead to higher utilization of preventative and curative healthcare.

The private sector already plays an important role in healthcare provision for both rich and poor households. Fostering better partnerships between the private sector and the government would likely lead to better health. For example, traditional birth attendants (TBAs) have played an important role in Nepal, but government policy has largely ignored their value. The government could consider accrediting TBAs and thereby ensure that service quality is regulated. In addition, providing incentives for TBAs to refer complicated cases would likely help reduce maternal and neonatal mortality. Similarly, it is worth piloting private for-profit healthcare providers of primary healthcare. Pilots in other countries, including those in neighboring India, have shown that private provision of primary healthcare can be more efficient than government provision.

Monitoring and evaluation, and the sharing of the resulting information, are essential elements for achieving the MDGs. In many cases, there is a severe lack of reliable, time-series data at the district level. In addition, rigorous and frequent evaluations are needed to ensure that scarce resources are being channeled into programs that are likely to deliver.

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STATISTICAL ANNEX

Table A1: Primary School Gross Enrollment Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	114.9	117.6	116.0	112.1	119.8	115.7
Other urban areas	102.0	107.4	104.6	123.7	114.9	119.4
Rural western hills	116.6	94.7	105.5	146.8	125.4	135.6
Rural eastern hills	126.3	101.9	114.2	119.8	108.5	114.1
Rural western terai	105.5	70.2	88.4	132.8	109.1	121.6
Rural eastern terai	90.8	50.8	71.0	105.5	72.3	89.2
Urban	105.8	109.9	107.8	120.4	116.2	118.4
Rural	108.5	78.1	93.4	123.0	100.0	111.5
Eastern	106.1	96.1	101.5	121.2	103.9	113.0
Central	104.7	62.4	82.9	106.6	83.4	94.7
Western	119.0	109.1	114.2	143.3	125.4	134.4
Mid-Western	102.0	72.5	87.1	127.2	123.9	125.6
Far-Western	109.9	54.1	81.4	145.5	95.0	117.0
Poorest quintile	85.6	46.9	65.5	106.4	79.9	92.9
Second	102.8	62.2	82.6	129.8	93.3	109.9
Third	111.7	90.0	100.8	132.2	115.1	123.6
Fourth	121.9	105.7	114.0	127.4	118.1	122.9
Richest quintile	129.3	121.0	125.5	120.4	121.4	120.8
Non-poor	121.3	103.9	112.9	128.3	112.4	120.6
Poor	93.4	55.2	73.9	112.4	85.7	98.5
Brahman/Chhetri	126.6	116.3	121.9	129.1	125.8	127.4
Terai_middle_caste	99.7	35.8	65.4	111.0	67.2	87.4
Dalits	124.1	66.0	93.0	143.7	132.1	138.3
Newar	128.0	96.1	112.6	132.6	124.8	128.6
Hill_Janajatis	113.7	92.9	103.1	125.9	110.7	118.4
Terai_Janajatis	94.1	56.0	75.8	147.4	98.1	121.3
Muslim	63.8	43.2	52.3	84.6	53.0	69.3
Other_minorities	86.2	54.0	70.3	111.9	76.9	94.9
Total	108.4	79.9	94.3	122.7	101.8	112.3

Table A2: Lower Secondary School Gross Enrollment Rates						
	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	91.3	105.6	97.4	122.4	107.3	114.8
Other urban areas	66.0	87.9	74.9	81.1	84.9	82.8
Rural western hills	57.5	43.0	50.4	78.1	61.5	70.8
Rural eastern hills	71.8	45.2	58.9	77.7	63.9	71.0
Rural western terai	56.8	41.4	49.9	72.4	100.4	84.4
Rural eastern terai	58.2	35.2	47.9	58.4	42.6	51.0
Urban	74.2	94.1	82.5	92.4	92.0	92.2
Rural	60.9	41.1	51.6	71.0	63.3	67.5
Eastern	72.2	58.8	65.8	80.6	84.8	82.4
Central	61.0	32.9	48.5	67.1	48.2	57.7
Western	60.3	57.6	58.9	84.1	86.2	85.0
Mid-Western	51.9	33.9	43.9	64.8	50.8	57.6
Far-Western	58.6	19.8	43.1	67.8	104.7	81.4
Poorest quintile	31.2	10.8	21.3	31.1	20.3	25.6
Second	47.7	18.8	33.2	60.4	44.3	52.9
Third	60.3	37.8	49.9	87.3	76.2	82.2
Fourth	75.5	58.7	68.0	84.4	116.8	97.0
Richest quintile	91.4	104.3	97.1	108.4	97.5	103.3
Non-poor	75.6	67.2	71.8	86.3	91.0	88.3
Poor	40.5	15.1	27.9	43.3	25.0	33.9
Brahman/Chhetri	75.4	68.1	72.1	96.2	95.2	95.7
Terai middle caste	44.1	22.4	37.1	47.3	11.4	34.0
Dalits	24.0	13.6	20.0	49.5	54.4	51.6
Newar	79.3	73.8	77.2	101.0	79.1	90.9
Hill_Janajatis	60.6	38.8	48.9	76.7	64.7	71.3
Terai_Janajatis	62.4	25.8	42.8	73.2	97.1	83.1
Muslim	32.7	0.0	16.9	24.4	5.4	13.1
Other minorities	60.1	27.3	44.9	57.9	43.2	51.6
Total	61.9	44.1	53.6	73.8	67.2	70.7

Table A3: Secondary School Gross Enrollment Rates						
	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	109.2	95.1	102.1	89.9	80.9	84.9
Other urban areas	94.0	50.6	73.9	101.5	94.9	98.5
Rural western hills	55.1	23.7	37.7	51.1	48.6	49.9
Rural eastern hills	67.0	23.2	43.1	61.2	40.9	51.0
Rural western terai	38.8	19.7	28.1	54.6	25.2	40.1
Rural eastern terai	53.0	37.0	46.1	57.6	41.2	48.9
Urban	99.9	69.5	85.3	98.2	89.5	94.0
Rural	54.7	25.9	39.8	56.3	39.9	48.1
Eastern	80.2	44.0	62.1	71.2	56.4	64.0
Central	53.4	27.6	41.2	60.3	43.0	51.2
Western	68.7	31.1	46.8	68.8	52.6	60.7
Mid-Western	40.0	17.7	28.0	42.0	30.9	36.8
Far-Western	30.7	12.6	21.1	59.0	38.6	49.6
Poorest quintile	13.2	1.7	7.1	19.0	5.7	12.0
Second	27.5	3.9	15.3	34.0	13.8	24.7
Third	40.7	14.5	26.9	48.1	43.8	46.1
Fourth	66.9	40.3	53.5	101.0	61.1	78.8
Richest quintile	124.8	77.1	100.9	100.0	98.5	99.3
Non-poor	81.7	45.7	63.3	77.0	60.7	68.8
Poor	21.5	3.4	12.1	24.0	8.3	16.3
Brahman/Chhetri	93.6	48.5	68.5	89.7	75.1	82.9
Terai middle caste	23.3	10.7	19.0	44.7	45.5	45.1
Dalits	27.0	3.8	15.2	28.0	17.2	22.1
Newar	72.1	64.8	68.9	84.1	67.7	74.2
Hill_Janajatis	39.5	13.5	25.7	51.9	36.3	44.3
Terai_Janajatis	49.6	20.6	34.8	59.5	51.0	55.1
Muslim	10.2	0.0	3.8	4.8	2.0	3.3
Other minorities	42.8	13.7	29.2	53.3	31.8	42.8
Total	58.6	29.2	43.4	61.9	46.2	54.1

Table A4: Higher secondary School Gross Enrollment Rates						
	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	128.2	128.2	128.2	149.3	175.1	160.0
Other urban areas	57.2	47.7	52.7	80.0	61.4	71.3
Rural western hills	21.8	6.3	13.7	23.4	18.1	20.5
Rural eastern hills	16.3	4.9	10.5	26.6	18.1	22.9
Rural western terai	6.6	2.5	4.5	33.0	19.4	26.2
Rural eastern terai	23.6	7.2	15.0	15.4	6.7	11.1
Urban	89.4	81.9	86.0	104.5	96.2	100.8
Rural	18.5	5.6	11.8	24.0	15.1	19.6
Eastern	21.7	8.8	15.2	26.6	24.5	25.7
Central	33.0	16.1	24.4	55.6	36.9	46.9
Western	19.7	6.0	11.8	32.8	32.7	32.8
Mid-Western	20.1	8.9	14.3	32.0	15.0	22.0
Far-Western	11.4	3.5	8.0	23.2	14.4	18.0
Poorest quintile	0.0	0.0	0.0	6.3	0.0	2.6
Second	2.5	1.2	1.9	6.2	2.0	4.0
Third	11.5	1.5	6.0	18.0	7.0	12.4
Fourth	28.2	10.7	18.8	29.6	32.6	30.9
Richest quintile	60.9	32.7	47.1	102.6	97.1	100.3
Non-poor	37.0	15.2	25.5	46.8	38.4	42.9
Poor	1.5	0.5	1.0	8.3	1.1	4.2
Brahman/Chhetri	35.6	16.8	25.0	64.0	40.1	51.9
Terai middle caste	19.0	0.0	10.1	13.2	0.0	3.9
Dalits	5.4	0.0	2.6	8.0	6.4	7.2
Newar	98.3	47.8	73.1	115.4	123.4	119.5
Hill_Janajatis	5.8	3.1	4.6	17.3	15.2	16.5
Terai_Janajatis	5.6	2.8	4.0	26.5	16.1	22.0
Muslim	0.0	0.0	0.0	7.6	0.0	2.5
Other minorities	20.3	0.2	11.2	21.9	6.8	14.1
Total	24.0	10.3	16.9	38.9	28.0	33.5

Table A5: University Gross Enrollment Rates						
	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	38.0	16.4	27.5	41.5	27.4	34.4
Other urban areas	16.2	2.0	8.6	21.1	8.0	14.3
Rural western hills	1.5	0.0	0.6	1.2	0.0	0.4
Rural eastern hills	5.0	0.0	2.5	5.5	1.3	2.9
Rural western terai	2.0	0.6	1.2	3.4	0.7	1.9
Rural eastern terai	2.2	0.0	1.1	2.2	0.0	0.9
Urban	25.5	7.4	16.2	28.4	14.6	21.3
Rural	2.7	0.1	1.3	3.1	0.5	1.5
Eastern	3.2	0.1	1.7	4.3	0.4	2.0
Central	8.4	1.5	4.7	13.9	6.4	9.8
Western	1.3	0.9	1.1	8.6	1.1	4.0
Mid-Western	2.6	0.0	1.1	2.5	0.9	1.6
Far-Western	6.5	0.0	2.5	4.1	1.2	2.3
Poorest quintile	0.0	0.0	0.0	1.2	0.0	0.5
Second	0.8	0.0	0.4	0.0	0.3	0.2
Third	0.0	0.0	0.0	2.7	0.0	0.9
Fourth	3.1	0.0	1.3	3.5	0.1	1.5
Richest quintile	16.6	3.6	10.0	24.6	12.3	18.4
Non-poor	7.4	1.2	4.1	10.8	3.6	6.7
Poor	0.4	0.0	0.2	0.7	0.0	0.3
Brahman/Chhetri	8.6	0.8	4.3	15.7	5.1	9.6
Terai middle caste	6.5	0.0	3.8	2.8	0.0	1.3
Dalits	0.0	0.0	0.0	1.2	0.0	0.4
Newar	16.4	6.3	11.5	21.2	13.6	17.2
Hill_Janajatis	1.6	0.6	1.0	3.7	0.4	1.6
Terai_Janajatis	0.6	0.0	0.3	3.2	0.0	1.3
Muslim	3.1	0.0	1.3	0.0	0.0	0.0
Other minorities	0.8	0.2	0.5	5.0	1.3	2.8
Total	4.9	0.7	2.6	8.3	2.7	5.0

Table A6: Primary School Net Enrollment Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Kathmandu	77.6	72.3	75.3	85.2	86.0	85.5
Other urban areas	65.4	77.4	71.3	83.0	81.1	82.1
Rural western hills	70.1	49.8	59.9	87.7	82.0	84.7
Rural eastern hills	71.8	55.4	63.6	76.2	67.1	71.6
Rural western terai	68.3	46.7	57.8	81.9	69.9	76.2
Rural eastern terai	59.0	31.1	45.2	68.8	49.1	59.2
Urban	69.1	76.1	72.4	83.6	82.4	83.0
Rural	66.7	44.7	55.8	77.1	64.9	71.0
Eastern	66.3	51.3	59.4	79.7	67.7	74.0
Central	63.6	39.3	51.0	68.8	55.7	62.1
Western	77.9	61.5	69.9	85.3	83.8	84.5
Mid-Western	63.0	41.1	52.0	85.6	73.0	79.8
Far-Western	58.5	36.4	47.2	82.8	67.4	74.2
Poorest quintile	50.9	26.6	38.3	64.5	47.3	55.8
Second	60.3	36.1	48.3	75.6	62.5	68.4
Third	71.4	52.1	61.7	84.4	77.1	80.7
Fourth	75.9	63.3	69.9	84.0	79.2	81.7
Richest quintile	82.5	69.5	76.5	85.8	83.2	84.8
Non-poor	76.9	60.7	69.1	83.2	75.9	79.7
Poor	55.2	31.8	43.3	68.3	52.9	60.3
Brahman/Chhetri	77.9	62.9	71.0	85.1	84.8	85.0
Terai middle caste	61.6	27.3	43.2	75.3	50.1	61.8
Dalits	68.6	43.2	55.0	84.6	84.0	84.3
Newar	74.4	63.9	69.4	92.5	86.1	89.2
Hill_Janajatis	64.7	47.1	55.7	75.3	66.3	70.9
Terai_Janajatis	58.9	33.8	46.9	83.9	64.8	73.8
Muslim	45.8	31.6	37.8	58.0	37.9	48.3
Other minorities	59.6	36.0	48.0	72.8	51.1	62.3
Total	66.8	46.5	56.8	77.9	66.9	72.4

Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Table A7: Lower Secondary School Net Enrollment Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Kathmandu	45.6	39.8	43.1	66.1	60.9	63.5
Other urban areas	33.2	33.9	33.5	40.5	40.2	40.4
Rural western hills	22.5	16.0	19.3	28.2	19.6	24.4
Rural eastern hills	24.9	10.8	18.0	31.5	26.9	29.3
Rural western terai	15.3	4.9	10.7	26.4	31.3	28.5
Rural eastern terai	23.6	16.1	20.2	28.3	17.9	23.4
Urban	37.2	36.0	36.7	47.5	46.8	47.2
Rural	22.2	13.0	17.9	28.7	23.2	26.2
Eastern	30.8	20.3	25.7	29.5	30.6	30.0
Central	22.6	11.9	17.8	35.5	24.4	29.9
Western	24.4	14.8	19.4	34.2	31.5	33.0
Mid-Western	18.4	16.7	17.6	19.6	21.6	20.6
Far-Western	14.4	1.4	9.2	26.7	20.4	24.4
Poorest quintile	7.3	3.3	5.4	7.9	7.9	7.9
Second	14.7	6.4	10.6	16.5	13.4	15.1
Third	27.5	7.8	18.4	34.5	25.7	30.4
Fourth	29.2	25.3	27.5	43.5	41.6	42.7
Richest quintile	35.5	32.6	34.2	53.7	52.6	53.2
Non-poor	31.1	21.2	26.7	39.1	36.8	38.1
Poor	11.1	5.6	8.4	11.9	7.8	9.8
Brahman/Chhetri	29.7	21.1	25.8	43.2	42.9	43.0
Terai middle caste	24.3	13.4	20.7	27.4	11.4	21.5
Dalits	10.8	2.6	7.7	17.2	14.4	16.0
Newar	27.8	21.5	25.4	55.9	37.5	47.4
Hill_Janajatis	16.2	10.8	13.3	28.9	19.3	24.6
Terai_Janajatis	13.4	9.5	11.3	15.1	29.8	21.2
Muslim	7.9	0.0	4.1	11.1	0.8	5.1
Other minorities	28.7	13.6	21.7	27.6	18.4	23.6
Total	23.3	14.3	19.1	31.1	26.4	29.0

Table A8: Secondary School Net Enrollments

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Kathmandu	38.4	36.2	37.3	34.9	31.9	33.2
Other urban areas	18.3	7.0	13.1	39.8	27.3	34.2
Rural western hills	9.9	1.7	5.3	10.5	11.2	10.9
Rural eastern hills	9.4	9.5	9.5	10.4	8.9	9.7
Rural western terai	5.9	0.0	2.6	17.1	7.3	12.3
Rural eastern terai	17.6	7.5	13.3	16.8	15.2	16.0
Urban	26.0	19.4	22.9	38.4	29.1	33.9
Rural	11.7	4.9	8.2	13.5	11.1	12.3
Eastern	20.8	12.9	16.9	20.2	16.9	18.6
Central	12.7	7.8	10.4	15.9	12.8	14.2
Western	17.4	1.9	8.4	13.7	14.7	14.2
Mid-Western	2.1	1.9	2.0	14.1	11.2	12.7
Far-Western	0.4	0.3	0.3	22.0	5.8	14.5
Poorest quintile	1.7	1.7	1.7	1.8	0.8	1.3
Second	8.5	1.3	4.8	10.1	2.5	6.6
Third	10.7	3.0	6.6	11.2	6.5	8.9
Fourth	11.6	9.3	10.5	23.2	21.3	22.1
Richest quintile	28.0	13.3	20.6	34.7	31.9	33.4
Non-poor	17.8	8.9	13.3	21.5	18.0	19.7
Poor	5.0	1.5	3.2	5.2	1.3	3.3
Brahman/Chhetri	17.2	10.4	13.5	25.9	22.6	24.4
Terai middle caste	5.3	10.7	7.1	27.9	22.3	24.8
Dalits	4.2	0.0	2.1	1.6	3.4	2.6
Newar	19.3	14.8	17.3	16.2	24.0	20.9
Hill_Janajatis	6.3	1.0	3.5	12.4	6.9	9.7
Terai_Janajatis	13.3	3.5	8.3	14.6	5.4	9.8
Muslim	0.0	0.0	0.0	0.0	0.0	0.0
Other minorities	16.7	2.4	10.0	18.3	14.9	16.6
Total	12.9	6.0	9.3	16.8	13.4	15.1

Table A9: Higher secondary School Net Enrollment Rates						
	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	17.3	23.4	20.0	37.7	35.8	36.9
Other urban areas	0.0	4.3	2.0	23.2	13.7	18.8
Rural western hills	2.6	1.3	1.9	5.8	3.6	4.6
Rural eastern hills	0.0	1.3	0.7	6.4	4.2	5.4
Rural western terai	2.1	0.0	1.0	7.5	6.1	6.8
Rural eastern terai	1.2	1.2	1.2	1.2	0.0	0.6
Urban	7.8	12.4	9.9	28.3	20.5	24.8
Rural	1.4	1.1	1.2	5.0	3.2	4.1
Eastern	0.0	1.4	0.7	5.4	1.7	3.8
Central	2.7	3.0	2.9	13.9	8.1	11.2
Western	1.8	2.0	1.9	10.9	10.4	10.7
Mid-Western	2.5	0.0	1.2	1.0	1.6	1.4
Far-Western	3.2	0.0	1.9	5.5	4.5	4.9
Poorest quintile	0.0	0.0	0.0	1.7	0.0	0.7
Second	0.0	0.2	0.1	1.4	0.0	0.7
Third	2.9	0.0	1.3	7.4	1.7	4.5
Fourth	0.0	3.3	1.8	3.2	4.6	3.8
Richest quintile	4.8	4.6	4.7	25.8	23.3	24.7
Non-poor	3.0	2.6	2.8	11.2	8.3	9.8
Poor	0.0	0.1	0.0	2.2	0.0	1.0
Brahman/Chhetri	2.6	3.0	2.8	15.7	13.5	14.6
Terai middle caste	6.6	0.0	3.5	13.2	0.0	3.9
Dalits	0.0	0.0	0.0	0.0	0.0	0.0
Newar	7.2	7.4	7.3	33.0	21.8	27.4
Hill_Janajatis	0.0	0.7	0.3	3.9	0.0	2.3
Terai_Janajatis	0.0	0.0	0.0	0.0	0.0	0.0
Muslim	0.0	0.0	0.0	0.0	0.0	0.0
Other minorities	1.8	0.0	1.0	6.9	0.0	3.4
Total	1.9	1.8	1.8	9.3	6.0	7.7

Table A10: University Net Enrollment Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Kathmandu	13.5	10.9	12.2	17.0	13.8	15.4
Other urban areas	7.4	1.0	4.0	11.7	6.6	9.0
Rural western hills	0.0	0.0	0.0	0.0	0.0	0.0
Rural eastern hills	1.1	0.0	0.5	0.8	0.0	0.3
Rural western terai	0.0	0.6	0.4	1.7	0.7	1.1
Rural eastern terai	1.1	0.0	0.5	1.6	0.0	0.7
Urban	10.0	4.7	7.3	13.6	9.0	11.2
Rural	0.6	0.1	0.4	1.2	0.1	0.6
Eastern	0.6	0.0	0.3	2.0	0.1	0.9
Central	2.7	1.0	1.8	5.9	3.4	4.5
Western	0.2	0.8	0.6	4.4	0.9	2.3
Mid-Western	0.0	0.0	0.0	1.4	0.9	1.1
Far-Western	4.5	0.0	1.8	1.4	1.2	1.3
Poorest quintile	0.0	0.0	0.0	0.0	0.0	0.0
Second	0.0	0.0	0.0	0.0	0.3	0.2
Third	0.0	0.0	0.0	1.9	0.0	0.7
Fourth	1.6	0.0	0.7	1.8	0.1	0.8
Richest quintile	4.9	2.5	3.7	10.7	6.9	8.8
Non-poor	2.4	0.8	1.6	5.0	2.1	3.3
Poor	0.0	0.0	0.0	0.0	0.0	0.0
Brahman/Chhetri	3.1	0.7	1.8	5.7	2.8	4.0
Terai middle caste	3.3	0.0	1.9	2.8	0.0	1.3
Dalits	0.0	0.0	0.0	1.2	0.0	0.4
Newar	3.0	4.8	3.9	9.4	7.6	8.5
Hill_Janajatis	0.5	0.0	0.2	1.7	0.4	0.9
Terai_Janajatis	0.6	0.0	0.3	3.2	0.0	1.3
Muslim	0.0	0.0	0.0	0.0	0.0	0.0
Other minorities	0.0	0.1	0.1	2.7	0.8	1.6
Total	1.6	0.5	1.0	3.7	1.5	2.5

Table A11: Population of Out-of-school Children Aged 6 to 10						
	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	301	742	1,043	0	1,678	1,678
Other urban areas	19,415	11,008	30,422	7,666	17,229	24,895
Rural western hills	101,877	187,777	289,655	28,423	49,864	78,287
Rural eastern hills	68,505	132,907	201,412	67,405	98,426	165,831
Rural western terai	66,560	141,007	207,567	25,066	47,369	72,435
Rural eastern terai	155,173	269,226	424,399	123,455	229,835	353,290
Urban	19,715	11,750	31,465	7,666	18,907	26,573
Rural	392,115	730,917	1,123,032	244,349	425,494	669,844
Eastern	105,615	141,431	247,045	59,661	103,333	162,994
Central	134,159	271,285	405,443	135,435	234,307	369,742
Western	54,105	115,302	169,406	17,287	35,114	52,401
Mid-Western	59,610	114,054	173,664	26,995	38,386	65,381
Far-Western	58,342	100,596	158,938	12,637	33,261	45,898
Poorest quintile	163,856	281,417	445,272	128,859	199,952	328,811
Second	113,243	199,053	312,297	65,732	143,821	209,554
Third	74,407	145,151	219,558	29,488	48,447	77,936
Fourth	43,232	85,855	129,088	21,894	39,198	61,092
Richest quintile	17,092	31,190	48,282	6,042	12,982	19,025
Non-poor	125,168	246,562	371,731	87,387	166,113	253,500
Poor	286,662	496,104	782,766	164,628	278,288	442,917
Brahman/Chhetri	76,466	142,983	219,449	28,711	32,836	61,547
Terai middle caste	17,131	42,230	59,361	3,118	24,319	27,437
Dalits	36,384	71,689	108,073	14,026	13,897	27,923
Newar	6,444	17,312	23,756	0	11,907	11,907
Hill_Janajatis	74,947	131,085	206,031	55,692	88,245	143,937
Terai_Janajatis	46,331	84,157	130,488	13,514	29,882	43,396
Muslim	48,801	74,481	123,281	46,539	68,924	115,463
Other minorities	105,326	178,731	284,057	90,414	174,392	264,805
Total	411,830	742,667	1,154,497	252,016	444,401	696,417

Table A12: Determinants of School Enrollment

	Primary		Lower Secondary		Secondary	
Central*	-0.1278	***	-0.0674	**	-0.0375	
Western*	0.0573	**	-0.0037		-0.0164	
Mid-Western*	0.0426		-0.1213	***	-0.0333	
Far-Western*	-0.0149		-0.0634		-0.0310	
Urban*	-0.0163		0.0356		0.0436	*
Correct age + 1	0.0783	***	-0.2004	***	-0.1106	***
Correct age + 2	0.1949	***	-0.0806	***	-0.0096	
Correct age + 3	0.2348	***	0.0891	***	0.0216	
Correct age + 4	0.2560	***	0.1143	***		
Correct age + 5	0.2281	***				
Correct age + 6	0.1115	***				
Female*	0.0051		-0.0865	*	-0.0220	
Hindumiddle	-0.1482	***	-0.1810	***	-0.0895	***
Hindudalits	-0.0642	**	-0.1990	***	-0.0948	***
Janajatinewar	0.0672	*	0.0050		-0.0889	***
Janajatihill	-0.0200		-0.1226	***	-0.0831	***
Janajatiterai	-0.0377		-0.1255	***	-0.0606	**
Religiousmino~s	-0.2761	***	-0.2983	***	-0.1607	***
Other	0.0319		-0.1895		-0.1037	
Log per capita household expenditures	0.0528	***	0.1087	***	0.0997	***
Male and male sibling	0.0038		-0.0274	**	0.0128	
Male and female sibling	0.0278	***	0.0313	**	0.0056	
Female and male sibling	-0.0145		-0.0208		0.0023	
Female and female sibling	-0.0080		0.0101		-0.0025	
Head literate	0.0817	***	0.0663	***	0.0856	***
Spouse literate	-0.0299		-0.0060		0.0463	*
Time to school	-0.0023	***	-0.0008		-0.0006	

Source: World Bank staff estimates using NLSS 2003/04.
Notes: * - significant at 10%; ** - significant at 5%; *** - significant at 1%.

Table A13: Primary School Completion Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Kathmandu	59.8	55.2	57.7	71.6	67.3	69.3
Other urban areas	40.5	35.7	38.5	54.9	52.7	53.9
Rural western hills	31.7	20.2	25.8	37.9	28.7	33.7
Rural eastern hills	29.3	17.9	23.5	40.3	33.3	36.7
Rural western terai	25.0	18.6	21.8	36.6	40.7	38.5
Rural eastern terai	36.4	20.3	29.2	34.9	27.0	31.1
Urban	47.0	42.7	45.1	59.5	57.9	58.8
Rural	31.6	19.4	25.6	37.4	31.7	34.7
Eastern	36.2	25.4	31.0	41.7	38.0	40.1
Central	34.6	18.5	27.2	40.9	33.1	36.9
Western	36.8	24.5	29.9	43.2	45.2	44.1
Mid-Western	24.7	19.9	22.4	30.7	25.2	28.0
Far-Western	22.1	8.5	16.1	41.0	29.4	36.4
Poorest quintile	14.7	5.0	9.9	15.0	12.0	13.4
Second	24.5	9.3	16.5	25.2	20.4	23.0
Third	33.1	13.7	23.6	43.1	34.2	38.8
Fourth	38.2	28.7	33.8	54.4	52.0	53.4
Richest quintile	50.5	49.5	50.0	62.5	62.9	62.7
Non-poor	41.0	30.8	36.2	48.8	46.6	47.8
Poor	19.9	7.7	13.7	19.3	12.8	15.9
Brahman/Chhetri	37.7	30.8	34.3	56.9	51.2	54.1
Terai middle caste	30.7	14.0	24.6	28.9	21.0	26.0
Dalits	19.1	7.0	13.7	20.2	23.8	21.8
Newar	42.8	38.1	40.7	63.4	48.0	55.5
Hill_Janajatis	27.4	15.3	21.0	35.3	29.5	32.5
Terai_Janajatis	27.0	12.0	19.2	25.2	40.9	32.4
Muslim	12.6	0.0	5.8	17.0	6.4	10.7
Other minorities	37.8	16.9	28.2	37.5	26.0	32.4
Total	32.7	20.8	26.9	40.3	35.2	37.9

Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Table A14: Lower Secondary School Completion Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	50.5	52.0	51.2	55.7	53.7	54.7
Other urban areas	34.8	18.1	27.1	52.3	46.5	49.6
Rural western hills	20.1	7.4	13.3	24.8	21.9	23.3
Rural eastern hills	16.0	10.4	13.1	25.3	15.1	20.5
Rural western terai	17.2	4.2	10.1	24.9	13.0	19.0
Rural eastern terai	21.4	13.3	17.5	24.4	18.5	21.4
Urban	41.4	32.5	37.2	53.4	49.0	51.3
Rural	19.0	9.2	13.9	24.8	17.5	21.1
Eastern	23.3	15.0	19.1	32.0	20.9	26.8
Central	21.1	13.1	17.2	29.7	23.8	26.8
Western	28.2	9.1	17.1	32.7	26.6	29.7
Mid-Western	15.5	5.1	10.0	19.5	17.2	18.3
Far-Western	7.7	4.4	6.1	26.0	13.6	19.6
Poorest quintile	5.8	0.9	3.2	6.7	2.1	4.1
Second	8.8	1.3	5.2	13.3	4.6	9.0
Third	15.0	4.8	9.5	21.7	18.3	20.0
Fourth	22.2	14.3	18.1	39.9	28.7	34.3
Richest quintile	43.7	28.7	36.2	53.6	52.8	53.2
Non-poor	28.6	16.2	22.2	35.7	29.3	32.6
Poor	7.9	1.4	4.6	10.0	2.7	6.2
Brahman/Chhetri	30.1	16.3	22.4	44.7	34.9	39.9
Terai middle caste	10.8	4.8	8.4	19.8	20.3	20.1
Dalits	6.9	6.5	6.7	13.9	10.1	11.9
Newar	30.2	28.2	29.3	45.1	43.9	44.5
Hill_Janajatis	11.6	5.4	8.5	21.4	14.4	18.3
Terai_Janajatis	19.2	4.4	11.1	21.5	16.5	19.1
Muslim	7.9	0.0	3.9	0.0	2.9	1.7
Other minorities	21.2	5.2	13.8	26.3	14.2	20.3
Total	20.8	10.8	15.7	29.3	21.9	25.7

Notes: Lower secondary completion rates among all children who completed primary school.

Table A15: Secondary School Completion Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	37.5	38.3	37.9	51.2	45.4	48.6
Other urban areas	15.6	15.9	15.8	31.6	31.1	31.3
Rural western hills	10.1	4.3	6.9	11.6	8.6	9.8
Rural eastern hills	4.5	1.9	3.1	12.5	10.1	11.3
Rural western terai	2.2	0.9	1.5	8.5	9.5	9.0
Rural eastern terai	4.3	5.1	4.7	14.8	8.1	11.2
Urban	25.0	24.7	24.9	38.6	35.7	37.2
Rural	5.6	3.3	4.4	12.2	9.0	10.4
Eastern	3.5	3.6	3.5	17.2	11.3	14.1
Central	9.6	8.4	9.0	22.5	16.3	19.4
Western	10.2	6.5	8.0	16.8	16.5	16.6
Mid-Western	5.7	0.0	2.6	8.9	6.8	7.6
Far-Western	4.8	0.0	2.4	3.6	7.8	6.1
Poorest quintile	0.0	0.0	0.0	3.0	0.5	1.5
Second	0.4	1.3	0.8	4.5	2.7	3.6
Third	8.1	2.0	4.8	12.8	5.3	8.4
Fourth	7.1	8.8	8.0	12.6	18.9	15.9
Richest quintile	15.8	11.3	13.6	40.2	35.1	37.9
Non-poor	10.9	7.5	9.1	20.8	17.3	19.0
Poor	0.5	0.7	0.6	4.3	0.9	2.4
Brahman/Chhetri	11.3	7.3	9.0	27.8	21.3	24.4
Terai middle caste	17.5	0.0	10.1	7.9	12.1	10.8
Dalits	0.3	4.8	2.8	6.3	6.1	6.2
Newar	22.2	12.2	17.0	41.5	40.8	41.2
Hill_Janajatis	2.2	3.8	3.0	9.2	7.9	8.5
Terai_Janajatis	0.7	0.3	0.5	0.0	4.5	2.4
Muslim	2.9	1.3	2.2	2.7	0.0	1.2
Other minorities	3.5	2.3	3.0	16.2	7.5	11.2
Total	7.1	4.9	6.0	17.2	13.0	15.0

Notes: Secondary completion rates among all children who completed lower secondary school.

Table A16: Higher secondary School Completion Rates						
	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	20.5	16.1	18.5	26.1	19.2	22.6
Other urban areas	14.6	1.2	7.1	21.7	13.5	17.4
Rural western hills	1.2	0.0	0.5	0.0	0.0	0.0
Rural eastern hills	1.5	0.0	0.7	1.1	0.0	0.4
Rural western terai	0.0	0.9	0.5	3.6	1.0	2.2
Rural eastern terai	4.3	1.3	2.6	2.9	0.6	1.6
Urban	17.4	6.8	11.9	23.3	15.4	19.2
Rural	2.0	0.6	1.2	2.2	0.4	1.1
Eastern	1.7	2.0	1.8	3.3	1.3	2.1
Central	6.4	1.5	3.6	10.1	5.2	7.4
Western	1.3	1.1	1.2	9.9	1.9	5.2
Mid-Western	0.0	0.0	0.0	1.8	1.2	1.5
Far-Western	8.2	0.0	3.0	1.5	2.9	2.3
Poorest quintile	0.0	0.0	0.0	0.0	0.0	0.0
Second	1.2	0.0	0.5	0.4	0.4	0.4
Third	0.6	0.0	0.2	3.3	1.0	1.9
Fourth	4.8	0.0	2.0	3.7	0.3	1.8
Richest quintile	8.9	5.4	7.1	17.8	11.1	14.4
Non-poor	5.3	1.8	3.4	8.7	3.8	5.9
Poor	0.6	0.0	0.3	0.0	0.0	0.0
Brahman/Chhetri	5.9	1.8	3.6	10.8	4.4	7.0
Terai middle caste	5.2	0.0	2.8	3.3	0.0	1.4
Dalits	8.0	0.0	3.3	1.4	0.0	0.5
Newar	4.8	6.0	5.4	16.8	11.6	14.0
Hill_Janajatis	0.5	0.0	0.3	2.0	0.3	0.9
Terai_Janajatis	1.9	1.8	1.9	4.2	1.6	2.7
Muslim	0.0	0.0	0.0	0.0	0.0	0.0
Other minorities	1.2	0.2	0.6	5.4	2.4	3.7
Total	3.7	1.1	2.2	6.6	2.8	4.4

Table A17: University Completion Rates

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
Kathmandu	18.6	5.1	11.3	8.0	1.8	4.8
Other urban areas	5.0	0.2	2.4	3.1	2.5	2.8
Rural western hills	1.3	0.0	0.5	0.0	0.0	0.0
Rural eastern hills	2.1	0.0	0.9	2.0	0.0	0.9
Rural western terai	1.0	0.0	0.5	0.0	0.0	0.0
Rural eastern terai	2.1	0.0	1.0	1.1	0.0	0.4
Urban	10.7	2.3	6.1	5.4	2.2	3.7
Rural	1.7	0.0	0.7	0.9	0.0	0.4
Eastern	2.0	0.0	0.9	1.6	0.4	0.9
Central	3.5	0.5	1.9	3.6	0.6	1.9
Western	1.8	0.1	0.7	0.4	0.3	0.4
Mid-Western	0.0	0.0	0.0	0.0	0.0	0.0
Far-Western	3.6	0.0	1.6	0.8	0.0	0.3
Poorest quintile	0.0	0.0	0.0	0.0	0.0	0.0
Second	0.0	0.0	0.0	0.0	0.0	0.0
Third	0.0	0.0	0.0	0.0	0.0	0.0
Fourth	0.9	0.0	0.4	2.7	0.0	1.1
Richest quintile	9.9	0.7	4.6	5.9	1.7	3.5
Non-poor	3.7	0.3	1.8	2.6	0.5	1.4
Poor	0.0	0.0	0.0	0.0	0.0	0.0
Brahman/Chhetri	2.7	0.3	1.3	3.7	0.6	1.8
Terai middle caste	0.0	0.0	0.0	0.0	0.0	0.0
Dalits	0.0	0.0	0.0	0.0	0.0	0.0
Newar	9.8	1.2	5.0	4.8	1.0	2.4
Hill_Janajatis	0.0	0.1	0.0	1.1	0.0	0.4
Terai_Janajatis	2.6	0.0	1.4	0.6	0.0	0.3
Muslim	0.0	0.0	0.0	4.1	0.0	1.7
Other minorities	2.8	0.0	1.4	0.6	0.6	0.6
Total	2.4	0.2	1.2	1.9	0.4	1.0

Table A18: Determinants of School Completion

	Primary		Lower Secondary		Secondary	
central*	-0.0050		-0.0372		-0.0184	
western*	-0.0329		-0.0155		-0.0164	
midwes~n*	-0.0757		-0.0454		-0.0450	
farwes~n*	-0.0407		-0.0251		-0.0719	**
urban*	0.0431		0.0951	***	0.0801	***
female*	-0.1741	***	-0.0232		-0.0206	
Hindumiddle	-0.1195	**	-0.1308	***	-0.0541	*
Hindudalits	-0.1947	***	-0.1230	***	-0.0837	***
Janajatinewar	0.0224		-0.0816	**	0.0426	
Janajatihill	-0.1651	***	-0.1200	***	-0.0868	***
Janajatiterai	-0.1707	***	-0.1018	***	-0.1095	***
Religiousmino~s	-0.2289	***	-0.2048	***	-0.0497	
Other	0.0043		-0.1902	*	-0.0786	
log per capita household expenditures	0.1719	***	0.1699	***	0.1079	***
male and male sibling	-0.0451	***	0.0159		-0.0175	
male and female sibling	0.0125		-0.0126		0.0066	
female and male sibling	0.0054		-0.0020		0.0031	
female and female sibling	0.0142		-0.0080		-0.0057	
head literate	0.0923	***	0.0976	***	0.0407	**
spouse literate	0.0166		0.0651	**	-0.0078	
time to school	-0.0005		0.0000		0.0002	

Source: World Bank staff estimates using NLSS 2003/04.
Notes: * - significant at 10%; ** - significant at 5%; *** - significant at 1%.

Table A19: Literacy Rates Among 15-24 Year Olds Across Regions, Per Capita Household Expenditure Quintiles, And Gender

	NLSS I (1995/96)			NLSS II (2003/2004)		
	Boys	Girls	Total	Boys	Girls	Total
Kathmandu	95.6	85.8	90.8	96.4	91.8	94.2
Other urban areas	83.4	60.4	71.5	92.5	83.5	88.0
Rural western hills	76.9	44.8	58.6	93.2	69.0	78.7
Rural eastern hills	81.0	47.1	63.3	84.3	65.0	74.0
Rural western terai	68.1	28.8	46.4	83.8	57.6	69.9
Rural eastern terai	62.8	31.9	46.7	76.8	44.9	58.9
Urban	88.8	70.9	79.7	93.9	86.3	90.2
Rural	72.1	38.7	54.1	83.7	58.1	69.4
Eastern	75.1	52.4	63.3	85.1	62.1	72.5
Central	72.4	36.1	53.6	82.8	59.2	70.4
Western	80.8	57.8	67.5	95.1	78.5	85.9
Mid-Western	68.1	27.3	46.2	81.9	55.3	66.8
Far-Western	68.5	18.0	39.9	84.2	53.6	66.5
Poorest quintile	55.0	19.5	34.2	71.2	31.5	47.6
Second	63.3	24.5	43.4	76.9	48.5	61.3
Third	67.0	33.5	48.8	85.1	57.4	69.2
Fourth	79.6	49.1	62.7	92.1	78.0	84.5
Richest quintile	92.1	71.0	81.5	94.8	90.0	92.4
Non-poor	81.1	51.9	65.5	89.2	71.4	79.6
Poor	59.9	22.3	39.5	74.4	38.9	53.8
Brahman/Chhetri	86.8	58.5	71.1	94.5	82.3	87.8
Terai middle caste	51.9	4.8	32.6	80.8	26.3	49.0
Dalits	59.8	24.5	40.6	89.4	66.0	75.8
Newar	91.3	72.7	82.3	92.9	81.8	86.9
Hill_Janajatis	72.8	50.0	60.9	87.3	68.1	77.1
Terai_Janajatis	63.3	20.4	38.9	84.5	49.8	66.2
Muslim	55.3	7.0	29.3	57.2	27.6	42.0
Other minorities	63.0	20.2	40.0	76.4	40.6	56.4
Total	73.6	41.2	56.2	85.6	62.5	73.0

Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Table A20: Primary School Dropout, Promotion, and Repetition Rates

Primary School Dropout Rates

Year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
1995/96*	23.1	3.5	4.6	8.3	15.5
1996/97*	23.1	4.6	8.2	9	15.1
1997/98*	19.2	4.8	4.1	11.2	18.6
1998/99*	21.6	8	5	10	15.7
2000/01+	13.6				12.7
2003/04+	13.9				9.5
2002/03+	15.1				11

Primary School Promotion Rates

Year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
1995/96*	37.3	76.7	79.8	73.8	67.1
1996/97*	35.2	70.8	72.1	70.4	63.6
1997/98*	42.1	76.7	81.0	76.5	67.4
1998/99*	42.0	74.0	81.0	79.0	72.0
2000/01+	44.6	NA	NA	NA	76.5
2003/04+	47.4	NA	NA	NA	81.5
2002/03+	48.1	NA	NA	NA	78

Primary School Repetition Rates

Year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
1995/96*	39.6	19.9	15.5	17.8	17.4
1996/97*	41.7	24.6	19.7	20.6	22.3
1997/98*	38.7	18.5	15.0	12.2	14.0
1998/99*	37.0	18.0	14.0	11.0	13.0
2000/01+	41.8	NA	NA	NA	10.8
2003/04+	38.7	NA	NA	NA	9.0
2002/03+	36.8	NA	NA	NA	11.0

Sources: * - MOE, Educational Statistics of Nepal (1997, 1998, and 1999) quoted in NPC.
+ - MOE, Education Statistics of Nepal (2002).

Table A21: Commute Time to Primary Schools

	1995/96				2003/04			
	0-10 mins	**11-30 mins**	**21-60 mins**	**60+ mins**	**0-10 mins**	**11-30 mins**	**21-60 mins**	**60+ mins**
Urban Kathmandu	87.4	12.6	0	0	95.7	3.5	0.7	0.1
Urban Other	56.2	39.4	3.5	0.8	64.4	34	1.3	0.3
RW Mt/Hill	30.1	50.6	11.7	7.6	40	47.5	9	3.5
RE Mt/Hill	35.0	49.4	10.7	4.8	32.3	45.2	16.4	6.1
RW Terai	37.7	54.6	7.2	0.5	44.4	53.2	2.2	0.2
RE Terai	54.1	40.2	4.1	1.6	63.6	33.8	2.3	0.4
Urban	68.8	28.6	2.1	0.5	75.5	23.2	1.1	0.2
Rural	40.0	47.7	8.4	3.9	46.4	43.4	7.6	2.6
Eastern	42.1	45.9	9.1	2.9	49.7	41.2	6.8	2.3
Central	52.1	40.4	4.9	2.6	60.2	30.4	7.1	2.3
Western	37.6	48.3	8.9	5.2	54	41.3	4.7	0
Mid-Western	31.3	54.9	8.7	5.1	37.9	48.2	8.5	5.4
Far-Western	27.0	54.5	14	4.5	25.3	67.8	4.6	2.3
Poorest	29.2	48.3	14	8.4	33.8	50.3	11.3	4.6
Second	38.5	47.9	10.4	3.2	49	40.5	7.7	2.9
Third	39.6	49.8	7.5	3.1	47.6	42.5	7	2.8
Fourth	46.8	45.9	4.7	2.6	51.5	42.1	5.7	0.7
Richest	51.4	41.3	5.2	2.1	67.8	28.6	2.7	0.9
non-poor	46.6	45.3	5.7	2.5	55.7	37.4	5.3	1.6
Poor	34.3	48	11.9	5.8	38.6	47.4	10	4
Nepal	42.1	46.3	8	3.7	51.2	40	6.5	2.2

Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Table A22: Enrollment in Private Schools			
	1995/06	**2003/04**	**Annual growth**
Urban Kathmandu	33,303	92,957	16%
Urban Other	41,854	114,712	15%
RW Mt./Hill	15,997	13,442	-2%
RE Mt./Hill	28,682	80,887	16%
RW Terai	15,060	75,301	26%
RE Terai	34,051	94,325	16%
urban	71,627	167,281	13%
rural	97,320	290,863	17%
Eastern	22,949	107,173	25%
Central	92,842	218,090	13%
Western	24,590	100,462	22%
Mid-Western	13,335	23,344	8%
Far-Western	15,231	22,555	6%
Poorest	13,556	27,939	11%
Second	7,528	20,006	15%
Third	13,450	53,887	22%
Fourth	32,322	118,081	20%
Richest	102,091	251,711	14%
non-poor	147,863	429,650	16%
poor	21,084	41,974	10%
Total	168,947	471,624	16%

Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Table A23: Public School Expenditures

	Total per capita expenditures	Per capita expenditures on education	Per capita education expenditures as a % of pc total expenditures
Urban Kathmandu	30,542	1,931	6.3%
Urban Other	15,192	897	5.9%
RW Mt./Hill	11,361	475	4.2%
RE Mt./Hill	10,065	404	4.0%
RW Terai	10,734	557	5.2%
RE Terai	9,524	495	5.2%
urban	14,797	880	5.9%
rural	10,638	491	4.6%
Eastern	10,386	448	4.3%
Central	10,351	547	5.3%
Western	12,689	651	5.1%
Mid-Western	10,179	413	4.1%
Far-Western	10,170	390	3.8%
Poorest	5,295	274	5.2%
Second	7,734	388	5.0%
Third	10,361	512	4.9%
Fourth	14,530	672	4.6%
Richest	29,649	1,233	4.2%
non-poor	13,646	633	4.6%
poor	6,082	309	5.1%
Total	10,862	514	4.7%

Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Table A24: Infant, Child, and Under-Five Mortality in Nepal

	1996			2001		
	Infant mortality ($_1q_0$)	**Child mortality ($_4q_1$)**	**Under-5 mortality ($_5q_0$)**	**Infant mortality ($_1q_0$)**	**Child mortality ($_4q_1$)**	**Under-5 mortality ($_5q_0$)**
Type of place of residence						
Urban	61.1	22.5	82.2	50.1	16.7	65.9
Rural	95.3	53.2	143.4	79.3	35.4	111.9
Region						
Eastern	79.4	36.3	112.8	77.5	29.6	104.8
Central	86.3	56.1	137.5	77.4	36.4	110.9
Western	84.3	37.6	118.8	60.1	25.1	83.7
Mid-Western	114.8	71.2	177.8	72.9	41.2	111
Far-Western	124.3	62.3	178.9	112.2	41.7	149.2
Sex of child						
Male	101.9	45.5	142.8	79.2	27.8	104.8
Female	83.7	56.5	135.5	75.2	40.2	112.4
	82.1%	124.2%	94.9%	94.9%	144.6%	107.3%
Total	93	50.9	139.2	77.2	33.9	108.4

Source: DHS (1996, 2001).
Notes: Computed for the 10 year period preceding the survey.

Table A25: Immunization Rates for 12-23 Year Olds

	1996				2001			
	DPT 3	Polio 0 (at birth)	Polio 3	Measles	DPT 3	Polio 0 (at birth)	Polio 3	Measles
Type of place of residence								
Urban	77.4	-	77.4	77.2	78.2	6.2	95.4	80.6
Rural	51.9	-	49.2	55.2	71.7	1.7	91.2	69.9
Highest educational level								
No education	48.4	-	45.3	52	64.3	1.1	89	63.2
Primary	68.3	-	68	65	87.8	3.2	96.5	84.6
Secondary or higher	81.4	-	80.7	87.1	94.5	5.1	98.9	92.9
Sex of child								
Male	54.7	-	52	59	74.2	2.9	92.1	72.9
Female	52.2	-	49.8	54	70.2	1.2	90.9	68.5
Region								
Eastern	57.7	-	54.5	63.3	81	3.6	96.5	78.6
Central	52.1	-	50.7	54.8	67.3	0.9	91.7	64.9
Western	62.4	-	61.5	56.8	73.1	3.2	93.2	68
Mid-Western	50.9	-	44.2	55.8	74	1.2	86.4	76.1
Far-Western	37.2	-	34.9	49.1	63.2	1	85.3	66.5
Total	53.5	-	50.9	56.6	72.1	2	91.5	70.6

Source: DHS (1996, 2001).
Notes: Percent of children 12-23 months who receive vaccines any time before the survey (according to the vaccination card or mother's report).

Table A26: Percentage of Individuals Who Sought Healthcare for an Illness or Injury in the Last Month

	NLSS I (1995/96)	NLSS II (2003/04)
Kathmandu	81.0%	57.4%
Other urban areas	73.2%	66.4%
Rural western hills	61.3%	79.3%
Rural eastern hills	56.4%	51.8%
Rural western terai	68.3%	82.9%
Rural eastern terai	73.2%	67.2%
Male	68.0%	67.5%
Female	64.2%	65.0%
Urban	80.6%	64.2%
Rural	65.2%	66.2%
Eastern	66.9%	60.0%
Central	67.8%	61.4%
Western	73.0%	78.2%
Mid-Western	50.1%	85.0%
Far-Western	62.5%	86.4%
Poorest quintile	51.5%	53.2%
Second	59.7%	61.7%
Third	63.1%	69.1%
Fourth	72.9%	65.9%
Richest quintile	77.4%	74.6%
Non-poor	71.4%	68.8%
Poor	55.7%	57.0%
Total	66.0%	66.2%

Source: World Bank staff estimates using NLSS 1995/96 and 2003/04.

Table A27: Assistance During Births

	1996			2001		
	Doctor	Other health professional	Traditional birth attendant	Doctor	Other health professional	Traditional birth attendant
Type of place of residence						
Urban	30.3	16.2	12.1	40.4	13.3	9.3
Rural	4.1	3	23.4	6.4	5.1	23.9
Highest educational level						
No education	3	2.1	24.1	4.1	3.3	25.3
Primary	8.8	6.1	20.2	9.8	7.9	19.1
Secondary or higher	26.6	16.1	13.3	31.5	15.9	14.5
Region						
Eastern	6.3	4.1	25.3	9.1	9.5	23.8
Central	8.9	4.1	27.1	11.2	4.8	28.6
Western	5	4.7	13.6	8.6	5.6	18.1
Mid-Western	1.7	2.9	28.5	3.1	3.6	19.7
Far-Western	2.7	2.3	11.6	6	2.7	16.9
Total	5.8	3.8	22.7	8.5	5.6	23

Source: DHS (1996, 2001).
Notes: Percent distribution of live births in 5 years preceding the survey.

Table A28: Place of Birth

	1996			2001		
	Health facility	**At home**	**Other**	**Health facility**	**At home**	**Other**
Urban	43.8	56.2	-	43.2	52.4	3
Rural	5.1	94.1	-	6.3	90.4	1.2
Highest educational level						
No education	3.8	95.6	-	4	93.4	0.6
Primary	10.7	87.7	-	11.4	85.1	1.1
Secondary or higher	36.5	62.6	-	30.6	61.5	5.4
Region						
Eastern	7.2	91.9	-	10.3	88	1.1
Central	11.3	88	-	10.8	86	1.6
Western	7.4	92	-	8.6	85.7	1.7
Mid-Western	2.7	96.5	-	2.6	92.9	1
Far-Western	3.9	94.8	-	6.1	91.9	0.5
Total	7.6	91.7	-	8.5	88.1	1.3

Source: DHS (1996, 2001).
Notes: Percent distribution of live births in five years preceding the survey.

Table A30: Initial Breastfeeding

	1996				2001			
	Ever breastfed	Started within 1 hour	Started within 1 day	All children	Ever breastfed	Started within 1 hour	Started within 1 day	All children
Type of place of residence								
Urban	97.3	17	66.8	277.9	97.4	36.4	73.2	247.9
Rural	97.8	18.3	59.2	4097.1	98.1	30.4	64	3848.3
Highest educational level								
No education	98	18.2	58.8	3470.2	98.1	29.5	61.7	2980.3
Primary	96.6	16.6	61.3	510.4	97.9	30.3	71.5	583.8
Secondary or higher	96.9	19.7	65.5	394.4	97.7	38.6	73.1	532.2
Sex of child								
Male	97.1	18	59.9	2250.8	97.8	31.2	64.1	1989.6
Female	98.4	18.3	59.6	2124.2	98.2	30.4	65	2106.6
Region								
Eastern	97.4	18.4	54.6	923.8	97.5	28.1	64.4	945.7
Central	97.5	11.7	49.6	1434.4	97.8	13.4	47.7	1375.1
Western	98	15.9	58.5	880.9	98.2	31.2	57	712.3
Mid-Western	97.9	27.3	71.9	694.5	98.8	62.1	89.2	612.1
Far-Western	98.5	28.9	86.3	441.4	98.4	45.9	94.6	451
Total	97.7	18.2	59.7	4375	98	30.8	64.6	4096.2

Source: DHS (1996, 2001).
Note: Percent distribution of children in 5 years preceding the survey.